LONGHORN ARMY AMMUNITION PLANT KARNACK, TEXAS

ADMINISTRATIVE RECORD

Volume 5

2024

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Prepared for

Department of the Army
Longhorn Army Ammunition Plant

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LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS
ADMINISTRATIVE RECORD – CHRONOLOGICAL INDEX

VOLUME 5

2024

A.	Title:	Report (Cont'd) – Continued Appendix I to Draft Final Pre-Design Investigation Report, LHAAP-47, Plant 3 Area, Solid Rocket Motor Fuel Production, Longhorn Army Ammunition Plant, Karnack, Texas
	Author(s):	Department of the Army
	Recipient:	Environmental Protection Agency and Texas Commission on Environmental Quality
	Date:	January 25, 2024
	Bate Stamp:	01220615–01221619
B.	Title:	Transmittal – Surface Water Data Transmittal – 2023, Longhorn Army Ammunition Plant, Karnack, Texas
	Author(s):	Department of the Army
	Recipient:	Texas Commission on Environmental Quality
	Date:	February 6, 2024
	Bate Stamp:	01221620–01221864
C.	Title:	Report – Draft Final Ninth Annual Remedial Action Operation Report (September 2022–August 2023), LHAAP-35A (58) Shops Area, Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas, February 2024
	Author(s):	Department of the Army
	Recipient:	Environmental Protection Agency and Texas Commission on Environmental Quality
	Date:	February 6, 2024
	Bate Stamp:	01221865–01222508

QC SUMMARY REPORT
INTERNAL STANDARD RELATIVE INTENSITY

Client: HDR

SDG: 23F0196

Project: Longhorn AAP

Test No: SW6020 B

Sequence: S3F0145

ICPMS

SampleID	Date	Time	Internal Standards for Element %:						
			Li	Sc	Ge	Y	In	Tb	Bi
S3F0145-CCB7	6/8/2023	13:15	105.45	98.65	98.02	98.00	96.62	97.76	98.96
23F0196-08	6/8/2023	13:17	104.74	99.01	92.72	95.06	89.26	95.63	86.46
23F0196-09	6/8/2023	13:19	110.43	103.09	98.33	100.77	93.73	99.44	93.51
23F0196-10	6/8/2023	13:21	113.98	106.12	100.70	101.84	96.58	101.26	94.69
23F0196-12	6/8/2023	13:22	114.89	107.06	94.95	98.77	88.56	95.01	82.44
23F0196-05RE1	6/8/2023	13:24	132.93	118.67	113.67	112.94			
S3F0145-CCVB	6/8/2023	13:30	93.58	88.76	90.12	90.24	89.83	92.10	95.78
S3F0145-CCB8	6/8/2023	13:32	103.69	95.88	96.07	95.65	94.91	97.45	100.67
23F0196-07RE1	6/8/2023	13:34	111.30	101.39	101.86				
23F0196-08RE1	6/8/2023	13:36	118.22	108.31	105.99	105.76			
23F0196-09RE1	6/8/2023	13:37	117.35	107.37	105.74	102.24			
23F0196-10RE1	6/8/2023	13:39	120.31	109.80	107.07	105.16			
23F0196-12RE1	6/8/2023	13:41	121.06	109.13	104.80	104.24			
S3F0145-CCVC	6/8/2023	13:52	130.00	115.63	112.65	110.15	107.60	108.40	109.97
S3F0145-CCVD	6/8/2023	13:54	128.67	113.81	111.43	109.09	106.30	106.75	108.28
S3F0145-CCB9	6/8/2023	13:56	128.03	112.98	110.79	108.03	104.96	106.08	108.84
S3F0145-CCVE	6/8/2023	14:15	112.10	102.91	101.30	100.97	99.03	100.06	103.25
S3F0145-CCBA	6/8/2023	14:17	113.21	102.39	101.35	101.25	100.10	101.41	102.38
23F0196-05RE2	6/8/2023	14:24	118.91	108.48	105.86	105.56			
23F0196-08RE2	6/8/2023	14:26	119.97	109.72	107.66				
23F0196-09RE2	6/8/2023	14:28	120.85	110.04	108.90				
23F0196-10RE2	6/8/2023	14:30	122.99	113.06	109.56				
23F0196-12RE2	6/8/2023	14:32	122.23	112.39	109.98	106.94			
S3F0145-CCVF	6/8/2023	14:34	122.95	111.70	108.63	106.12	104.73	105.67	106.25
S3F0145-CCBB	6/8/2023	14:35	122.25	111.71	107.96	106.84	103.83	105.64	105.65

Element		QC Range
Li	=	> 70%
Sc	=	> 70%
Ge	=	> 70%
Y	=	> 70%
In	=	> 70%
Tb	=	> 70%
Bi	=	> 70%

QC SUMMARY REPORT
INTERNAL STANDARD RELATIVE INTENSITY

Client: HDR

SDG: 23F0196

Project: Longhorn AAP

Test No: SW6020 B

Sequence: S3F0237

ICPMS

SampleID	Date	Time	Internal Standards for Element %:						
			Li	Sc	Ge	Y	In	Tb	Bi
S3F0237-ICV1	6/14/2023	08:38	101.79	99.08	99.31	99.51	102.35	104.94	103.76
S3F0237-ICB1	6/14/2023	08:40	100.77	99.51	100.43	99.04	103.23	101.45	102.81
S3F0237-IFA1	6/14/2023	08:43	123.92	107.67	108.42	108.45	109.51	116.83	111.79
S3F0237-IFB1	6/14/2023	08:45	128.68	110.67	108.79	110.88	110.72	116.29	112.75
S3F0237-CRL1	6/14/2023	08:47	128.81	111.54	110.32	111.23	113.88	116.70	114.98
S3F0237-HCV1	6/14/2023	08:54	126.45	111.11	110.84	111.92	114.13	115.93	115.88
S3F0237-CCV1	6/14/2023	09:01	99.47	92.00	95.37	93.59	96.81	97.94	99.94
S3F0237-CCB1	6/14/2023	09:03	103.86	95.03	97.18	95.96	99.16	99.46	104.47
S3F0237-CCV2	6/14/2023	09:23	118.70	110.43	108.00	106.12	108.11	107.43	107.92
S3F0237-CCB2	6/14/2023	09:25	122.65	113.54	109.38	108.57	110.96	107.41	109.74
S3F0237-CCV3	6/14/2023	09:35	85.63	87.41	88.21	88.03	90.12	89.21	91.95
S3F0237-CCB3	6/14/2023	09:36	95.36	95.34	94.05	93.88	96.97	94.92	95.87
B3F0173-BLK1	6/14/2023	09:38	103.57	103.19	98.84	103.39	106.67	105.95	99.99
B3F0173-BS1	6/14/2023	09:40	101.36	100.78	99.49	98.41	100.71	97.25	98.13
S3F0237-CCV4	6/14/2023	09:53	140.73	123.60	119.75	119.35	121.91	119.07	119.21
S3F0237-CCV5	6/14/2023	09:55	142.44	124.75	118.87	118.33	118.89	117.60	118.82
S3F0237-CCB4	6/14/2023	09:57	143.91	125.58	120.11	120.62	121.53	120.27	120.43
S3F0237-CCV6	6/14/2023	10:05	85.53	85.16	86.98	88.09	93.31	92.77	94.84
S3F0237-CCB5	6/14/2023	10:07	93.22	92.83	92.84	93.21	94.74	98.21	98.03
S3F0237-CCV7	6/14/2023	10:21	96.34	93.08	93.73	94.54	97.96	98.46	101.33
S3F0237-CCB6	6/14/2023	10:23	101.94	98.11	97.55	96.65	101.05	101.73	104.30
23F0196-01	6/14/2023	10:33	136.16	127.37	110.80	111.92	102.93	104.60	92.46
S3F0237-CCV8	6/14/2023	10:38	107.87	102.73	101.17	103.60	105.40	103.21	102.46
S3F0237-CCB7	6/14/2023	10:40	112.64	106.75	105.12	103.28	107.64	102.98	102.33
23F0196-02	6/14/2023	10:42	116.30	109.90	103.31	104.12	103.26	103.79	92.14
23F0196-03	6/14/2023	10:44	122.53	115.00	108.86	109.81	108.66	108.15	99.98
23F0196-04	6/14/2023	10:46	127.28	116.35	107.25	109.41	104.34	107.06	96.21
23F0196-06	6/14/2023	10:48	135.01	122.90	114.33	114.95	112.49	110.86	103.10

Element		QC Range
Li	=	> 70%
Sc	=	> 70%
Ge	=	> 70%
Y	=	> 70%
In	=	> 70%
Tb	=	> 70%
Bi	=	> 70%

QC SUMMARY REPORT
INTERNAL STANDARD RELATIVE INTENSITY

Client: HDR

SDG: 23F0196

Project: Longhorn AAP

Test No: SW6020 B

Sequence: S3F0237

ICPMS

SampleID	Date	Time	Internal Standards for Element %:						
			Li	Sc	Ge	Y	In	Tb	Bi
B3F0173-PS1	6/14/2023	10:49	138.46	124.54	115.83	113.75	112.82	112.46	101.51
B3F0173-DUP1	6/14/2023	10:51	148.56	130.83	125.43	121.80	121.31	119.45	113.04
S3F0237-CCV9	6/14/2023	10:59	99.87	95.91	95.83	95.30	102.08	100.26	102.93
S3F0237-CCB8	6/14/2023	11:01	105.40	99.26	99.17	98.52	103.69	101.02	103.96
S3F0237-CCVA	6/14/2023	11:10	115.97	109.95	107.24	107.28	110.33	107.34	106.95
S3F0237-CCB9	6/14/2023	11:12	122.08	114.23	111.27	111.31	112.59	111.30	111.70
S3F0237-CCVB	6/14/2023	11:25	96.01	92.81	92.85	94.92	101.17	96.69	100.57
S3F0237-CCBA	6/14/2023	11:27	99.80	96.93	93.80	97.45	100.37	99.46	100.65
S3F0237-CCVC	6/14/2023	11:40	116.31	109.52	106.74	106.16	108.48	104.96	106.08
S3F0237-CCBB	6/14/2023	11:42	119.13	111.46	107.93	107.08	108.40	104.02	107.05
23F0196-01RE1	6/14/2023	11:46	121.83	116.42	110.81	110.89			
23F0196-02RE1	6/14/2023	11:48	126.09	119.08	114.97	112.12			
23F0196-03RE1	6/14/2023	11:53	95.45	93.83	94.98	94.48			
23F0196-04RE1	6/14/2023	11:55	98.05	96.03	95.17	96.25			
23F0196-06RE1	6/14/2023	11:57	102.46	100.14	98.69	98.05			
S3F0237-CCVD	6/14/2023	12:03	89.97	87.72	89.35	91.93	94.04	93.87	96.20
S3F0237-CCBC	6/14/2023	12:05	93.32	91.29	91.54	93.37	98.17	93.96	97.06
S3F0237-CCVE	6/14/2023	12:16	106.79	103.02	100.91	101.98	103.88	100.13	103.57
S3F0237-CCBD	6/14/2023	12:18	111.93	106.96	104.06	105.74	110.53	104.23	105.77
S3F0237-CCVF	6/14/2023	12:35	117.73	111.17	107.96	107.54	110.47	105.03	108.24
S3F0237-CCBE	6/14/2023	12:37	119.70	111.95	107.24	107.94	109.50	105.84	105.81
23F0196-01RE2	6/14/2023	12:44	96.09	95.78	95.02	97.30			
23F0196-02RE2	6/14/2023	12:46	98.16	96.38	96.98	97.41			
23F0196-03RE2	6/14/2023	12:48	99.27	98.37	97.42				
23F0196-04RE2	6/14/2023	12:50	103.09	101.21	101.21	100.28			
23F0196-06RE2	6/14/2023	12:52	102.68	100.38	100.00				
S3F0237-CCVG	6/14/2023	12:54	104.70	101.48	99.20	101.20	102.18	100.37	101.79
S3F0237-CCBF	6/14/2023	12:56	114.21	107.75	106.12	105.65	109.21	105.32	106.67

Element		QC Range
Li	=	> 70%
Sc	=	> 70%
Ge	=	> 70%
Y	=	> 70%
In	=	> 70%
Tb	=	> 70%
Bi	=	> 70%

QC SUMMARY REPORT
INTERNAL STANDARD RELATIVE INTENSITY

Client: HDR

SDG: 23F0196

Project: Longhorn AAP

Test No: SW6020 B

Sequence: S3F0259

ICPMS

SampleID	Date	Time	Internal Standards for Element %:						
			Li	Sc	Ge	Y	In	Tb	Bi
S3F0259-ICV1	6/15/2023	15:10	97.21	94.47	96.13				
S3F0259-ICB1	6/15/2023	15:12	96.39	95.35	95.89				
S3F0259-CRL1	6/15/2023	15:14	97.99	96.68	97.28				
S3F0259-IFA1	6/15/2023	15:16	98.90	93.77	92.78				
S3F0259-IFB1	6/15/2023	15:18	103.86	94.88	95.92				
S3F0259-HCV1	6/15/2023	15:20	106.03	96.74	97.53				
S3F0259-CCV1	6/15/2023	15:27	86.13	83.18	86.55				
S3F0259-CCB1	6/15/2023	15:29	90.42	87.07	90.43				
B3F0173-BLK2	6/15/2023	15:33	97.77	94.11	95.69				
S3F0259-CCV2	6/15/2023	15:49	112.20	102.23	101.92				
S3F0259-CCB2	6/15/2023	15:51	112.20	101.91	103.34				
S3F0259-CCV3	6/15/2023	16:11	83.84	84.05	87.42				
S3F0259-CCB3	6/15/2023	16:13	90.79	88.38	90.91				
S3F0259-CCV4	6/15/2023	16:30	109.21	104.83	103.91				
S3F0259-CCB4	6/15/2023	16:32	108.92	103.21	104.72				
S3F0259-CCV5	6/15/2023	16:53	98.25	95.79	97.28				
S3F0259-CCB5	6/15/2023	16:55	99.84	96.92	99.07				
S3F0259-CCV6	6/15/2023	17:13	111.08	104.58	105.09				
S3F0259-CCB6	6/15/2023	17:15	110.90	104.26	104.63				
S3F0259-CCV7	6/15/2023	17:32	112.72	106.15	105.48				
S3F0259-CCB7	6/15/2023	17:34	111.94	105.92	105.94				

Element		QC Range
Li	=	> 70%
Sc	=	> 70%
Ge	=	> 70%
Y	=	> 70%
In	=	> 70%
Tb	=	> 70%
Bi	=	> 70%

Performance Report

System (SN 02314R):

Time	6/8/2023 10:21:51 AM
Instrument id	iCAP Q
Operator	EMT\TICPMSUSER
Template	EMT Tuning Report For 200.8_6020, Oxides, doubly charged
Serial number	02314R
Last Autotune	Autotune-SourceTune High Matrix-20230605-104820023.imatdat
Solution	EMT iCAPqc Tuning check solution: 11.0 Be and Mg, rest at 1.0 ppb, with Ba and Ce. In 1% HNO3.

Sensitivity & Stability Test:

Result	Runs	Sweeps
Passed	5	10

Sensitivity:
Manufacturer recommended settings
No firm Method requirements (200.8 or 6020)

Analyte	Result	Value	Condition	Limit
9Be	Passed	3,159.56 CPS	Greater than	5.0 CPS
59Co	Passed	44,428.0 CPS	Greater than	1,000.0 CPS
24Mg	Passed	9,096.3 CPS	Greater than	50.0 CPS
208Pb	Passed	204,772.0 CPS	Greater than	1,000.0 CPS
140Ce.16O/140Ce	Passed	0.0054	Less than	0.02
137Ba++/137Ba	Passed	0.034	Less than	0.1
115In	Passed	80,543.0 CPS	Greater than	1,000.0 CPS

Stability:
< 5% for 5 Replicates (200.8)

Analyte	Value	Limit
9Be	0.8%	5
59Co	1.3%	5
24Mg	0.4%	5
208Pb	0.9%	5
115In	1.5%	5

Mass Calibration Test:

Within 0.1 amu target mass (200.8 and 6020) and peak widths
(~ 0.75 amu at 5% peak height for 200.8 and < 0.90 amu at 10% peak height for 6020)
- set to 0.65 to 0.85 amu at 5% height- most stringent

Result	Channels	Dwell	MeasureWidth	PointSpacing	Sweeps
Passed	75	0.1	1.5	0.02	5

Analyte	Result	Centroid	Offset	Peak Width	Peak Width Min	Peak Width Max
9Be	Passed	8.9923	0.0199	0.715	0.650	0.850
24Mg	Passed	23.9611	0.0240	0.704	0.650	0.850
59Co	Passed	58.9138	0.0194	0.730	0.650	0.850
115In	Passed	114.8952	0.0087	0.740	0.650	0.850
208Pb	Passed	207.9838	0.0072	0.771	0.650	0.850

Performance Report

Tune and Instrument Settings:

Parameter	Value
Additional Gas Flow 1	0.00
Additional Gas Flow 2	0.00
Additional Gas Flow 3	0.00
Angular Deflection	-382.40
Auxilliary Flow	0.80
CCT Bias	-21.00
CCT Entry Lens	-105.98
CCT Exit Lens	-40.00
CCT Focus Lens	-2.34
CCT1 Flow	0.00
CCT1 Shut-Off Valve	0.00
CCT2 Flow	4.73
CCT2 Shut-Off Valve	1.00
Cool Flow	14.00
D1 Lens	-353.20
D2 Lens	-158.00
Deflection Entry Lens	-35.01
Extraction Lens 1 Negative	0.00
Extraction Lens 1 Polarity	0.00
Extraction Lens 1 Positive	0.00
Extraction Lens 2	-125.00
Focus Lens	-6.50
Nebulizer Flow	0.96
Peristaltic Pump Speed	40.00
Plasma Power	1550.00
Pole Bias	-18.00
Quad Entry Lens	-62.00
Sampling Depth	5.00
Spray Chamber Temperature	2.70
Torch Horizontal Position	-0.17
Torch Vertical Position	0.79
Virtual CCT Mass Maximum Dac Limit Set	4095.00
Virtual CCT Mass parameter b	1.00
Virtual CCT Mass to Dac Factor	60.00
Virtual CCT Mass to Dac Offset	100.00

Vacuum Check:

Parameter	Result	Value
Analyzer Pressure		6.184e-7
Interface Pressure		1.546e+0

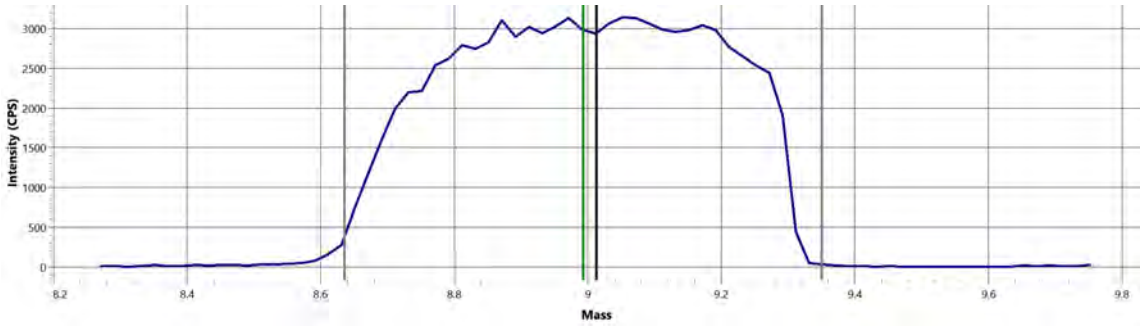
Detector (EM) Voltages:

Analog	Counting
-2837.50	1812.50

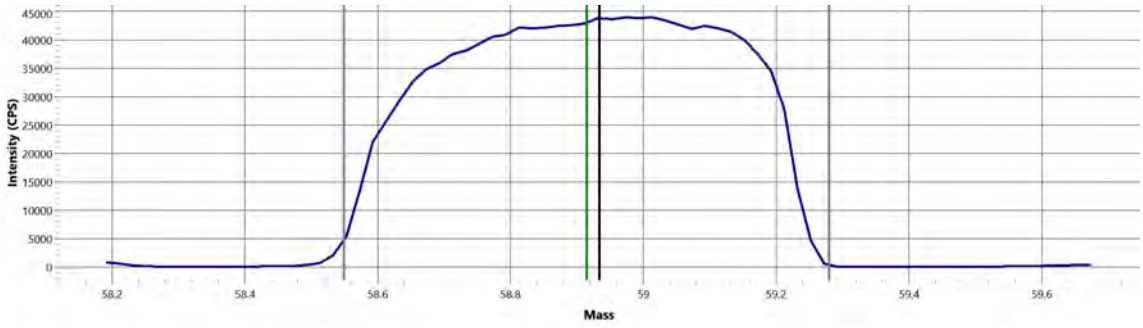
Performance Report

Mass Calibration Peaks

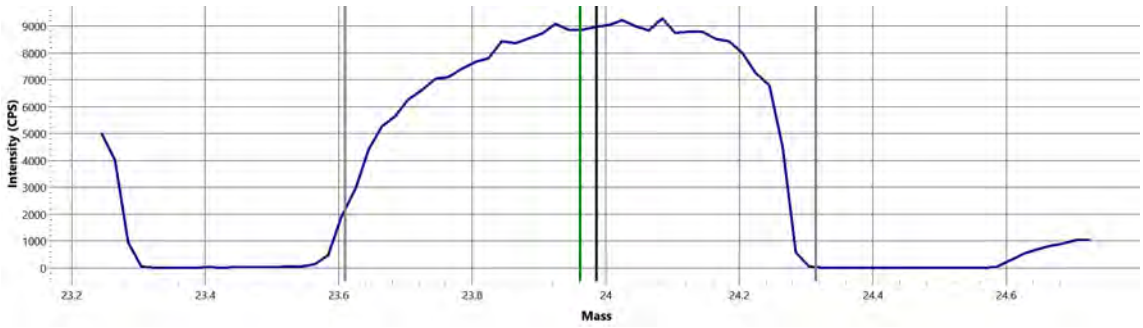
9Be



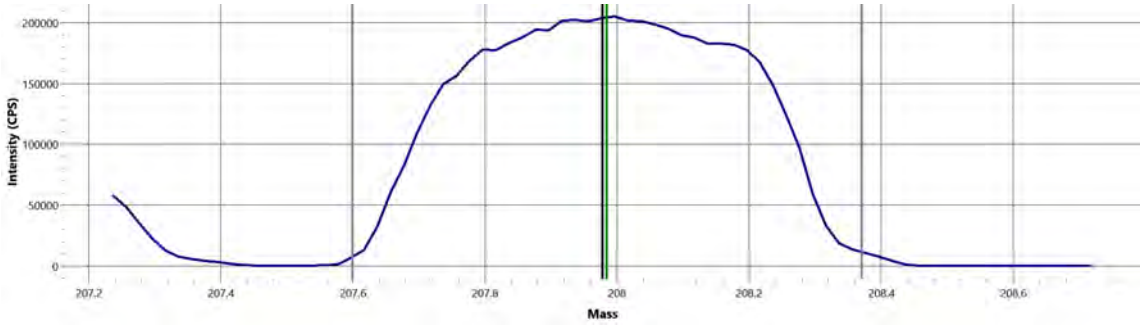
59Co



24Mg

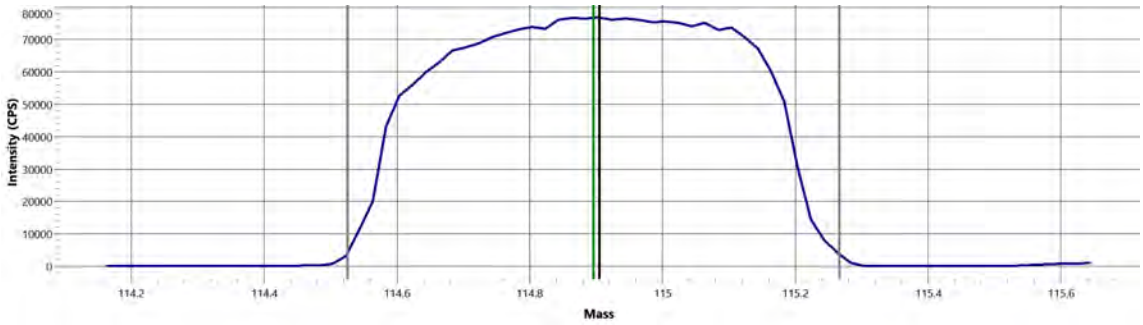


208Pb



115In

Performance Report



Performance Report

System (SN 02314R):

Time	6/14/2023 8:13:15 AM
Instrument id	iCAP Q
Operator	EMT\TICPMSUSER
Template	EMT Tuning Report For 200.8_6020, Oxides, doubly charged
Serial number	02314R
Last Autotune	Autotune-SourceTune High Matrix-20230613-113851447.imatdat
Solution	EMT iCAPqc Tuning check solution: 11.0 Be and Mg, rest at 1.0 ppb, with Ba and Ce. In 1% HNO3.

Sensitivity & Stability Test:

Result	Runs	Sweeps
Passed	5	10

Sensitivity:
Manufacturer recommended settings
No firm Method requirements (200.8 or 6020)

Analyte	Result	Value	Condition	Limit
9Be	Passed	2,932.94 CPS	Greater than	5.0 CPS
59Co	Passed	40,967.0 CPS	Greater than	1,000.0 CPS
24Mg	Passed	8,222.3 CPS	Greater than	50.0 CPS
208Pb	Passed	144,531.0 CPS	Greater than	1,000.0 CPS
140Ce.16O/140Ce	Passed	0.0049	Less than	0.02
137Ba++/137Ba	Passed	0.045	Less than	0.1
115In	Passed	59,887.0 CPS	Greater than	1,000.0 CPS

Stability:
< 5% for 5 Replicates (200.8)

Analyte	Value	Limit
9Be	0.6%	5
59Co	0.6%	5
24Mg	1.5%	5
208Pb	0.8%	5
115In	0.8%	5

Mass Calibration Test:

Within 0.1 amu target mass (200.8 and 6020) and peak widths
(~ 0.75 amu at 5% peak height for 200.8 and < 0.90 amu at 10% peak height for 6020)
- set to 0.65 to 0.85 amu at 5% height- most stringent

Result	Channels	Dwell	MeasureWidth	PointSpacing	Sweeps
Passed	75	0.1	1.5	0.02	5

Analyte	Result	Centroid	Offset	Peak Width	Peak Width Min	Peak Width Max
9Be	Passed	9.0056	0.0066	0.692	0.650	0.850
24Mg	Passed	23.9756	0.0094	0.683	0.650	0.850
59Co	Passed	58.9395	0.0063	0.692	0.650	0.850
115In	Passed	114.9425	0.0386	0.689	0.650	0.850
208Pb	Passed	208.0626	0.0859	0.692	0.650	0.850

Performance Report

Tune and Instrument Settings:

Parameter	Value
Additional Gas Flow 1	0.00
Additional Gas Flow 2	0.00
Additional Gas Flow 3	0.00
Angular Deflection	-382.40
Auxilliary Flow	0.80
CCT Bias	-21.00
CCT Entry Lens	-105.98
CCT Exit Lens	-40.00
CCT Focus Lens	-2.34
CCT1 Flow	0.00
CCT1 Shut-Off Valve	0.00
CCT2 Flow	4.73
CCT2 Shut-Off Valve	1.00
Cool Flow	14.00
D1 Lens	-353.20
D2 Lens	-158.00
Deflection Entry Lens	-35.01
Extraction Lens 1 Negative	0.00
Extraction Lens 1 Polarity	0.00
Extraction Lens 1 Positive	0.00
Extraction Lens 2	-115.00
Focus Lens	-6.50
Nebulizer Flow	0.93
Peristaltic Pump Speed	40.00
Plasma Power	1550.00
Pole Bias	-18.00
Quad Entry Lens	-62.00
Sampling Depth	5.00
Spray Chamber Temperature	2.70
Torch Horizontal Position	0.03
Torch Vertical Position	0.83
Virtual CCT Mass Maximum Dac Limit Set	4095.00
Virtual CCT Mass parameter b	1.00
Virtual CCT Mass to Dac Factor	60.00
Virtual CCT Mass to Dac Offset	100.00

Vacuum Check:

Parameter	Result	Value
Analyzer Pressure		5.403e-7
Interface Pressure		1.617e+0

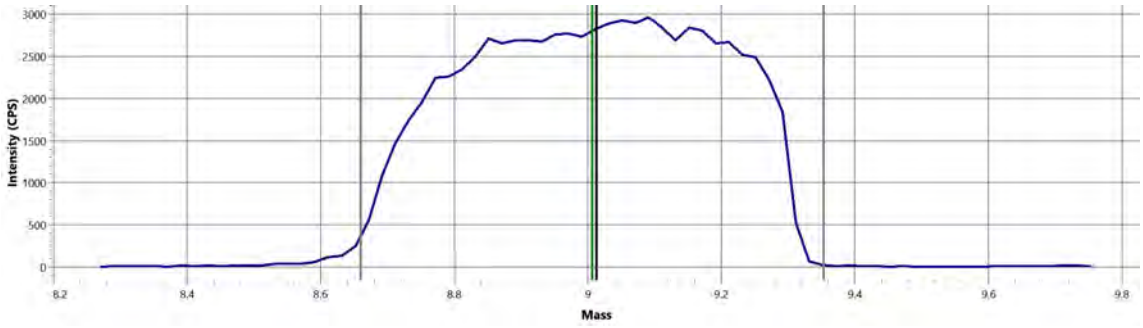
Detector (EM) Voltages:

Analog	Counting
-2837.50	1812.50

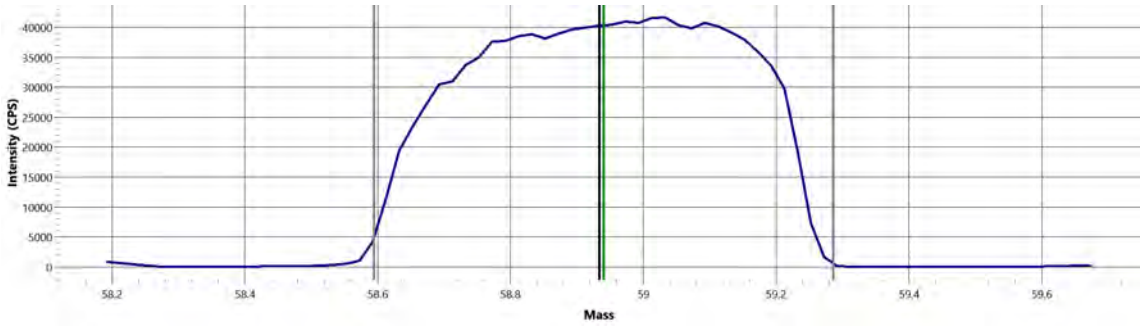
Performance Report

Mass Calibration Peaks

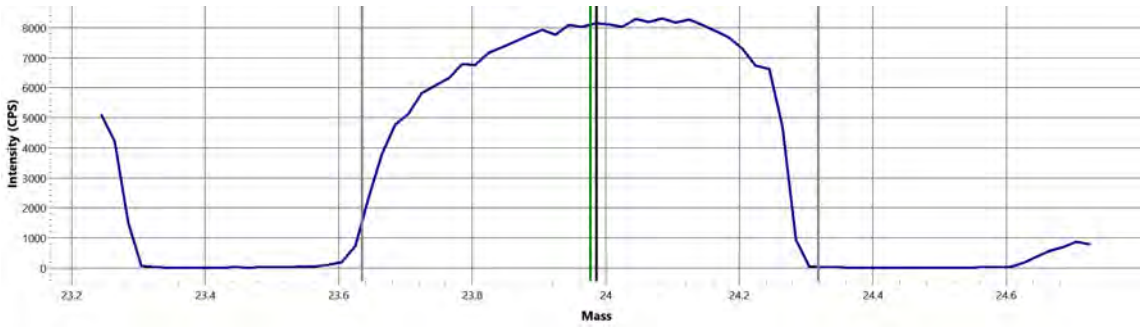
9Be



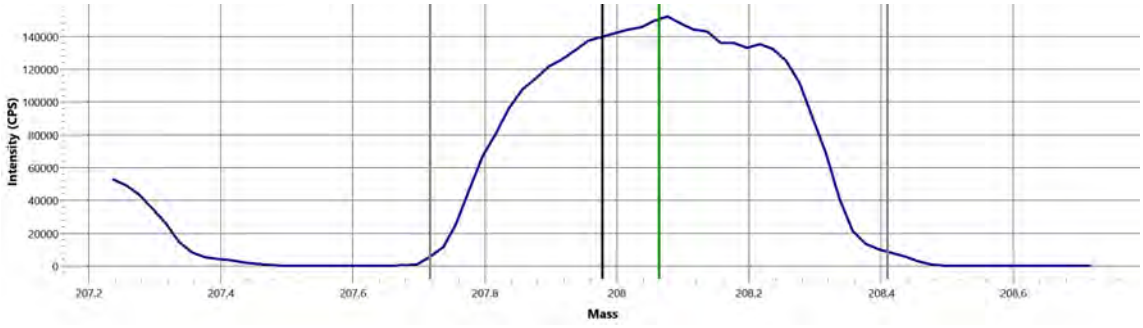
59Co



24Mg

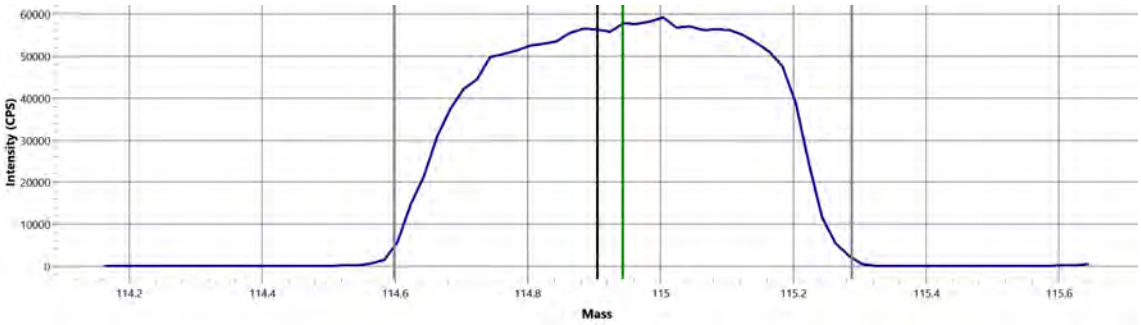


208Pb



115In

Performance Report



Performance Report

System (SN 02314R):

Time	6/15/2023 2:08:56 PM
Instrument id	iCAP Q
Operator	EMT\TICPMSUSER
Template	EMT Tuning Report For 200.8_6020, Oxides, doubly charged
Serial number	02314R
Last Autotune	Autotune-SourceTune High Matrix-20230613-113851447.imatdat
Solution	EMT iCAPqc Tuning check solution: 11.0 Be and Mg, rest at 1.0 ppb, with Ba and Ce. In 1% HNO3.

Sensitivity & Stability Test:

Result	Runs	Sweeps
Passed	5	10

Sensitivity:
Manufacturer recommended settings
No firm Method requirements (200.8 or 6020)

Analyte	Result	Value	Condition	Limit
9Be	Passed	4,098.95 CPS	Greater than	5.0 CPS
59Co	Passed	53,829.0 CPS	Greater than	1,000.0 CPS
24Mg	Passed	12,329.5 CPS	Greater than	50.0 CPS
208Pb	Passed	170,705.0 CPS	Greater than	1,000.0 CPS
140Ce.16O/140Ce	Passed	0.0046	Less than	0.02
137Ba++/137Ba	Passed	0.048	Less than	0.1
115In	Passed	75,377.0 CPS	Greater than	1,000.0 CPS

Stability:
< 5% for 5 Replicates (200.8)

Analyte	Value	Limit
9Be	0.6%	5
59Co	0.4%	5
24Mg	1.4%	5
208Pb	0.9%	5
115In	0.8%	5

Mass Calibration Test:

Within 0.1 amu target mass (200.8 and 6020) and peak widths
(~ 0.75 amu at 5% peak height for 200.8 and < 0.90 amu at 10% peak height for 6020)
- set to 0.65 to 0.85 amu at 5% height- most stringent

Result	Channels	Dwell	MeasureWidth	PointSpacing	Sweeps
Passed	75	0.1	1.5	0.02	5

Analyte	Result	Centroid	Offset	Peak Width	Peak Width Min	Peak Width Max
9Be	Passed	9.0030	0.0092	0.691	0.650	0.850
24Mg	Passed	23.9724	0.0127	0.680	0.650	0.850
59Co	Passed	58.9314	0.0018	0.693	0.650	0.850
115In	Passed	114.9271	0.0232	0.694	0.650	0.850
208Pb	Passed	208.0389	0.0622	0.705	0.650	0.850

Performance Report

Tune and Instrument Settings:

Parameter	Value
Additional Gas Flow 1	0.00
Additional Gas Flow 2	0.00
Additional Gas Flow 3	0.00
Angular Deflection	-382.40
Auxilliary Flow	0.80
CCT Bias	-21.00
CCT Entry Lens	-105.98
CCT Exit Lens	-40.00
CCT Focus Lens	-2.34
CCT1 Flow	0.00
CCT1 Shut-Off Valve	0.00
CCT2 Flow	4.73
CCT2 Shut-Off Valve	1.00
Cool Flow	14.00
D1 Lens	-353.20
D2 Lens	-158.00
Deflection Entry Lens	-35.01
Extraction Lens 1 Negative	0.00
Extraction Lens 1 Polarity	0.00
Extraction Lens 1 Positive	0.00
Extraction Lens 2	-115.00
Focus Lens	-6.50
Nebulizer Flow	0.93
Peristaltic Pump Speed	40.00
Plasma Power	1550.00
Pole Bias	-18.00
Quad Entry Lens	-62.00
Sampling Depth	5.00
Spray Chamber Temperature	2.70
Torch Horizontal Position	0.03
Torch Vertical Position	0.83
Virtual CCT Mass Maximum Dac Limit Set	4095.00
Virtual CCT Mass parameter b	1.00
Virtual CCT Mass to Dac Factor	60.00
Virtual CCT Mass to Dac Offset	100.00

Vacuum Check:

Parameter	Result	Value
Analyzer Pressure		5.912e-7
Interface Pressure		1.581e+0

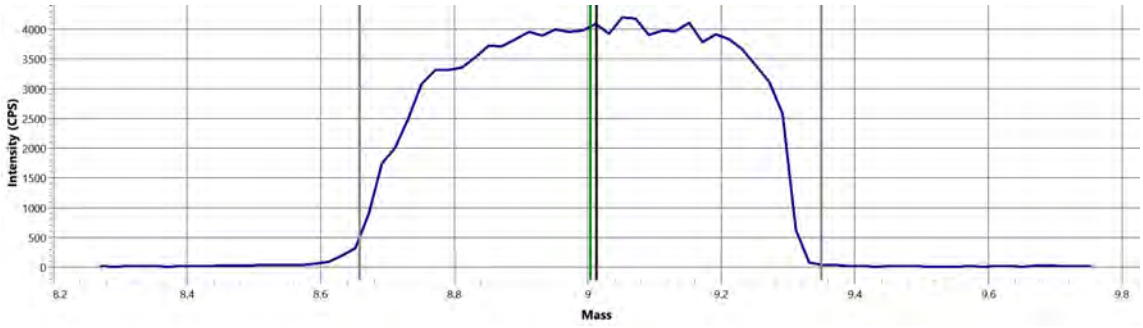
Detector (EM) Voltages:

Analog	Counting
-2837.50	1812.50

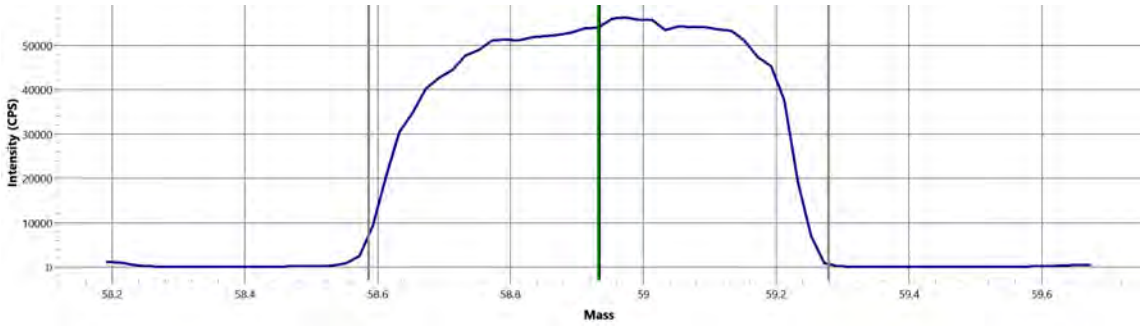
Performance Report

Mass Calibration Peaks

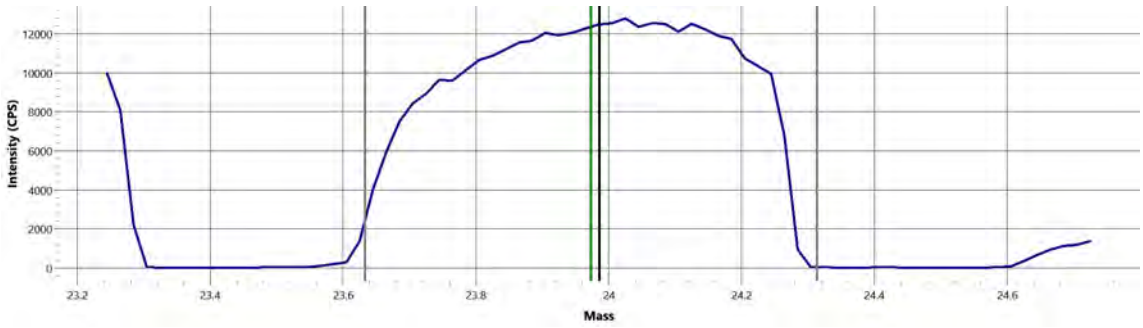
9Be



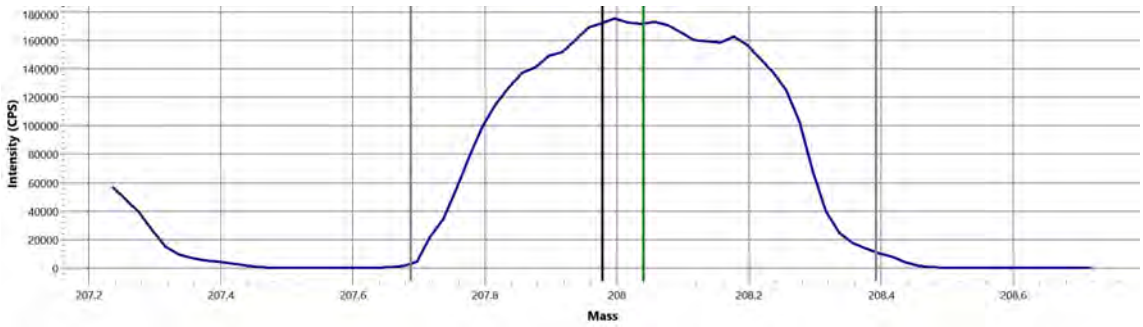
59Co



24Mg

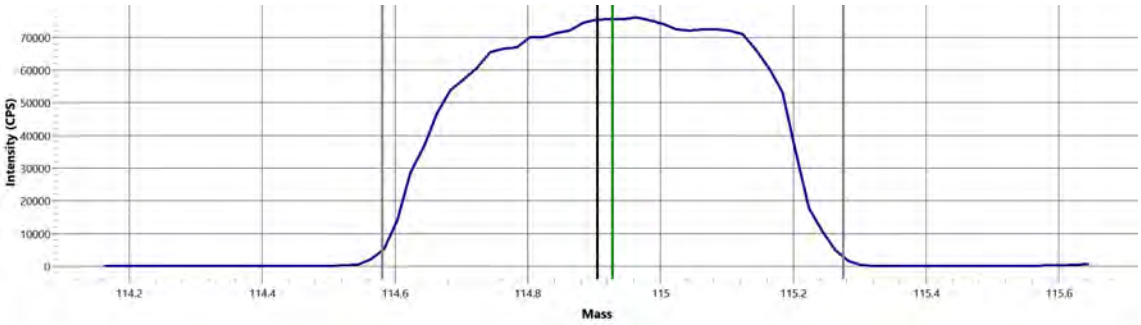


208Pb



115In

Performance Report



Calibration

6/8/2023 2:40:36 PM

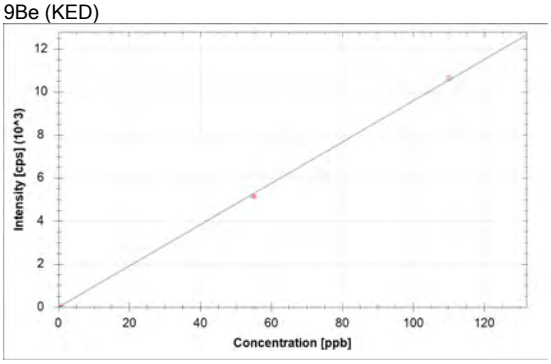
QTEGRA

Calibration Curves:

Instrument Name:	Serial Number:
iCAP Q	Undefined

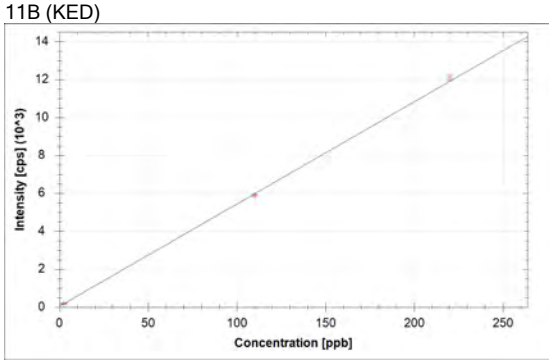
Labbook:	Labbook Path:
060823.imexp	_Application Data\Workspace\LabBooks

9Be (KED)



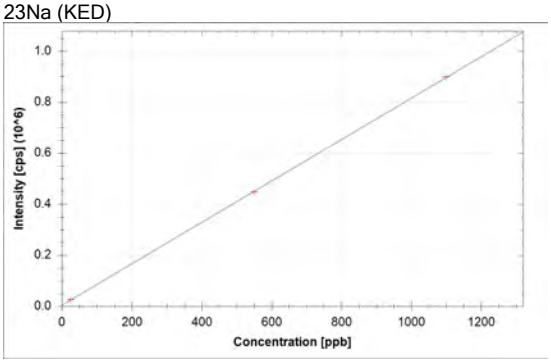
f(x) = 95.8506*x + 1.8913
R² = 0.9995
BEC = 0.020 ppb
LoD = N/A

11B (KED)



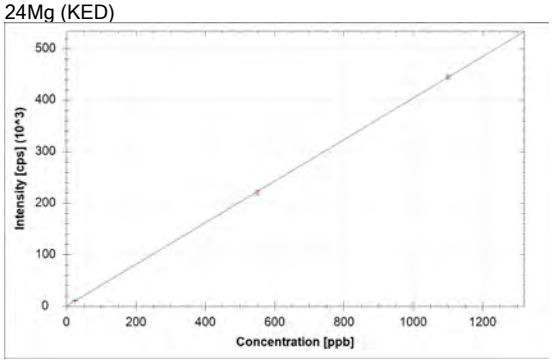
f(x) = 53.8745*x + 50.3986
R² = 0.9994
BEC = 0.935 ppb
LoD = N/A

23Na (KED)



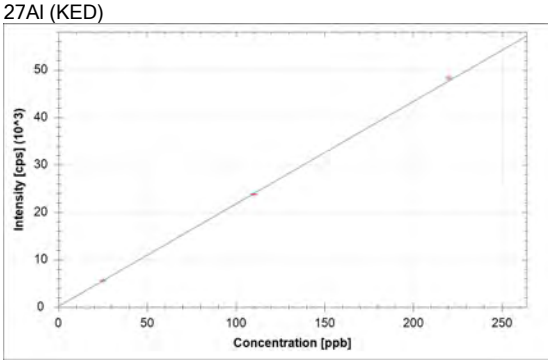
f(x) = 811.7633*x + 3860.1719
R² = 1.0000
BEC = 4.755 ppb
LoD = N/A

24Mg (KED)



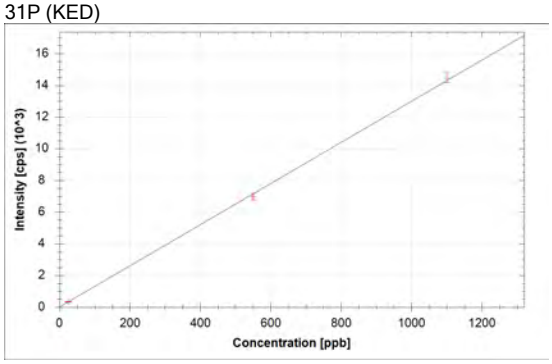
f(x) = 403.3601*x + 419.2555
R² = 1.0000
BEC = 1.039 ppb
LoD = N/A

27Al (KED)



f(x) = 215.8781*x + 176.4504
R² = 0.9995
BEC = 0.817 ppb
LoD = N/A

31P (KED)

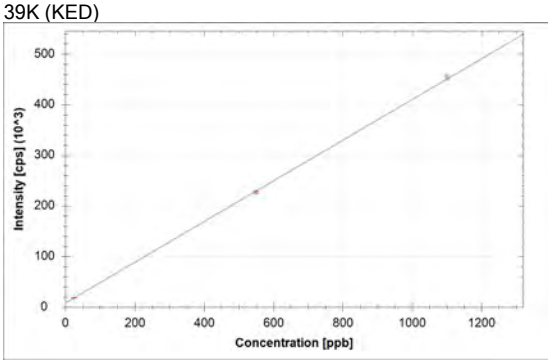


f(x) = 12.9765*x + 14.1099
R² = 0.9994
BEC = 1.087 ppb
LoD = N/A

Calibration

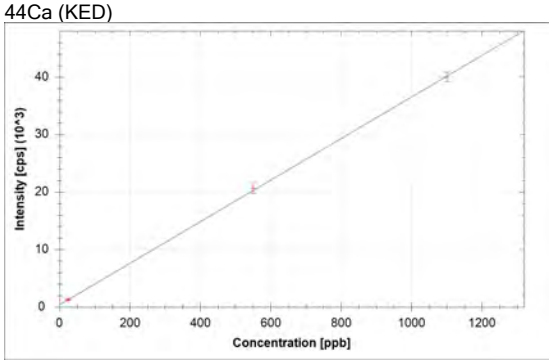
6/8/2023 2:40:36 PM

39K (KED)



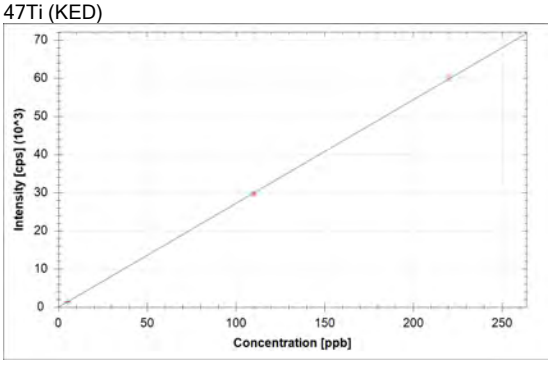
f(x) = 402.1907*x + 8117.6076
R² = 0.9998
BEC = 20.183 ppb
LoD = N/A

44Ca (KED)



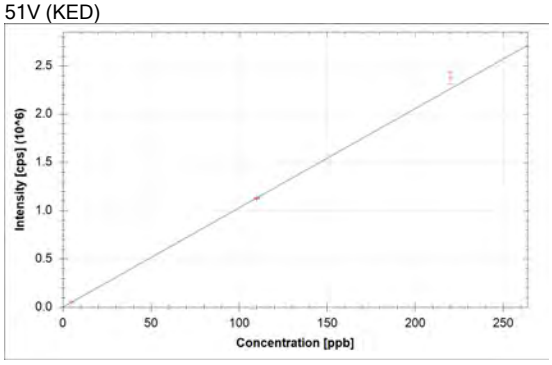
f(x) = 36.1569*x + 373.9548
R² = 0.9998
BEC = 10.343 ppb
LoD = N/A

47Ti (KED)



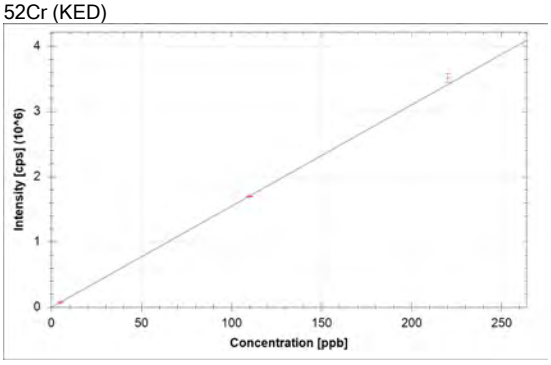
f(x) = 271.8572*x + 4.0368
R² = 0.9999
BEC = 0.015 ppb
LoD = N/A

51V (KED)



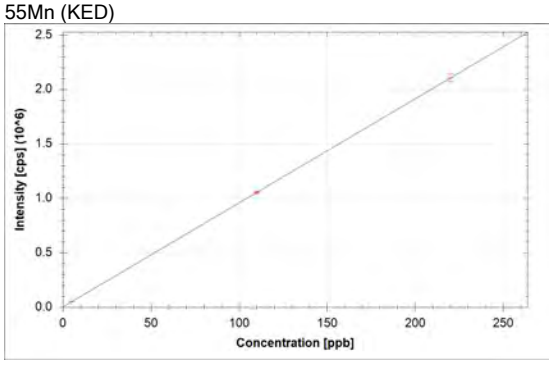
f(x) = 10277.4584*x + 750.1823
R² = 0.9953
BEC = 0.073 ppb
LoD = N/A

52Cr (KED)



f(x) = 15516.5172*x + -3154.5510
R² = 0.9982
BEC = -0.203 ppb
LoD = N/A

55Mn (KED)

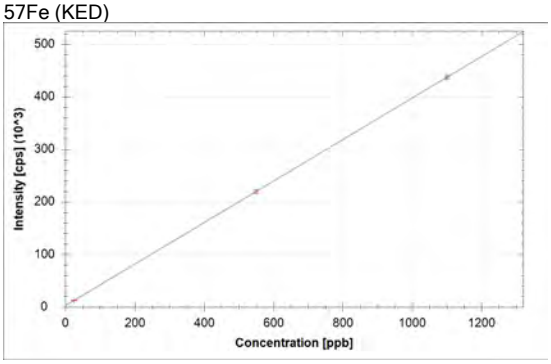


f(x) = 9552.7935*x + 2412.6910
R² = 1.0000
BEC = 0.253 ppb
LoD = N/A

Calibration

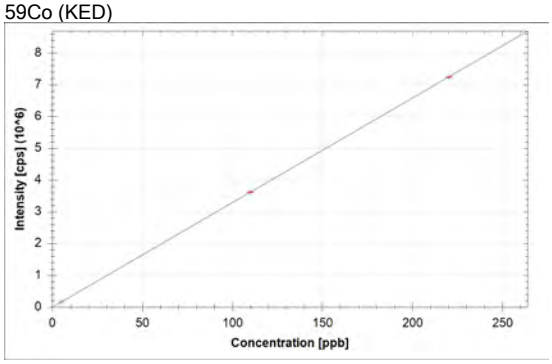
6/8/2023 2:40:36 PM

57Fe (KED)



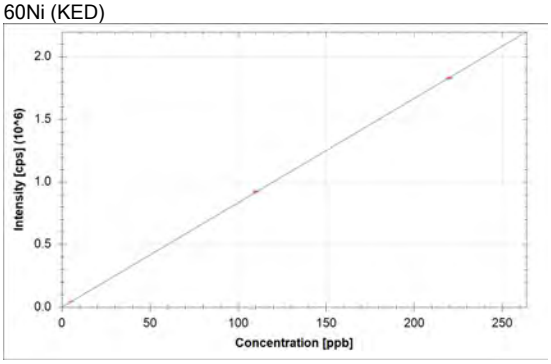
f(x) = 395.0955*x + 2713.6688
R² = 1.0000
BEC = 6.868 ppb
LoD = N/A

59Co (KED)



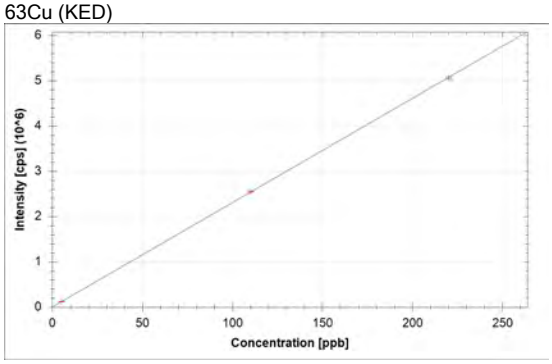
f(x) = 32929.5662*x + -3033.8139
R² = 1.0000
BEC = -0.092 ppb
LoD = N/A

60Ni (KED)



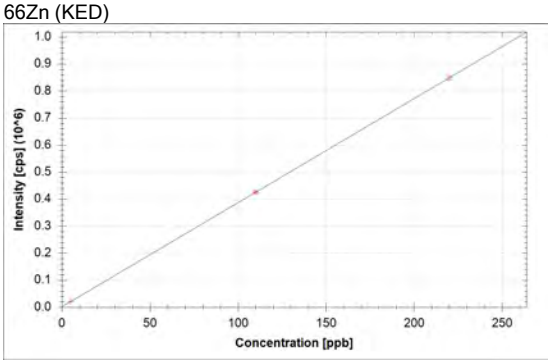
f(x) = 8325.2084*x + 693.3939
R² = 1.0000
BEC = 0.083 ppb
LoD = N/A

63Cu (KED)



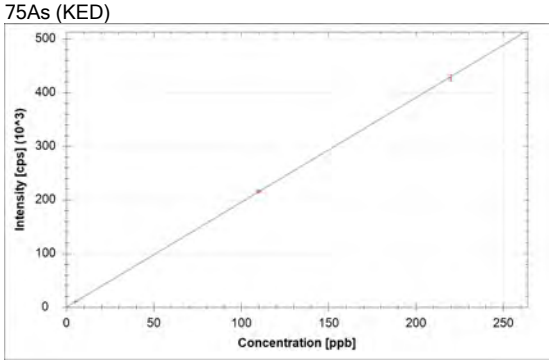
f(x) = 23027.1136*x + 6761.6623
R² = 1.0000
BEC = 0.294 ppb
LoD = N/A

66Zn (KED)



f(x) = 3849.9538*x + 1771.9719
R² = 1.0000
BEC = 0.460 ppb
LoD = N/A

75As (KED)

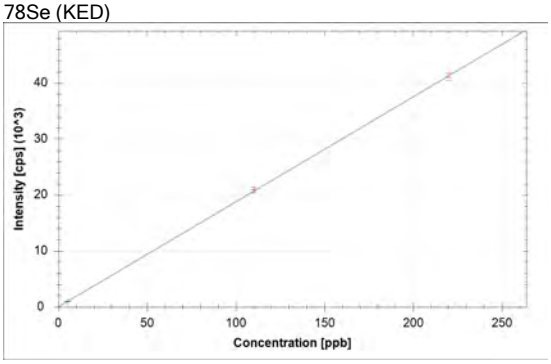


f(x) = 1953.0095*x + 151.4252
R² = 0.9999
BEC = 0.078 ppb
LoD = N/A

Calibration

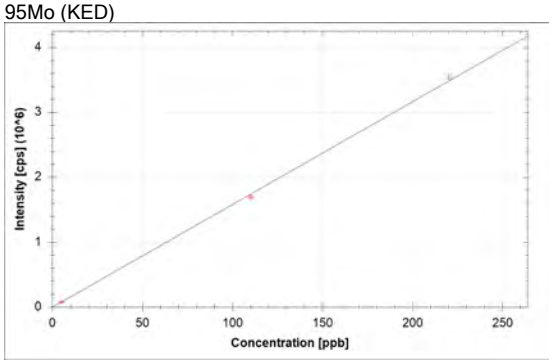
6/8/2023 2:40:36 PM

78Se (KED)



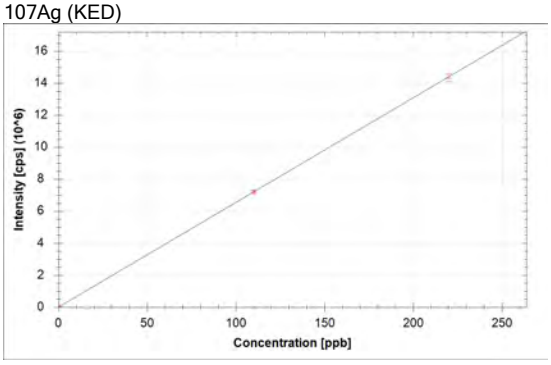
f(x) = 187.5727*x + 26.7245
R² = 0.9999
BEC = 0.142 ppb
LoD = N/A

95Mo (KED)



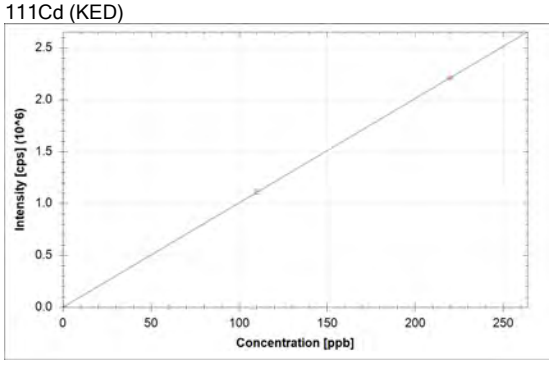
f(x) = 15828.6278*x + -3869.0659
R² = 0.9990
BEC = -0.244 ppb
LoD = N/A

107Ag (KED)



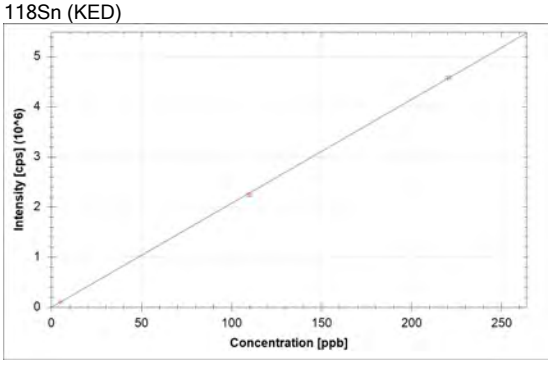
f(x) = 65417.6533*x + 2824.6962
R² = 1.0000
BEC = 0.043 ppb
LoD = N/A

111Cd (KED)



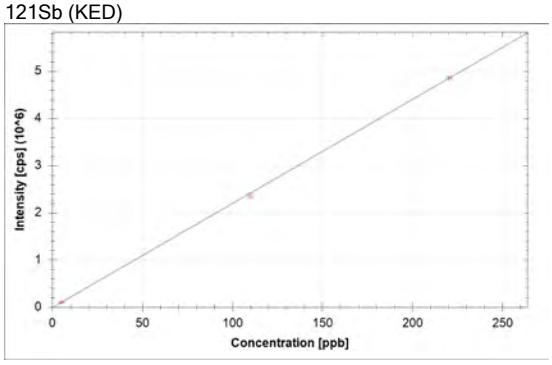
f(x) = 10056.4528*x + 62.1809
R² = 1.0000
BEC = 0.006 ppb
LoD = N/A

118Sn (KED)



f(x) = 20732.4962*x + -1252.9069
R² = 0.9999
BEC = -0.060 ppb
LoD = N/A

121Sb (KED)

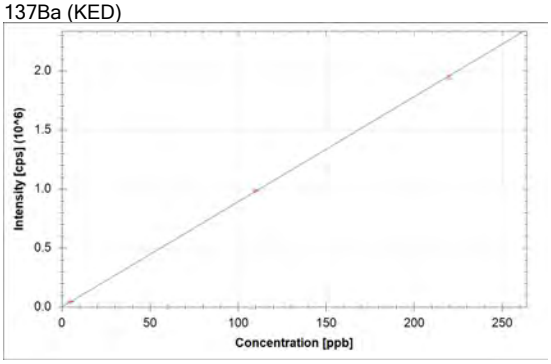


f(x) = 22055.6280*x + -7666.8661
R² = 0.9997
BEC = -0.348 ppb
LoD = N/A

Calibration

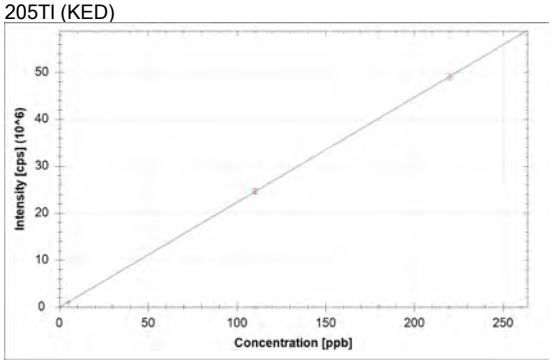
6/8/2023 2:40:36 PM

137Ba (KED)



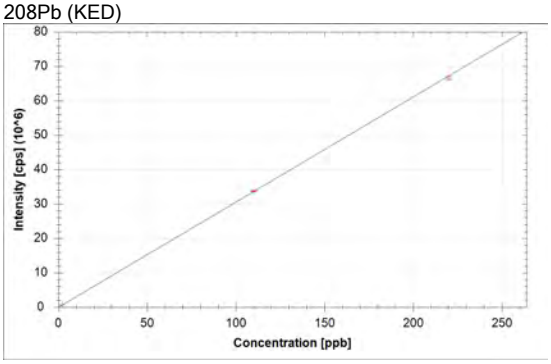
f(x) = 8899.0497*x + 668.1247
R² = 0.9999
BEC = 0.075 ppb
LoD = N/A

205Tl (KED)



f(x) = 223462.6709*x + -64275.2808
R² = 1.0000
BEC = -0.288 ppb
LoD = N/A

208Pb (KED)



f(x) = 305554.8054*x + -27794.9559
R² = 0.9998
BEC = -0.091 ppb
LoD = N/A

Calibration

6/8/2023 2:40:36 PM

Standards:

Analysis Index: 4
Analysis Name: Calibration 1
AnalysisType STD
Analysis Started at: 6/8/2023 10:49:01 AM
Standard (Stock): Calibration 1
Standard DF: 1

Category	Concentration average	Concentration RSD	RSE	Standard Concentration
6Li (KED)	99.632 %	N/A	0.0 %	
9Be (KED)	0.503 ppb	9.2 %	2.8 %	0.500 ppb
11B (KED)	2.593 ppb	16.0 %	4.3 %	2.500 ppb
23Na (KED)	26.881 ppb	3.8 %	7.6 %	25.000 ppb
24Mg (KED)	25.014 ppb	3.5 %	0.8 %	25.000 ppb
27Al (KED)	25.197 ppb	1.2 %	1.7 %	25.000 ppb
31P (KED)	25.047 ppb	5.5 %	2.7 %	25.000 ppb
39K (KED)	25.011 ppb	1.6 %	1.3 %	25.000 ppb
44Ca (KED)	24.883 ppb	15.5 %	2.0 %	25.000 ppb
45Sc (KED)	99.302 %	N/A	0.0 %	
47Ti (KED)	5.002 ppb	2.0 %	1.0 %	5.000 ppb
51V (KED)	5.002 ppb	1.7 %	5.0 %	5.000 ppb
52Cr (KED)	5.004 ppb	1.9 %	3.1 %	5.000 ppb
55Mn (KED)	5.000 ppb	0.8 %	0.1 %	5.000 ppb
57Fe (KED)	25.016 ppb	5.7 %	0.3 %	25.000 ppb
59Co (KED)	5.000 ppb	0.3 %	0.0 %	5.000 ppb
60Ni (KED)	4.995 ppb	1.8 %	0.8 %	5.000 ppb
63Cu (KED)	5.000 ppb	0.8 %	0.3 %	5.000 ppb
66Zn (KED)	5.000 ppb	1.4 %	0.1 %	5.000 ppb
72Ge (KED)	100.262 %	N/A	0.0 %	
75As (KED)	5.000 ppb	0.9 %	0.7 %	5.000 ppb
78Se (KED)	4.996 ppb	3.9 %	1.3 %	5.000 ppb
89Y (KED)	100.595 %	N/A	0.0 %	
95Mo (KED)	5.006 ppb	1.6 %	3.0 %	5.000 ppb
107Ag (KED)	0.500 ppb	1.4 %	0.5 %	0.500 ppb
111Cd (KED)	0.500 ppb	5.1 %	0.7 %	0.500 ppb
115In (KED)	101.171 %	N/A	0.0 %	
118Sn (KED)	5.000 ppb	0.4 %	1.5 %	5.000 ppb
121Sb (KED)	5.002 ppb	1.4 %	2.2 %	5.000 ppb
137Ba (KED)	4.987 ppb	3.3 %	0.8 %	5.000 ppb
159Tb (KED)	99.604 %	N/A	0.0 %	
205Tl (KED)	4.999 ppb	1.6 %	0.8 %	5.000 ppb
208Pb (KED)	1.999 ppb	1.4 %	0.9 %	2.000 ppb
209Bi (KED)	100.834 %	N/A	0.0 %	

Calibration

6/8/2023 2:40:36 PM

Standards:

Analysis Index: 5
Analysis Name: Calibration 2
AnalysisType STD
Analysis Started at: 6/8/2023 10:50:51 AM
Standard (Stock): Calibration 2
Standard DF: 0.5

Category	Concentration average	Concentration RSD	RSE	Standard Concentration
6Li (KED)	97.540 %	N/A	0.0 %	
9Be (KED)	53.636 ppb	1.2 %	2.8 %	55.000 ppb
11B (KED)	108.487 ppb	1.1 %	4.3 %	110.000 ppb
23Na (KED)	546.108 ppb	0.2 %	7.6 %	550.000 ppb
24Mg (KED)	545.930 ppb	2.0 %	0.8 %	550.000 ppb
27Al (KED)	109.325 ppb	0.4 %	1.7 %	110.000 ppb
31P (KED)	536.708 ppb	3.1 %	2.7 %	550.000 ppb
39K (KED)	544.868 ppb	1.2 %	1.3 %	550.000 ppb
44Ca (KED)	560.549 ppb	4.7 %	2.0 %	550.000 ppb
45Sc (KED)	98.190 %	N/A	0.0 %	
47Ti (KED)	109.088 ppb	1.4 %	1.0 %	110.000 ppb
51V (KED)	109.647 ppb	0.7 %	5.0 %	110.000 ppb
52Cr (KED)	109.755 ppb	0.5 %	3.1 %	110.000 ppb
55Mn (KED)	109.969 ppb	1.0 %	0.1 %	110.000 ppb
57Fe (KED)	548.642 ppb	1.7 %	0.3 %	550.000 ppb
59Co (KED)	110.024 ppb	0.5 %	0.0 %	110.000 ppb
60Ni (KED)	110.854 ppb	0.8 %	0.8 %	110.000 ppb
63Cu (KED)	110.266 ppb	0.6 %	0.3 %	110.000 ppb
66Zn (KED)	110.076 ppb	1.2 %	0.1 %	110.000 ppb
72Ge (KED)	97.144 %	N/A	0.0 %	
75As (KED)	110.431 ppb	1.1 %	0.7 %	110.000 ppb
78Se (KED)	111.337 ppb	2.4 %	1.3 %	110.000 ppb
89Y (KED)	97.711 %	N/A	0.0 %	
95Mo (KED)	107.355 ppb	1.1 %	3.0 %	110.000 ppb
107Ag (KED)	110.243 ppb	1.1 %	0.5 %	110.000 ppb
111Cd (KED)	110.719 ppb	1.8 %	0.7 %	110.000 ppb
115In (KED)	96.727 %	N/A	0.0 %	
118Sn (KED)	108.386 ppb	1.5 %	1.5 %	110.000 ppb
121Sb (KED)	107.552 ppb	1.8 %	2.2 %	110.000 ppb
137Ba (KED)	110.592 ppb	0.7 %	0.8 %	110.000 ppb
159Tb (KED)	97.210 %	N/A	0.0 %	
205Tl (KED)	110.821 ppb	2.0 %	0.8 %	110.000 ppb
208Pb (KED)	110.460 ppb	0.5 %	0.9 %	110.000 ppb
209Bi (KED)	98.373 %	N/A	0.0 %	

Calibration

6/8/2023 2:40:36 PM

Standards:

Analysis Index: 6
Analysis Name: Calibration 3
AnalysisType STD
Analysis Started at: 6/8/2023 10:52:42 AM
Standard (Stock): Calibration 3
Standard DF: 1

Category	Concentration average	Concentration RSD	RSE	Standard Concentration
6Li (KED)	97.105 %	N/A	0.0 %	
9Be (KED)	111.129 ppb	0.8 %	2.8 %	110.000 ppb
11B (KED)	223.406 ppb	1.1 %	4.3 %	220.000 ppb
23Na (KED)	1,102.402 ppb	0.1 %	7.6 %	1,100.000 ppb
24Mg (KED)	1,102.007 ppb	1.0 %	0.8 %	1,100.000 ppb
27Al (KED)	223.084 ppb	0.6 %	1.7 %	220.000 ppb
31P (KED)	1,113.465 ppb	2.2 %	2.7 %	1,100.000 ppb
39K (KED)	1,109.965 ppb	1.1 %	1.3 %	1,100.000 ppb
44Ca (KED)	1,095.903 ppb	2.1 %	2.0 %	1,100.000 ppb
45Sc (KED)	95.190 %	N/A	0.0 %	
47Ti (KED)	221.066 ppb	1.1 %	1.0 %	220.000 ppb
51V (KED)	231.015 ppb	2.7 %	5.0 %	220.000 ppb
52Cr (KED)	226.741 ppb	1.9 %	3.1 %	220.000 ppb
55Mn (KED)	220.173 ppb	1.7 %	0.1 %	220.000 ppb
57Fe (KED)	1,100.780 ppb	0.9 %	0.3 %	1,100.000 ppb
59Co (KED)	219.985 ppb	0.3 %	0.0 %	220.000 ppb
60Ni (KED)	219.731 ppb	0.3 %	0.8 %	220.000 ppb
63Cu (KED)	219.548 ppb	0.6 %	0.3 %	220.000 ppb
66Zn (KED)	219.914 ppb	0.9 %	0.1 %	220.000 ppb
72Ge (KED)	96.549 %	N/A	0.0 %	
75As (KED)	218.705 ppb	1.3 %	0.7 %	220.000 ppb
78Se (KED)	218.805 ppb	1.6 %	1.3 %	220.000 ppb
89Y (KED)	96.909 %	N/A	0.0 %	
95Mo (KED)	224.017 ppb	0.9 %	3.0 %	220.000 ppb
107Ag (KED)	218.974 ppb	1.7 %	0.5 %	220.000 ppb
111Cd (KED)	219.811 ppb	0.7 %	0.7 %	220.000 ppb
115In (KED)	94.199 %	N/A	0.0 %	
118Sn (KED)	220.773 ppb	0.7 %	1.5 %	220.000 ppb
121Sb (KED)	220.635 ppb	0.6 %	2.2 %	220.000 ppb
137Ba (KED)	218.713 ppb	0.7 %	0.8 %	220.000 ppb
159Tb (KED)	98.002 %	N/A	0.0 %	
205Tl (KED)	219.439 ppb	1.2 %	0.8 %	220.000 ppb
208Pb (KED)	218.160 ppb	0.8 %	0.9 %	220.000 ppb
209Bi (KED)	98.324 %	N/A	0.0 %	

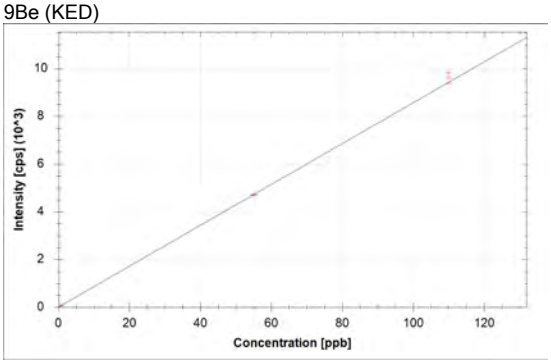
Calibration
6/14/2023 1:00:49 PM

Calibration Curves:

Instrument Name:	Serial Number:
iCAP Q	Undefined

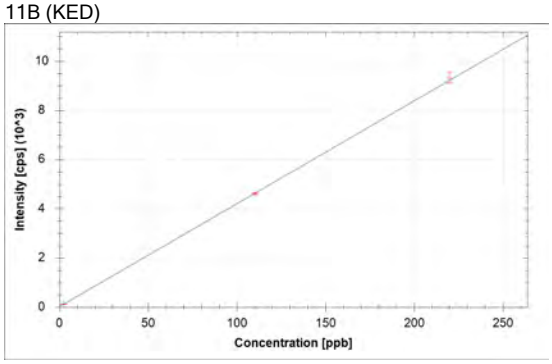
Labbook:	Labbook Path:
061423.imexp	_Application Data\Workspace\LabBooks

9Be (KED)



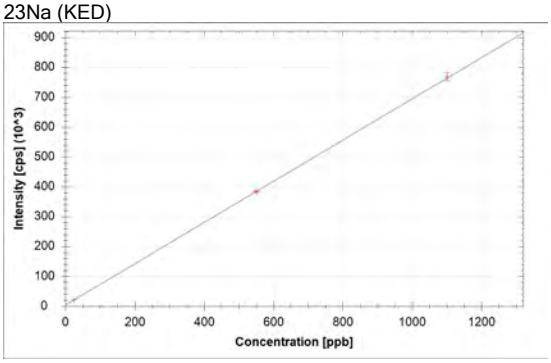
f(x) = 85.5992*x + 6.2806
R² = 0.9993
BEC = 0.073 ppb
LoD = N/A

11B (KED)



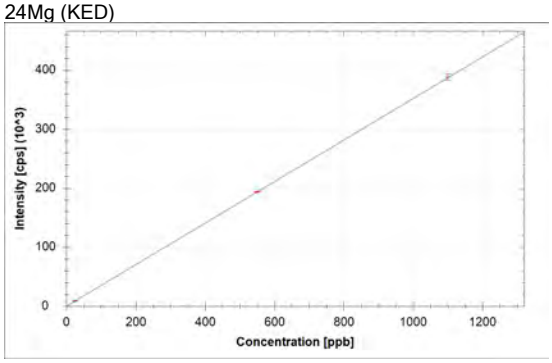
f(x) = 41.8295*x + 18.8805
R² = 0.9998
BEC = 0.451 ppb
LoD = N/A

23Na (KED)



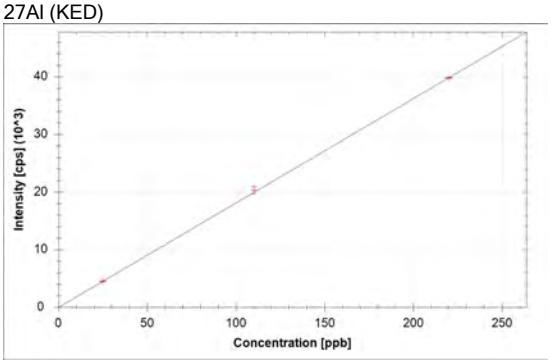
f(x) = 690.3756*x + 4245.1207
R² = 0.9999
BEC = 6.149 ppb
LoD = N/A

24Mg (KED)



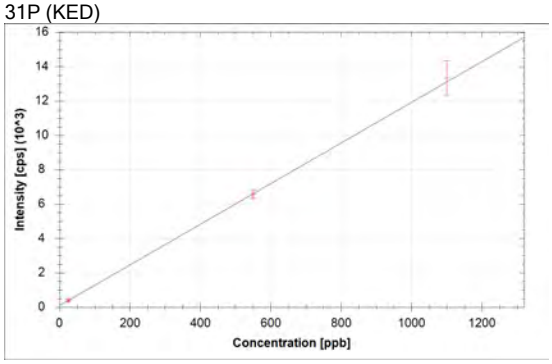
f(x) = 352.0409*x + 42.1055
R² = 1.0000
BEC = 0.120 ppb
LoD = N/A

27Al (KED)



f(x) = 181.0675*x + -43.0208
R² = 0.9998
BEC = -0.238 ppb
LoD = N/A

31P (KED)

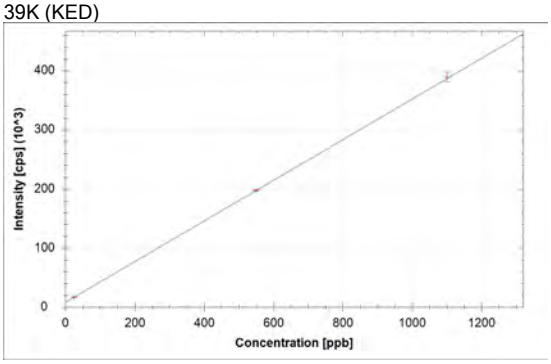


f(x) = 11.8364*x + 89.5060
R² = 0.9993
BEC = 7.562 ppb
LoD = N/A

Calibration

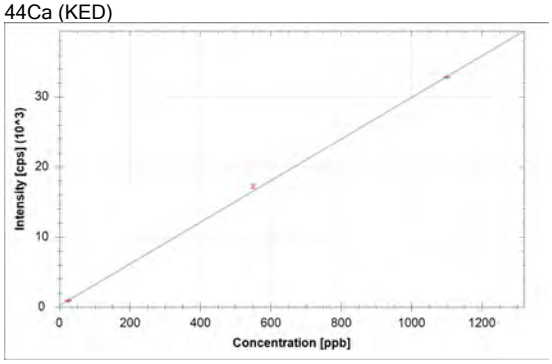
6/14/2023 1:00:49 PM

39K (KED)



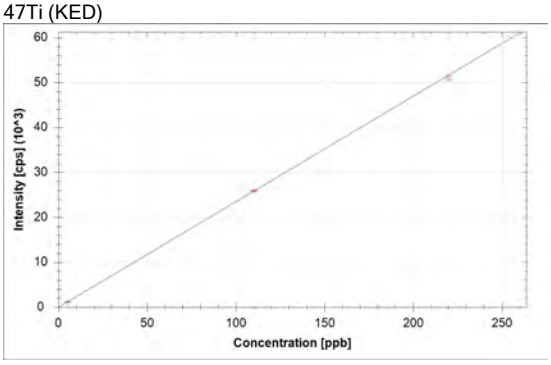
f(x) = 344.0486*x + 8137.2354
R² = 0.9999
BEC = 23.651 ppb
LoD = N/A

44Ca (KED)



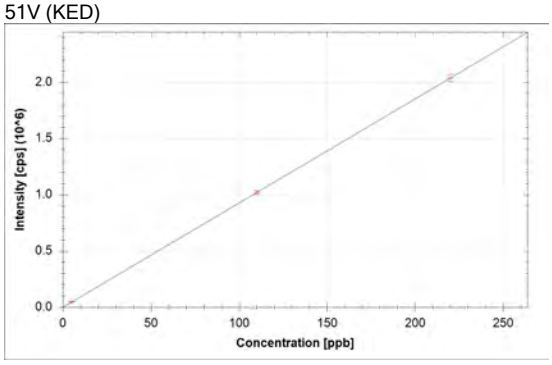
f(x) = 29.7213*x + 199.4097
R² = 0.9990
BEC = 6.709 ppb
LoD = N/A

47Ti (KED)



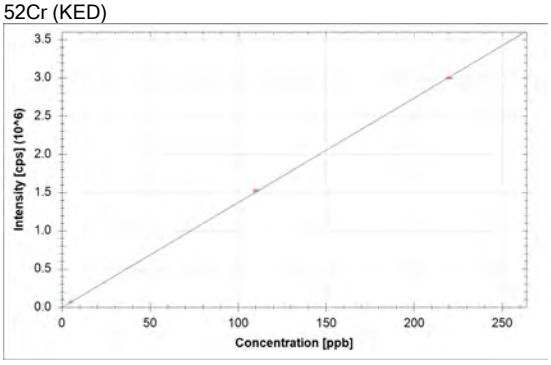
f(x) = 235.0549*x + -30.2783
R² = 0.9997
BEC = -0.129 ppb
LoD = N/A

51V (KED)



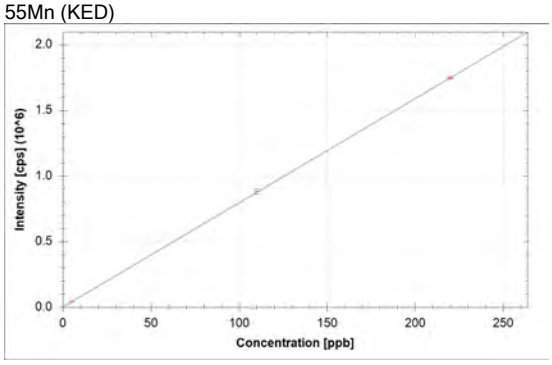
f(x) = 9259.5437*x + -239.6242
R² = 1.0000
BEC = -0.026 ppb
LoD = N/A

52Cr (KED)



f(x) = 13686.5039*x + -2229.3825
R² = 0.9999
BEC = -0.163 ppb
LoD = N/A

55Mn (KED)

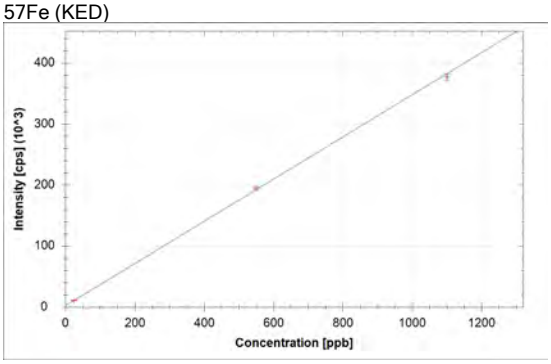


f(x) = 7937.5418*x + 1402.5835
R² = 1.0000
BEC = 0.177 ppb
LoD = N/A

Calibration

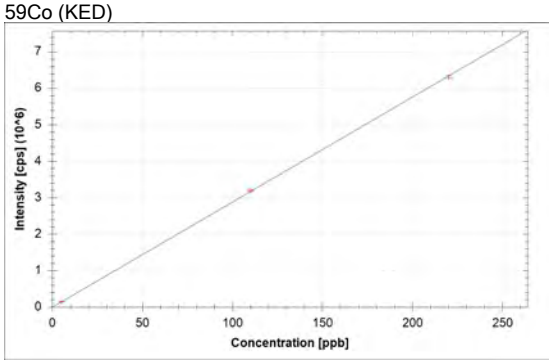
6/14/2023 1:00:49 PM

57Fe (KED)



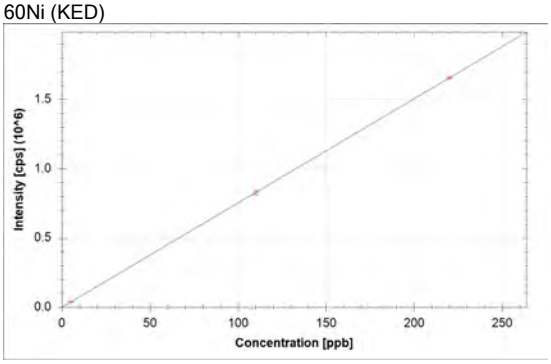
f(x) = 345.8305*x + 2194.5288
R² = 0.9994
BEC = 6.346 ppb
LoD = N/A

59Co (KED)



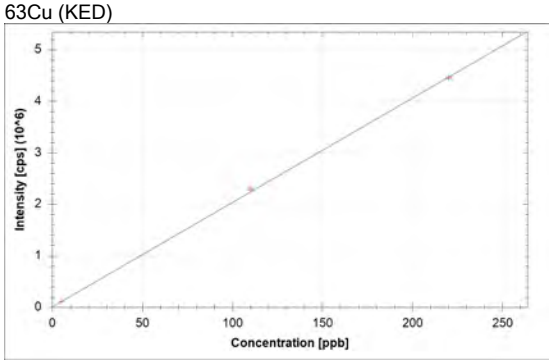
f(x) = 28815.1564*x + -2986.3740
R² = 0.9999
BEC = -0.104 ppb
LoD = N/A

60Ni (KED)



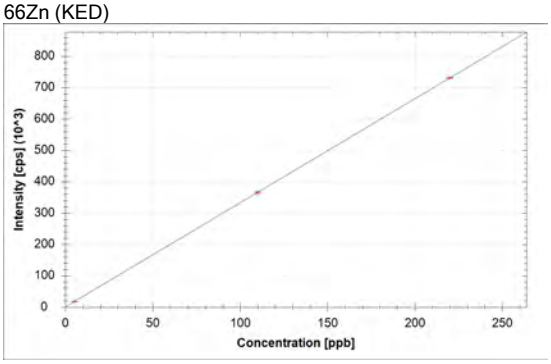
f(x) = 7521.9060*x + 193.0586
R² = 1.0000
BEC = 0.026 ppb
LoD = N/A

63Cu (KED)



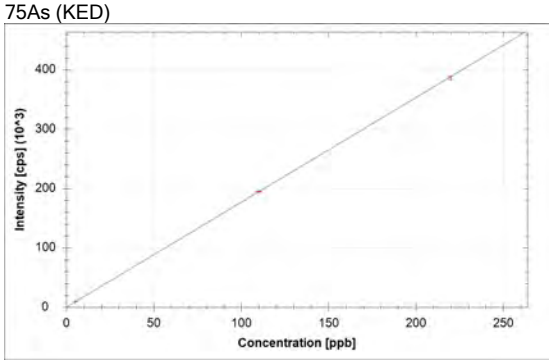
f(x) = 20268.2601*x + 7478.4872
R² = 0.9995
BEC = 0.369 ppb
LoD = N/A

66Zn (KED)



f(x) = 3316.1993*x + 1302.7846
R² = 1.0000
BEC = 0.393 ppb
LoD = N/A

75As (KED)

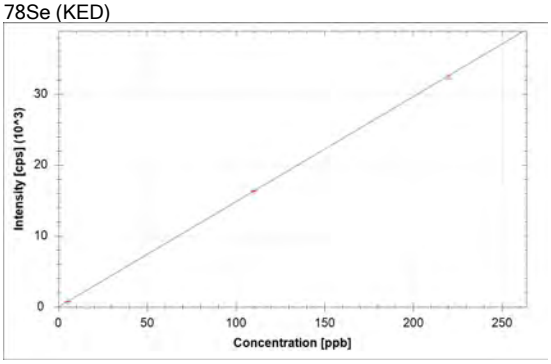


f(x) = 1765.5015*x + 147.1202
R² = 0.9999
BEC = 0.083 ppb
LoD = N/A

Calibration

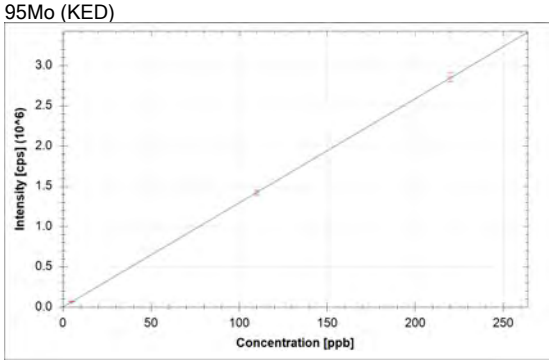
6/14/2023 1:00:49 PM

78Se (KED)



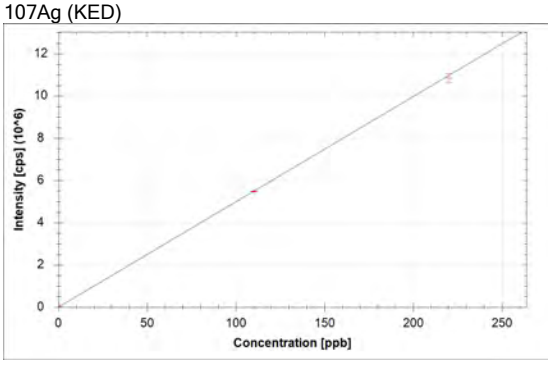
f(x) = 148.1910*x + 9.9278
R² = 0.9999
BEC = 0.067 ppb
LoD = N/A

95Mo (KED)



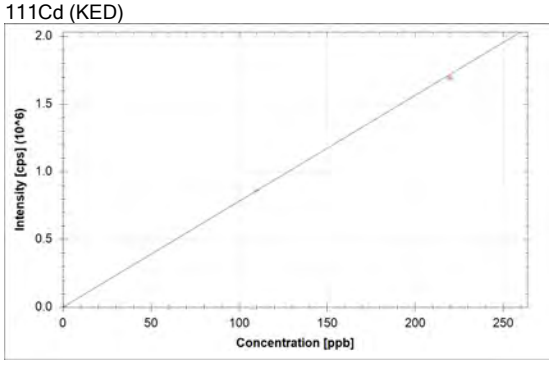
f(x) = 12923.1644*x + 132.0368
R² = 1.0000
BEC = 0.010 ppb
LoD = N/A

107Ag (KED)



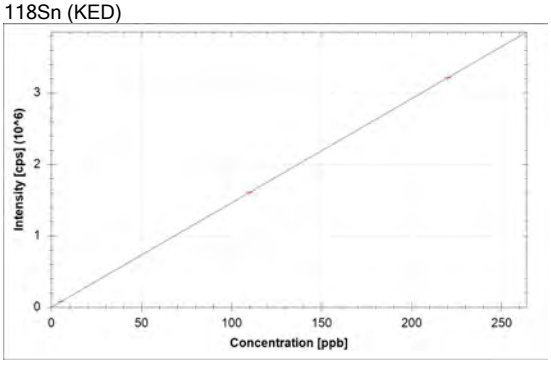
f(x) = 49837.0577*x + 2298.5837
R² = 0.9998
BEC = 0.046 ppb
LoD = N/A

111Cd (KED)



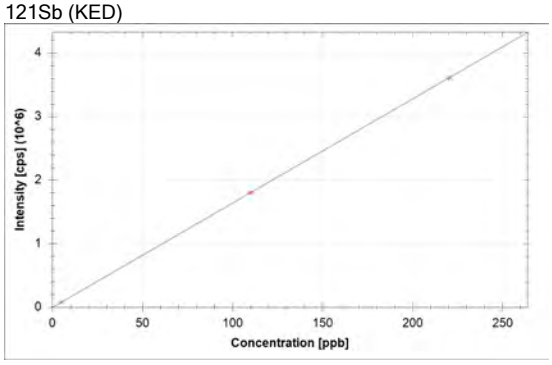
f(x) = 7814.8788*x + 176.3552
R² = 0.9995
BEC = 0.023 ppb
LoD = N/A

118Sn (KED)



f(x) = 14589.3809*x + 884.4675
R² = 1.0000
BEC = 0.061 ppb
LoD = N/A

121Sb (KED)

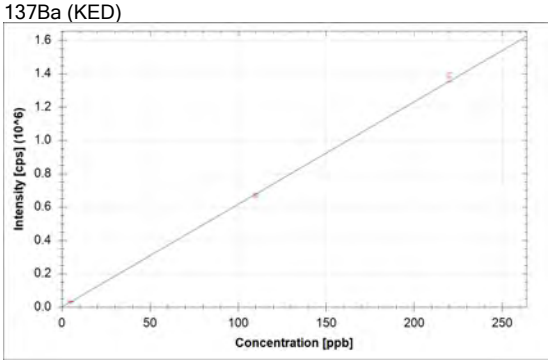


f(x) = 16397.7686*x + -2791.5896
R² = 1.0000
BEC = -0.170 ppb
LoD = N/A

Calibration

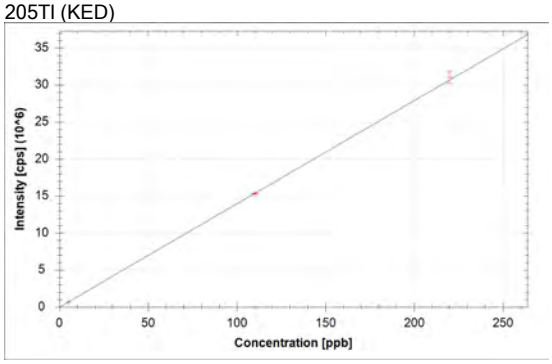
6/14/2023 1:00:49 PM

137Ba (KED)



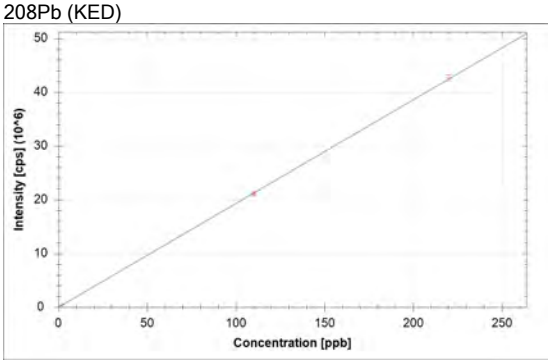
f(x) = 6147.3230*x + 625.2879
R² = 0.9992
BEC = 0.102 ppb
LoD = N/A

205Tl (KED)



f(x) = 139499.7019*x + -15593.0661
R² = 0.9997
BEC = -0.112 ppb
LoD = N/A

208Pb (KED)



f(x) = 192951.5032*x + -1660.5527
R² = 0.9999
BEC = -0.009 ppb
LoD = N/A

Calibration

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Standards:

Analysis Index: 4
Analysis Name: Calibration 1
AnalysisType STD
Analysis Started at: 6/14/2023 8:32:56 AM
Standard (Stock): Calibration 1
Standard DF: 1

Category	Concentration average	Concentration RSD	RSE	Standard Concentration
6Li (KED)	101.176 %	N/A	0.0 %	
9Be (KED)	0.500 ppb	5.0 %	2.0 %	0.500 ppb
11B (KED)	2.502 ppb	5.5 %	1.1 %	2.500 ppb
23Na (KED)	25.005 ppb	2.3 %	0.6 %	25.000 ppb
24Mg (KED)	25.026 ppb	5.2 %	0.4 %	25.000 ppb
27Al (KED)	24.968 ppb	2.5 %	2.0 %	25.000 ppb
31P (KED)	25.094 ppb	22.4 %	1.9 %	25.000 ppb
39K (KED)	25.018 ppb	4.3 %	0.7 %	25.000 ppb
44Ca (KED)	24.013 ppb	11.0 %	5.8 %	25.000 ppb
45Sc (KED)	100.036 %	N/A	0.0 %	
47Ti (KED)	4.967 ppb	5.2 %	1.4 %	5.000 ppb
51V (KED)	5.000 ppb	1.4 %	0.1 %	5.000 ppb
52Cr (KED)	4.986 ppb	2.0 %	1.6 %	5.000 ppb
55Mn (KED)	4.999 ppb	1.5 %	0.8 %	5.000 ppb
57Fe (KED)	24.859 ppb	4.9 %	2.0 %	25.000 ppb
59Co (KED)	4.999 ppb	1.0 %	1.0 %	5.000 ppb
60Ni (KED)	5.000 ppb	2.6 %	0.1 %	5.000 ppb
63Cu (KED)	4.998 ppb	1.2 %	2.9 %	5.000 ppb
66Zn (KED)	5.000 ppb	2.0 %	0.0 %	5.000 ppb
72Ge (KED)	100.917 %	N/A	0.0 %	
75As (KED)	4.996 ppb	1.7 %	0.6 %	5.000 ppb
78Se (KED)	4.983 ppb	4.1 %	0.7 %	5.000 ppb
89Y (KED)	99.006 %	N/A	0.0 %	
95Mo (KED)	5.000 ppb	1.2 %	0.6 %	5.000 ppb
107Ag (KED)	0.500 ppb	6.5 %	1.0 %	0.500 ppb
111Cd (KED)	0.498 ppb	6.8 %	1.6 %	0.500 ppb
115In (KED)	100.837 %	N/A	0.0 %	
118Sn (KED)	4.992 ppb	1.6 %	0.2 %	5.000 ppb
121Sb (KED)	5.001 ppb	1.8 %	0.2 %	5.000 ppb
137Ba (KED)	5.002 ppb	1.9 %	2.2 %	5.000 ppb
159Tb (KED)	99.156 %	N/A	0.0 %	
205Tl (KED)	5.001 ppb	2.3 %	1.3 %	5.000 ppb
208Pb (KED)	2.000 ppb	0.9 %	0.9 %	2.000 ppb
209Bi (KED)	100.287 %	N/A	0.0 %	

Calibration

6/14/2023 1:00:49 PM

Standards:

Analysis Index: 5
Analysis Name: Calibration 2
AnalysisType STD
Analysis Started at: 6/14/2023 8:34:44 AM
Standard (Stock): Calibration 2
Standard DF: 0.5

Category	Concentration average	Concentration RSD	RSE	Standard Concentration
6Li (KED)	102.305 %	N/A	0.0 %	
9Be (KED)	54.994 ppb	0.2 %	2.0 %	55.000 ppb
11B (KED)	109.831 ppb	0.9 %	1.1 %	110.000 ppb
23Na (KED)	549.398 ppb	0.8 %	0.6 %	550.000 ppb
24Mg (KED)	549.725 ppb	0.5 %	0.4 %	550.000 ppb
27Al (KED)	112.156 ppb	3.4 %	2.0 %	110.000 ppb
31P (KED)	547.453 ppb	3.8 %	1.9 %	550.000 ppb
39K (KED)	549.650 ppb	0.6 %	0.7 %	550.000 ppb
44Ca (KED)	573.363 ppb	1.6 %	5.8 %	550.000 ppb
45Sc (KED)	101.276 %	N/A	0.0 %	
47Ti (KED)	110.273 ppb	0.5 %	1.4 %	110.000 ppb
51V (KED)	109.937 ppb	1.3 %	0.1 %	110.000 ppb
52Cr (KED)	111.637 ppb	0.7 %	1.6 %	110.000 ppb
55Mn (KED)	110.861 ppb	2.0 %	0.8 %	110.000 ppb
57Fe (KED)	557.143 ppb	1.1 %	2.0 %	550.000 ppb
59Co (KED)	110.933 ppb	1.0 %	1.0 %	110.000 ppb
60Ni (KED)	109.876 ppb	1.6 %	0.1 %	110.000 ppb
63Cu (KED)	113.187 ppb	1.4 %	2.9 %	110.000 ppb
66Zn (KED)	109.974 ppb	0.6 %	0.0 %	110.000 ppb
72Ge (KED)	101.135 %	N/A	0.0 %	
75As (KED)	110.237 ppb	0.4 %	0.6 %	110.000 ppb
78Se (KED)	110.211 ppb	0.5 %	0.7 %	110.000 ppb
89Y (KED)	100.532 %	N/A	0.0 %	
95Mo (KED)	109.571 ppb	2.0 %	0.6 %	110.000 ppb
107Ag (KED)	110.017 ppb	0.2 %	1.0 %	110.000 ppb
111Cd (KED)	110.057 ppb	0.1 %	1.6 %	110.000 ppb
115In (KED)	103.186 %	N/A	0.0 %	
118Sn (KED)	110.083 ppb	0.2 %	0.2 %	110.000 ppb
121Sb (KED)	109.791 ppb	1.0 %	0.2 %	110.000 ppb
137Ba (KED)	108.862 ppb	1.5 %	2.2 %	110.000 ppb
159Tb (KED)	102.563 %	N/A	0.0 %	
205Tl (KED)	109.934 ppb	0.6 %	1.3 %	110.000 ppb
208Pb (KED)	109.246 ppb	1.6 %	0.9 %	110.000 ppb
209Bi (KED)	103.327 %	N/A	0.0 %	

Calibration

6/14/2023 1:00:49 PM

Standards:

Analysis Index: 6
Analysis Name: Calibration 3
AnalysisType STD
Analysis Started at: 6/14/2023 8:36:31 AM
Standard (Stock): Calibration 3
Standard DF: 1

Category	Concentration average	Concentration RSD	RSE	Standard Concentration
6Li (KED)	103.271 %	N/A	0.0 %	
9Be (KED)	112.159 ppb	2.4 %	2.0 %	110.000 ppb
11B (KED)	222.326 ppb	2.3 %	1.1 %	220.000 ppb
23Na (KED)	1,106.170 ppb	1.8 %	0.6 %	1,100.000 ppb
24Mg (KED)	1,103.795 ppb	1.4 %	0.4 %	1,100.000 ppb
27Al (KED)	219.980 ppb	0.3 %	2.0 %	220.000 ppb
31P (KED)	1,119.957 ppb	7.5 %	1.9 %	1,100.000 ppb
39K (KED)	1,107.855 ppb	2.1 %	0.7 %	1,100.000 ppb
44Ca (KED)	1,098.147 ppb	0.3 %	5.8 %	1,100.000 ppb
45Sc (KED)	100.479 %	N/A	0.0 %	
47Ti (KED)	217.315 ppb	1.1 %	1.4 %	220.000 ppb
51V (KED)	220.174 ppb	1.6 %	0.1 %	220.000 ppb
52Cr (KED)	219.246 ppb	0.3 %	1.6 %	220.000 ppb
55Mn (KED)	219.936 ppb	0.4 %	0.8 %	220.000 ppb
57Fe (KED)	1,083.766 ppb	1.2 %	2.0 %	1,100.000 ppb
59Co (KED)	218.986 ppb	0.7 %	1.0 %	220.000 ppb
60Ni (KED)	220.021 ppb	0.5 %	0.1 %	220.000 ppb
63Cu (KED)	219.333 ppb	0.5 %	2.9 %	220.000 ppb
66Zn (KED)	220.009 ppb	0.2 %	0.0 %	220.000 ppb
72Ge (KED)	100.849 %	N/A	0.0 %	
75As (KED)	218.688 ppb	0.7 %	0.6 %	220.000 ppb
78Se (KED)	218.611 ppb	0.9 %	0.7 %	220.000 ppb
89Y (KED)	101.019 %	N/A	0.0 %	
95Mo (KED)	220.862 ppb	2.0 %	0.6 %	220.000 ppb
107Ag (KED)	217.713 ppb	1.9 %	1.0 %	220.000 ppb
111Cd (KED)	216.577 ppb	0.6 %	1.6 %	220.000 ppb
115In (KED)	103.174 %	N/A	0.0 %	
118Sn (KED)	219.983 ppb	0.1 %	0.2 %	220.000 ppb
121Sb (KED)	220.202 ppb	0.7 %	0.2 %	220.000 ppb
137Ba (KED)	224.204 ppb	2.0 %	2.2 %	220.000 ppb
159Tb (KED)	103.527 %	N/A	0.0 %	
205Tl (KED)	222.829 ppb	2.7 %	1.3 %	220.000 ppb
208Pb (KED)	221.158 ppb	1.3 %	0.9 %	220.000 ppb
209Bi (KED)	103.535 %	N/A	0.0 %	

Calibration
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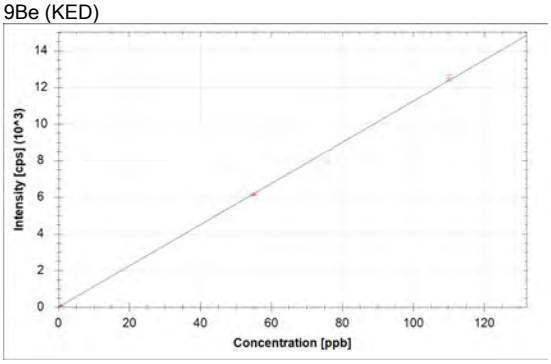
QTEGRA

Calibration Curves:

Instrument Name:	Serial Number:
iCAP Q	02314R

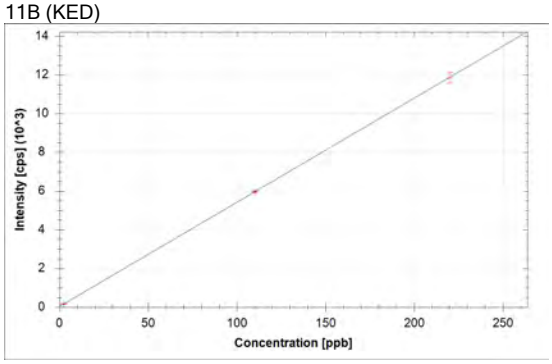
Labbook:	Labbook Path:
061523B.imexp	_Application Data\Workspace\LabBooks

9Be (KED)



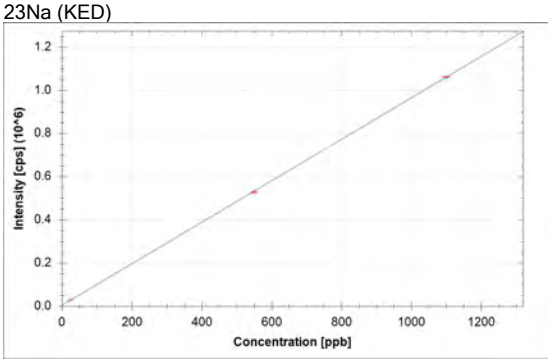
f(x) = 112.3321*x + 6.4442
R² = 0.9997
BEC = 0.057 ppb
LoD = N/A

11B (KED)



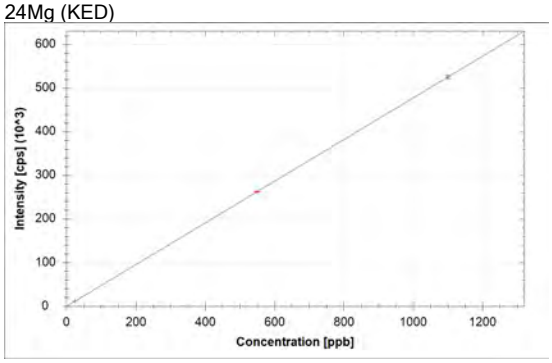
f(x) = 53.8102*x + 35.4569
R² = 1.0000
BEC = 0.659 ppb
LoD = N/A

23Na (KED)



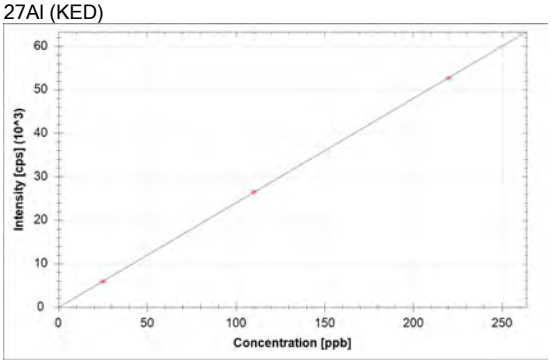
f(x) = 960.5718*x + 4551.6019
R² = 1.0000
BEC = 4.738 ppb
LoD = N/A

24Mg (KED)



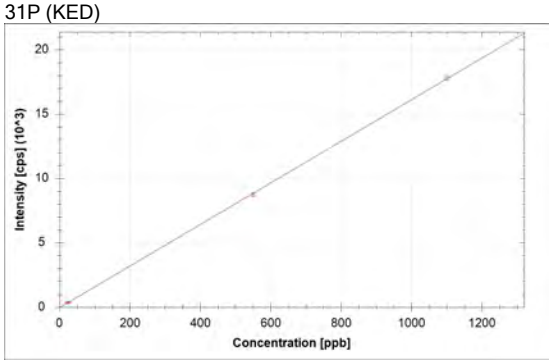
f(x) = 477.5654*x + -268.4286
R² = 1.0000
BEC = -0.562 ppb
LoD = N/A

27Al (KED)



f(x) = 240.1198*x + -55.7420
R² = 1.0000
BEC = -0.232 ppb
LoD = N/A

31P (KED)

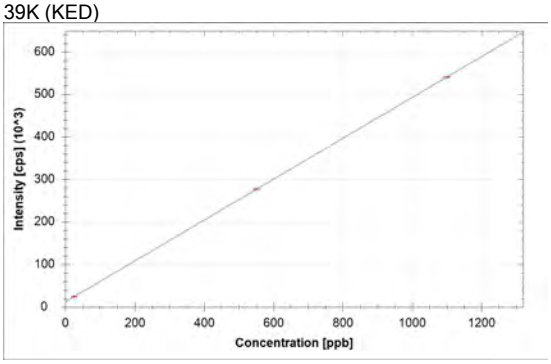


f(x) = 16.1493*x + -40.6985
R² = 0.9999
BEC = -2.520 ppb
LoD = N/A

Calibration

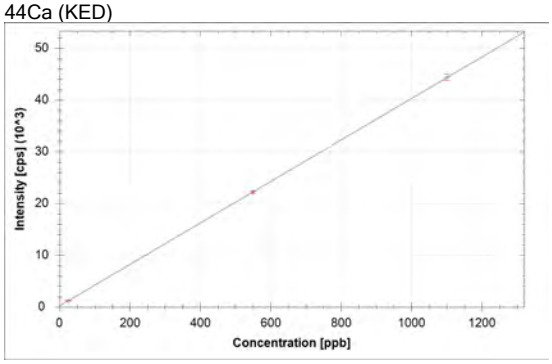
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39K (KED)



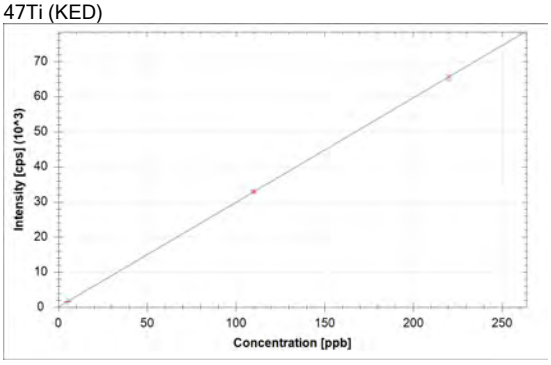
f(x) = 480.4329*x + 12355.8935
R² = 1.0000
BEC = 25.718 ppb
LoD = N/A

44Ca (KED)



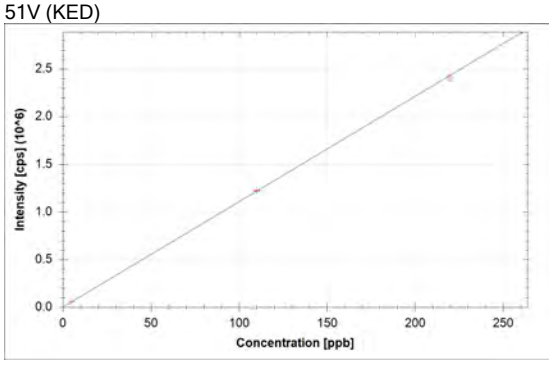
f(x) = 40.0870*x + 207.3817
R² = 1.0000
BEC = 5.173 ppb
LoD = N/A

47Ti (KED)



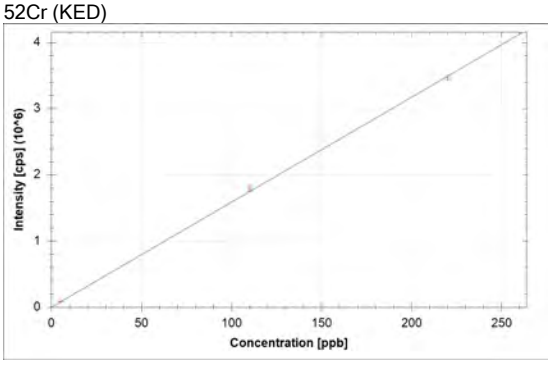
f(x) = 297.9369*x + 67.4904
R² = 1.0000
BEC = 0.227 ppb
LoD = N/A

51V (KED)



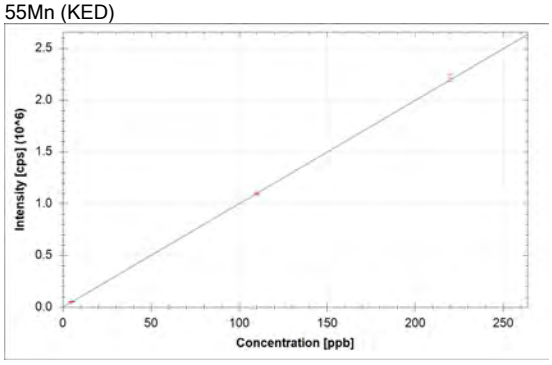
f(x) = 11062.6152*x + 1063.8981
R² = 0.9997
BEC = 0.096 ppb
LoD = N/A

52Cr (KED)



f(x) = 15854.4419*x + 690.7026
R² = 0.9995
BEC = 0.044 ppb
LoD = N/A

55Mn (KED)

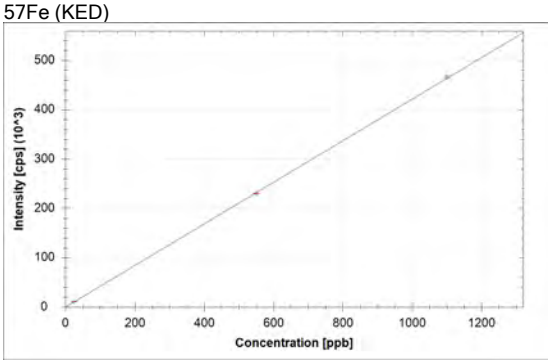


f(x) = 9969.3959*x + 1332.3510
R² = 0.9998
BEC = 0.134 ppb
LoD = N/A

Calibration

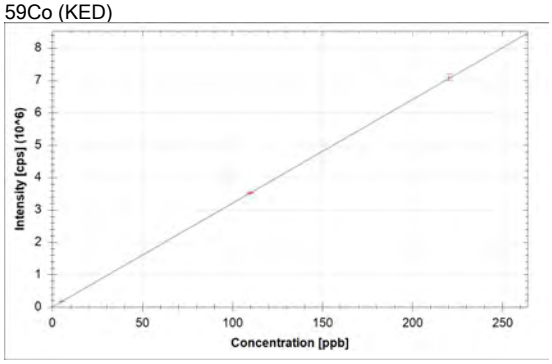
6/15/2023 5:36:57 PM

57Fe (KED)



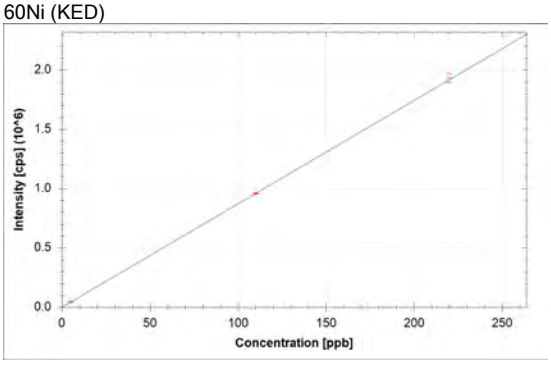
f(x) = 421.3536*x + -35.5799
R² = 0.9999
BEC = -0.084 ppb
LoD = N/A

59Co (KED)



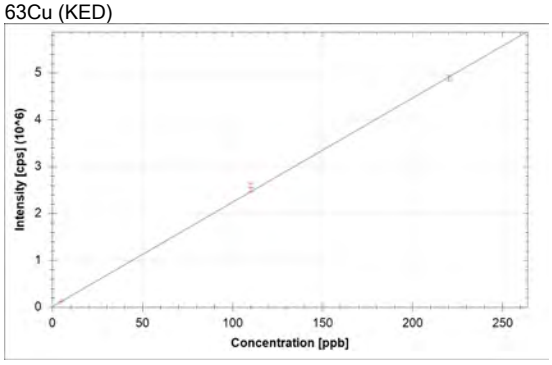
f(x) = 32031.2062*x + 4352.1493
R² = 0.9999
BEC = 0.136 ppb
LoD = N/A

60Ni (KED)



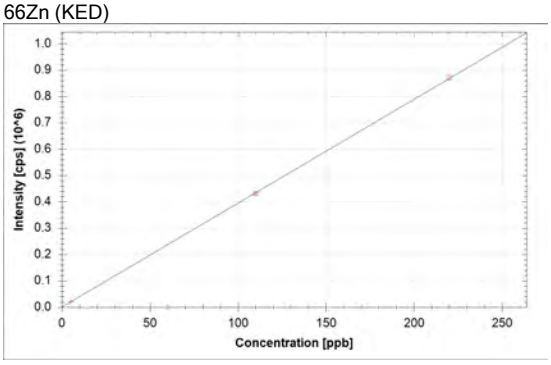
f(x) = 8711.7676*x + 230.9853
R² = 0.9999
BEC = 0.027 ppb
LoD = N/A

63Cu (KED)



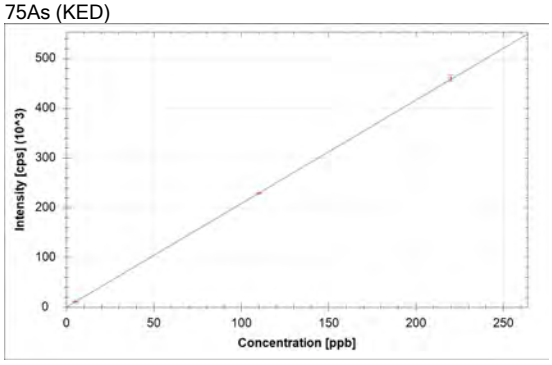
f(x) = 22245.2491*x + 12930.4811
R² = 0.9992
BEC = 0.581 ppb
LoD = N/A

66Zn (KED)



f(x) = 3942.2475*x + 664.0858
R² = 1.0000
BEC = 0.168 ppb
LoD = N/A

75As (KED)

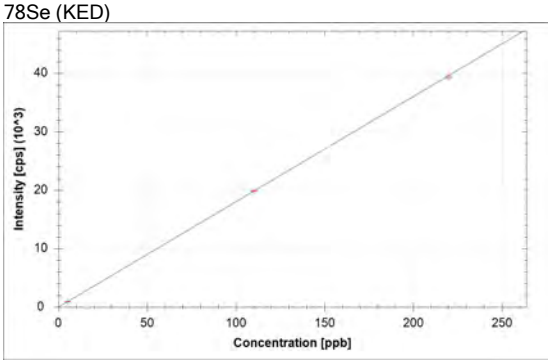


f(x) = 2081.2714*x + 118.8726
R² = 0.9999
BEC = 0.057 ppb
LoD = N/A

Calibration

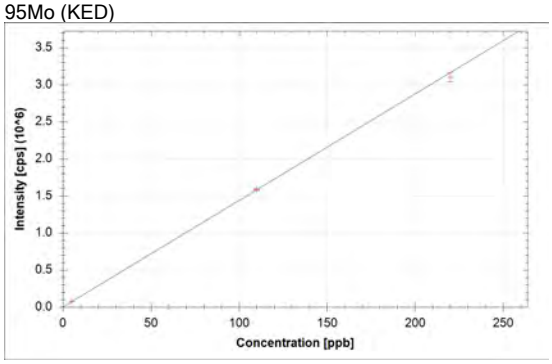
6/15/2023 5:36:57 PM

78Se (KED)



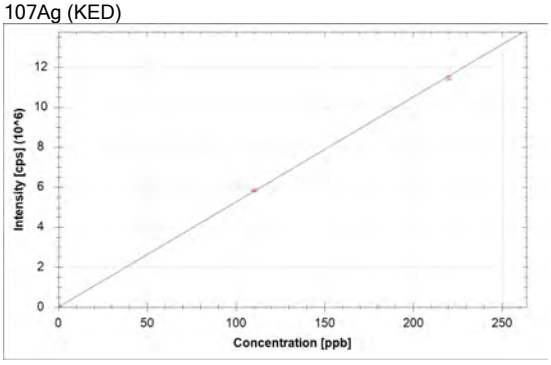
f(x) = 180.1231*x + -6.7871
R² = 0.9999
BEC = -0.038 ppb
LoD = N/A

95Mo (KED)



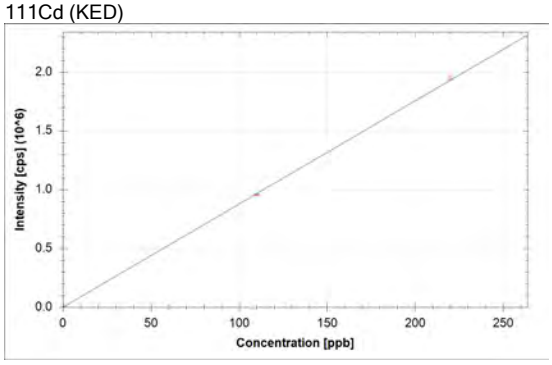
f(x) = 14373.0865*x + 158.2824
R² = 0.9992
BEC = 0.011 ppb
LoD = N/A

107Ag (KED)



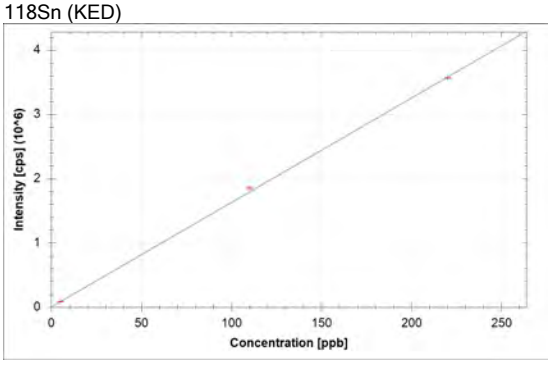
f(x) = 52481.9616*x + 4228.0923
R² = 0.9998
BEC = 0.081 ppb
LoD = N/A

111Cd (KED)



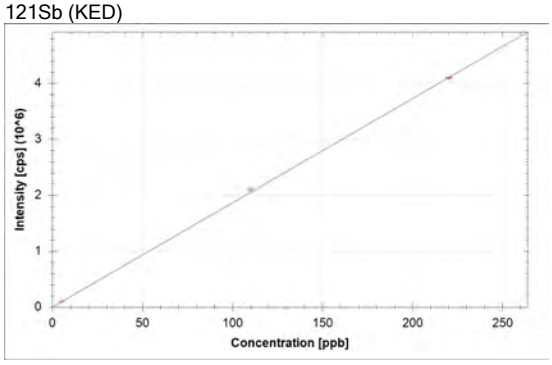
f(x) = 8773.0934*x + 264.3886
R² = 0.9997
BEC = 0.030 ppb
LoD = N/A

118Sn (KED)



f(x) = 16251.1392*x + 4873.8024
R² = 0.9994
BEC = 0.300 ppb
LoD = N/A

121Sb (KED)

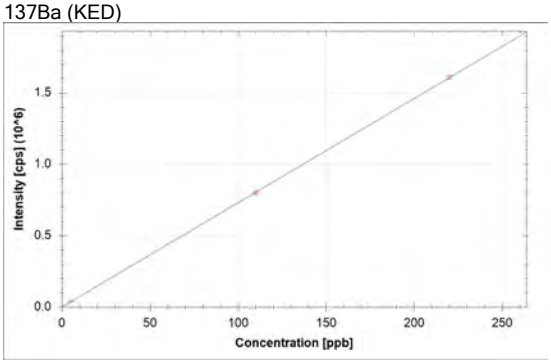


f(x) = 18626.0876*x + 1910.9496
R² = 0.9997
BEC = 0.103 ppb
LoD = N/A

Calibration

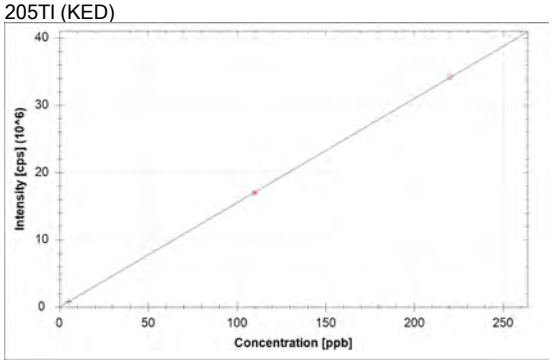
6/15/2023 5:36:57 PM

137Ba (KED)



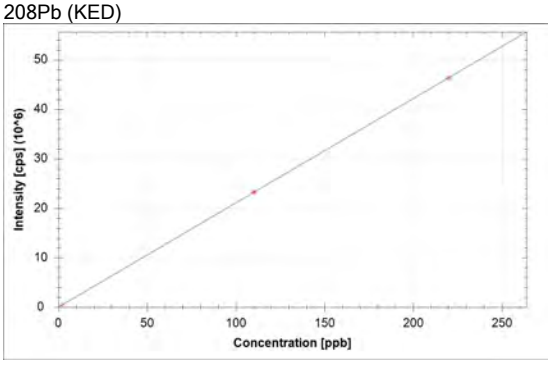
f(x) = 7295.6604*x + 717.2085
R² = 1.0000
BEC = 0.098 ppb
LoD = N/A

205Tl (KED)



f(x) = 154866.0713*x + 359.8682
R² = 1.0000
BEC = 0.002 ppb
LoD = N/A

208Pb (KED)



f(x) = 210860.7757*x + 10549.9752
R² = 1.0000
BEC = 0.050 ppb
LoD = N/A

Calibration

6/15/2023 5:36:57 PM

QTEGRA

Standards:

Analysis Index: 6
Analysis Name: Calibration 1
AnalysisType STD
Analysis Started at: 6/15/2023 3:05:17 PM
Standard (Stock): Calibration 1
Standard DF: 1

Category	Concentration average	Concentration RSD	RSE	Standard Concentration
6Li (KED)	100.408 %	N/A	0.0 %	
9Be (KED)	0.502 ppb	10.0 %	1.4 %	0.500 ppb
11B (KED)	2.499 ppb	6.6 %	0.3 %	2.500 ppb
23Na (KED)	25.008 ppb	0.8 %	0.8 %	25.000 ppb
24Mg (KED)	25.001 ppb	1.3 %	0.1 %	25.000 ppb
27Al (KED)	24.709 ppb	4.2 %	1.3 %	25.000 ppb
31P (KED)	25.317 ppb	11.0 %	1.9 %	25.000 ppb
39K (KED)	24.648 ppb	8.0 %	1.4 %	25.000 ppb
44Ca (KED)	25.010 ppb	3.5 %	0.3 %	25.000 ppb
45Sc (KED)	100.549 %	N/A	0.0 %	
47Ti (KED)	4.999 ppb	1.3 %	0.6 %	5.000 ppb
51V (KED)	4.994 ppb	2.4 %	1.2 %	5.000 ppb
52Cr (KED)	4.999 ppb	1.1 %	2.9 %	5.000 ppb
55Mn (KED)	5.008 ppb	4.4 %	0.9 %	5.000 ppb
57Fe (KED)	25.226 ppb	4.8 %	1.3 %	25.000 ppb
59Co (KED)	5.000 ppb	0.6 %	0.8 %	5.000 ppb
60Ni (KED)	5.000 ppb	0.8 %	0.8 %	5.000 ppb
63Cu (KED)	5.000 ppb	0.3 %	3.8 %	5.000 ppb
66Zn (KED)	5.001 ppb	1.6 %	0.7 %	5.000 ppb
72Ge (KED)	100.502 %	N/A	0.0 %	
75As (KED)	5.001 ppb	1.4 %	0.6 %	5.000 ppb
78Se (KED)	4.997 ppb	1.3 %	0.7 %	5.000 ppb
89Y (KED)	100.166 %	N/A	0.0 %	
95Mo (KED)	4.999 ppb	1.5 %	1.9 %	5.000 ppb
107Ag (KED)	0.500 ppb	3.0 %	1.2 %	0.500 ppb
111Cd (KED)	0.501 ppb	5.8 %	1.4 %	0.500 ppb
115In (KED)	100.303 %	N/A	0.0 %	
118Sn (KED)	4.999 ppb	0.5 %	3.3 %	5.000 ppb
121Sb (KED)	4.998 ppb	1.2 %	2.5 %	5.000 ppb
137Ba (KED)	5.002 ppb	2.0 %	0.5 %	5.000 ppb
159Tb (KED)	98.934 %	N/A	0.0 %	
205Tl (KED)	5.004 ppb	3.3 %	0.5 %	5.000 ppb
208Pb (KED)	2.000 ppb	2.1 %	0.3 %	2.000 ppb
209Bi (KED)	100.788 %	N/A	0.0 %	

Calibration

6/15/2023 5:36:57 PM

QTEGRA

Standards:

Analysis Index: 7
Analysis Name: Calibration 2
AnalysisType STD
Analysis Started at: 6/15/2023 3:07:12 PM
Standard (Stock): Calibration 2
Standard DF: 0.5

Category	Concentration average	Concentration RSD	RSE	Standard Concentration
6Li (KED)	99.088 %	N/A	0.0 %	
9Be (KED)	54.695 ppb	0.8 %	1.4 %	55.000 ppb
11B (KED)	110.050 ppb	1.0 %	0.3 %	110.000 ppb
23Na (KED)	545.561 ppb	0.6 %	0.8 %	550.000 ppb
24Mg (KED)	549.888 ppb	0.5 %	0.1 %	550.000 ppb
27Al (KED)	110.563 ppb	1.0 %	1.3 %	110.000 ppb
31P (KED)	542.737 ppb	1.8 %	1.9 %	550.000 ppb
39K (KED)	551.413 ppb	0.5 %	1.4 %	550.000 ppb
44Ca (KED)	549.100 ppb	1.1 %	0.3 %	550.000 ppb
45Sc (KED)	98.031 %	N/A	0.0 %	
47Ti (KED)	110.484 ppb	1.2 %	0.6 %	110.000 ppb
51V (KED)	110.364 ppb	0.6 %	1.2 %	110.000 ppb
52Cr (KED)	113.145 ppb	2.0 %	2.9 %	110.000 ppb
55Mn (KED)	109.697 ppb	0.9 %	0.9 %	110.000 ppb
57Fe (KED)	546.250 ppb	0.6 %	1.3 %	550.000 ppb
59Co (KED)	109.811 ppb	0.7 %	0.8 %	110.000 ppb
60Ni (KED)	109.971 ppb	0.3 %	0.8 %	110.000 ppb
63Cu (KED)	114.148 ppb	3.6 %	3.8 %	110.000 ppb
66Zn (KED)	109.299 ppb	1.6 %	0.7 %	110.000 ppb
72Ge (KED)	99.143 %	N/A	0.0 %	
75As (KED)	109.978 ppb	0.2 %	0.6 %	110.000 ppb
78Se (KED)	110.366 ppb	0.4 %	0.7 %	110.000 ppb
89Y (KED)	99.448 %	N/A	0.0 %	
95Mo (KED)	110.241 ppb	0.7 %	1.9 %	110.000 ppb
107Ag (KED)	111.062 ppb	0.9 %	1.2 %	110.000 ppb
111Cd (KED)	109.006 ppb	0.8 %	1.4 %	110.000 ppb
115In (KED)	101.695 %	N/A	0.0 %	
118Sn (KED)	113.604 ppb	0.9 %	3.3 %	110.000 ppb
121Sb (KED)	112.704 ppb	1.3 %	2.5 %	110.000 ppb
137Ba (KED)	109.505 ppb	1.0 %	0.5 %	110.000 ppb
159Tb (KED)	100.121 %	N/A	0.0 %	
205Tl (KED)	109.538 ppb	1.1 %	0.5 %	110.000 ppb
208Pb (KED)	110.330 ppb	1.4 %	0.3 %	110.000 ppb
209Bi (KED)	100.120 %	N/A	0.0 %	

Calibration

6/15/2023 5:36:57 PM

QTEGRA

Standards:

Analysis Index: 8
Analysis Name: Calibration 3
AnalysisType STD
Analysis Started at: 6/15/2023 3:09:04 PM
Standard (Stock): Calibration 3
Standard DF: 1

Category	Concentration average	Concentration RSD	RSE	Standard Concentration
6Li (KED)	97.686 %	N/A	0.0 %	
9Be (KED)	111.367 ppb	1.2 %	1.4 %	110.000 ppb
11B (KED)	219.416 ppb	2.3 %	0.3 %	220.000 ppb
23Na (KED)	1,100.837 ppb	0.2 %	0.8 %	1,100.000 ppb
24Mg (KED)	1,100.514 ppb	0.8 %	0.1 %	1,100.000 ppb
27Al (KED)	219.742 ppb	0.5 %	1.3 %	220.000 ppb
31P (KED)	1,104.675 ppb	1.0 %	1.9 %	1,100.000 ppb
39K (KED)	1,099.640 ppb	0.2 %	1.4 %	1,100.000 ppb
44Ca (KED)	1,103.147 ppb	1.5 %	0.3 %	1,100.000 ppb
45Sc (KED)	95.327 %	N/A	0.0 %	
47Ti (KED)	219.084 ppb	1.1 %	0.6 %	220.000 ppb
51V (KED)	217.500 ppb	1.2 %	1.2 %	220.000 ppb
52Cr (KED)	218.429 ppb	1.0 %	2.9 %	220.000 ppb
55Mn (KED)	221.897 ppb	1.6 %	0.9 %	220.000 ppb
57Fe (KED)	1,106.179 ppb	0.6 %	1.3 %	1,100.000 ppb
59Co (KED)	221.654 ppb	1.4 %	0.8 %	220.000 ppb
60Ni (KED)	221.826 ppb	2.0 %	0.8 %	220.000 ppb
63Cu (KED)	219.352 ppb	1.1 %	3.8 %	220.000 ppb
66Zn (KED)	220.596 ppb	1.0 %	0.7 %	220.000 ppb
72Ge (KED)	96.404 %	N/A	0.0 %	
75As (KED)	221.423 ppb	1.2 %	0.6 %	220.000 ppb
78Se (KED)	218.529 ppb	0.6 %	0.7 %	220.000 ppb
89Y (KED)	96.428 %	N/A	0.0 %	
95Mo (KED)	215.856 ppb	2.1 %	1.9 %	220.000 ppb
107Ag (KED)	218.263 ppb	0.8 %	1.2 %	220.000 ppb
111Cd (KED)	222.293 ppb	0.8 %	1.4 %	220.000 ppb
115In (KED)	99.038 %	N/A	0.0 %	
118Sn (KED)	219.257 ppb	0.3 %	3.3 %	220.000 ppb
121Sb (KED)	219.838 ppb	0.2 %	2.5 %	220.000 ppb
137Ba (KED)	220.655 ppb	0.8 %	0.5 %	220.000 ppb
159Tb (KED)	97.963 %	N/A	0.0 %	
205Tl (KED)	220.725 ppb	1.0 %	0.5 %	220.000 ppb
208Pb (KED)	219.854 ppb	0.7 %	0.3 %	220.000 ppb
209Bi (KED)	99.582 %	N/A	0.0 %	

Analysis Class: HG

1 - FORM I
ANALYSIS DATA SHEET

6247WW36

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-01	File ID:	061523L-031
Sampled:	06/02/23 12:10	Prepared:	06/14/23 11:45	Analyzed:	06/15/23 08:19
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0433	Sequence:	S3F0254	Calibration:	EF30064
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6247WW35

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-02	File ID:	061523L-032
Sampled:	06/02/23 14:55	Prepared:	06/14/23 11:45	Analyzed:	06/15/23 08:21
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0433	Sequence:	S3F0254	Calibration:	EF30064
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6247WW49

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-03	File ID:	061523L-033
Sampled:	06/02/23 09:45	Prepared:	06/14/23 11:45	Analyzed:	06/15/23 08:22
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0433	Sequence:	S3F0254	Calibration:	EF30064
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6247WW32

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-04	File ID:	061523L-034
Sampled:	06/02/23 11:45	Prepared:	06/14/23 11:45	Analyzed:	06/15/23 08:24
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0433	Sequence:	S3F0254	Calibration:	EF30064
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6247WW47

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-05	File ID:	061523L-035
Sampled:	06/02/23 14:25	Prepared:	06/14/23 11:45	Analyzed:	06/15/23 08:26
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0433	Sequence:	S3F0254	Calibration:	EF30064
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6347WW44

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-06	File ID:	061523L-036
Sampled:	06/03/23 10:55	Prepared:	06/14/23 11:45	Analyzed:	06/15/23 08:28
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0433	Sequence:	S3F0254	Calibration:	EF30064
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6347WW21

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-07	File ID:	061523L-039
Sampled:	06/03/23 12:20	Prepared:	06/14/23 11:45	Analyzed:	06/15/23 08:34
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0433	Sequence:	S3F0254	Calibration:	EF30064
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

63LHSMWW45

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-08	File ID:	061523L-040
Sampled:	06/03/23 14:30	Prepared:	06/14/23 11:45	Analyzed:	06/15/23 08:35
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0433	Sequence:	S3F0254	Calibration:	EF30064
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6447WW60

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-09	File ID:	061523L-041
Sampled:	06/04/23 10:00	Prepared:	06/14/23 11:45	Analyzed:	06/15/23 08:37
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0433	Sequence:	S3F0254	Calibration:	EF30064
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6447WW28

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-10	File ID:	061523L-042
Sampled:	06/04/23 12:05	Prepared:	06/14/23 11:45	Analyzed:	06/15/23 08:39
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0433	Sequence:	S3F0254	Calibration:	EF30064
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6547WW03

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-12	File ID:	061523L-043
Sampled:	06/05/23 11:30	Prepared:	06/14/23 11:45	Analyzed:	06/15/23 08:41
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0433	Sequence:	S3F0254	Calibration:	EF30064
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

Blank

Laboratory:	Environmental Monitoring and Technologies, I			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0433-BLK1	File ID:	061523L-015
		Prepared:	06/14/23 11:45	Analyzed:	06/15/23 07:25
		Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0433	Sequence:	S3F0254	Calibration:	EF30064
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

LCS

Laboratory:	Environmental Monitoring and Technologies, I			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0433-BS1	File ID:	061523L-016
		Prepared:	06/14/23 11:45	Analyzed:	06/15/23 07:27
		Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0433	Sequence:	S3F0254	Calibration:	EF30064
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury	0.00524	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike

Laboratory:	Environmental Monitoring and Technologies, I			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0433-MS1	File ID:	061523L-018
		Prepared:	06/14/23 11:45	Analyzed:	06/15/23 07:55
		Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0433	Sequence:	S3F0254	Calibration:	EF30064
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury	0.00195	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike

Laboratory:	Environmental Monitoring and Technologies, I			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0433-MS2	File ID:	061523L-024
		Prepared:	06/14/23 11:45	Analyzed:	06/15/23 08:06
		Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0433	Sequence:	S3F0254	Calibration:	EF30064
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury	0.00230	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory:	Environmental Monitoring and Technologies, I			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0433-MSD1	File ID:	061523L-019
		Prepared:	06/14/23 11:45	Analyzed:	06/15/23 07:57
		Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0433	Sequence:	S3F0254	Calibration:	EF30064
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury	0.00208	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory:	Environmental Monitoring and Technologies, I			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0433-MSD2	File ID:	061523L-027
		Prepared:	06/14/23 11:45	Analyzed:	06/15/23 08:11
		Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0433	Sequence:	S3F0254	Calibration:	EF30064
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury	0.00230	0.00020	0.00040	0.00050	

INITIAL AND CONTINUING CALIBRATION CHECK

SW7470A

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	Hg Hydra II # 2	Calibration:	EF30064
		Sequence:	S3F0254

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
S3F0254-ICV1	Mercury	5.000	5.28	106	ug/L	+/- 10.00%
S3F0254-CCV1	Mercury	5.000	5.11	102	ug/L	+/- 10.00%
S3F0254-ICV2	Mercury	5.000	4.97	99.3	ug/L	+/- 10.00%
S3F0254-CCV2	Mercury	5.000	4.76	95.2	ug/L	+/- 10.00%
S3F0254-CCV3	Mercury	5.000	4.79	95.7	ug/L	+/- 10.00%
S3F0254-CCV4	Mercury	5.000	4.62	92.5	ug/L	+/- 10.00%

LOQ Check

SW7470A

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	Hg Hydra II # 2		

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
B3F0433-MRL1	Mercury	0.0005000	0.00053	105	mg/L	70 - 130

FORM 3 - Blank Summary

SW7470A

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	Hg Hydra II # 2	Calibration:	EF30064
Sequence:	S3F0254		

Lab Sample ID	Analyte	Found	Units	LOQ	Qual
S3F0254-ICB1	Mercury		ug/L	0.500	U
S3F0254-CCB1	Mercury		ug/L	0.500	U
B3F0433-BLK1	Mercury		mg/L	0.00050	U
S3F0254-CCB2	Mercury		ug/L	0.500	U
S3F0254-CCB3	Mercury		ug/L	0.500	U
S3F0254-CCB4	Mercury		ug/L	0.500	U

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Analysis Method:	SW7470A
Prep Batch:	B3F0433	Prep Method:	245-7470_HG_PREP
Percent Solids:		Laboratory ID:	B3F0433-MS1
		Source Sample ID:	23F0158-04

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Mercury	0.002000	ND	0.00195	97.7	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	QC LIMITS RPD	QC LIMITS REC.
Mercury	0.002000	0.00208	104	6.35	20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Analysis Method:	SW7470A
Prep Batch:	B3F0433	Prep Method:	245-7470_HG_PREP
Percent Solids:		Laboratory ID:	B3F0433-MS2
		Source Sample ID:	23F0321-01

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Mercury	0.002000	ND	0.00230	115	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	QC LIMITS RPD	QC LIMITS REC.
Mercury	0.002000	0.00230	115	0.0782	20	75 - 125

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

SW7470A

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Prep Method:	245-7470_HG_PREP
Prep Batch:	B3F0433	Lab Sample ID:	B3F0433-BS1

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Mercury	0.005000	0.00524	105	87.6 - 112

* Values outside of QC limits

PREPARATION BENCH SHEET
ME

Print Date/Time: 06/15/2023

B3F0433

Matrix: Water

Prepared using: ME - 245-7470_HG_PREP

Analyses
245.1_MERCURY
7470_MERCURY

Surrogate Solution(s)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
B3F0433-BLK1	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0433-BS1	06/14/23 11:45	50	50	3050521		250		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0433-MRL1	06/14/23 11:45	50	50	3050520		200		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0433-MS1	06/14/23 11:45	50	50	3050521	23F0158-04	100		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0433-MS2	06/14/23 11:45	50	50	3050521	23F0321-01	100		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0433-MSD1	06/14/23 11:45	50	50	3050521	23F0158-04	100		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0433-MSD2	06/14/23 11:45	50	50	3050521	23F0321-01	100		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
23F0158-04 F	06/14/23 11:45	50	50					Added for BatchQC in: B3F0433 BatchQC
Position:	**Hot Block:**	**Temperature:**	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0158-05 F	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0158-06 F	06/14/23 11:45	25	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0158-07 F	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0196-01 D	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							

PREPARATION BENCH SHEET
ME

Print Date/Time: 06/15/2023

B3F0433

(Continued)

Matrix: Water

Prepared using: ME - 245-7470_HG_PREP

Analyses
245.1_MERCURY
7470_MERCURY

Surrogate Solution(s)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0196-02 D	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0196-03 A	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0196-04 D	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0196-05 D	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0196-06 D	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0196-07 D	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0196-08 D	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0196-09 D	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0196-10 D	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0196-12 D	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0253-01 A	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							

PREPARATION BENCH SHEET
ME

Print Date/Time: 06/15/2023

B3F0433

(Continued)

Matrix: Water

Prepared using: ME - 245-7470_HG_PREP

Analyses
245.1_MERCURY
7470_MERCURY

Surrogate Solution(s)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0321-01 A	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0331-01 A	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0331-02 A	06/14/23 11:45	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0331-03 A	06/14/23 11:45	25	50					Due to low sample volume could not risk the KMnO4 requirement for this sample
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							

Spiking Solution(s)

3050520	MERCURY 125 PPB ICV CHECK
3050521	MERCURY 1000 PPB LCS/MS/MSD

Reagents / Equipment

Standard	Description	LotNum
2090624	Nitric Acid HNO3 - Metals	62082
2100069	pH paper 0-14 mbd	225320a
3040514	Hydrochloric Acid HCL	23a1362009
3050121	CYLINDERS 100 ml 2202231	2211204
3050375	Sulfuric acid H2SO4	62252
3050454	5% K2S2O8	1003376829
3050890	SNCL2	22240209
3060348	10% KMNO4	1003366985
3060479	10% HCL	23A1362009
3060484	NH2OH.HCL	2LF0424

ANALYSIS SEQUENCE SUMMARY

Mercury by CVAA

Client: HDR
Project: Longhorn AAP

Sequence: S3F0254 Instrument: Hg Hydra II # 2
Calibration: EF30064

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard (STD # 3060687)	S3F0254-CAL1	061523L-001	06/15/23 06:50
Cal Standard (STD # 3060688)	S3F0254-CAL2	061523L-002	06/15/23 06:51
Cal Standard (STD # 3060689)	S3F0254-CAL3	061523L-003	06/15/23 06:53
Cal Standard (STD # 3060690)	S3F0254-CAL4	061523L-004	06/15/23 06:55
Cal Standard (STD # 3060691)	S3F0254-CAL5	061523L-005	06/15/23 06:57
Cal Standard (STD # 3060692)	S3F0254-CAL6	061523L-006	06/15/23 06:59
Initial Cal Check (STD # 3060693)	S3F0254-ICV1	061523L-007	06/15/23 07:01
Initial Cal Blank	S3F0254-ICB1	061523L-008	06/15/23 07:03
Calibration Check (STD # 3060691)	S3F0254-CCV1	061523L-009	06/15/23 07:04
Calibration Blank	S3F0254-CCB1	061523L-010	06/15/23 07:06
MRL Check	B3F0433-MRL1	061523L-011	06/15/23 07:08
Instrument RL Check (STD # 3060694)	S3F0254-CRL1	061523L-012	06/15/23 07:10
Initial Cal Check (STD # 3060693)	S3F0254-ICV2	061523L-013	06/15/23 07:13
Blank	B3F0433-BLK1	061523L-015	06/15/23 07:25
LCS	B3F0433-BS1	061523L-016	06/15/23 07:27
Matrix Spike	B3F0433-MS1	061523L-018	06/15/23 07:55
Matrix Spike Dup	B3F0433-MSD1	061523L-019	06/15/23 07:57
Matrix Spike	B3F0433-MS2	061523L-024	06/15/23 08:06
Calibration Check (STD # 3060691)	S3F0254-CCV2	061523L-025	06/15/23 08:08
Calibration Blank	S3F0254-CCB2	061523L-026	06/15/23 08:10
Matrix Spike Dup	B3F0433-MSD2	061523L-027	06/15/23 08:11
6247WW36	23F0196-01	061523L-031	06/15/23 08:19
6247WW35	23F0196-02	061523L-032	06/15/23 08:21
6247WW49	23F0196-03	061523L-033	06/15/23 08:22
6247WW32	23F0196-04	061523L-034	06/15/23 08:24
6247WW47	23F0196-05	061523L-035	06/15/23 08:26
6347WW44	23F0196-06	061523L-036	06/15/23 08:28
Calibration Check (STD # 3060691)	S3F0254-CCV3	061523L-037	06/15/23 08:30
Calibration Blank	S3F0254-CCB3	061523L-038	06/15/23 08:32
6347WW21	23F0196-07	061523L-039	06/15/23 08:34
63LHSMWW45	23F0196-08	061523L-040	06/15/23 08:35
6447WW60	23F0196-09	061523L-041	06/15/23 08:37
6447WW28	23F0196-10	061523L-042	06/15/23 08:39

ANALYSIS SEQUENCE SUMMARY

Mercury by CVAA

Client: HDR
Project: Longhorn AAP

Sequence: S3F0254 Instrument: Hg Hydra II # 2
Calibration: EF30064

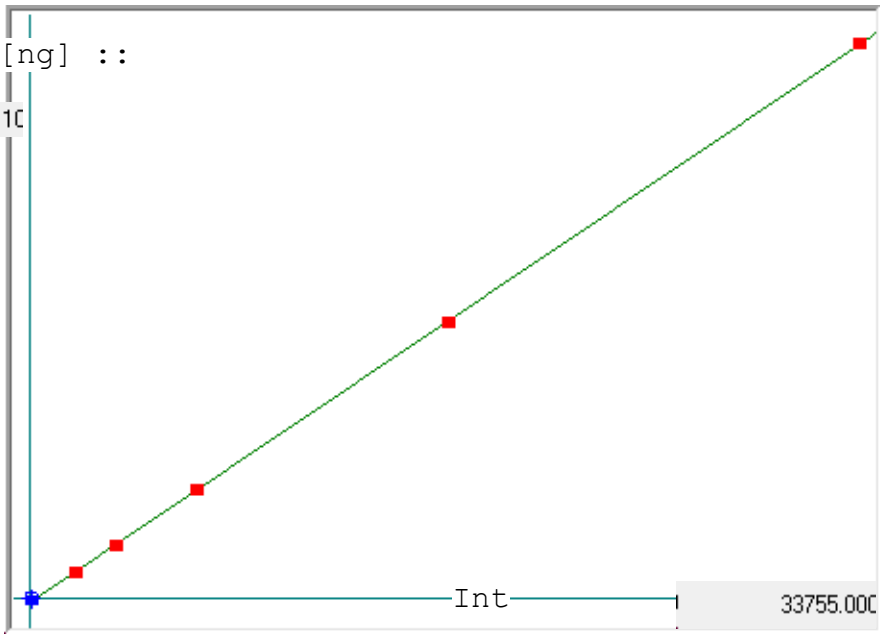
Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
6547WW03	23F0196-12	061523L-043	06/15/23 08:41
Calibration Check (STD # 3060691)	S3F0254-CCV4	061523L-046	06/15/23 08:47
Calibration Blank	S3F0254-CCB4	061523L-047	06/15/23 08:48

EF30064

True value for cal standard	Measured concentration of the cal std,	% Relative Error	Recovery Acceptance range		Recovery Evaluation
ppm	ppm	%	Low%	High%	
0.5	0.511	2.20	-30	30	TRUE
1	0.997	-0.30	-30	30	TRUE
2	1.992	-0.40	-30	30	TRUE
5	5.028	0.56	-10	10	TRUE
10	9.987	-0.13	-10	10	TRUE

HG WATER

Linear



A= 0.0000e+000

B= 2.9744e-004

C= -5.2640e-002

Rho= 0.9999908

Accept=Accepted

Accepted Date=

06/15/23 07:01

Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
Blank	0.000	-0.015	-0.015	128	0.000	128				
0.5	0.500	0.511	0.011	1894	0.0 %	1894				
1	1.000	0.997	-0.003	3528	0.0 %	3528				
2	2.000	1.992	-0.008	6874	0.0 %	6874				
5	5.000	5.028	0.028	17081	0.0 %	17081				
10	10.000	9.987	-0.013	33755	0.0 %	33755				

Method: HG WATER Operator: IGORELIK Date of Analysis: 14 Jun 2023 11:53:24

Type	Sample ID	Extended ID	Conc.	µ Abs.	Units	Date	Curve Type	Method
S	Blank - 1		-	128	ppb	15 Jun 2023 06:50:00	-	HG WATER
S	0.5 - 1		-	1894	ppb	15 Jun 2023 06:51:53	-	HG WATER
S	1 - 1		-	3528	ppb	15 Jun 2023 06:53:45	-	HG WATER
S	2 - 1		-	6874	ppb	15 Jun 2023 06:55:37	-	HG WATER
S	5 - 1		-	17081	ppb	15 Jun 2023 06:57:29	-	HG WATER
S	10 - 1		-	33755	ppb	15 Jun 2023 06:59:21	-	HG WATER
C	SEQ-ICV - 1		(H)105.6% 5.2795	17927	ppb	15 Jun 2023 07:01:11	Linear	HG WATER
C	SEQ-ICB - 1		-0.0485	14	ppb	15 Jun 2023 07:03:01	Linear	HG WATER
C	SEQ-CCV - 1		102.2% 5.1076	17349	ppb	15 Jun 2023 07:04:51	Linear	HG WATER
C	SEQ-CCB - 1		-0.0434	31	ppb	15 Jun 2023 07:06:42	Linear	HG WATER
C	SEQ-MRL - 1		105.3% 0.5265	1947	ppb	15 Jun 2023 07:08:33	Linear	HG WATER
C	SEQ-CRL - 1		100.9% 0.5045	1873	ppb	15 Jun 2023 07:10:23	Linear	HG WATER
C	SEQ-ICV - 1		99.3% 4.9669	16876	ppb	15 Jun 2023 07:13:52	Linear	HG WATER
C	SEQ-ICV - 1		97.2% 4.8601	16517	ppb	15 Jun 2023 07:16:13	Linear	HG WATER
U	B3F0433-BLK1 - 1	7470 / 245.1	-0.0202	109	ppb	15 Jun 2023 07:25:39	Linear	HG WATER
U	B3F0433-BS1 - 1	5.0 PPB	5.2376	17786	ppb	15 Jun 2023 07:27:28	Linear	HG WATER
U	23F0158-04 - 1		-0.0223	102	ppb	15 Jun 2023 07:53:21	Linear	HG WATER
U	B3F0433-MS1 - 1	23F0158-04	1.9548	6749	ppb	15 Jun 2023 07:55:10	Linear	HG WATER
U	B3F0433-MSD1 - 1	23F0158-04	2.0830	7180	ppb	15 Jun 2023 07:57:01	Linear	HG WATER
U	23F0158-05 - 1		-0.0152	126	ppb	15 Jun 2023 07:58:51	Linear	HG WATER
U	23F0158-06 - 1		0.5797	2126	ppb	15 Jun 2023 08:00:42	Linear	HG WATER
U	23F0158-07 - 1		-0.0250	93	ppb	15 Jun 2023 08:02:33	Linear	HG WATER
U	23F0321-01 - 1		0.0083	205	ppb	15 Jun 2023 08:04:24	Linear	HG WATER
U	B3F0433-MS2 - 1	23F0321-01	2.3004	7911	ppb	15 Jun 2023 08:06:16	Linear	HG WATER
C	SEQ-CCV - 1		95.2% 4.7602	16181	ppb	15 Jun 2023 08:08:08	Linear	HG WATER
C	SEQ-CCB - 1		-0.0381	49	ppb	15 Jun 2023 08:10:00	Linear	HG WATER
U	B3F0433-MSD2 - 1	23F0321-01	2.3022	7917	ppb	15 Jun 2023 08:11:50	Linear	HG WATER
U	23F0331-01 - 1		-0.0187	114	ppb	15 Jun 2023 08:13:42	Linear	HG WATER
U	23F0331-02 - 1		-0.0164	122	ppb	15 Jun 2023 08:15:35	Linear	HG WATER
U	23F0331-03 - 1		0.0095	209	ppb	15 Jun 2023 08:17:26	Linear	HG WATER
U	23F0196-01 - 1		-0.0187	114	ppb	15 Jun 2023 08:19:17	Linear	HG WATER
U	23F0196-02 - 1		0.0030	187	ppb	15 Jun 2023 08:21:07	Linear	HG WATER
U	23F0196-03 - 1		-0.0101	143	ppb	15 Jun 2023 08:22:58	Linear	HG WATER
U	23F0196-04 - 1		0.0036	189	ppb	15 Jun 2023 08:24:49	Linear	HG WATER
U	23F0196-05 - 1		-0.0241	96	ppb	15 Jun 2023 08:26:40	Linear	HG WATER
U	23F0196-06 - 1		-0.0119	137	ppb	15 Jun 2023 08:28:31	Linear	HG WATER
C	SEQ-CCV - 1		95.7% 4.7855	16266	ppb	15 Jun 2023 08:30:22	Linear	HG WATER
C	SEQ-CCB - 1		-0.0404	41	ppb	15 Jun 2023 08:32:13	Linear	HG WATER
U	23F0196-07 - 1		0.0122	218	ppb	15 Jun 2023 08:34:03	Linear	HG WATER
U	23F0196-08 - 1		-0.0068	154	ppb	15 Jun 2023 08:35:55	Linear	HG WATER
U	23F0196-09 - 1		-0.0128	134	ppb	15 Jun 2023 08:37:47	Linear	HG WATER
U	23F0196-10 - 1		-0.0122	136	ppb	15 Jun 2023 08:39:39	Linear	HG WATER
U	23F0196-12 - 1		-0.0056	158	ppb	15 Jun 2023 08:41:32	Linear	HG WATER
U	23F0253-01 - 1		-0.0178	117	ppb	15 Jun 2023 08:43:22	Linear	HG WATER
U	23F0158-06RE1 - 1		0.4938	1837	ppb	15 Jun 2023 08:45:13	Linear	HG WATER
C	SEQ-CCV - 1		92.5% 4.6240	15723	ppb	15 Jun 2023 08:47:04	Linear	HG WATER
C	SEQ-CCB - 1		-0.0384	48	ppb	15 Jun 2023 08:48:56	Linear	HG WATER

HYDRA II #2
B3F0433
S3F0254
RUN BY: ES1
06/15/2023

Rack	Cup	Sample ID	Extended ID	Wt.	Vol.	Cup Action
1	1	B3F0433-BLK1	7470 / 245.1	1.0000	1.0000	
1	2	B3F0433-BS1	5.0 PPB	1.0000	1.0000	
1	3	23F0158-04		1.0000	1.0000	
1	4	B3F0433-MS1	23F0158-04	1.0000	1.0000	
1	5	B3F0433-MSD1	23F0158-04	1.0000	1.0000	
1	6	23F0158-05		1.0000	1.0000	
1	7	23F0158-06		1.0000	1.0000	
1	8	23F0158-07		1.0000	1.0000	
1	9	23F0321-01		1.0000	1.0000	
1	10	B3F0433-MS2	23F0321-01	1.0000	1.0000	
1	11	B3F0433-MSD2	23F0321-01	1.0000	1.0000	
1	12	23F0331-01		1.0000	1.0000	
1	13	23F0331-02		1.0000	1.0000	
1	14	23F0331-03		1.0000	1.0000	
1	15	23F0196-01		1.0000	1.0000	
1	16	23F0196-02		1.0000	1.0000	
1	17	23F0196-03		1.0000	1.0000	
1	18	23F0196-04		1.0000	1.0000	
1	19	23F0196-05		1.0000	1.0000	
1	20	23F0196-06		1.0000	1.0000	
1	21	23F0196-07		1.0000	1.0000	
1	22	23F0196-08		1.0000	1.0000	
1	23	23F0196-09		1.0000	1.0000	
1	24	23F0196-10		1.0000	1.0000	
1	25	23F0196-12		1.0000	1.0000	
1	26	23F0253-01		1.0000	1.0000	
1	27	23F0158-06RE1		1.0000	1.0000	
1	28			1.0000	1.0000	
1	29			1.0000	1.0000	
1	30			1.0000	1.0000	
1	31			1.0000	1.0000	
1	32			1.0000	1.0000	
1	33			1.0000	1.0000	
1	34			1.0000	1.0000	
1	35			1.0000	1.0000	
1	36			1.0000	1.0000	
1	37			1.0000	1.0000	

Mercury in Waste Water. SW-846 # 7470 A ; US EPA # 245.1

Instrument HYDRA AA SN# HA-1005 HYDRA II AA SN# 3009

Protocol of prepartion batch # B3F0433 Time in: 06:00:00AM Time out: 1(8:00:00 AM

Date: 06/15/23 **Prepared by:** ES1 **Hot Block Temperature = 94°C**

Mercury Hot Block SC150 Serial # 2017CECW4609 Termometer #F95-616

Pipettes: #64, #Hg-1, #GB-1, #AB-1, #78

Calibration Standards	D.I. water ml.	**Hg 500 ug /L *** ml.	H2SO4 conc. ml.	HNO3 conc. ml.	10% KMnO4 ml.	5 % K2S2O8 ml.	NH2OH*HCl ml.
Calibration/Method blank	50.00	0.00	2.5	1.25	15	4.0	6.0
0.5 ug/l	49.95	0.05	2.5	1.25	15	4.0	6.0
1.0 ug/l	49.90	0.10	2.5	1.25	15	4.0	6.0
2.0 ug/l	49.80	0.20	2.5	1.25	15	4.0	6.0
5.0 ug/l/CCV	49.50	0.50	2.5	1.25	15	4.0	6.0
10.0 ug/l	49.00	1.00	2.5	1.25	15	4.0	6.0
		Hg 125 ug /L *					
0.5 ug/l (check standard)	49.80	0.20	2.5	1.25	15	4.0	6.0

QC samples	D.I. water ml	**Hg 1000 ug /l**** ml	H2SO4 conc. ml	HNO3 conc. ml	10% KMnO4 ml	5 % K2S2O8 ml	NH2OH*HCl ml
LCS/ICV 5 ug/l	49.75	0.25	2.5	1.25	15	4.0	6.0
Spike 2 ug/l	Sample	0.10	2.5	1.25	15	4.0	6.0

Extra _____mL10% KMnO4 is added to the samples and standards

Extra ____mL NH2OH*HCl is added to the samples and standards

Note: Add 0.8 ml of NH2OH*HCl per each additional 1 mL of 10% KMnO4.

Traceability

*** Hg 500 ug/l**	3050519
**** Hg 1000 ug/l**	3050521
***** Hg 125 ug/l**	3050520
SnCl2:	3050890
10% KMno4 :	3060348
NH2OH*HCl :	3060484
H2SO4conc:	3050375
K2S2O8:	3050454
HNO3 conc.:	2090624
Comments:	

Abbreviations:

t	TCLP
b/t/f1/11/27	Blank,TCLP, Fluid 1, date
b/t/s	Blank, TCLP, spike (LCS for TCLP)

Mercury in Waste Water. SW-846 # 7470 A ; US EPA # 245.1

Instrument HYDRA AA SN# HA-1005 HYDRA II AA SN# 3009

Protocol of prepartion batch # B3F0433 Time in: 06:00:00AM Time out: 1(8:00:00 AM

Date: 06/15/23 **Prepared by:** ES1 **Hot Block Temperature = 94°C**

Mercury Hot Block SC150 Serial # 2017CECW4609 Termometer #F95-616

Pipettes: #64, #Hg-1, #GB-1, #AB-1, #78

Calibration Standards	D.I. water ml.	**Hg 500 ug /L *** ml.	H2SO4 conc. ml.	HNO3 conc. ml.	10% KMnO4 ml.	5 % K2S2O8 ml.	NH2OH*HCl ml.
Calibration/Method blank	50.00	0.00	2.5	1.25	15	4.0	6.0
0.5 ug/l	49.95	0.05	2.5	1.25	15	4.0	6.0
1.0 ug/l	49.90	0.10	2.5	1.25	15	4.0	6.0
2.0 ug/l	49.80	0.20	2.5	1.25	15	4.0	6.0
5.0 ug/l/CCV	49.50	0.50	2.5	1.25	15	4.0	6.0
10.0 ug/l	49.00	1.00	2.5	1.25	15	4.0	6.0
		Hg 125 ug /L *					
0.5 ug/l (check standard)	49.80	0.20	2.5	1.25	15	4.0	6.0

QC samples	D.I. water ml	**Hg 1000 ug /l**** ml	H2SO4 conc. ml	HNO3 conc. ml	10% KMnO4 ml	5 % K2S2O8 ml	NH2OH*HCl ml
LCS/ICV 5 ug/l	49.75	0.25	2.5	1.25	15	4.0	6.0
Spike 2 ug/l	Sample	0.10	2.5	1.25	15	4.0	6.0

Extra _____mL10% KMnO4 is added to the samples and standards

Extra ____mL NH2OH*HCl is added to the samples and standards

Note: Add 0.8 ml of NH2OH*HCl per each additional 1 mL of 10% KMnO4.

Traceability

*** Hg 500 ug/l**	3050519
**** Hg 1000 ug/l**	3050521
***** Hg 125 ug/l**	3050520
SnCl2:	3050890
10% KMno4 :	3060348
NH2OH*HCl :	3060484
H2SO4conc:	3050375
K2S2O8:	3050454
HNO3 conc.:	2090624
Comments:	

Abbreviations:

t	TCLP
b/t/f1/11/27	Blank,TCLP, Fluid 1, date
b/t/s	Blank, TCLP, spike (LCS for TCLP)

Analysis Class: HG

1 - FORM I
ANALYSIS DATA SHEET

6247WW36

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-01	File ID:	061223L-029
Sampled:	06/02/23 12:10	Prepared:	06/09/23 12:58	Analyzed:	06/12/23 14:26
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0309	Sequence:	S3F0199	Calibration:	EF30046
				Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6247WW35

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-02	File ID:	061223L-030
Sampled:	06/02/23 14:55	Prepared:	06/09/23 12:58	Analyzed:	06/12/23 14:28
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0309	Sequence:	S3F0199	Calibration:	EF30046
				Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6247WW49

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-03	File ID:	061223L-031
Sampled:	06/02/23 09:45	Prepared:	06/09/23 12:58	Analyzed:	06/12/23 14:30
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0309	Sequence:	S3F0199	Calibration:	EF30046
				Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6247WW32

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-04	File ID:	061223L-032
Sampled:	06/02/23 11:45	Prepared:	06/09/23 12:58	Analyzed:	06/12/23 14:31
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0309	Sequence:	S3F0199	Calibration:	EF30046
				Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6247WW47

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-05	File ID:	061223L-033
Sampled:	06/02/23 14:25	Prepared:	06/09/23 12:58	Analyzed:	06/12/23 14:33
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0309	Sequence:	S3F0199	Calibration:	EF30046
				Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6347WW44

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-06	File ID:	061223L-034
Sampled:	06/03/23 10:55	Prepared:	06/09/23 12:58	Analyzed:	06/12/23 14:35
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0309	Sequence:	S3F0199	Calibration:	EF30046
				Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6347WW21

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-07	File ID:	061223L-039
Sampled:	06/03/23 12:20	Prepared:	06/09/23 12:58	Analyzed:	06/12/23 14:46
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0309	Sequence:	S3F0199	Calibration:	EF30046
				Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

63LHSMWW45

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-08	File ID:	061223L-040
Sampled:	06/03/23 14:30	Prepared:	06/09/23 12:58	Analyzed:	06/12/23 14:48
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0309	Sequence:	S3F0199	Calibration:	EF30046
				Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6447WW60

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-09	File ID:	061223L-041
Sampled:	06/04/23 10:00	Prepared:	06/09/23 12:58	Analyzed:	06/12/23 14:50
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0309	Sequence:	S3F0199	Calibration:	EF30046
				Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6447WW28

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-10	File ID:	061223L-042
Sampled:	06/04/23 12:05	Prepared:	06/09/23 12:58	Analyzed:	06/12/23 14:52
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0309	Sequence:	S3F0199	Calibration:	EF30046
				Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

6547WW03

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-12	File ID:	061623L-021
Sampled:	06/05/23 11:30	Prepared:	06/15/23 13:00	Analyzed:	06/16/23 10:56
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0482	Sequence:	S3F0275	Calibration:	EF30070
				Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	*Mercury, Dissolved*		*0.00020*	0.00040	*0.00050*	*J1, U*

Italicized = secondary result

1 - FORM I
ANALYSIS DATA SHEET

6547WW03

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-12RE1	File ID:	062723L-028
Sampled:	06/05/23 11:30	Prepared:	06/27/23 08:26	Analyzed:	06/27/23 11:12
Solids:		Preparation:	245-7470_HG_PREP	Dilution:	1
Initial/Final:	50 ml / 50 ml				
Batch:	B3F0863	Sequence:	S3F0463	Calibration:	EF30126
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

Blank

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0309-BLK1	File ID:	061223L-013
		Prepared:	06/09/23 12:58	Analyzed:	06/12/23 13:37
		Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0309	Sequence:	S3F0199	Calibration:	EF30046
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

LCS

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0309-BS1	File ID:	061223L-014
		Prepared:	06/09/23 12:58	Analyzed:	06/12/23 13:39
		Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0309	Sequence:	S3F0199	Calibration:	EF30046
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved	0.00499	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0309-MS1	File ID:	061223L-022
		Prepared:	06/09/23 12:58	Analyzed:	06/12/23 14:13
		Preparation:	245-7470_HG_PREP	Dilution:	1

Batch:	B3F0309	Sequence:	S3F0199	Calibration:	EF30046	Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved	0.00204	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0309-MSD1	File ID:	061223L-025
		Prepared:	06/09/23 12:58	Analyzed:	06/12/23 14:18
		Preparation:	245-7470_HG_PREP	Dilution:	1

Batch:	B3F0309	Sequence:	S3F0199	Calibration:	EF30046	Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved	0.00204	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

LCS

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0482-BS1	File ID:	061623L-016
		Prepared:	06/15/23 13:00	Analyzed:	06/16/23 10:36
		Preparation:	245-7470_HG_PREP	Dilution:	1

Batch:	B3F0482	Sequence:	S3F0275	Calibration:	EF30070	Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved	0.00537	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0482-MS1	File ID:	061623L-019
		Prepared:	06/15/23 13:00	Analyzed:	06/16/23 10:52
	94.27	Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0482	Sequence:	S3F0275	Calibration:	EF30070	Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved	0.00210	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike

Laboratory:	Sterling Labs				SDG:	23F0196	
Client:	HDR				Project:	Longhorn AAP	
Matrix:	Water	Laboratory ID:	B3F0482-MS2		File ID:	061623L-022	
		Prepared:	06/15/23 13:00		Analyzed:	06/16/23 10:58	
		Preparation:	245-7470_HG_PREP		Dilution:	1	
Batch:	B3F0482	Sequence:	S3F0275	Calibration:	EF30070	Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved		0.00020	0.00040	0.00050	S, U

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0482-MS3	File ID:	061623L-028
		Prepared:	06/15/23 13:00	Analyzed:	06/16/23 11:17
		Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0482	Sequence:	S3F0275	Calibration:	EF30070
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved	0.00232	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory:	Sterling Labs				SDG:	23F0196	
Client:	HDR				Project:	Longhorn AAP	
Matrix:	Water	Laboratory ID:	B3F0482-MSD1		File ID:	061623L-020	
		Prepared:	06/15/23 13:00		Analyzed:	06/16/23 10:54	
	94.27	Preparation:	245-7470_HG_PREP		Dilution:	1	
Batch:	B3F0482	Sequence:	S3F0275	Calibration:	EF30070	Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved	0.00208	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0482-MSD2	File ID:	061623L-024
		Prepared:	06/15/23 13:00	Analyzed:	06/16/23 11:09
		Preparation:	245-7470_HG_PREP	Dilution:	1

Batch:	B3F0482	Sequence:	S3F0275	Calibration:	EF30070	Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved	0.00242	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0482-MSD3	File ID:	061623L-029
		Prepared:	06/15/23 13:00	Analyzed:	06/16/23 11:18
		Preparation:	245-7470_HG_PREP	Dilution:	1

Batch:	B3F0482	Sequence:	S3F0275	Calibration:	EF30070	Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved	0.00224	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Blank

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0863-BLK1	File ID:	062723L-013
		Prepared:	06/27/23 08:26	Analyzed:	06/27/23 10:40
		Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0863	Sequence:	S3F0463	Calibration:	EF30126
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved		0.00020	0.00040	0.00050	U

1 - FORM I
ANALYSIS DATA SHEET

LCS

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0863-BS1	File ID:	062723L-014
		Prepared:	06/27/23 08:26	Analyzed:	06/27/23 10:42
		Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0863	Sequence:	S3F0463	Calibration:	EF30126
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved	0.00533	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0863-MS1	File ID:	062723L-018
		Prepared:	06/27/23 08:26	Analyzed:	06/27/23 10:54
	89.06	Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0863	Sequence:	S3F0463	Calibration:	EF30126	Instrument:	Hg Hydra II # 2

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved	0.00219	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0863-MS2	File ID:	062723L-030
		Prepared:	06/27/23 08:26	Analyzed:	06/27/23 11:16
		Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0863	Sequence:	S3F0463	Calibration:	EF30126
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved	0.00232	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0863-MS3	File ID:	062723L-033
		Prepared:	06/27/23 08:26	Analyzed:	06/27/23 11:22
		Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0863	Sequence:	S3F0463	Calibration:	EF30126
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved	0.00271	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0863-MSD1	File ID:	062723L-019
		Prepared:	06/27/23 08:26	Analyzed:	06/27/23 10:56
	89.06	Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0863	Sequence:	S3F0463	Calibration:	EF30126
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved	0.00234	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0863-MSD2	File ID:	062723L-031
		Prepared:	06/27/23 08:26	Analyzed:	06/27/23 11:18
		Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0863	Sequence:	S3F0463	Calibration:	EF30126
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved	0.00221	0.00020	0.00040	0.00050	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory:	Sterling Labs			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0863-MSD3	File ID:	062723L-034
		Prepared:	06/27/23 08:26	Analyzed:	06/27/23 11:23
		Preparation:	245-7470_HG_PREP	Dilution:	1
Batch:	B3F0863	Sequence:	S3F0463	Calibration:	EF30126
Instrument:	Hg Hydra II # 2				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	LOD	LOQ	Q
7439-97-6	Mercury, Dissolved	0.00256	0.00020	0.00040	0.00050	

INITIAL AND CONTINUING CALIBRATION CHECK

SW7470A

Laboratory:	Sterling Labs	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	Hg Hydra II # 2	Calibration:	EF30046
		Sequence:	S3F0199

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
S3F0199-ICV1	Mercury, Dissolved (dissolved)	5.000	4.75	94.9	ug/L	+/- 10.00%
S3F0199-CCV1	Mercury, Dissolved (dissolved)	5.000	4.88	97.5	ug/L	+/- 10.00%
S3F0199-CCV2	Mercury, Dissolved (dissolved)	5.000	4.59	91.8	ug/L	+/- 10.00%
S3F0199-CCV3	**Mercury, Dissolved (dissolved)**	**5.000**	**4.33**	**86.7**	**ug/L**	+/- 10.00%
S3F0199-CCV4	Mercury, Dissolved (dissolved)	5.000	5.48	110	ug/L	+/- 10.00%
S3F0199-CCV5	Mercury, Dissolved (dissolved)	5.000	5.25	105	ug/L	+/- 10.00%
S3F0199-CCV6	Mercury, Dissolved (dissolved)	5.000	5.47	109	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW7470A

Laboratory:	Sterling Labs	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	Hg Hydra II # 2	Calibration:	EF30070
		Sequence:	S3F0275

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
S3F0275-ICV1	Mercury, Dissolved (dissolved)	5.000	5.45	109	ug/L	+/- 10.00%
S3F0275-CCV1	Mercury, Dissolved (dissolved)	5.000	5.13	103	ug/L	+/- 10.00%
S3F0275-ICV2	Mercury, Dissolved (dissolved)	5.000	5.10	102	ug/L	+/- 10.00%
S3F0275-CCV2	Mercury, Dissolved (dissolved)	5.000	4.91	98.2	ug/L	+/- 10.00%
S3F0275-CCV3	Mercury, Dissolved (dissolved)	5.000	4.67	93.5	ug/L	+/- 10.00%
S3F0275-CCV4	**Mercury, Dissolved (dissolved)**	**5.000**	**4.47**	**89.4**	**ug/L**	+/- 10.00%
S3F0275-CCV5	Mercury, Dissolved (dissolved)	5.000	4.98	99.6	ug/L	+/- 10.00%
S3F0275-CCV6	Mercury, Dissolved (dissolved)	5.000	4.80	96.0	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW7470A

Laboratory:	Sterling Labs	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	Hg Hydra II # 2	Calibration:	EF30126
		Sequence:	S3F0463

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
S3F0463-ICV1	Mercury, Dissolved (dissolved)	5.000	5.18	104	ug/L	+/- 10.00%
S3F0463-CCV1	Mercury, Dissolved (dissolved)	5.000	5.03	101	ug/L	+/- 10.00%
S3F0463-CCV2	Mercury, Dissolved (dissolved)	5.000	5.16	103	ug/L	+/- 10.00%
S3F0463-CCV3	Mercury, Dissolved (dissolved)	5.000	4.97	99.4	ug/L	+/- 10.00%
S3F0463-CCV4	Mercury, Dissolved (dissolved)	5.000	5.13	103	ug/L	+/- 10.00%
S3F0463-CCV5	Mercury, Dissolved (dissolved)	5.000	4.95	99.1	ug/L	+/- 10.00%
S3F0463-CCV6	Mercury, Dissolved (dissolved)	5.000	4.90	98.0	ug/L	+/- 10.00%
S3F0463-CCV7	Mercury, Dissolved (dissolved)	5.000	4.90	97.9	ug/L	+/- 10.00%
S3F0463-CCV8	Mercury, Dissolved (dissolved)	5.000	4.78	95.7	ug/L	+/- 10.00%
S3F0463-CCV9	Mercury, Dissolved (dissolved)	5.000	4.73	94.6	ug/L	+/- 10.00%

LOQ Check

SW7470A

Laboratory:	Sterling Labs	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	Hg Hydra II # 2		

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
B3F0309-MRL1	Mercury, Dissolved (dissolved)	0.0005000	0.00060	121	mg/L	70 - 130

LOQ Check

SW7470A

Laboratory:	Sterling Labs	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	Hg Hydra II # 2		

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
B3F0482-MRL1	Mercury, Dissolved (dissolved)	0.0005000	0.00050	99.6	mg/L	70 - 130

LOQ Check

SW7470A

Laboratory:	Sterling Labs	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	Hg Hydra II # 2		

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
B3F0863-MRL1	Mercury, Dissolved (dissolved)	0.0005000	0.00055	110	mg/L	70 - 130

FORM 3 - Blank Summary

SW7470A

Laboratory:	Sterling Labs	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	Hg Hydra II # 2	Calibration:	EF30046
Sequence:	S3F0199		

Lab Sample ID	Analyte	Found	Units	LOQ	Qual
S3F0199-ICB1	Mercury, Dissolved (dissolved)		ug/L	0.500	U
S3F0199-CCB1	Mercury, Dissolved (dissolved)		ug/L	0.500	U
B3F0309-BLK1	Mercury, Dissolved (dissolved)		mg/L	0.00050	U
S3F0199-CCB2	Mercury, Dissolved (dissolved)		ug/L	0.500	U
S3F0199-CCB3	Mercury, Dissolved (dissolved)		ug/L	0.500	U
S3F0199-CCB4	Mercury, Dissolved (dissolved)		ug/L	0.500	U

FORM 3 - Blank Summary

SW7470A

Laboratory:	Sterling Labs	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	Hg Hydra II # 2	Calibration:	EF30070
Sequence:	S3F0275		

Lab Sample ID	Analyte	Found	Units	LOQ	Qual
S3F0275-ICB1	Mercury, Dissolved (dissolved)		ug/L	0.500	U
S3F0275-CCB1	Mercury, Dissolved (dissolved)		ug/L	0.500	U
S3F0275-CCB2	Mercury, Dissolved (dissolved)		ug/L	0.500	U
S3F0275-CCB3	Mercury, Dissolved (dissolved)		ug/L	0.500	U
S3F0275-CCB4	Mercury, Dissolved (dissolved)		ug/L	0.500	U

FORM 3 - Blank Summary

SW7470A

Laboratory:	Sterling Labs	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	Hg Hydra II # 2	Calibration:	EF30126
Sequence:	S3F0463		

Lab Sample ID	Analyte	Found	Units	LOQ	Qual
S3F0463-ICB1	Mercury, Dissolved (dissolved)		ug/L	0.500	U
S3F0463-CCB1	Mercury, Dissolved (dissolved)		ug/L	0.500	U
B3F0863-BLK1	Mercury, Dissolved (dissolved)		mg/L	0.00050	U
S3F0463-CCB2	Mercury, Dissolved (dissolved)		ug/L	0.500	U
S3F0463-CCB3	Mercury, Dissolved (dissolved)		ug/L	0.500	U
S3F0463-CCB4	Mercury, Dissolved (dissolved)		ug/L	0.500	U
S3F0463-CCB5	Mercury, Dissolved (dissolved)		ug/L	0.500	U
S3F0463-CCB6	Mercury, Dissolved (dissolved)		ug/L	0.500	U
S3F0463-CCB7	Mercury, Dissolved (dissolved)		ug/L	0.500	U
S3F0463-CCB8	Mercury, Dissolved (dissolved)		ug/L	0.500	U
S3F0463-CCB9	Mercury, Dissolved (dissolved)		ug/L	0.500	U

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Analysis Method:	SW7470A
Prep Batch:	B3F0309	Prep Method:	245-7470_HG_PREP
Percent Solids:		Laboratory ID:	B3F0309-MS1
		Source Sample ID:	23F0136-12

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Mercury, Dissolved (dissolved)	0.002000	ND	0.00204	102	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	QC LIMITS RPD	QC LIMITS REC.
Mercury, Dissolved (dissolved)	0.002000	0.00204	102	0.245	20	75 - 125

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Analysis Method:	SW7470A
Prep Batch:	B3F0482	Prep Method:	245-7470_HG_PREP
Percent Solids:	94.27	Laboratory ID:	B3F0482-MS1
		Source Sample ID:	23F0431-01

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Mercury, Dissolved (dissolved)	0.002000	ND	0.00210	105	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	QC LIMITS RPD	QC LIMITS REC.
Mercury, Dissolved (dissolved)	0.002000	0.00208	104	1.33	20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

6547WW03

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Analysis Method:	SW7470A
Prep Batch:	B3F0482	Prep Method:	245-7470_HG_PREP
Percent Solids:		Laboratory ID:	B3F0482-MS2
		Source Sample ID:	23F0196-12

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.		QC LIMITS REC.
Mercury, Dissolved (dissolved)	0.002000	ND	ND	0	*	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	QC LIMITS RPD	QC LIMITS REC.
Mercury, Dissolved (dissolved)	0.002000	0.00242	121		20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Analysis Method:	SW7470A
Prep Batch:	B3F0482	Prep Method:	245-7470_HG_PREP
Percent Solids:		Laboratory ID:	B3F0482-MS3
		Source Sample ID:	23F0398-01

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Mercury, Dissolved (dissolved)	0.002000	ND	0.00232	116	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	QC LIMITS RPD	QC LIMITS REC.
Mercury, Dissolved (dissolved)	0.002000	0.00224	112	3.78	20	75 - 125

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Analysis Method:	SW7470A
Prep Batch:	B3F0863	Prep Method:	245-7470_HG_PREP
Percent Solids:	89.06	Laboratory ID:	B3F0863-MS1
		Source Sample ID:	23F0621-01

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Mercury, Dissolved (dissolved)	0.002000	ND	0.00219	110	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	QC LIMITS RPD	QC LIMITS REC.
Mercury, Dissolved (dissolved)	0.002000	0.00234	117	6.70	20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

6547WW03

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Analysis Method:	SW7470A
Prep Batch:	B3F0863	Prep Method:	245-7470_HG_PREP
Percent Solids:		Laboratory ID:	B3F0863-MS2
		Source Sample ID:	23F0196-12RE1

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Mercury, Dissolved (dissolved)	0.002000	ND	0.00232	116	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	QC LIMITS RPD	QC LIMITS REC.
Mercury, Dissolved (dissolved)	0.002000	0.00221	110	5.04	20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Analysis Method:	SW7470A
Prep Batch:	B3F0863	Prep Method:	245-7470_HG_PREP
Percent Solids:		Laboratory ID:	B3F0863-MS3
		Source Sample ID:	23F0525-05

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Mercury, Dissolved (dissolved)	0.002000	0.00035	0.00271	118	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	QC LIMITS RPD	QC LIMITS REC.
Mercury, Dissolved (dissolved)	0.002000	0.00256	111	5.72	20	75 - 125

* Values outside of QC limits

POST DIGEST SPIKE SAMPLE RECOVERY

SW7470A

6547WW03

Laboratory: Sterling Labs
Client: HDR
Matrix: Water
Batch: B3F0482
Preparation: 245-7470_HG_PREP

SDG: 23F0196
Project: Longhorn AAP
Laboratory ID: B3F0482-PS1
Lab Source ID: 23F0196-12
Initial/Final: 25 ml / 25.1 ml

Source Sample Name: 6547WW03
% Solids:

Analyte	Control Limit %R	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R
Mercury, Dissolved	80 - 120	2.66	-0.0454	1.992	133 *

* Values outside of QC limits

POST DIGEST SPIKE SAMPLE RECOVERY

SW7470A

Post Spike

Laboratory: Sterling Labs
Client: HDR
Matrix: Water
Batch: B3F0482
Preparation: 245-7470_HG_PREP

SDG: 23F0196
Project: Longhorn AAP
Laboratory ID: B3F0482-PS2
Lab Source ID: 23F0398-01
Initial/Final: 25 ml / 25.1 ml

Source Sample Name: Post Spike
% Solids:

Analyte	Control Limit %R	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R
Mercury, Dissolved	80 - 120	2.56	-0.0272	1.992	129 *

* Values outside of QC limits

POST DIGEST SPIKE SAMPLE RECOVERY

SW7470A

6547WW03

Laboratory: Sterling Labs
Client: HDR
Matrix: Water
Batch: B3F0482
Preparation: 245-7470_HG_PREP

SDG: 23F0196
Project: Longhorn AAP
Laboratory ID: B3F0482-PS1
Lab Source ID: 23F0196-12
Initial/Final: 25 ml / 25.1 ml

Source Sample Name: 6547WW03
% Solids:

Analyte	Control Limit %R	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R
Mercury, Dissolved	80 - 120	2.66	-0.0454	1.992	133 *

* Values outside of QC limits

POST DIGEST SPIKE SAMPLE RECOVERY

SW7470A

Post Spike

Laboratory: Sterling Labs
Client: HDR
Matrix: Water
Batch: B3F0482
Preparation: 245-7470_HG_PREP

SDG: 23F0196
Project: Longhorn AAP
Laboratory ID: B3F0482-PS2
Lab Source ID: 23F0398-01
Initial/Final: 25 ml / 25.1 ml

Source Sample Name: Post Spike
% Solids:

Analyte	Control Limit %R	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R
Mercury, Dissolved	80 - 120	2.56	-0.0272	1.992	129 *

* Values outside of QC limits

POST DIGEST SPIKE SAMPLE RECOVERY

SW7470A

6547WW03

Laboratory: Sterling Labs
Client: HDR
Matrix: Water
Batch: B3F0482
Preparation: 245-7470_HG_PREP

SDG: 23F0196
Project: Longhorn AAP
Laboratory ID: B3F0482-PS1
Lab Source ID: 23F0196-12
Initial/Final: 25 ml / 25.1 ml

Source Sample Name: 6547WW03
% Solids:

Analyte	Control Limit %R	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R
Mercury, Dissolved	80 - 120	2.66	-0.0454	1.992	133 *

* Values outside of QC limits

POST DIGEST SPIKE SAMPLE RECOVERY

SW7470A

Post Spike

Laboratory: Sterling Labs
Client: HDR
Matrix: Water
Batch: B3F0482
Preparation: 245-7470_HG_PREP

SDG: 23F0196
Project: Longhorn AAP
Laboratory ID: B3F0482-PS2
Lab Source ID: 23F0398-01
Initial/Final: 25 ml / 25.1 ml

Source Sample Name: Post Spike
% Solids:

Analyte	Control Limit %R	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R
Mercury, Dissolved	80 - 120	2.56	-0.0272	1.992	129 *

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

SW7470A

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Prep Method:	245-7470_HG_PREP
Prep Batch:	B3F0309	Lab Sample ID:	B3F0309-BS1

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Mercury, Dissolved (dissolved)	0.005000	0.00499	99.9	87.6 - 112

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

SW7470A

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Prep Method:	245-7470_HG_PREP
Prep Batch:	B3F0482	Lab Sample ID:	B3F0482-BS1

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Mercury, Dissolved (dissolved)	0.005000	0.00537	107	87.6 - 112

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

SW7470A

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Prep Method:	245-7470_HG_PREP
Prep Batch:	B3F0863	Lab Sample ID:	B3F0863-BS1

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Mercury, Dissolved (dissolved)	0.005000	0.00533	107	87.6 - 112

* Values outside of QC limits

PREPARATION BENCH SHEET
ME

Print Date/Time: 06/12/2023

B3F0309

Matrix: Water

Prepared using: ME - 245-7470_HG_PREP

Analyses
7470_MERCURY_DISSOLVED

Surrogate Solution(s)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
B3F0309-BLK1	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0309-BS1	06/09/23 12:58	50	50	3050521		250		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0309-MRL1	06/09/23 12:58	50	50	3050520		200		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0309-MS1	06/09/23 12:58	50	50	3050521	23F0136-12	100		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94 :					**Prepared By**: ES1
B3F0309-MSD1	06/09/23 12:58	50	50	3050521	23F0136-12	100		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94 :					**Prepared By**: ES1
23F0136-06 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94 :					**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							
23F0136-07 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94 :					**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							
23F0136-08 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94 :					**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							
23F0136-09 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94 :					**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							
23F0136-10 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94 :					**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							
23F0136-11 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94 :					**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							
23F0136-12 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94 :					**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							

PREPARATION BENCH SHEET
ME

Print Date/Time: 06/12/2023

B3F0309

(Continued)

Matrix: Water

Prepared using: ME - 245-7470_HG_PREP

Analyses
7470_MERCURY_DISSOLVED

Surrogate Solution(s)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0136-13 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94	:				**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							
23F0136-14 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94	:				**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							
23F0136-15 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94	:				**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							
23F0196-01 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94	:				**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							
23F0196-02 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94	:				**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							
23F0196-03 B	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94	:				**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							
23F0196-04 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94	:				**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							
23F0196-05 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94	:				**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							
23F0196-06 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94	:				**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							
23F0196-07 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94	:				**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							
23F0196-08 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94	:				**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							

PREPARATION BENCH SHEET
ME

Print Date/Time: 06/12/2023

B3F0309

(Continued)

Matrix: Water

Prepared using: ME - 245-7470_HG_PREP

Analyses
7470_MERCURY_DISSOLVED

Surrogate Solution(s)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0196-09 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94	:				**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							
23F0196-10 E	06/09/23 12:58	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:**	**pH:** 94	:				**Prepared By**: ES1
Special Analytes:	Mercury, Dissolved							

Spiking Solution(s)

3050520	MERCURY 125 PPB ICV CHECK
3050521	MERCURY 1000 PPB LCS/MS/MSD

Reagents / Equipment

Standard	Description	LotNum
2090624	Nitric Acid HNO3 - Metals	62082
2100069	pH paper 0-14 mbd	225320a
3040514	Hydrochloric Acid HCL	23a1362009
3050121	CYLINDERS 100 ml 2202231	2211204
3050375	Sulfuric acid H2SO4	62252
3050454	5% K2S2O8	1003376829
3050724	10% HCL	23A1362009
3050828	10% KMNO4	1003366985
3050890	SNCL2	22240209
3050895	NH2OH.HCL	2LF0424

PREPARATION BENCH SHEET
ME

Print Date/Time: 06/16/2023

B3F0482

Matrix: Water

Prepared using: ME - 245-7470_HG_PREP

Analyses
245.1_MERCURY
7470_MERCURY_DISSOLVED
7470_MERCURY_TCLP

Surrogate Solution(s)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
B3F0482-BLK1	06/15/23 13:00	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0482-BS1	06/15/23 13:00	50	50	3060713		250		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0482-MRL1	06/15/23 13:00	50	50	3060714		200		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0482-MS1	06/15/23 13:00	50	50	3060713	23F0431-01	100		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0482-MS2	06/15/23 13:00	50	50	3060713	23F0196-12	100		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0482-MS3	06/15/23 13:00	50	50	3060713	23F0398-01	100		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0482-MSD1	06/15/23 13:00	50	50	3060713	23F0431-01	100		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0482-MSD2	06/15/23 13:00	50	50	3060713	23F0196-12	100		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0482-MSD3	06/15/23 13:00	50	50	3060713	23F0398-01	100		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0482-PS1	06/15/23 13:00	25	25.1	3060712	23F0196-12	100		[Spk] 50ml->50ml; 25ml->25.1ml; Spiked 25.1ml
Position:	**Hot Block:**	**Temperature:**	**pH:** :					**Prepared By**: ES1
B3F0482-PS2	06/15/23 13:00	25	25.1	3060712	23F0398-01	100		[Spk] 50ml->50ml; 25ml->25.1ml; Spiked 25.1ml
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
23F0196-12 E	06/15/23 11:23	50	50					Added for BatchQC in: B3F0482 BatchQC
Position:	**Hot Block:**	**Temperature:**	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury, Mercury, Dissolved							
23F0398-01 A	06/15/23 13:00	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury, Mercury, Dissolved							

PREPARATION BENCH SHEET
ME

Print Date/Time: 06/16/2023

B3F0482

(Continued)

Matrix: Water

Prepared using: ME - 245-7470_HG_PREP

Analyses
245.1_MERCURY
7470_MERCURY_DISSOLVED
7470_MERCURY_TCLP

Surrogate Solution(s)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0414-01 A	06/15/23 13:00	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0429-01 A	06/15/23 13:00	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0430-01 A	06/15/23 13:00	10	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0431-01 A 01	06/15/23 11:23	50	50					Added for BatchQC in: B3F0482 BatchQC
Position:	**Hot Block:**	**Temperature:**	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury, Mercury, Dissolved							
23F0434-01 A	06/15/23 13:00	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0444-01 A	06/15/23 13:00	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0448-01 A	06/15/23 13:00	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							

PREPARATION BENCH SHEET
ME

Print Date/Time: 06/16/2023

B3F0482

(Continued)

Matrix: Water

Prepared using: ME - 245-7470_HG_PREP

Analyses

245.1_MERCURY
7470_MERCURY_DISSOLVED
7470_MERCURY_TCLP

Surrogate Solution(s)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments

Spiking Solution(s)

3060712	MERCURY CALIBRATION 500 PPB
3060713	MERCURY 1000 PPB LCS/MS/MSD
3060714	MERCURY 125 PPB ICV CHECK

Reagents / Equipment

Standard	Description	LotNum
2090624	Nitric Acid HNO3 - Metals	62082
2100069	pH paper 0-14 mbd	225320a
3040514	Hydrochloric Acid HCL	23a1362009
3050121	CYLINDERS 100 ml 2202231	2211204
3050375	Sulfuric acid H2SO4	62252
3050454	5% K2S2O8	1003376829
3060348	10% KMNO4	1003366985
3060479	10% HCL	23A1362009
3060484	NH2OH.HCL	2LF0424
3060761	SNCL2	22240209

PREPARATION BENCH SHEET
ME

Print Date/Time: 06/28/2023

B3F0863

Matrix: Water

Prepared using: ME - 245-7470_HG_PREP

Analyses
245.1_MERCURY
7470_MERCURY_DISSOLVED
7470_MERCURY_TCLP

Surrogate Solution(s)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
B3F0863-BLK1	06/27/23 08:26	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0863-BS1	06/27/23 08:26	50	50	3060713		250		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0863-LBK1	06/27/23 08:26	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0863-LBK2	06/27/23 08:26	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0863-MRL1	06/27/23 08:26	50	50	3060714		200		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0863-MS1	06/27/23 08:26	50	50	3060713	23F0621-01	100		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0863-MS2	06/27/23 08:26	50	50	3060713	23F0196-12RE1	100		
Position:	**Hot Block:**	**Temperature:**	**pH:** :					**Prepared By**: ES1
B3F0863-MS3	06/27/23 08:26	50	50	3060713	23F0525-05	100		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0863-MSD1	06/27/23 08:26	50	50	3060713	23F0621-01	100		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
B3F0863-MSD2	06/27/23 08:26	50	50	3060713	23F0196-12RE1	100		
Position:	**Hot Block:**	**Temperature:**	**pH:** :					**Prepared By**: ES1
B3F0863-MSD3	06/27/23 08:26	50	50	3060713	23F0525-05	100		
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
23F0196-12RE1 E	06/27/23 08:26	50	50					Added for BatchQC in: B3F0863 BatchQC
Position:	**Hot Block:**	**Temperature:**	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury, Mercury, Dissolved							
23F0515-01 A	06/27/23 08:26	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							

PREPARATION BENCH SHEET
ME

Print Date/Time: 06/28/2023

B3F0863

(Continued)

Matrix: Water

Prepared using: ME - 245-7470_HG_PREP

Analyses
245.1_MERCURY
7470_MERCURY_DISSOLVED
7470_MERCURY_TCLP

Surrogate Solution(s)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0525-05 A	06/27/23 08:26	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury, Mercury, Dissolved							
23F0525-06 A	06/27/23 08:26	50	50					
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-07 A	06/27/23 08:26	25	50					Dilution required due to expected high reading
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-07RE1 A	06/27/23 08:26	25	50					Added 6/28/2023 by ES1
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-08 A	06/27/23 08:26	25	50					Dilution required due to expected high reading
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-08RE1 A	06/27/23 08:26	25	50					Added 6/28/2023 by ES1
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-08RE2 A	06/27/23 08:26	25	50					Added 6/28/2023 by ES1
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-10 A	06/27/23 08:26	10	50					Dilution required due to expected high reading
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-10RE1 A	06/27/23 08:26	10	50					Added 6/28/2023 by ES1
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-10RE2 A	06/27/23 08:26	10	50					Added 6/28/2023 by ES1
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							

PREPARATION BENCH SHEET
ME

Print Date/Time: 06/28/2023

B3F0863

(Continued)

Matrix: Water

Prepared using: ME - 245-7470_HG_PREP

Analyses
245.1_MERCURY
7470_MERCURY_DISSOLVED
7470_MERCURY_TCLP

Surrogate Solution(s)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0525-11 A	06/27/23 08:26	10	50					Dilution required due to expected high reading
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-11RE1 A	06/27/23 08:26	10	50					Added 6/28/2023 by ES1
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-11RE2 A	06/27/23 08:26	10	50					Added 6/28/2023 by ES1
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-12 A	06/27/23 08:26	25	50					Dilution required due to expected high reading
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-12RE1 A	06/27/23 08:26	25	50					Added 6/28/2023 by ES1
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-12RE2 A	06/27/23 08:26	25	50					Added 6/28/2023 by ES1
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-13 A	06/27/23 08:26	10	50					Dilution required due to expected high reading
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-13RE1 A	06/27/23 08:26	10	50					Added 6/28/2023 by ES1
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-13RE2 A	06/27/23 08:26	10	50					Added 6/28/2023 by ES1
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							

PREPARATION BENCH SHEET
ME

Print Date/Time: 06/28/2023

B3F0863

(Continued)

Matrix: Water

Prepared using: ME - 245-7470_HG_PREP

Analyses
245.1_MERCURY
7470_MERCURY_DISSOLVED
7470_MERCURY_TCLP

Surrogate Solution(s)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0525-14 A	06/27/23 08:26	10	50					Dilution required due to expected high reading
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-14RE1 A	06/27/23 08:26	10	50					Added 6/28/2023 by ES1
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-14RE2 A	06/27/23 08:26	10	50					Added 6/28/2023 by ES1
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-15 A	06/27/23 08:26	25	50					Dilution required due to expected high reading
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-15RE1 A	06/27/23 08:26	25	50					Added 6/28/2023 by ES1
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-15RE2 A	06/27/23 08:26	25	50					Added 6/28/2023 by ES1
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-16 A	06/27/23 08:26	25	50					Dilution required due to expected high reading
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-16RE1 A	06/27/23 08:26	25	50					Added 6/28/2023 by ES1
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							
23F0525-16RE2 A	06/27/23 08:26	25	50					Added 6/28/2023 by ES1
Position:	**Hot Block:** Hot Block 24 # 3	**Temperature:** 94	**pH:** :					**Prepared By**: ES1
Special Analytes:	Mercury							

PREPARATION BENCH SHEET
ME

Print Date/Time: 06/28/2023

B3F0863

(Continued)

Matrix: Water

Prepared using: ME - 245-7470_HG_PREP

Analyses
245.1_MERCURY
7470_MERCURY_DISSOLVED
7470_MERCURY_TCLP

Surrogate Solution(s)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0553-01 A 02	06/27/23 08:26	1	50					dilution required due to the KMnO4 requirement in SOP
Position: **Hot Block:** Hot Block 24 # 3 **Temperature:** 94 **pH:** :								**Prepared By**: ES1
Special Analytes: Mercury								
23F0593-01 A 01	06/27/23 08:26	45	50					Used all the sample up
Position: **Hot Block:** Hot Block 24 # 3 **Temperature:** 94 **pH:** :								**Prepared By**: ES1
Special Analytes: Mercury								
23F0621-01 A 03	06/27/23 08:26	50	50					Added for BatchQC in: B3F0863 BatchQC
Position: **Hot Block:** **Temperature:** **pH:** :								**Prepared By**: ES1
Special Analytes: Mercury, Mercury, Dissolved								
23F0624-01 A 01	06/27/23 08:26	50	50					
Position: **Hot Block:** Hot Block 24 # 3 **Temperature:** 94 **pH:** :								**Prepared By**: ES1
Special Analytes: Mercury								
23F0662-01 A 01	06/27/23 08:26	50	50					
Position: **Hot Block:** Hot Block 24 # 3 **Temperature:** 94 **pH:** :								**Prepared By**: ES1
Special Analytes: Mercury								
23F0665-01 A 01	06/27/23 08:26	50	50					
Position: **Hot Block:** Hot Block 24 # 3 **Temperature:** 94 **pH:** :								**Prepared By**: ES1
Special Analytes: Mercury								
23F0676-01 A 01	06/27/23 08:26	50	50					
Position: **Hot Block:** Hot Block 24 # 3 **Temperature:** 94 **pH:** :								**Prepared By**: ES1
Special Analytes: Mercury								

PREPARATION BENCH SHEET
ME

Print Date/Time: 06/28/2023

B3F0863

(Continued)

Matrix: Water

Prepared using: ME - 245-7470_HG_PREP

Analyses

245.1_MERCURY
7470_MERCURY_DISSOLVED
7470_MERCURY_TCLP

Surrogate Solution(s)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments

Spiking Solution(s)

3060713	MERCURY	1000 PPB LCS/MS/MSD
3060714	MERCURY	125 PPB ICV CHECK

Reagents / Equipment

Standard	Description	LotNum
2090624	Nitric Acid HNO3 - Metals	62082
2100069	pH paper 0-14 mbd	225320a
3040514	Hydrochloric Acid HCL	23a1362009
3050121	CYLINDERS 100 ml 2202231	2211204
3050375	Sulfuric acid H2SO4	62252
3060483	5% K2S2O8	1003376829
3060761	SNCL2	22240209
3060795	10% KMNO4	1003366985
3060895	10% HCL	23A1362009
3061139	NH2OH.HCL	2LL0243

ANALYSIS SEQUENCE SUMMARY

Dissolved Mercury by CVAA

Client: HDR
Project: Longhorn AAP

Sequence: S3F0199 Instrument: Hg Hydra II # 2
Calibration: EF30046

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Initial Cal Check (STD # 3050553)	S3F0199-ICV1	061223L-007	06/12/23 13:26
Initial Cal Blank	S3F0199-ICB1	061223L-008	06/12/23 13:28
Calibration Check (STD # 3060344)	S3F0199-CCV1	061223L-009	06/12/23 13:30
Calibration Blank	S3F0199-CCB1	061223L-010	06/12/23 13:32
Instrument RL Check (STD # 3050555)	S3F0199-CRL1	061223L-012	06/12/23 13:35
Blank	B3F0309-BLK1	061223L-013	06/12/23 13:37
LCS	B3F0309-BS1	061223L-014	06/12/23 13:39
MRL Check	B3F0309-MRL1	061223L-015	06/12/23 14:00
Matrix Spike	B3F0309-MS1	061223L-022	06/12/23 14:13
Calibration Check (STD # 3060344)	S3F0199-CCV2	061223L-023	06/12/23 14:15
Calibration Blank	S3F0199-CCB2	061223L-024	06/12/23 14:17
Matrix Spike Dup	B3F0309-MSD1	061223L-025	06/12/23 14:18
6247WW36	23F0196-01	061223L-029	06/12/23 14:26
6247WW35	23F0196-02	061223L-030	06/12/23 14:28
6247WW49	23F0196-03	061223L-031	06/12/23 14:30
6247WW32	23F0196-04	061223L-032	06/12/23 14:31
6247WW47	23F0196-05	061223L-033	06/12/23 14:33
6347WW44	23F0196-06	061223L-034	06/12/23 14:35
Calibration Check (STD # 3060344)	S3F0199-CCV3	061223L-035	06/12/23 14:37
Calibration Check (STD # 3060344)	S3F0199-CCV4	061223L-036	06/12/23 14:40
Calibration Check (STD # 3060344)	S3F0199-CCV5	061223L-037	06/12/23 14:43
Calibration Blank	S3F0199-CCB3	061223L-038	06/12/23 14:44
6347WW21	23F0196-07	061223L-039	06/12/23 14:46
63LHSMWW45	23F0196-08	061223L-040	06/12/23 14:48
6447WW60	23F0196-09	061223L-041	06/12/23 14:50
6447WW28	23F0196-10	061223L-042	06/12/23 14:52
Calibration Check (STD # 3060344)	S3F0199-CCV6	061223L-043	06/12/23 14:57
Calibration Blank	S3F0199-CCB4	061223L-044	06/12/23 14:59

ANALYSIS SEQUENCE SUMMARY

Dissolved Mercury by CVAA

Client: HDR
Project: Longhorn AAP

Sequence: S3F0275 Instrument: Hg Hydra II # 2
Calibration: EF30070

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard (STD # 3060743)	S3F0275-CAL1	061623L-001	06/16/23 10:02
Cal Standard (STD # 3060745)	S3F0275-CAL2	061623L-002	06/16/23 10:04
Cal Standard (STD # 3060746)	S3F0275-CAL3	061623L-003	06/16/23 10:06
Cal Standard (STD # 3060748)	S3F0275-CAL4	061623L-004	06/16/23 10:07
Cal Standard (STD # 3060749)	S3F0275-CAL5	061623L-005	06/16/23 10:09
Cal Standard (STD # 3060750)	S3F0275-CAL6	061623L-006	06/16/23 10:11
Initial Cal Check (STD # 3060751)	S3F0275-ICV1	061623L-007	06/16/23 10:13
Initial Cal Blank	S3F0275-ICB1	061623L-008	06/16/23 10:15
Calibration Check (STD # 3060749)	S3F0275-CCV1	061623L-009	06/16/23 10:17
Calibration Blank	S3F0275-CCB1	061623L-010	06/16/23 10:18
MRL Check	B3F0482-MRL1	061623L-011	06/16/23 10:20
Instrument RL Check (STD # 3060752)	S3F0275-CRL1	061623L-012	06/16/23 10:22
Initial Cal Check (STD # 3060751)	S3F0275-ICV2	061623L-013	06/16/23 10:25
LCS	B3F0482-BS1	061623L-016	06/16/23 10:36
Matrix Spike	B3F0482-MS1	061623L-019	06/16/23 10:52
Matrix Spike Dup	B3F0482-MSD1	061623L-020	06/16/23 10:54
6547WW03	23F0196-12	061623L-021	06/16/23 10:56
6547WW03	B3F0482-MS2	061623L-022	06/16/23 10:58
6547WW03	B3F0482-MSD2	061623L-024	06/16/23 11:09
Calibration Check (STD # 3060749)	S3F0275-CCV2	061623L-026	06/16/23 11:13
Calibration Blank	S3F0275-CCB2	061623L-027	06/16/23 11:15
Matrix Spike	B3F0482-MS3	061623L-028	06/16/23 11:17
Matrix Spike Dup	B3F0482-MSD3	061623L-029	06/16/23 11:18
6547WW03	B3F0482-PS1	061623L-035	06/16/23 11:30
Post Spike	B3F0482-PS2	061623L-036	06/16/23 11:31
Calibration Check (STD # 3060749)	S3F0275-CCV3	061623L-038	06/16/23 11:36
Calibration Blank	S3F0275-CCB3	061623L-039	06/16/23 11:38
Calibration Check (STD # 3060749)	S3F0275-CCV4	061623L-041	06/16/23 11:41
Calibration Blank	S3F0275-CCB4	061623L-042	06/16/23 11:43
Calibration Check (STD # 3060749)	S3F0275-CCV5	061623L-043	06/16/23 11:44
Calibration Check (STD # 3060749)	S3F0275-CCV6	061623L-044	06/16/23 11:47

ANALYSIS SEQUENCE SUMMARY

Dissolved Mercury by CVAA

Client: HDR
Project: Longhorn AAP

Sequence: S3F0463 Instrument: Hg Hydra II # 2
Calibration: EF30126

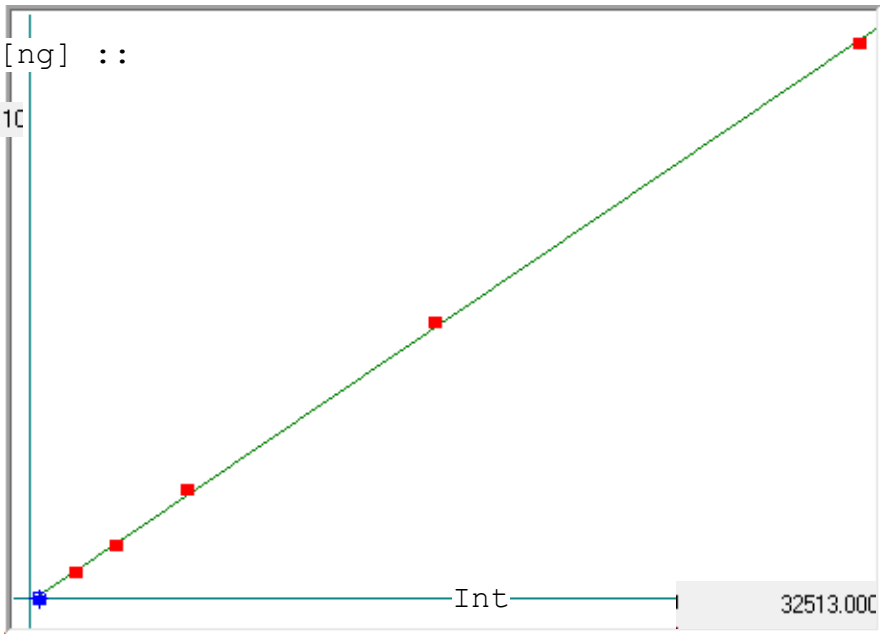
Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Initial Cal Check (STD # 3061301)	S3F0463-ICV1	062723L-007	06/27/23 10:29
Initial Cal Blank	S3F0463-ICB1	062723L-008	06/27/23 10:31
Calibration Check (STD # 3061299)	S3F0463-CCV1	062723L-009	06/27/23 10:33
Calibration Blank	S3F0463-CCB1	062723L-010	06/27/23 10:35
MRL Check	B3F0863-MRL1	062723L-011	06/27/23 10:37
Instrument RL Check (STD # 3061302)	S3F0463-CRL1	062723L-012	06/27/23 10:39
Blank	B3F0863-BLK1	062723L-013	06/27/23 10:40
LCS	B3F0863-BS1	062723L-014	06/27/23 10:42
Leach Fluid Blank	B3F0863-LBK1	062723L-015	06/27/23 10:48
Leach Fluid Blank	B3F0863-LBK2	062723L-016	06/27/23 10:50
Matrix Spike	B3F0863-MS1	062723L-018	06/27/23 10:54
Matrix Spike Dup	B3F0863-MSD1	062723L-019	06/27/23 10:56
Calibration Check (STD # 3061299)	S3F0463-CCV2	062723L-023	06/27/23 11:03
Calibration Blank	S3F0463-CCB2	062723L-024	06/27/23 11:05
6547WW03	23F0196-12RE1	062723L-028	06/27/23 11:12
6547WW03	B3F0863-MS2	062723L-030	06/27/23 11:16
6547WW03	B3F0863-MSD2	062723L-031	06/27/23 11:18
Matrix Spike	B3F0863-MS3	062723L-033	06/27/23 11:22
Matrix Spike Dup	B3F0863-MSD3	062723L-034	06/27/23 11:23
Calibration Check (STD # 3061299)	S3F0463-CCV3	062723L-035	06/27/23 11:25
Calibration Blank	S3F0463-CCB3	062723L-036	06/27/23 11:27
Calibration Check (STD # 3061299)	S3F0463-CCV4	062723L-047	06/27/23 11:47
Calibration Blank	S3F0463-CCB4	062723L-048	06/27/23 11:49
Calibration Check (STD # 3061299)	S3F0463-CCV5	062723L-056	06/27/23 12:21
Calibration Blank	S3F0463-CCB5	062723L-057	06/27/23 12:22
Calibration Check (STD # 3061299)	S3F0463-CCV6	062723L-059	06/27/23 12:26
Calibration Blank	S3F0463-CCB6	062723L-060	06/27/23 12:28
Calibration Check (STD # 3061299)	S3F0463-CCV7	062723L-063	06/27/23 12:33
Calibration Blank	S3F0463-CCB7	062723L-064	06/27/23 12:34
Calibration Check (STD # 3061299)	S3F0463-CCV8	062723L-072	06/27/23 12:57
Calibration Blank	S3F0463-CCB8	062723L-073	06/27/23 12:59
Calibration Check (STD # 3061299)	S3F0463-CCV9	062723L-075	06/27/23 13:03
Calibration Blank	S3F0463-CCB9	062723L-076	06/27/23 13:05

EF30046

True value for cal standard	Measured concentration of the cal std,	% Relative Error	Recovery Acceptance range		Recovery Evaluation
ppm	ppm	%	Low%	High%	
0.5	0.524	4.80	-30	30	TRUE
1	1.028	2.80	-30	30	TRUE
2	1.895	-5.25	-30	30	TRUE
5	4.901	-1.98	-10	10	TRUE
10	10.063	0.63	-10	10	TRUE

HG WATER

Linear



A= 0.0000e+000

B= 3.1095e-004

C= -4.6551e-002

Rho= 0.9997667

Accept=Accepted

Accepted Date=

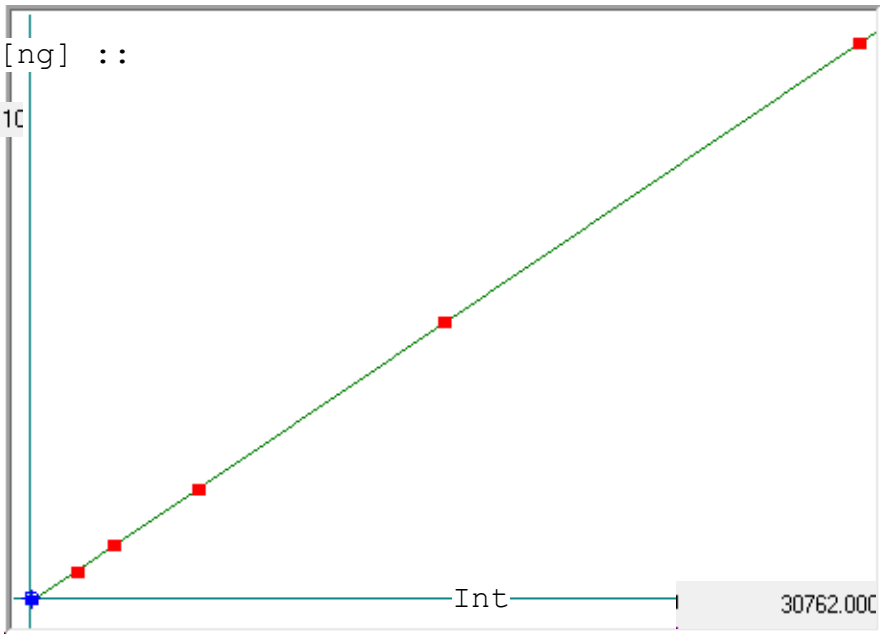
06/12/23 13:26

Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
Blank	0.000	0.089	0.089	437	0.000	437				
0.5	0.500	0.524	0.024	1834	0.0 %	1834				
1	1.000	1.028	0.028	3455	0.0 %	3455				
2	2.000	1.895	-0.105	6245	0.0 %	6245				
5	5.000	4.901	-0.099	15910	0.0 %	15910				
10	10.000	10.063	0.063	32513	0.0 %	32513				

EF30070

True value for cal standard	Measured concentration of the cal std,	% Relative Error	Recovery Acceptance range		Recovery Evaluation
ppm	ppm	%	Low%	High%	
0.5	0.548	9.60	-30	30	TRUE
1	0.983	-1.70	-30	30	TRUE
2	2.002	0.10	-30	30	TRUE
5	4.978	-0.44	-10	10	TRUE
10	10.009	0.09	-10	10	TRUE

HG WATER



Linear

A= 0.0000e+000

B= 3.2716e-004

C= -5.4794e-002

Rho= 0.9999753

Accept= Accepted

Accepted Date=

06/16/23 10:13

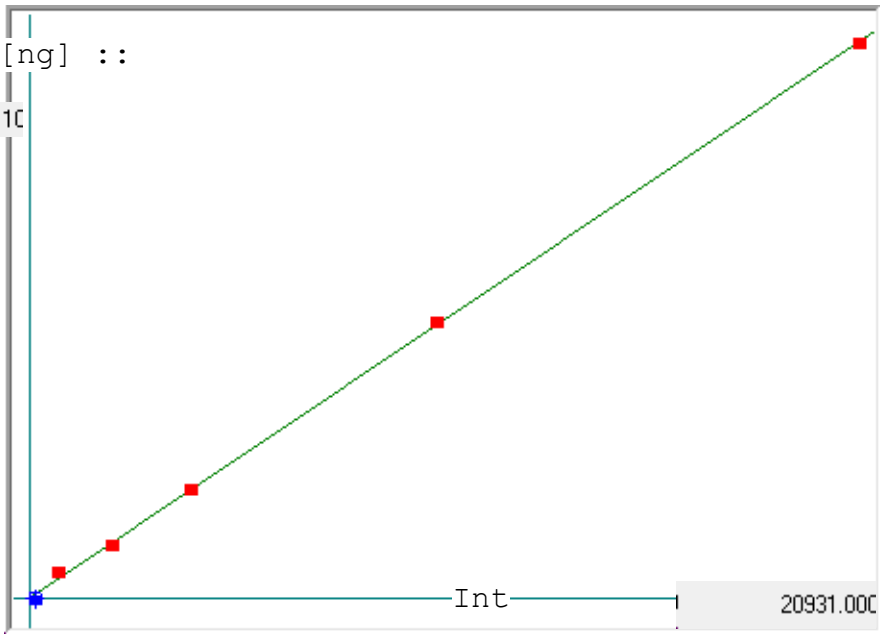
Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
Blank	0.000	-0.021	-0.021	103	0.000	103				
0.5	0.500	0.548	0.048	1843	0.0 %	1843				
1	1.000	0.983	-0.017	3172	0.0 %	3172				
2	2.000	2.002	0.002	6288	0.0 %	6288				
5	5.000	4.978	-0.022	15384	0.0 %	15384				
10	10.000	10.009	0.009	30762	0.0 %	30762				

EF30126

True value for cal standard	Measured concentration of the cal std,	% Relative Error	Recovery Acceptance range		Recovery Evaluation
ppm	ppm	%	Low%	High%	
0.5	0.395	-21.00	-30	30	TRUE
1	1.027	2.70	-30	30	TRUE
2	1.983	-0.85	-30	30	TRUE
5	4.95	-1.00	-10	10	TRUE
10	10.028	0.28	-10	10	TRUE

HG WATER

Linear



A= 0.0000e+000

B= 4.7761e-004

C= 3.0899e-002

Rho= 0.9998023

Accept=Accepted

Accepted Date=

06/27/23 10:29

Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
Blank	0.000	0.117	0.117	180	0.000	180				
0.5	0.500	0.395	-0.105	762	0.0 %	762				
1	1.000	1.027	0.027	2085	0.0 %	2085				
2	2.000	1.983	-0.017	4088	0.0 %	4088				
5	5.000	4.950	-0.050	10300	0.0 %	10300				
10	10.000	10.028	0.028	20931	0.0 %	20931				

Report Title

01220768

Method: HG WATER Operator: IGORELIK Date of Analysis: 12 Jun 2023 13:11:10

Type	Sample ID	Extended ID	Conc.	µ Abs.	Units	Date	Curve Type	Method
S	Blank - 1		-	437	ppb	12 Jun 2023 13:15:35	-	HG WATER
S	0.5 - 1		-	1834	ppb	12 Jun 2023 13:17:27	-	HG WATER
S	1 - 1		-	3455	ppb	12 Jun 2023 13:19:20	-	HG WATER
S	2 - 1		-	6245	ppb	12 Jun 2023 13:21:12	-	HG WATER
S	5 - 1		-	15910	ppb	12 Jun 2023 13:23:04	-	HG WATER
S	10 - 1		-	32513	ppb	12 Jun 2023 13:24:55	-	HG WATER
C	SEQ-ICV - 1		(L)94.9% 4.7473	15417	ppb	12 Jun 2023 13:26:46	Linear	HG WATER
C	SEQ-ICB - 1		0.0567	332	ppb	12 Jun 2023 13:28:36	Linear	HG WATER
C	SEQ-CCV - 1		97.5% 4.8773	15835	ppb	12 Jun 2023 13:30:26	Linear	HG WATER
C	SEQ-CCB - 1		0.0673	366	ppb	12 Jun 2023 13:32:17	Linear	HG WATER
C	SEQ-MRL - 1		120.6% 0.6030	2089	ppb	12 Jun 2023 13:34:08	Linear	HG WATER
C	SEQ-CRL - 1		115.9% 0.5794	2013	ppb	12 Jun 2023 13:35:58	Linear	HG WATER
U	B3F0309-BLK1 - 1	7470 DISS	0.0921	446	ppb	12 Jun 2023 13:37:48	Linear	HG WATER
U	B3F0309-BS1 - 1	5.0 PPB	4.9945	16212	ppb	12 Jun 2023 13:39:38	Linear	HG WATER
U	23F0136-06 - 1		0.0632	353	ppb	12 Jun 2023 14:00:27	Linear	HG WATER
U	23F0136-07 - 1		-0.0316	48	ppb	12 Jun 2023 14:02:18	Linear	HG WATER
U	23F0136-08 - 1		-0.0366	32	ppb	12 Jun 2023 14:04:08	Linear	HG WATER
U	23F0136-09 - 1		-0.0394	23	ppb	12 Jun 2023 14:05:58	Linear	HG WATER
U	23F0136-10 - 1		-0.0375	29	ppb	12 Jun 2023 14:07:49	Linear	HG WATER
U	23F0136-11 - 1		-0.0385	26	ppb	12 Jun 2023 14:09:40	Linear	HG WATER
U	23F0136-12 - 1		-0.0310	50	ppb	12 Jun 2023 14:11:31	Linear	HG WATER
U	B3F0309-MS1 - 1	23F0136-12	2.0427	6719	ppb	12 Jun 2023 14:13:22	Linear	HG WATER
C	SEQ-CCV - 1		91.8% 4.5921	14918	ppb	12 Jun 2023 14:15:14	Linear	HG WATER
C	SEQ-CCB - 1		0.0526	319	ppb	12 Jun 2023 14:17:06	Linear	HG WATER
U	B3F0309-MSD1 - 1	23F0136-12	2.0377	6703	ppb	12 Jun 2023 14:18:56	Linear	HG WATER
U	23F0136-13 - 1		-0.0410	18	ppb	12 Jun 2023 14:20:49	Linear	HG WATER
U	23F0136-14 - 1		-0.0207	83	ppb	12 Jun 2023 14:22:41	Linear	HG WATER
U	23F0136-15 - 1		-0.0382	27	ppb	12 Jun 2023 14:24:32	Linear	HG WATER
U	23F0196-01 - 1		-0.0403	20	ppb	12 Jun 2023 14:26:23	Linear	HG WATER
U	23F0196-02 - 1		-0.0332	43	ppb	12 Jun 2023 14:28:13	Linear	HG WATER
U	23F0196-03 - 1		-0.0366	32	ppb	12 Jun 2023 14:30:04	Linear	HG WATER
U	23F0196-04 - 1		-0.0363	33	ppb	12 Jun 2023 14:31:54	Linear	HG WATER
U	23F0196-05 - 1		-0.0332	43	ppb	12 Jun 2023 14:33:45	Linear	HG WATER
U	23F0196-06 - 1		-0.0310	50	ppb	12 Jun 2023 14:35:36	Linear	HG WATER
C	SEQ-CCV - 1		(L)86.7% 4.3328	14084	ppb	12 Jun 2023 14:37:27	Linear	HG WATER
C	SEQ-CCV - 1		109.6% 5.4777	17766	ppb	12 Jun 2023 14:40:15	Linear	HG WATER
C	SEQ-CCV - 1		105.1% 5.2532	17044	ppb	12 Jun 2023 14:43:03	Linear	HG WATER
C	SEQ-CCB - 1		0.0741	388	ppb	12 Jun 2023 14:44:54	Linear	HG WATER
U	23F0196-07 - 1		-0.0438	9	ppb	12 Jun 2023 14:46:44	Linear	HG WATER
U	23F0196-08 - 1		-0.0403	20	ppb	12 Jun 2023 14:48:36	Linear	HG WATER
U	23F0196-09 - 1		-0.0434	10	ppb	12 Jun 2023 14:50:28	Linear	HG WATER
U	23F0196-10 - 1		-0.0322	46	ppb	12 Jun 2023 14:52:20	Linear	HG WATER
C	SEQ-CCV - 1		109.5% 5.4731	17751	ppb	12 Jun 2023 14:57:53	Linear	HG WATER
C	SEQ-CCB - 1		0.0663	363	ppb	12 Jun 2023 14:59:45	Linear	HG WATER

HYDRA II #2
B3F0309
S3F0199
RUN BY: ES1
06/12/2023

Rack	Cup	Sample ID	Extended ID	Wt.	Vol.	Cup Action
1	1	B3F0309-BLK1	7470 DISS	1.0000	1.0000	
1	2	B3F0309-BS1	5.0 PPB	1.0000	1.0000	
1	3	23F0136-06		1.0000	1.0000	
1	4	23F0136-07		1.0000	1.0000	
1	5	23F0136-08		1.0000	1.0000	
1	6	23F0136-09		1.0000	1.0000	
1	7	23F0136-10		1.0000	1.0000	
1	8	23F0136-11		1.0000	1.0000	
1	9	23F0136-12		1.0000	1.0000	
1	10	B3F0309-MS1	23F0136-12	1.0000	1.0000	
1	11	B3F0309-MSD1	23F0136-12	1.0000	1.0000	
1	12	23F0136-13		1.0000	1.0000	
1	13	23F0136-14		1.0000	1.0000	
1	14	23F0136-15		1.0000	1.0000	
1	15	23F0196-01		1.0000	1.0000	
1	16	23F0196-02		1.0000	1.0000	
1	17	23F0196-03		1.0000	1.0000	
1	18	23F0196-04		1.0000	1.0000	
1	19	23F0196-05		1.0000	1.0000	
1	20	23F0196-06		1.0000	1.0000	
1	21	23F0196-07		1.0000	1.0000	
1	22	23F0196-08		1.0000	1.0000	
1	23	23F0196-09		1.0000	1.0000	
1	24	23F0196-10		1.0000	1.0000	
1	25	WASTE 1		1.0000	1.0000	
1	26	WASTE 2		1.0000	1.0000	
1	27			1.0000	1.0000	
1	28			1.0000	1.0000	
1	29			1.0000	1.0000	
1	30			1.0000	1.0000	
1	31			1.0000	1.0000	
1	32			1.0000	1.0000	
1	33			1.0000	1.0000	
1	34			1.0000	1.0000	
1	35			1.0000	1.0000	
1	36			1.0000	1.0000	
1	37			1.0000	1.0000	

Mercury in Waste Water. SW-846 # 7470 A ; US EPA # 245.1

Instrument HYDRA AA SN# HA-1005 HYDRA II AA SN# 3009

Protocol of prepartion batch # B3F0309 Time in: 9:00:00AM Time out: 1(11:00:00 AM

Date: 06/12/23 **Prepared by:** ES1 **Hot Block Temperature = 94°C**

Mercury Hot Block SC150 Serial # 2017CECW4609 Termometer #F95-616

Pipettes: #64, #Hg-1, #GB-1, #AB-1, #78

Calibration Standards	D.I. water ml.	**Hg 500 ug /L *** ml.	H2SO4 conc. ml.	HNO3 conc. ml.	10% KMnO4 ml.	5 % K2S2O8 ml.	NH2OH*HCl ml.
Calibration/Method blank	50.00	0.00	2.5	1.25	15	4.0	6.0
0.5 ug/l	49.95	0.05	2.5	1.25	15	4.0	6.0
1.0 ug/l	49.90	0.10	2.5	1.25	15	4.0	6.0
2.0 ug/l	49.80	0.20	2.5	1.25	15	4.0	6.0
5.0 ug/l/CCV	49.50	0.50	2.5	1.25	15	4.0	6.0
10.0 ug/l	49.00	1.00	2.5	1.25	15	4.0	6.0
		Hg 125 ug /L *					
0.5 ug/l (check standard)	49.80	0.20	2.5	1.25	15	4.0	6.0

QC samples	D.I. water ml	**Hg 1000 ug /l**** ml	H2SO4 conc. ml	HNO3 conc. ml	10% KMnO4 ml	5 % K2S2O8 ml	NH2OH*HCl ml
LCS/ICV 5 ug/l	49.75	0.25	2.5	1.25	15	4.0	6.0
Spike 2 ug/l	Sample	0.10	2.5	1.25	15	4.0	6.0

Extra _____mL10% KMnO4 is added to the samples and standards

Extra ____mL NH2OH*HCl is added to the samples and standards

Note: Add 0.8 ml of NH2OH*HCl per each additional 1 mL of 10% KMnO4.

Traceability

*** Hg 500 ug/l**	3050519
**** Hg 1000 ug/l**	3050521
***** Hg 125 ug/l**	3050520
SnCl2:	3050890
10% KMno4 :	3050828
NH2OH*HCl :	3050895
H2SO4conc:	3050375
K2S2O8:	3050454
HNO3 conc.:	2090624
Comments:	

Abbreviations:

t	TCLP
b/t/f1/11/27	Blank,TCLP, Fluid 1, date
b/t/s	Blank, TCLP, spike (LCS for TCLP)

Report Title

01220771

Method: HG WATER Operator: IGORELIK Date of Analysis: 15 Jun 2023 11:29:25

Type	Sample ID	Extended ID	Conc.	µ Abs.	Units	Date	Curve Type	Method
S	Blank - 1		-	103	ppb	16 Jun 2023 10:02:16	-	HG WATER
S	0.5 - 1		-	1843	ppb	16 Jun 2023 10:04:08	-	HG WATER
S	1 - 1		-	3172	ppb	16 Jun 2023 10:06:01	-	HG WATER
S	2 - 1		-	6288	ppb	16 Jun 2023 10:07:53	-	HG WATER
S	5 - 1		-	15384	ppb	16 Jun 2023 10:09:45	-	HG WATER
S	10 - 1		-	30762	ppb	16 Jun 2023 10:11:36	-	HG WATER
C	SEQ-ICV - 1		(H)109.0% 5.4490	16823	ppb	16 Jun 2023 10:13:26	Linear	HG WATER
C	SEQ-ICB - 1		-0.0492	17	ppb	16 Jun 2023 10:15:16	Linear	HG WATER
C	SEQ-CCV - 1		102.6% 5.1297	15847	ppb	16 Jun 2023 10:17:07	Linear	HG WATER
C	SEQ-CCB - 1		-0.0443	32	ppb	16 Jun 2023 10:18:59	Linear	HG WATER
C	SEQ-MRL - 1		99.6% 0.4978	1689	ppb	16 Jun 2023 10:20:49	Linear	HG WATER
C	SEQ-CRL - 1		95.7% 0.4785	1630	ppb	16 Jun 2023 10:22:39	Linear	HG WATER
C	SEQ-ICV - 1		102.0% 5.0980	15750	ppb	16 Jun 2023 10:25:27	Linear	HG WATER
C	SEQ-ICV - 1		102.1% 5.1049	15771	ppb	16 Jun 2023 10:27:44	Linear	HG WATER
U	B3F0482-BLK - 1	7470 DISS / TCLP / 245.1	-0.0289	79	ppb	16 Jun 2023 10:34:21	Linear	HG WATER
U	B3F0482-BS1 - 1	5.0 PPB	5.3686	16577	ppb	16 Jun 2023 10:36:11	Linear	HG WATER
U	B3F0482-LBK1 - 1	B3F0437	-0.0420	39	ppb	16 Jun 2023 10:48:49	Linear	HG WATER
U	23F0431-01 - 1		-0.0404	44	ppb	16 Jun 2023 10:50:39	Linear	HG WATER
U	B3F0482-MS1 - 1	23F0431-01	2.1038	6598	ppb	16 Jun 2023 10:52:30	Linear	HG WATER
U	B3F0482-MSD1 - 1	23F0431-01	2.0760	6513	ppb	16 Jun 2023 10:54:20	Linear	HG WATER
U	23F0196-12 - 1		-0.0456	28	ppb	16 Jun 2023 10:56:11	Linear	HG WATER
U	B3F0482-MS2 - 1	23F0196-12	-0.0548	0	ppb	16 Jun 2023 10:58:02	Linear	HG WATER
U	B3F0482-MS2 - 1	23F0196-12	2.5190	7867	ppb	16 Jun 2023 11:07:45	Linear	HG WATER
U	B3F0482-MSD2 - 1	23F0196-12	2.4248	7579	ppb	16 Jun 2023 11:09:37	Linear	HG WATER
U	23F0398-01 - 1		-0.0273	84	ppb	16 Jun 2023 11:11:28	Linear	HG WATER
C	SEQ-CCV - 1		98.2% 4.9122	15182	ppb	16 Jun 2023 11:13:20	Linear	HG WATER
C	SEQ-CCB - 1		-0.0447	31	ppb	16 Jun 2023 11:15:12	Linear	HG WATER
U	B3F0482-MS3 - 1	23F0398-01	2.3214	7263	ppb	16 Jun 2023 11:17:02	Linear	HG WATER
U	B3F0482-MSD3 - 1	23F0398-01	2.2353	7000	ppb	16 Jun 2023 11:18:54	Linear	HG WATER
U	23F0414-01 - 1		-0.0070	146	ppb	16 Jun 2023 11:20:47	Linear	HG WATER
U	23F0429-01 - 1		0.0093	196	ppb	16 Jun 2023 11:22:38	Linear	HG WATER
U	23F0444-01 - 1		0.2282	865	ppb	16 Jun 2023 11:24:29	Linear	HG WATER
U	23F0448-01 - 1		-0.0155	120	ppb	16 Jun 2023 11:26:20	Linear	HG WATER
U	23F0434-01 - 1		-0.0411	42	ppb	16 Jun 2023 11:28:10	Linear	HG WATER
U	B3F0482-PS1 - 1	23F0196-12	2.6564	8287	ppb	16 Jun 2023 11:30:01	Linear	HG WATER
U	B3F0482-PS2 - 1	23F0398-01	2.5599	7992	ppb	16 Jun 2023 11:31:52	Linear	HG WATER
U	23F0430-01 - 1		2.6662	8317	ppb	16 Jun 2023 11:33:43	Linear	HG WATER
C	SEQ-CCV - 1		93.5% 4.6740	14454	ppb	16 Jun 2023 11:36:20	Linear	HG WATER
C	SEQ-CCB - 1		-0.0401	45	ppb	16 Jun 2023 11:38:11	Linear	HG WATER
U	23F0430-01RE1 - 1		2.7172	8473	ppb	16 Jun 2023 11:40:01	Linear	HG WATER
C	SEQ-CCV - 1		(L)89.4% 4.4725	13838	ppb	16 Jun 2023 11:41:53	Linear	HG WATER
C	SEQ-CCB - 1		-0.0548	0	ppb	16 Jun 2023 11:43:44	Linear	HG WATER
C	SEQ-CCV - 1		99.6% 4.9809	15392	ppb	16 Jun 2023 11:44:48	Linear	HG WATER
C	SEQ-CCV - 1		96.0% 4.8016	14844	ppb	16 Jun 2023 11:47:07	Linear	HG WATER

HYDRA II #2
B3F0482
S3F0275
RUN BY: ES1
06/16/2023

Rack	Cup	Sample ID	Extended ID	Wt.	Vol.	Cup Action
1	1	B3F0482-BLK	7470 DISS / TCLP	1.0000	1.0000	
1	2	B3F0482-BS1	5.0 PPB	1.0000	1.0000	
1	3	B3F0482-LBK1	B3F0437	1.0000	1.0000	
1	4	23F0431-01		1.0000	1.0000	
1	5	B3F0482-MS1	23F0431-01	1.0000	1.0000	
1	6	B3F0482-MSD1	23F0431-01	1.0000	1.0000	
1	7	23F0196-12		1.0000	1.0000	
1	8	B3F0482-MS2	23F0196-12	1.0000	1.0000	
1	9	B3F0482-MSD2	23F0196-12	1.0000	1.0000	
1	10	23F0398-01		1.0000	1.0000	
1	11	B3F0482-MS3	23F0398-01	1.0000	1.0000	
1	12	B3F0482-MSD3	23F0398-01	1.0000	1.0000	
1	13	23F0414-01		1.0000	1.0000	
1	14	23F0429-01		1.0000	1.0000	
1	15	23F0444-01		1.0000	1.0000	
1	16	23F0448-01		1.0000	1.0000	
1	17	23F0434-01		1.0000	1.0000	
1	18	B3F0482-PS1	23F0196-12	1.0000	1.0000	
1	19	B3F0482-PS2	23F0398-01	1.0000	1.0000	
1	20	23F0430-01		1.0000	1.0000	
1	21	23F0430-01RE1		1.0000	1.0000	
1	22			1.0000	1.0000	
1	23			1.0000	1.0000	
1	24			1.0000	1.0000	
1	25			1.0000	1.0000	
1	26			1.0000	1.0000	
1	27			1.0000	1.0000	
1	28			1.0000	1.0000	
1	29			1.0000	1.0000	
1	30			1.0000	1.0000	
1	31			1.0000	1.0000	
1	32			1.0000	1.0000	
1	33			1.0000	1.0000	
1	34			1.0000	1.0000	
1	35			1.0000	1.0000	
1	36			1.0000	1.0000	
1	37			1.0000	1.0000	

Method: HG WATER Operator: IGORELIK Date of Analysis: 27 Jun 2023 09:12:50

Type	Sample ID	Extended ID	Conc.	µ Abs.	Units	Date	Curve Type	Method
S	Blank - 1		-	180	ppb	27 Jun 2023 10:18:40	-	HG WATER
S	0.5 - 1		-	762	ppb	27 Jun 2023 10:20:32	-	HG WATER
S	1 - 1		-	2085	ppb	27 Jun 2023 10:22:25	-	HG WATER
S	2 - 1		-	4088	ppb	27 Jun 2023 10:24:17	-	HG WATER
S	5 - 1		-	10300	ppb	27 Jun 2023 10:26:09	-	HG WATER
S	10 - 1		-	20931	ppb	27 Jun 2023 10:28:00	-	HG WATER
C	SEQ-ICV - 1		103.6% 5.1815	10784	ppb	27 Jun 2023 10:29:50	Linear	HG WATER
C	SEQ-ICB - 1		0.0362	11	ppb	27 Jun 2023 10:31:40	Linear	HG WATER
C	SEQ-CCV - 1		100.6% 5.0296	10466	ppb	27 Jun 2023 10:33:30	Linear	HG WATER
C	SEQ-CCB - 1		-0.1024	-279	ppb	27 Jun 2023 10:35:22	Linear	HG WATER
C	SEQ-MRL - 1		110.5% 0.5525	1092	ppb	27 Jun 2023 10:37:12	Linear	HG WATER
C	SEQ-CRL - 1		118.8% 0.5940	1179	ppb	27 Jun 2023 10:39:01	Linear	HG WATER
U	B3F0863-BLK1 - 1	7470 DISS / TCLP / 245.1	-0.1129	-301	ppb	27 Jun 2023 10:40:51	Linear	HG WATER
U	B3F0863-BS1 - 1	5.0 PPB	5.3276	11090	ppb	27 Jun 2023 10:42:42	Linear	HG WATER
U	B3F0863-LBK1 - 1	B3F0740	0.0705	83	ppb	27 Jun 2023 10:48:41	Linear	HG WATER
U	B3F0863-LBK2 - 1	B3F0794	0.1121	170	ppb	27 Jun 2023 10:50:31	Linear	HG WATER
U	23F0621-01 - 1		0.1398	228	ppb	27 Jun 2023 10:52:22	Linear	HG WATER
U	B3F0863-MS1 - 1	23F0621-01	2.1902	4521	ppb	27 Jun 2023 10:54:12	Linear	HG WATER
U	B3F0863-MSD1 - 1	23F0621-01	2.3421	4839	ppb	27 Jun 2023 10:56:02	Linear	HG WATER
U	23F0624-01 - 1		0.0543	49	ppb	27 Jun 2023 10:57:54	Linear	HG WATER
U	23F0662-01 - 1		0.1718	295	ppb	27 Jun 2023 10:59:45	Linear	HG WATER
U	23F0676-01 - 1		0.0180	-27	ppb	27 Jun 2023 11:01:36	Linear	HG WATER
C	SEQ-CCV - 1		103.2% 5.1614	10742	ppb	27 Jun 2023 11:03:28	Linear	HG WATER
C	SEQ-CCB - 1		0.0075	-49	ppb	27 Jun 2023 11:05:20	Linear	HG WATER
U	23F0665-01 - 1		0.0338	6	ppb	27 Jun 2023 11:07:10	Linear	HG WATER
U	23F0553-01 - 1		0.0003	-64	ppb	27 Jun 2023 11:09:02	Linear	HG WATER
U	23F0593-01 - 1		0.3648	699	ppb	27 Jun 2023 11:10:55	Linear	HG WATER
U	23F0196-12RE1 - 1		0.1002	145	ppb	27 Jun 2023 11:12:45	Linear	HG WATER
U	23F0515-01 - 1		0.0720	86	ppb	27 Jun 2023 11:14:36	Linear	HG WATER
U	B3F0863-MS2 - 1	23F0515-01	2.3201	4793	ppb	27 Jun 2023 11:16:27	Linear	HG WATER
U	B3F0863-MSD2 - 1	23F0515-01	2.2060	4554	ppb	27 Jun 2023 11:18:18	Linear	HG WATER
U	23F0525-05 - 1		0.3480	664	ppb	27 Jun 2023 11:20:08	Linear	HG WATER
U	B3F0863-MS3 - 1	23F0525-05	2.7146	5619	ppb	27 Jun 2023 11:22:01	Linear	HG WATER
U	B3F0863-MSD3 - 1	23F0525-05	2.5637	5303	ppb	27 Jun 2023 11:23:52	Linear	HG WATER
C	SEQ-CCV - 1		99.4% 4.9680	10337	ppb	27 Jun 2023 11:25:43	Linear	HG WATER
C	SEQ-CCB - 1		-0.0388	-146	ppb	27 Jun 2023 11:27:34	Linear	HG WATER
U	23F0525-06 - 1		0.4311	838	ppb	27 Jun 2023 11:29:24	Linear	HG WATER
U	23F0525-07@100 - 1	DF 100	0.4316	839	ppb	27 Jun 2023 11:31:16	Linear	HG WATER
U	23F0525-08@100 - 1	DF 100	0.1828	318	ppb	27 Jun 2023 11:33:07	Linear	HG WATER
U	23F0525-12@1000 - 1	DF 1,000	0.1398	228	ppb	27 Jun 2023 11:34:59	Linear	HG WATER
U	23F0525-15@1000 - 1	DF 1,000	0.2377	433	ppb	27 Jun 2023 11:36:52	Linear	HG WATER
U	23F0525-16@1000 - 1	DF 1,000	0.1603	271	ppb	27 Jun 2023 11:38:43	Linear	HG WATER
U	23F0525-10@10000 - 1	DF 10,000	0.2917	546	ppb	27 Jun 2023 11:40:33	Linear	HG WATER
U	23F0525-11@10000 - 1	DF 10,000	0.1842	321	ppb	27 Jun 2023 11:42:24	Linear	HG WATER
U	23F0525-13@10000 - 1	DF 10,000	0.2224	401	ppb	27 Jun 2023 11:44:15	Linear	HG WATER
U	23F0525-14@10000 - 1	DF 10,000	0.1470	243	ppb	27 Jun 2023 11:46:05	Linear	HG WATER
C	SEQ-CCV - 1		102.6% 5.1318	10680	ppb	27 Jun 2023 11:47:56	Linear	HG WATER
C	SEQ-CCB - 1		0.0328	4	ppb	27 Jun 2023 11:49:48	Linear	HG WATER
U	23F0525-07RE1@10 - 1	DF 10	4.8835	10160	ppb	27 Jun 2023 11:51:38	Linear	HG WATER
U	23F0525-08RE1@10 - 1	DF10	0.2019	358	ppb	27 Jun 2023 11:53:29	Linear	HG WATER
U	23F0525-12RE1@100 - 1	DF 100	0.0309	0	ppb	27 Jun 2023 11:55:20	Linear	HG WATER
U	23F0525-08RE2 - 1		0.3819	735	ppb	27 Jun 2023 11:56:57	Linear	HG WATER
U	23F0525-12RE1@100 - 1	DF 100	0.2769	515	ppb	27 Jun 2023 11:58:48	Linear	HG WATER
U	23F0525-15RE1@100 - 1	DF 100	0.3695	709	ppb	27 Jun 2023 12:00:40	Linear	HG WATER
U	23F0525-16RE1@1000 - 1	DF 1,000	0.0309	0	ppb	27 Jun 2023 12:19:19	Linear	HG WATER
C	SEQ-CCV - 1		99.1% 4.9537	10307	ppb	27 Jun 2023 12:21:02	Linear	HG WATER
C	SEQ-CCB - 1		-0.0250	-117	ppb	27 Jun 2023 12:22:53	Linear	HG WATER
U	23F0525-12RE2@10 - 1	DF 10	1.7021	3499	ppb	27 Jun 2023 12:24:43	Linear	HG WATER
C	SEQ-CCV - 1		98.0% 4.8983	10191	ppb	27 Jun 2023 12:26:34	Linear	HG WATER
C	SEQ-CCB - 1		0.0309	0	ppb	27 Jun 2023 12:28:24	Linear	HG WATER
U	23F0525-15RE2@10 - 1	DF 10	2.2485	4643	ppb	27 Jun 2023 12:29:21	Linear	HG WATER
U	23F0525-16RE2@10 - 1	DF 10	1.1194	2279	ppb	27 Jun 2023 12:31:11	Linear	HG WATER
C	SEQ-CCV - 1		97.9% 4.8968	10188	ppb	27 Jun 2023 12:33:02	Linear	HG WATER
C	SEQ-CCB - 1		-0.0966	-267	ppb	27 Jun 2023 12:34:53	Linear	HG WATER
U	23F0525-10RE1@1000 - 1	DF1,000	0.2492	457	ppb	27 Jun 2023 12:44:41	Linear	HG WATER
U	23F0525-11RE1@1000 - 1	DF1,000	0.1474	244	ppb	27 Jun 2023 12:46:31	Linear	HG WATER
U	23F0525-13RE1@1000 - 1	DF1,000	0.3662	702	ppb	27 Jun 2023 12:48:23	Linear	HG WATER
U	23F0525-14RE1@1000 - 1	DF1,000	0.2960	555	ppb	27 Jun 2023 12:50:15	Linear	HG WATER
U	23F0525-10RE2@100 - 1	DF 100	2.9873	6190	ppb	27 Jun 2023 12:52:08	Linear	HG WATER
U	23F0525-11RE2@100 - 1	DF 100	1.2636	2581	ppb	27 Jun 2023 12:54:00	Linear	HG WATER
U	23F0525-13RE2@100 - 1	DF 100	3.1383	6506	ppb	27 Jun 2023 12:55:51	Linear	HG WATER
C	SEQ-CCV - 1		95.7% 4.7836	9951	ppb	27 Jun 2023 12:57:42	Linear	HG WATER
C	SEQ-CCB - 1		-0.0331	-134	ppb	27 Jun 2023 12:59:33	Linear	HG WATER
U	23F0525-14RE2@100 - 1	DF 100	1.1027	2244	ppb	27 Jun 2023 13:01:23	Linear	HG WATER
C	SEQ-CCV - 1		94.6% 4.7278	9834	ppb	27 Jun 2023 13:03:14	Linear	HG WATER
C	SEQ-CCB - 1		0.0486	37	ppb	27 Jun 2023 13:05:05	Linear	HG WATER

HYDRA II #2
B3F0863
S3F0463
RUN BY: ES1 / CS3
06/27/2023

Rack	Cup	Sample ID	Extended ID	Wt.	Vol.	Cu
1	1	B3F0863-BLK1	7470 DISS / TCLP / 245.	1.0000	1.0000	
1	2	B3F0863-BS1	5.0 PPB	1.0000	1.0000	
1	3	B3F0863-LBK1	B3F0740	1.0000	1.0000	
1	4	B3F0863-LBK2	B3F0794	1.0000	1.0000	
1	5	23F0621-01		1.0000	1.0000	
1	6	B3F0863-MS1	23F0621-01	1.0000	1.0000	
1	7	B3F0863-MSD1	23F0621-01	1.0000	1.0000	
1	8	23F0624-01		1.0000	1.0000	
1	9	23F0662-01		1.0000	1.0000	
1	10	23F0676-01		1.0000	1.0000	
1	11	23F0665-01		1.0000	1.0000	
1	12	23F0553-01		1.0000	1.0000	
1	13	23F0593-01		1.0000	1.0000	
1	14	23F0196-12RE1		1.0000	1.0000	
1	15	23F0515-01		1.0000	1.0000	
1	16	B3F0863-MS2	23F0515-01	1.0000	1.0000	
1	17	B3F0863-MSD2	23F0515-01	1.0000	1.0000	
1	18	23F0525-05		1.0000	1.0000	
1	19	B3F0863-MS3	23F0525-05	1.0000	1.0000	
1	20	B3F0863-MSD3	23F0525-05	1.0000	1.0000	
1	21	23F0525-06		1.0000	1.0000	
1	22	23F0525-07@100	DF 100	1.0000	1.0000	
1	23	23F0525-08@100	DF 100	1.0000	1.0000	
1	24	23F0525-12@1000	DF 1,000	1.0000	1.0000	
1	25	23F0525-15@1000	DF 1,000	1.0000	1.0000	
1	26	23F0525-16@1000	DF 1,000	1.0000	1.0000	
1	27	23F0525-10@10000	DF 10,000	1.0000	1.0000	
1	28	23F0525-11@10000	DF 10,000	1.0000	1.0000	
1	29	23F0525-13@10000	DF 10,000	1.0000	1.0000	
1	30	23F0525-14@10000	DF 10,000	1.0000	1.0000	
1	31	23F0525-07RE1@10	DF 10	1.0000	1.0000	
1	32	23F0525-08RE1@10	DF10	1.0000	1.0000	
1	33	23F0525-08RE2		1.0000	1.0000	
1	34	23F0525-12RE1@10	DF 100	1.0000	1.0000	
1	35	23F0525-15RE1@10	DF 100	1.0000	1.0000	
1	36	23F0525-16RE1@10	DF 100	1.0000	1.0000	
1	37	BLANK		1.0000	1.0000	

Rack	Cup	Sample ID	Extended ID	Wt.	Vol.	Cu
1	38	23F0525-12RE1@10	DF 1,000	1.0000	1.0000	
1	39	23F0525-15RE1@10	DF 1,000	1.0000	1.0000	
1	40	23F0525-16RE1@10	DF 1,000	1.0000	1.0000	
1	41	23F0525-12RE2@10	DF 10	1.0000	1.0000	
1	42	23F0525-15RE2@10	DF 10	1.0000	1.0000	
1	43	23F0525-16RE2@10	DF 10	1.0000	1.0000	
1	44	23F0525-10RE1@10	DF1,000	1.0000	1.0000	
1	45	23F0525-11RE1@10	DF1,000	1.0000	1.0000	
1	46	23F0525-13RE1@10	DF1,000	1.0000	1.0000	
1	47	23F0525-14RE1@10	DF1,000	1.0000	1.0000	
1	48	23F0525-10RE2@10	DF 100	1.0000	1.0000	
1	49	23F0525-11RE2@10	DF 100	1.0000	1.0000	
1	50	23F0525-13RE2@10	DF 100	1.0000	1.0000	
1	51	23F0525-14RE2@10	DF 100	1.0000	1.0000	
1	52			1.0000	1.0000	
1	53			1.0000	1.0000	
1	54			1.0000	1.0000	
1	55			1.0000	1.0000	
1	56			1.0000	1.0000	
1	57			1.0000	1.0000	
1	58			1.0000	1.0000	
1	59			1.0000	1.0000	
1	60			1.0000	1.0000	
2	1			1.0000	1.0000	
2	2			1.0000	1.0000	
2	3			1.0000	1.0000	
2	4			1.0000	1.0000	
2	5			1.0000	1.0000	
2	6			1.0000	1.0000	
2	7			1.0000	1.0000	
2	8			1.0000	1.0000	
2	9			1.0000	1.0000	
2	10			1.0000	1.0000	
2	11			1.0000	1.0000	
2	12			1.0000	1.0000	
2	13			1.0000	1.0000	
2	14			1.0000	1.0000	

Mercury in Waste Water. SW-846 # 7470 A ; US EPA # 245.1

Instrument HYDRA AA SN# HA-1005 HYDRA II AA SN# 3009

Protocol of prepartion batch # B3F0863 Time in: 6:00:00AM Time out: 1(8:00:00 AM

Date: 06/27/23 **Prepared by:** ES1 / CS3 **Hot Block Temperature = 94°C**

Mercury Hot Block SC150 Serial # 2017CECW4609 Termometer #F95-616

Pipettes: #64, #Hg-1, #GB-1, #AB-1, #78

Calibration Standards	D.I. water ml.	**Hg 500 ug /L *** ml.	H2SO4 conc. ml.	HNO3 conc. ml.	10% KMnO4 ml.	5 % K2S2O8 ml.	NH2OH*HCl ml.
Calibration/Method blank	50.00	0.00	2.5	1.25	15	4.0	6.0
0.5 ug/l	49.95	0.05	2.5	1.25	15	4.0	6.0
1.0 ug/l	49.90	0.10	2.5	1.25	15	4.0	6.0
2.0 ug/l	49.80	0.20	2.5	1.25	15	4.0	6.0
5.0 ug/l/CCV	49.50	0.50	2.5	1.25	15	4.0	6.0
10.0 ug/l	49.00	1.00	2.5	1.25	15	4.0	6.0
		Hg 125 ug /L *					
0.5 ug/l (check standard)	49.80	0.20	2.5	1.25	15	4.0	6.0

QC samples	D.I. water ml	**Hg 1000 ug /l**** ml	H2SO4 conc. ml	HNO3 conc. ml	10% KMnO4 ml	5 % K2S2O8 ml	NH2OH*HCl ml
LCS/ICV 5 ug/l	49.75	0.25	2.5	1.25	15	4.0	6.0
Spike 2 ug/l	Sample	0.10	2.5	1.25	15	4.0	6.0

Extra _____mL10% KMnO4 is added to the samples and standards

Extra ____mL NH2OH*HCl is added to the samples and standards

Note: Add 0.8 ml of NH2OH*HCl per each additional 1 mL of 10% KMnO4.

Traceability

*** Hg 500 ug/l**	3060712
**** Hg 1000 ug/l**	3060713
***** Hg 125 ug/l**	3060714
SnCl2:	3060761
10% KMno4 :	3060795
NH2OH*HCl :	3060484
H2SO4conc:	3050375
K2S2O8:	3060483
HNO3 conc.:	2090624
Comments:	

Abbreviations:

t	TCLP
b/t/f1/11/27	Blank,TCLP, Fluid 1, date
b/t/s	Blank, TCLP, spike (LCS for TCLP)

Analysis Class: VOA

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6247WW36

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-01	File ID:	G2230614013.D
Sampled:	06/02/23 12:10	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 13:30
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
630-20-6	1,1,1,2-Tetrachloroethane		0.130	0.400	1.00	pH >2, U
71-55-6	1,1,1-Trichloroethane		0.175	0.400	1.00	pH >2, U
79-34-5	1,1,2,2-Tetrachloroethane		0.124	0.400	1.00	pH >2, U
79-00-5	1,1,2-Trichloroethane		0.166	0.400	1.00	pH >2, U
75-34-3	1,1-Dichloroethane		0.134	0.400	1.00	pH >2, U
75-35-4	1,1-Dichloroethene		0.191	0.400	1.00	pH >2, U
563-58-6	1,1-Dichloropropene		0.140	0.400	1.00	pH >2, U
87-61-6	1,2,3-Trichlorobenzene		0.204	0.400	1.00	pH >2, U
96-18-4	1,2,3-Trichloropropane		0.183	0.400	1.00	pH >2, U
120-82-1	1,2,4-Trichlorobenzene		0.205	0.600	1.20	pH >2, U
95-63-6	1,2,4-Trimethylbenzene		0.132	0.400	1.00	pH >2, U
96-12-8	1,2-Dibromo-3-chloropropane		0.260	1.00	2.00	pH >2, U
106-93-4	1,2-Dibromoethane		0.106	0.400	1.00	pH >2, U
95-50-1	1,2-Dichlorobenzene		0.126	0.400	1.00	pH >2, U
107-06-2	1,2-Dichloroethane		0.212	0.600	1.20	pH >2, U
78-87-5	1,2-Dichloropropane		0.205	0.600	1.20	pH >2, U
108-67-8	1,3,5-Trimethylbenzene		0.100	0.400	1.00	pH >2, U
541-73-1	1,3-Dichlorobenzene		0.145	0.400	1.00	pH >2, U
142-28-9	1,3-Dichloropropane		0.136	0.400	1.00	pH >2, U
106-46-7	1,4-Dichlorobenzene		0.184	0.400	1.00	pH >2, U
594-20-7	2,2-Dichloropropane		0.184	0.400	1.00	pH >2, U
78-93-3	2-Butanone		0.660	1.40	3.50	pH >2, U
95-49-8	2-Chlorotoluene		0.147	0.400	1.00	pH >2, U
591-78-6	2-Hexanone		0.143	1.40	3.50	pH >2, U
106-43-4	4-Chlorotoluene		0.184	0.400	1.00	pH >2, U
99-87-6	4-Isopropyltoluene		0.140	0.400	1.00	pH >2, U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6247WW36

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-01	File ID:	G2230614013.D
Sampled:	06/02/23 12:10	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 13:30
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
108-10-1	4-Methyl-2-pentanone	9.96	0.270	1.40	3.50	pH >2, D
67-64-1	Acetone	17.6	1.04	4.00	8.00	pH >2, D
71-43-2	Benzene		0.101	0.400	1.00	pH >2, U
108-86-1	Bromobenzene		0.170	0.400	1.00	pH >2, U
74-97-5	Bromochloromethane		0.134	0.400	1.00	pH >2, U
75-27-4	Bromodichloromethane		0.106	0.400	1.00	pH >2, U
75-25-2	Bromoform		0.206	0.400	1.00	pH >2, U
74-83-9	Bromomethane		0.320	1.00	2.00	pH >2, U
75-15-0	Carbon disulfide		0.280	1.00	2.00	pH >2, U
56-23-5	Carbon tetrachloride		0.169	0.400	1.00	pH >2, U
108-90-7	Chlorobenzene		0.130	0.400	1.00	pH >2, U
75-00-3	Chloroethane		0.311	0.400	1.00	pH >2, U
67-66-3	Chloroform		0.203	0.600	1.20	pH >2, U
74-87-3	Chloromethane		0.384	1.00	2.00	pH >2, U
156-59-2	cis-1,2-Dichloroethene		0.205	0.600	1.20	pH >2, U
10061-01-5	cis-1,3-Dichloropropene		0.117	0.400	1.00	pH >2, U
124-48-1	Dibromochloromethane		0.152	0.400	1.00	pH >2, U
74-95-3	Dibromomethane		0.163	0.400	1.00	pH >2, U
75-71-8	Dichlorodifluoromethane		0.259	1.00	2.00	pH >2, U
100-41-4	Ethylbenzene		0.0600	0.200	0.400	pH >2, U
87-68-3	Hexachlorobutadiene		0.200	0.400	1.00	pH >2, U
98-82-8	Isopropylbenzene		0.110	0.400	1.00	pH >2, U
179601-23-1	m,p-Xylene		0.178	0.800	2.00	pH >2, U
1634-04-4	Methyl tert-butyl ether		0.106	0.400	1.00	pH >2, U
75-09-2	Methylene chloride		0.447	1.00	2.00	pH >2, U
104-51-8	n-Butylbenzene		0.260	1.00	2.00	pH >2, U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6247WW36

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-01	File ID:	G2230614013.D
Sampled:	06/02/23 12:10	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 13:30
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097	Instrument:	G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
103-65-1	n-Propylbenzene		0.126	0.400	1.00	pH >2, U
91-20-3	Naphthalene		0.140	0.400	1.00	pH >2, U
95-47-6	o-Xylene		0.0832	0.400	1.00	pH >2, U
135-98-8	sec-Butylbenzene		0.120	0.400	1.00	pH >2, U
100-42-5	Styrene		0.0906	0.200	0.400	pH >2, U
98-06-6	tert-Butylbenzene		0.0906	0.400	1.00	pH >2, U
127-18-4	Tetrachloroethene		0.357	1.00	2.00	H >2, Q,
108-88-3	Toluene		0.114	0.400	1.00	pH >2, U
156-60-5	trans-1,2-Dichloroethene		0.171	0.400	1.00	pH >2, U
10061-02-6	trans-1,3-Dichloropropene		0.117	0.400	1.00	pH >2, U
79-01-6	Trichloroethene		0.156	0.400	1.00	pH >2, U
75-69-4	Trichlorofluoromethane		0.101	0.400	1.00	pH >2, U
75-01-4	Vinyl chloride		0.258	1.00	2.00	pH >2, U

Italicized = secondary result

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614013.D
Acq On : 14 Jun 2023 13:30
Operator : PO1/MP3
Sample : 23F0196-01
Misc : 2
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 15 09:29:59 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

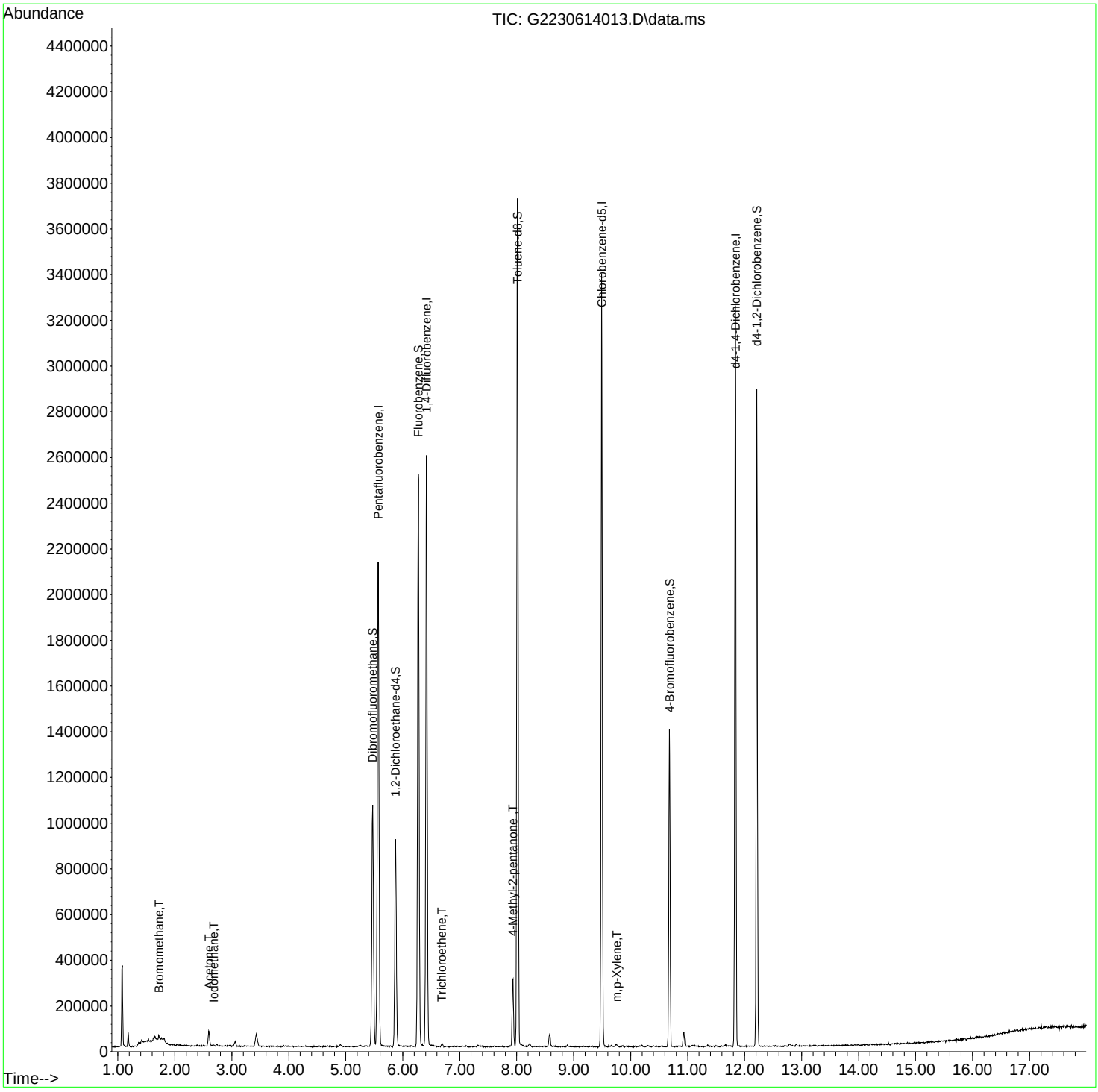
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.571	168	16761124	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.419	114	22451121	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	19689458	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.840	152	9244957	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.473	111	6696299	18.15	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 90.75%			
43) 1,2-Dichloroethane-d4	5.876	65	6440673	17.67	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 88.35%			
49) Fluorobenzene	6.276	96	24508493	19.16	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 95.80%			
64) Toluene-d8	8.015	98	24229333	19.52	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.60%			
81) 4-Bromofluorobenzene	10.683	174	4296855	9.84	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 98.40%			
97) d4-1,2-Dichlorobenzene	12.216	152	8166523	20.54	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 102.70%			
Target Compounds						Qvalue
5) Bromomethane	1.721	94	84347	0.13	ug/L #	81
12) Acetone	2.598	43	785584	8.78	ug/L	91
13) Iodomethane	2.677	142	71411	0.18	ug/L #	41
18) Methylene chloride	3.061	49	107536	Below Cal		72
21) Methyl tert-butyl ether	3.431	73	681034	Below Cal		95
50) Trichloroethene	6.683	95	34839	0.04	ug/L #	42
60) 4-Methyl-2-pentanone	7.934	43	1605404	4.98	ug/L #	81
65) Toluene	8.089	91	30468	Below Cal	#	30
74) Ethylbenzene	9.637	91	30794	Below Cal	#	44
75) m,p-Xylene	9.757	91	39367	0.04	ug/L #	36

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614013.D
Acq On : 14 Jun 2023 13:30
Operator : PO1/MP3
Sample : 23F0196-01
Misc : 2
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 15 09:29:59 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G



Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614013.D
Acq On : 14 Jun 2023 13:30
Operator : PO1/MP3
Sample : 23F0196-01
Misc : 2
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 15 09:29:59 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

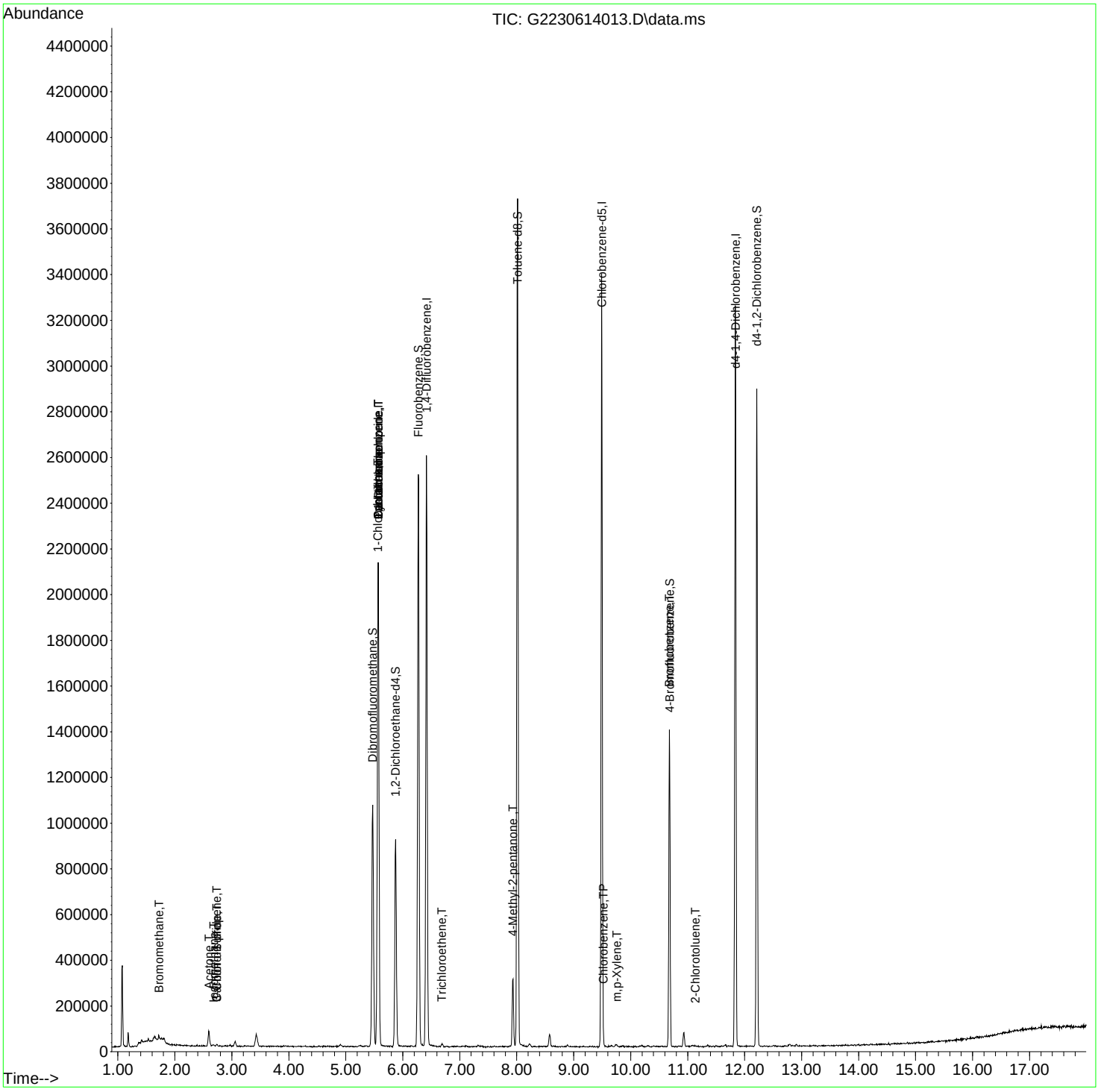
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.571	168	16761124	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.419	114	22451121	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	19689458	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.840	152	9244957	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.473	111	6696299	18.15	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 90.75%			
43) 1,2-Dichloroethane-d4	5.876	65	6440673	17.67	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 88.35%			
49) Fluorobenzene	6.276	96	24508493	19.16	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 95.80%			
64) Toluene-d8	8.015	98	24229333	19.52	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.60%			
81) 4-Bromofluorobenzene	10.683	174	4296855	9.84	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 98.40%			
97) d4-1,2-Dichlorobenzene	12.216	152	8166523	20.54	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 102.70%			
Target Compounds						Qvalue
3) Chloromethane	1.353	50	19482	Below Cal	#	41
5) Bromomethane	1.721	94	84347	0.13	ug/L #	81
12) Acetone	2.598	43	785584	8.78	ug/L	91
13) Iodomethane	2.677	142	71411	0.18	ug/L #	41
14) Carbon disulfide	2.736	76	103117	0.04	ug/L #	74
17) 3-Chloro-1-propene	2.736	76	103125	0.53	ug/L #	53
18) Methylene chloride	3.061	49	107536	Below Cal		72
21) Methyl tert-butyl ether	3.431	73	681034	Below Cal		95
40) Cyclohexane	5.566	84	396387	0.88	ug/L #	33
41) 1-Chlorobutane	5.566	56	211123	0.40	ug/L #	1
42) 1,1-Dichloropropene	5.570	75	898331	2.29	ug/L #	38
47) Carbon tetrachloride	5.570	117	1369734	3.38	ug/L #	17
50) Trichloroethene	6.683	95	34839	0.04	ug/L #	42
60) 4-Methyl-2-pentanone	7.934	43	1605404	4.98	ug/L #	81
65) Toluene	8.089	91	30468	Below Cal	#	30
72) Chlorobenzene	9.521	112	37917	0.04	ug/L #	1
74) Ethylbenzene	9.637	91	30794	Below Cal	#	44
75) m,p-Xylene	9.757	91	39367	0.04	ug/L #	36
82) Bromobenzene	10.681	77	29546	0.06	ug/L #	1
87) 2-Chlorotoluene	11.133	91	10531	0.01	ug/L #	47
99) n-Butylbenzene	12.221	91	35415	Below Cal	#	53

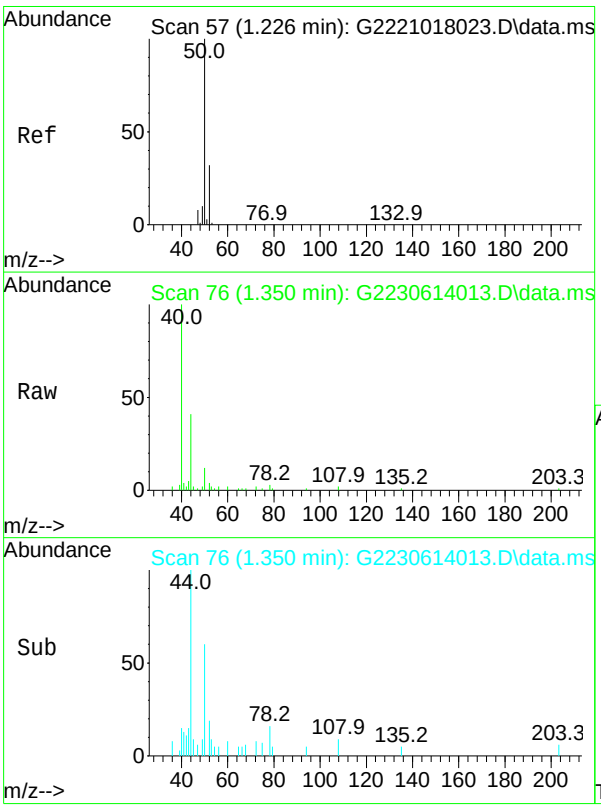
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614013.D
Acq On : 14 Jun 2023 13:30
Operator : PO1/MP3
Sample : 23F0196-01
Misc : 2
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 15 09:29:59 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

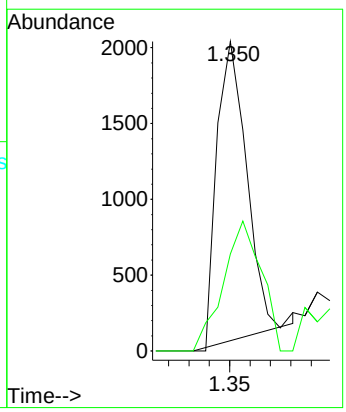


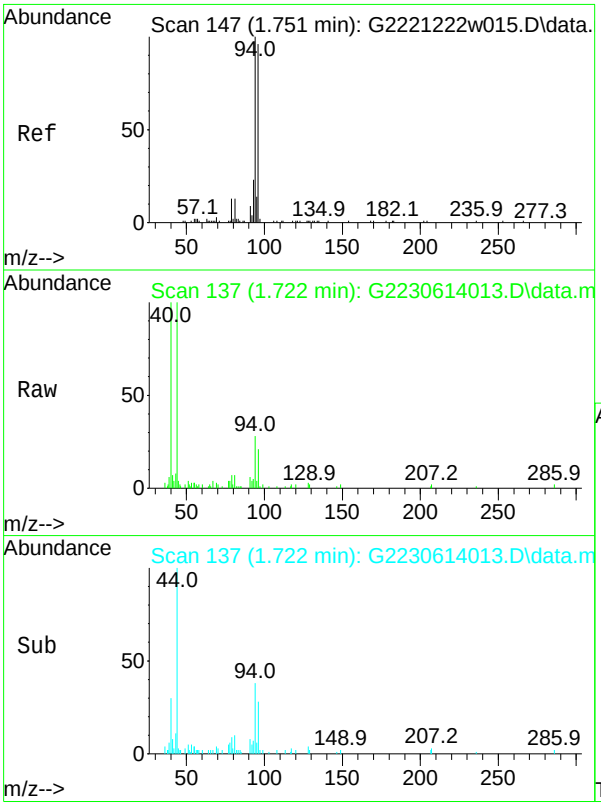


#3
Chloromethane
Concen: Below Cal
RT: 1.353 min Scan# 76
Delta R.T. -0.001 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 50 Resp: 19482

Ion	Ratio	Lower	Upper
50	100		
52	0.0	3.2	63.2#

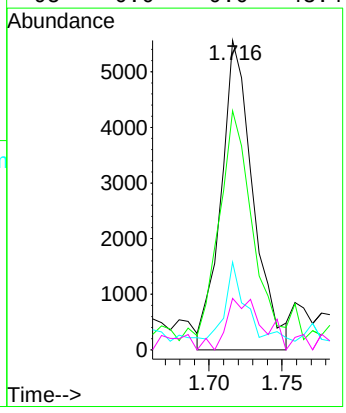


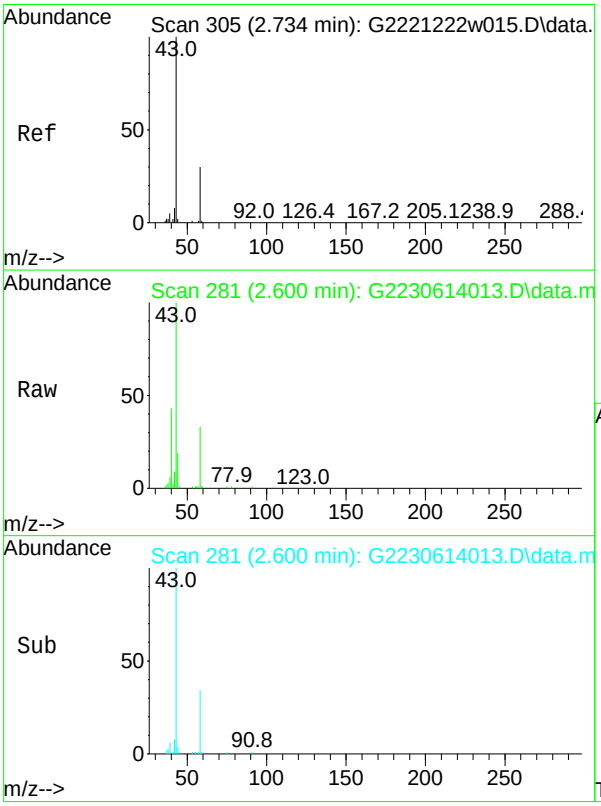


#5
Bromomethane
Concen: 0.13 ug/L
RT: 1.721 min Scan# 137
Delta R.T. 0.007 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 94 Resp: 84347

Ion	Ratio	Lower	Upper
94	100		
96	84.4	65.6	125.6
93	0.0	0.0	49.5
95	0.0	0.0	43.4

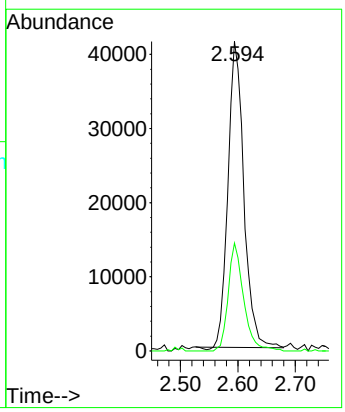


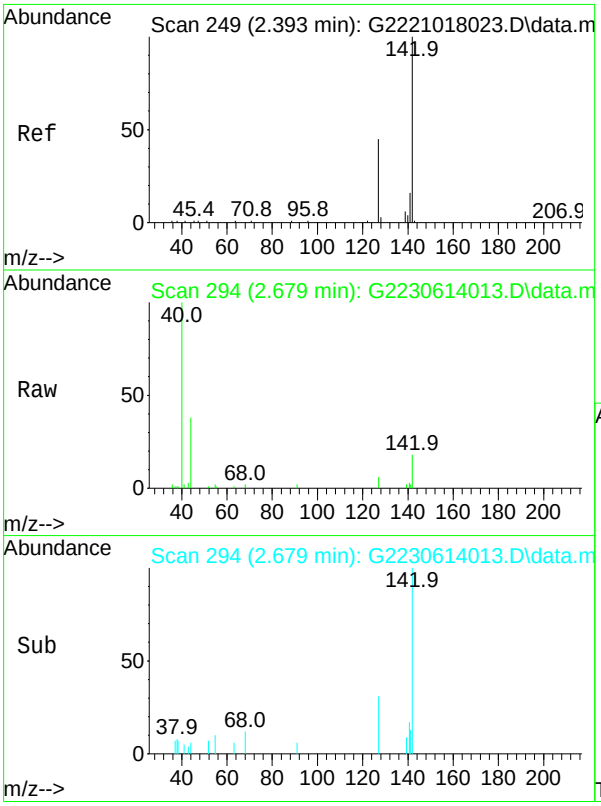


#12
Acetone
Concen: 8.78 ug/L
RT: 2.598 min Scan# 281
Delta R.T. -0.010 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 43 Resp: 785584

Ion	Ratio	Lower	Upper
43	100		
58	34.5	0.0	59.7

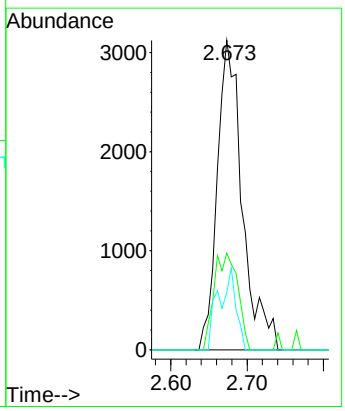


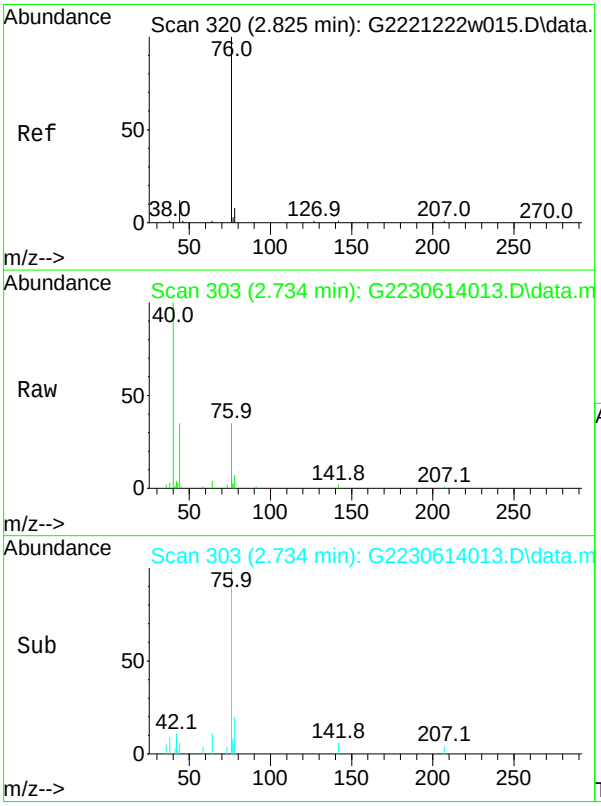


#13
Iodomethane
Concen: 0.18 ug/L
RT: 2.677 min Scan# 294
Delta R.T. 0.001 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion:142 Resp: 71411

Ion	Ratio	Lower	Upper
142	100		
127	0.0	13.3	73.3#
141	0.0	0.0	45.3

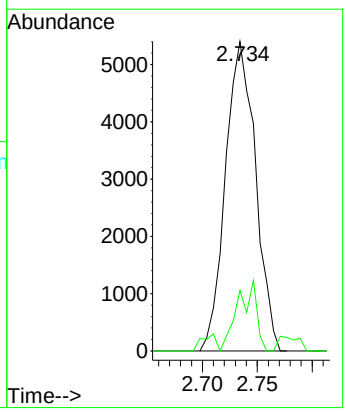


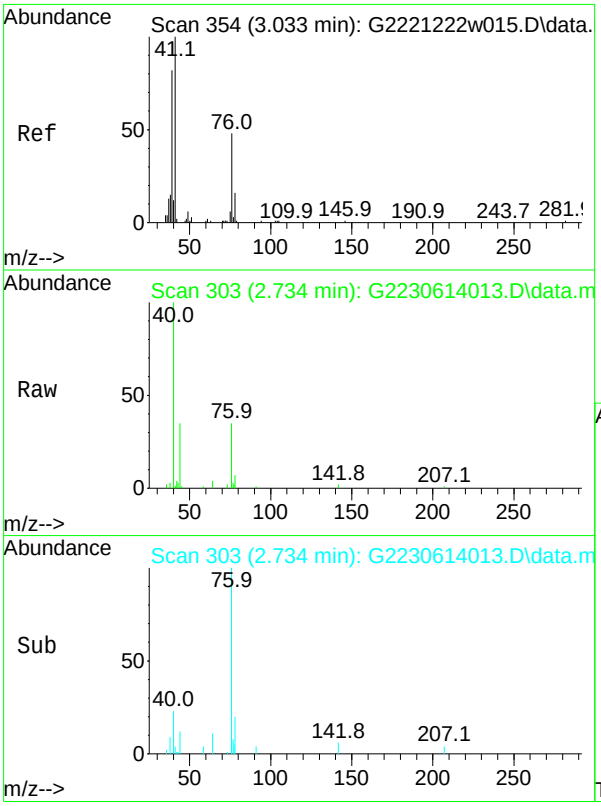


#14
Carbon disulfide
Concen: 0.04 ug/L
RT: 2.736 min Scan# 303
Delta R.T. -0.003 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 76 Resp: 103117

Ion	Ratio	Lower	Upper
76	100		
78	0.0	0.0	39.3

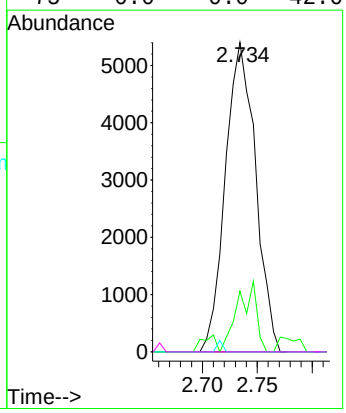


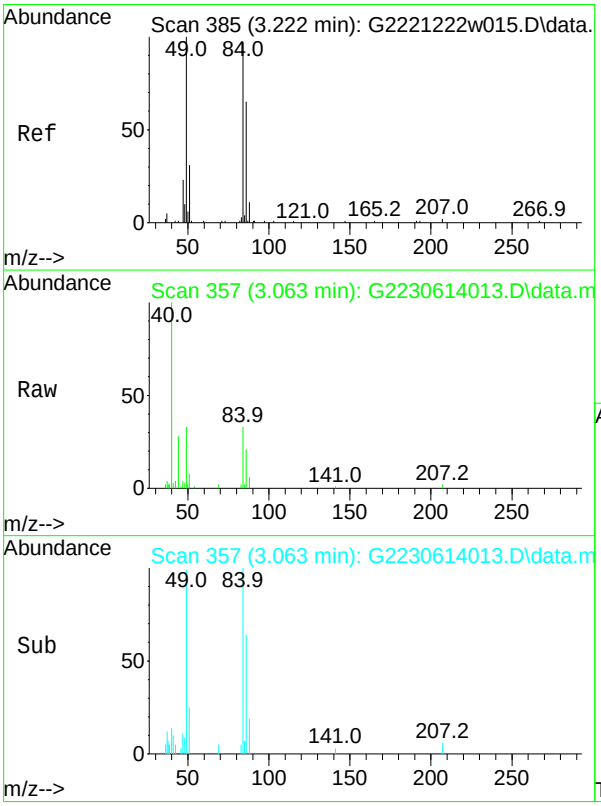


#17
3-Chloro-1-propene
Concen: 0.53 ug/L
RT: 2.736 min Scan# 303
Delta R.T. -0.184 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 76 Resp: 103125

Ion	Ratio	Lower	Upper
76	100		
78	0.0	2.4	62.4#
49	0.0	0.0	43.0
75	0.0	0.0	42.6

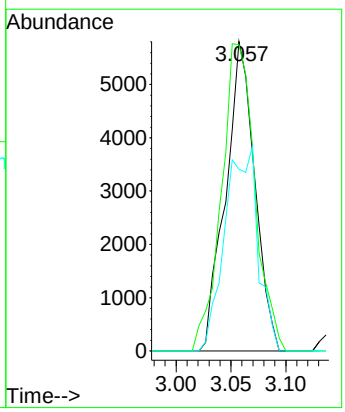


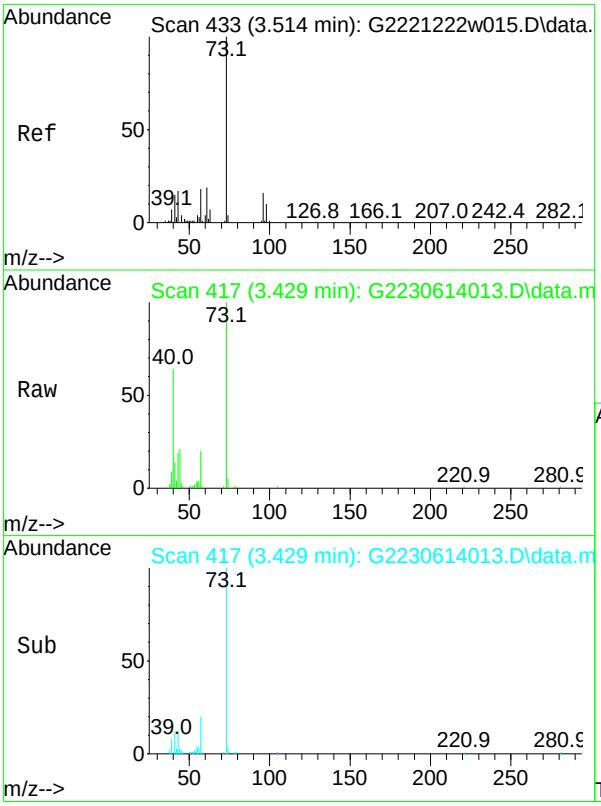


#18
Methylene chloride
Concen: Below Cal
RT: 3.061 min Scan# 357
Delta R.T. -0.001 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 49 Resp: 107536

Ion	Ratio	Lower	Upper
49	100		
84	113.7	57.9	117.9
86	74.6	24.9	84.9

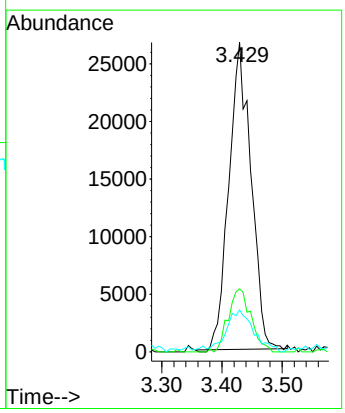


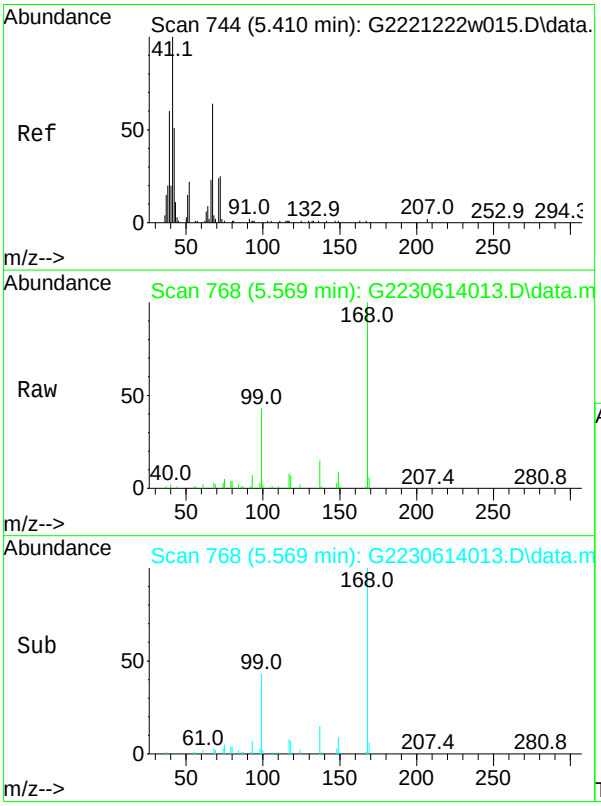


#21
Methyl tert-butyl ether
Concen: Below Cal
RT: 3.431 min Scan# 417
Delta R.T. -0.015 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 73 Resp: 681034

Ion	Ratio	Lower	Upper
73	100		
57	20.6	0.0	51.7
41	16.7	0.0	50.6

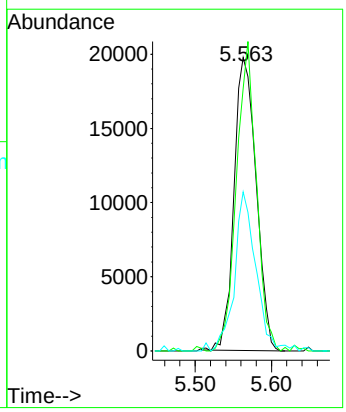


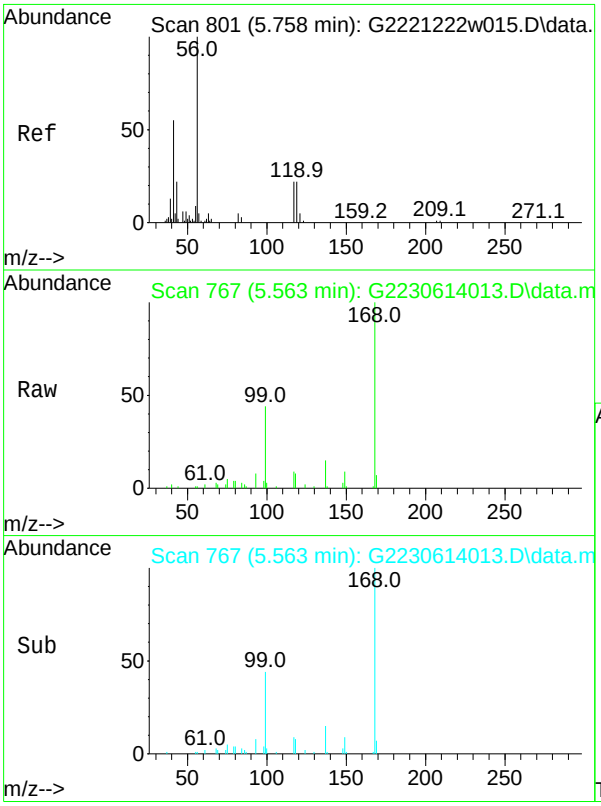


#40
Cyclohexane
Concen: 0.88 ug/L
RT: 5.566 min Scan# 768
Delta R.T. 0.032 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 84 Resp: 396387

Ion	Ratio	Lower	Upper
84	100		
69	96.4	6.8	66.8#
56	50.6	79.1	139.1#

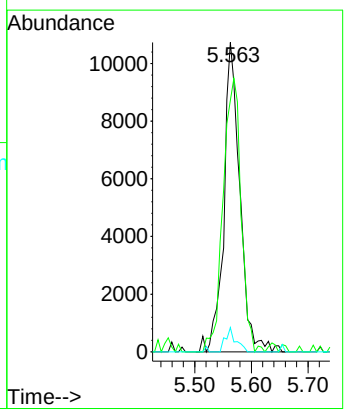


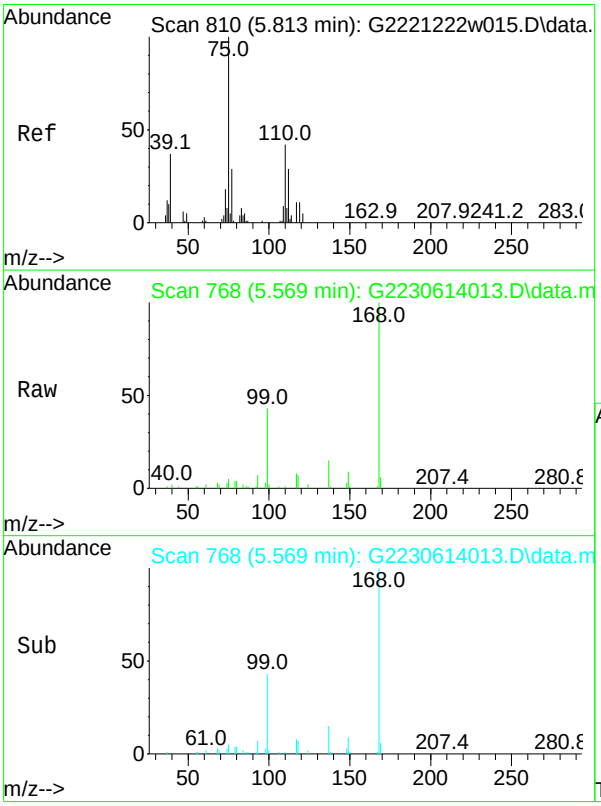


#41
1-Chlorobutane
Concen: 0.40 ug/L
RT: 5.566 min Scan# 767
Delta R.T. -0.064 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 56 Resp: 211123

Ion	Ratio	Lower	Upper
56	100		
55	98.5	0.0	41.0#
57	0.0	0.0	35.7

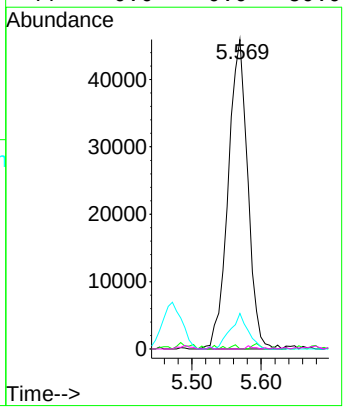


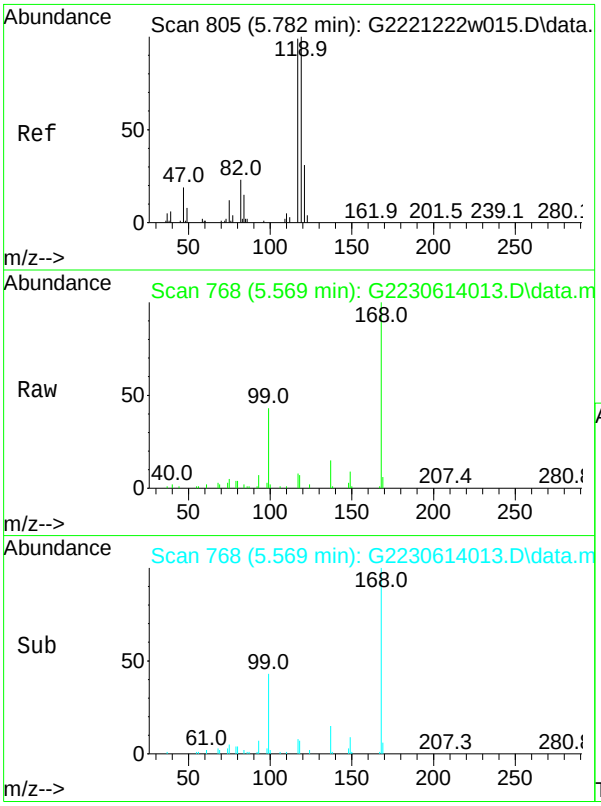


#42
1,1-Dichloropropene
Concen: 2.29 ug/L
RT: 5.570 min Scan# 768
Delta R.T. -0.119 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 75 Resp: 898331

Ion	Ratio	Lower	Upper
75	100		
39	0.0	25.8	85.8#
110	10.5	9.1	69.1
77	0.0	0.0	59.9

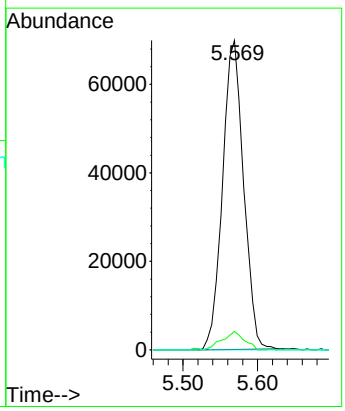


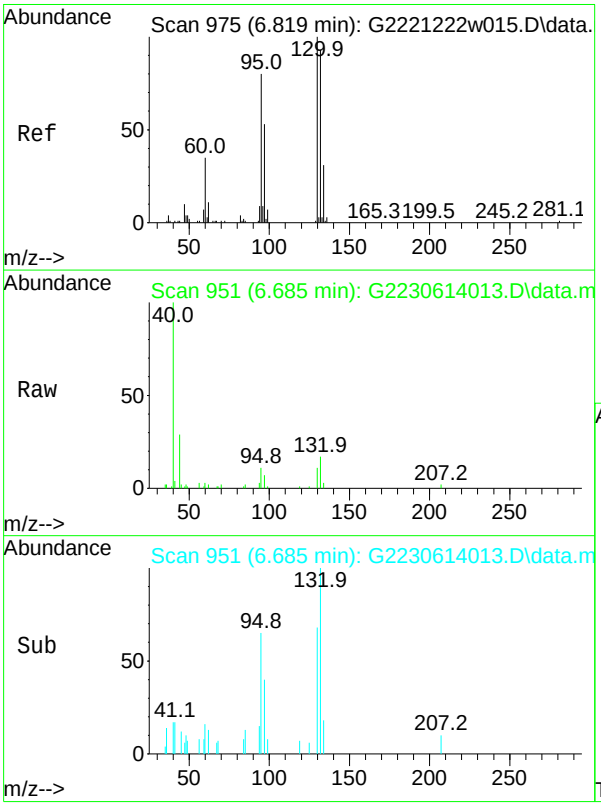


#47
Carbon tetrachloride
Concen: 3.38 ug/L
RT: 5.570 min Scan# 768
Delta R.T. -0.110 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion:117 Resp: 1369734

Ion	Ratio	Lower	Upper
117	100		
119	6.1	66.4	126.4#
121	0.0	0.4	60.4#

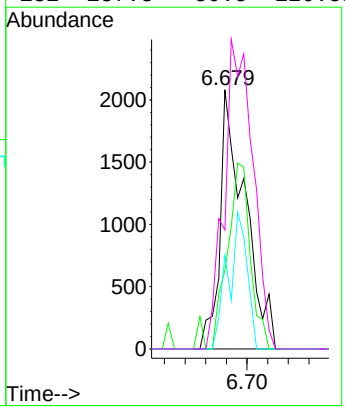


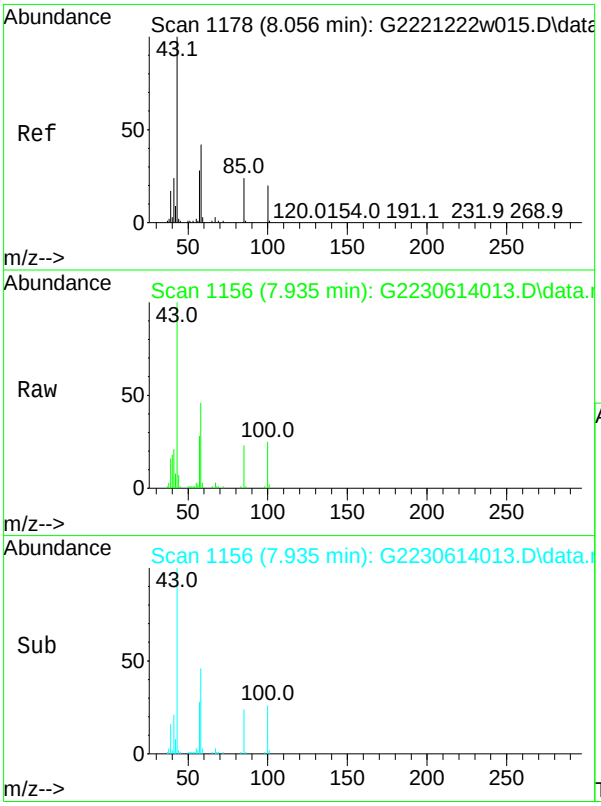


#50
Trichloroethene
Concen: 0.04 ug/L
RT: 6.683 min Scan# 951
Delta R.T. -0.013 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 95 Resp: 34839

Ion	Ratio	Lower	Upper
95	100		
97	0.0	35.5	95.5#
60	0.0	14.8	74.8#
132	137.3	80.5	120.5#

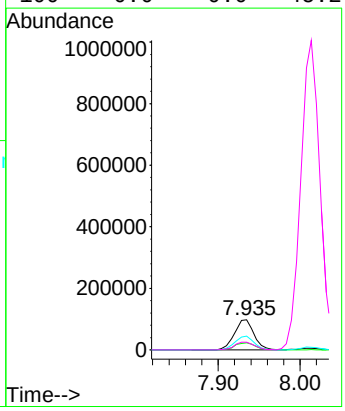


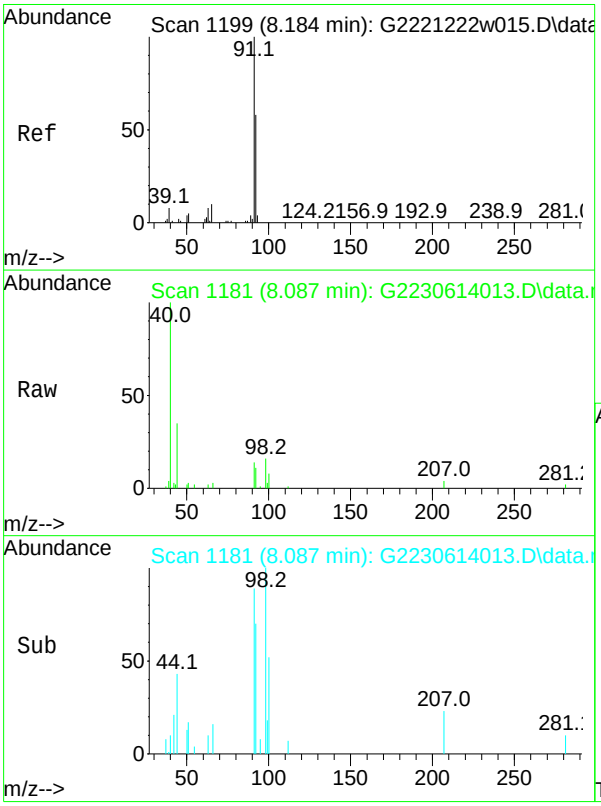


#60
4-Methyl-2-pentanone
Concen: 4.98 ug/L
RT: 7.934 min Scan# 1156
Delta R.T. -0.010 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 43 Resp: 1605404

Ion	Ratio	Lower	Upper
43	100		
85	25.0	0.0	47.7
58	44.4	37.0	37.0#
100	0.0	0.0	45.2

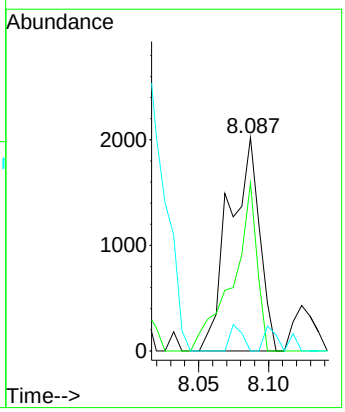


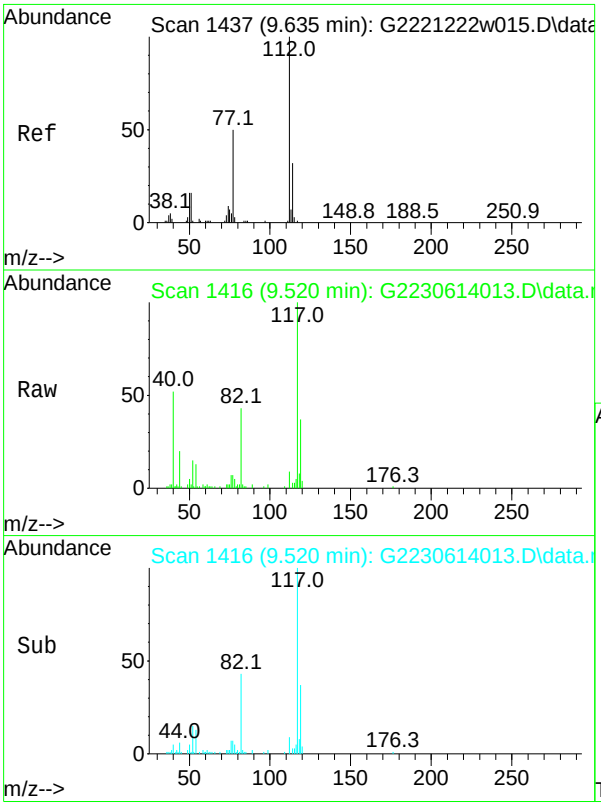


#65
Toluene
Concen: Below Cal
RT: 8.089 min Scan# 1181
Delta R.T. 0.003 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 91 Resp: 30468

Ion	Ratio	Lower	Upper
91	100		
92	0.0	27.5	87.5#
65	0.0	0.0	41.4

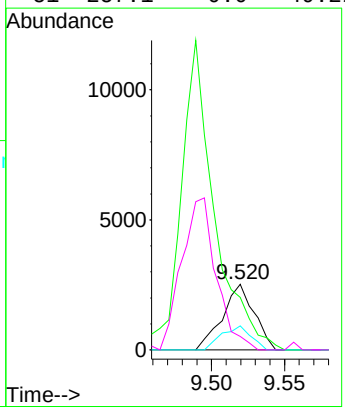


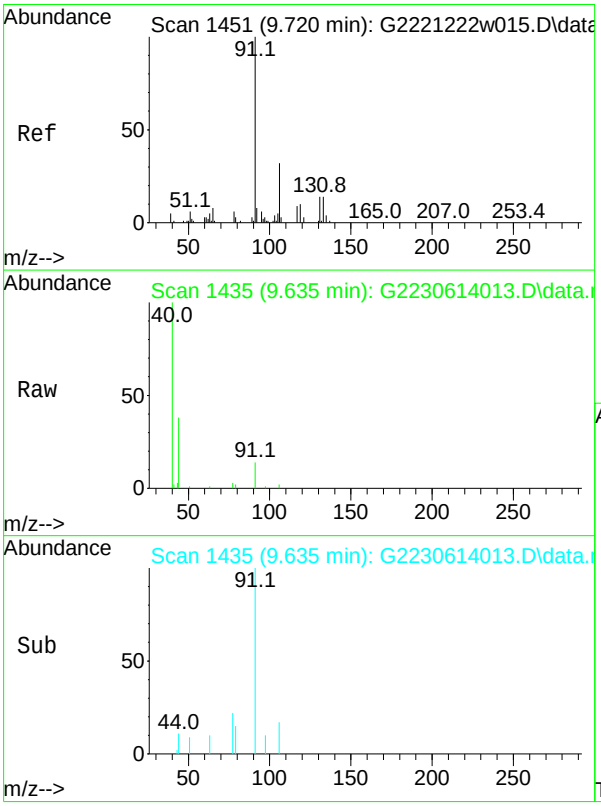


#72
Chlorobenzene
Concen: 0.04 ug/L
RT: 9.521 min Scan# 1416
Delta R.T. -0.003 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion:112 Resp: 37917

Ion	Ratio	Lower	Upper
112	100		
77	495.7	27.8	87.8#
114	0.0	3.4	63.4#
51	257.1	0.0	49.2#

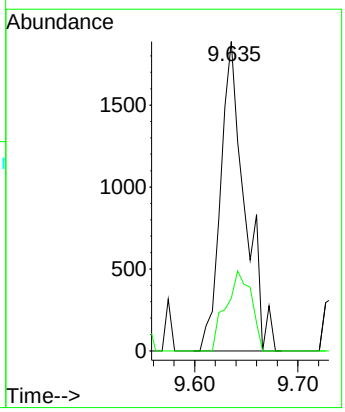


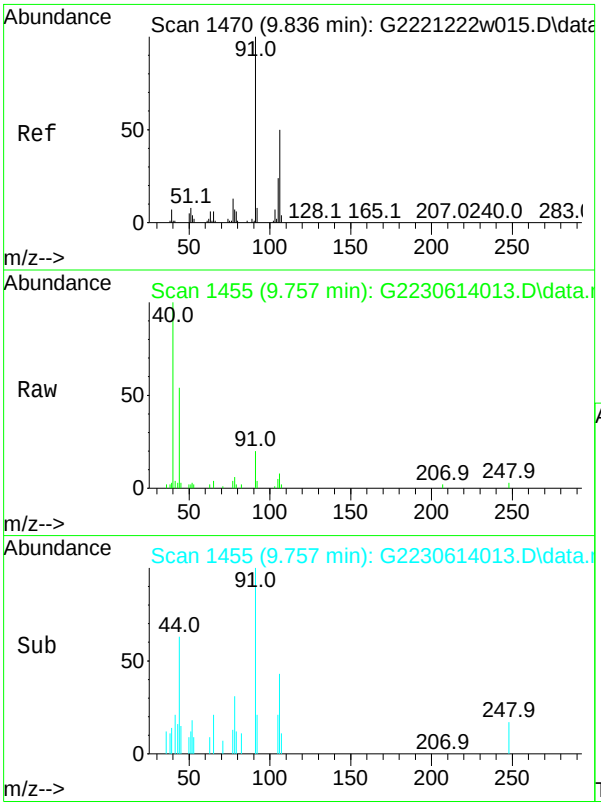


#74
Ethylbenzene
Concen: Below Cal
RT: 9.637 min Scan# 1435
Delta R.T. -0.006 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 91 Resp: 30794

Ion	Ratio	Lower	Upper
91	100		
106	0.0	0.8	60.8#

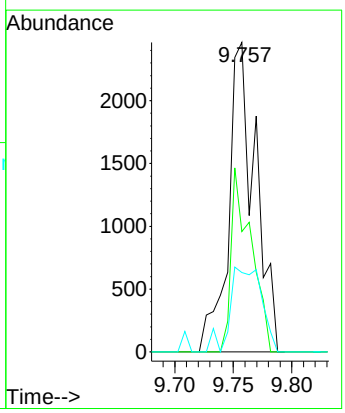


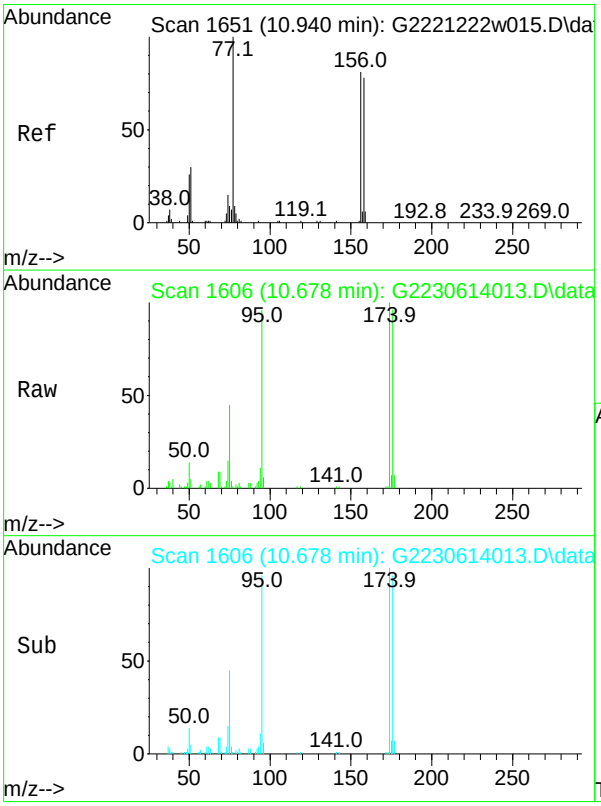


#75
m,p-Xylene
Concen: 0.04 ug/L
RT: 9.757 min Scan# 1455
Delta R.T. -0.007 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 91 Resp: 39367

Ion	Ratio	Lower	Upper
91	100		
106	0.0	19.0	79.0#
105	0.0	0.0	52.7

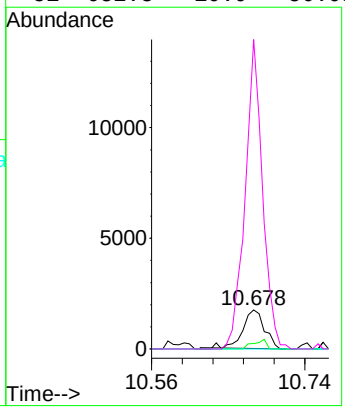


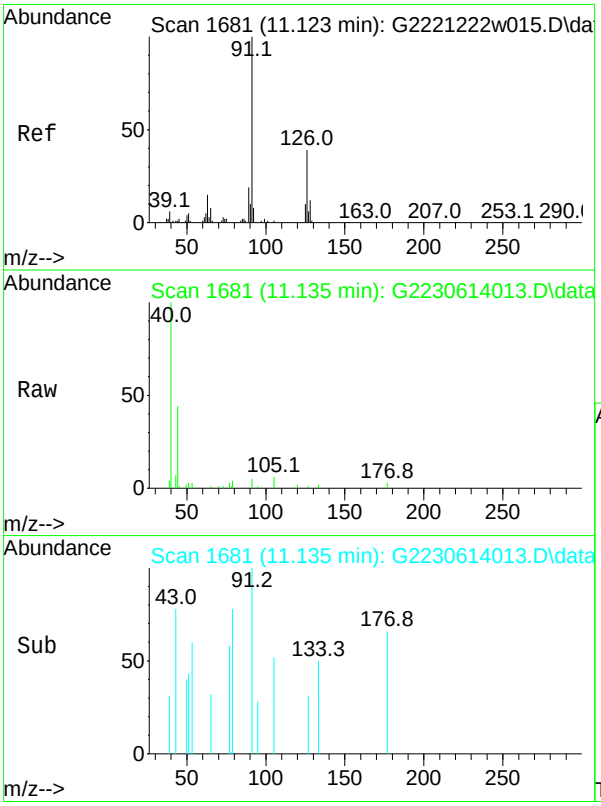


#82
Bromobenzene
Concen: 0.06 ug/L
RT: 10.681 min Scan# 1606
Delta R.T. -0.147 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 77 Resp: 29546

Ion	Ratio	Lower	Upper
77	100		
156	0.0	49.1	89.1#
158	0.0	44.8	84.8#
51	652.8	10.9	50.9#

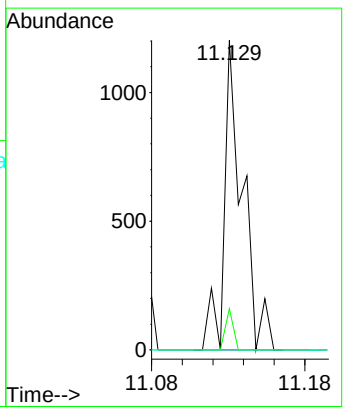


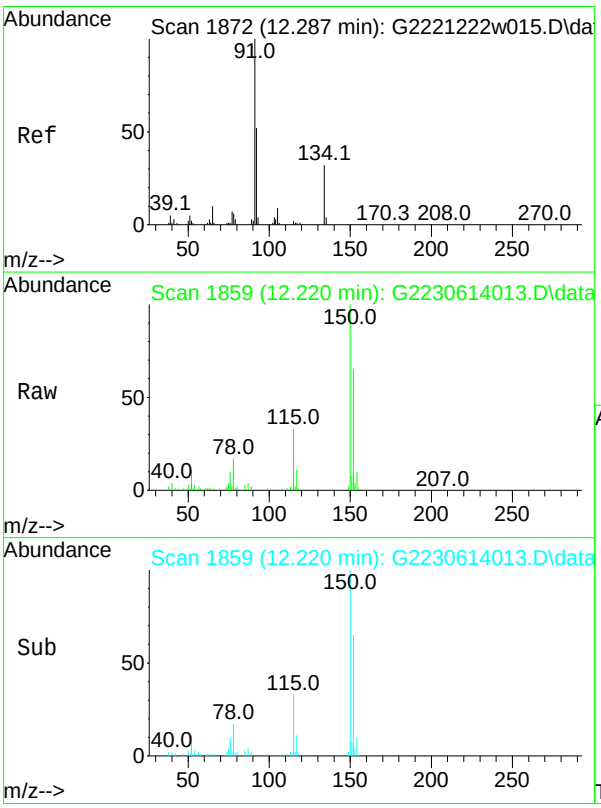


#87
2-Chlorotoluene
Concen: 0.01 ug/L
RT: 11.133 min Scan# 1681
Delta R.T. 0.105 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 91 Resp: 10531

Ion	Ratio	Lower	Upper
91	100		
126	0.0	4.7	64.7#
128	0.0	0.0	41.4

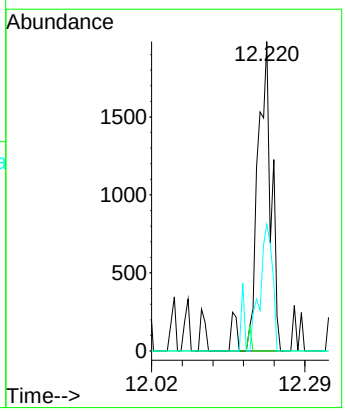




#99
n-Butylbenzene
Concen: Below Cal
RT: 12.221 min Scan# 1859
Delta R.T. -0.010 min
Lab File: G2230614013.D
Acq: 14 Jun 2023 13:30

Tgt Ion: 91 Resp: 35415

Ion	Ratio	Lower	Upper
91	100		
93	0.0	0.0	33.6
134	0.0	0.0	56.6



1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6247WW35

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-02	File ID:	G2230614014.D
Sampled:	06/02/23 14:55	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 13:55
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
630-20-6	1,1,1,2-Tetrachloroethane		0.130	0.400	1.00	U
71-55-6	1,1,1-Trichloroethane		0.175	0.400	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.124	0.400	1.00	U
79-00-5	1,1,2-Trichloroethane		0.166	0.400	1.00	U
75-34-3	1,1-Dichloroethane		0.134	0.400	1.00	U
75-35-4	1,1-Dichloroethene		0.191	0.400	1.00	U
563-58-6	1,1-Dichloropropene		0.140	0.400	1.00	U
87-61-6	1,2,3-Trichlorobenzene		0.204	0.400	1.00	U
96-18-4	1,2,3-Trichloropropane		0.183	0.400	1.00	U
120-82-1	1,2,4-Trichlorobenzene		0.205	0.600	1.20	U
95-63-6	1,2,4-Trimethylbenzene		0.132	0.400	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane		0.260	1.00	2.00	U
106-93-4	1,2-Dibromoethane		0.106	0.400	1.00	U
95-50-1	1,2-Dichlorobenzene		0.126	0.400	1.00	U
107-06-2	1,2-Dichloroethane		0.212	0.600	1.20	U
78-87-5	1,2-Dichloropropane		0.205	0.600	1.20	U
108-67-8	1,3,5-Trimethylbenzene		0.100	0.400	1.00	U
541-73-1	1,3-Dichlorobenzene		0.145	0.400	1.00	U
142-28-9	1,3-Dichloropropane		0.136	0.400	1.00	U
106-46-7	1,4-Dichlorobenzene		0.184	0.400	1.00	U
594-20-7	2,2-Dichloropropane		0.184	0.400	1.00	U
78-93-3	2-Butanone		0.660	1.40	3.50	U
95-49-8	2-Chlorotoluene		0.147	0.400	1.00	U
591-78-6	2-Hexanone		0.143	1.40	3.50	U
106-43-4	4-Chlorotoluene		0.184	0.400	1.00	U
99-87-6	4-Isopropyltoluene		0.140	0.400	1.00	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6247WW35

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-02	File ID:	G2230614014.D
Sampled:	06/02/23 14:55	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 13:55
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
108-10-1	4-Methyl-2-pentanone		0.270	1.40	3.50	U
67-64-1	Acetone		1.04	4.00	8.00	U
71-43-2	Benzene		0.101	0.400	1.00	U
108-86-1	Bromobenzene		0.170	0.400	1.00	U
74-97-5	Bromochloromethane		0.134	0.400	1.00	U
75-27-4	Bromodichloromethane		0.106	0.400	1.00	U
75-25-2	Bromoform		0.206	0.400	1.00	U
74-83-9	Bromomethane		0.320	1.00	2.00	U
75-15-0	Carbon disulfide		0.280	1.00	2.00	U
56-23-5	Carbon tetrachloride		0.169	0.400	1.00	U
108-90-7	Chlorobenzene		0.130	0.400	1.00	U
75-00-3	Chloroethane		0.311	0.400	1.00	U
67-66-3	Chloroform		0.203	0.600	1.20	U
74-87-3	Chloromethane		0.384	1.00	2.00	U
156-59-2	cis-1,2-Dichloroethene		0.205	0.600	1.20	U
10061-01-5	cis-1,3-Dichloropropene		0.117	0.400	1.00	U
124-48-1	Dibromochloromethane		0.152	0.400	1.00	U
74-95-3	Dibromomethane		0.163	0.400	1.00	U
75-71-8	Dichlorodifluoromethane		0.259	1.00	2.00	U
100-41-4	Ethylbenzene		0.0600	0.200	0.400	U
87-68-3	Hexachlorobutadiene		0.200	0.400	1.00	U
98-82-8	Isopropylbenzene		0.110	0.400	1.00	U
179601-23-1	m,p-Xylene		0.178	0.800	2.00	U
1634-04-4	Methyl tert-butyl ether		0.106	0.400	1.00	U
75-09-2	Methylene chloride		0.447	1.00	2.00	U
104-51-8	n-Butylbenzene		0.260	1.00	2.00	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6247WW35

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-02	File ID:	G2230614014.D
Sampled:	06/02/23 14:55	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 13:55
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
103-65-1	n-Propylbenzene		0.126	0.400	1.00	U
91-20-3	Naphthalene		0.140	0.400	1.00	U
95-47-6	o-Xylene		0.0832	0.400	1.00	U
135-98-8	sec-Butylbenzene		0.120	0.400	1.00	U
100-42-5	Styrene		0.0906	0.200	0.400	U
98-06-6	tert-Butylbenzene		0.0906	0.400	1.00	U
127-18-4	Tetrachloroethene		0.357	1.00	2.00	Q, U
108-88-3	Toluene		0.114	0.400	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.171	0.400	1.00	U
10061-02-6	trans-1,3-Dichloropropene		0.117	0.400	1.00	U
79-01-6	Trichloroethene		0.156	0.400	1.00	U
75-69-4	Trichlorofluoromethane		0.101	0.400	1.00	U
75-01-4	Vinyl chloride		0.258	1.00	2.00	U

Italicized = secondary result

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614014.D
Acq On : 14 Jun 2023 13:55
Operator : PO1/MP3
Sample : 23F0196-02
Misc : 2
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 15 09:32:46 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

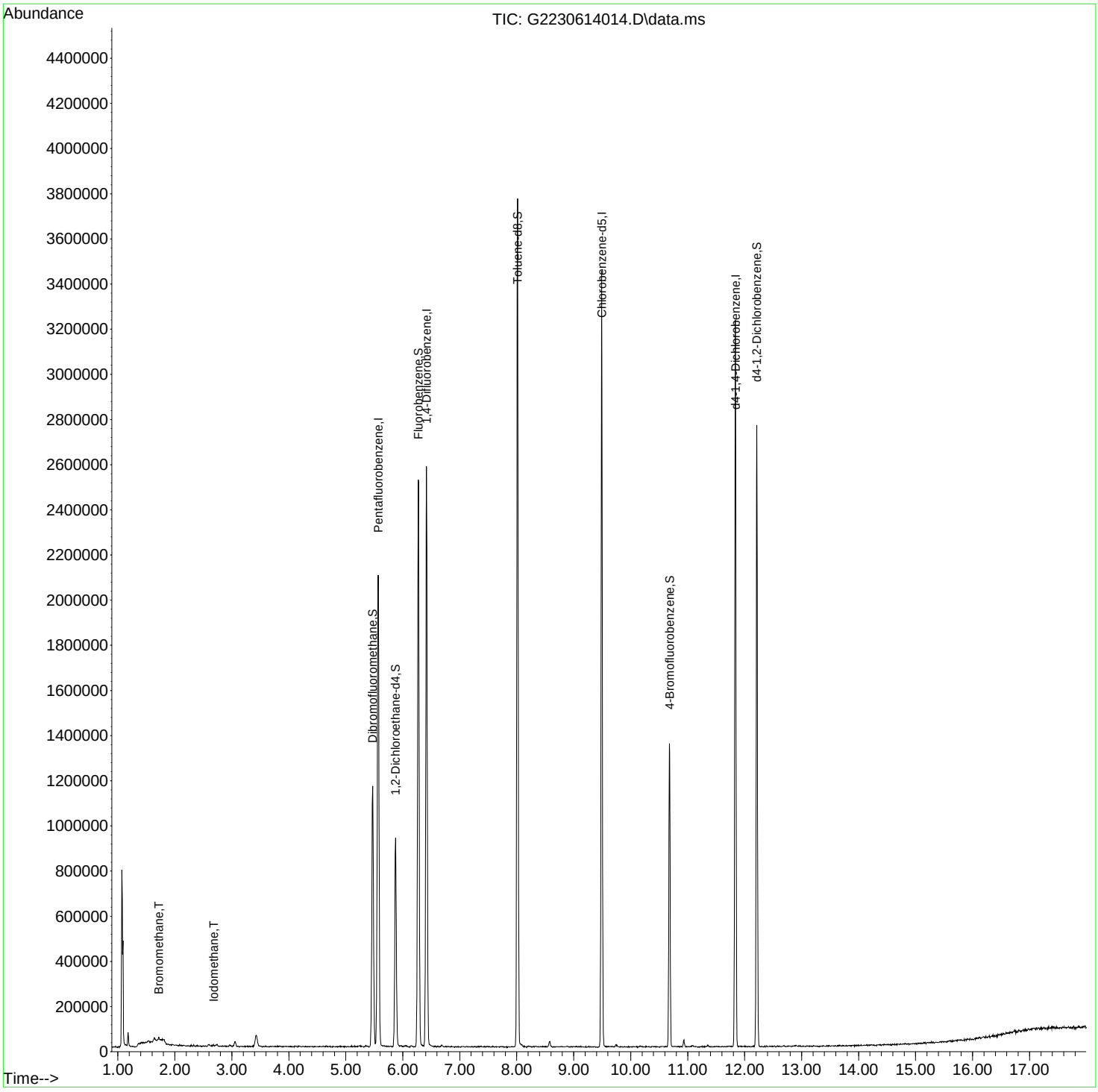
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.571	168	16726514	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.419	114	22417230	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	19758503	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.840	152	8993920	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.473	111	7205263	19.57	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.85%			
43) 1,2-Dichloroethane-d4	5.875	65	6470228	17.79	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 88.95%			
49) Fluorobenzene	6.276	96	24629537	19.28	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.40%			
64) Toluene-d8	8.015	98	24157937	19.40	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.00%			
81) 4-Bromofluorobenzene	10.684	174	4212242	9.92	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 99.20%			
97) d4-1,2-Dichlorobenzene	12.216	152	7785885	20.13	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.65%			
Target Compounds						Qvalue
5) Bromomethane	1.719	94	71550	0.07	ug/L #	86
12) Acetone	2.600	43	101998	Below Cal		98
13) Iodomethane	2.682	142	59782	0.15	ug/L #	41
18) Methylene chloride	3.054	49	106488	Below Cal		82
21) Methyl tert-butyl ether	3.431	73	706193	Below Cal		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614014.D
Acq On : 14 Jun 2023 13:55
Operator : PO1/MP3
Sample : 23F0196-02
Misc : 2
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 15 09:32:46 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G



Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614014.D
Acq On : 14 Jun 2023 13:55
Operator : PO1/MP3
Sample : 23F0196-02
Misc : 2
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 15 09:32:46 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

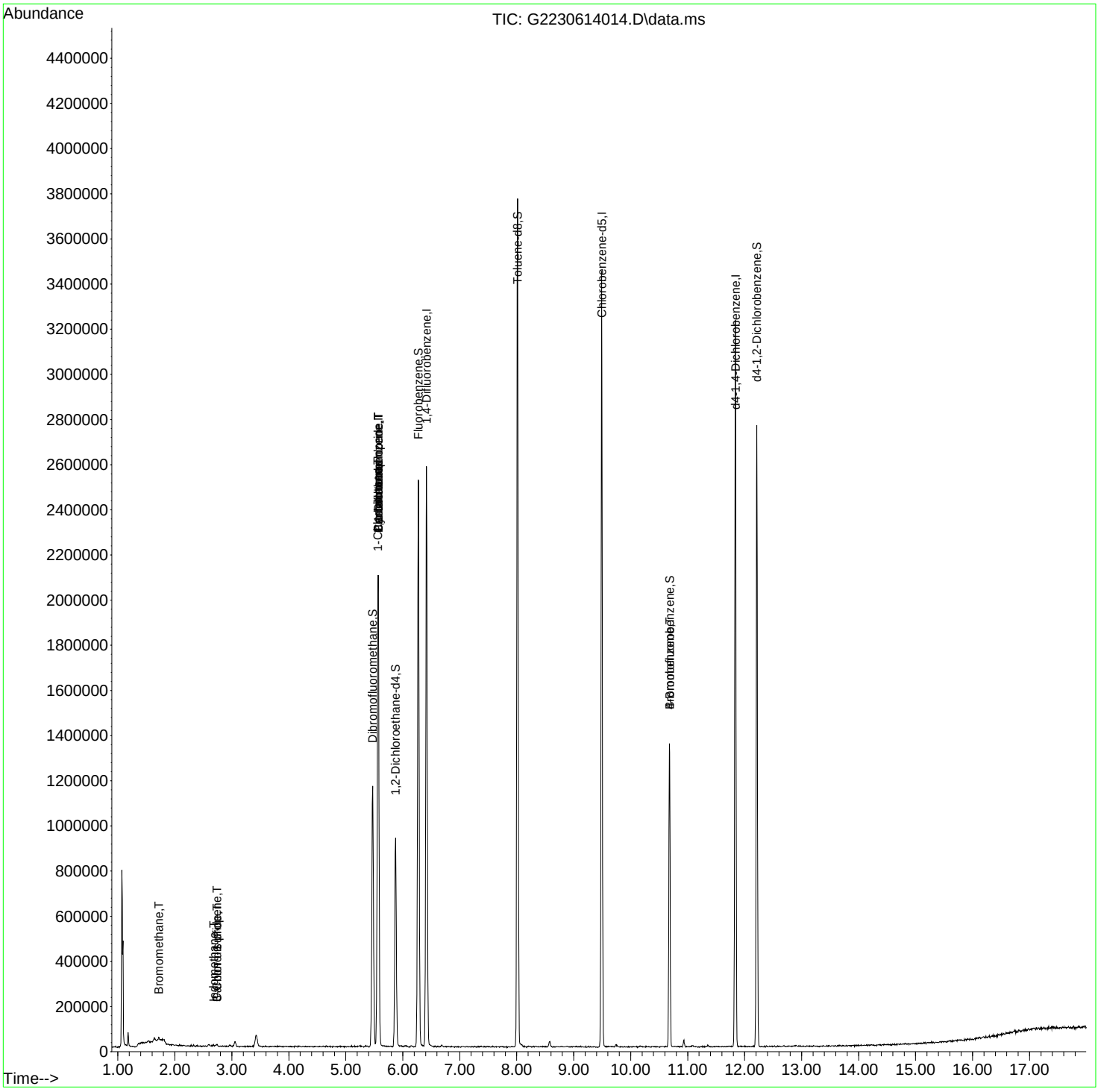
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.571	168	16726514	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.419	114	22417230	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	19758503	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.840	152	8993920	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.473	111	7205263	19.57	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.85%			
43) 1,2-Dichloroethane-d4	5.875	65	6470228	17.79	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 88.95%			
49) Fluorobenzene	6.276	96	24629537	19.28	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.40%			
64) Toluene-d8	8.015	98	24157937	19.40	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.00%			
81) 4-Bromofluorobenzene	10.684	174	4212242	9.92	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 99.20%			
97) d4-1,2-Dichlorobenzene	12.216	152	7785885	20.13	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.65%			
Target Compounds						Qvalue
5) Bromomethane	1.719	94	71550	0.07	ug/L #	86
9) Acrolein	2.427	56	4332	Below Cal	#	20
12) Acetone	2.600	43	101998	Below Cal		98
13) Iodomethane	2.682	142	59782	0.15	ug/L #	41
14) Carbon disulfide	2.739	76	113613	0.06	ug/L #	74
17) 3-Chloro-1-propene	2.739	76	113610	0.60	ug/L #	53
18) Methylene chloride	3.054	49	106488	Below Cal		82
21) Methyl tert-butyl ether	3.431	73	706193	Below Cal		96
40) Cyclohexane	5.567	84	392041	0.87	ug/L #	30
41) 1-Chlorobutane	5.566	56	208672	0.40	ug/L #	1
42) 1,1-Dichloropropene	5.568	75	841401	2.14	ug/L #	39
47) Carbon tetrachloride	5.568	117	1329561	3.29	ug/L #	16
60) 4-Methyl-2-pentanone	8.011	43	90418	Below Cal	#	1
74) Ethylbenzene	9.490	91	43952	Below Cal	#	44
82) Bromobenzene	10.681	77	26259	0.05	ug/L #	1

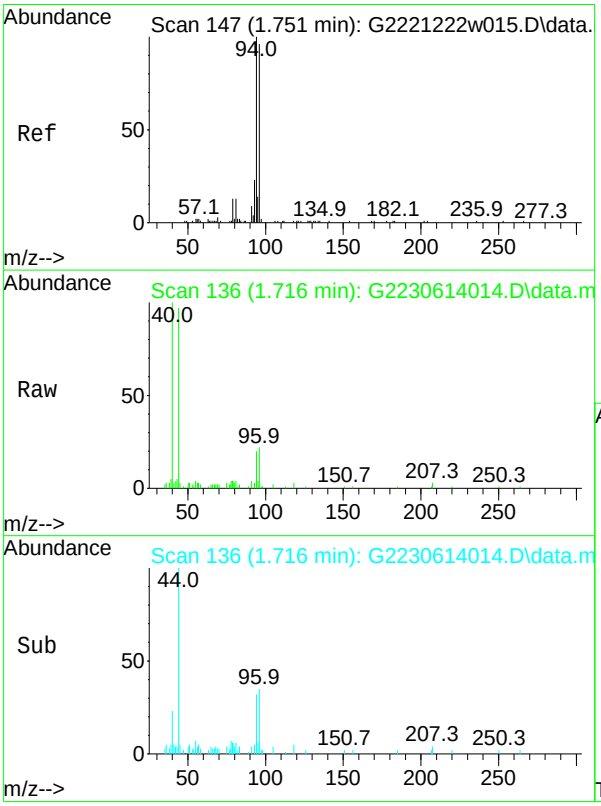
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614014.D
Acq On : 14 Jun 2023 13:55
Operator : PO1/MP3
Sample : 23F0196-02
Misc : 2
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 15 09:32:46 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

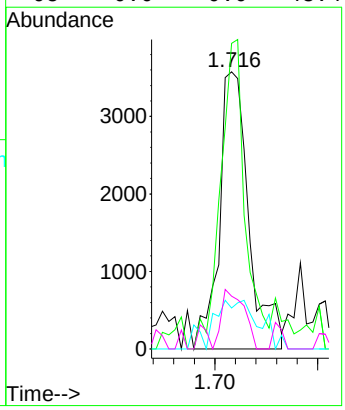


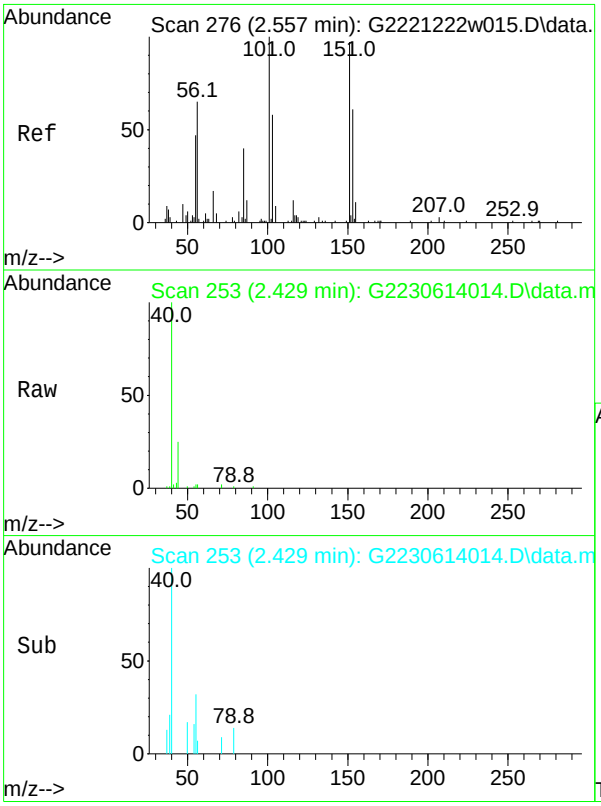


#5
Bromomethane
Concen: 0.07 ug/L
RT: 1.719 min Scan# 136
Delta R.T. 0.005 min
Lab File: G2230614014.D
Acq: 14 Jun 2023 13:55

Tgt Ion: 94 Resp: 71550

Ion	Ratio	Lower	Upper
94	100		
96	101.3	65.6	125.6
93	0.0	0.0	49.5
95	0.0	0.0	43.4

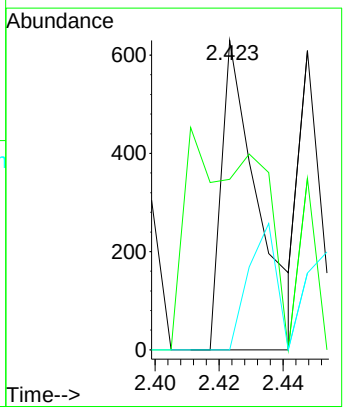


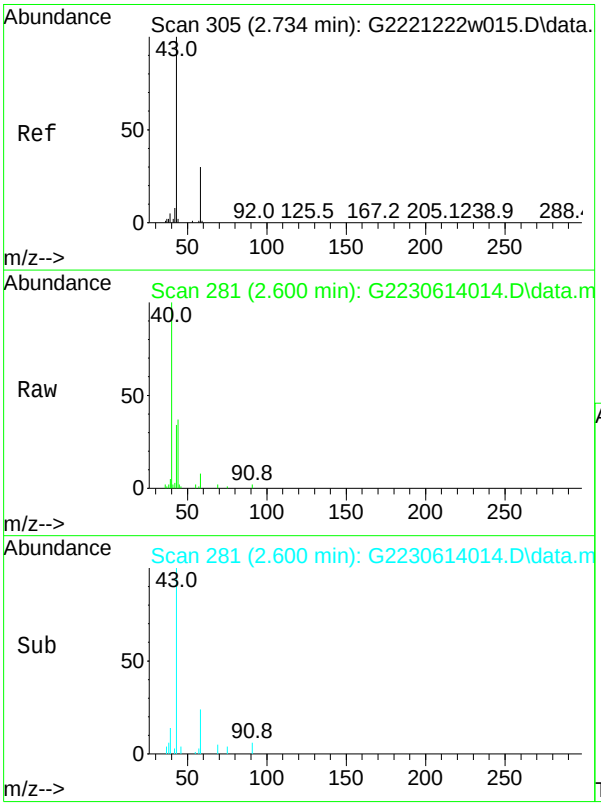


#9
Acrolein
Concen: Below Cal
RT: 2.427 min Scan# 253
Delta R.T. -0.012 min
Lab File: G2230614014.D
Acq: 14 Jun 2023 13:55

Tgt Ion: 56 Resp: 4332

Ion	Ratio	Lower	Upper
56	100		
55	0.0	43.5	103.5#
37	0.0	0.0	40.5

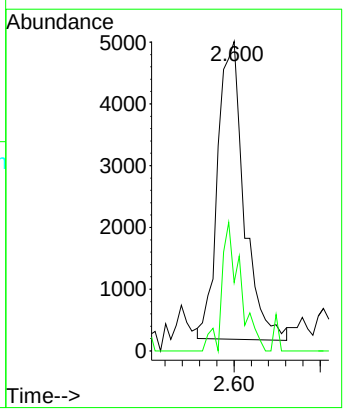


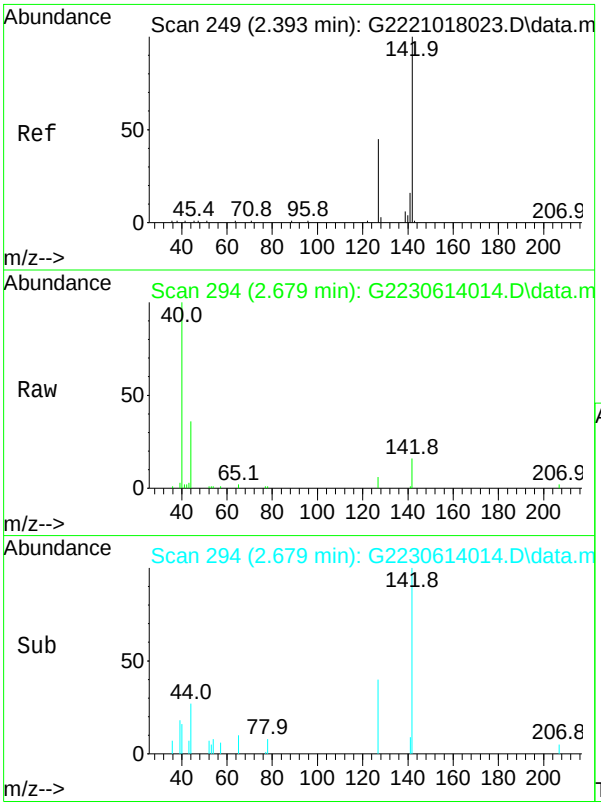


#12
Acetone
Concen: Below Cal
RT: 2.600 min Scan# 281
Delta R.T. -0.008 min
Lab File: G2230614014.D
Acq: 14 Jun 2023 13:55

Tgt Ion: 43 Resp: 101998

Ion	Ratio	Lower	Upper
43	100		
58	30.6	0.0	59.7

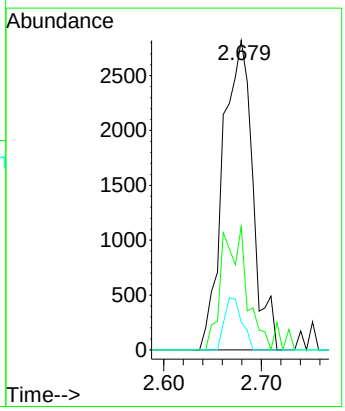


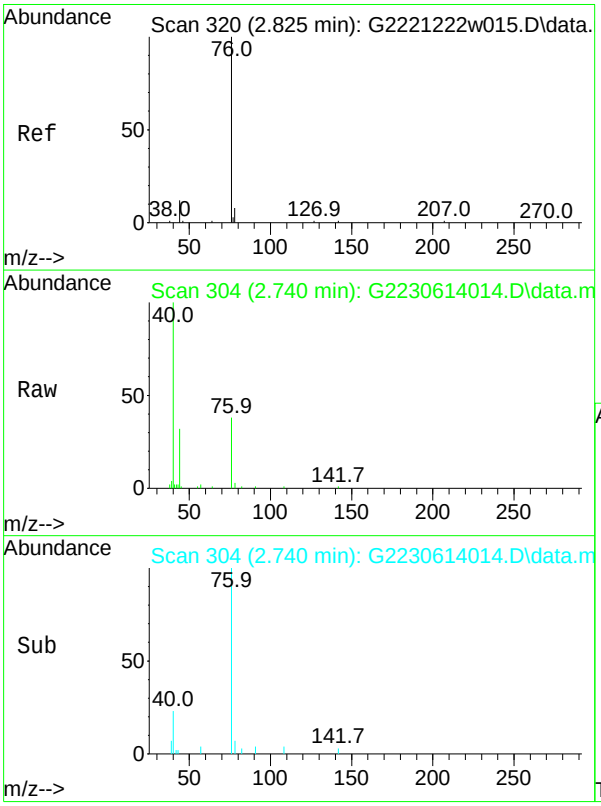


#13
Iodomethane
Concen: 0.15 ug/L
RT: 2.682 min Scan# 294
Delta R.T. 0.006 min
Lab File: G2230614014.D
Acq: 14 Jun 2023 13:55

Tgt Ion:142 Resp: 59782

Ion	Ratio	Lower	Upper
142	100		
127	0.0	13.3	73.3#
141	0.0	0.0	45.3

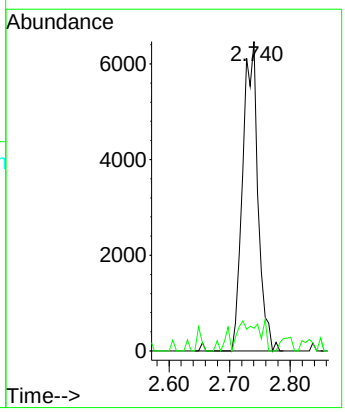


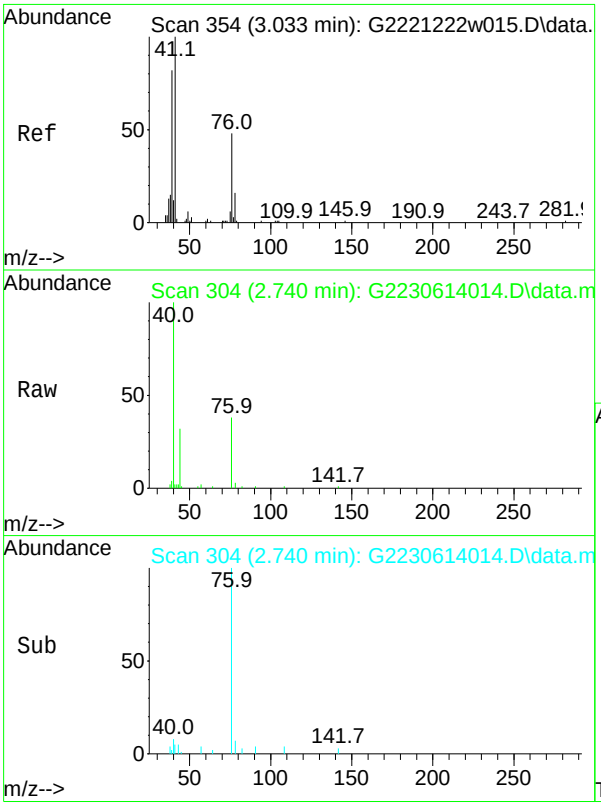


#14
Carbon disulfide
Concen: 0.06 ug/L
RT: 2.739 min Scan# 304
Delta R.T. 0.000 min
Lab File: G2230614014.D
Acq: 14 Jun 2023 13:55

Tgt Ion: 76 Resp: 113613

Ion	Ratio	Lower	Upper
76	100		
78	0.0	0.0	39.3

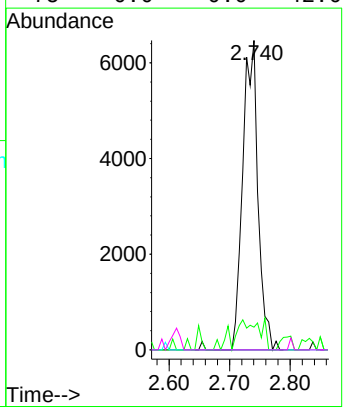


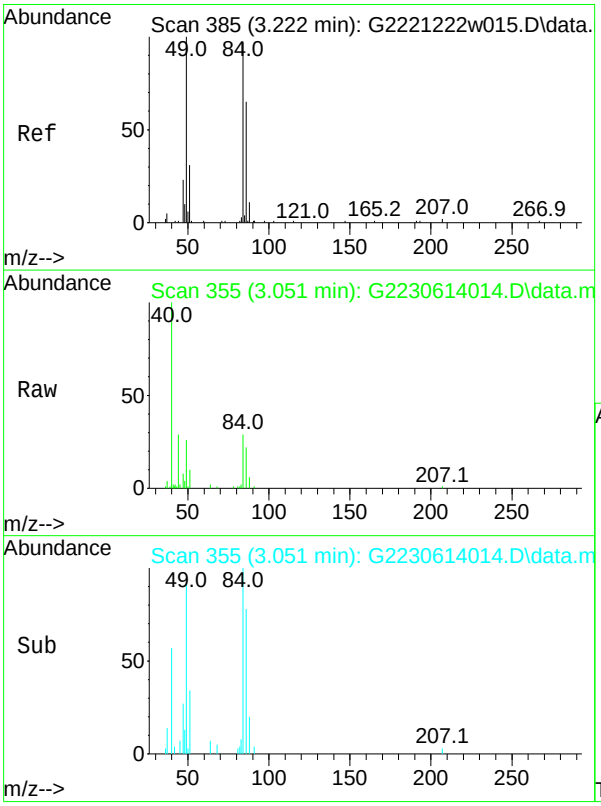


#17
3-Chloro-1-propene
Concen: 0.60 ug/L
RT: 2.739 min Scan# 304
Delta R.T. -0.181 min
Lab File: G2230614014.D
Acq: 14 Jun 2023 13:55

Tgt Ion: 76 Resp: 113610

Ion	Ratio	Lower	Upper
76	100		
78	0.0	2.4	62.4#
49	0.0	0.0	43.0
75	0.0	0.0	42.6

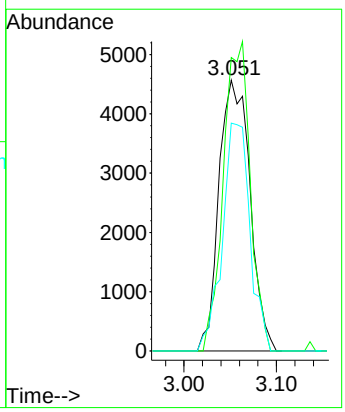


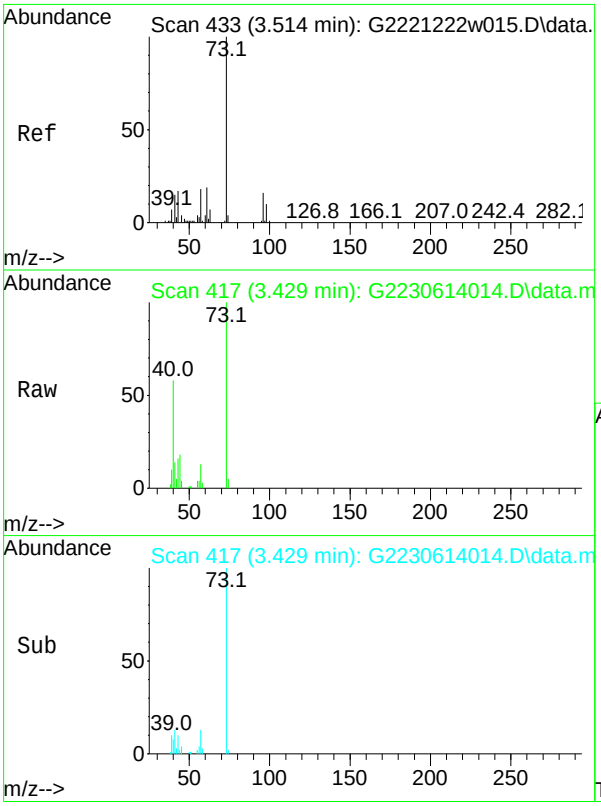


#18
Methylene chloride
Concen: Below Cal
RT: 3.054 min Scan# 355
Delta R.T. -0.008 min
Lab File: G2230614014.D
Acq: 14 Jun 2023 13:55

Tgt Ion: 49 Resp: 106488

Ion	Ratio	Lower	Upper
49	100		
84	98.9	57.9	117.9
86	74.7	24.9	84.9

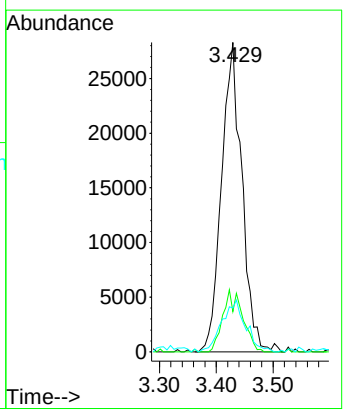


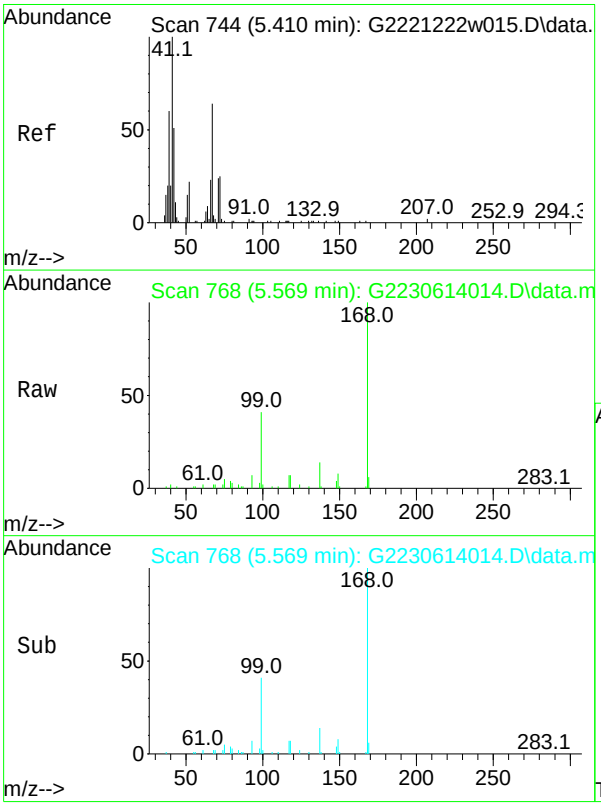


#21
Methyl tert-butyl ether
Concen: Below Cal
RT: 3.431 min Scan# 417
Delta R.T. -0.015 min
Lab File: G2230614014.D
Acq: 14 Jun 2023 13:55

Tgt Ion: 73 Resp: 706193

Ion	Ratio	Lower	Upper
73	100		
57	19.5	0.0	51.7
41	19.0	0.0	50.6

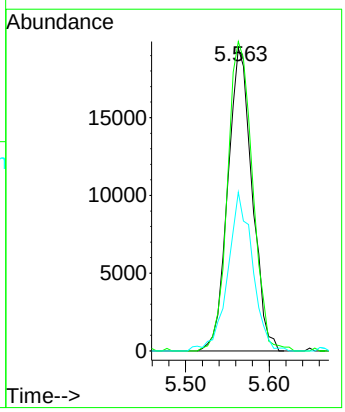


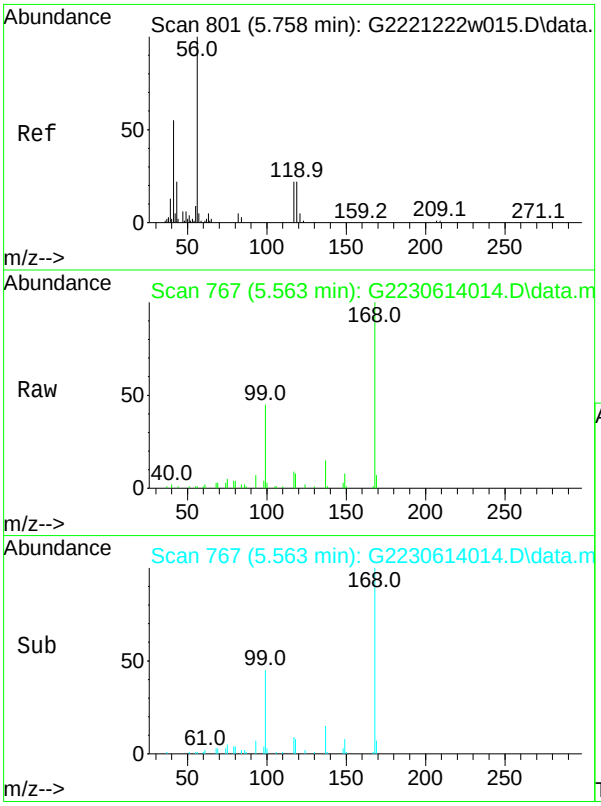


#40
Cyclohexane
Concen: 0.87 ug/L
RT: 5.567 min Scan# 768
Delta R.T. 0.033 min
Lab File: G2230614014.D
Acq: 14 Jun 2023 13:55

Tgt Ion: 84 Resp: 392041

Ion	Ratio	Lower	Upper
84	100		
69	105.4	6.8	66.8#
56	52.1	79.1	139.1#

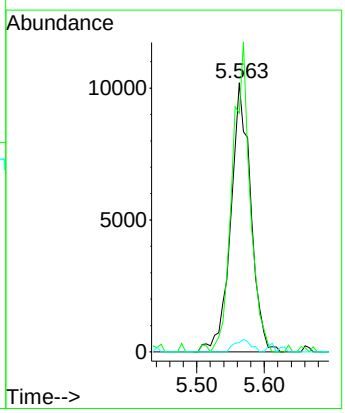


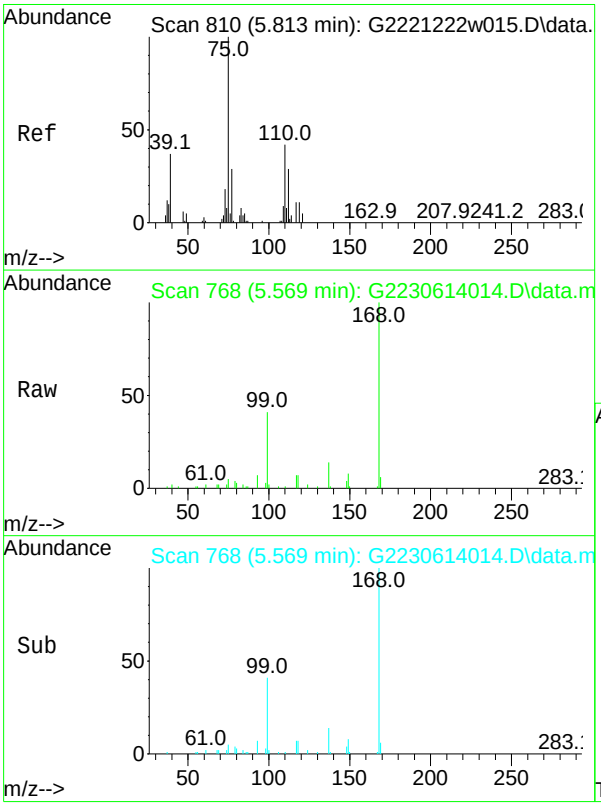


#41
1-Chlorobutane
Concen: 0.40 ug/L
RT: 5.566 min Scan# 767
Delta R.T. -0.064 min
Lab File: G2230614014.D
Acq: 14 Jun 2023 13:55

Tgt Ion: 56 Resp: 208672

Ion	Ratio	Lower	Upper
56	100		
55	102.1	0.0	41.0#
57	0.0	0.0	35.7

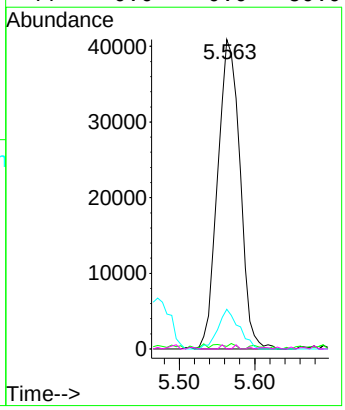


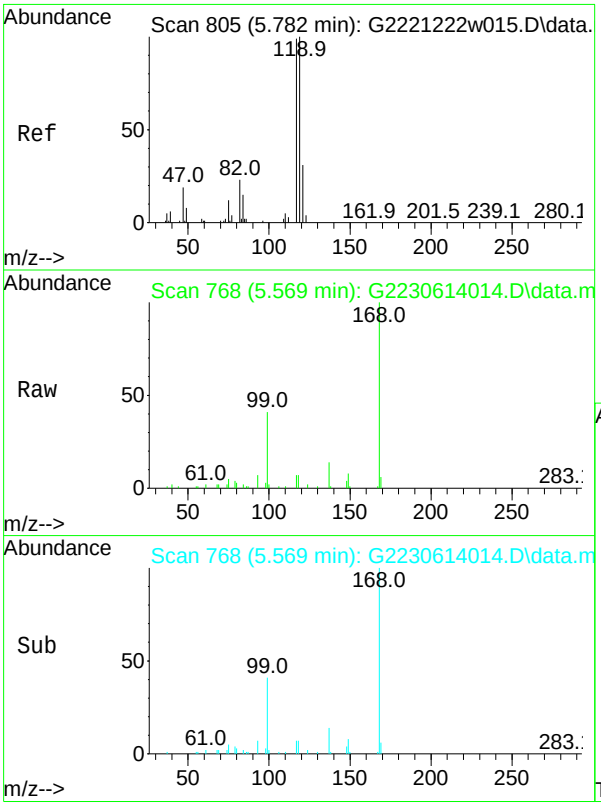


#42
1,1-Dichloropropene
Concen: 2.14 ug/L
RT: 5.568 min Scan# 768
Delta R.T. -0.121 min
Lab File: G2230614014.D
Acq: 14 Jun 2023 13:55

Tgt Ion: 75 Resp: 841401

Ion	Ratio	Lower	Upper
75	100		
39	0.0	25.8	85.8#
110	12.2	9.1	69.1
77	0.0	0.0	59.9

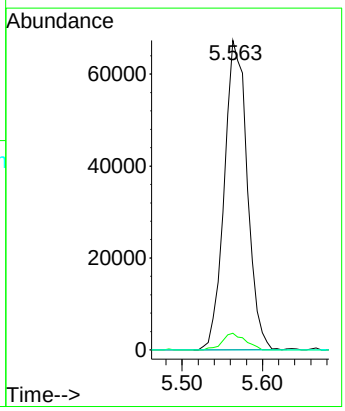


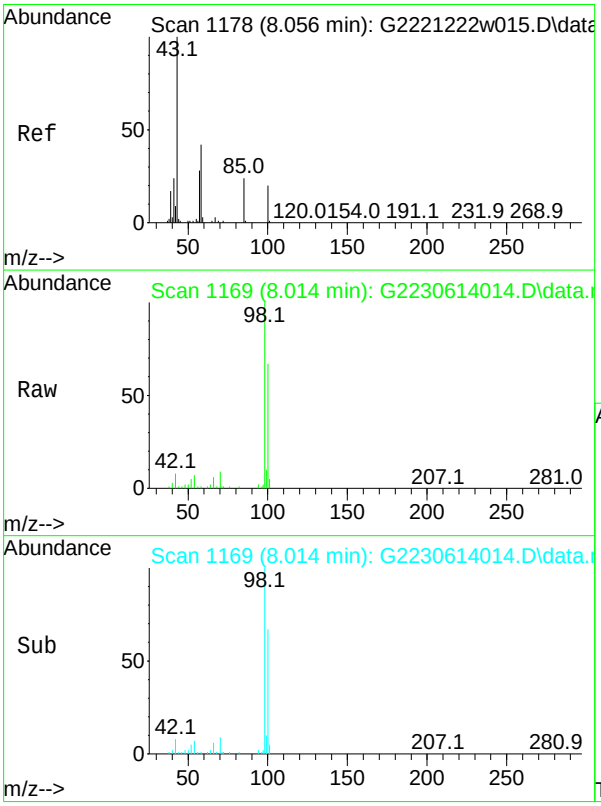


#47
Carbon tetrachloride
Concen: 3.29 ug/L
RT: 5.568 min Scan# 768
Delta R.T. -0.112 min
Lab File: G2230614014.D
Acq: 14 Jun 2023 13:55

Tgt Ion:117 Resp: 1329561

Ion	Ratio	Lower	Upper
117	100		
119	5.4	66.4	126.4#
121	0.0	0.4	60.4#

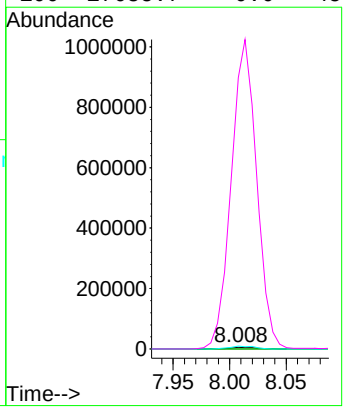


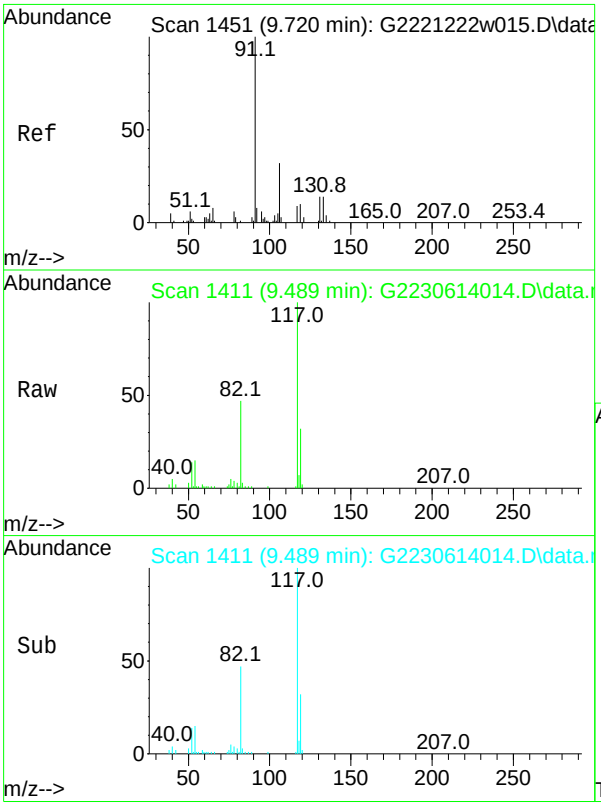


#60
4-Methyl-2-pentanone
Concen: Below Cal
RT: 8.011 min Scan# 1169
Delta R.T. 0.067 min
Lab File: G2230614014.D
Acq: 14 Jun 2023 13:55

Tgt Ion: 43 Resp: 90418

Ion	Ratio	Lower	Upper
43	100		
85	0.0	0.0	47.7
58	166.7	37.0	37.0#
100	17685.7	0.0	45.2#

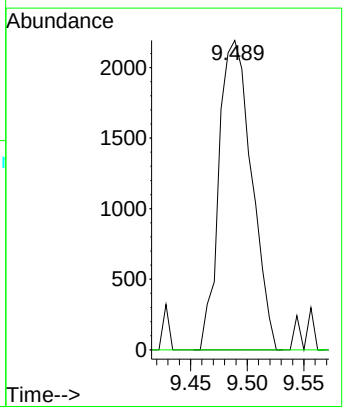


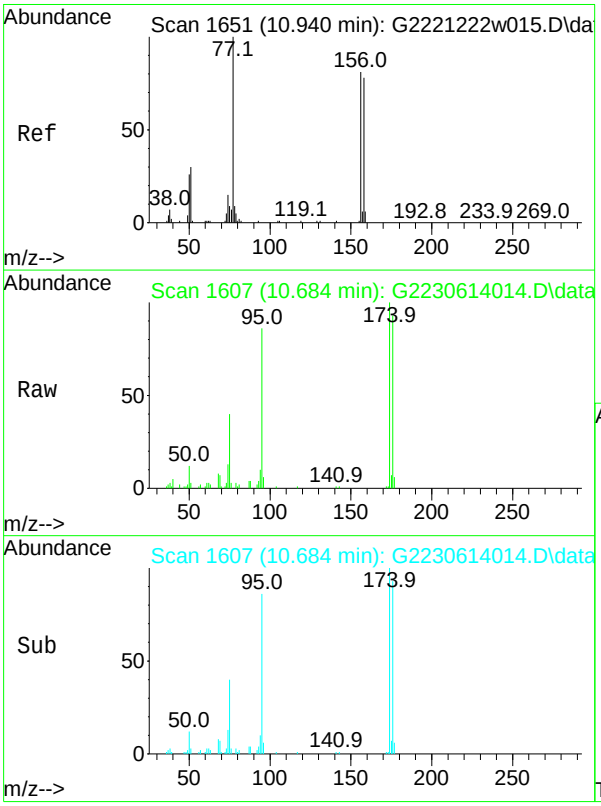


#74
Ethylbenzene
Concen: Below Cal
RT: 9.490 min Scan# 1411
Delta R.T. -0.153 min
Lab File: G2230614014.D
Acq: 14 Jun 2023 13:55

Tgt Ion: 91 Resp: 43952

Ion	Ratio	Lower	Upper
91	100		
106	0.0	0.8	60.8#

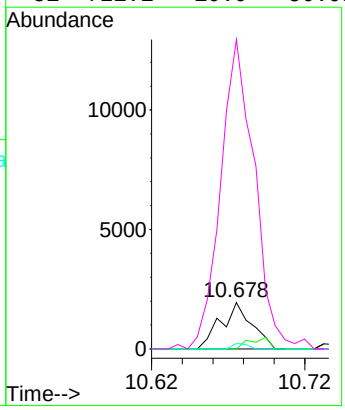




#82
Bromobenzene
Concen: 0.05 ug/L
RT: 10.681 min Scan# 1607
Delta R.T. -0.147 min
Lab File: G2230614014.D
Acq: 14 Jun 2023 13:55

Tgt Ion: 77 Resp: 26259

Ion	Ratio	Lower	Upper
77	100		
156	0.0	49.1	89.1#
158	0.0	44.8	84.8#
51	721.1	10.9	50.9#



1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6247WW32

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-04	File ID:	G2230614015.D
Sampled:	06/02/23 11:45	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 14:20
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097	Instrument:	G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
630-20-6	1,1,1,2-Tetrachloroethane		0.130	0.400	1.00	U
71-55-6	1,1,1-Trichloroethane		0.175	0.400	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.124	0.400	1.00	U
79-00-5	1,1,2-Trichloroethane		0.166	0.400	1.00	U
75-34-3	1,1-Dichloroethane		0.134	0.400	1.00	U
75-35-4	1,1-Dichloroethene	0.200	0.191	0.400	1.00	J, D
563-58-6	1,1-Dichloropropene		0.140	0.400	1.00	U
87-61-6	1,2,3-Trichlorobenzene		0.204	0.400	1.00	U
96-18-4	1,2,3-Trichloropropane		0.183	0.400	1.00	U
120-82-1	1,2,4-Trichlorobenzene		0.205	0.600	1.20	U
95-63-6	1,2,4-Trimethylbenzene		0.132	0.400	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane		0.260	1.00	2.00	U
106-93-4	1,2-Dibromoethane		0.106	0.400	1.00	U
95-50-1	1,2-Dichlorobenzene		0.126	0.400	1.00	U
107-06-2	1,2-Dichloroethane		0.212	0.600	1.20	U
78-87-5	1,2-Dichloropropane		0.205	0.600	1.20	U
108-67-8	1,3,5-Trimethylbenzene		0.100	0.400	1.00	U
541-73-1	1,3-Dichlorobenzene		0.145	0.400	1.00	U
142-28-9	1,3-Dichloropropane		0.136	0.400	1.00	U
106-46-7	1,4-Dichlorobenzene		0.184	0.400	1.00	U
594-20-7	2,2-Dichloropropane		0.184	0.400	1.00	U
78-93-3	2-Butanone		0.660	1.40	3.50	U
95-49-8	2-Chlorotoluene		0.147	0.400	1.00	U
591-78-6	2-Hexanone		0.143	1.40	3.50	U
106-43-4	4-Chlorotoluene		0.184	0.400	1.00	U
99-87-6	4-Isopropyltoluene		0.140	0.400	1.00	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6247WW32

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-04	File ID:	G2230614015.D
Sampled:	06/02/23 11:45	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 14:20
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097	Instrument:	G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
108-10-1	4-Methyl-2-pentanone		0.270	1.40	3.50	U
67-64-1	Acetone		1.04	4.00	8.00	U
71-43-2	Benzene		0.101	0.400	1.00	U
108-86-1	Bromobenzene		0.170	0.400	1.00	U
74-97-5	Bromochloromethane		0.134	0.400	1.00	U
75-27-4	Bromodichloromethane		0.106	0.400	1.00	U
75-25-2	Bromoform		0.206	0.400	1.00	U
74-83-9	Bromomethane		0.320	1.00	2.00	U
75-15-0	Carbon disulfide		0.280	1.00	2.00	U
56-23-5	Carbon tetrachloride		0.169	0.400	1.00	U
108-90-7	Chlorobenzene		0.130	0.400	1.00	U
75-00-3	Chloroethane		0.311	0.400	1.00	U
67-66-3	Chloroform		0.203	0.600	1.20	U
74-87-3	Chloromethane		0.384	1.00	2.00	U
156-59-2	cis-1,2-Dichloroethene	0.700	0.205	0.600	1.20	J, D
10061-01-5	cis-1,3-Dichloropropene		0.117	0.400	1.00	U
124-48-1	Dibromochloromethane		0.152	0.400	1.00	U
74-95-3	Dibromomethane		0.163	0.400	1.00	U
75-71-8	Dichlorodifluoromethane		0.259	1.00	2.00	U
100-41-4	Ethylbenzene		0.0600	0.200	0.400	U
87-68-3	Hexachlorobutadiene		0.200	0.400	1.00	U
98-82-8	Isopropylbenzene		0.110	0.400	1.00	U
179601-23-1	m,p-Xylene		0.178	0.800	2.00	U
1634-04-4	Methyl tert-butyl ether		0.106	0.400	1.00	U
75-09-2	Methylene chloride		0.447	1.00	2.00	U
104-51-8	n-Butylbenzene		0.260	1.00	2.00	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6247WW32

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-04	File ID:	G2230614015.D
Sampled:	06/02/23 11:45	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 14:20
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
103-65-1	n-Propylbenzene		0.126	0.400	1.00	U
91-20-3	Naphthalene		0.140	0.400	1.00	U
95-47-6	o-Xylene		0.0832	0.400	1.00	U
135-98-8	sec-Butylbenzene		0.120	0.400	1.00	U
100-42-5	Styrene		0.0906	0.200	0.400	U
98-06-6	tert-Butylbenzene		0.0906	0.400	1.00	U
127-18-4	Tetrachloroethene		0.357	1.00	2.00	Q, U
108-88-3	Toluene		0.114	0.400	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.171	0.400	1.00	U
10061-02-6	trans-1,3-Dichloropropene		0.117	0.400	1.00	U
79-01-6	Trichloroethene	26.9	0.156	0.400	1.00	D
75-69-4	Trichlorofluoromethane		0.101	0.400	1.00	U
75-01-4	Vinyl chloride		0.258	1.00	2.00	U

Italicized = secondary result

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614015.D
Acq On : 14 Jun 2023 14:20
Operator : PO1/MP3
Sample : 23F0196-04
Misc : 2
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 15 09:34:31 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

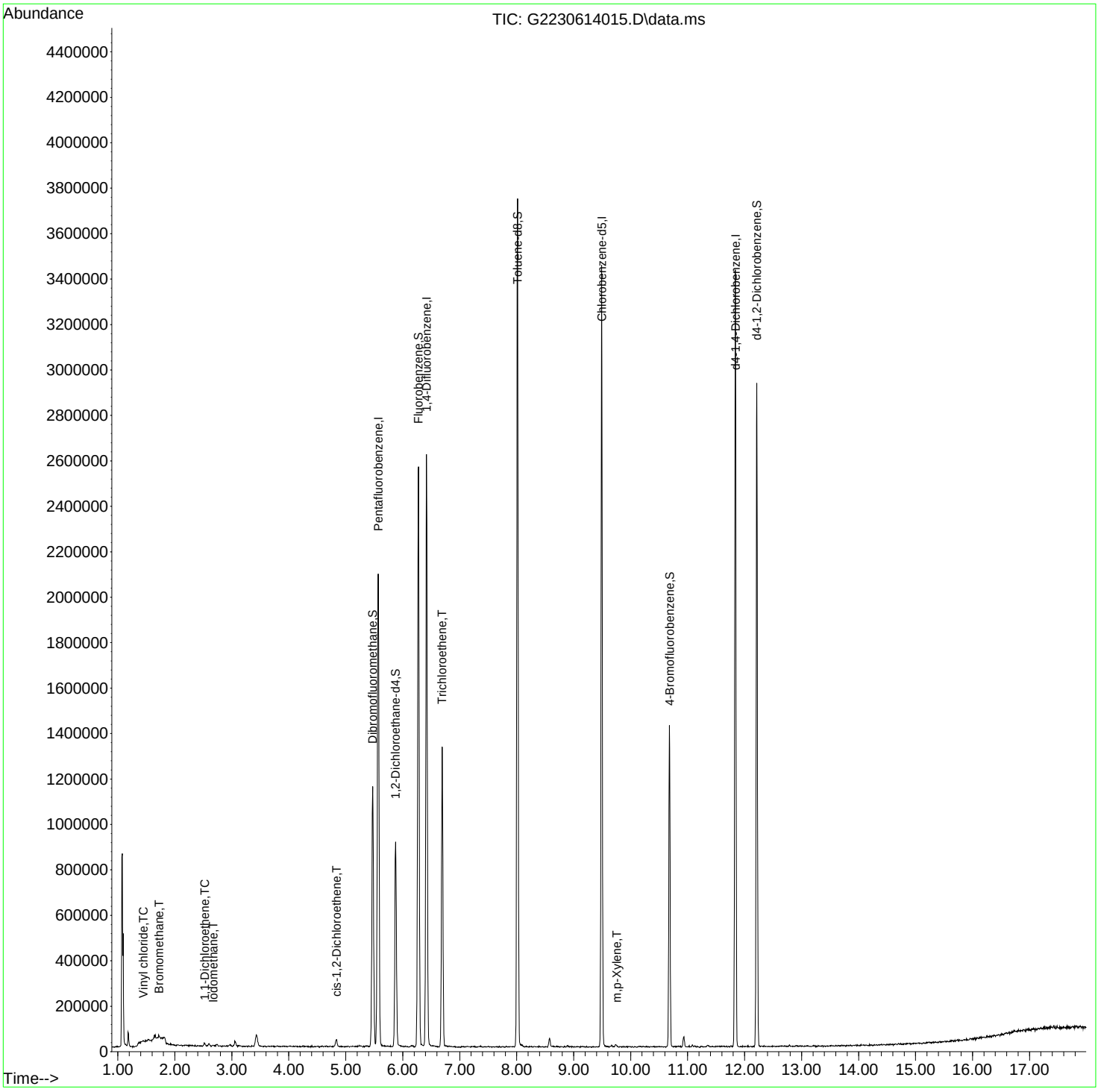
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.572	168	16817463	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.420	114	22745631	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	20042477	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.840	152	9600523	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.475	111	7131784	19.27	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.35%			
43) 1,2-Dichloroethane-d4	5.876	65	6460070	17.66	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 88.30%			
49) Fluorobenzene	6.277	96	25008005	19.29	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.45%			
64) Toluene-d8	8.015	98	24435283	19.34	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.70%			
81) 4-Bromofluorobenzene	10.683	174	4342057	9.58	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 95.80%			
97) d4-1,2-Dichlorobenzene	12.216	152	8473563	20.52	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 102.60%			
Target Compounds						Qvalue
4) Vinyl chloride	1.448	62	28333	0.09	ug/L #	43
5) Bromomethane	1.719	94	63773	0.03	ug/L #	82
10) 1,1-Dichloroethene	2.525	61	66307	0.10	ug/L #	69
12) Acetone	2.602	43	113281	Below Cal		93
13) Iodomethane	2.674	142	44978	0.11	ug/L #	41
18) Methylene chloride	3.054	49	109230	Below Cal		71
21) Methyl tert-butyl ether	3.437	73	718401	Below Cal		90
28) cis-1,2-Dichloroethene	4.836	61	183041	0.35	ug/L	74
50) Trichloroethene	6.694	95	4040021	13.45	ug/L	91
65) Toluene	8.090	91	30714	Below Cal	#	30
75) m,p-Xylene	9.760	91	26206	0.02	ug/L #	36

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614015.D
Acq On : 14 Jun 2023 14:20
Operator : PO1/MP3
Sample : 23F0196-04
Misc : 2
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 15 09:34:31 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G



Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614015.D
Acq On : 14 Jun 2023 14:20
Operator : PO1/MP3
Sample : 23F0196-04
Misc : 2
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 15 09:34:31 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

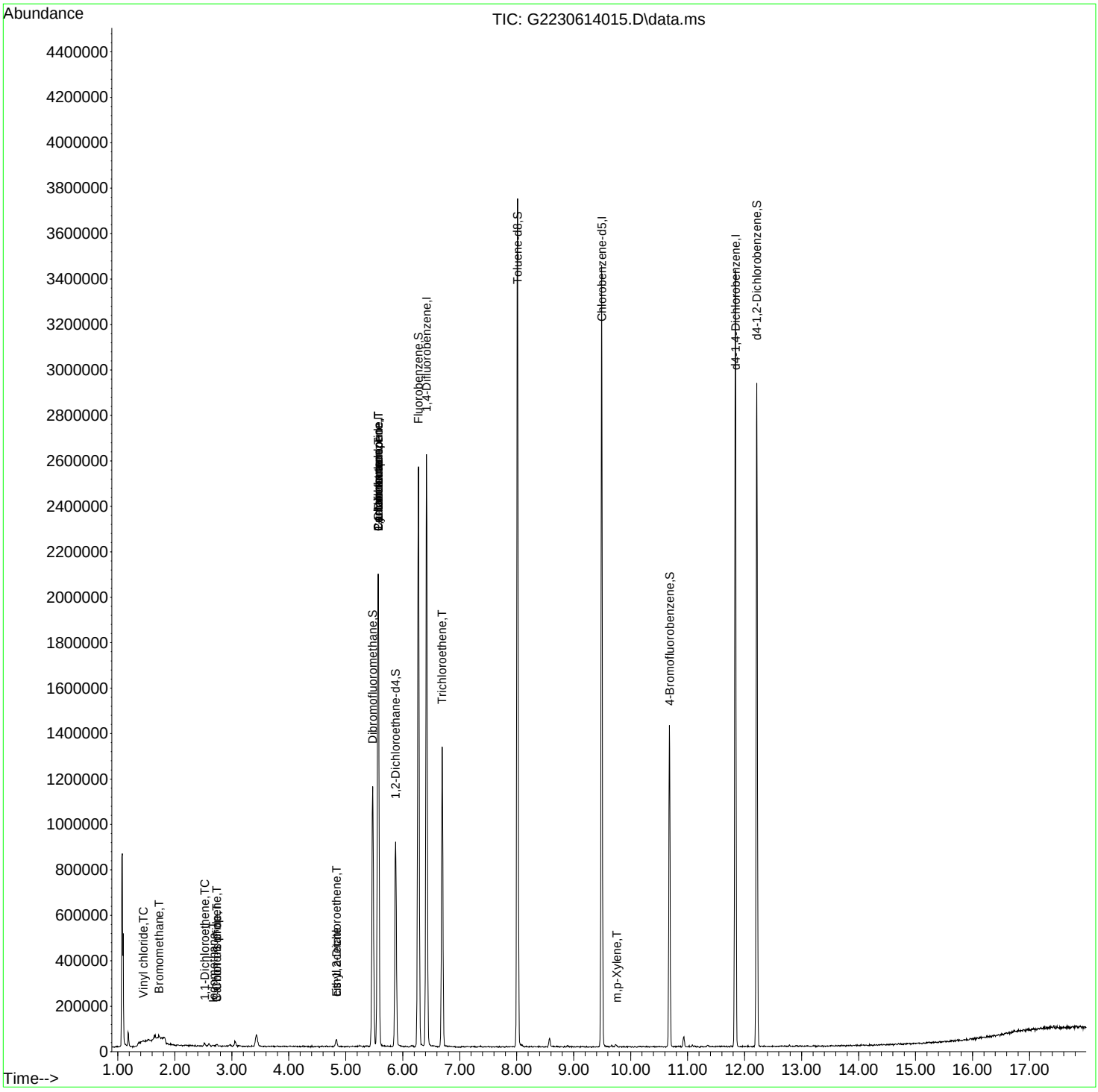
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.572	168	16817463	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.420	114	22745631	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	20042477	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.840	152	9600523	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.475	111	7131784	19.27	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.35%			
43) 1,2-Dichloroethane-d4	5.876	65	6460070	17.66	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 88.30%			
49) Fluorobenzene	6.277	96	25008005	19.29	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.45%			
64) Toluene-d8	8.015	98	24435283	19.34	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.70%			
81) 4-Bromofluorobenzene	10.683	174	4342057	9.58	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 95.80%			
97) d4-1,2-Dichlorobenzene	12.216	152	8473563	20.52	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 102.60%			
Target Compounds						Qvalue
3) Chloromethane	1.355	50	24949	Below Cal	#	41
4) Vinyl chloride	1.448	62	28333	0.09	ug/L #	43
5) Bromomethane	1.719	94	63773	0.03	ug/L #	82
10) 1,1-Dichloroethene	2.525	61	66307	0.10	ug/L #	69
12) Acetone	2.602	43	113281	Below Cal		93
13) Iodomethane	2.674	142	44978	0.11	ug/L #	41
14) Carbon disulfide	2.737	76	100540	0.04	ug/L #	74
17) 3-Chloro-1-propene	2.737	76	100541	0.52	ug/L #	53
18) Methylene chloride	3.054	49	109230	Below Cal		71
21) Methyl tert-butyl ether	3.437	73	718401	Below Cal		90
28) cis-1,2-Dichloroethene	4.836	61	183041	0.35	ug/L	74
31) Ethyl acetate	4.837	61	183044	3.45	ug/L #	45
40) Cyclohexane	5.572	84	382371	0.85	ug/L #	35
41) 1-Chlorobutane	5.569	56	216366	0.41	ug/L #	1
42) 1,1-Dichloropropene	5.571	75	911186	2.31	ug/L #	37
47) Carbon tetrachloride	5.570	117	1334177	3.25	ug/L #	16
50) Trichloroethene	6.694	95	4040021	13.45	ug/L	91
60) 4-Methyl-2-pentanone	8.016	43	79008	Below Cal	#	1
65) Toluene	8.090	91	30714	Below Cal	#	30
74) Ethylbenzene	9.760	91	29699	Below Cal	#	44
75) m,p-Xylene	9.760	91	26206	0.02	ug/L #	36
99) n-Butylbenzene	12.220	91	32343	Below Cal	#	53

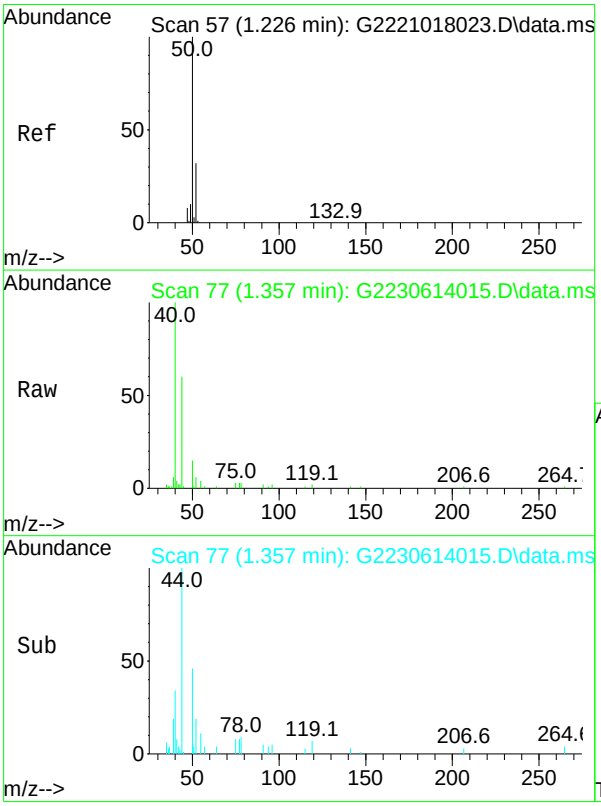
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614015.D
Acq On : 14 Jun 2023 14:20
Operator : PO1/MP3
Sample : 23F0196-04
Misc : 2
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 15 09:34:31 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

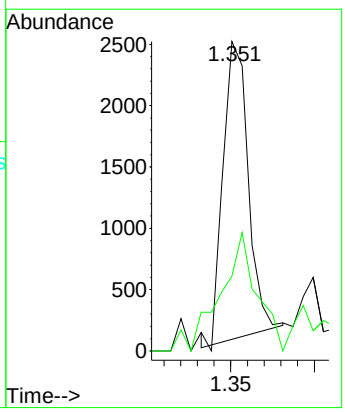


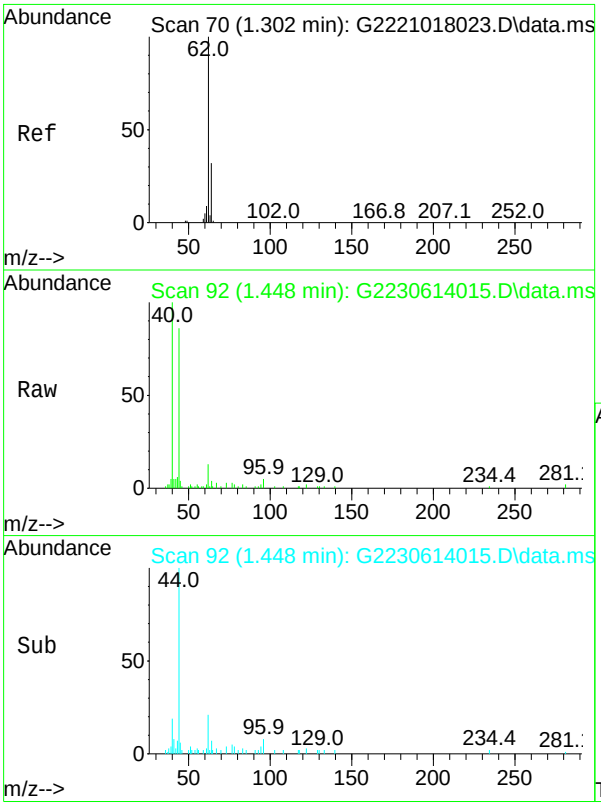


#3
Chloromethane
Concen: Below Cal
RT: 1.355 min Scan# 77
Delta R.T. 0.001 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 50 Resp: 24949

Ion	Ratio	Lower	Upper
50	100		
52	0.0	3.2	63.2#

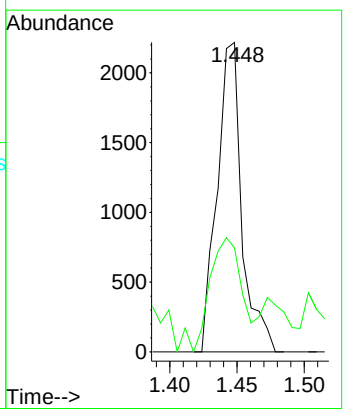


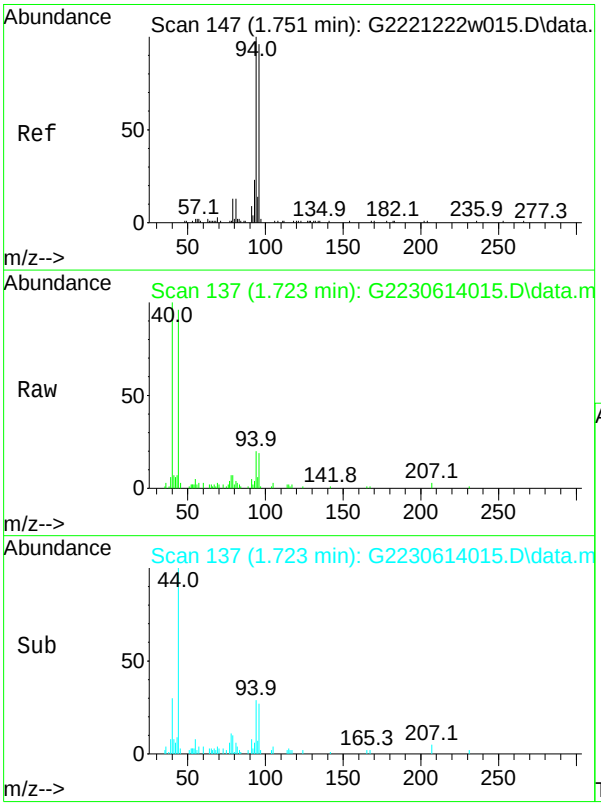


#4
Vinyl chloride
Concen: 0.09 ug/L
RT: 1.448 min Scan# 92
Delta R.T. 0.002 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 62 Resp: 28333

Ion	Ratio	Lower	Upper
62	100		
64	0.0	2.1	62.1#

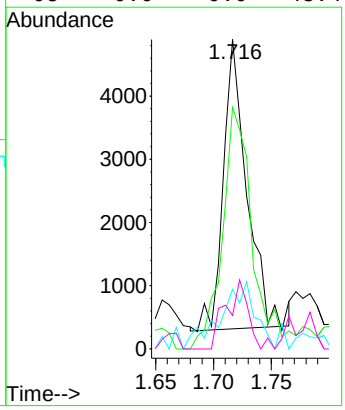


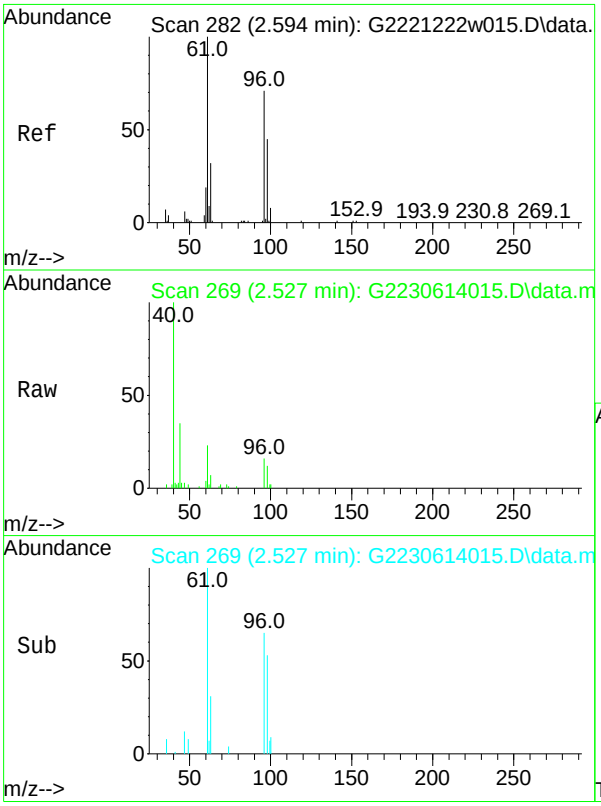


#5
Bromomethane
Concen: 0.03 ug/L
RT: 1.719 min Scan# 137
Delta R.T. 0.005 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 94 Resp: 63773

Ion	Ratio	Lower	Upper
94	100		
96	106.7	65.6	125.6
93	0.0	0.0	49.5
95	0.0	0.0	43.4

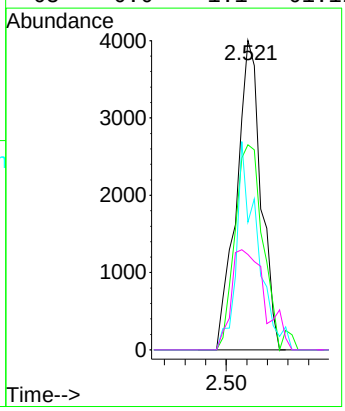


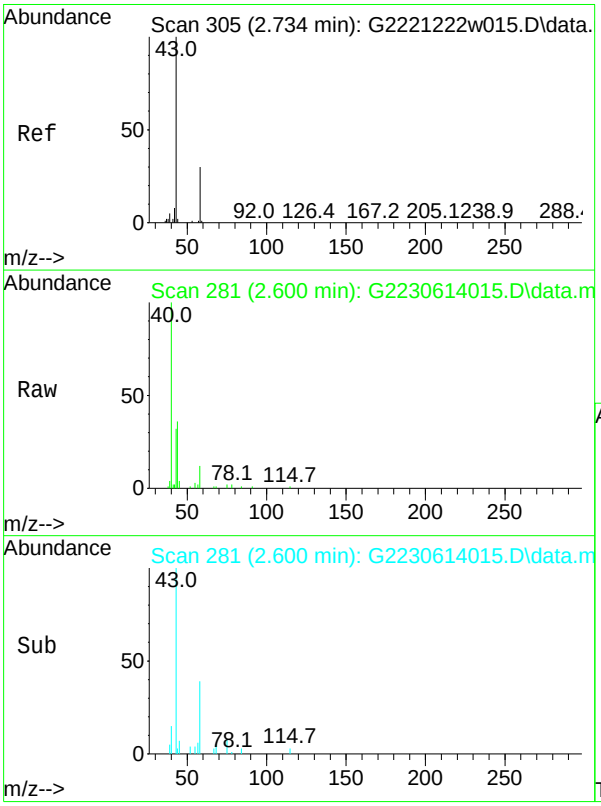


#10
1,1-Dichloroethene
Concen: 0.10 ug/L
RT: 2.525 min Scan# 269
Delta R.T. 0.002 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 61 Resp: 66307

Ion	Ratio	Lower	Upper
61	100		
96	77.0	32.7	92.7
98	57.2	9.3	69.3
63	0.0	1.1	61.1#

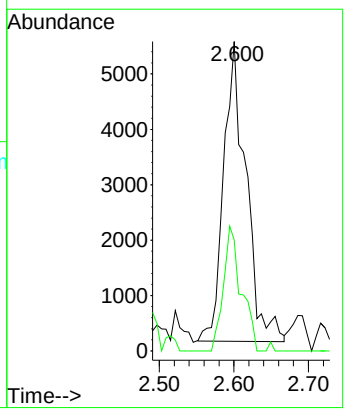


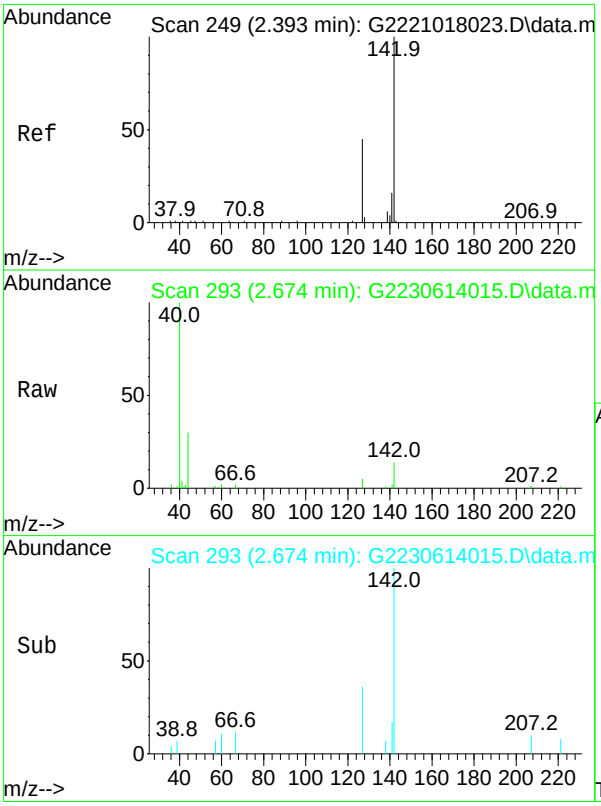


#12
Acetone
Concen: Below Cal
RT: 2.602 min Scan# 281
Delta R.T. -0.006 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 43 Resp: 113281

Ion	Ratio	Lower	Upper
43	100		
58	33.2	0.0	59.7

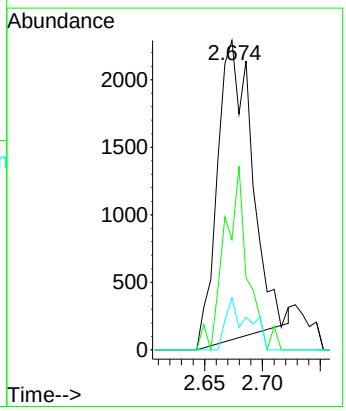


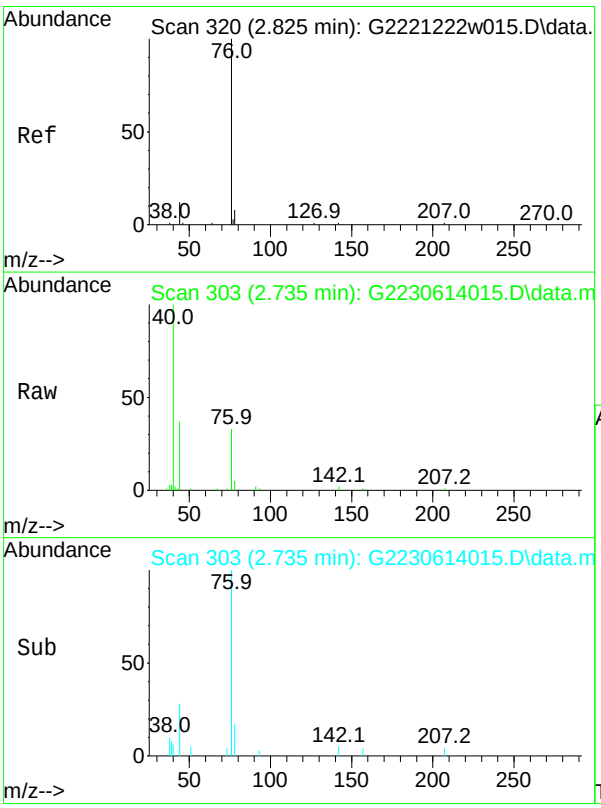


#13
Iodomethane
Concen: 0.11 ug/L
RT: 2.674 min Scan# 293
Delta R.T. -0.002 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion:142 Resp: 44978

Ion	Ratio	Lower	Upper
142	100		
127	0.0	13.3	73.3#
141	0.0	0.0	45.3

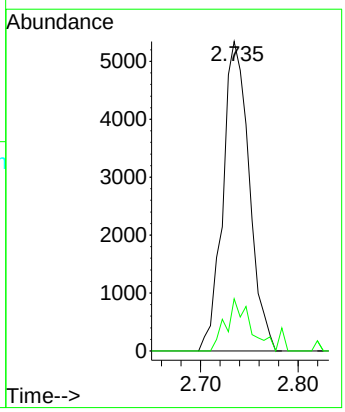


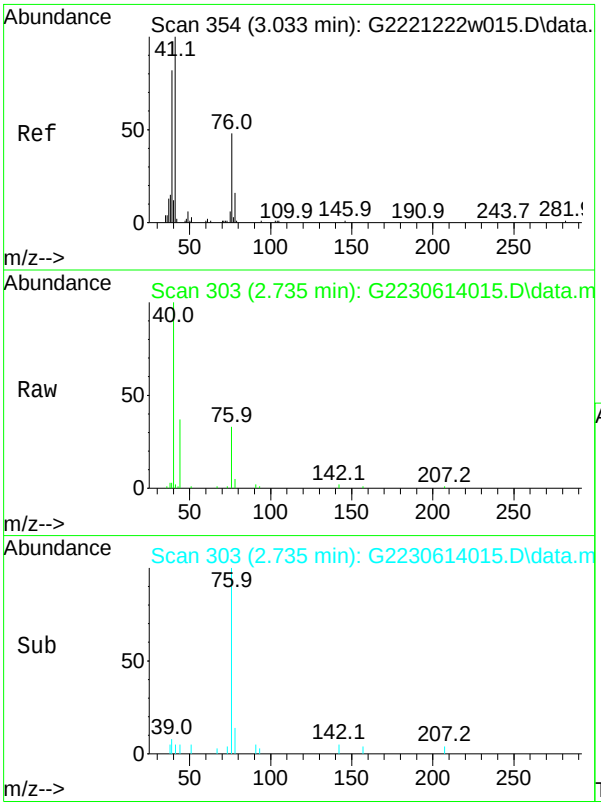


#14
Carbon disulfide
Concen: 0.04 ug/L
RT: 2.737 min Scan# 303
Delta R.T. -0.002 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 76 Resp: 100540

Ion	Ratio	Lower	Upper
76	100		
78	0.0	0.0	39.3

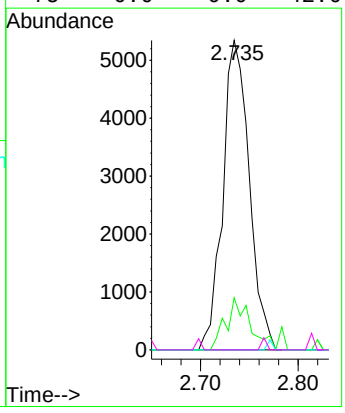


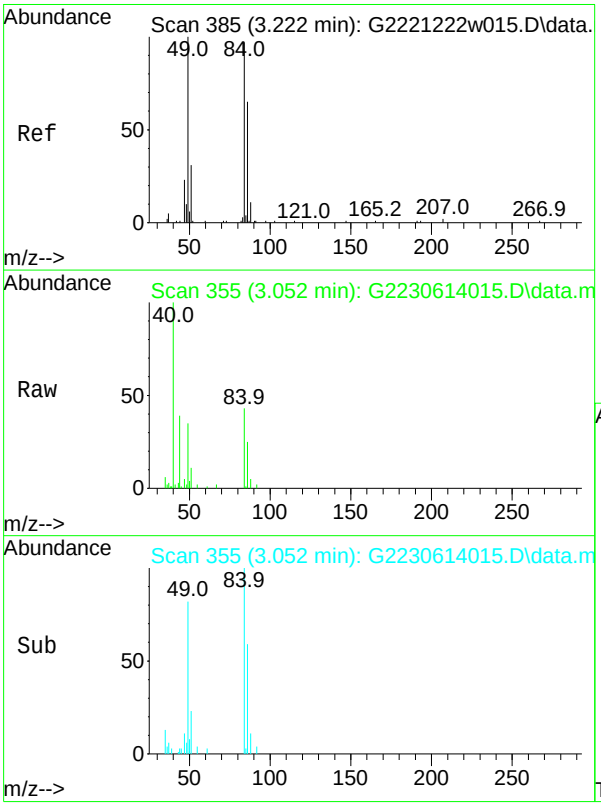


#17
3-Chloro-1-propene
Concen: 0.52 ug/L
RT: 2.737 min Scan# 303
Delta R.T. -0.183 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 76 Resp: 100541

Ion	Ratio	Lower	Upper
76	100		
78	0.0	2.4	62.4#
49	0.0	0.0	43.0
75	0.0	0.0	42.6

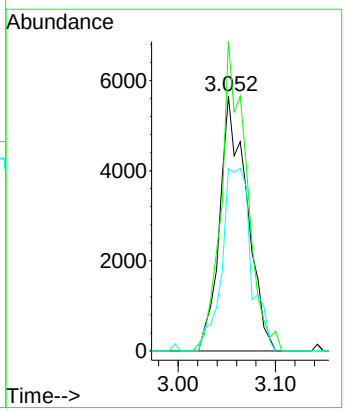


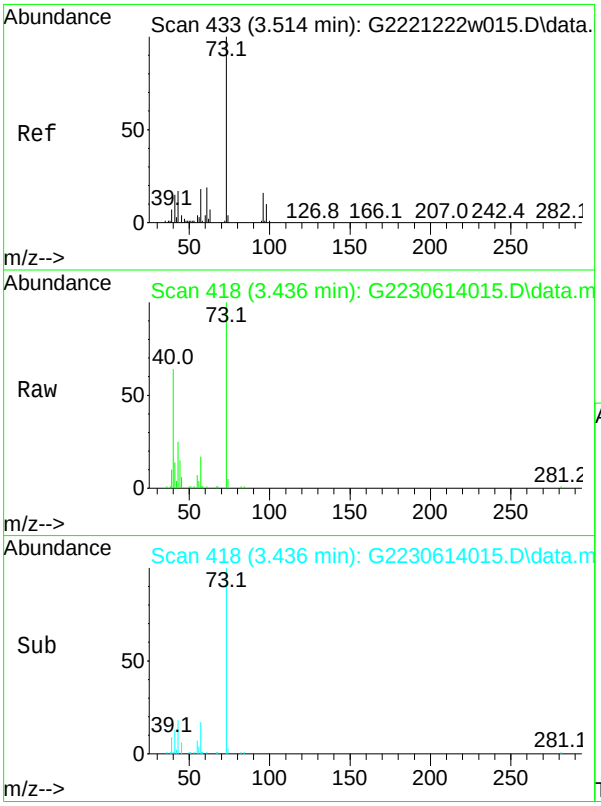


#18
Methylene chloride
Concen: Below Cal
RT: 3.054 min Scan# 355
Delta R.T. -0.008 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 49 Resp: 109230

Ion	Ratio	Lower	Upper
49	100		
84	114.0	57.9	117.9
86	77.5	24.9	84.9

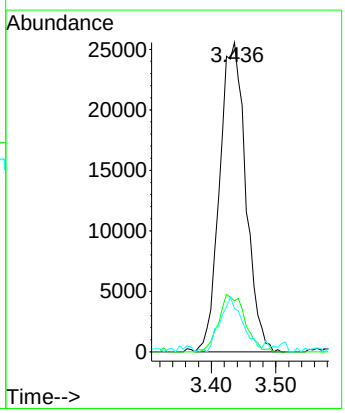


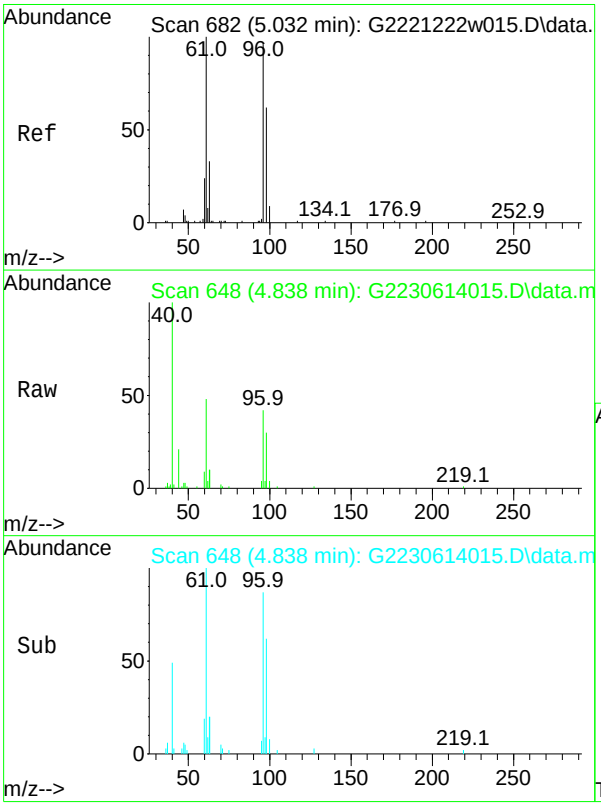


#21
Methyl tert-butyl ether
Concen: Below Cal
RT: 3.437 min Scan# 418
Delta R.T. -0.009 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 73 Resp: 718401

Ion	Ratio	Lower	Upper
73	100		
57	18.8	0.0	51.7
41	13.7	0.0	50.6

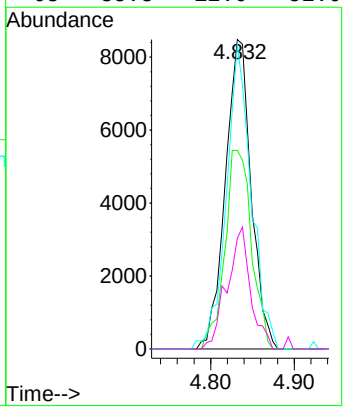


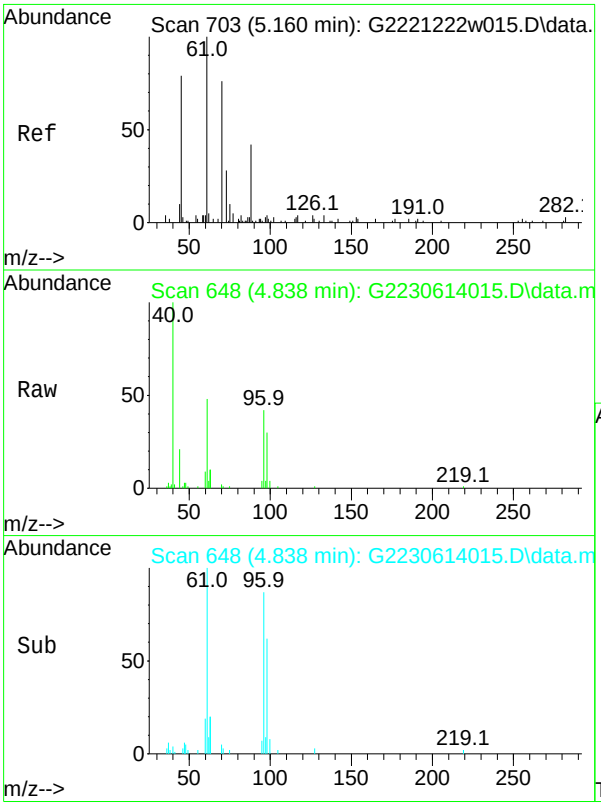


#28
cis-1,2-Dichloroethene
Concen: 0.35 ug/L
RT: 4.836 min Scan# 648
Delta R.T. 0.000 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 61 Resp: 183041

Ion	Ratio	Lower	Upper
61	100		
98	66.3	15.9	75.9
96	94.8	39.6	99.6
63	35.8	12.0	52.0

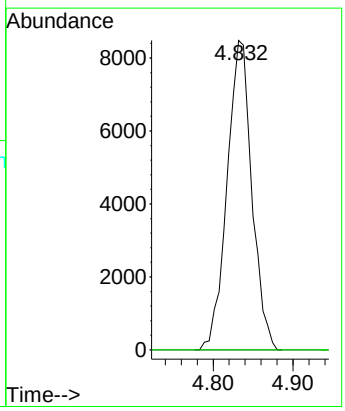


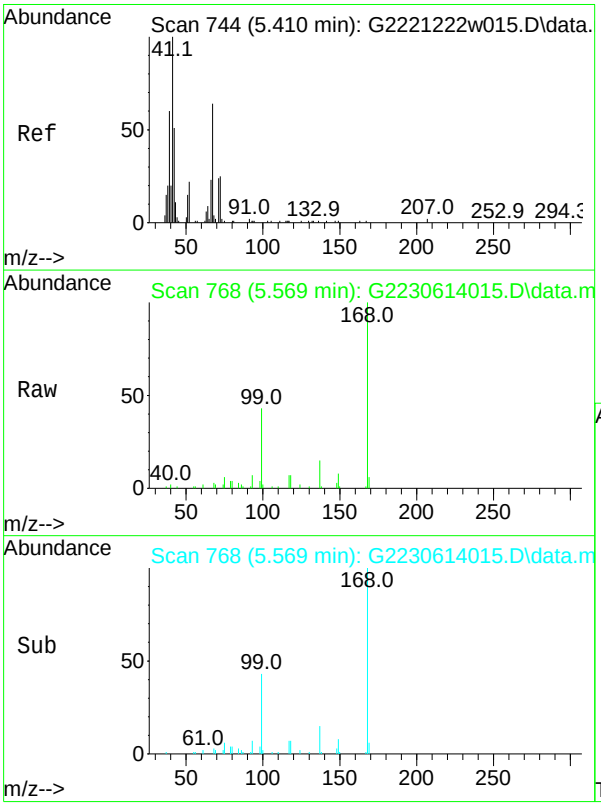


#31
Ethyl acetate
Concen: 3.45 ug/L
RT: 4.837 min Scan# 648
Delta R.T. -0.185 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 61 Resp: 183044

Ion	Ratio	Lower	Upper
61	100		
88	0.0	0.1	60.1#

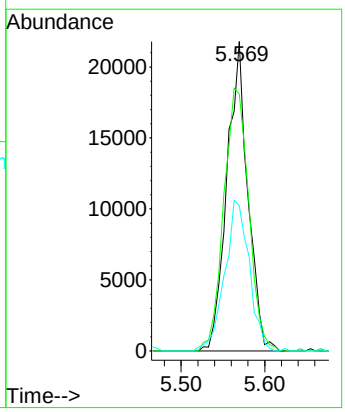


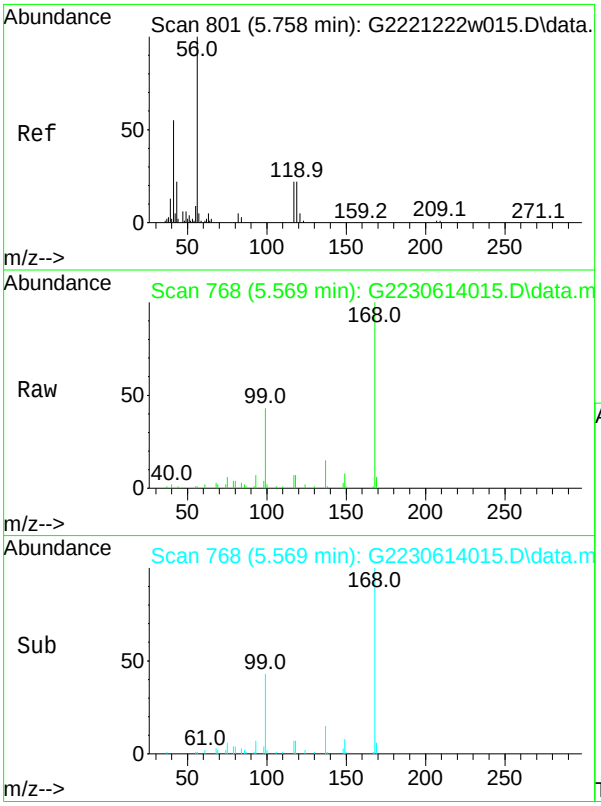


#40
Cyclohexane
Concen: 0.85 ug/L
RT: 5.572 min Scan# 768
Delta R.T. 0.038 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 84 Resp: 382371

Ion	Ratio	Lower	Upper
84	100		
69	101.0	6.8	66.8#
56	56.6	79.1	139.1#

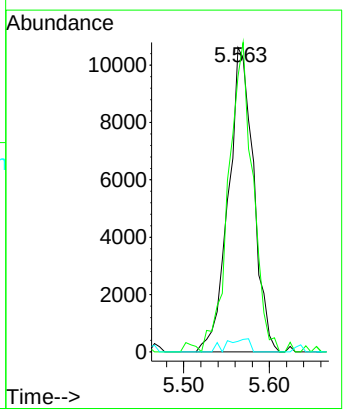


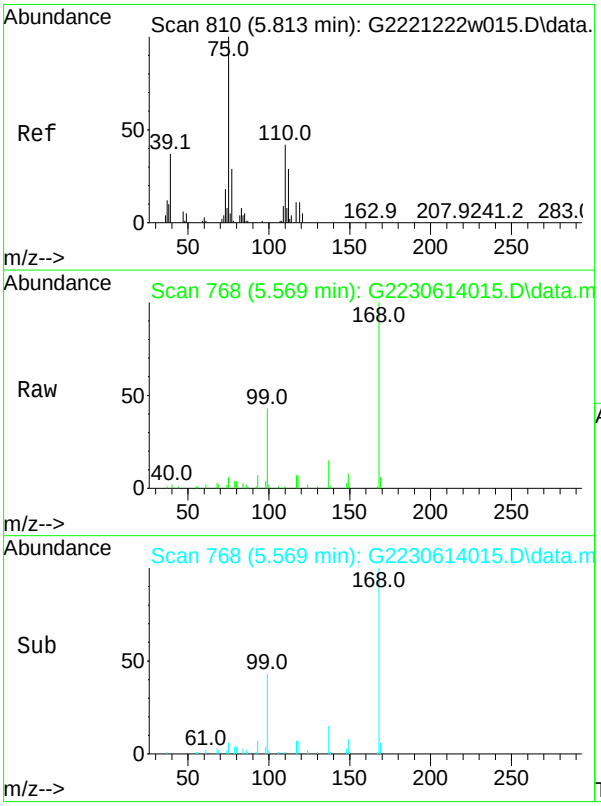


#41
1-Chlorobutane
Concen: 0.41 ug/L
RT: 5.569 min Scan# 768
Delta R.T. -0.061 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 56 Resp: 216366

Ion	Ratio	Lower	Upper
56	100		
55	98.4	0.0	41.0#
57	0.0	0.0	35.7

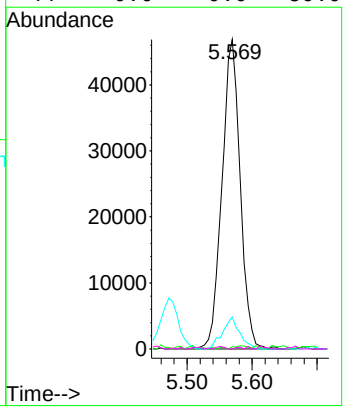


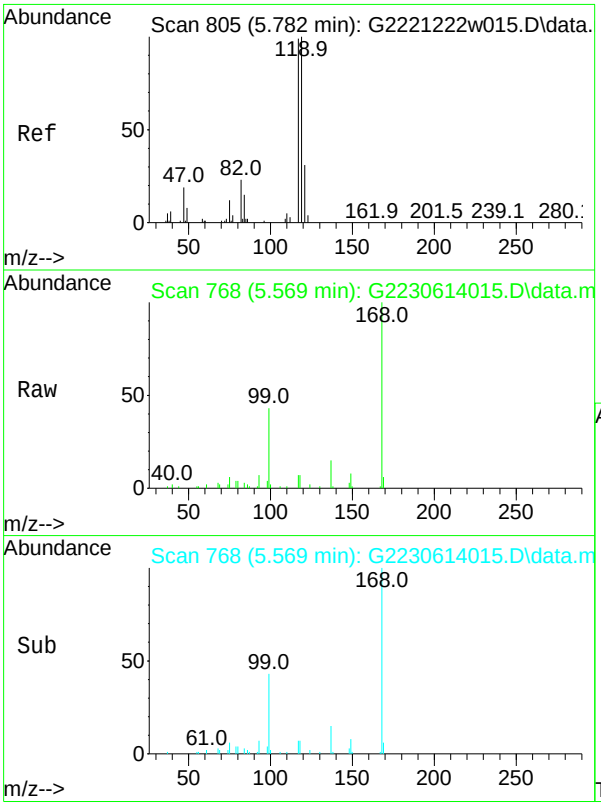


#42
1,1-Dichloropropene
Concen: 2.31 ug/L
RT: 5.571 min Scan# 768
Delta R.T. -0.118 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 75 Resp: 911186

Ion	Ratio	Lower	Upper
75	100		
39	0.0	25.8	85.8#
110	9.6	9.1	69.1
77	0.0	0.0	59.9

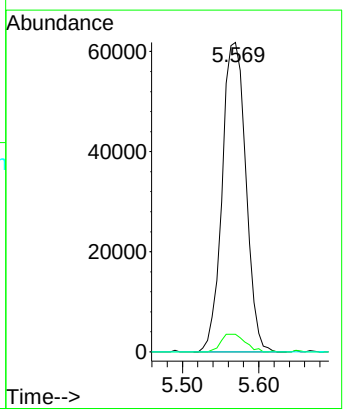


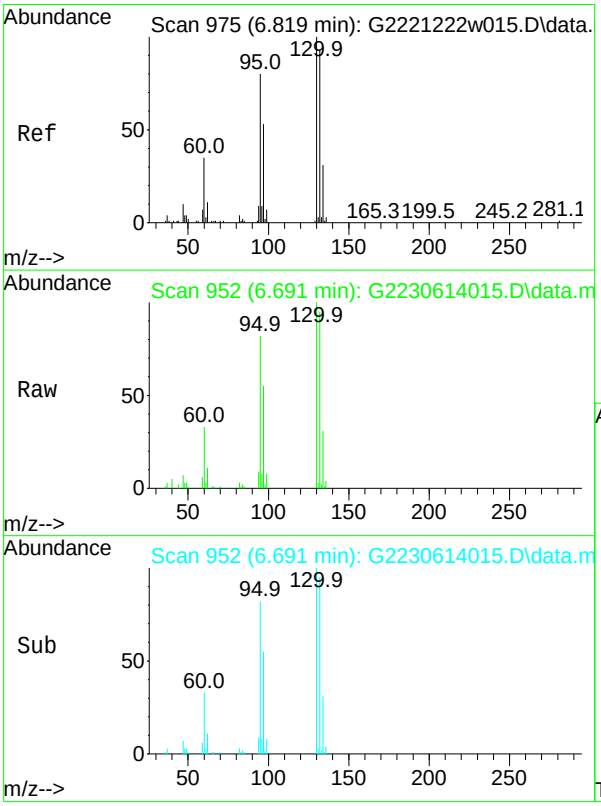


#47
Carbon tetrachloride
Concen: 3.25 ug/L
RT: 5.570 min Scan# 768
Delta R.T. -0.110 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion:117 Resp: 1334177

Ion	Ratio	Lower	Upper
117	100		
119	5.8	66.4	126.4#
121	0.0	0.4	60.4#

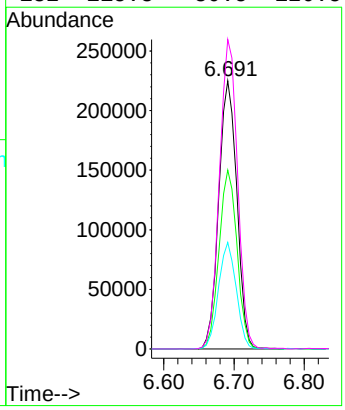


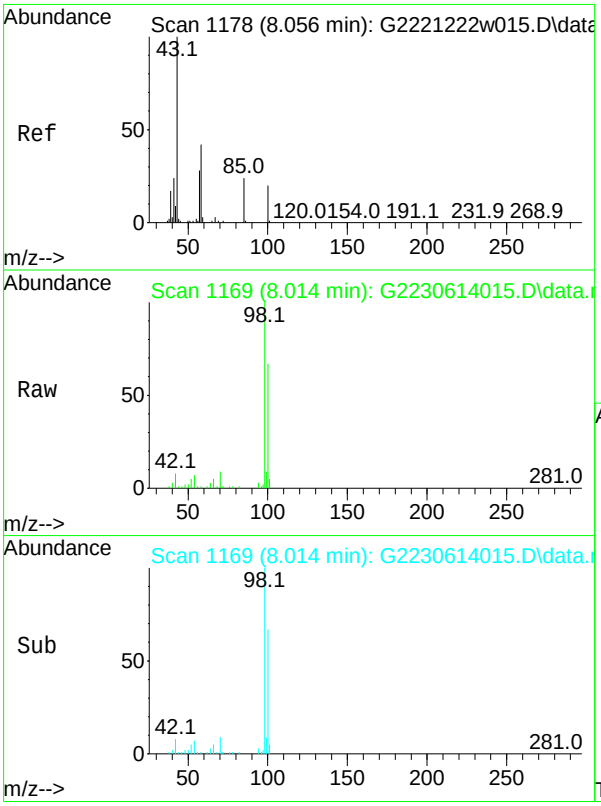


#50
Trichloroethene
Concen: 13.45 ug/L
RT: 6.694 min Scan# 952
Delta R.T. -0.002 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 95 Resp: 4040021

Ion	Ratio	Lower	Upper
95	100		
97	66.5	35.5	95.5
60	39.1	14.8	74.8
132	115.8	80.5	120.5

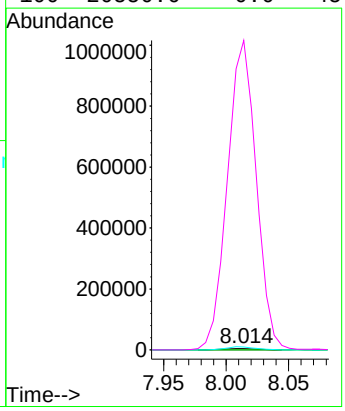


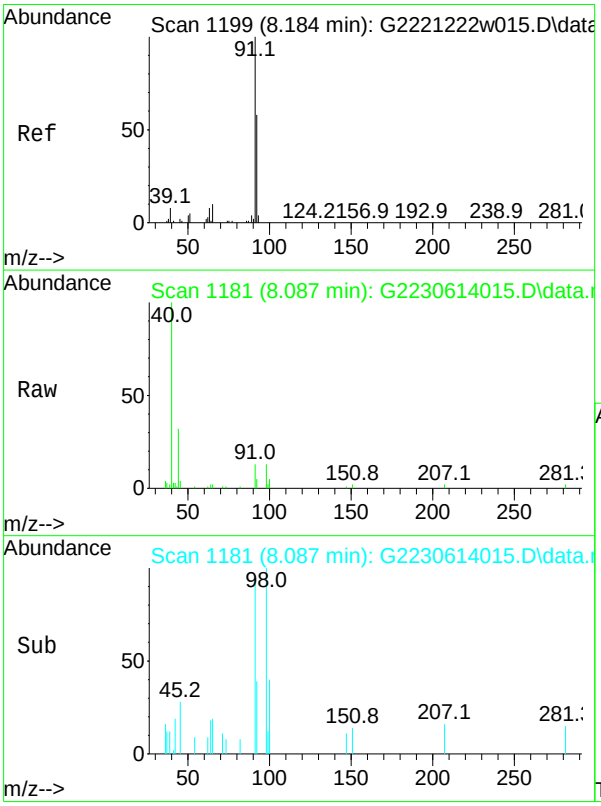


#60
4-Methyl-2-pentanone
Concen: Below Cal
RT: 8.016 min Scan# 1169
Delta R.T. 0.072 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 43 Resp: 79008

Ion	Ratio	Lower	Upper
43	100		
85	0.0	0.0	47.7
58	206.6	37.0	37.0#
100	20550.6	0.0	45.2#

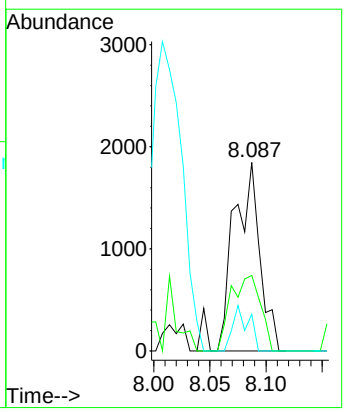


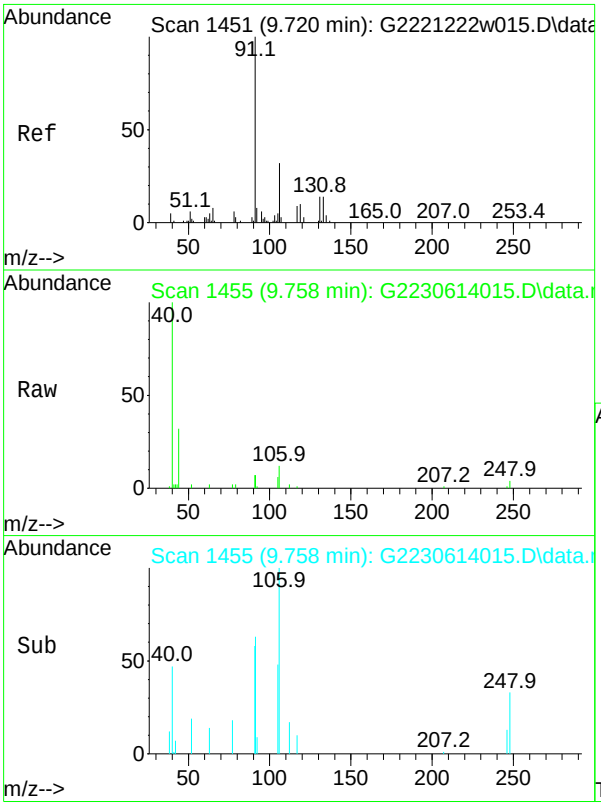


#65
Toluene
Concen: Below Cal
RT: 8.090 min Scan# 1181
Delta R.T. 0.004 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 91 Resp: 30714

Ion	Ratio	Lower	Upper
91	100		
92	0.0	27.5	87.5#
65	0.0	0.0	41.4

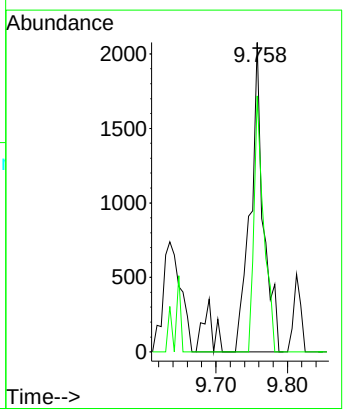


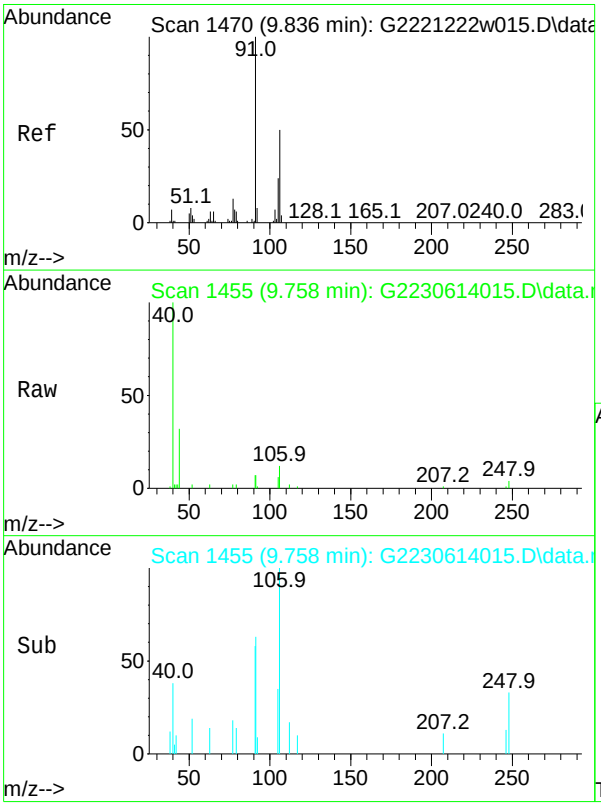


#74
Ethylbenzene
Concen: Below Cal
RT: 9.760 min Scan# 1455
Delta R.T. 0.117 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 91 Resp: 29699

Ion	Ratio	Lower	Upper
91	100		
106	0.0	0.8	60.8#

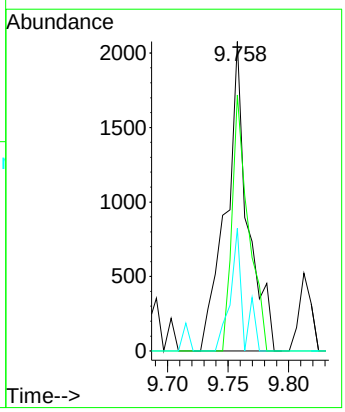


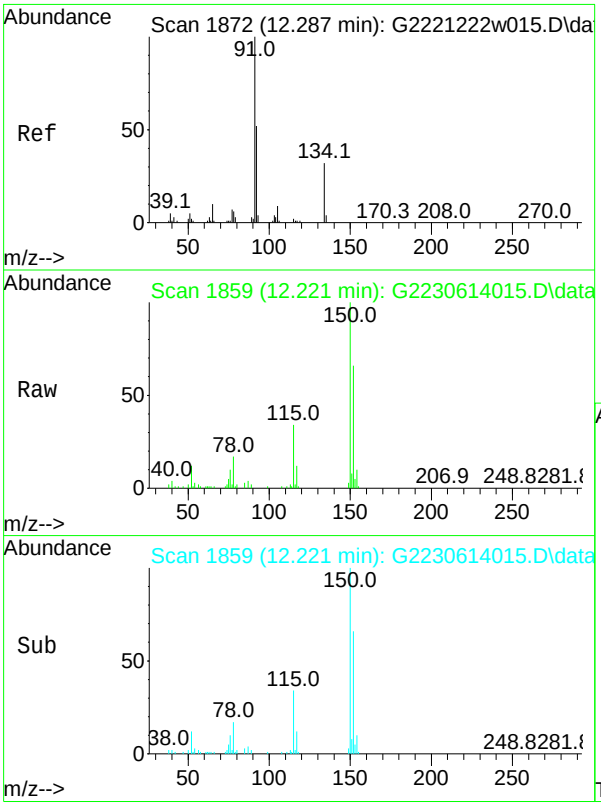


#75
m,p-Xylene
Concen: 0.02 ug/L
RT: 9.760 min Scan# 1455
Delta R.T. -0.004 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 91 Resp: 26206

Ion	Ratio	Lower	Upper
91	100		
106	0.0	19.0	79.0#
105	0.0	0.0	52.7

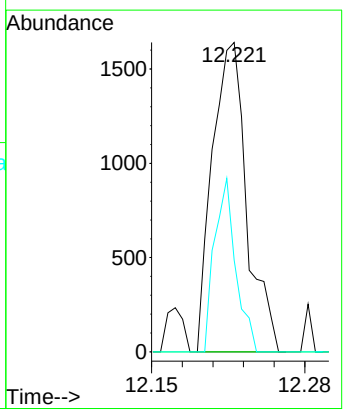




#99
n-Butylbenzene
Concen: Below Cal
RT: 12.220 min Scan# 1859
Delta R.T. -0.011 min
Lab File: G2230614015.D
Acq: 14 Jun 2023 14:20

Tgt Ion: 91 Resp: 32343

Ion	Ratio	Lower	Upper
91	100		
93	0.0	0.0	33.6
134	0.0	0.0	56.6



1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6247WW47

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-05	File ID:	G2230614016.D
Sampled:	06/02/23 14:25	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 14:45
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097	Instrument:	G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
630-20-6	1,1,1,2-Tetrachloroethane		0.130	0.400	1.00	U
71-55-6	1,1,1-Trichloroethane		0.175	0.400	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.124	0.400	1.00	U
79-00-5	1,1,2-Trichloroethane		0.166	0.400	1.00	U
75-34-3	1,1-Dichloroethane		0.134	0.400	1.00	U
75-35-4	1,1-Dichloroethene		0.191	0.400	1.00	U
563-58-6	1,1-Dichloropropene		0.140	0.400	1.00	U
87-61-6	1,2,3-Trichlorobenzene		0.204	0.400	1.00	U
96-18-4	1,2,3-Trichloropropane		0.183	0.400	1.00	U
120-82-1	1,2,4-Trichlorobenzene		0.205	0.600	1.20	U
95-63-6	1,2,4-Trimethylbenzene		0.132	0.400	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane		0.260	1.00	2.00	U
106-93-4	1,2-Dibromoethane		0.106	0.400	1.00	U
95-50-1	1,2-Dichlorobenzene		0.126	0.400	1.00	U
107-06-2	1,2-Dichloroethane		0.212	0.600	1.20	U
78-87-5	1,2-Dichloropropane		0.205	0.600	1.20	U
108-67-8	1,3,5-Trimethylbenzene		0.100	0.400	1.00	U
541-73-1	1,3-Dichlorobenzene		0.145	0.400	1.00	U
142-28-9	1,3-Dichloropropane		0.136	0.400	1.00	U
106-46-7	1,4-Dichlorobenzene		0.184	0.400	1.00	U
594-20-7	2,2-Dichloropropane		0.184	0.400	1.00	U
78-93-3	2-Butanone		0.660	1.40	3.50	U
95-49-8	2-Chlorotoluene		0.147	0.400	1.00	U
591-78-6	2-Hexanone		0.143	1.40	3.50	U
106-43-4	4-Chlorotoluene		0.184	0.400	1.00	U
99-87-6	4-Isopropyltoluene		0.140	0.400	1.00	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6247WW47

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-05	File ID:	G2230614016.D
Sampled:	06/02/23 14:25	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 14:45
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
108-10-1	4-Methyl-2-pentanone		0.270	1.40	3.50	U
67-64-1	Acetone	16.7	1.04	4.00	8.00	D
71-43-2	Benzene		0.101	0.400	1.00	U
108-86-1	Bromobenzene		0.170	0.400	1.00	U
74-97-5	Bromochloromethane		0.134	0.400	1.00	U
75-27-4	Bromodichloromethane		0.106	0.400	1.00	U
75-25-2	Bromoform		0.206	0.400	1.00	U
74-83-9	Bromomethane		0.320	1.00	2.00	U
75-15-0	Carbon disulfide		0.280	1.00	2.00	U
56-23-5	Carbon tetrachloride		0.169	0.400	1.00	U
108-90-7	Chlorobenzene		0.130	0.400	1.00	U
75-00-3	Chloroethane		0.311	0.400	1.00	U
67-66-3	Chloroform		0.203	0.600	1.20	U
74-87-3	Chloromethane		0.384	1.00	2.00	U
156-59-2	cis-1,2-Dichloroethene		0.205	0.600	1.20	U
10061-01-5	cis-1,3-Dichloropropene		0.117	0.400	1.00	U
124-48-1	Dibromochloromethane		0.152	0.400	1.00	U
74-95-3	Dibromomethane		0.163	0.400	1.00	U
75-71-8	Dichlorodifluoromethane		0.259	1.00	2.00	U
100-41-4	Ethylbenzene		0.0600	0.200	0.400	U
87-68-3	Hexachlorobutadiene		0.200	0.400	1.00	U
98-82-8	Isopropylbenzene		0.110	0.400	1.00	U
179601-23-1	m,p-Xylene		0.178	0.800	2.00	U
1634-04-4	Methyl tert-butyl ether		0.106	0.400	1.00	U
75-09-2	Methylene chloride		0.447	1.00	2.00	U
104-51-8	n-Butylbenzene		0.260	1.00	2.00	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6247WW47

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-05	File ID:	G2230614016.D
Sampled:	06/02/23 14:25	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 14:45
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097	Instrument:	G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
103-65-1	n-Propylbenzene		0.126	0.400	1.00	U
91-20-3	Naphthalene		0.140	0.400	1.00	U
95-47-6	o-Xylene		0.0832	0.400	1.00	U
135-98-8	sec-Butylbenzene		0.120	0.400	1.00	U
100-42-5	Styrene		0.0906	0.200	0.400	U
98-06-6	tert-Butylbenzene		0.0906	0.400	1.00	U
127-18-4	Tetrachloroethene		0.357	1.00	2.00	Q, U
108-88-3	Toluene		0.114	0.400	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.171	0.400	1.00	U
10061-02-6	trans-1,3-Dichloropropene		0.117	0.400	1.00	U
79-01-6	Trichloroethene	0.400	0.156	0.400	1.00	J, D
75-69-4	Trichlorofluoromethane		0.101	0.400	1.00	U
75-01-4	Vinyl chloride		0.258	1.00	2.00	U

Italicized = secondary result

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614016.D
Acq On : 14 Jun 2023 14:45
Operator : PO1/MP3
Sample : 23F0196-05
Misc : 2
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 15 09:36:27 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

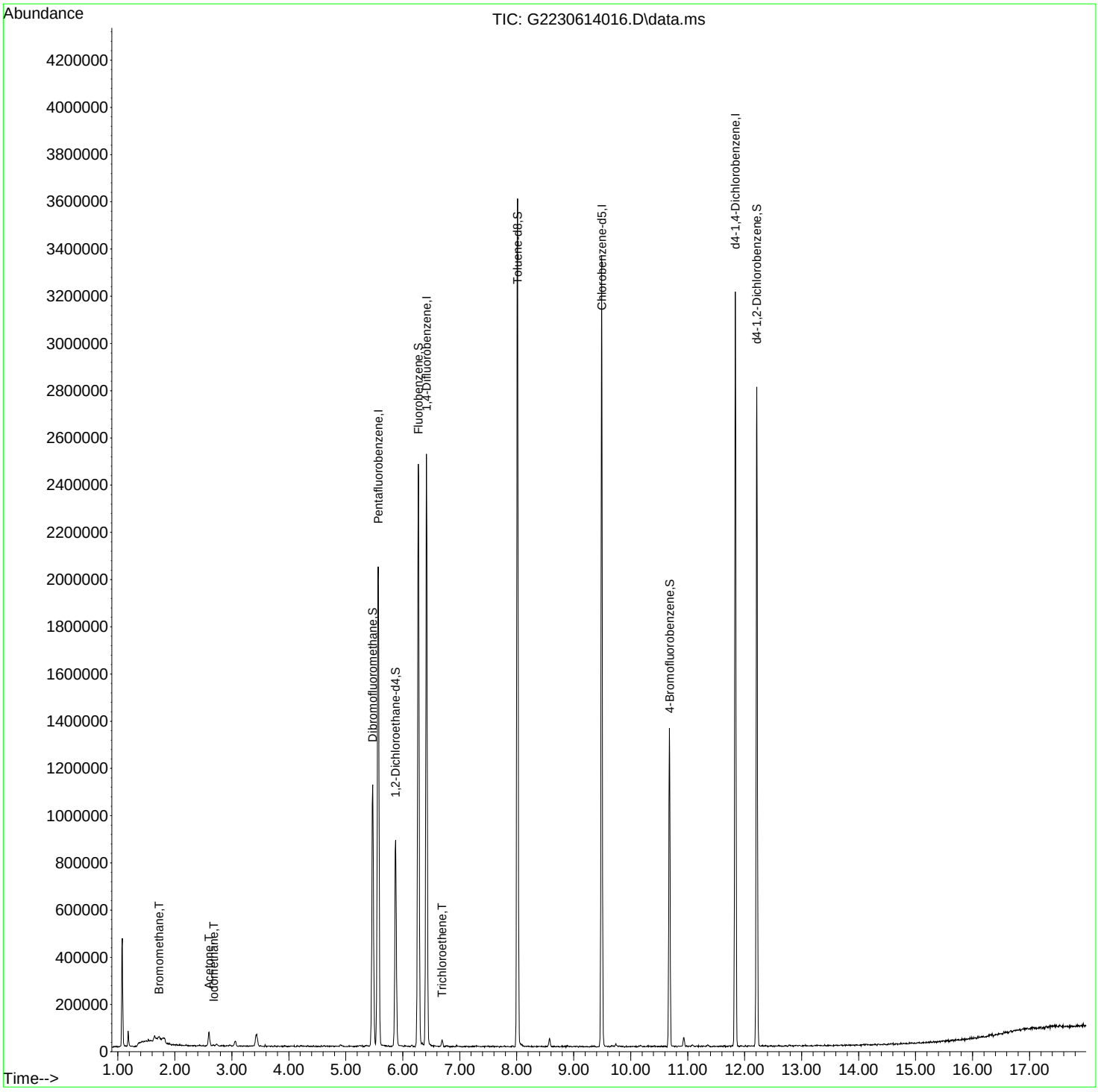
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.571	168	16495164	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.419	114	21844641	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	19350198	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.839	152	9122057	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.473	111	6970659	19.20	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.00%			
43) 1,2-Dichloroethane-d4	5.875	65	6216215	17.33	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 86.65%			
49) Fluorobenzene	6.276	96	24117142	19.38	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.90%			
64) Toluene-d8	8.014	98	23728559	19.46	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.30%			
81) 4-Bromofluorobenzene	10.684	174	4189361	9.73	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 97.30%			
97) d4-1,2-Dichlorobenzene	12.216	152	8038740	20.49	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 102.45%			
Target Compounds						Qvalue
5) Bromomethane	1.721	94	62179	0.03	ug/L #	80
12) Acetone	2.600	43	743439	8.37	ug/L	90
13) Iodomethane	2.681	142	46415	0.12	ug/L #	41
18) Methylene chloride	3.059	49	109878	Below Cal		78
21) Methyl tert-butyl ether	3.429	73	699059	Below Cal		95
50) Trichloroethene	6.692	95	81019	0.20	ug/L #	78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614016.D
Acq On : 14 Jun 2023 14:45
Operator : PO1/MP3
Sample : 23F0196-05
Misc : 2
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 15 09:36:27 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G



Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614016.D
Acq On : 14 Jun 2023 14:45
Operator : PO1/MP3
Sample : 23F0196-05
Misc : 2
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 15 09:36:27 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

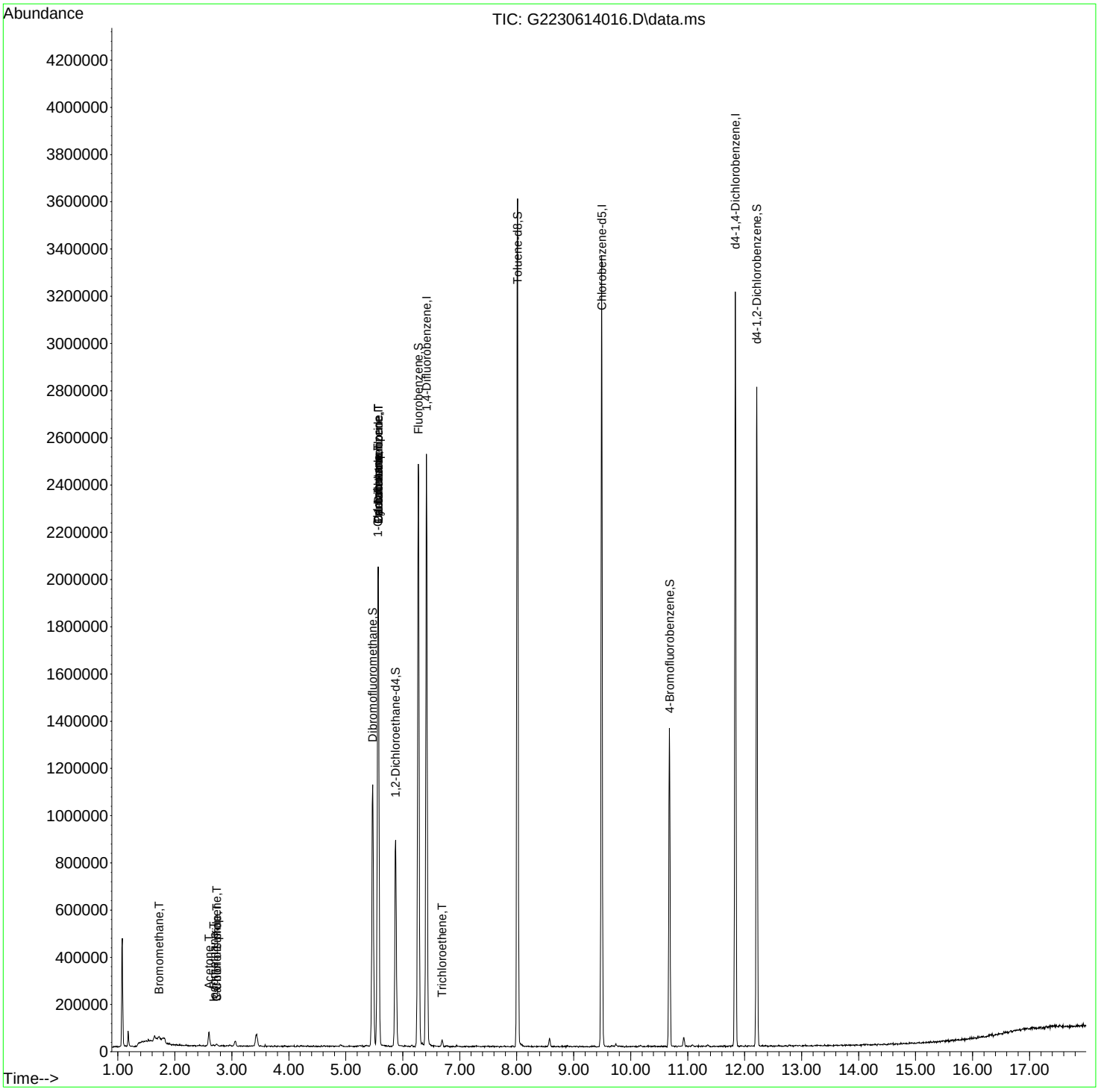
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene	5.571	168	16495164	20.00	ug/L		0.00
46) 1,4-Difluorobenzene	6.419	114	21844641	20.00	ug/L		0.00
63) Chlorobenzene-d5	9.493	117	19350198	20.00	ug/L		0.00
78) d4-1,4-Dichlorobenzene	11.839	152	9122057	20.00	ug/L		0.00
System Monitoring Compounds							
38) Dibromofluoromethane	5.473	111	6970659	19.20	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.00%				
43) 1,2-Dichloroethane-d4	5.875	65	6216215	17.33	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 86.65%				
49) Fluorobenzene	6.276	96	24117142	19.38	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.90%				
64) Toluene-d8	8.014	98	23728559	19.46	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.30%				
81) 4-Bromofluorobenzene	10.684	174	4189361	9.73	ug/L		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 97.30%				
97) d4-1,2-Dichlorobenzene	12.216	152	8038740	20.49	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 102.45%				
Target Compounds							Qvalue
5) Bromomethane	1.721	94	62179	0.03	ug/L	#	80
12) Acetone	2.600	43	743439	8.37	ug/L		90
13) Iodomethane	2.681	142	46415	0.12	ug/L	#	41
14) Carbon disulfide	2.732	76	104585	0.05	ug/L	#	74
17) 3-Chloro-1-propene	2.732	76	104583	0.55	ug/L	#	53
18) Methylene chloride	3.059	49	109878	Below Cal			78
21) Methyl tert-butyl ether	3.429	73	699059	Below Cal			95
40) Cyclohexane	5.569	84	350082	0.79	ug/L	#	28
41) 1-Chlorobutane	5.565	56	192958	0.38	ug/L	#	1
42) 1,1-Dichloropropene	5.569	75	821830	2.12	ug/L	#	38
47) Carbon tetrachloride	5.570	117	1321089	3.35	ug/L	#	16
50) Trichloroethene	6.692	95	81019	0.20	ug/L	#	78
60) 4-Methyl-2-pentanone	8.012	43	69284	Below Cal		#	1
74) Ethylbenzene	9.495	91	45968	Below Cal		#	44
99) n-Butylbenzene	12.213	91	26669	Below Cal		#	53

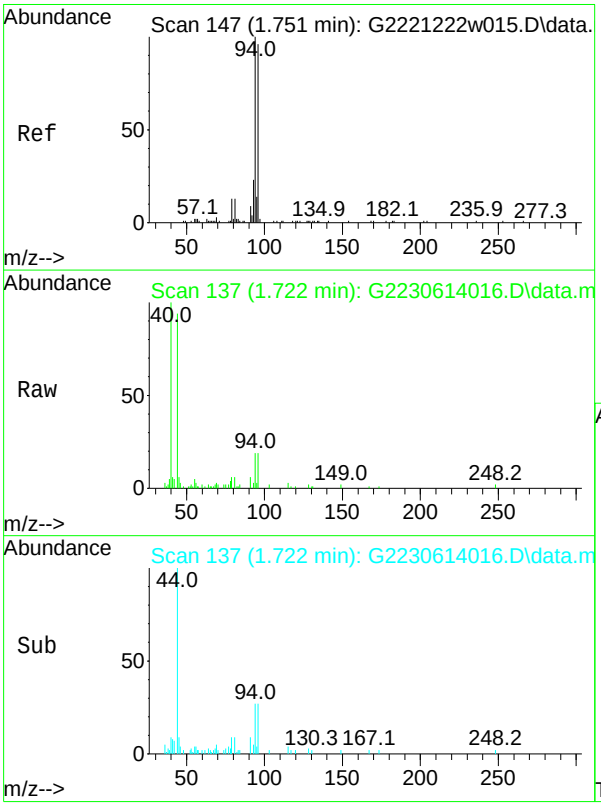
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614016.D
Acq On : 14 Jun 2023 14:45
Operator : PO1/MP3
Sample : 23F0196-05
Misc : 2
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 15 09:36:27 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

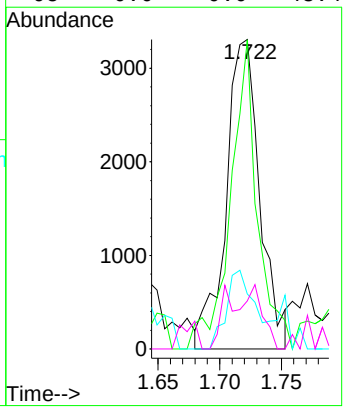


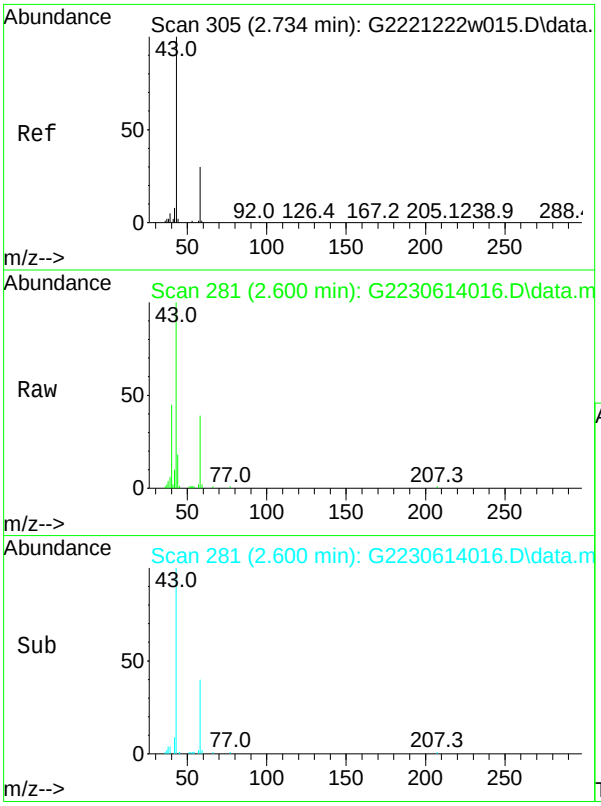


#5
Bromomethane
Concen: 0.03 ug/L
RT: 1.721 min Scan# 137
Delta R.T. 0.007 min
Lab File: G2230614016.D
Acq: 14 Jun 2023 14:45

Tgt Ion: 94 Resp: 62179

Ion	Ratio	Lower	Upper
94	100		
96	82.5	65.6	125.6
93	0.0	0.0	49.5
95	0.0	0.0	43.4

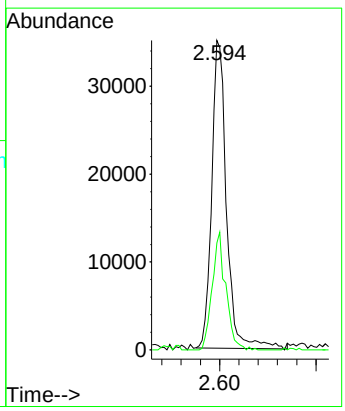


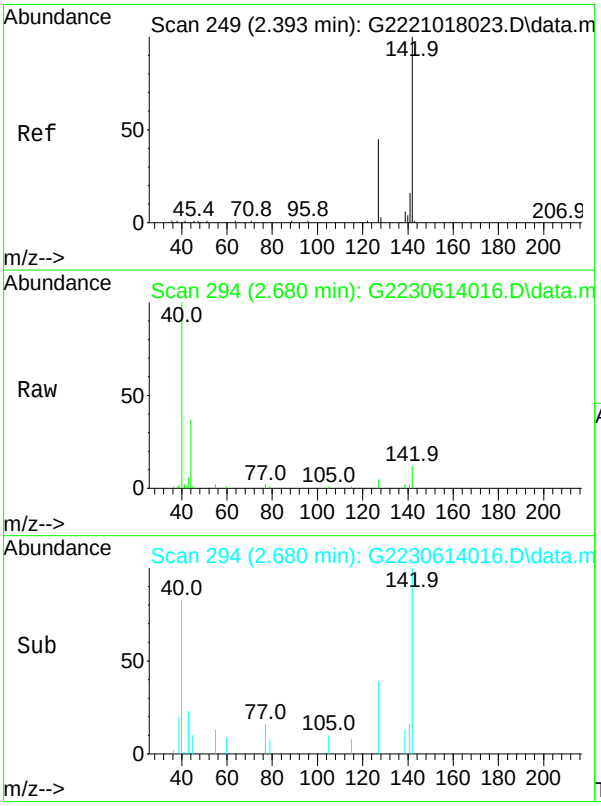


#12
Acetone
Concen: 8.37 ug/L
RT: 2.600 min Scan# 281
Delta R.T. -0.008 min
Lab File: G2230614016.D
Acq: 14 Jun 2023 14:45

Tgt Ion: 43 Resp: 743439

Ion	Ratio	Lower	Upper
43	100		
58	35.3	0.0	59.7

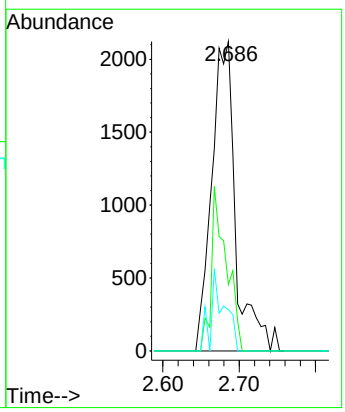


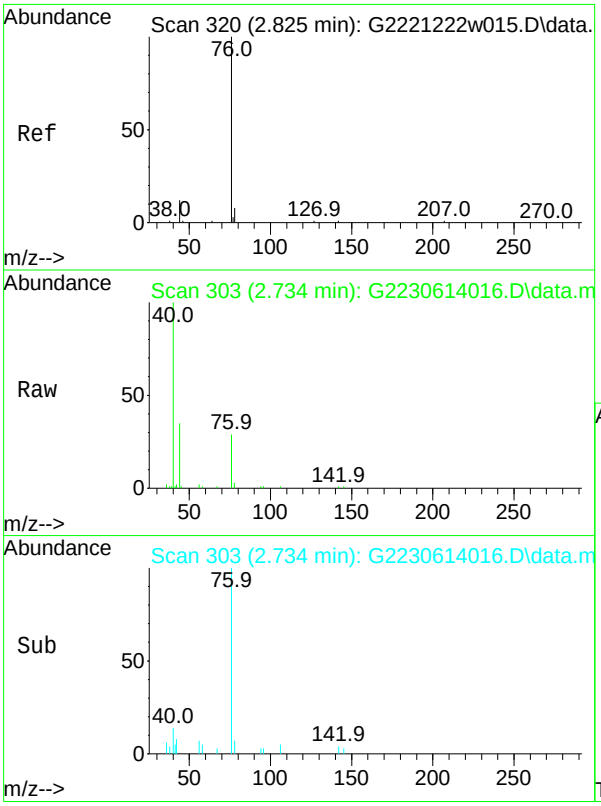


#13
Iodomethane
Concen: 0.12 ug/L
RT: 2.681 min Scan# 294
Delta R.T. 0.005 min
Lab File: G2230614016.D
Acq: 14 Jun 2023 14:45

Tgt Ion:142 Resp: 46415

Ion	Ratio	Lower	Upper
142	100		
127	0.0	13.3	73.3#
141	0.0	0.0	45.3

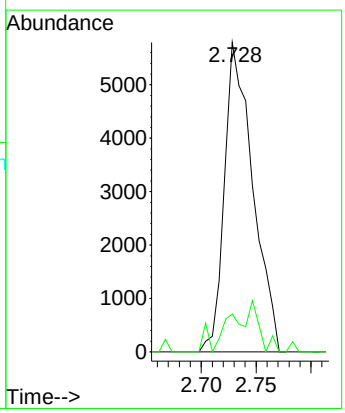


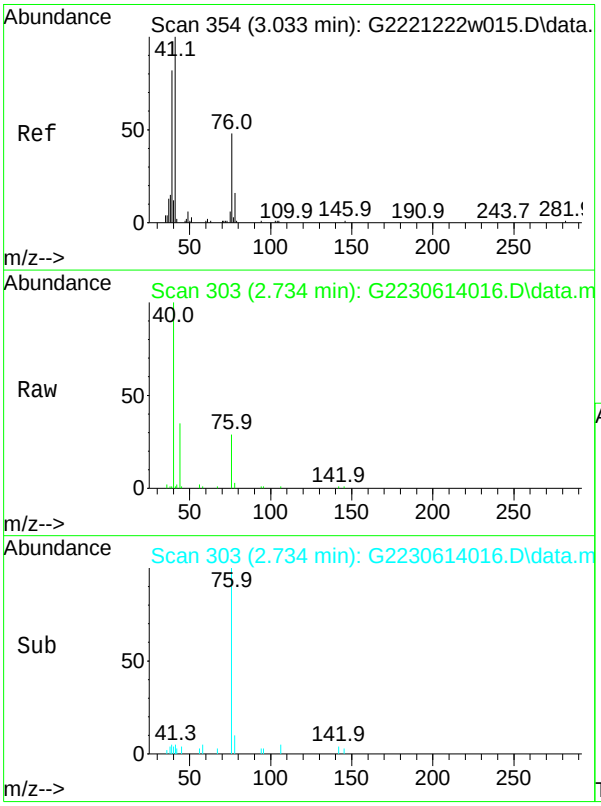


#14
Carbon disulfide
Concen: 0.05 ug/L
RT: 2.732 min Scan# 303
Delta R.T. -0.007 min
Lab File: G2230614016.D
Acq: 14 Jun 2023 14:45

Tgt Ion: 76 Resp: 104585

Ion	Ratio	Lower	Upper
76	100		
78	0.0	0.0	39.3

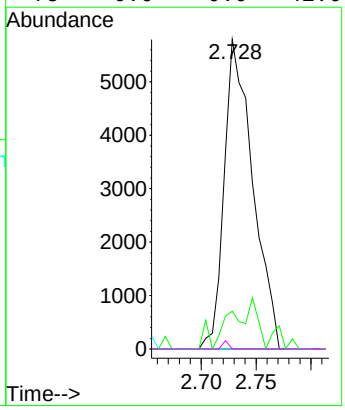


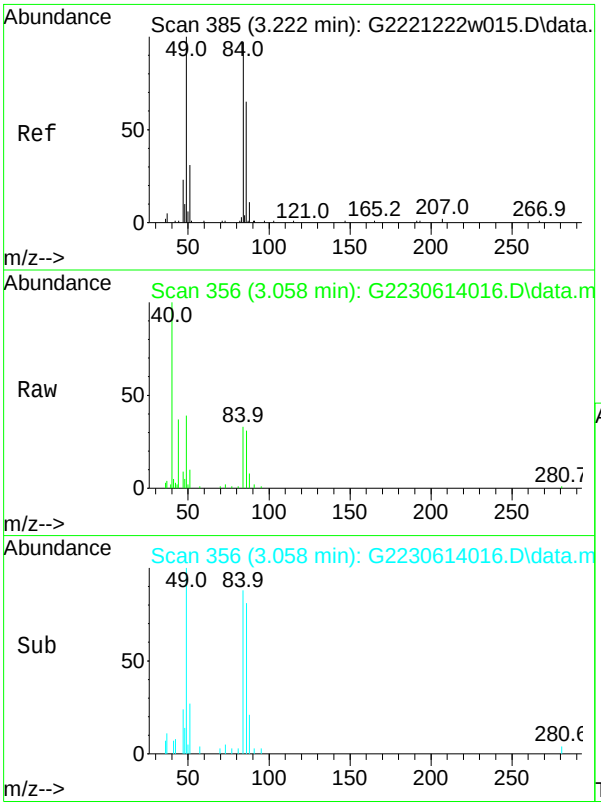


#17
3-Chloro-1-propene
Concen: 0.55 ug/L
RT: 2.732 min Scan# 303
Delta R.T. -0.188 min
Lab File: G2230614016.D
Acq: 14 Jun 2023 14:45

Tgt Ion: 76 Resp: 104583

Ion	Ratio	Lower	Upper
76	100		
78	0.0	2.4	62.4#
49	0.0	0.0	43.0
75	0.0	0.0	42.6

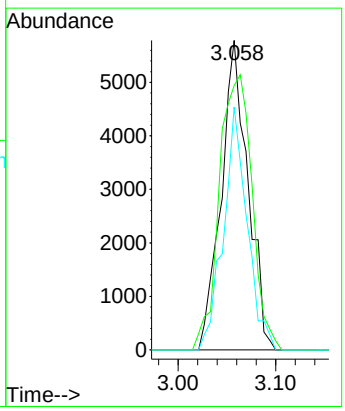


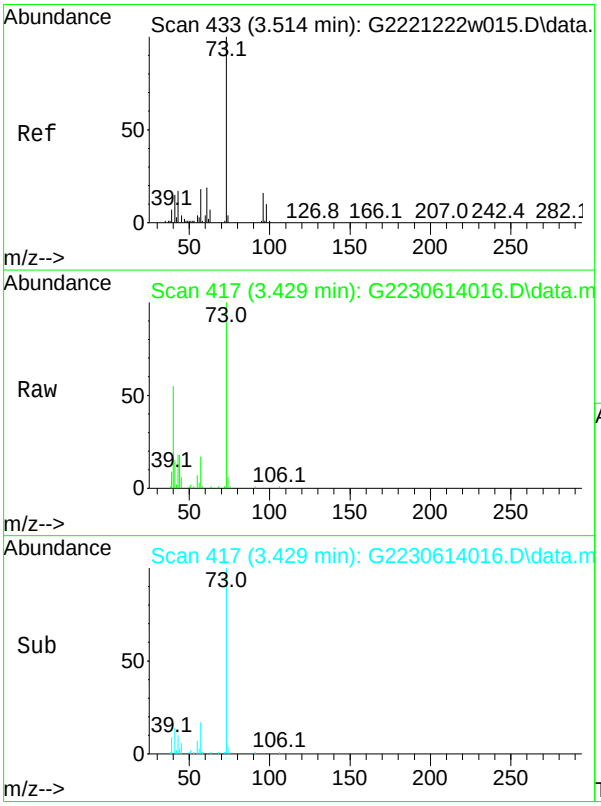


#18
Methylene chloride
Concen: Below Cal
RT: 3.059 min Scan# 356
Delta R.T. -0.003 min
Lab File: G2230614016.D
Acq: 14 Jun 2023 14:45

Tgt Ion: 49 Resp: 109878

Ion	Ratio	Lower	Upper
49	100		
84	109.2	57.9	117.9
86	70.0	24.9	84.9

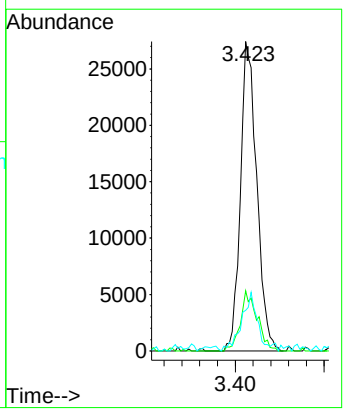


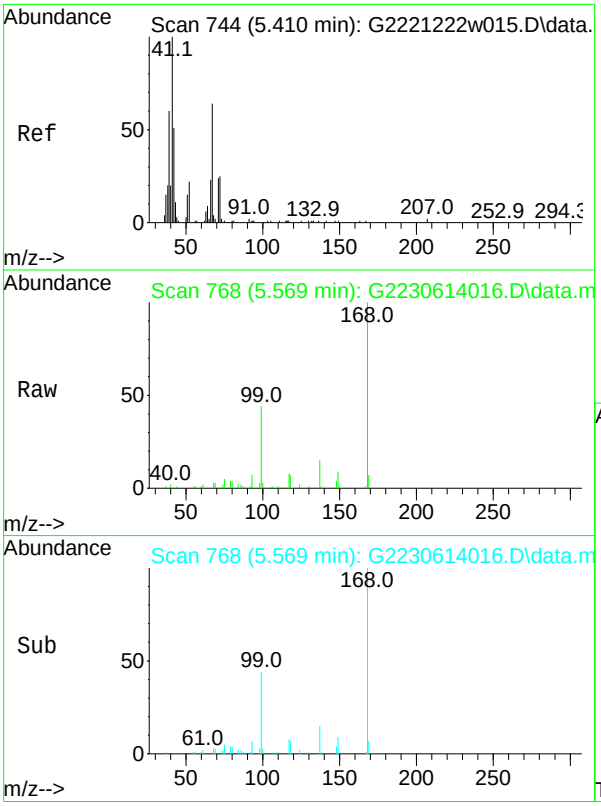


#21
Methyl tert-butyl ether
Concen: Below Cal
RT: 3.429 min Scan# 417
Delta R.T. -0.017 min
Lab File: G2230614016.D
Acq: 14 Jun 2023 14:45

Tgt Ion: 73 Resp: 699059

Ion	Ratio	Lower	Upper
73	100		
57	20.0	0.0	51.7
41	18.0	0.0	50.6

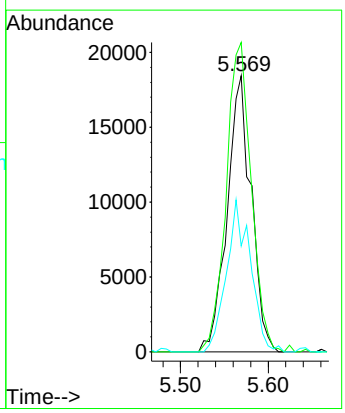


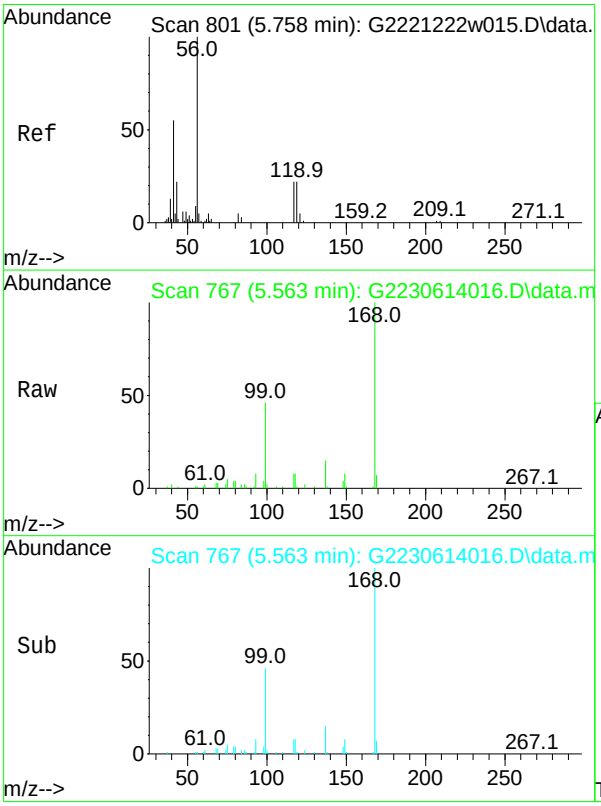


#40
Cyclohexane
Concen: 0.79 ug/L
RT: 5.569 min Scan# 768
Delta R.T. 0.035 min
Lab File: G2230614016.D
Acq: 14 Jun 2023 14:45

Tgt Ion: 84 Resp: 350082

Ion	Ratio	Lower	Upper
84	100		
69	116.9	6.8	66.8#
56	55.1	79.1	139.1#

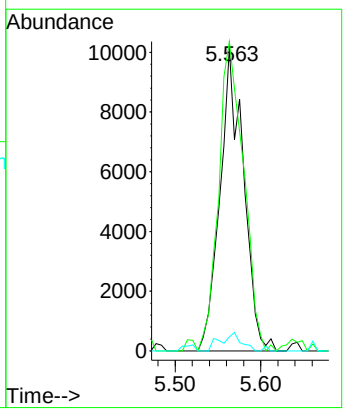


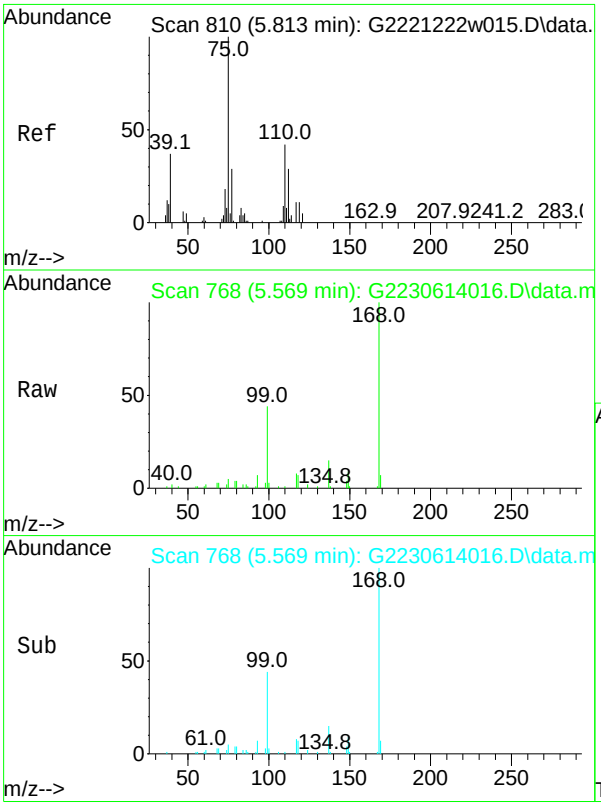


#41
1-Chlorobutane
Concen: 0.38 ug/L
RT: 5.565 min Scan# 767
Delta R.T. -0.065 min
Lab File: G2230614016.D
Acq: 14 Jun 2023 14:45

Tgt Ion: 56 Resp: 192958

Ion	Ratio	Lower	Upper
56	100		
55	109.0	0.0	41.0#
57	0.0	0.0	35.7

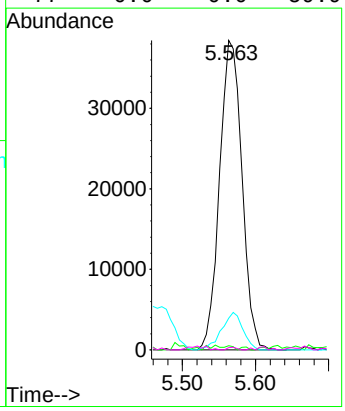


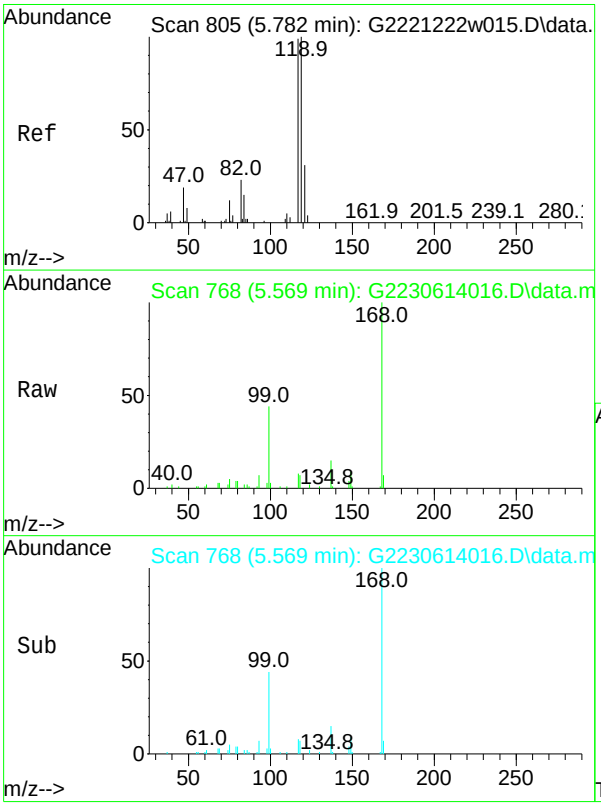


#42
1,1-Dichloropropene
Concen: 2.12 ug/L
RT: 5.569 min Scan# 768
Delta R.T. -0.120 min
Lab File: G2230614016.D
Acq: 14 Jun 2023 14:45

Tgt Ion: 75 Resp: 821830

Ion	Ratio	Lower	Upper
75	100		
39	0.0	25.8	85.8#
110	11.6	9.1	69.1
77	0.0	0.0	59.9

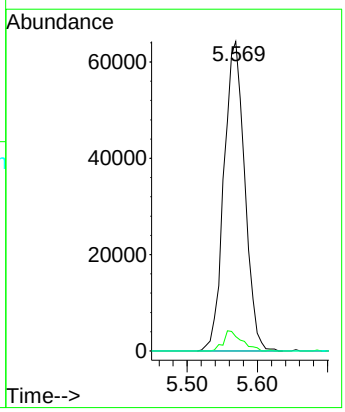


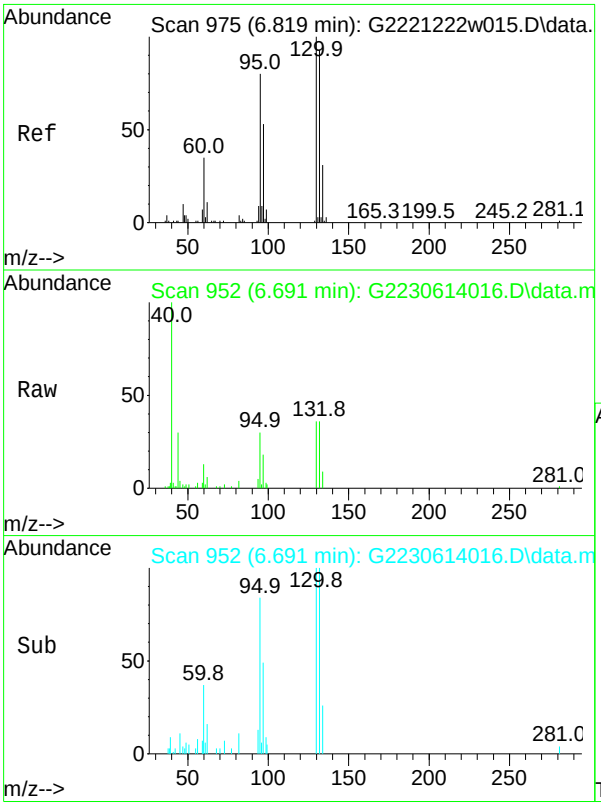


#47
Carbon tetrachloride
Concen: 3.35 ug/L
RT: 5.570 min Scan# 768
Delta R.T. -0.110 min
Lab File: G2230614016.D
Acq: 14 Jun 2023 14:45

Tgt Ion:117 Resp: 1321089

Ion	Ratio	Lower	Upper
117	100		
119	5.7	66.4	126.4#
121	0.0	0.4	60.4#

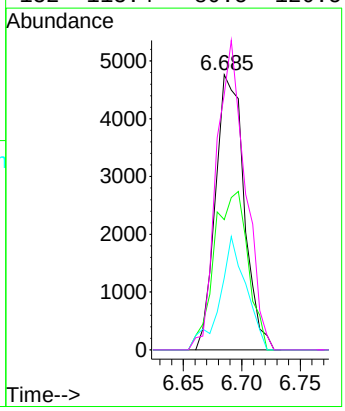


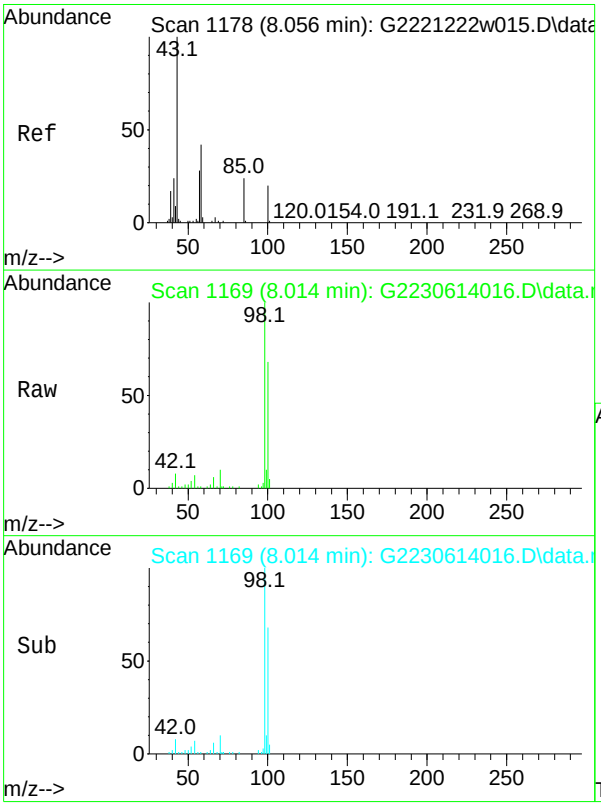


#50
Trichloroethene
Concen: 0.20 ug/L
RT: 6.692 min Scan# 952
Delta R.T. -0.004 min
Lab File: G2230614016.D
Acq: 14 Jun 2023 14:45

Tgt Ion: 95 Resp: 81019

Ion	Ratio	Lower	Upper
95	100		
97	67.9	35.5	95.5
60	0.0	14.8	74.8#
132	113.4	80.5	120.5

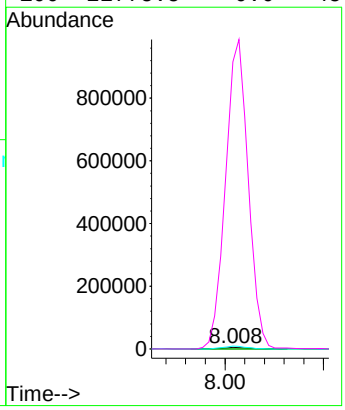


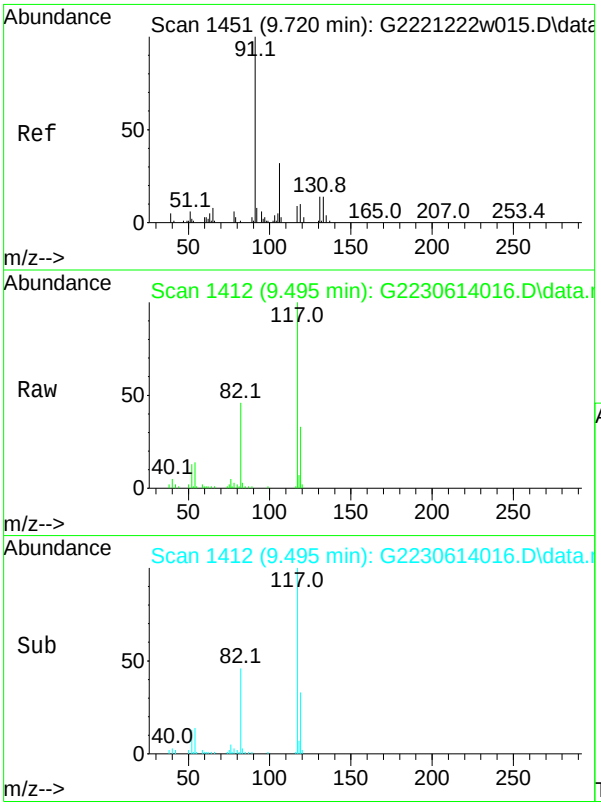


#60
4-Methyl-2-pentanone
Concen: Below Cal
RT: 8.012 min Scan# 1169
Delta R.T. 0.068 min
Lab File: G2230614016.D
Acq: 14 Jun 2023 14:45

Tgt Ion: 43 Resp: 69284

Ion	Ratio	Lower	Upper
43	100		
85	0.0	0.0	47.7
58	218.4	37.0	37.0#
100	22775.5	0.0	45.2#

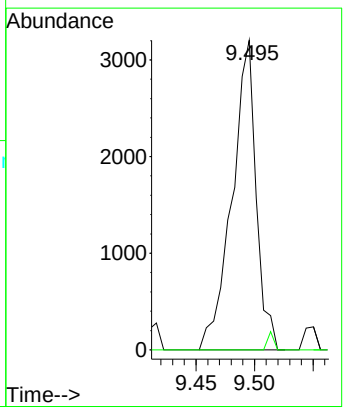


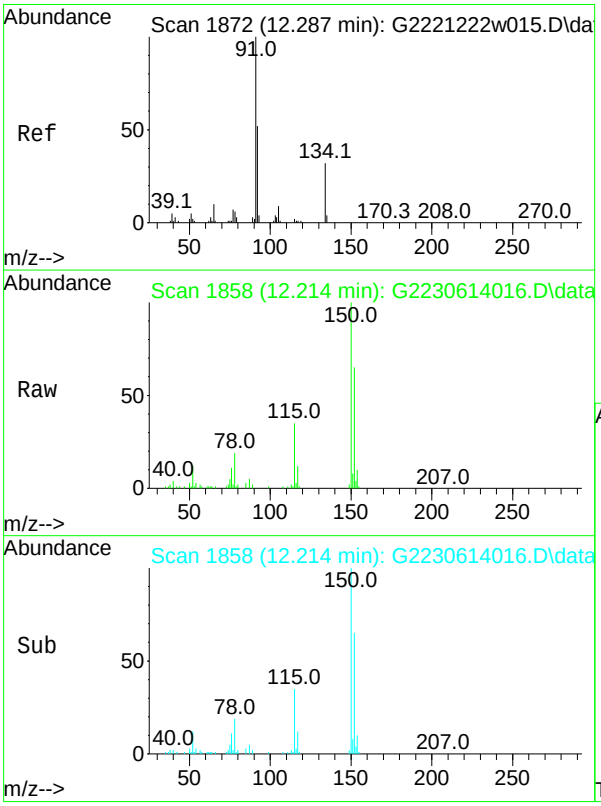


#74
Ethylbenzene
Concen: Below Cal
RT: 9.495 min Scan# 1412
Delta R.T. -0.148 min
Lab File: G2230614016.D
Acq: 14 Jun 2023 14:45

Tgt Ion: 91 Resp: 45968

Ion	Ratio	Lower	Upper
91	100		
106	0.0	0.8	60.8#

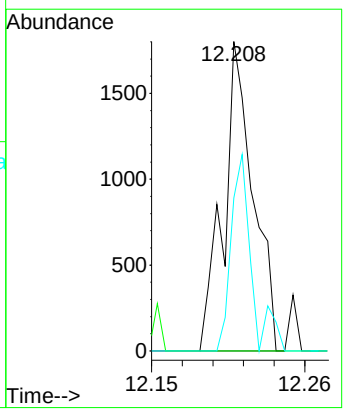




#99
n-Butylbenzene
Concen: Below Cal
RT: 12.213 min Scan# 1858
Delta R.T. -0.018 min
Lab File: G2230614016.D
Acq: 14 Jun 2023 14:45

Tgt Ion: 91 Resp: 26669

Ion	Ratio	Lower	Upper
91	100		
93	0.0	0.0	33.6
134	0.0	0.0	56.6



1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6347WW44

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-06	File ID:	G2230614017.D
Sampled:	06/03/23 10:55	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 15:10
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097	Instrument:	G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
630-20-6	1,1,1,2-Tetrachloroethane		0.130	0.400	1.00	U
71-55-6	1,1,1-Trichloroethane		0.175	0.400	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.124	0.400	1.00	U
79-00-5	1,1,2-Trichloroethane		0.166	0.400	1.00	U
75-34-3	1,1-Dichloroethane		0.134	0.400	1.00	U
75-35-4	1,1-Dichloroethene		0.191	0.400	1.00	U
563-58-6	1,1-Dichloropropene		0.140	0.400	1.00	U
87-61-6	1,2,3-Trichlorobenzene		0.204	0.400	1.00	U
96-18-4	1,2,3-Trichloropropane		0.183	0.400	1.00	U
120-82-1	1,2,4-Trichlorobenzene		0.205	0.600	1.20	U
95-63-6	1,2,4-Trimethylbenzene		0.132	0.400	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane		0.260	1.00	2.00	U
106-93-4	1,2-Dibromoethane		0.106	0.400	1.00	U
95-50-1	1,2-Dichlorobenzene		0.126	0.400	1.00	U
107-06-2	1,2-Dichloroethane		0.212	0.600	1.20	U
78-87-5	1,2-Dichloropropane		0.205	0.600	1.20	U
108-67-8	1,3,5-Trimethylbenzene		0.100	0.400	1.00	U
541-73-1	1,3-Dichlorobenzene		0.145	0.400	1.00	U
142-28-9	1,3-Dichloropropane		0.136	0.400	1.00	U
106-46-7	1,4-Dichlorobenzene		0.184	0.400	1.00	U
594-20-7	2,2-Dichloropropane		0.184	0.400	1.00	U
78-93-3	2-Butanone		0.660	1.40	3.50	U
95-49-8	2-Chlorotoluene		0.147	0.400	1.00	U
591-78-6	2-Hexanone		0.143	1.40	3.50	U
106-43-4	4-Chlorotoluene		0.184	0.400	1.00	U
99-87-6	4-Isopropyltoluene		0.140	0.400	1.00	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6347WW44

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-06	File ID:	G2230614017.D
Sampled:	06/03/23 10:55	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 15:10
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
108-10-1	4-Methyl-2-pentanone		0.270	1.40	3.50	U
67-64-1	Acetone		1.04	4.00	8.00	U
71-43-2	Benzene		0.101	0.400	1.00	U
108-86-1	Bromobenzene		0.170	0.400	1.00	U
74-97-5	Bromochloromethane		0.134	0.400	1.00	U
75-27-4	Bromodichloromethane		0.106	0.400	1.00	U
75-25-2	Bromoform		0.206	0.400	1.00	U
74-83-9	Bromomethane		0.320	1.00	2.00	U
75-15-0	Carbon disulfide		0.280	1.00	2.00	U
56-23-5	Carbon tetrachloride		0.169	0.400	1.00	U
108-90-7	Chlorobenzene		0.130	0.400	1.00	U
75-00-3	Chloroethane		0.311	0.400	1.00	U
67-66-3	Chloroform		0.203	0.600	1.20	U
74-87-3	Chloromethane		0.384	1.00	2.00	U
156-59-2	cis-1,2-Dichloroethene		0.205	0.600	1.20	U
10061-01-5	cis-1,3-Dichloropropene		0.117	0.400	1.00	U
124-48-1	Dibromochloromethane		0.152	0.400	1.00	U
74-95-3	Dibromomethane		0.163	0.400	1.00	U
75-71-8	Dichlorodifluoromethane		0.259	1.00	2.00	U
100-41-4	Ethylbenzene		0.0600	0.200	0.400	U
87-68-3	Hexachlorobutadiene		0.200	0.400	1.00	U
98-82-8	Isopropylbenzene		0.110	0.400	1.00	U
179601-23-1	m,p-Xylene		0.178	0.800	2.00	U
1634-04-4	Methyl tert-butyl ether		0.106	0.400	1.00	U
75-09-2	Methylene chloride		0.447	1.00	2.00	U
104-51-8	n-Butylbenzene		0.260	1.00	2.00	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6347WW44

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-06	File ID:	G2230614017.D
Sampled:	06/03/23 10:55	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 15:10
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
103-65-1	n-Propylbenzene		0.126	0.400	1.00	U
91-20-3	Naphthalene		0.140	0.400	1.00	U
95-47-6	o-Xylene		0.0832	0.400	1.00	U
135-98-8	sec-Butylbenzene		0.120	0.400	1.00	U
100-42-5	Styrene		0.0906	0.200	0.400	U
98-06-6	tert-Butylbenzene		0.0906	0.400	1.00	U
127-18-4	Tetrachloroethene		0.357	1.00	2.00	Q, U
108-88-3	Toluene		0.114	0.400	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.171	0.400	1.00	U
10061-02-6	trans-1,3-Dichloropropene		0.117	0.400	1.00	U
79-01-6	Trichloroethene		0.156	0.400	1.00	U
75-69-4	Trichlorofluoromethane		0.101	0.400	1.00	U
75-01-4	Vinyl chloride		0.258	1.00	2.00	U

Italicized = secondary result

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614017.D
Acq On : 14 Jun 2023 15:10
Operator : PO1/MP3
Sample : 23F0196-06
Misc : 2
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 15 09:38:20 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

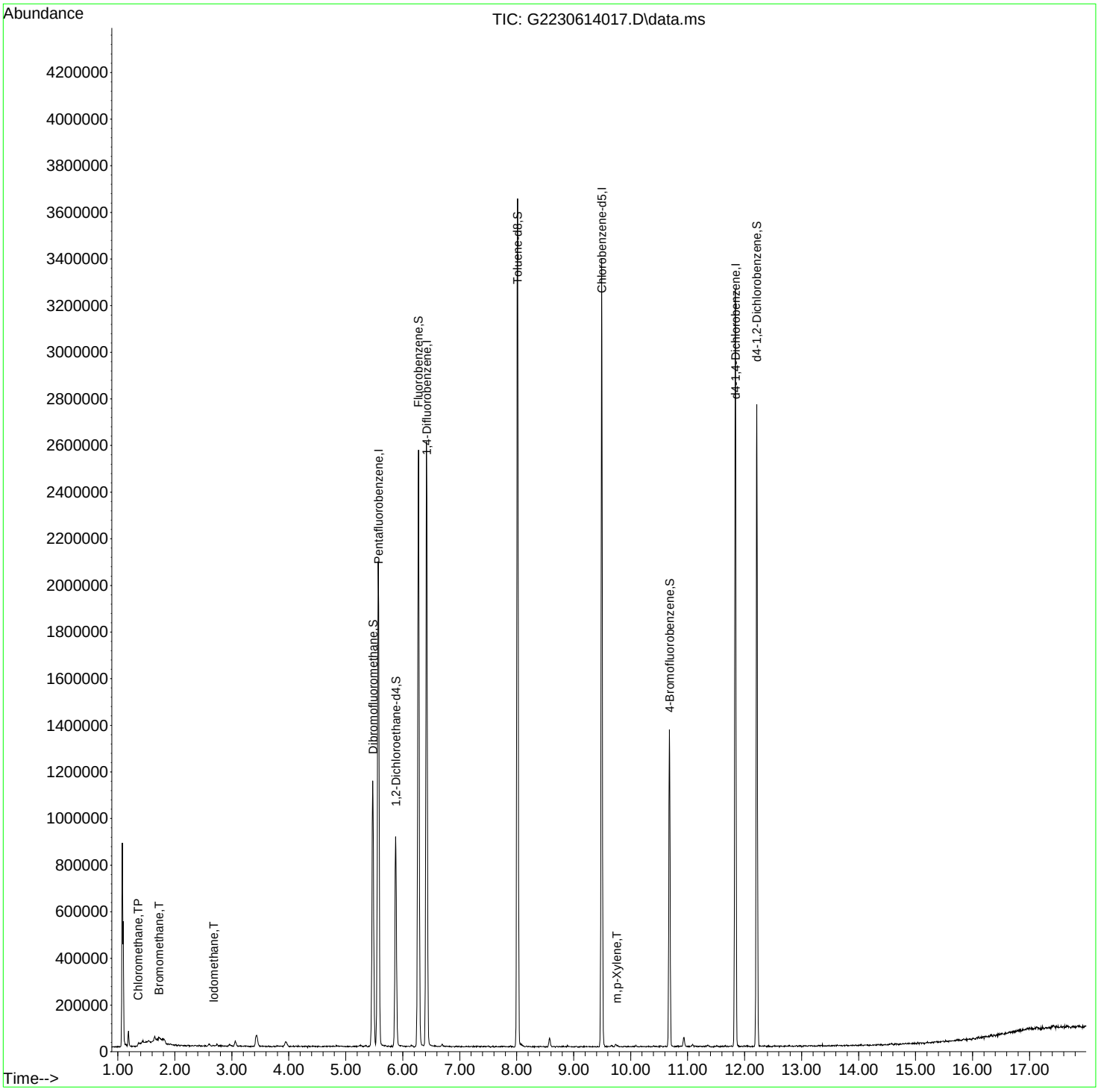
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.573	168	16619414	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.420	114	22507775	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.494	117	19539558	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.840	152	9086964	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.476	111	7034942	19.23	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.15%			
43) 1,2-Dichloroethane-d4	5.877	65	6272690	17.35	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 86.75%			
49) Fluorobenzene	6.278	96	24546690	19.14	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 95.70%			
64) Toluene-d8	8.016	98	24145501	19.61	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 98.05%			
81) 4-Bromofluorobenzene	10.683	174	4224550	9.85	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 98.50%			
97) d4-1,2-Dichlorobenzene	12.216	152	7859656	20.11	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.55%			
Target Compounds						Qvalue
3) Chloromethane	1.358	50	40478	0.04	ug/L #	41
5) Bromomethane	1.725	94	63991	0.04	ug/L #	86
13) Iodomethane	2.687	142	32023	0.08	ug/L #	41
18) Methylene chloride	3.063	49	108183	Below Cal		72
21) Methyl tert-butyl ether	3.434	73	671179	Below Cal		96
75) m,p-Xylene	9.758	91	22900m	0.02	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614017.D
Acq On : 14 Jun 2023 15:10
Operator : PO1/MP3
Sample : 23F0196-06
Misc : 2
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 15 09:38:20 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G



Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614017.D
Acq On : 14 Jun 2023 15:10
Operator : PO1/MP3
Sample : 23F0196-06
Misc : 2
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 15 09:38:20 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

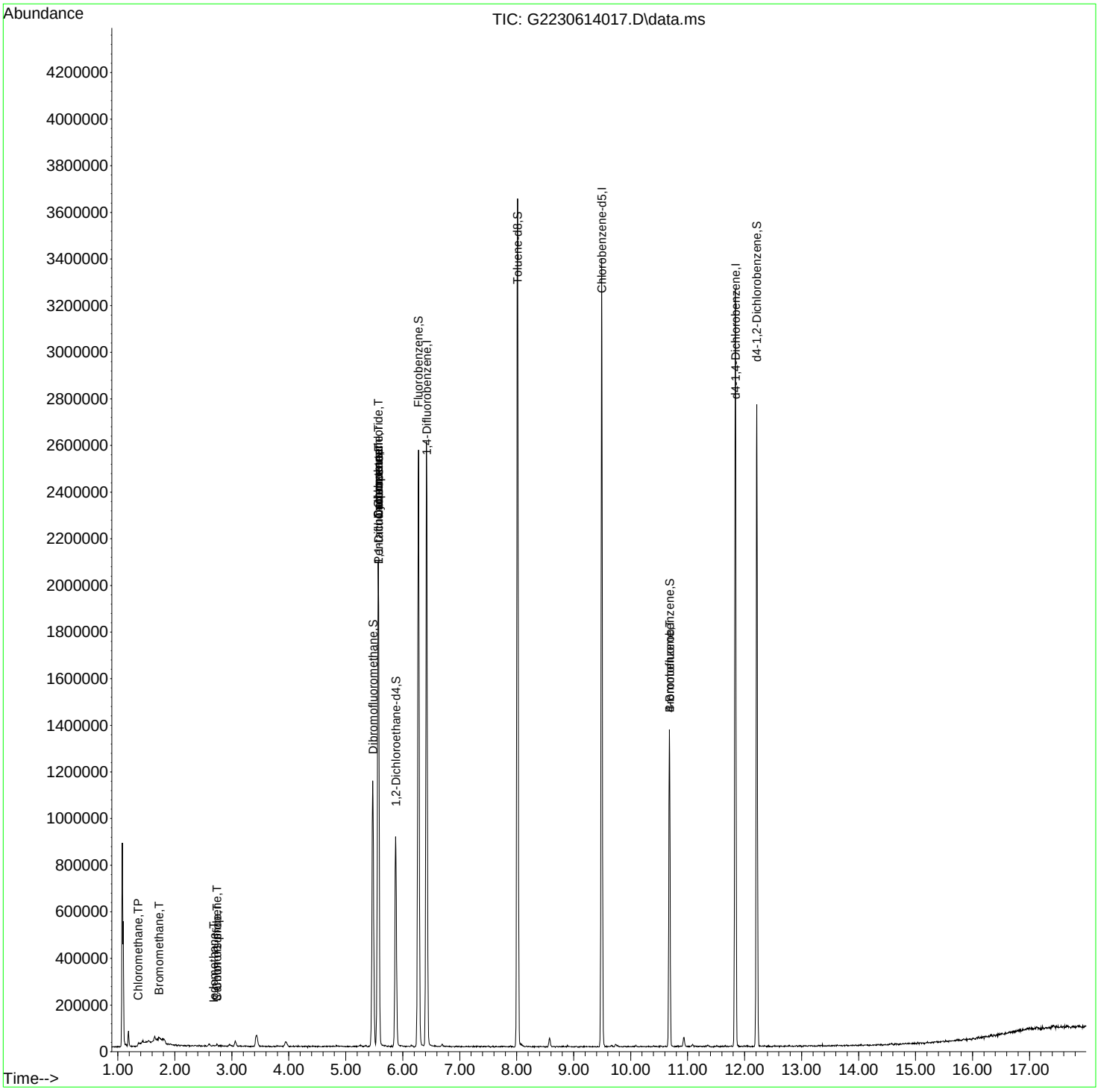
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.573	168	16619414	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.420	114	22507775	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.494	117	19539558	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.840	152	9086964	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.476	111	7034942	19.23	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.15%			
43) 1,2-Dichloroethane-d4	5.877	65	6272690	17.35	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 86.75%			
49) Fluorobenzene	6.278	96	24546690	19.14	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 95.70%			
64) Toluene-d8	8.016	98	24145501	19.61	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 98.05%			
81) 4-Bromofluorobenzene	10.683	174	4224550	9.85	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 98.50%			
97) d4-1,2-Dichlorobenzene	12.216	152	7859656	20.11	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.55%			
Target Compounds						Qvalue
3) Chloromethane	1.358	50	40478	0.04	ug/L #	41
5) Bromomethane	1.725	94	63991	0.04	ug/L #	86
12) Acetone	2.603	43	128597	Below Cal		85
13) Iodomethane	2.687	142	32023	0.08	ug/L #	41
14) Carbon disulfide	2.741	76	119275	0.07	ug/L #	74
17) 3-Chloro-1-propene	2.741	76	119282	0.64	ug/L #	53
18) Methylene chloride	3.063	49	108183	Below Cal		72
21) Methyl tert-butyl ether	3.434	73	671179	Below Cal		96
40) Cyclohexane	5.572	84	360613	0.81	ug/L #	38
41) 1-Chlorobutane	5.571	56	230481	0.44	ug/L #	1
42) 1,1-Dichloropropene	5.573	75	896388	2.30	ug/L #	38
47) Carbon tetrachloride	5.572	117	1356363	3.34	ug/L #	16
60) 4-Methyl-2-pentanone	8.015	43	89509	Below Cal	#	1
65) Toluene	8.084	91	27863	Below Cal	#	30
74) Ethylbenzene	9.494	91	40075	Below Cal	#	44
82) Bromobenzene	10.684	77	32384	0.07	ug/L #	1

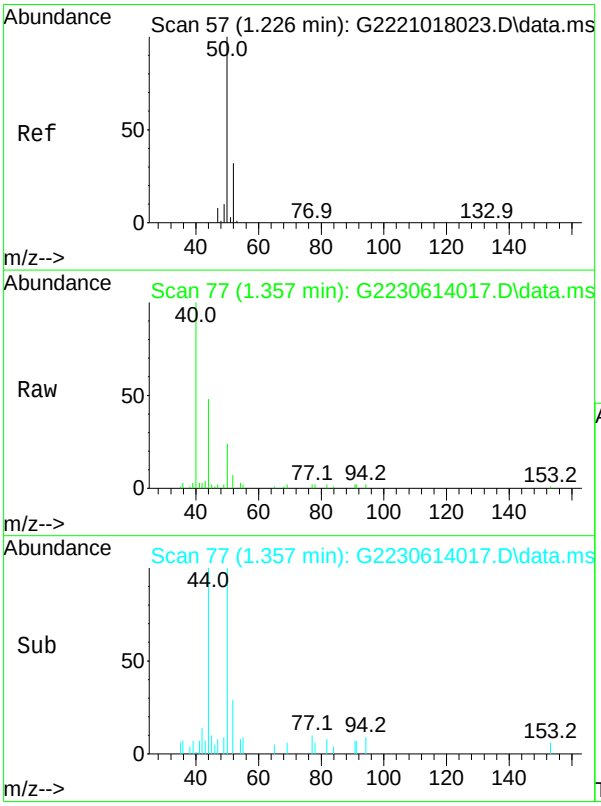
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614017.D
Acq On : 14 Jun 2023 15:10
Operator : PO1/MP3
Sample : 23F0196-06
Misc : 2
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 15 09:38:20 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

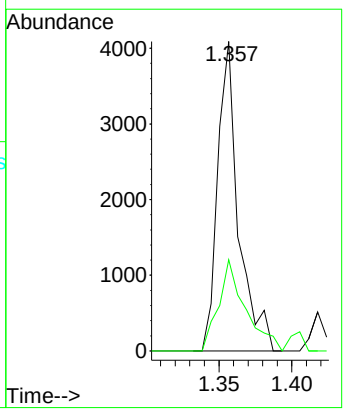


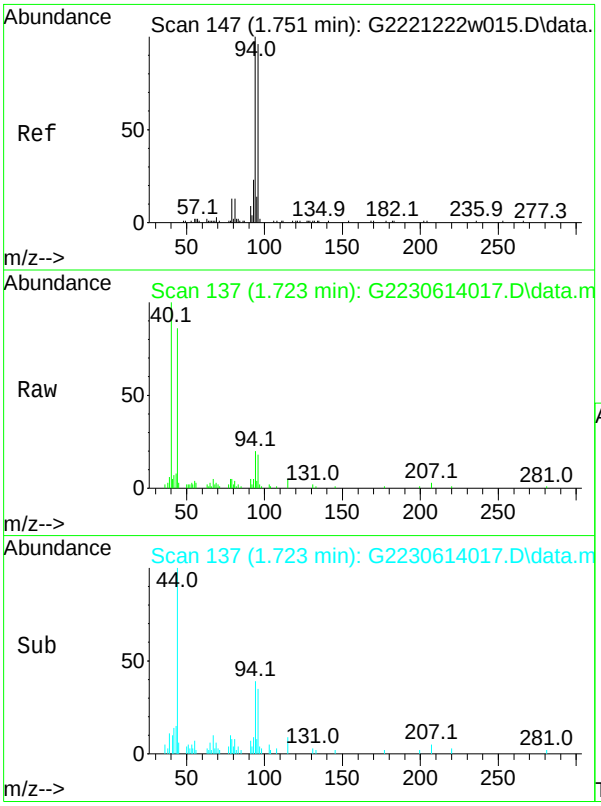


#3
Chloromethane
Concen: 0.04 ug/L
RT: 1.358 min Scan# 77
Delta R.T. 0.004 min
Lab File: G2230614017.D
Acq: 14 Jun 2023 15:10

Tgt Ion: 50 Resp: 40478

Ion	Ratio	Lower	Upper
50	100		
52	0.0	3.2	63.2#

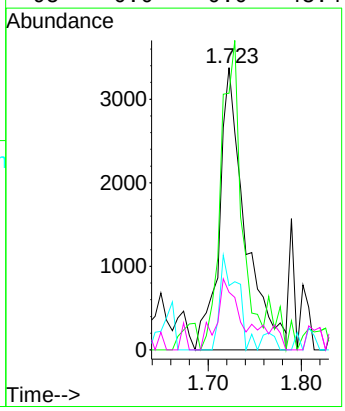


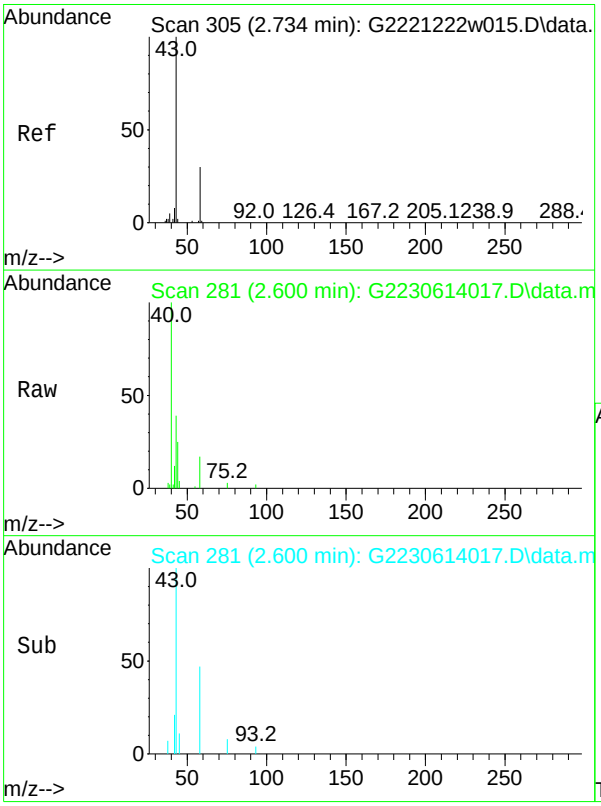


#5
Bromomethane
Concen: 0.04 ug/L
RT: 1.725 min Scan# 137
Delta R.T. 0.011 min
Lab File: G2230614017.D
Acq: 14 Jun 2023 15:10

Tgt Ion: 94 Resp: 63991

Ion	Ratio	Lower	Upper
94	100		
96	101.1	65.6	125.6
93	0.0	0.0	49.5
95	0.0	0.0	43.4

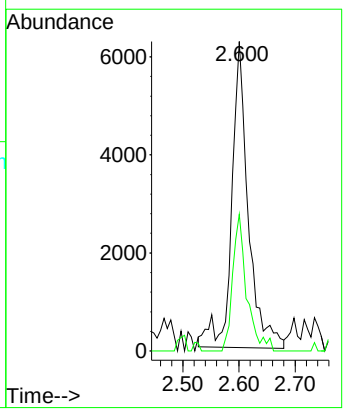


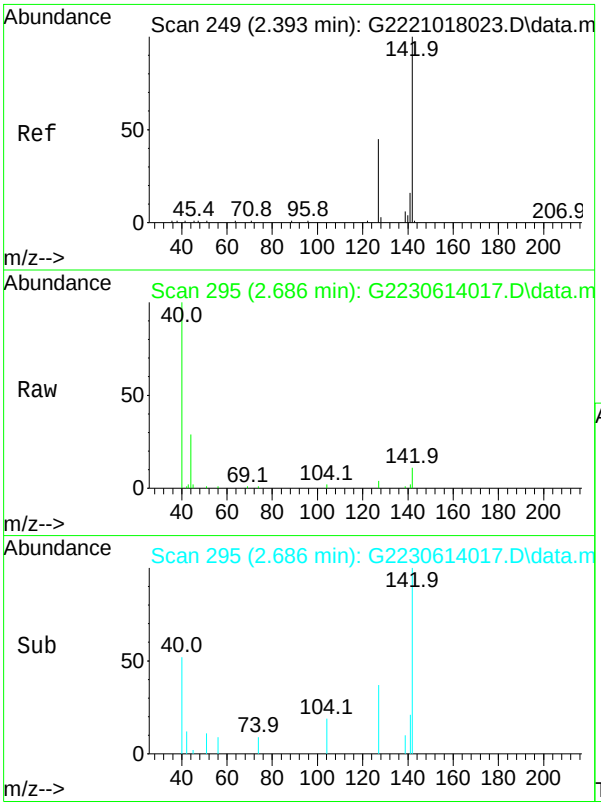


#12
Acetone
Concen: Below Cal
RT: 2.603 min Scan# 281
Delta R.T. -0.005 min
Lab File: G2230614017.D
Acq: 14 Jun 2023 15:10

Tgt Ion: 43 Resp: 128597

Ion	Ratio	Lower	Upper
43	100		
58	37.6	0.0	59.7

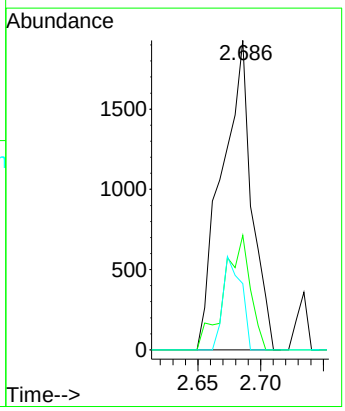


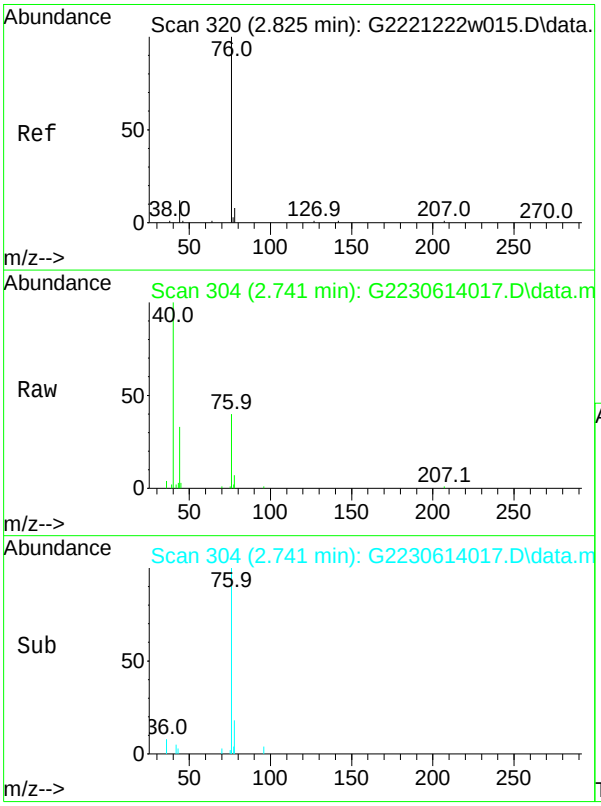


#13
Iodomethane
Concen: 0.08 ug/L
RT: 2.687 min Scan# 295
Delta R.T. 0.011 min
Lab File: G2230614017.D
Acq: 14 Jun 2023 15:10

Tgt Ion:142 Resp: 32023

Ion	Ratio	Lower	Upper
142	100		
127	0.0	13.3	73.3#
141	0.0	0.0	45.3

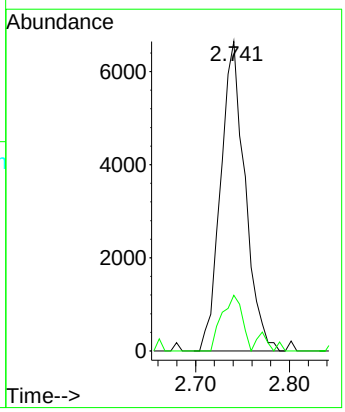


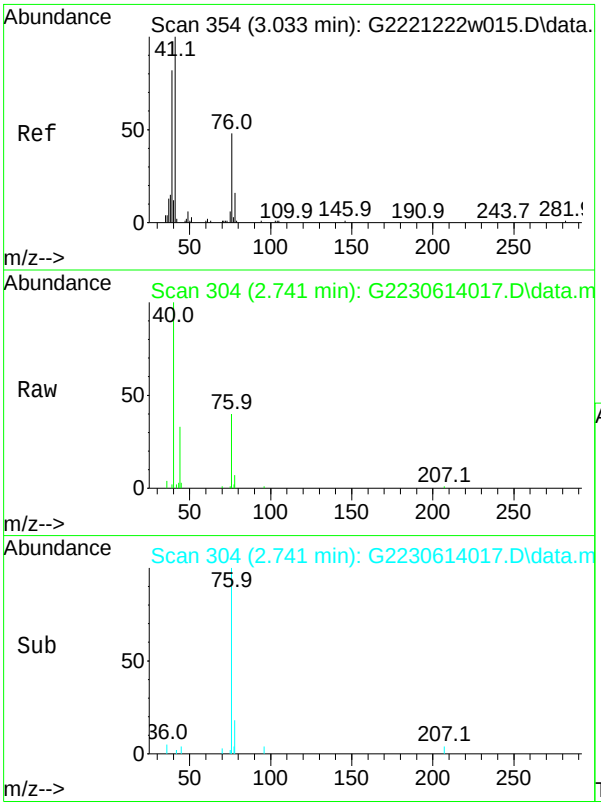


#14
Carbon disulfide
Concen: 0.07 ug/L
RT: 2.741 min Scan# 304
Delta R.T. 0.002 min
Lab File: G2230614017.D
Acq: 14 Jun 2023 15:10

Tgt Ion: 76 Resp: 119275

Ion	Ratio	Lower	Upper
76	100		
78	0.0	0.0	39.3

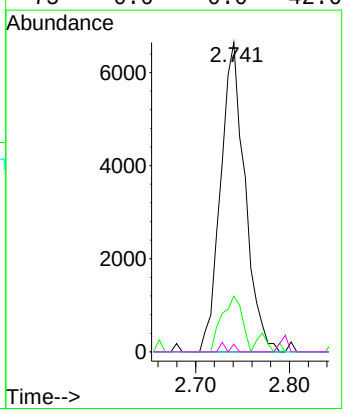


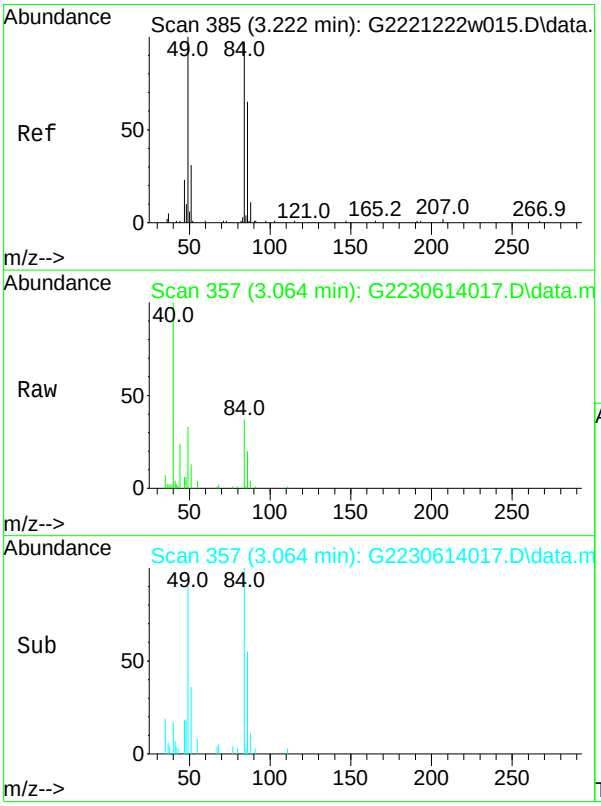


#17
3-Chloro-1-propene
Concen: 0.64 ug/L
RT: 2.741 min Scan# 304
Delta R.T. -0.179 min
Lab File: G2230614017.D
Acq: 14 Jun 2023 15:10

Tgt Ion: 76 Resp: 119282

Ion	Ratio	Lower	Upper
76	100		
78	0.0	2.4	62.4#
49	0.0	0.0	43.0
75	0.0	0.0	42.6

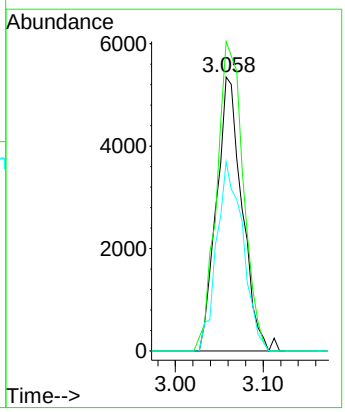


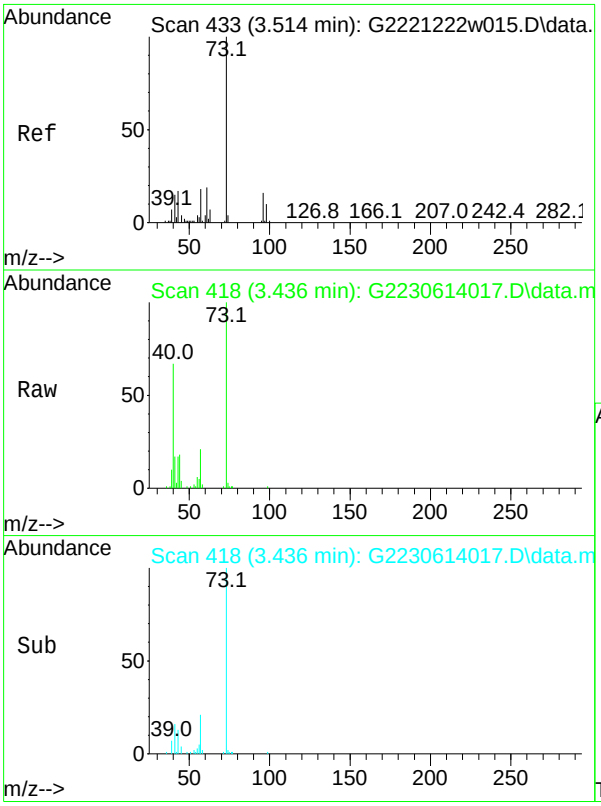


#18
Methylene chloride
Concen: Below Cal
RT: 3.063 min Scan# 357
Delta R.T. 0.001 min
Lab File: G2230614017.D
Acq: 14 Jun 2023 15:10

Tgt Ion: 49 Resp: 108183

Ion	Ratio	Lower	Upper
49	100		
84	117.5	57.9	117.9
86	70.7	24.9	84.9

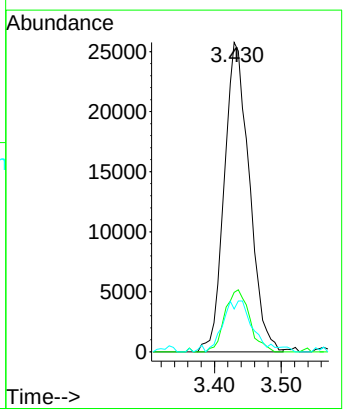


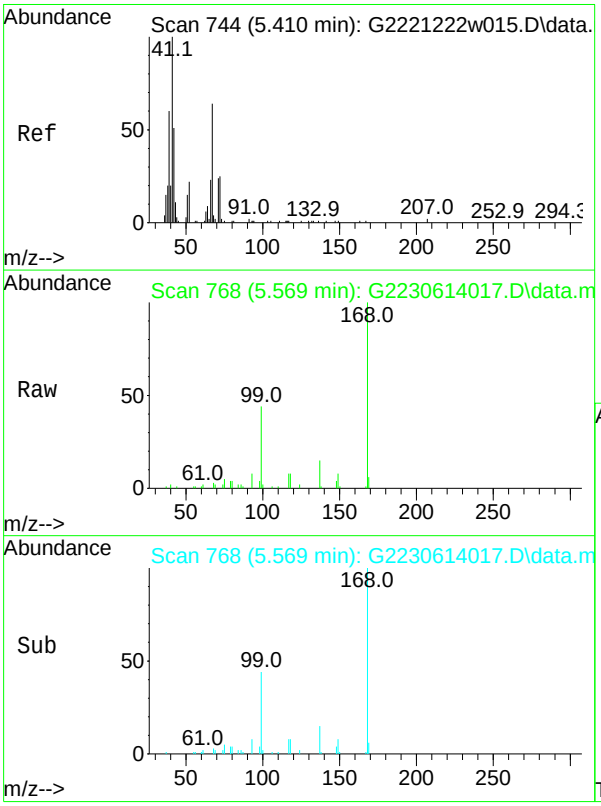


#21
Methyl tert-butyl ether
Concen: Below Cal
RT: 3.434 min Scan# 418
Delta R.T. -0.012 min
Lab File: G2230614017.D
Acq: 14 Jun 2023 15:10

Tgt Ion: 73 Resp: 671179

Ion	Ratio	Lower	Upper
73	100		
57	20.0	0.0	51.7
41	18.9	0.0	50.6

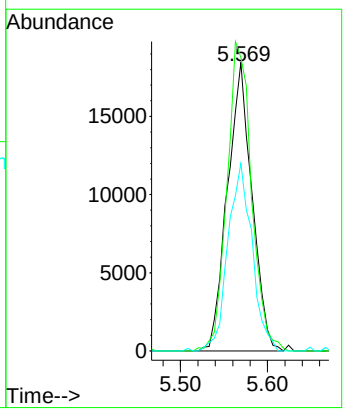


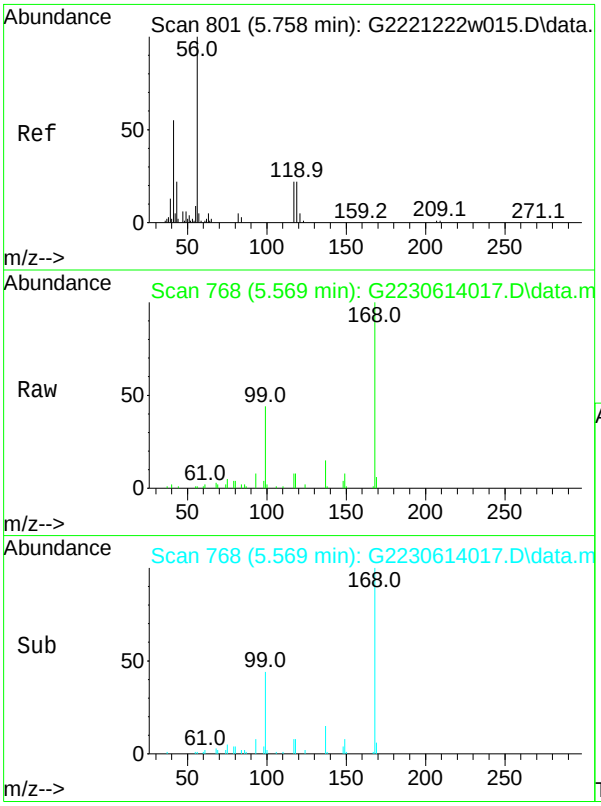


#40
Cyclohexane
Concen: 0.81 ug/L
RT: 5.572 min Scan# 768
Delta R.T. 0.038 min
Lab File: G2230614017.D
Acq: 14 Jun 2023 15:10

Tgt Ion: 84 Resp: 360613

Ion	Ratio	Lower	Upper
84	100		
69	106.9	6.8	66.8#
56	63.9	79.1	139.1#

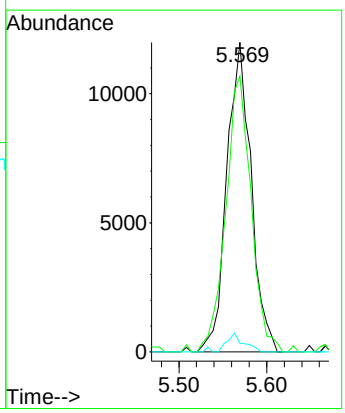


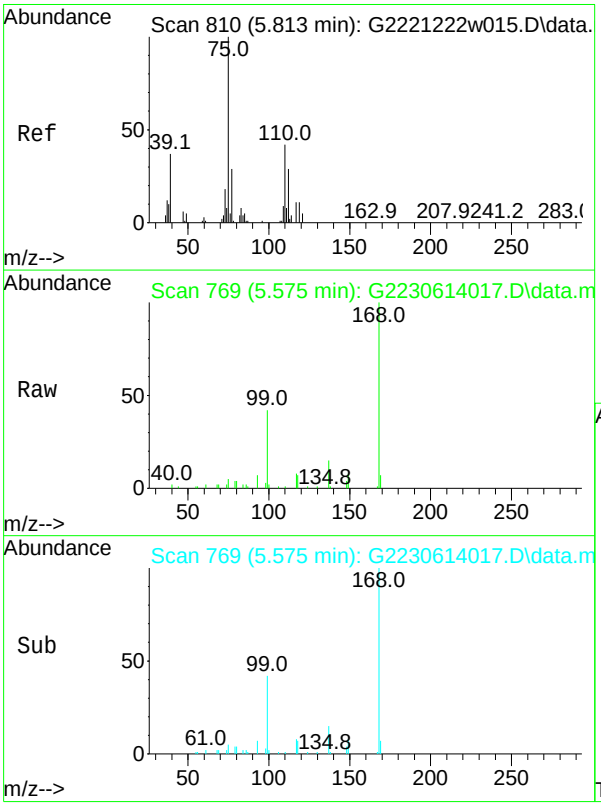


#41
1-Chlorobutane
Concen: 0.44 ug/L
RT: 5.571 min Scan# 768
Delta R.T. -0.059 min
Lab File: G2230614017.D
Acq: 14 Jun 2023 15:10

Tgt Ion: 56 Resp: 230481

Ion	Ratio	Lower	Upper
56	100		
55	92.8	0.0	41.0#
57	0.0	0.0	35.7

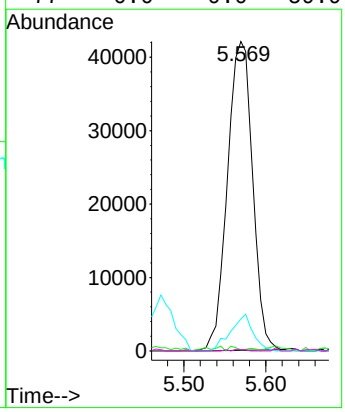


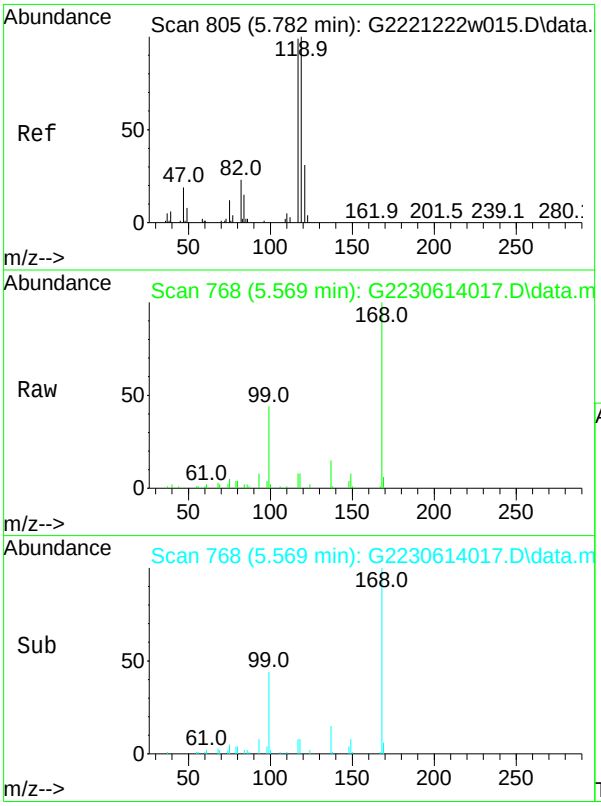


#42
1,1-Dichloropropene
Concen: 2.30 ug/L
RT: 5.573 min Scan# 769
Delta R.T. -0.116 min
Lab File: G2230614017.D
Acq: 14 Jun 2023 15:10

Tgt Ion: 75 Resp: 896388

Ion	Ratio	Lower	Upper
75	100		
39	0.0	25.8	85.8#
110	10.6	9.1	69.1
77	0.0	0.0	59.9

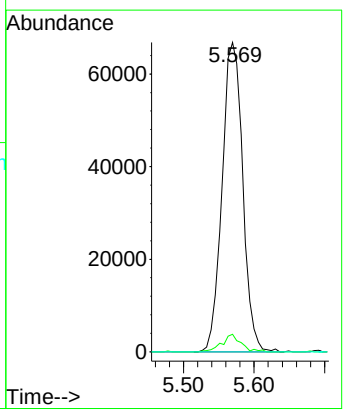


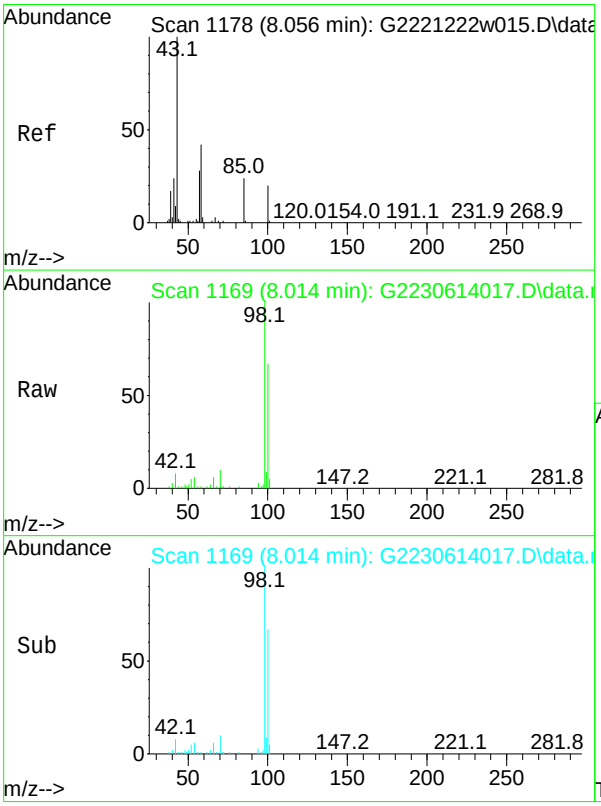


#47
Carbon tetrachloride
Concen: 3.34 ug/L
RT: 5.572 min Scan# 768
Delta R.T. -0.108 min
Lab File: G2230614017.D
Acq: 14 Jun 2023 15:10

Tgt Ion:117 Resp: 1356363

Ion	Ratio	Lower	Upper
117	100		
119	5.3	66.4	126.4#
121	0.0	0.4	60.4#

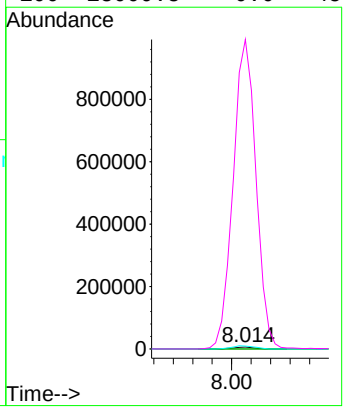


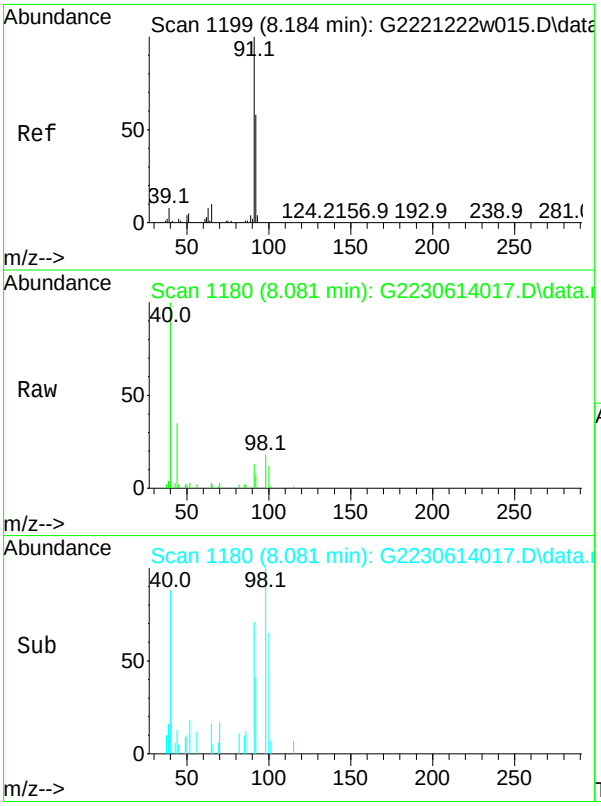


#60
4-Methyl-2-pentanone
Concen: Below Cal
RT: 8.015 min Scan# 1169
Delta R.T. 0.071 min
Lab File: G2230614017.D
Acq: 14 Jun 2023 15:10

Tgt Ion: 43 Resp: 89509

Ion	Ratio	Lower	Upper
43	100		
85	0.0	0.0	47.7
58	183.4	37.0	37.0#
100	18009.8	0.0	45.2#

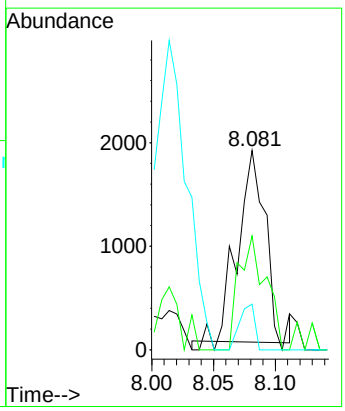


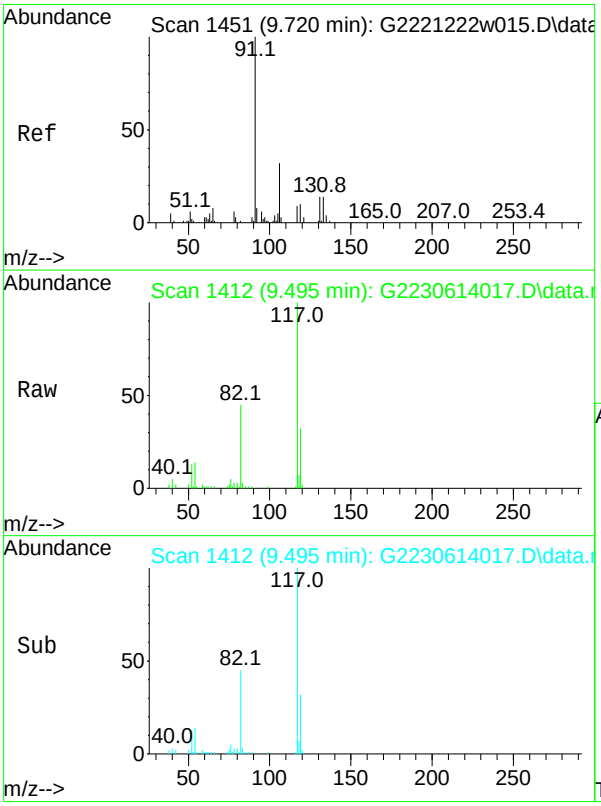


#65
Toluene
Concen: Below Cal
RT: 8.084 min Scan# 1180
Delta R.T. -0.002 min
Lab File: G2230614017.D
Acq: 14 Jun 2023 15:10

Tgt Ion: 91 Resp: 27863

Ion	Ratio	Lower	Upper
91	100		
92	0.0	27.5	87.5#
65	0.0	0.0	41.4

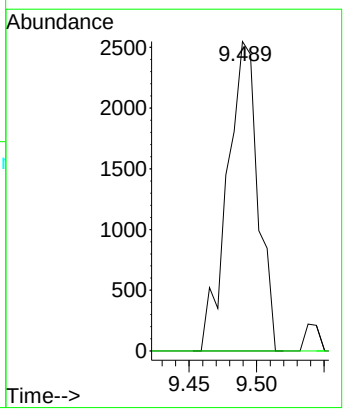


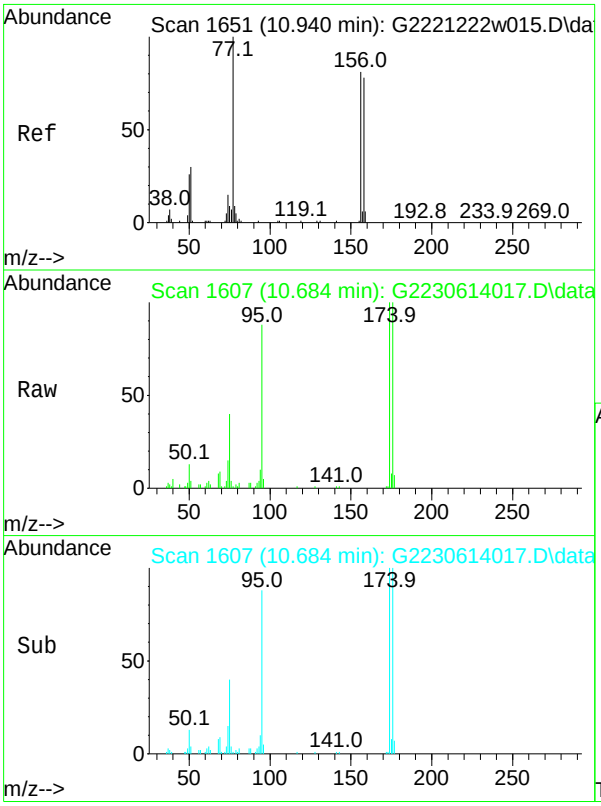


#74
Ethylbenzene
Concen: Below Cal
RT: 9.494 min Scan# 1412
Delta R.T. -0.149 min
Lab File: G2230614017.D
Acq: 14 Jun 2023 15:10

Tgt Ion: 91 Resp: 40075

Ion	Ratio	Lower	Upper
91	100		
106	0.0	0.8	60.8#

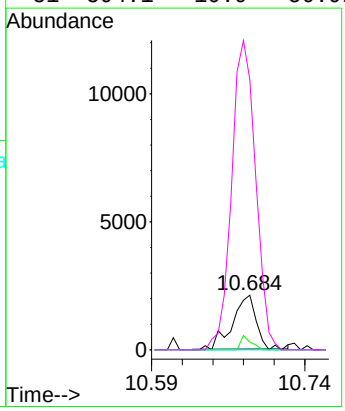




#82
Bromobenzene
Concen: 0.07 ug/L
RT: 10.684 min Scan# 1607
Delta R.T. -0.144 min
Lab File: G2230614017.D
Acq: 14 Jun 2023 15:10

Tgt Ion: 77 Resp: 32384

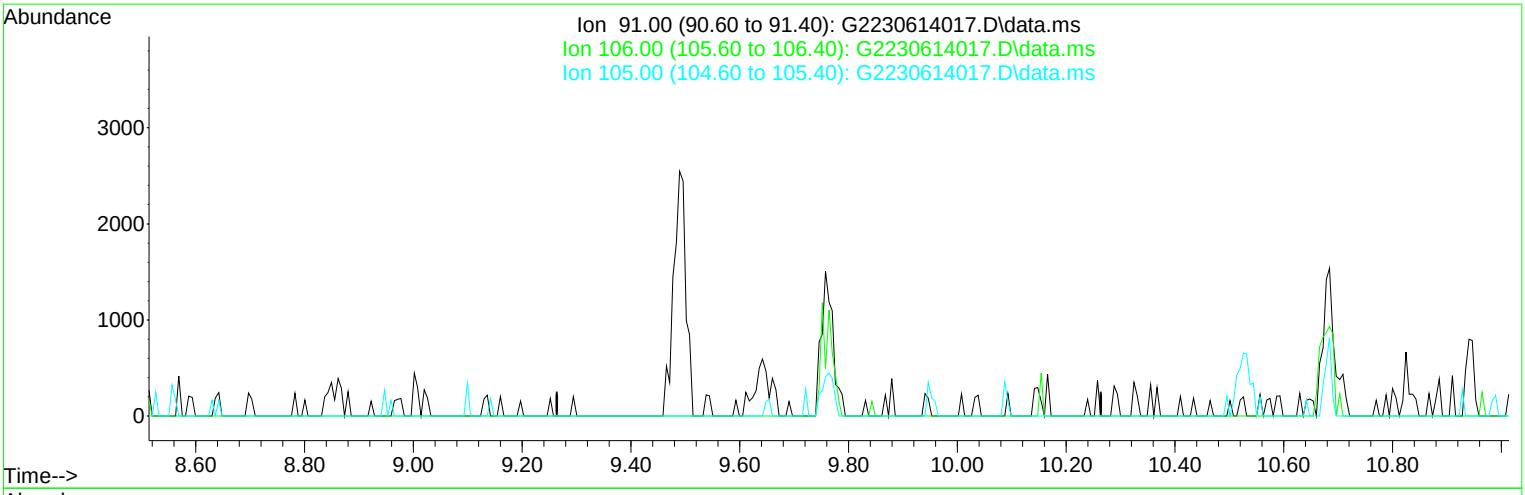
Ion	Ratio	Lower	Upper
77	100		
156	0.0	49.1	89.1#
158	0.0	44.8	84.8#
51	594.1	10.9	50.9#

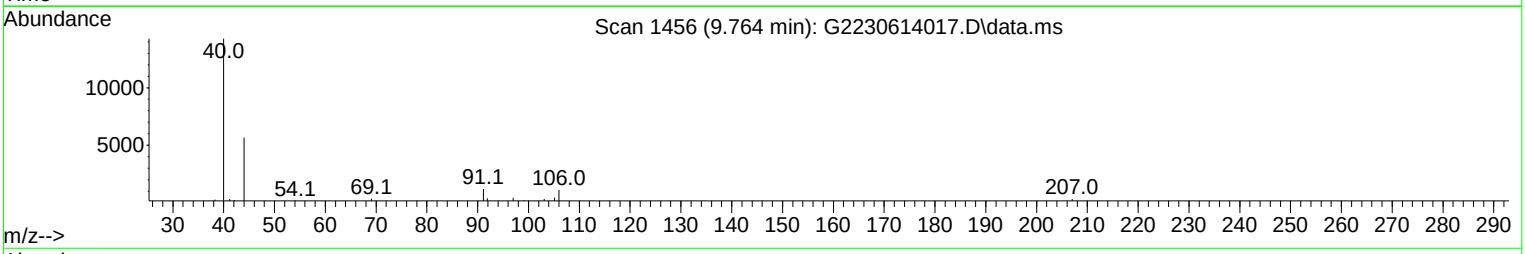


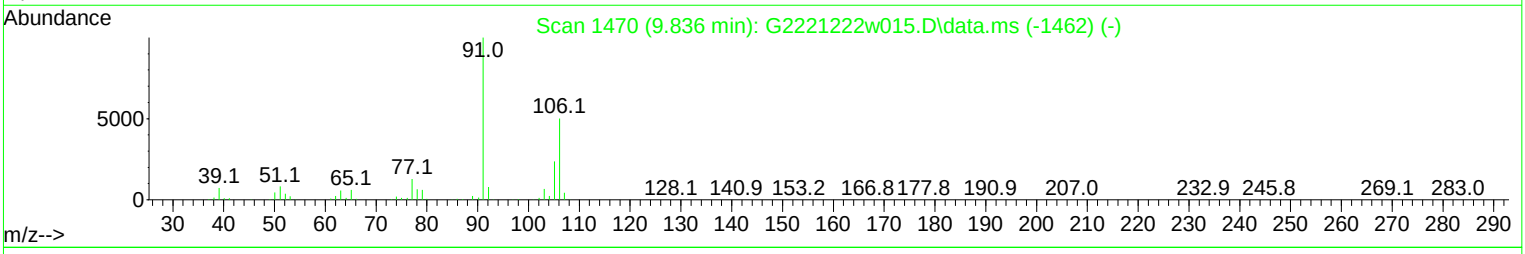
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614017.D
Acq On : 14 Jun 2023 15:10
Operator : PO1/MP3
Sample : 23F0196-06
Misc : 2
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 15 09:38:20 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614017.D\data.ms

(75) m,p-Xylene (T)

9.764min (-9.764) 0.00 ug/L

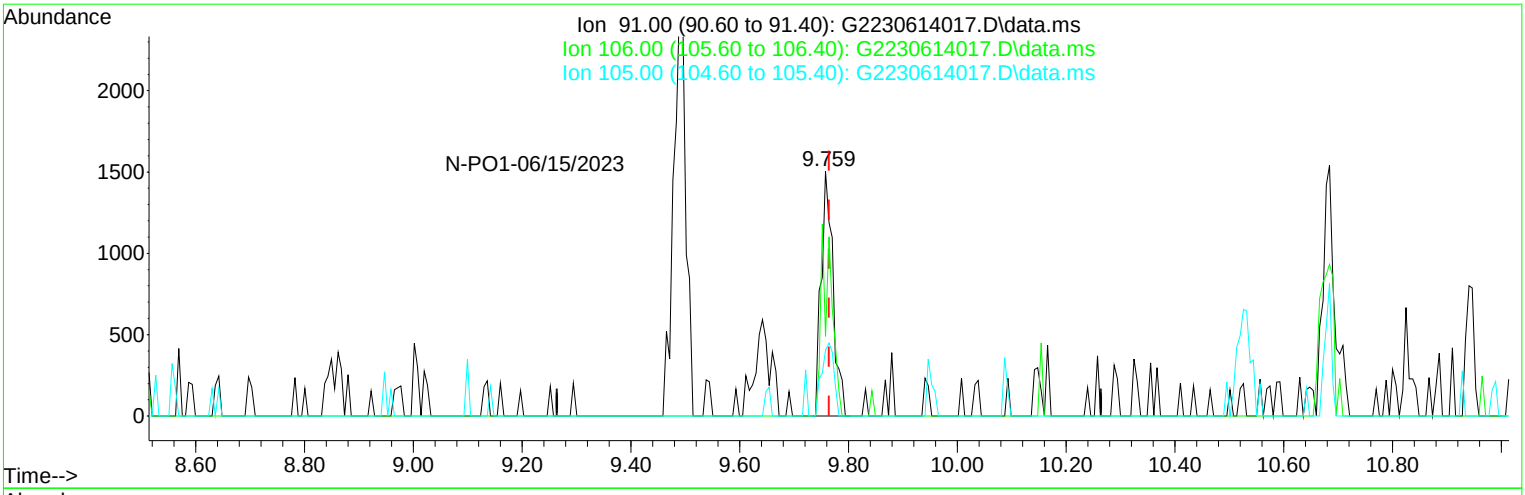
response 0

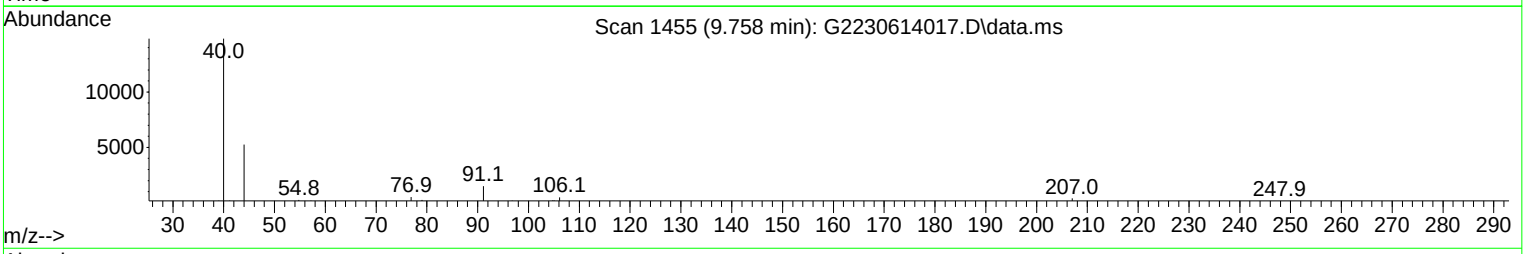
Ion	Exp%	Act%
91.00	100.00	0.00
106.00	49.00	0.00#
105.00	22.70	0.00
0.00	0.00	0.00

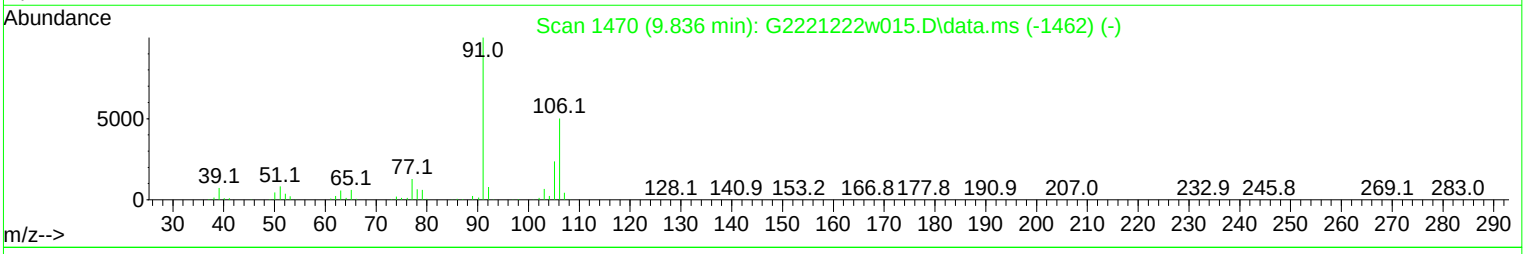
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614017.D
Acq On : 14 Jun 2023 15:10
Operator : PO1/MP3
Sample : 23F0196-06
Misc : 2
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 15 09:38:20 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614017.D\data.ms

(75) m,p-Xylene (T)

9.758min (-0.006) 0.02 ug/L m

response 22900

Ion	Exp%	Act%
91.00	100.00	100.00
106.00	49.00	0.00#
105.00	22.70	0.00
0.00	0.00	0.00

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6347WW21

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-07	File ID:	G2230614018.D
Sampled:	06/03/23 12:20	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 15:35
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097	Instrument:	G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
630-20-6	1,1,1,2-Tetrachloroethane		0.130	0.400	1.00	U
71-55-6	1,1,1-Trichloroethane		0.175	0.400	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.124	0.400	1.00	U
79-00-5	1,1,2-Trichloroethane		0.166	0.400	1.00	U
75-34-3	1,1-Dichloroethane		0.134	0.400	1.00	U
75-35-4	1,1-Dichloroethene		0.191	0.400	1.00	U
563-58-6	1,1-Dichloropropene		0.140	0.400	1.00	U
87-61-6	1,2,3-Trichlorobenzene		0.204	0.400	1.00	U
96-18-4	1,2,3-Trichloropropane		0.183	0.400	1.00	U
120-82-1	1,2,4-Trichlorobenzene		0.205	0.600	1.20	U
95-63-6	1,2,4-Trimethylbenzene		0.132	0.400	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane		0.260	1.00	2.00	U
106-93-4	1,2-Dibromoethane		0.106	0.400	1.00	U
95-50-1	1,2-Dichlorobenzene		0.126	0.400	1.00	U
107-06-2	1,2-Dichloroethane		0.212	0.600	1.20	U
78-87-5	1,2-Dichloropropane		0.205	0.600	1.20	U
108-67-8	1,3,5-Trimethylbenzene		0.100	0.400	1.00	U
541-73-1	1,3-Dichlorobenzene		0.145	0.400	1.00	U
142-28-9	1,3-Dichloropropane		0.136	0.400	1.00	U
106-46-7	1,4-Dichlorobenzene		0.184	0.400	1.00	U
594-20-7	2,2-Dichloropropane		0.184	0.400	1.00	U
78-93-3	2-Butanone		0.660	1.40	3.50	U
95-49-8	2-Chlorotoluene		0.147	0.400	1.00	U
591-78-6	2-Hexanone		0.143	1.40	3.50	U
106-43-4	4-Chlorotoluene		0.184	0.400	1.00	U
99-87-6	4-Isopropyltoluene		0.140	0.400	1.00	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6347WW21

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-07	File ID:	G2230614018.D
Sampled:	06/03/23 12:20	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 15:35
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097	Instrument:	G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
108-10-1	4-Methyl-2-pentanone		0.270	1.40	3.50	U
67-64-1	Acetone		1.04	4.00	8.00	U
71-43-2	Benzene		0.101	0.400	1.00	U
108-86-1	Bromobenzene		0.170	0.400	1.00	U
74-97-5	Bromochloromethane		0.134	0.400	1.00	U
75-27-4	Bromodichloromethane		0.106	0.400	1.00	U
75-25-2	Bromoform		0.206	0.400	1.00	U
74-83-9	Bromomethane		0.320	1.00	2.00	U
75-15-0	Carbon disulfide		0.280	1.00	2.00	U
56-23-5	Carbon tetrachloride		0.169	0.400	1.00	U
108-90-7	Chlorobenzene		0.130	0.400	1.00	U
75-00-3	Chloroethane		0.311	0.400	1.00	U
67-66-3	Chloroform		0.203	0.600	1.20	U
74-87-3	Chloromethane		0.384	1.00	2.00	U
156-59-2	cis-1,2-Dichloroethene		0.205	0.600	1.20	U
10061-01-5	cis-1,3-Dichloropropene		0.117	0.400	1.00	U
124-48-1	Dibromochloromethane		0.152	0.400	1.00	U
74-95-3	Dibromomethane		0.163	0.400	1.00	U
75-71-8	Dichlorodifluoromethane		0.259	1.00	2.00	U
100-41-4	Ethylbenzene		0.0600	0.200	0.400	U
87-68-3	Hexachlorobutadiene		0.200	0.400	1.00	U
98-82-8	Isopropylbenzene		0.110	0.400	1.00	U
179601-23-1	m,p-Xylene		0.178	0.800	2.00	U
1634-04-4	Methyl tert-butyl ether		0.106	0.400	1.00	U
75-09-2	Methylene chloride		0.447	1.00	2.00	U
104-51-8	n-Butylbenzene		0.260	1.00	2.00	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6347WW21

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-07	File ID:	G2230614018.D
Sampled:	06/03/23 12:20	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 15:35
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
103-65-1	n-Propylbenzene		0.126	0.400	1.00	U
91-20-3	Naphthalene		0.140	0.400	1.00	U
95-47-6	o-Xylene		0.0832	0.400	1.00	U
135-98-8	sec-Butylbenzene		0.120	0.400	1.00	U
100-42-5	Styrene		0.0906	0.200	0.400	U
98-06-6	tert-Butylbenzene		0.0906	0.400	1.00	U
127-18-4	Tetrachloroethene		0.357	1.00	2.00	Q, U
108-88-3	Toluene		0.114	0.400	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.171	0.400	1.00	U
10061-02-6	trans-1,3-Dichloropropene		0.117	0.400	1.00	U
79-01-6	Trichloroethene		0.156	0.400	1.00	U
75-69-4	Trichlorofluoromethane		0.101	0.400	1.00	U
75-01-4	Vinyl chloride		0.258	1.00	2.00	U

Italicized = secondary result

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614018.D
Acq On : 14 Jun 2023 15:35
Operator : PO1/MP3
Sample : 23F0196-07
Misc : 2
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 15 09:40:21 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

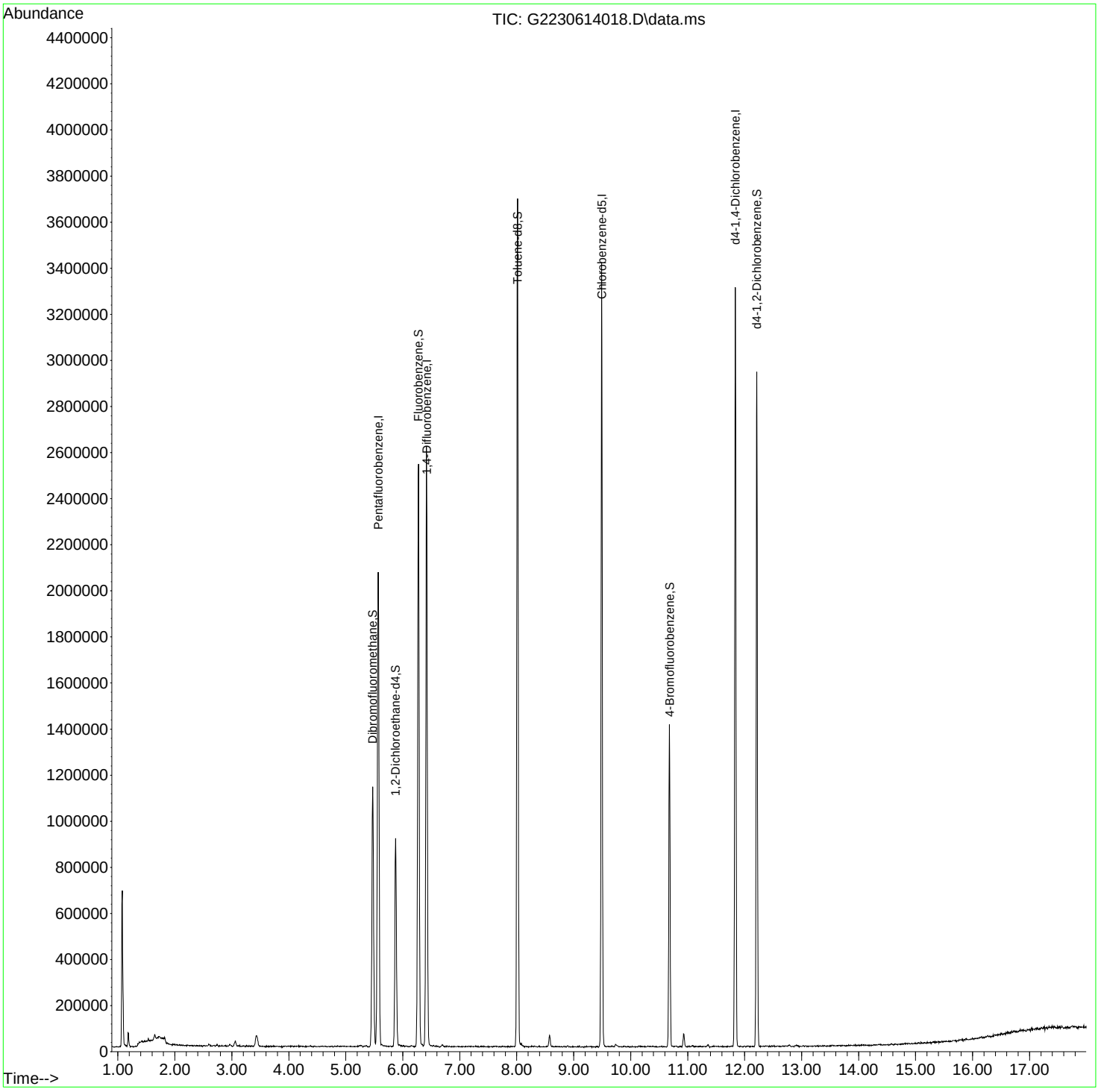
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.572	168	16711331	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.420	114	22334038	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	19861920	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.839	152	9432442	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.475	111	6923646	18.83	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 94.15%			
43) 1,2-Dichloroethane-d4	5.877	65	6409410	17.64	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 88.20%			
49) Fluorobenzene	6.277	96	24709713	19.42	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.10%			
64) Toluene-d8	8.015	98	24009762	19.18	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 95.90%			
81) 4-Bromofluorobenzene	10.683	174	4308821	9.67	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 96.70%			
97) d4-1,2-Dichlorobenzene	12.216	152	8497711	20.95	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 104.75%			
Target Compounds						Qvalue
18) Methylene chloride	3.061	49	118618	Below Cal		81
21) Methyl tert-butyl ether	3.436	73	693967	Below Cal		91
65) Toluene	8.085	91	33469	Below Cal	#	30

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614018.D
Acq On : 14 Jun 2023 15:35
Operator : PO1/MP3
Sample : 23F0196-07
Misc : 2
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 15 09:40:21 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G



Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614018.D
Acq On : 14 Jun 2023 15:35
Operator : PO1/MP3
Sample : 23F0196-07
Misc : 2
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 15 09:40:21 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

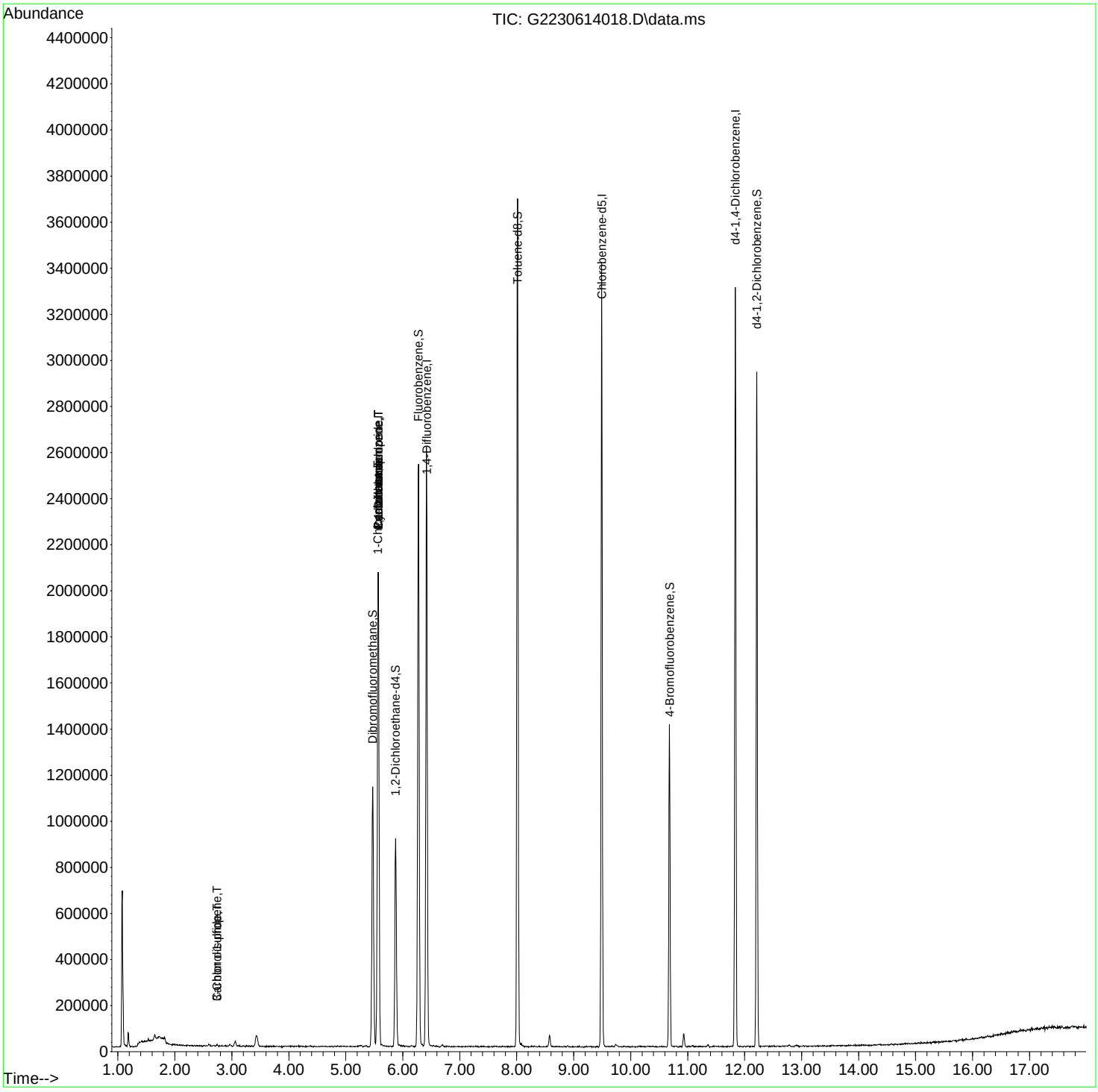
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.572	168	16711331	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.420	114	22334038	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	19861920	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.839	152	9432442	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.475	111	6923646	18.83	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 94.15%			
43) 1,2-Dichloroethane-d4	5.877	65	6409410	17.64	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 88.20%			
49) Fluorobenzene	6.277	96	24709713	19.42	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.10%			
64) Toluene-d8	8.015	98	24009762	19.18	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 95.90%			
81) 4-Bromofluorobenzene	10.683	174	4308821	9.67	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 96.70%			
97) d4-1,2-Dichlorobenzene	12.216	152	8497711	20.95	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 104.75%			
Target Compounds						Qvalue
5) Bromomethane	1.725	94	53969	Below Cal	#	61
12) Acetone	2.608	43	84044	Below Cal	#	45
14) Carbon disulfide	2.743	76	94307	0.03	ug/L #	74
17) 3-Chloro-1-propene	2.743	76	94312	0.48	ug/L #	53
18) Methylene chloride	3.061	49	118618	Below Cal		81
21) Methyl tert-butyl ether	3.436	73	693967	Below Cal		91
40) Cyclohexane	5.570	84	361340	0.80	ug/L #	35
41) 1-Chlorobutane	5.565	56	208140	0.40	ug/L #	1
42) 1,1-Dichloropropene	5.568	75	880035	2.25	ug/L #	38
47) Carbon tetrachloride	5.569	117	1319123	3.27	ug/L #	16
60) 4-Methyl-2-pentanone	8.015	43	69942	Below Cal	#	1
65) Toluene	8.085	91	33469	Below Cal	#	30
74) Ethylbenzene	9.494	91	39779	Below Cal	#	44

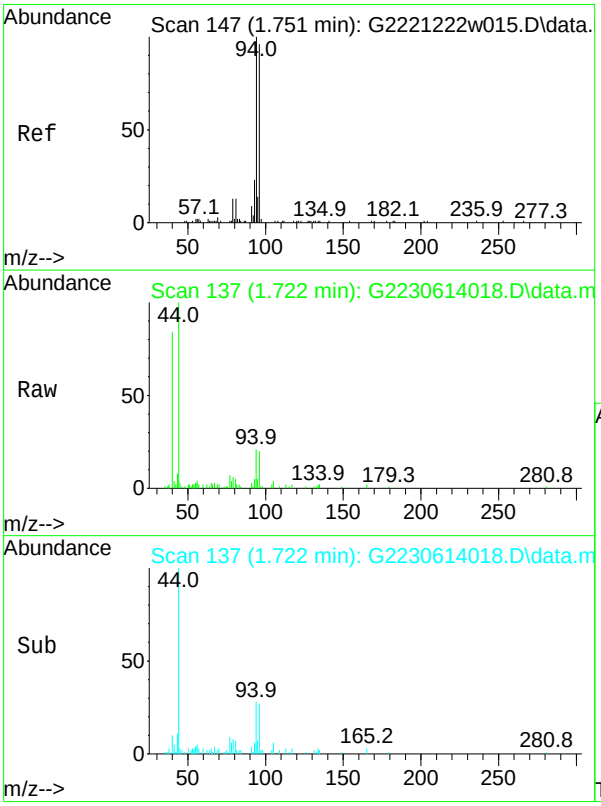
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614018.D
Acq On : 14 Jun 2023 15:35
Operator : PO1/MP3
Sample : 23F0196-07
Misc : 2
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 15 09:40:21 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

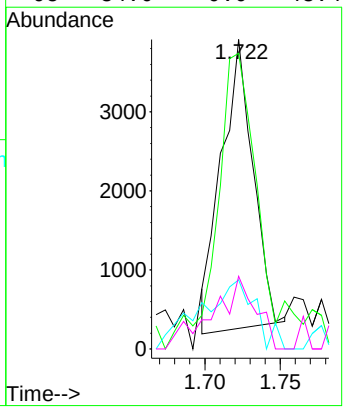


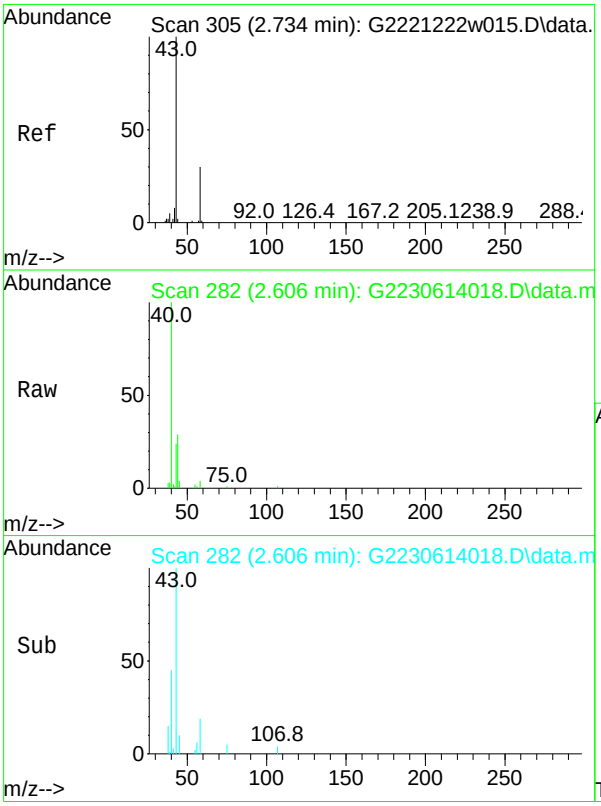


#5
Bromomethane
Concen: Below Cal
RT: 1.725 min Scan# 137
Delta R.T. 0.011 min
Lab File: G2230614018.D
Acq: 14 Jun 2023 15:35

Tgt Ion: 94 Resp: 53969

Ion	Ratio	Lower	Upper
94	100		
96	130.9	65.6	125.6#
93	0.0	0.0	49.5
95	34.0	0.0	43.4

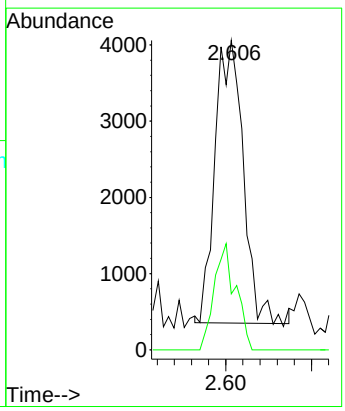


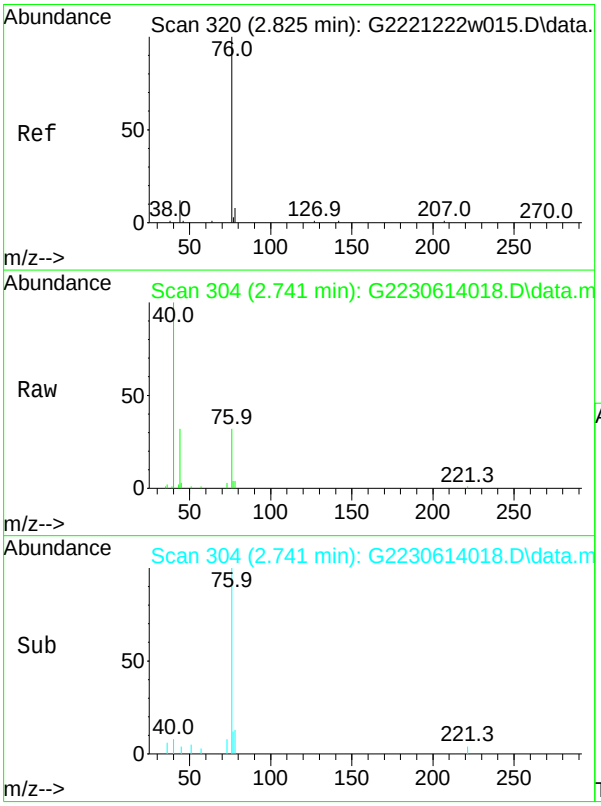


#12
Acetone
Concen: Below Cal
RT: 2.608 min Scan# 282
Delta R.T. 0.000 min
Lab File: G2230614018.D
Acq: 14 Jun 2023 15:35

Tgt Ion: 43 Resp: 84044

Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	59.7

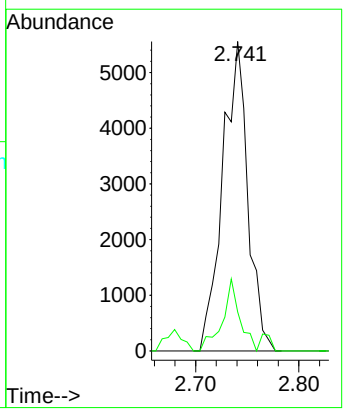


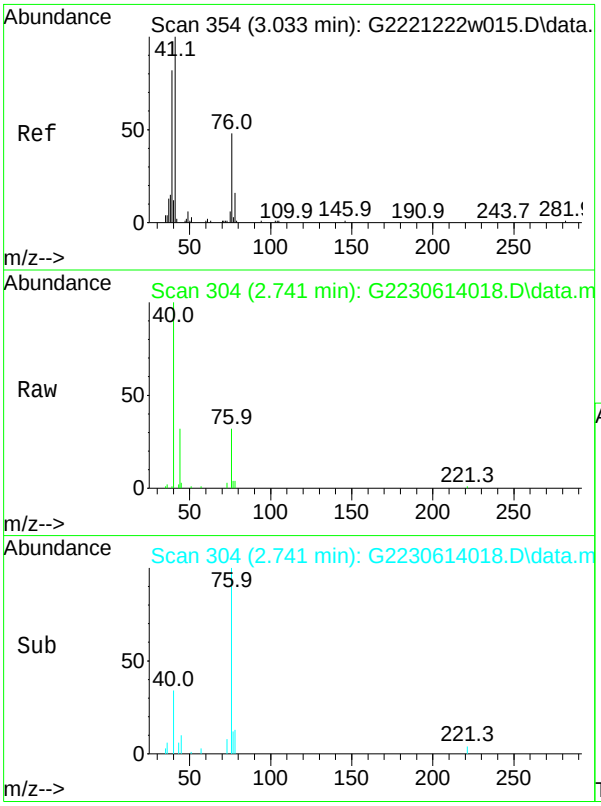


#14
Carbon disulfide
Concen: 0.03 ug/L
RT: 2.743 min Scan# 304
Delta R.T. 0.004 min
Lab File: G2230614018.D
Acq: 14 Jun 2023 15:35

Tgt Ion: 76 Resp: 94307

Ion	Ratio	Lower	Upper
76	100		
78	0.0	0.0	39.3

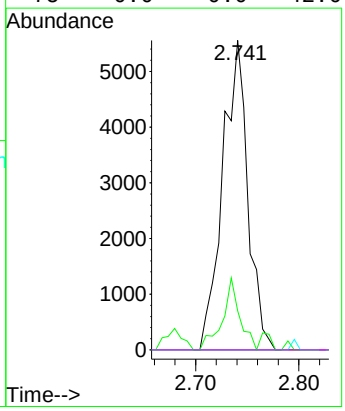


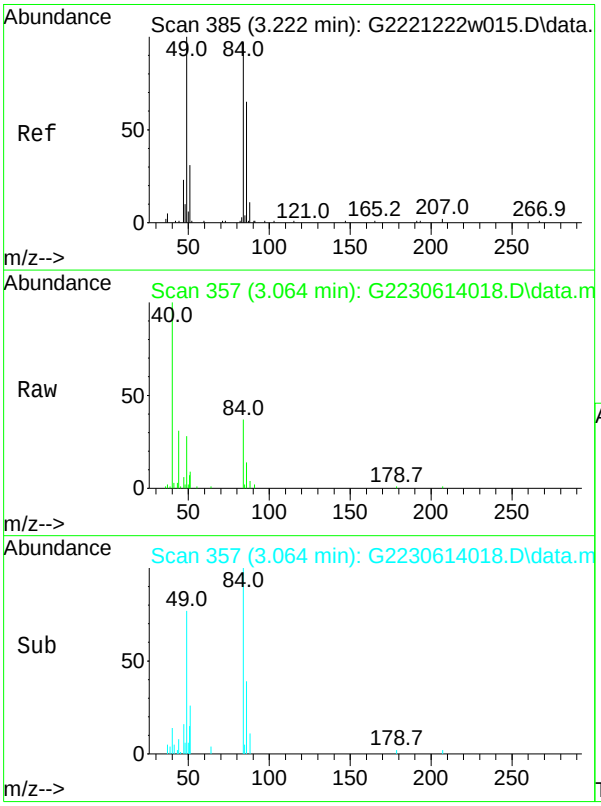


#17
3-Chloro-1-propene
Concen: 0.48 ug/L
RT: 2.743 min Scan# 304
Delta R.T. -0.177 min
Lab File: G2230614018.D
Acq: 14 Jun 2023 15:35

Tgt Ion: 76 Resp: 94312

Ion	Ratio	Lower	Upper
76	100		
78	0.0	2.4	62.4#
49	0.0	0.0	43.0
75	0.0	0.0	42.6

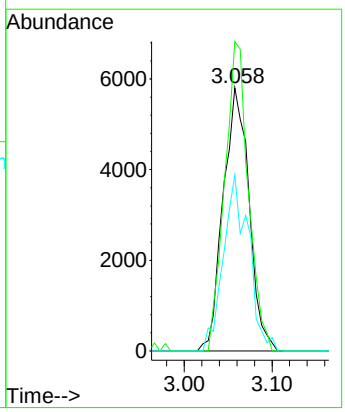


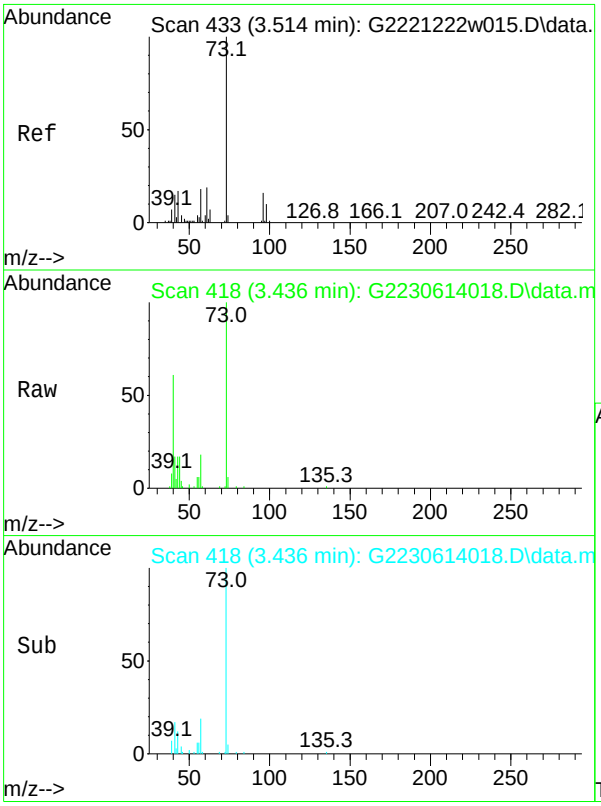


#18
Methylene chloride
Concen: Below Cal
RT: 3.061 min Scan# 357
Delta R.T. -0.001 min
Lab File: G2230614018.D
Acq: 14 Jun 2023 15:35

Tgt Ion: 49 Resp: 118618

Ion	Ratio	Lower	Upper
49	100		
84	107.7	57.9	117.9
86	65.6	24.9	84.9

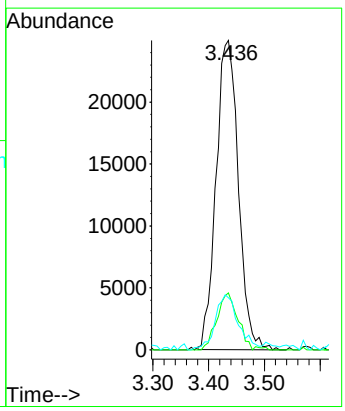


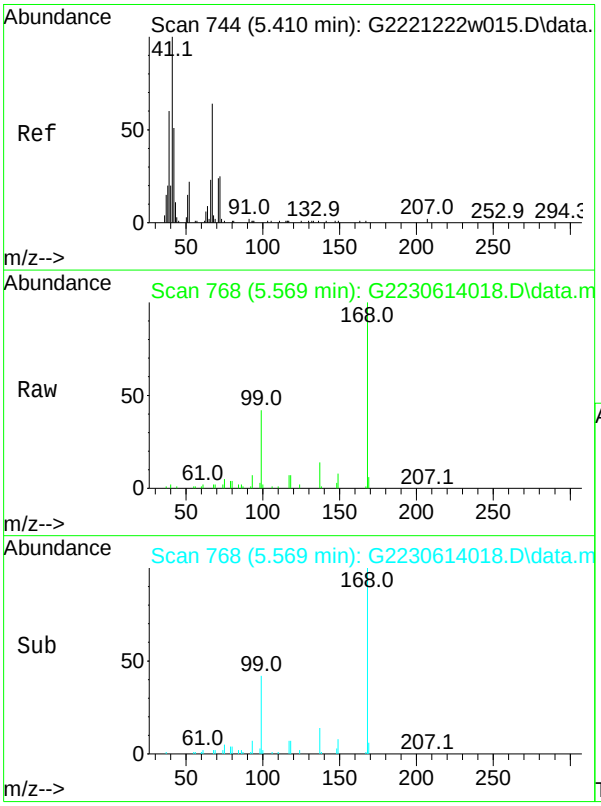


#21
Methyl tert-butyl ether
Concen: Below Cal
RT: 3.436 min Scan# 418
Delta R.T. -0.010 min
Lab File: G2230614018.D
Acq: 14 Jun 2023 15:35

Tgt Ion: 73 Resp: 693967

Ion	Ratio	Lower	Upper
73	100		
57	17.5	0.0	51.7
41	16.8	0.0	50.6

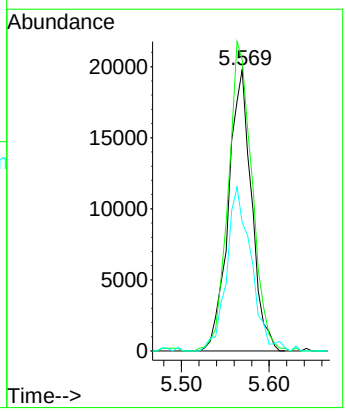


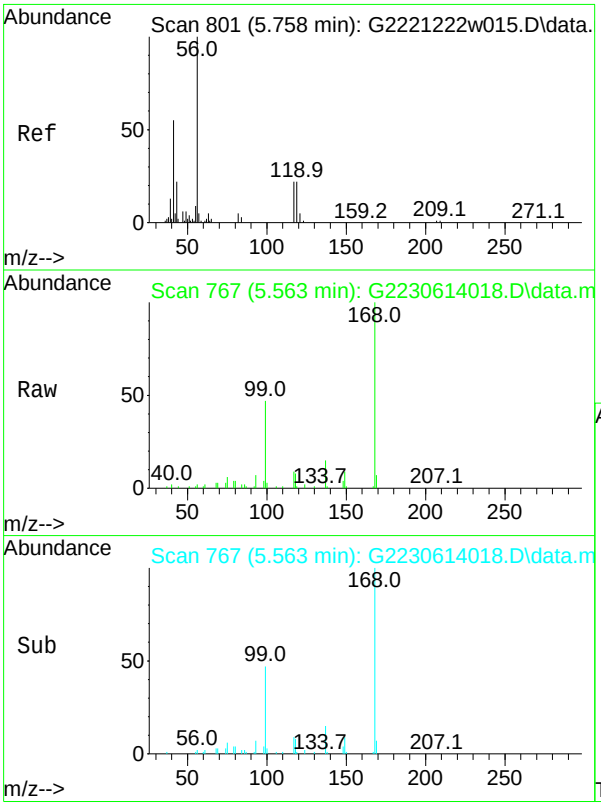


#40
Cyclohexane
Concen: 0.80 ug/L
RT: 5.570 min Scan# 768
Delta R.T. 0.036 min
Lab File: G2230614018.D
Acq: 14 Jun 2023 15:35

Tgt Ion: 84 Resp: 361340

Ion	Ratio	Lower	Upper
84	100		
69	112.1	6.8	66.8#
56	62.3	79.1	139.1#

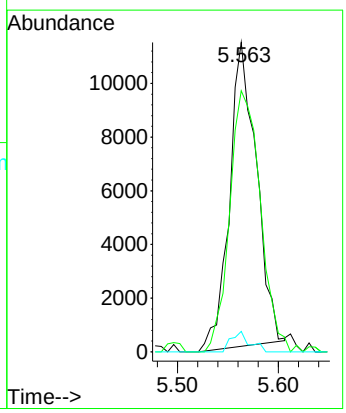


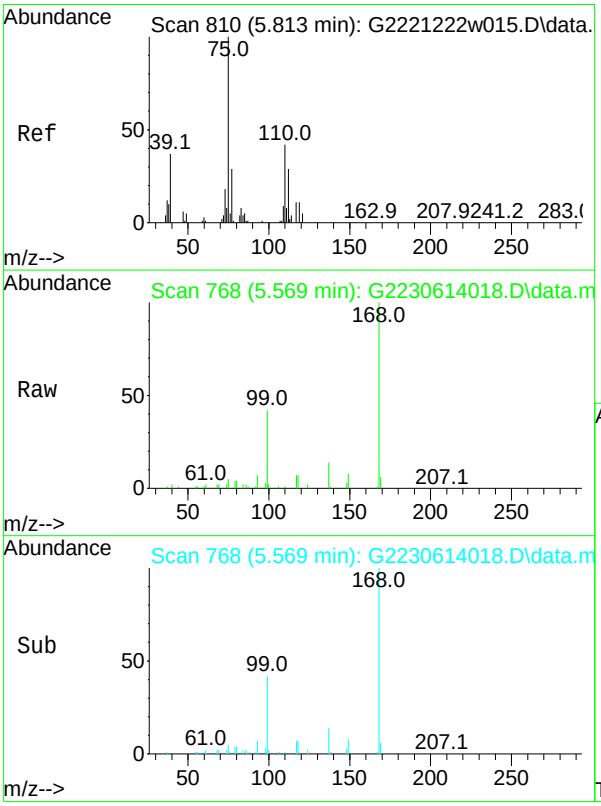


#41
1-Chlorobutane
Concen: 0.40 ug/L
RT: 5.565 min Scan# 767
Delta R.T. -0.065 min
Lab File: G2230614018.D
Acq: 14 Jun 2023 15:35

Tgt Ion: 56 Resp: 208140

Ion	Ratio	Lower	Upper
56	100		
55	99.2	0.0	41.0#
57	0.0	0.0	35.7

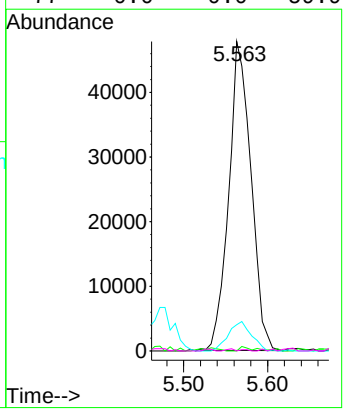


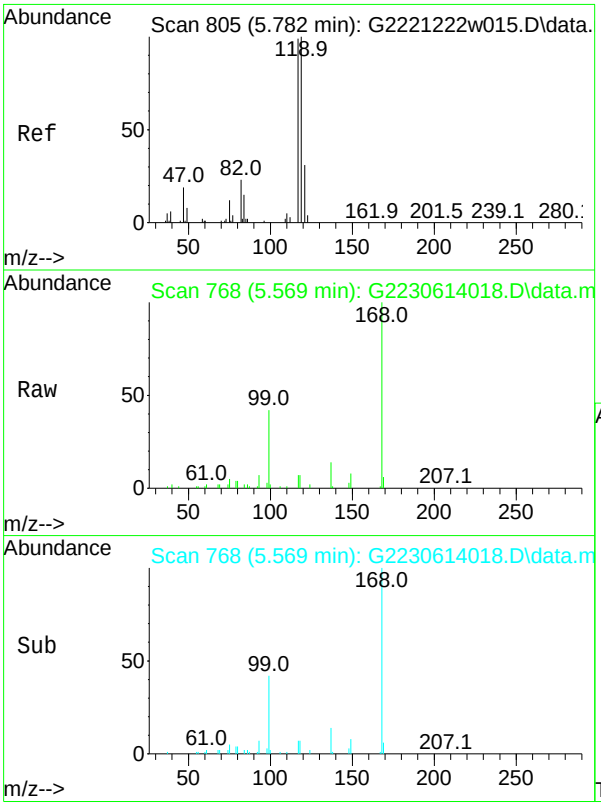


#42
1,1-Dichloropropene
Concen: 2.25 ug/L
RT: 5.568 min Scan# 768
Delta R.T. -0.121 min
Lab File: G2230614018.D
Acq: 14 Jun 2023 15:35

Tgt Ion: 75 Resp: 880035

Ion	Ratio	Lower	Upper
75	100		
39	0.0	25.8	85.8#
110	9.9	9.1	69.1
77	0.0	0.0	59.9

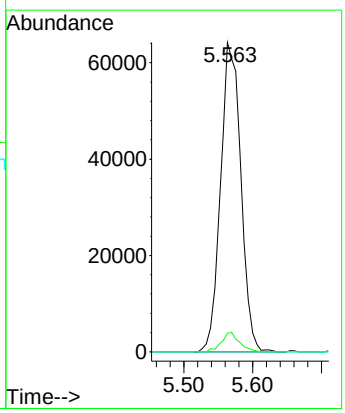


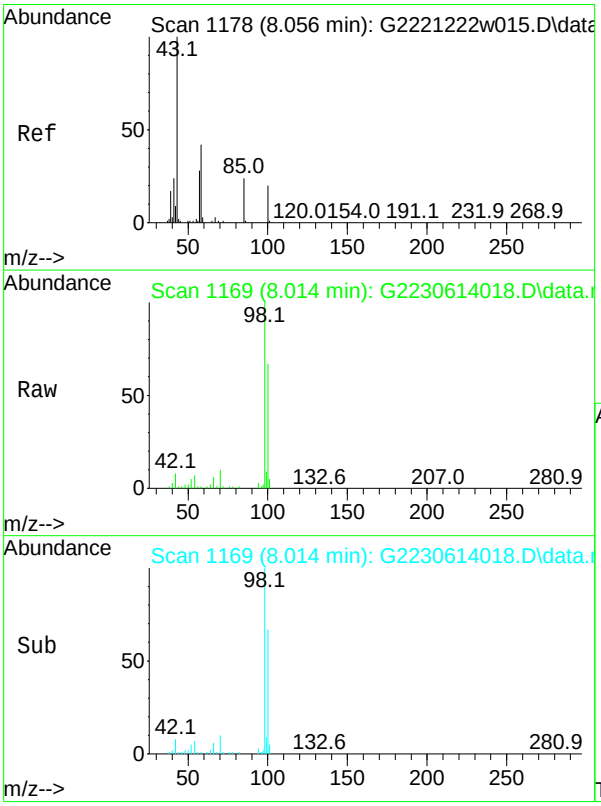


#47
Carbon tetrachloride
Concen: 3.27 ug/L
RT: 5.569 min Scan# 768
Delta R.T. -0.111 min
Lab File: G2230614018.D
Acq: 14 Jun 2023 15:35

Tgt Ion:117 Resp: 1319123

Ion	Ratio	Lower	Upper
117	100		
119	5.6	66.4	126.4#
121	0.0	0.4	60.4#

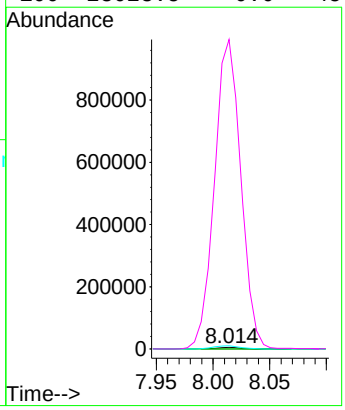


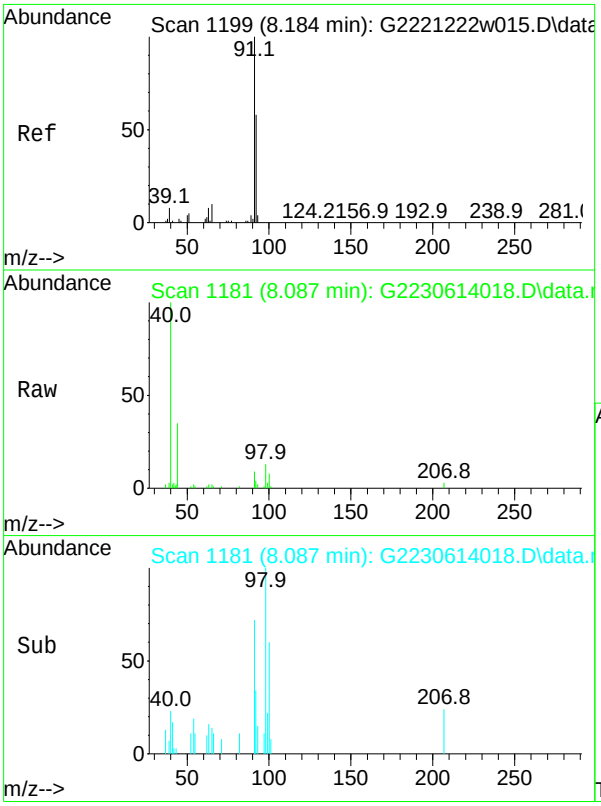


#60
4-Methyl-2-pentanone
Concen: Below Cal
RT: 8.015 min Scan# 1169
Delta R.T. 0.071 min
Lab File: G2230614018.D
Acq: 14 Jun 2023 15:35

Tgt Ion: 43 Resp: 69942

Ion	Ratio	Lower	Upper
43	100		
85	0.0	0.0	47.7
58	235.8	37.0	37.0#
100	23023.5	0.0	45.2#

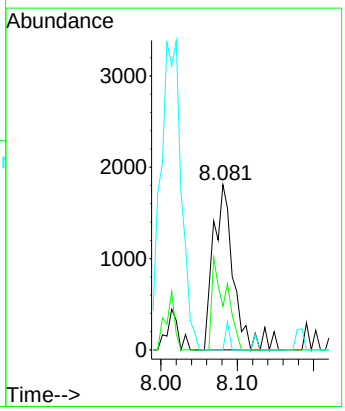


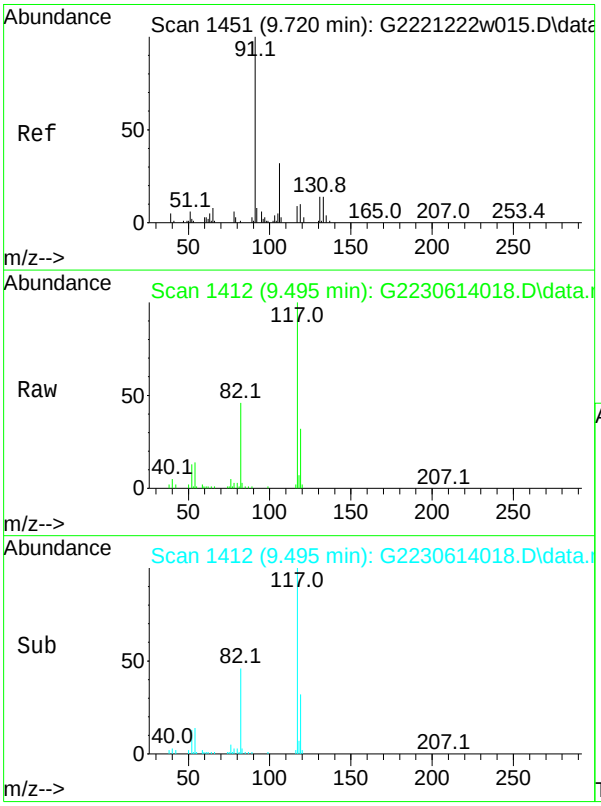


#65
Toluene
Concen: Below Cal
RT: 8.085 min Scan# 1181
Delta R.T. -0.001 min
Lab File: G2230614018.D
Acq: 14 Jun 2023 15:35

Tgt Ion: 91 Resp: 33469

Ion	Ratio	Lower	Upper
91	100		
92	0.0	27.5	87.5#
65	0.0	0.0	41.4

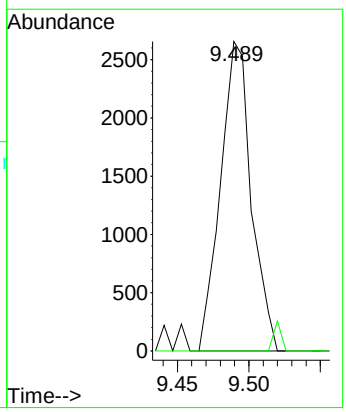




#74
Ethylbenzene
Concen: Below Cal
RT: 9.494 min Scan# 1412
Delta R.T. -0.149 min
Lab File: G2230614018.D
Acq: 14 Jun 2023 15:35

Tgt Ion: 91 Resp: 39779

Ion	Ratio	Lower	Upper
91	100		
106	0.0	0.8	60.8#



1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

63LHSMWW45

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-08	File ID:	G2230614022.D
Sampled:	06/03/23 14:30	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 17:14
		Preparation:	5030_W	Dilution:	100
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097	Instrument:	G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
630-20-6	1,1,1,2-Tetrachloroethane		6.50	20.0	50.0	U
71-55-6	1,1,1-Trichloroethane		8.77	20.0	50.0	U
79-34-5	1,1,2,2-Tetrachloroethane		6.21	20.0	50.0	U
79-00-5	1,1,2-Trichloroethane		8.32	20.0	50.0	U
75-34-3	1,1-Dichloroethane		6.69	20.0	50.0	U
75-35-4	1,1-Dichloroethene		9.54	20.0	50.0	U
563-58-6	1,1-Dichloropropene		6.99	20.0	50.0	U
87-61-6	1,2,3-Trichlorobenzene		10.2	20.0	50.0	U
96-18-4	1,2,3-Trichloropropane		9.13	20.0	50.0	U
120-82-1	1,2,4-Trichlorobenzene		10.2	30.0	60.0	U
95-63-6	1,2,4-Trimethylbenzene		6.61	20.0	50.0	U
96-12-8	1,2-Dibromo-3-chloropropane		13.0	50.0	100	U
106-93-4	1,2-Dibromoethane		5.31	20.0	50.0	U
95-50-1	1,2-Dichlorobenzene		6.30	20.0	50.0	U
107-06-2	1,2-Dichloroethane		10.6	30.0	60.0	U
78-87-5	1,2-Dichloropropane		10.2	30.0	60.0	U
108-67-8	1,3,5-Trimethylbenzene		5.00	20.0	50.0	U
541-73-1	1,3-Dichlorobenzene		7.24	20.0	50.0	U
142-28-9	1,3-Dichloropropane		6.80	20.0	50.0	U
106-46-7	1,4-Dichlorobenzene		9.20	20.0	50.0	U
594-20-7	2,2-Dichloropropane		9.20	20.0	50.0	U
78-93-3	2-Butanone		33.0	70.0	175	U
95-49-8	2-Chlorotoluene		7.33	20.0	50.0	U
591-78-6	2-Hexanone		7.16	70.0	175	U
106-43-4	4-Chlorotoluene		9.21	20.0	50.0	U
99-87-6	4-Isopropyltoluene		7.00	20.0	50.0	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

63LHSMWW45

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-08	File ID:	G2230614022.D
Sampled:	06/03/23 14:30	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 17:14
		Preparation:	5030_W	Dilution:	100
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097	Instrument:	G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
108-10-1	4-Methyl-2-pentanone		13.5	70.0	175	U
67-64-1	Acetone		51.8	200	400	U
71-43-2	Benzene		5.07	20.0	50.0	U
108-86-1	Bromobenzene		8.48	20.0	50.0	U
74-97-5	Bromochloromethane		6.69	20.0	50.0	U
75-27-4	Bromodichloromethane		5.31	20.0	50.0	U
75-25-2	Bromoform		10.3	20.0	50.0	U
74-83-9	Bromomethane		16.0	50.0	100	U
75-15-0	Carbon disulfide		14.0	50.0	100	U
56-23-5	Carbon tetrachloride		8.44	20.0	50.0	U
108-90-7	Chlorobenzene		6.50	20.0	50.0	U
75-00-3	Chloroethane		15.5	20.0	50.0	U
67-66-3	Chloroform		10.1	30.0	60.0	U
74-87-3	Chloromethane		19.2	50.0	100	U
156-59-2	cis-1,2-Dichloroethene	314	10.3	30.0	60.0	D
10061-01-5	cis-1,3-Dichloropropene		5.87	20.0	50.0	U
124-48-1	Dibromochloromethane		7.59	20.0	50.0	U
74-95-3	Dibromomethane		8.17	20.0	50.0	U
75-71-8	Dichlorodifluoromethane		13.0	50.0	100	U
100-41-4	Ethylbenzene		3.00	10.0	20.0	U
87-68-3	Hexachlorobutadiene		10.0	20.0	50.0	U
98-82-8	Isopropylbenzene		5.49	20.0	50.0	U
179601-23-1	m,p-Xylene		8.89	40.0	100	U
1634-04-4	Methyl tert-butyl ether		5.30	20.0	50.0	U
75-09-2	Methylene chloride		22.4	50.0	100	U
104-51-8	n-Butylbenzene		13.0	50.0	100	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

63LHSMWW45

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-08	File ID:	G2230614022.D
Sampled:	06/03/23 14:30	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 17:14
		Preparation:	5030_W	Dilution:	100
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
103-65-1	n-Propylbenzene		6.30	20.0	50.0	U
91-20-3	Naphthalene		7.00	20.0	50.0	U
95-47-6	o-Xylene		4.16	20.0	50.0	U
135-98-8	sec-Butylbenzene		5.98	20.0	50.0	U
100-42-5	Styrene		4.53	10.0	20.0	U
98-06-6	tert-Butylbenzene		4.53	20.0	50.0	U
127-18-4	Tetrachloroethene		17.8	50.0	100	Q, U
108-88-3	Toluene		5.72	20.0	50.0	U
156-60-5	trans-1,2-Dichloroethene		8.55	20.0	50.0	U
10061-02-6	trans-1,3-Dichloropropene		5.87	20.0	50.0	U
79-01-6	Trichloroethene	1740	7.81	20.0	50.0	D
75-69-4	Trichlorofluoromethane		5.05	20.0	50.0	U
75-01-4	Vinyl chloride		12.9	50.0	100	U

Italicized = secondary result

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614022.D
Acq On : 14 Jun 2023 17:14
Operator : PO1/MP3
Sample : 23F0196-08
Misc : 100
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 15 09:50:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

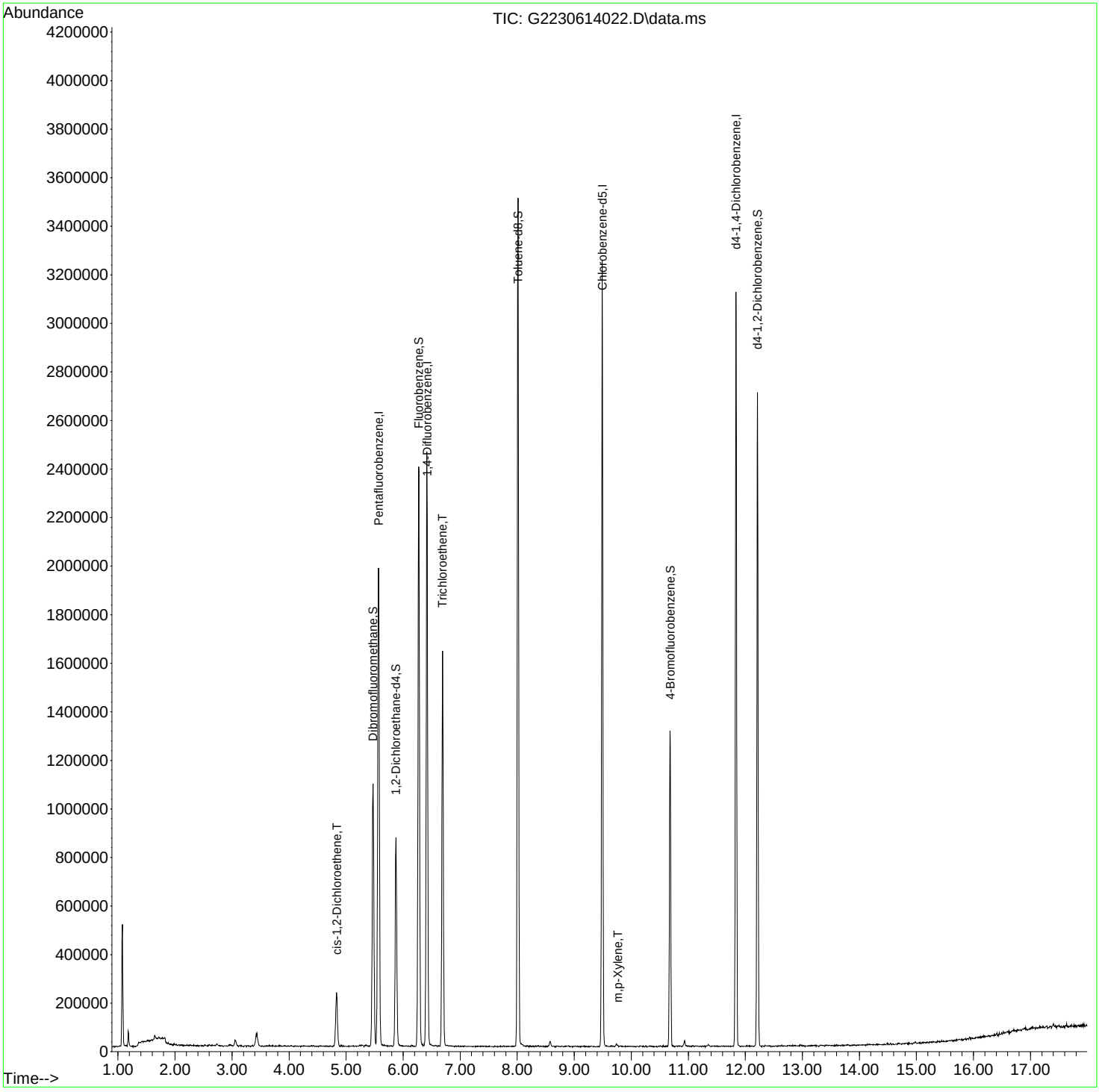
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.571	168	15852462	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.420	114	21327767	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	18790196	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.839	152	8684354	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.473	111	6715297	19.25	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.25%			
43) 1,2-Dichloroethane-d4	5.876	65	6069802	17.61	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 88.05%			
49) Fluorobenzene	6.276	96	23442106	19.29	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.45%			
64) Toluene-d8	8.015	98	22829832	19.28	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.40%			
81) 4-Bromofluorobenzene	10.684	174	4010161	9.78	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 97.80%			
97) d4-1,2-Dichlorobenzene	12.216	152	7569320	20.27	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 101.35%			
Target Compounds						Qvalue
18) Methylene chloride	3.057	49	123274	Below Cal		76
21) Methyl tert-butyl ether	3.437	73	666892	Below Cal		96
28) cis-1,2-Dichloroethene	4.836	61	1277949	3.14	ug/L #	71
50) Trichloroethene	6.693	95	4899738	17.42	ug/L	89
75) m,p-Xylene	9.764	91	27987	0.03	ug/L #	36

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614022.D
Acq On : 14 Jun 2023 17:14
Operator : PO1/MP3
Sample : 23F0196-08
Misc : 100
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 15 09:50:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G



Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614022.D
Acq On : 14 Jun 2023 17:14
Operator : PO1/MP3
Sample : 23F0196-08
Misc : 100
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 15 09:50:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

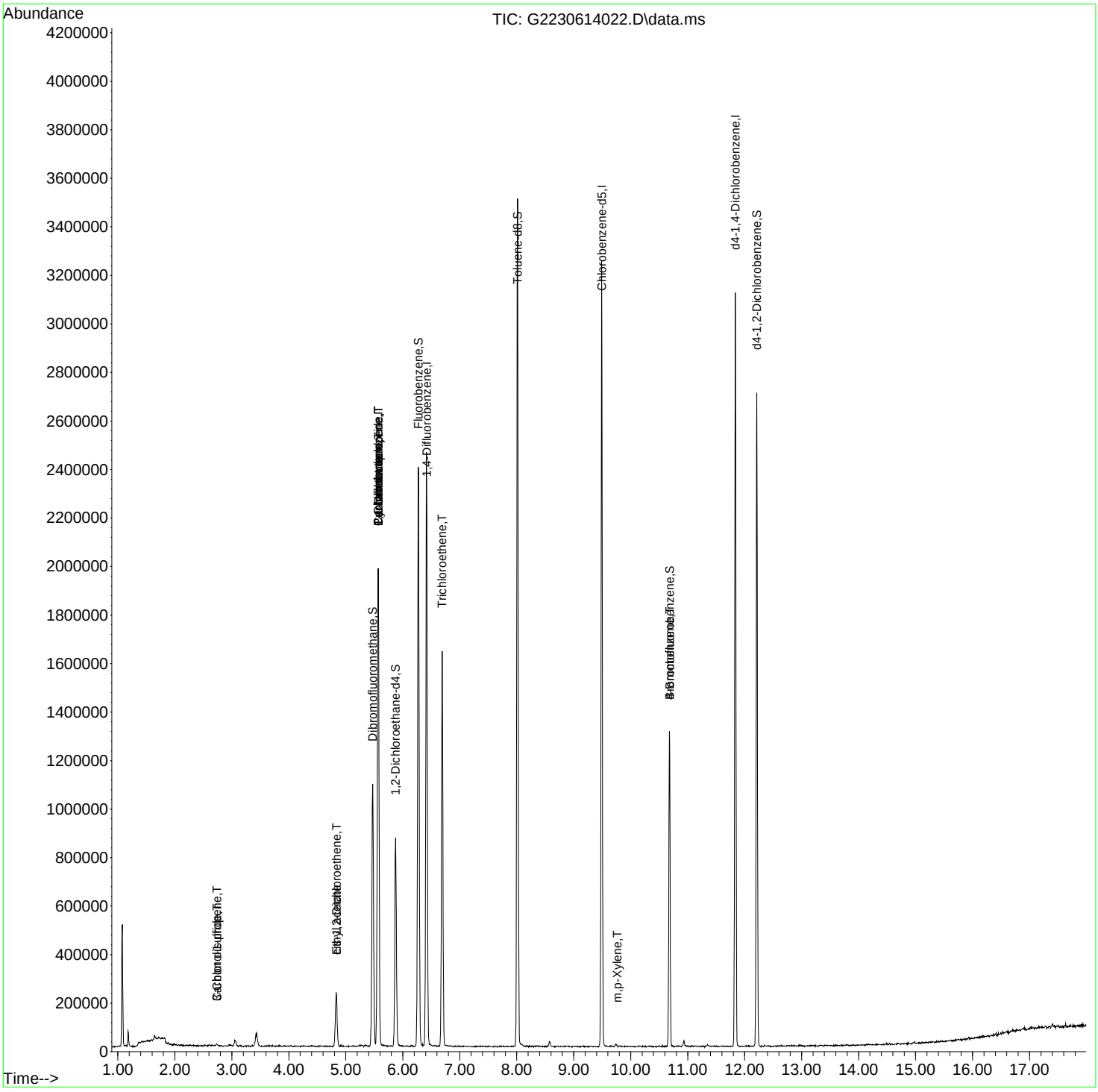
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene	5.571	168	15852462	20.00	ug/L		0.00
46) 1,4-Difluorobenzene	6.420	114	21327767	20.00	ug/L		0.00
63) Chlorobenzene-d5	9.493	117	18790196	20.00	ug/L		0.00
78) d4-1,4-Dichlorobenzene	11.839	152	8684354	20.00	ug/L		0.00
System Monitoring Compounds							
38) Dibromofluoromethane	5.473	111	6715297	19.25	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.25%				
43) 1,2-Dichloroethane-d4	5.876	65	6069802	17.61	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 88.05%				
49) Fluorobenzene	6.276	96	23442106	19.29	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.45%				
64) Toluene-d8	8.015	98	22829832	19.28	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.40%				
81) 4-Bromofluorobenzene	10.684	174	4010161	9.78	ug/L		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 97.80%				
97) d4-1,2-Dichlorobenzene	12.216	152	7569320	20.27	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 101.35%				
Target Compounds							Qvalue
5) Bromomethane	1.725	94	47973	Below Cal		#	81
12) Acetone	2.599	43	49404	Below Cal		#	45
14) Carbon disulfide	2.740	76	108906	0.06	ug/L	#	74
17) 3-Chloro-1-propene	2.740	76	108904	0.60	ug/L	#	53
18) Methylene chloride	3.057	49	123274	Below Cal			76
21) Methyl tert-butyl ether	3.437	73	666892	Below Cal			96
28) cis-1,2-Dichloroethene	4.836	61	1277949	3.14	ug/L	#	71
31) Ethyl acetate	4.836	61	1277942	27.04	ug/L	#	45
40) Cyclohexane	5.570	84	329064	0.77	ug/L	#	37
41) 1-Chlorobutane	5.567	56	212003	0.43	ug/L	#	1
42) 1,1-Dichloropropene	5.567	75	848754	2.29	ug/L	#	38
47) Carbon tetrachloride	5.570	117	1270272	3.30	ug/L	#	16
50) Trichloroethene	6.693	95	4899738	17.42	ug/L		89
60) 4-Methyl-2-pentanone	8.015	43	69637	Below Cal		#	1
74) Ethylbenzene	9.765	91	27256	Below Cal		#	44
75) m,p-Xylene	9.764	91	27987	0.03	ug/L	#	36
82) Bromobenzene	10.682	77	23627	0.05	ug/L	#	1

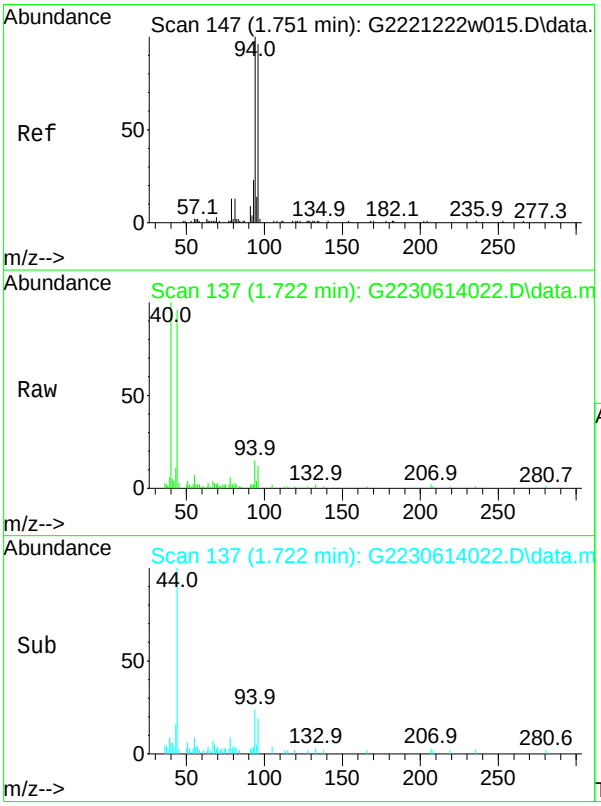
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614022.D
Acq On : 14 Jun 2023 17:14
Operator : PO1/MP3
Sample : 23F0196-08
Misc : 100
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 15 09:50:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

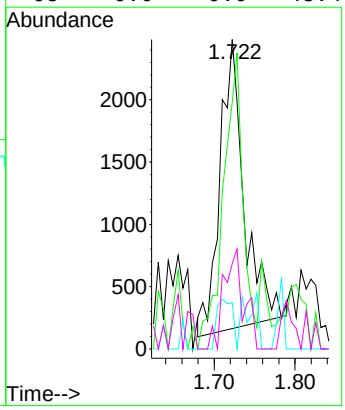


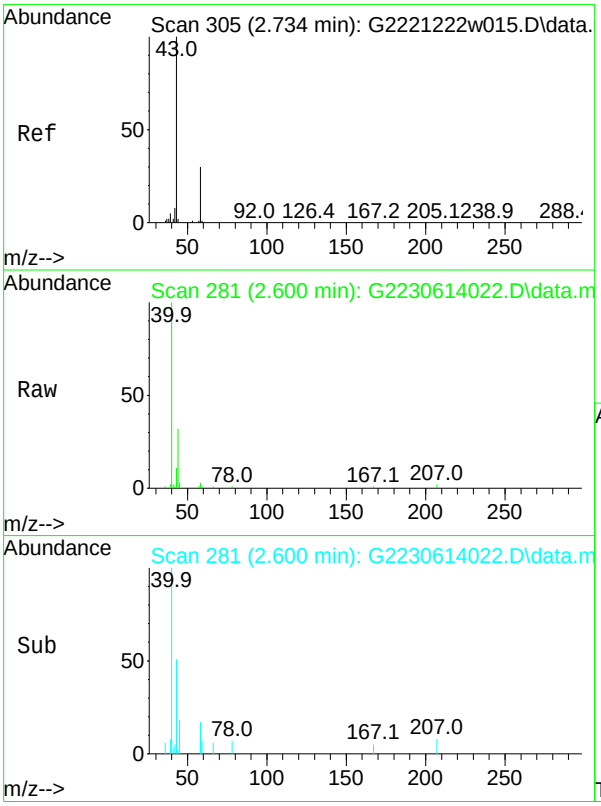


#5
Bromomethane
Concen: Below Cal
RT: 1.725 min Scan# 137
Delta R.T. 0.011 min
Lab File: G2230614022.D
Acq: 14 Jun 2023 17:14

Tgt Ion: 94 Resp: 47973

Ion	Ratio	Lower	Upper
94	100		
96	83.2	65.6	125.6
93	0.0	0.0	49.5
95	0.0	0.0	43.4

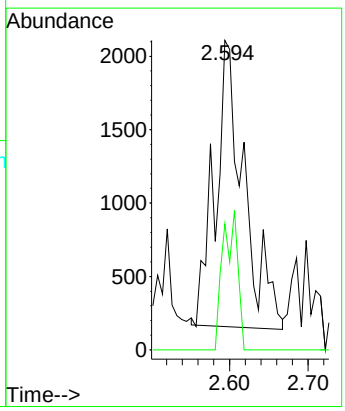


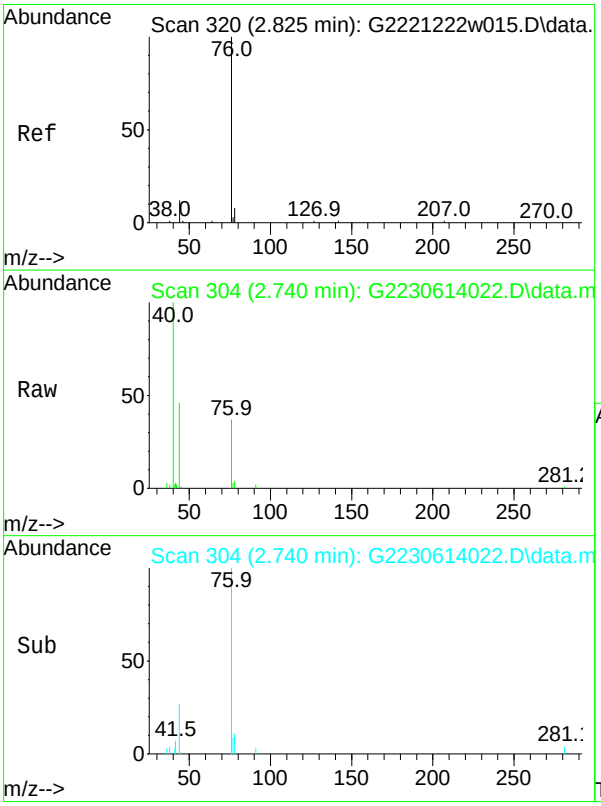


#12
Acetone
Concen: Below Cal
RT: 2.599 min Scan# 281
Delta R.T. -0.009 min
Lab File: G2230614022.D
Acq: 14 Jun 2023 17:14

Tgt Ion: 43 Resp: 49404

Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	59.7

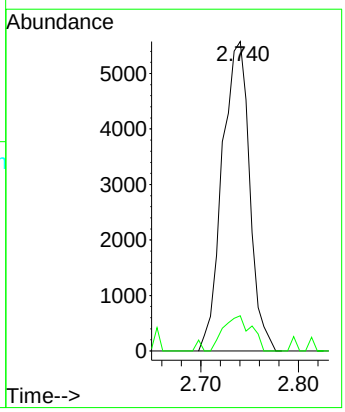


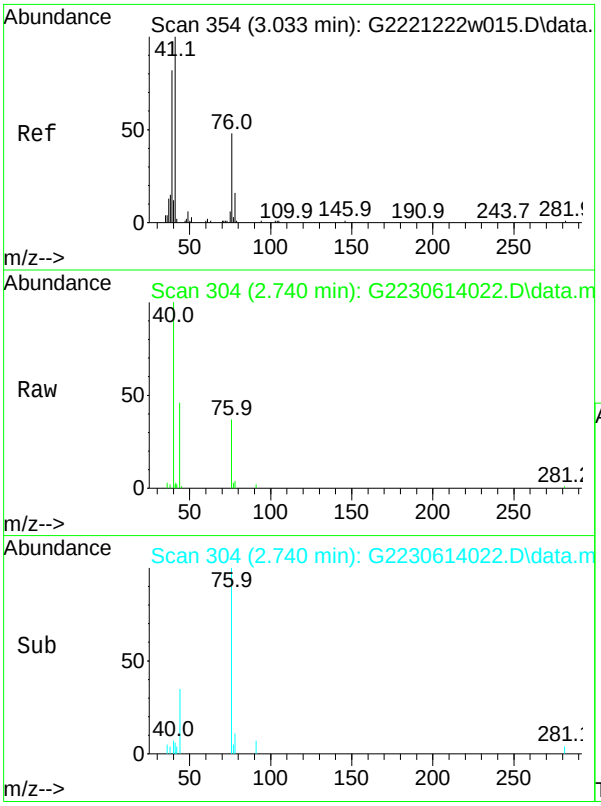


#14
Carbon disulfide
Concen: 0.06 ug/L
RT: 2.740 min Scan# 304
Delta R.T. 0.001 min
Lab File: G2230614022.D
Acq: 14 Jun 2023 17:14

Tgt Ion: 76 Resp: 108906

Ion	Ratio	Lower	Upper
76	100		
78	0.0	0.0	39.3

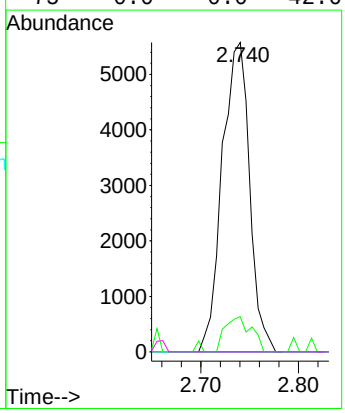


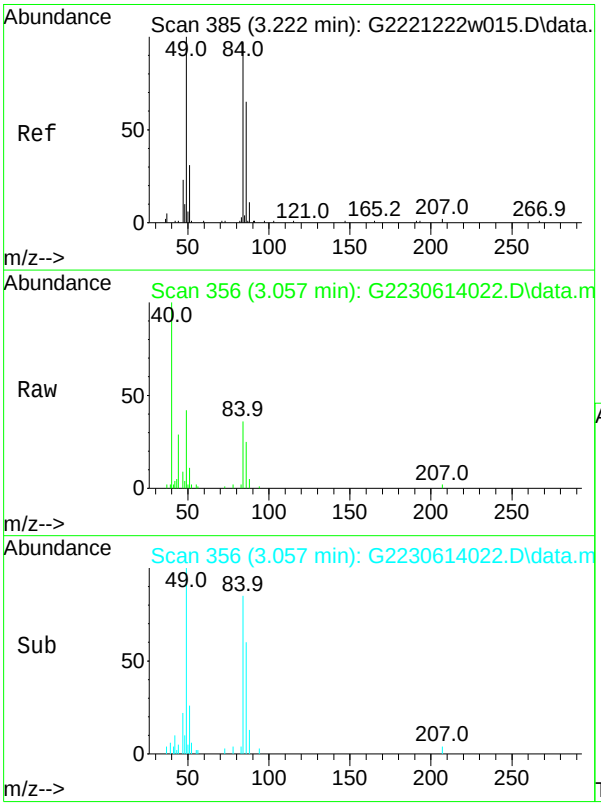


#17
3-Chloro-1-propene
Concen: 0.60 ug/L
RT: 2.740 min Scan# 304
Delta R.T. -0.180 min
Lab File: G2230614022.D
Acq: 14 Jun 2023 17:14

Tgt Ion: 76 Resp: 108904

Ion	Ratio	Lower	Upper
76	100		
78	0.0	2.4	62.4#
49	0.0	0.0	43.0
75	0.0	0.0	42.6

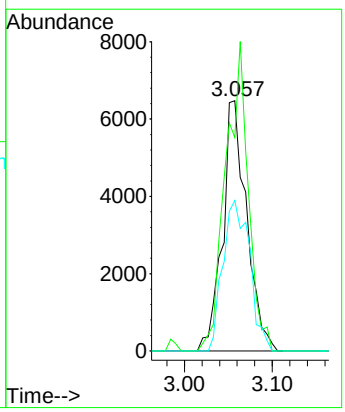


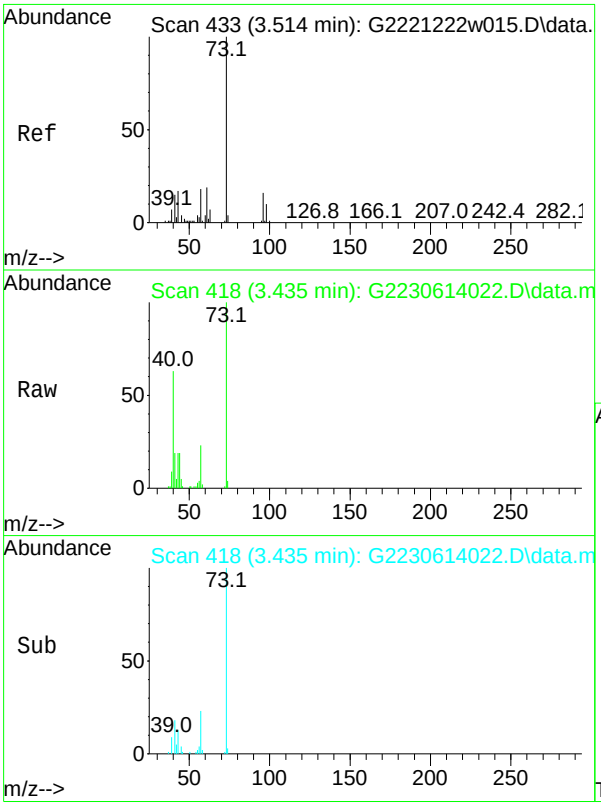


#18
Methylene chloride
Concen: Below Cal
RT: 3.057 min Scan# 356
Delta R.T. -0.005 min
Lab File: G2230614022.D
Acq: 14 Jun 2023 17:14

Tgt Ion: 49 Resp: 123274

Ion	Ratio	Lower	Upper
49	100		
84	114.7	57.9	117.9
86	67.1	24.9	84.9

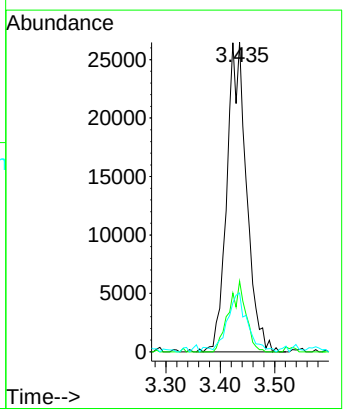


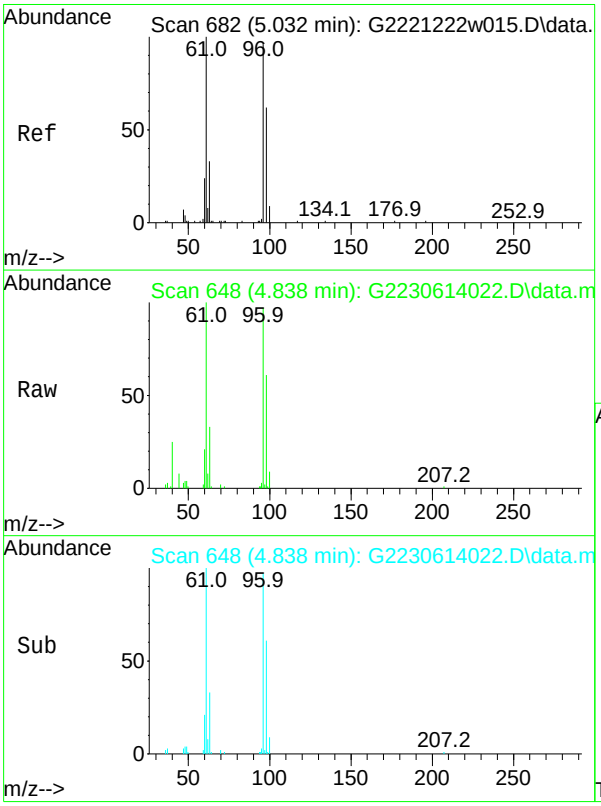


#21
Methyl tert-butyl ether
Concen: Below Cal
RT: 3.437 min Scan# 418
Delta R.T. -0.009 min
Lab File: G2230614022.D
Acq: 14 Jun 2023 17:14

Tgt Ion: 73 Resp: 666892

Ion	Ratio	Lower	Upper
73	100		
57	19.9	0.0	51.7
41	18.2	0.0	50.6

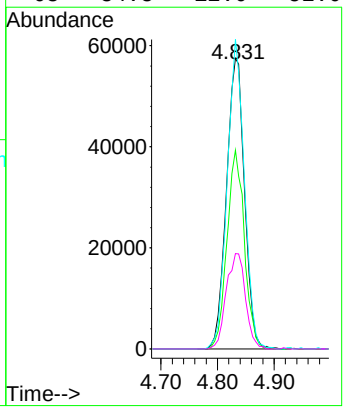


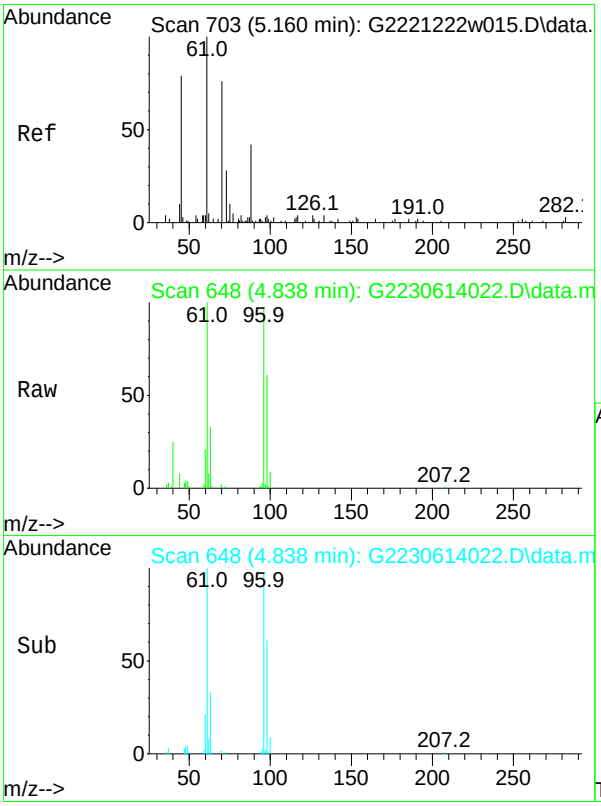


#28
cis-1,2-Dichloroethene
Concen: 3.14 ug/L
RT: 4.836 min Scan# 648
Delta R.T. -0.000 min
Lab File: G2230614022.D
Acq: 14 Jun 2023 17:14

Tgt Ion: 61 Resp: 1277949

Ion	Ratio	Lower	Upper
61	100		
98	65.9	15.9	75.9
96	100.8	39.6	99.6#
63	34.8	12.0	52.0

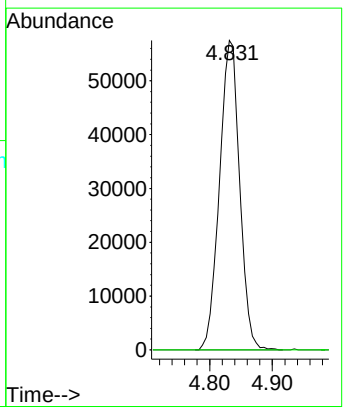


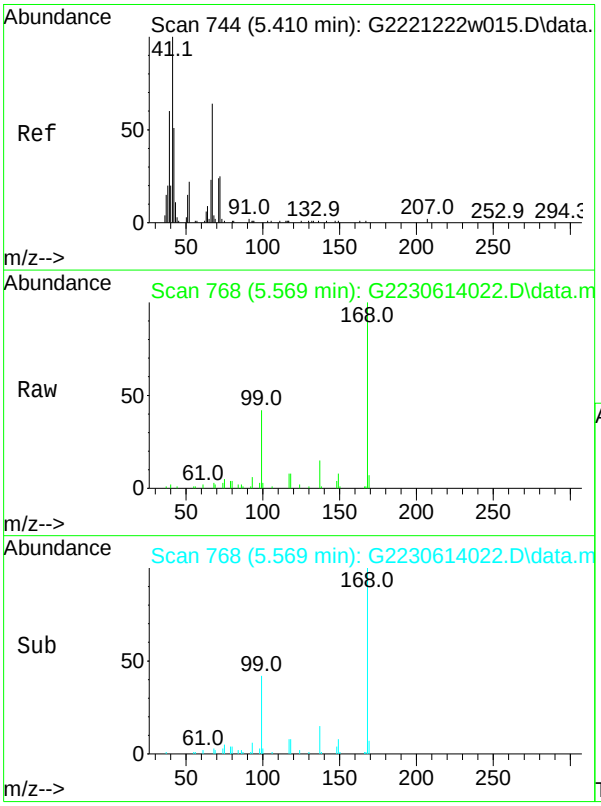


#31
Ethyl acetate
Concen: 27.04 ug/L
RT: 4.836 min Scan# 648
Delta R.T. -0.186 min
Lab File: G2230614022.D
Acq: 14 Jun 2023 17:14

Tgt Ion: 61 Resp: 1277942

Ion	Ratio	Lower	Upper
61	100		
88	0.0	0.1	60.1#

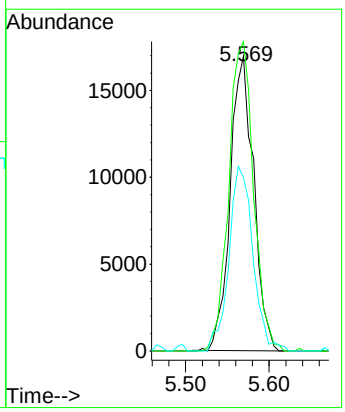


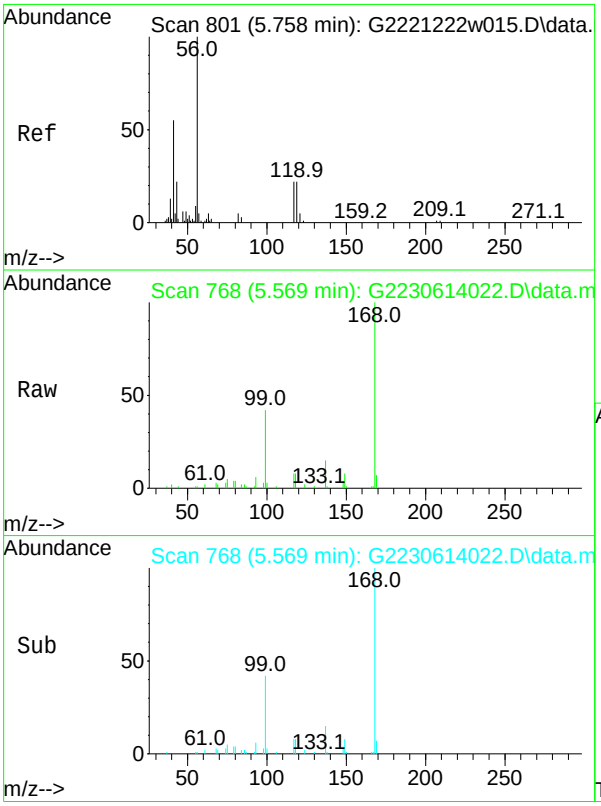


#40
Cyclohexane
Concen: 0.77 ug/L
RT: 5.570 min Scan# 768
Delta R.T. 0.036 min
Lab File: G2230614022.D
Acq: 14 Jun 2023 17:14

Tgt Ion: 84 Resp: 329064

Ion	Ratio	Lower	Upper
84	100		
69	111.5	6.8	66.8#
56	64.4	79.1	139.1#

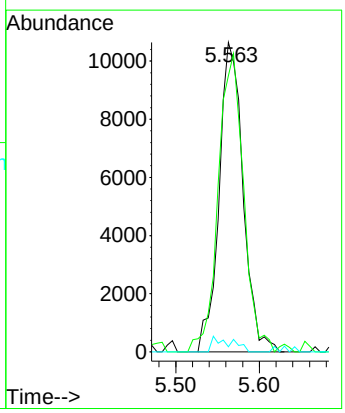


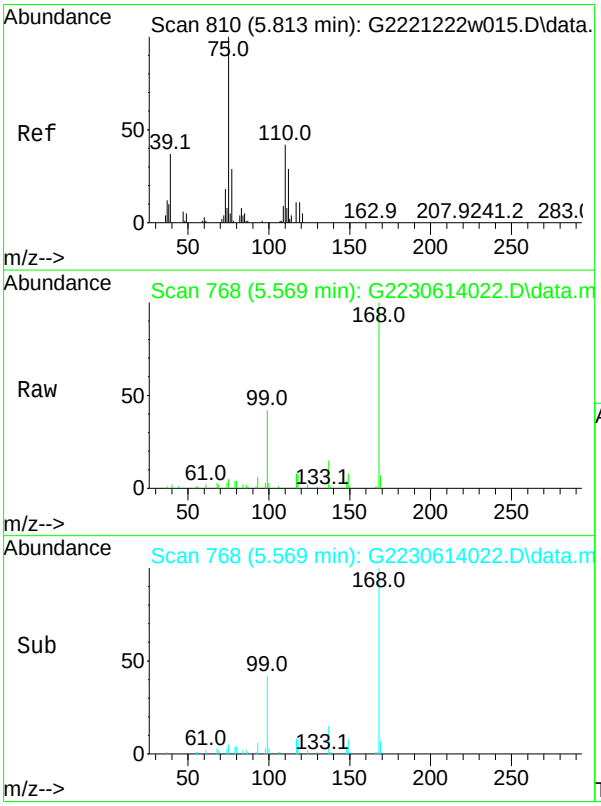


#41
1-Chlorobutane
Concen: 0.43 ug/L
RT: 5.567 min Scan# 768
Delta R.T. -0.063 min
Lab File: G2230614022.D
Acq: 14 Jun 2023 17:14

Tgt Ion: 56 Resp: 212003

Ion	Ratio	Lower	Upper
56	100		
55	101.9	0.0	41.0#
57	0.0	0.0	35.7

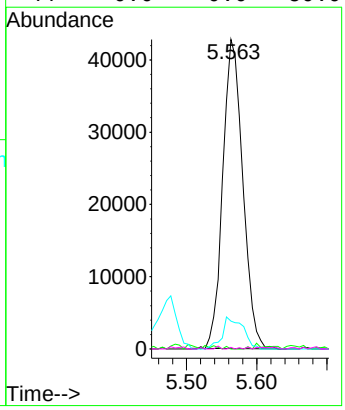


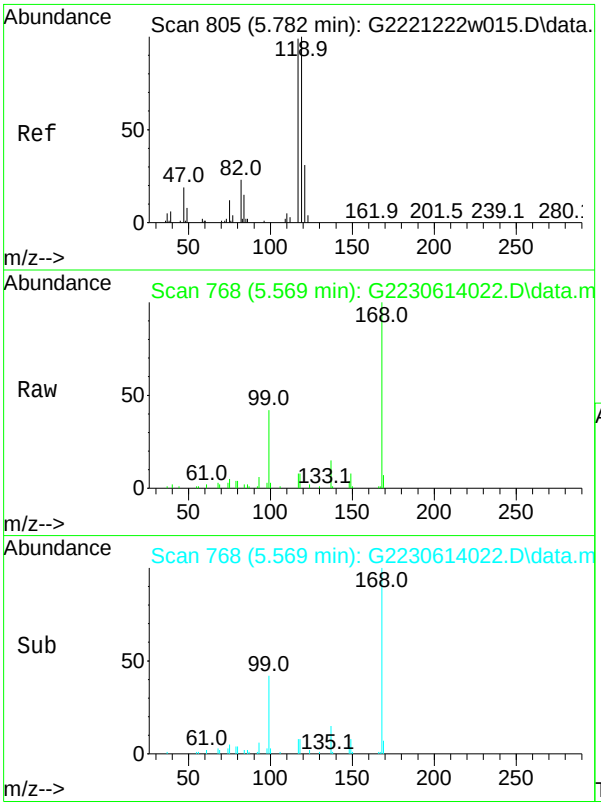


#42
1,1-Dichloropropene
Concen: 2.29 ug/L
RT: 5.567 min Scan# 768
Delta R.T. -0.122 min
Lab File: G2230614022.D
Acq: 14 Jun 2023 17:14

Tgt Ion: 75 Resp: 848754

Ion	Ratio	Lower	Upper
75	100		
39	0.0	25.8	85.8#
110	10.6	9.1	69.1
77	0.0	0.0	59.9

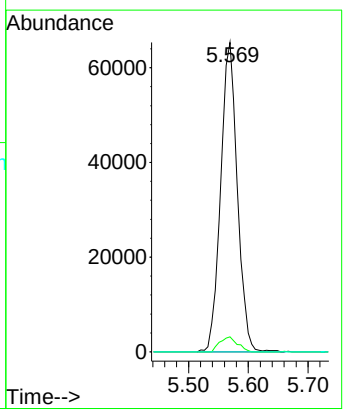


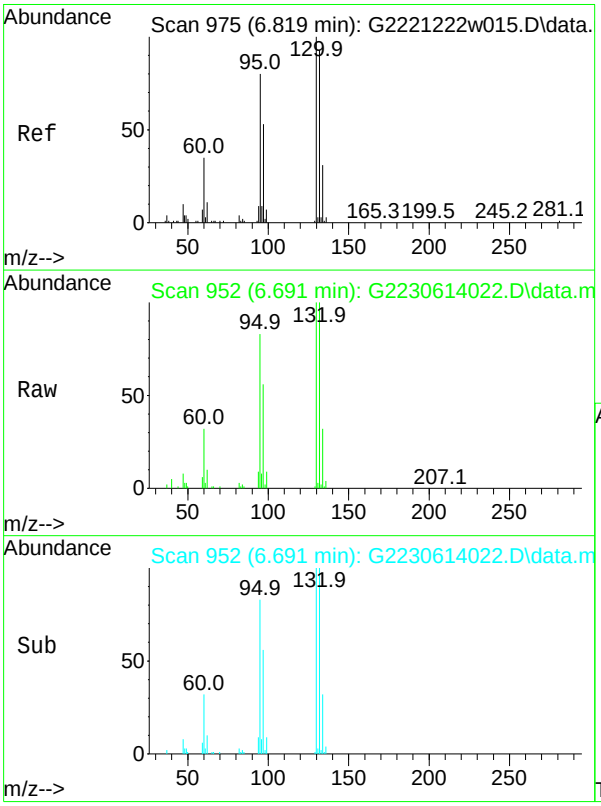


#47
Carbon tetrachloride
Concen: 3.30 ug/L
RT: 5.570 min Scan# 768
Delta R.T. -0.110 min
Lab File: G2230614022.D
Acq: 14 Jun 2023 17:14

Tgt Ion:117 Resp: 1270272

Ion	Ratio	Lower	Upper
117	100		
119	5.2	66.4	126.4#
121	0.0	0.4	60.4#

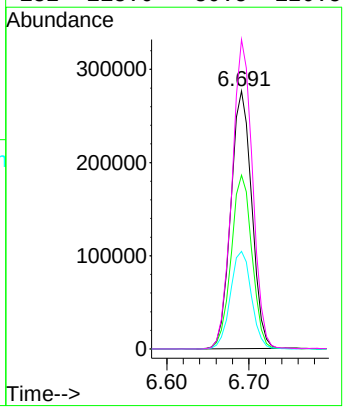


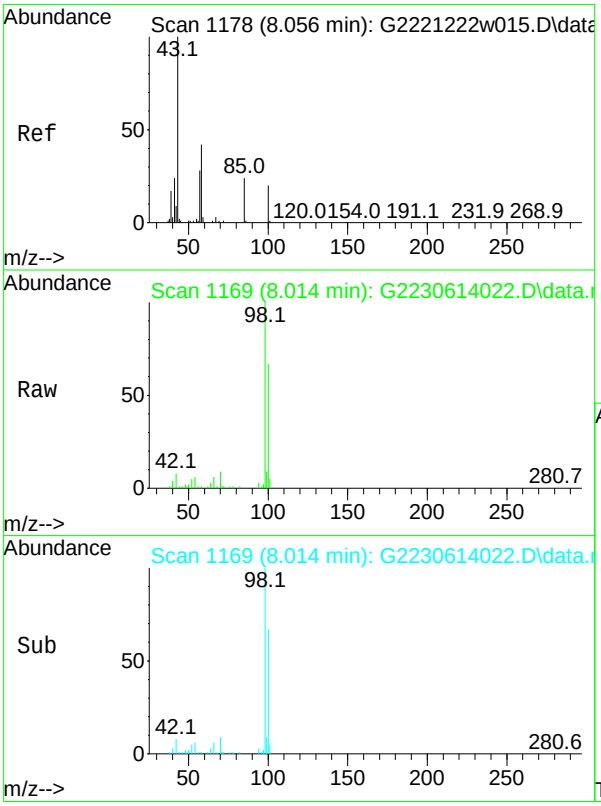


#50
Trichloroethene
Concen: 17.42 ug/L
RT: 6.693 min Scan# 952
Delta R.T. -0.003 min
Lab File: G2230614022.D
Acq: 14 Jun 2023 17:14

Tgt Ion: 95 Resp: 4899738

Ion	Ratio	Lower	Upper
95	100		
97	67.1	35.5	95.5
60	38.3	14.8	74.8
132	118.0	80.5	120.5

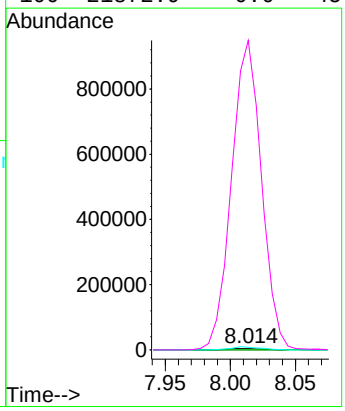


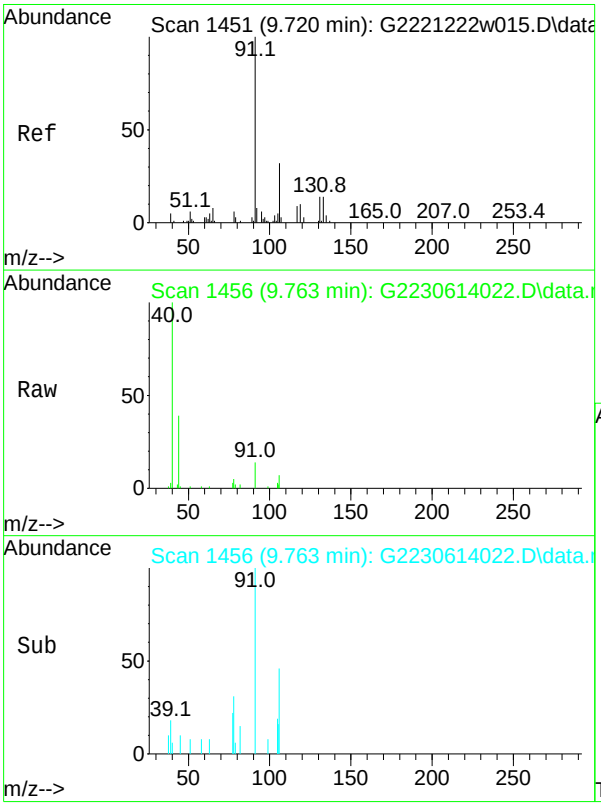


#60
4-Methyl-2-pentanone
Concen: Below Cal
RT: 8.015 min Scan# 1169
Delta R.T. 0.071 min
Lab File: G2230614022.D
Acq: 14 Jun 2023 17:14

Tgt Ion: 43 Resp: 69637

Ion	Ratio	Lower	Upper
43	100		
85	0.0	0.0	47.7
58	212.7	37.0	37.0#
100	21872.9	0.0	45.2#

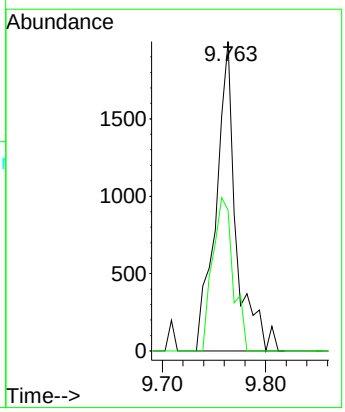


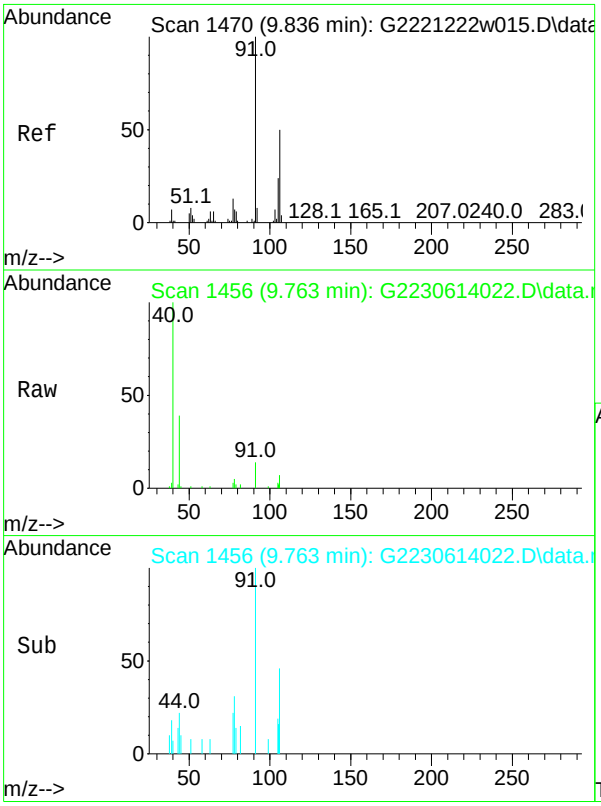


#74
Ethylbenzene
Concen: Below Cal
RT: 9.765 min Scan# 1456
Delta R.T. 0.121 min
Lab File: G2230614022.D
Acq: 14 Jun 2023 17:14

Tgt Ion: 91 Resp: 27256

Ion	Ratio	Lower	Upper
91	100		
106	0.0	0.8	60.8#

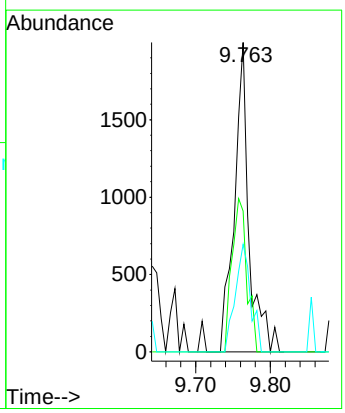


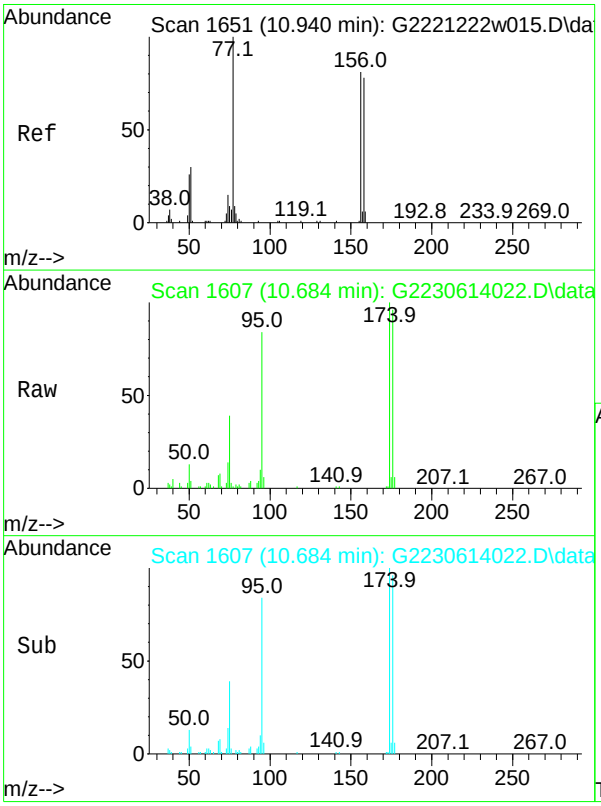


#75
m,p-Xylene
Concen: 0.03 ug/L
RT: 9.764 min Scan# 1456
Delta R.T. 0.000 min
Lab File: G2230614022.D
Acq: 14 Jun 2023 17:14

Tgt Ion: 91 Resp: 27987

Ion	Ratio	Lower	Upper
91	100		
106	0.0	19.0	79.0#
105	0.0	0.0	52.7

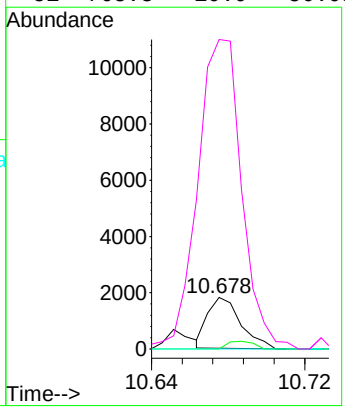




#82
Bromobenzene
Concen: 0.05 ug/L
RT: 10.682 min Scan# 1607
Delta R.T. -0.146 min
Lab File: G2230614022.D
Acq: 14 Jun 2023 17:14

Tgt Ion: 77 Resp: 23627

Ion	Ratio	Lower	Upper
77	100		
156	0.0	49.1	89.1#
158	0.0	44.8	84.8#
51	768.3	10.9	50.9#



1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6447WW60

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-09	File ID:	G2230614019.D
Sampled:	06/04/23 10:00	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 15:59
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
630-20-6	1,1,1,2-Tetrachloroethane		0.130	0.400	1.00	U
71-55-6	1,1,1-Trichloroethane		0.175	0.400	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.124	0.400	1.00	U
79-00-5	1,1,2-Trichloroethane		0.166	0.400	1.00	U
75-34-3	1,1-Dichloroethane		0.134	0.400	1.00	U
75-35-4	1,1-Dichloroethene		0.191	0.400	1.00	U
563-58-6	1,1-Dichloropropene		0.140	0.400	1.00	U
87-61-6	1,2,3-Trichlorobenzene		0.204	0.400	1.00	U
96-18-4	1,2,3-Trichloropropane		0.183	0.400	1.00	U
120-82-1	1,2,4-Trichlorobenzene		0.205	0.600	1.20	U
95-63-6	1,2,4-Trimethylbenzene		0.132	0.400	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane		0.260	1.00	2.00	U
106-93-4	1,2-Dibromoethane		0.106	0.400	1.00	U
95-50-1	1,2-Dichlorobenzene		0.126	0.400	1.00	U
107-06-2	1,2-Dichloroethane		0.212	0.600	1.20	U
78-87-5	1,2-Dichloropropane		0.205	0.600	1.20	U
108-67-8	1,3,5-Trimethylbenzene		0.100	0.400	1.00	U
541-73-1	1,3-Dichlorobenzene		0.145	0.400	1.00	U
142-28-9	1,3-Dichloropropane		0.136	0.400	1.00	U
106-46-7	1,4-Dichlorobenzene		0.184	0.400	1.00	U
594-20-7	2,2-Dichloropropane		0.184	0.400	1.00	U
78-93-3	2-Butanone		0.660	1.40	3.50	U
95-49-8	2-Chlorotoluene		0.147	0.400	1.00	U
591-78-6	2-Hexanone		0.143	1.40	3.50	U
106-43-4	4-Chlorotoluene		0.184	0.400	1.00	U
99-87-6	4-Isopropyltoluene		0.140	0.400	1.00	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6447WW60

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-09	File ID:	G2230614019.D
Sampled:	06/04/23 10:00	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 15:59
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097	Instrument:	G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
108-10-1	4-Methyl-2-pentanone		0.270	1.40	3.50	U
67-64-1	Acetone		1.04	4.00	8.00	U
71-43-2	Benzene	0.120	0.101	0.400	1.00	J, D
108-86-1	Bromobenzene		0.170	0.400	1.00	U
74-97-5	Bromochloromethane		0.134	0.400	1.00	U
75-27-4	Bromodichloromethane		0.106	0.400	1.00	U
75-25-2	Bromoform		0.206	0.400	1.00	U
74-83-9	Bromomethane		0.320	1.00	2.00	U
75-15-0	Carbon disulfide		0.280	1.00	2.00	U
56-23-5	Carbon tetrachloride		0.169	0.400	1.00	U
108-90-7	Chlorobenzene		0.130	0.400	1.00	U
75-00-3	Chloroethane		0.311	0.400	1.00	U
67-66-3	Chloroform	0.220	0.203	0.600	1.20	J, D
74-87-3	Chloromethane		0.384	1.00	2.00	U
156-59-2	cis-1,2-Dichloroethene		0.205	0.600	1.20	U
10061-01-5	cis-1,3-Dichloropropene		0.117	0.400	1.00	U
124-48-1	Dibromochloromethane		0.152	0.400	1.00	U
74-95-3	Dibromomethane	0.200	0.163	0.400	1.00	J, D
75-71-8	Dichlorodifluoromethane		0.259	1.00	2.00	U
100-41-4	Ethylbenzene		0.0600	0.200	0.400	U
87-68-3	Hexachlorobutadiene		0.200	0.400	1.00	U
98-82-8	Isopropylbenzene		0.110	0.400	1.00	U
179601-23-1	m,p-Xylene		0.178	0.800	2.00	U
1634-04-4	Methyl tert-butyl ether		0.106	0.400	1.00	U
75-09-2	Methylene chloride		0.447	1.00	2.00	U
104-51-8	n-Butylbenzene		0.260	1.00	2.00	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6447WW60

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-09	File ID:	G2230614019.D
Sampled:	06/04/23 10:00	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 15:59
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097	Instrument:	G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
103-65-1	n-Propylbenzene		0.126	0.400	1.00	U
91-20-3	Naphthalene		0.140	0.400	1.00	U
95-47-6	o-Xylene		0.0832	0.400	1.00	U
135-98-8	sec-Butylbenzene		0.120	0.400	1.00	U
100-42-5	Styrene		0.0906	0.200	0.400	U
98-06-6	tert-Butylbenzene		0.0906	0.400	1.00	U
127-18-4	Tetrachloroethene		0.357	1.00	2.00	Q, U
108-88-3	Toluene		0.114	0.400	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.171	0.400	1.00	U
10061-02-6	trans-1,3-Dichloropropene		0.117	0.400	1.00	U
79-01-6	Trichloroethene	2.52	0.156	0.400	1.00	D
75-69-4	Trichlorofluoromethane		0.101	0.400	1.00	U
75-01-4	Vinyl chloride		0.258	1.00	2.00	U

Italicized = secondary result

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614019.D
Acq On : 14 Jun 2023 15:59
Operator : PO1/MP3
Sample : 23F0196-09
Misc : 2
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 15 09:42:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

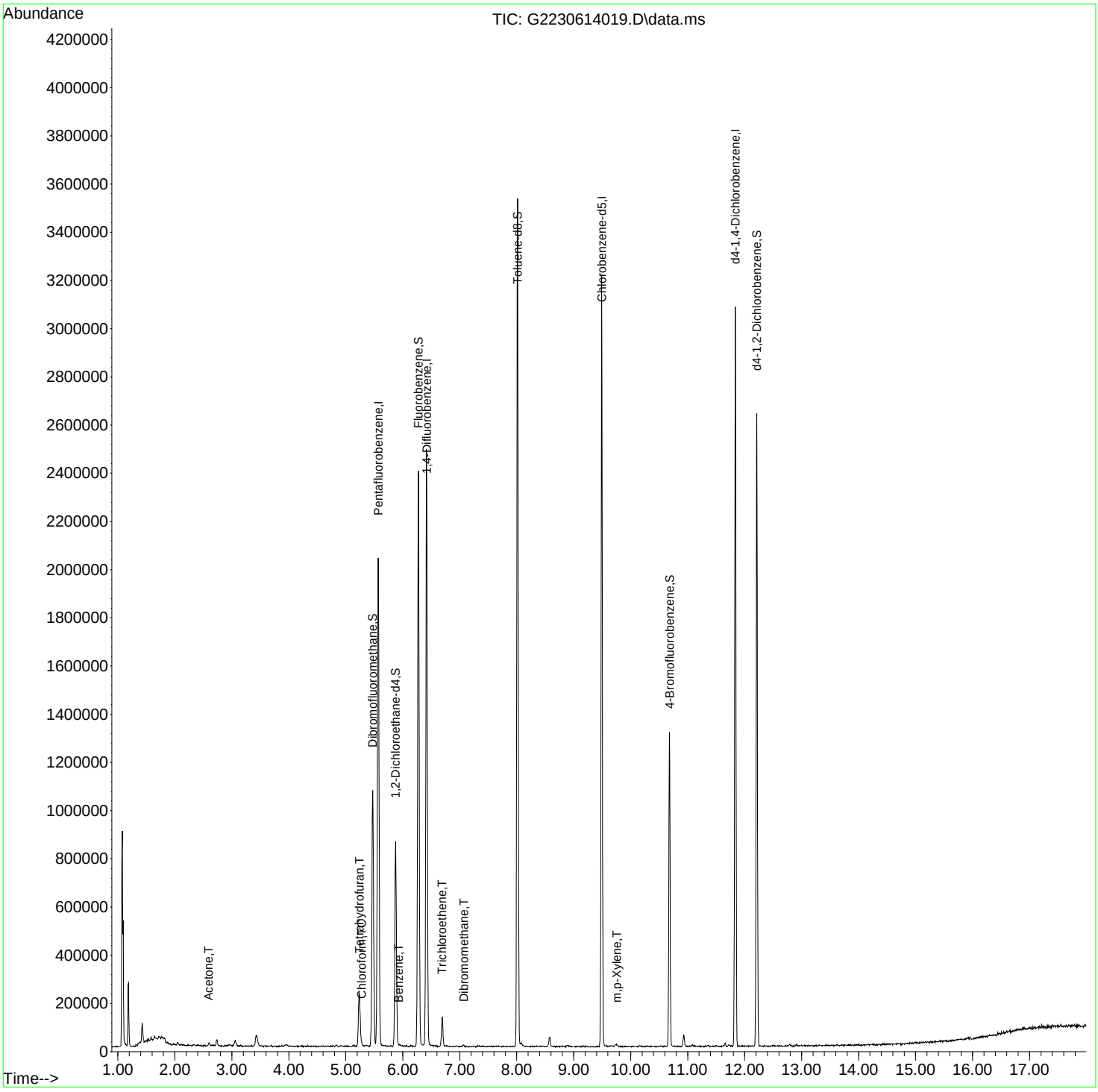
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene	5.572	168	15994052	20.00	ug/L		0.00
46) 1,4-Difluorobenzene	6.420	114	21427054	20.00	ug/L		0.00
63) Chlorobenzene-d5	9.494	117	18550937	20.00	ug/L		0.00
78) d4-1,4-Dichlorobenzene	11.839	152	8524820	20.00	ug/L		0.00
System Monitoring Compounds							
38) Dibromofluoromethane	5.474	111	6720992	19.09	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 95.45%				
43) 1,2-Dichloroethane-d4	5.876	65	5896269	16.95	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 84.75%				
49) Fluorobenzene	6.277	96	23365256	19.14	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 95.70%				
64) Toluene-d8	8.015	98	22864171	19.55	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.75%				
81) 4-Bromofluorobenzene	10.683	174	3986953	9.90	ug/L		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 99.00%				
97) d4-1,2-Dichlorobenzene	12.216	152	7445311	20.31	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 101.55%				
Target Compounds							Qvalue
3) Chloromethane	1.356	50	26185	Below Cal		#	41
12) Acetone	2.594	43	162203m	0.51	ug/L		
18) Methylene chloride	3.058	49	116676	Below Cal			73
21) Methyl tert-butyl ether	3.437	73	615516	Below Cal			97
36) Tetrahydrofuran	5.239	42	1324747	15.92	ug/L		81
37) Chloroform	5.278	83	56189	0.11	ug/L	#	91
48) Benzene	5.926	78	59167	0.06	ug/L	#	52
50) Trichloroethene	6.693	95	377038	1.26	ug/L		90
53) Dibromomethane	7.069	174	26280m	0.10	ug/L		
65) Toluene	8.081	91	50913	Below Cal		#	85
75) m,p-Xylene	9.758	91	31704	0.03	ug/L	#	72

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614019.D
Acq On : 14 Jun 2023 15:59
Operator : PO1/MP3
Sample : 23F0196-09
Misc : 2
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 15 09:42:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G



Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614019.D
Acq On : 14 Jun 2023 15:59
Operator : PO1/MP3
Sample : 23F0196-09
Misc : 2
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 15 09:42:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

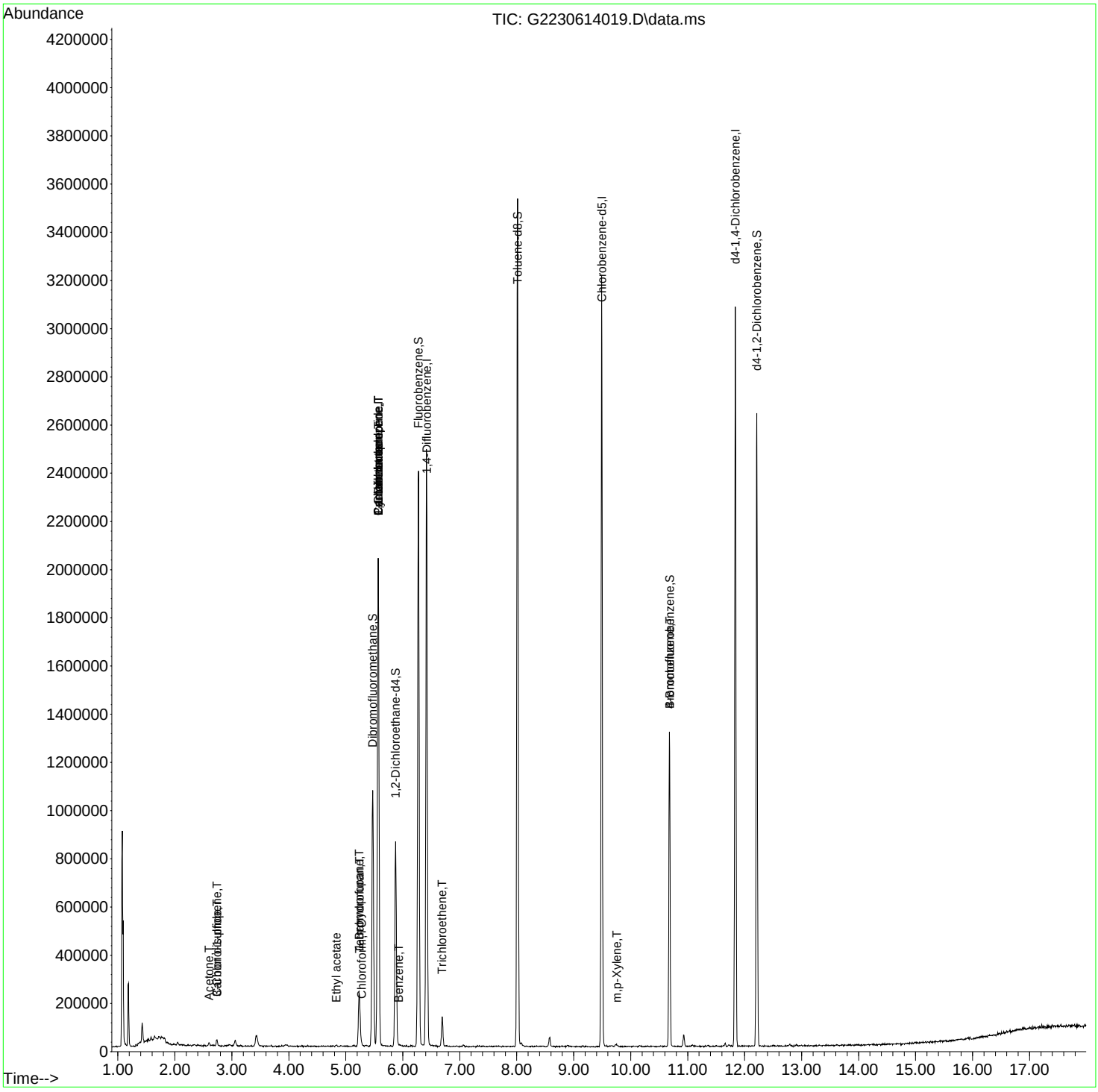
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene	5.572	168	15994052	20.00	ug/L		0.00
46) 1,4-Difluorobenzene	6.420	114	21427054	20.00	ug/L		0.00
63) Chlorobenzene-d5	9.494	117	18550937	20.00	ug/L		0.00
78) d4-1,4-Dichlorobenzene	11.839	152	8524820	20.00	ug/L		0.00
System Monitoring Compounds							
38) Dibromofluoromethane	5.474	111	6720992	19.09	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 95.45%				
43) 1,2-Dichloroethane-d4	5.876	65	5896269	16.95	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 84.75%				
49) Fluorobenzene	6.277	96	23365256	19.14	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 95.70%				
64) Toluene-d8	8.015	98	22864171	19.55	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.75%				
81) 4-Bromofluorobenzene	10.683	174	3986953	9.90	ug/L		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 99.00%				
97) d4-1,2-Dichlorobenzene	12.216	152	7445311	20.31	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 101.55%				
Target Compounds							Qvalue
3) Chloromethane	1.356	50	26185	Below Cal	#		41
8) Ethyl ether	2.329	59	862	Below Cal	#		13
9) Acrolein	2.275	56	2660	Below Cal	#		20
12) Acetone	2.600	43	128017	0.03	ug/L		84
14) Carbon disulfide	2.740	76	367265	0.43	ug/L		93
17) 3-Chloro-1-propene	2.740	76	367263	2.21	ug/L	#	65
18) Methylene chloride	3.058	49	116676	Below Cal			73
21) Methyl tert-butyl ether	3.437	73	615516	Below Cal			97
31) Ethyl acetate	4.833	61	31923	0.44	ug/L	#	45
33) 1-Bromopropane	5.234	41	774680	4.66	ug/L	#	40
36) Tetrahydrofuran	5.239	42	1324747	15.92	ug/L		81
37) Chloroform	5.278	83	56189	0.11	ug/L	#	91
40) Cyclohexane	5.571	84	359213	0.84	ug/L	#	38
41) 1-Chlorobutane	5.567	56	227062	0.46	ug/L	#	1
42) 1,1-Dichloropropene	5.571	75	841688	2.25	ug/L	#	38
47) Carbon tetrachloride	5.571	117	1249670	3.23	ug/L	#	16
48) Benzene	5.926	78	59167	0.06	ug/L	#	52
50) Trichloroethene	6.693	95	377038	1.26	ug/L		90
60) 4-Methyl-2-pentanone	8.012	43	84023	Below Cal	#		1
65) Toluene	8.081	91	50913	Below Cal	#		85
74) Ethylbenzene	9.758	91	31706	Below Cal	#		38
75) m,p-Xylene	9.758	91	31704	0.03	ug/L	#	72
82) Bromobenzene	10.687	77	27881	0.06	ug/L	#	1

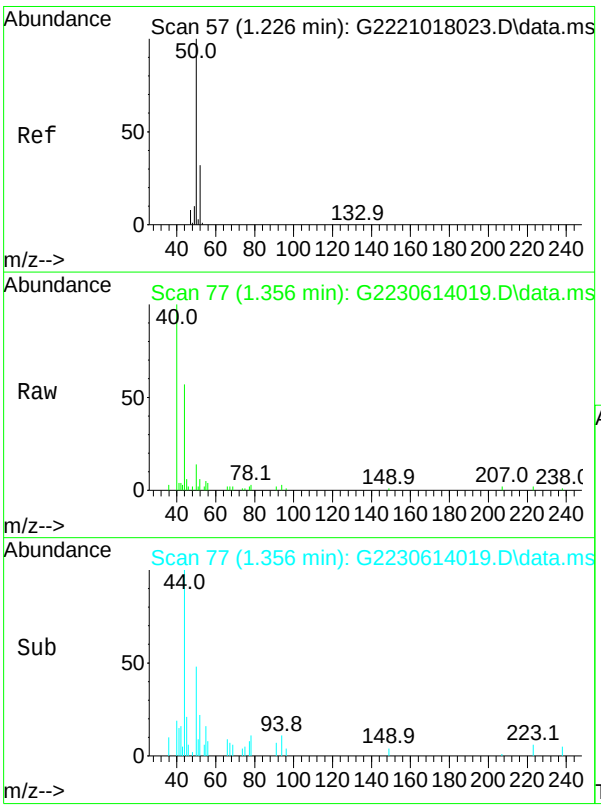
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614019.D
Acq On : 14 Jun 2023 15:59
Operator : PO1/MP3
Sample : 23F0196-09
Misc : 2
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 15 09:42:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

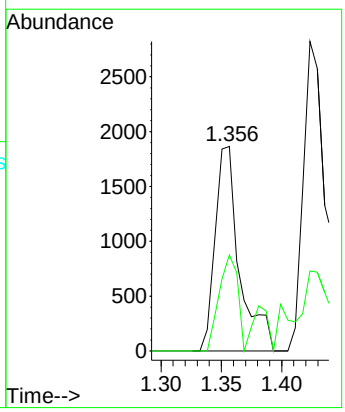


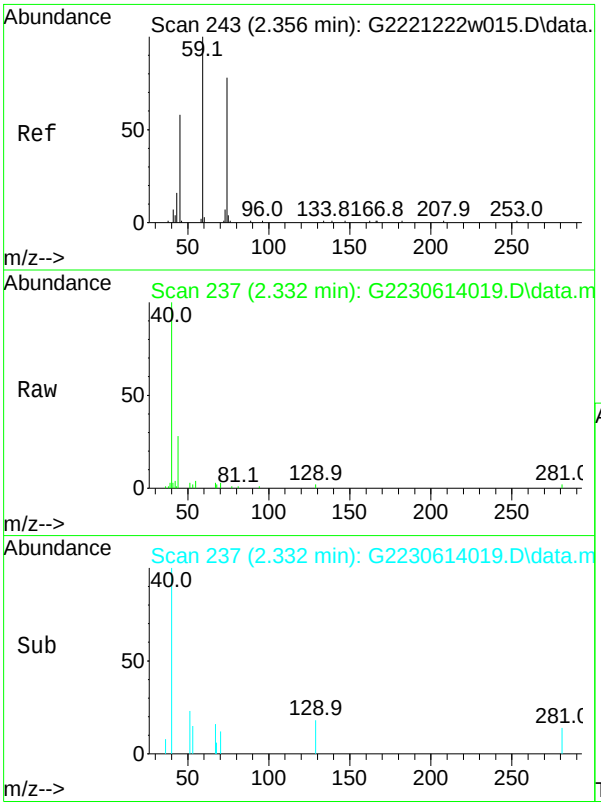


#3
Chloromethane
Concen: Below Cal
RT: 1.356 min Scan# 77
Delta R.T. 0.002 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 50 Resp: 26185

Ion	Ratio	Lower	Upper
50	100		
52	0.0	3.2	63.2#

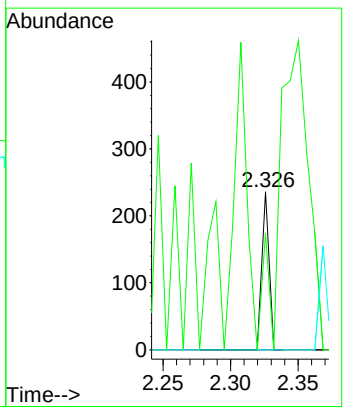


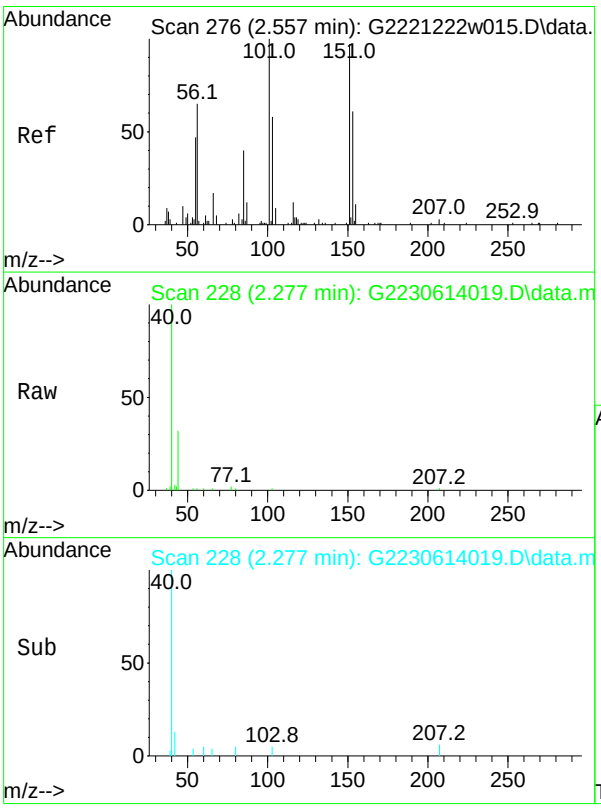


#8
Ethyl ether
Concen: Below Cal
RT: 2.329 min Scan# 237
Delta R.T. 0.011 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 59 Resp: 862

Ion	Ratio	Lower	Upper
59	100		
45	0.0	41.5	101.5#
74	0.0	43.4	103.4#

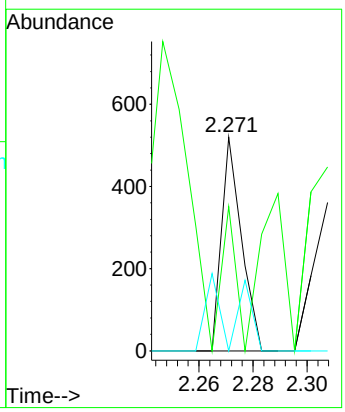


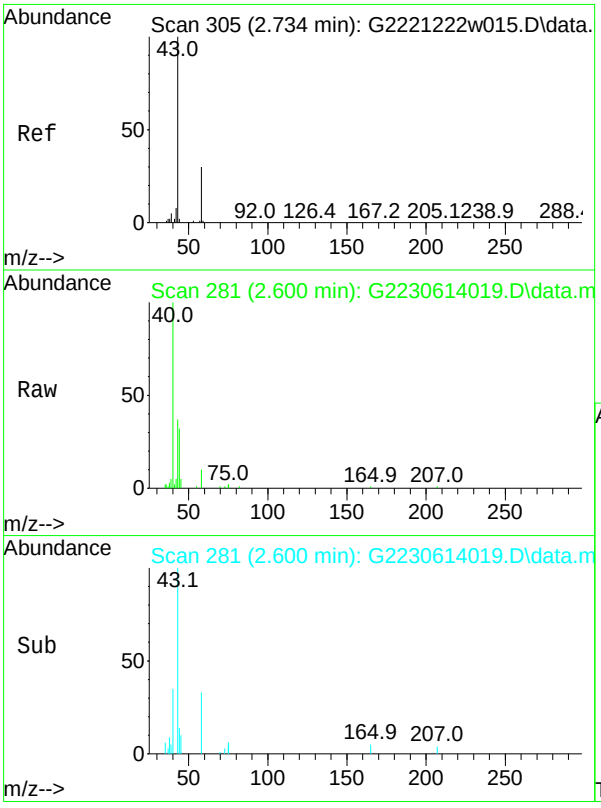


#9
Acrolein
Concen: Below Cal
RT: 2.275 min Scan# 228
Delta R.T. -0.164 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 56 Resp: 2660

Ion	Ratio	Lower	Upper
56	100		
55	0.0	43.5	103.5#
37	0.0	0.0	40.5

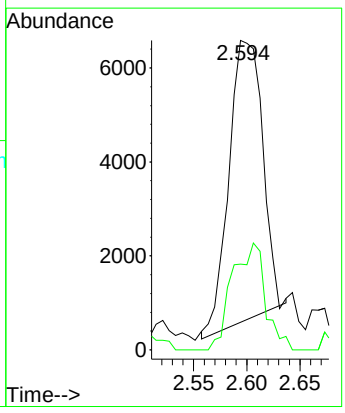


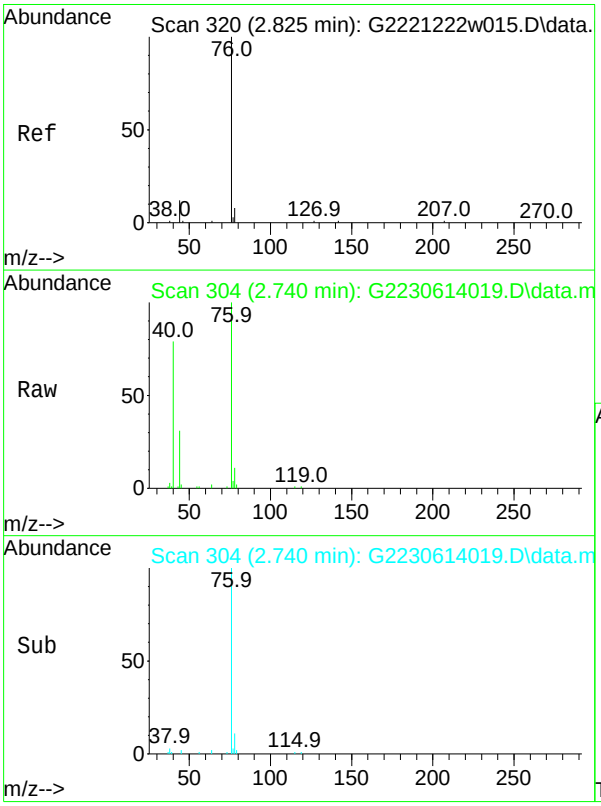


#12
Acetone
Concen: 0.03 ug/L
RT: 2.600 min Scan# 281
Delta R.T. -0.008 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 43 Resp: 128017

Ion	Ratio	Lower	Upper
43	100		
58	38.4	0.0	59.7

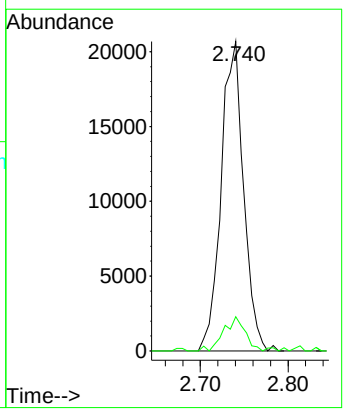


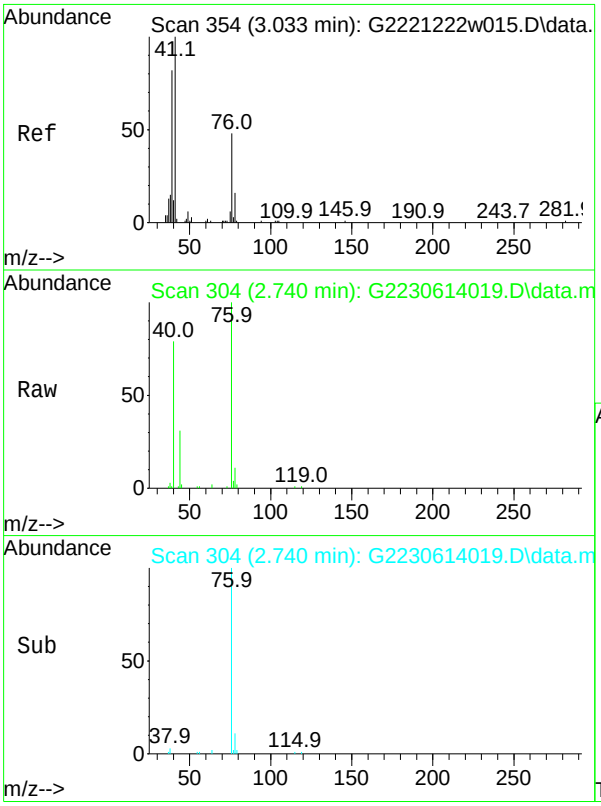


#14
Carbon disulfide
Concen: 0.43 ug/L
RT: 2.740 min Scan# 304
Delta R.T. 0.001 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 76 Resp: 367265

Ion	Ratio	Lower	Upper
76	100		
78	11.9	0.0	39.3

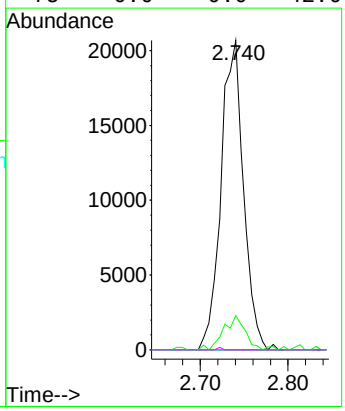


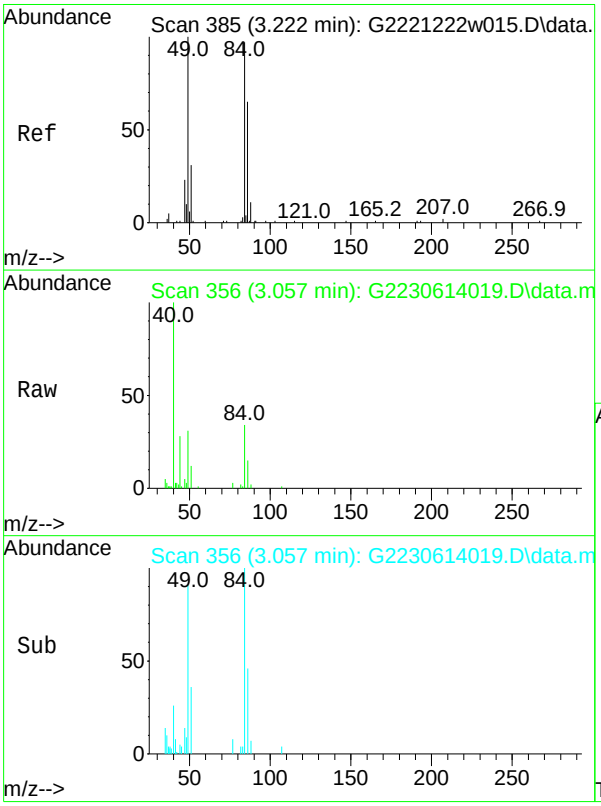


#17
3-Chloro-1-propene
Concen: 2.21 ug/L
RT: 2.740 min Scan# 304
Delta R.T. -0.180 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 76 Resp: 367263

Ion	Ratio	Lower	Upper
76	100		
78	11.5	2.4	62.4
49	0.0	0.0	43.0
75	0.0	0.0	42.6

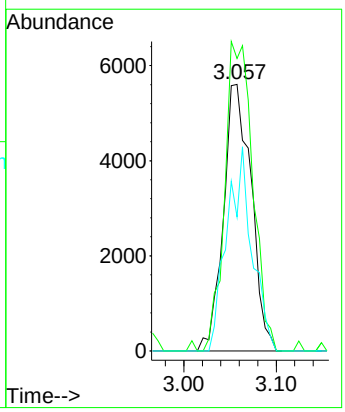


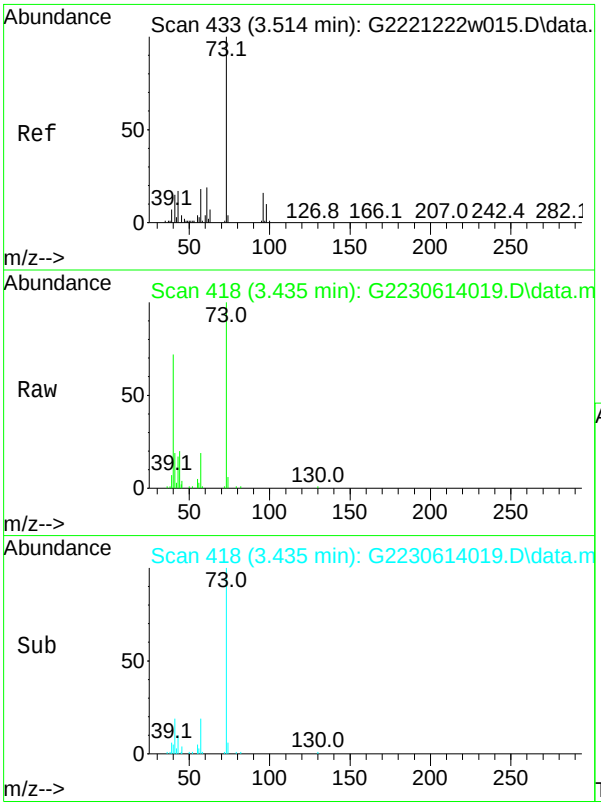


#18
Methylene chloride
Concen: Below Cal
RT: 3.058 min Scan# 356
Delta R.T. -0.004 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 49 Resp: 116676

Ion	Ratio	Lower	Upper
49	100		
84	117.4	57.9	117.9
86	69.1	24.9	84.9

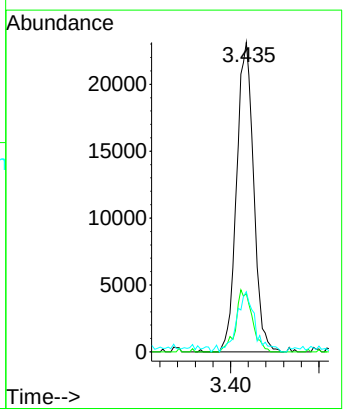


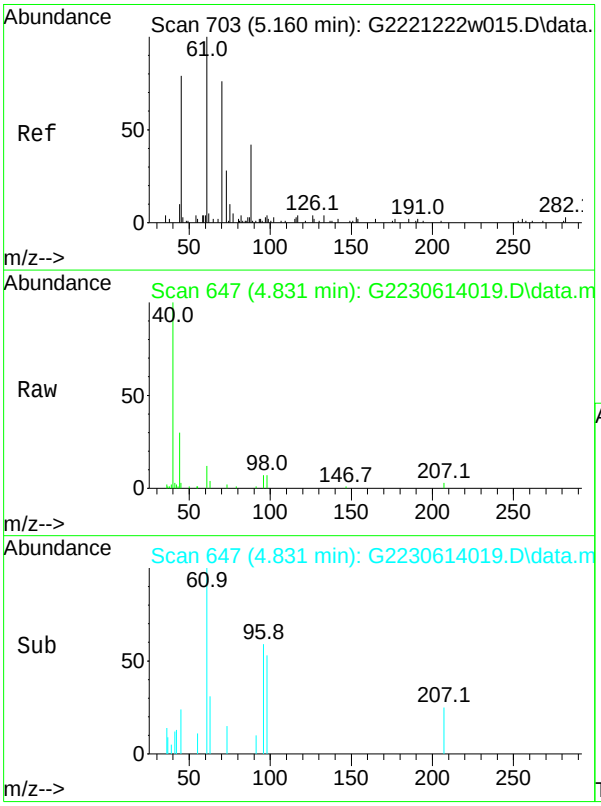


#21
Methyl tert-butyl ether
Concen: Below Cal
RT: 3.437 min Scan# 418
Delta R.T. -0.009 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 73 Resp: 615516

Ion	Ratio	Lower	Upper
73	100		
57	19.4	0.0	51.7
41	20.3	0.0	50.6

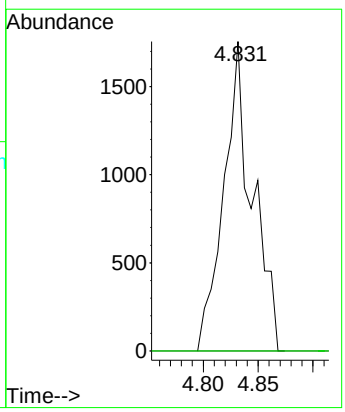


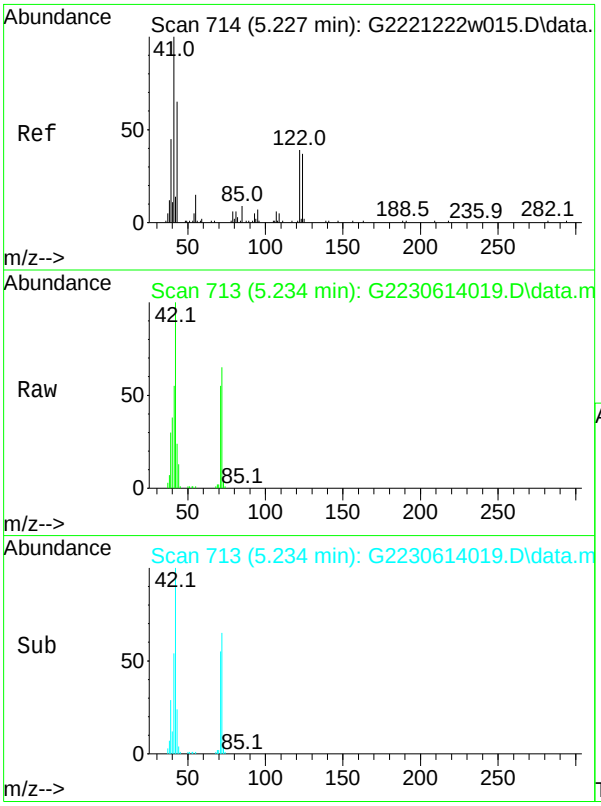


#31
Ethyl acetate
Concen: 0.44 ug/L
RT: 4.833 min Scan# 647
Delta R.T. -0.189 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 61 Resp: 31923

Ion	Ratio	Lower	Upper
61	100		
88	0.0	0.1	60.1#

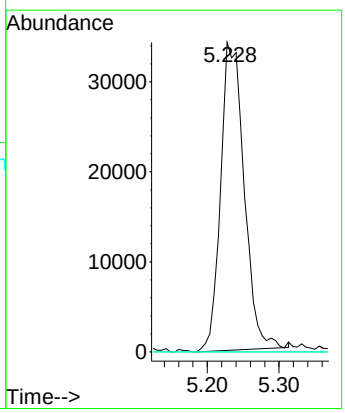


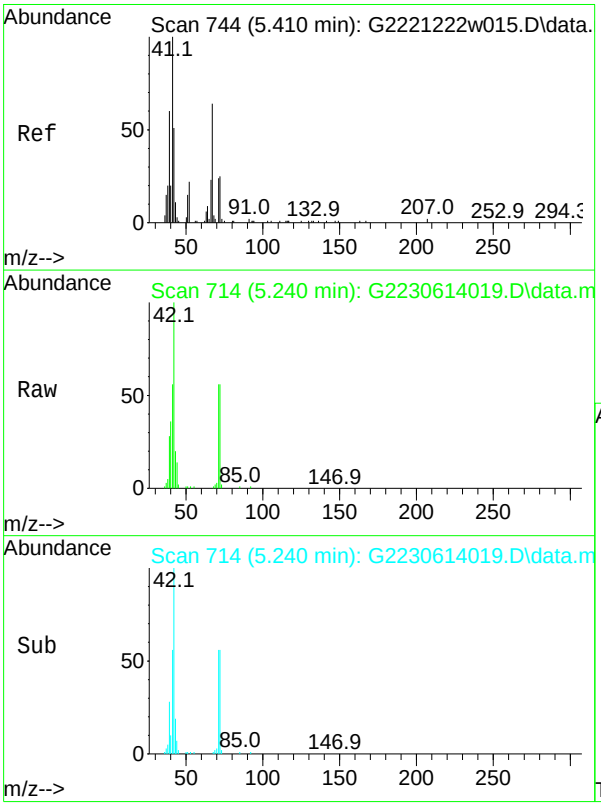


#33
1-Bromopropane
Concen: 4.66 ug/L
RT: 5.234 min Scan# 713
Delta R.T. 0.158 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 41 Resp: 774680

Ion	Ratio	Lower	Upper
41	100		
122	0.0	5.6	65.6#
124	0.0	3.8	63.8#

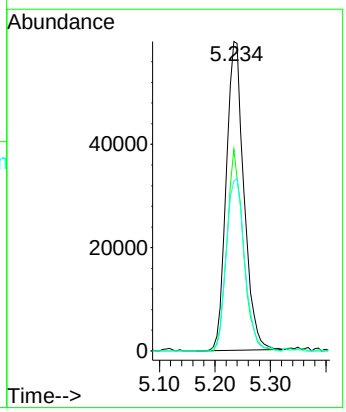


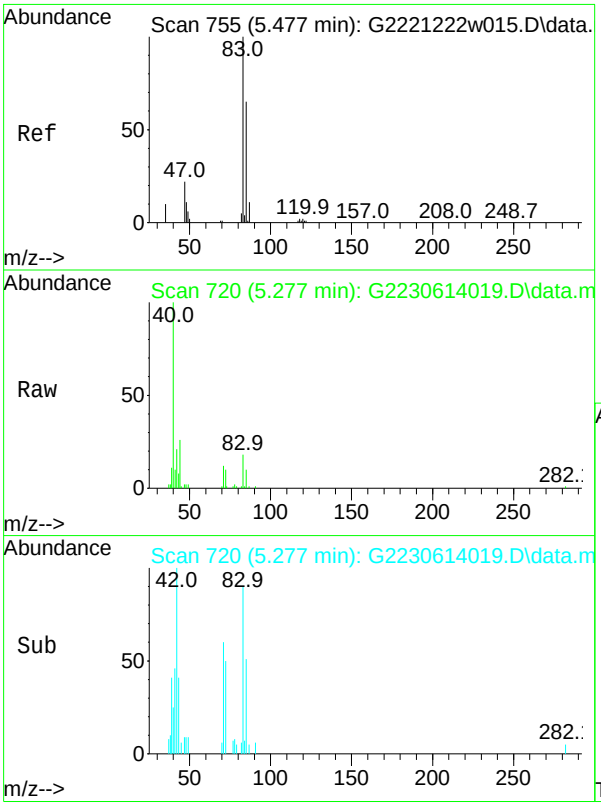


#36
Tetrahydrofuran
Concen: 15.92 ug/L
RT: 5.239 min Scan# 714
Delta R.T. -0.022 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 42 Resp: 1324747

Ion	Ratio	Lower	Upper
42	100		
72	59.9	18.8	78.8
71	58.5	14.7	74.7

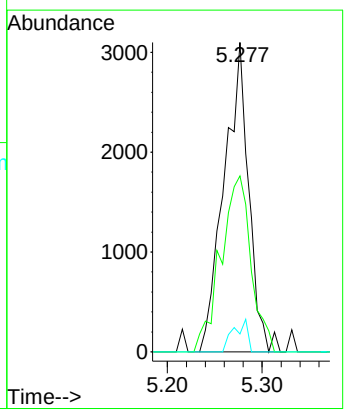


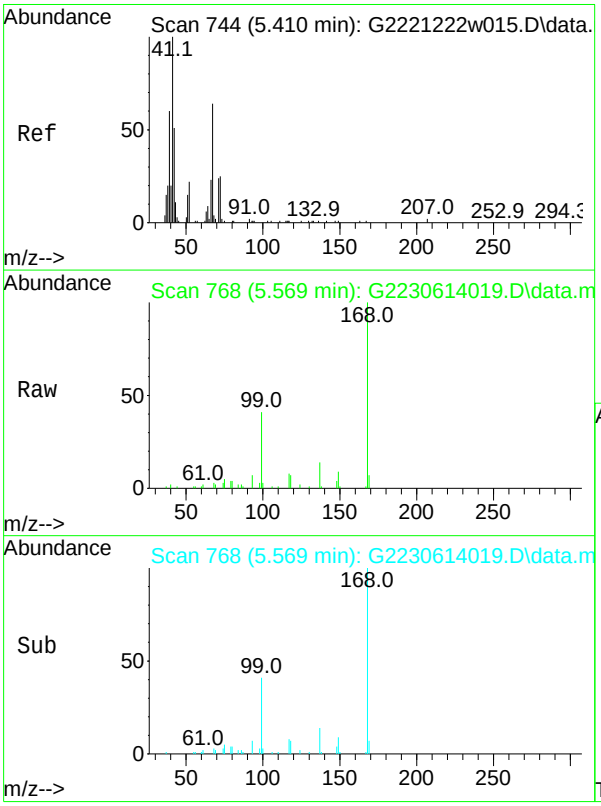


#37
Chloroform
Concen: 0.11 ug/L
RT: 5.278 min Scan# 720
Delta R.T. 0.002 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 83 Resp: 56189

Ion	Ratio	Lower	Upper
83	100		
85	69.7	35.4	95.4
87	0.0	0.0	40.8

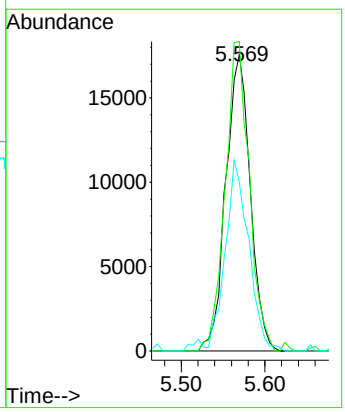


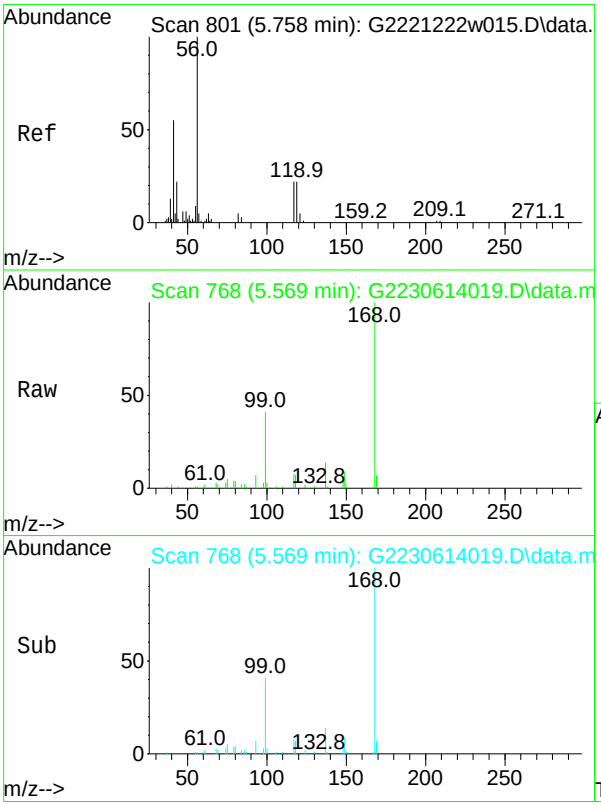


#40
Cyclohexane
Concen: 0.84 ug/L
RT: 5.571 min Scan# 768
Delta R.T. 0.037 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 84 Resp: 359213

Ion	Ratio	Lower	Upper
84	100		
69	102.6	6.8	66.8#
56	61.6	79.1	139.1#

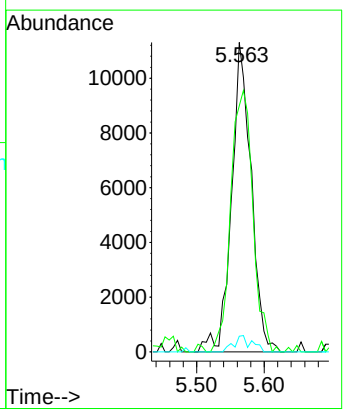


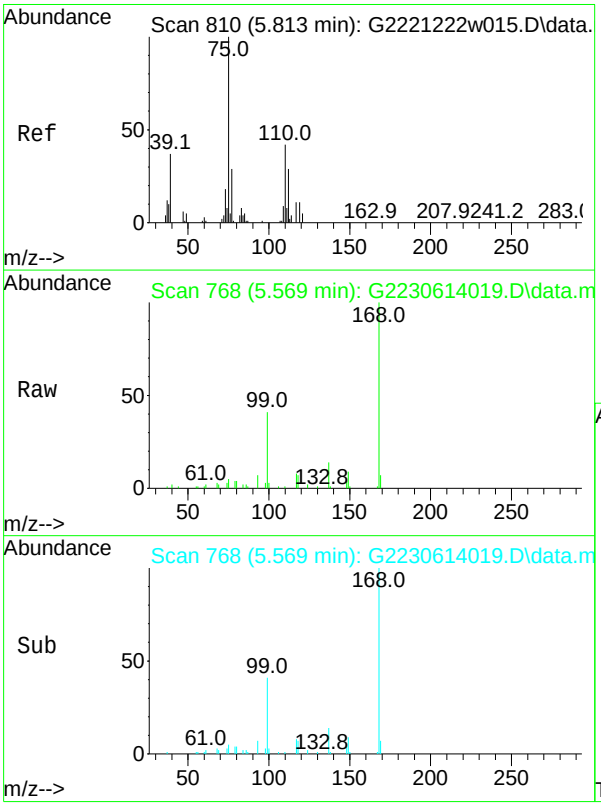


#41
1-Chlorobutane
Concen: 0.46 ug/L
RT: 5.567 min Scan# 768
Delta R.T. -0.063 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 56 Resp: 227062

Ion	Ratio	Lower	Upper
56	100		
55	95.4	0.0	41.0#
57	0.0	0.0	35.7

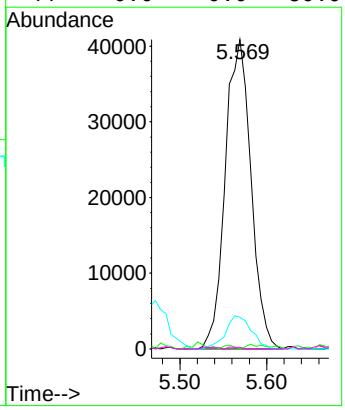


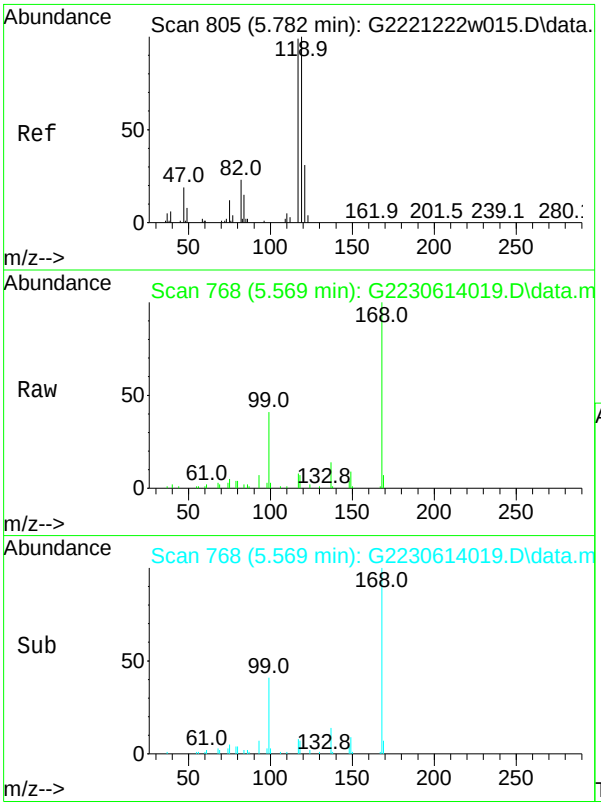


#42
1,1-Dichloropropene
Concen: 2.25 ug/L
RT: 5.571 min Scan# 768
Delta R.T. -0.118 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 75 Resp: 841688

Ion	Ratio	Lower	Upper
75	100		
39	0.0	25.8	85.8#
110	10.8	9.1	69.1
77	0.0	0.0	59.9

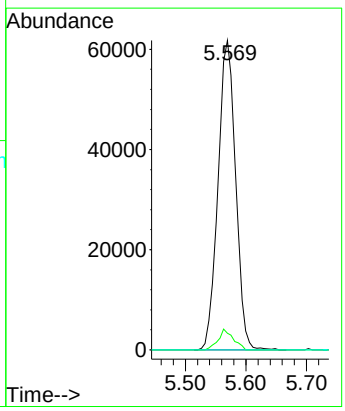


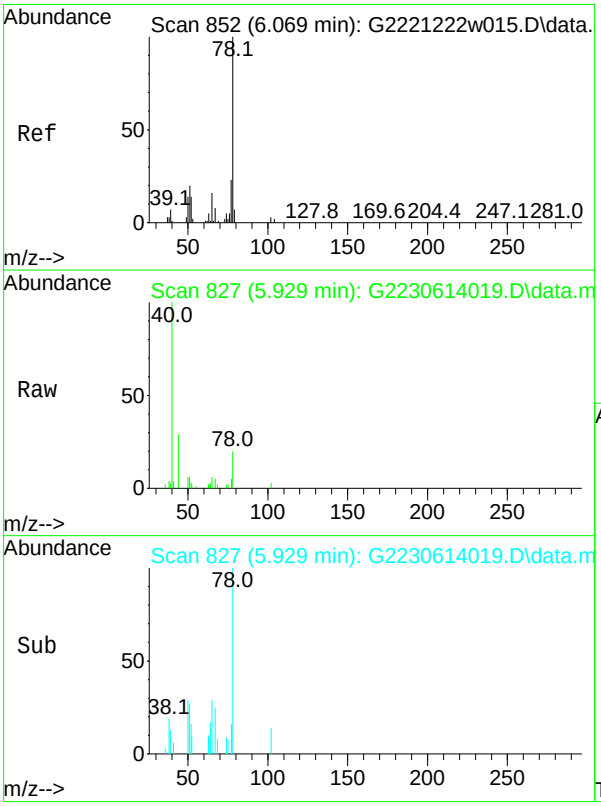


#47
Carbon tetrachloride
Concen: 3.23 ug/L
RT: 5.571 min Scan# 768
Delta R.T. -0.109 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion:117 Resp: 1249670

Ion	Ratio	Lower	Upper
117	100		
119	5.7	66.4	126.4#
121	0.0	0.4	60.4#

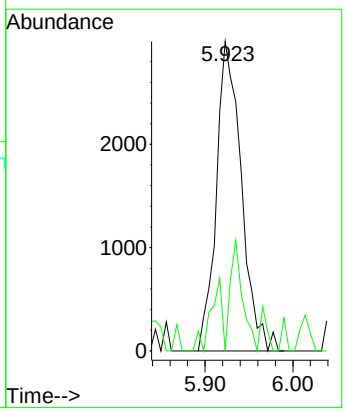


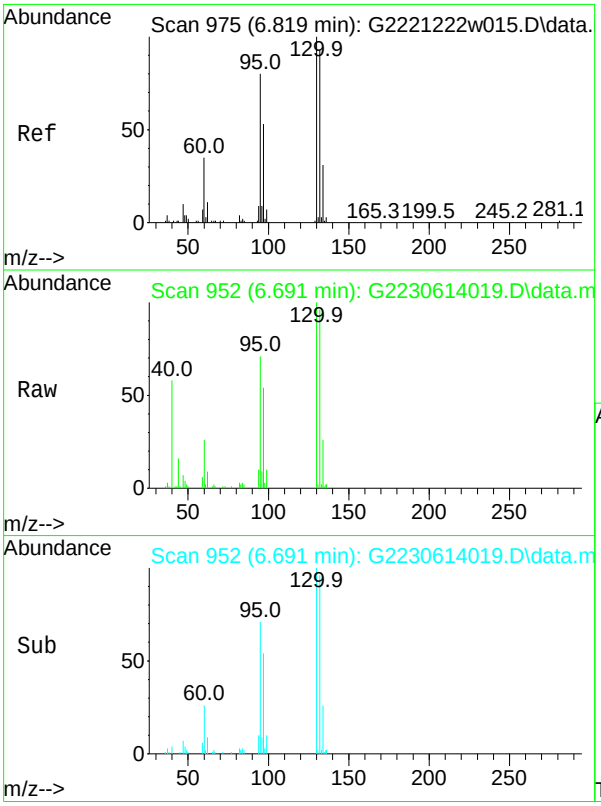


#48
Benzene
Concen: 0.06 ug/L
RT: 5.926 min Scan# 827
Delta R.T. -0.009 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 78 Resp: 59167

Ion	Ratio	Lower	Upper
78	100		
77	0.0	0.0	53.8

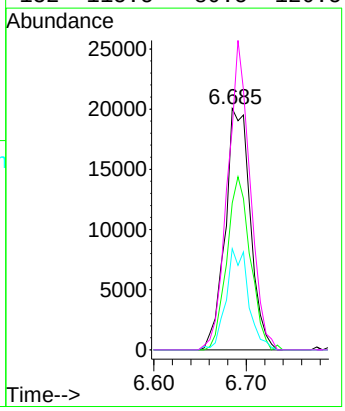


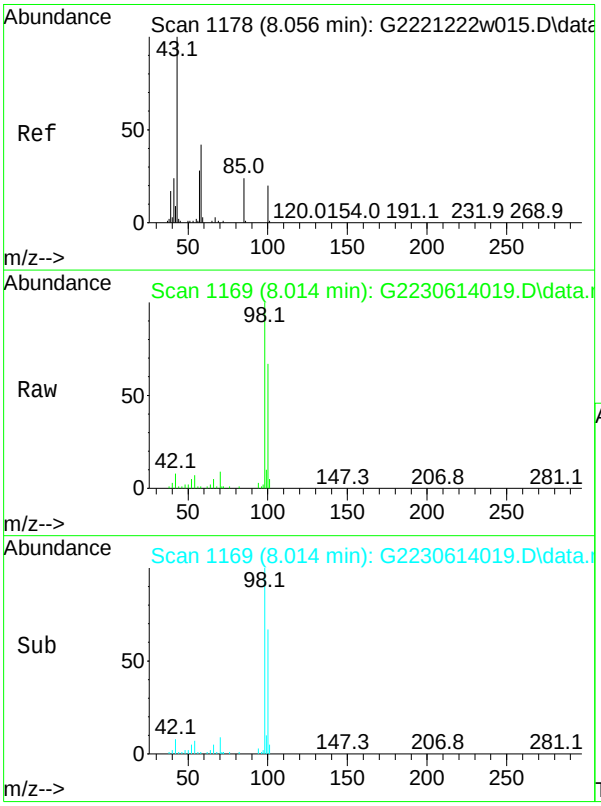


#50
Trichloroethene
Concen: 1.26 ug/L
RT: 6.693 min Scan# 952
Delta R.T. -0.003 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 95 Resp: 377038

Ion	Ratio	Lower	Upper
95	100		
97	67.1	35.5	95.5
60	37.5	14.8	74.8
132	115.5	80.5	120.5

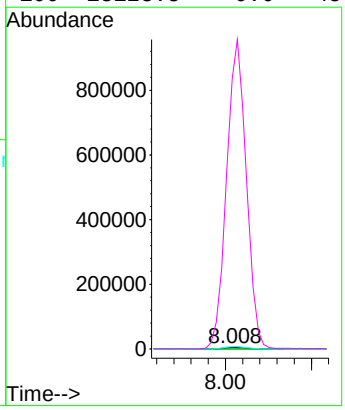


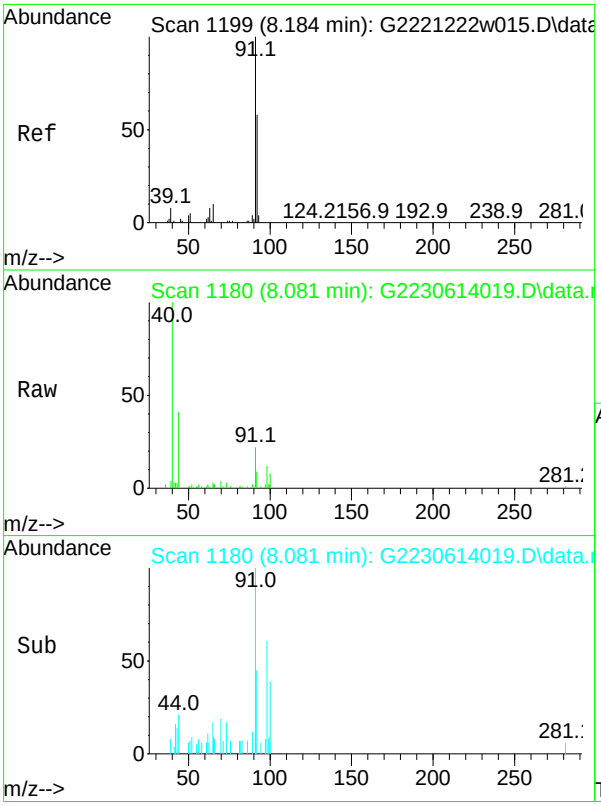


#60
4-Methyl-2-pentanone
Concen: Below Cal
RT: 8.012 min Scan# 1169
Delta R.T. 0.068 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 43 Resp: 84023

Ion	Ratio	Lower	Upper
43	100		
85	0.0	0.0	47.7
58	166.2	37.0	37.0#
100	18128.8	0.0	45.2#

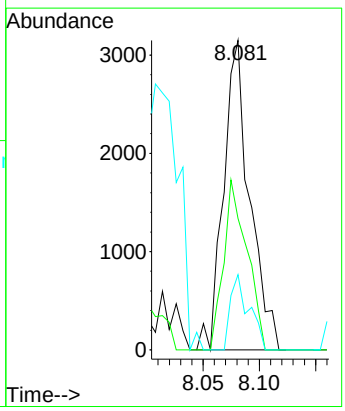


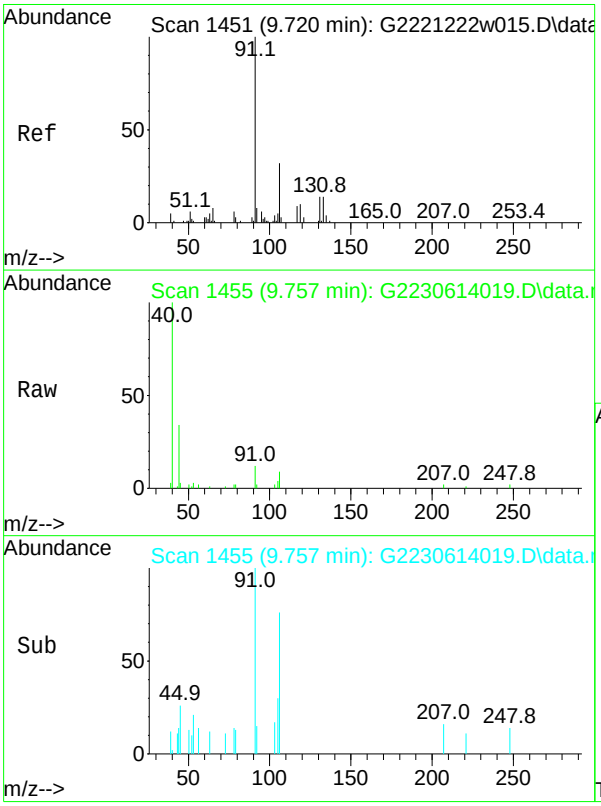


#65
Toluene
Concen: Below Cal
RT: 8.081 min Scan# 1180
Delta R.T. -0.005 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 91 Resp: 50913

Ion	Ratio	Lower	Upper
91	100		
92	48.9	27.5	87.5
65	0.0	0.0	41.4

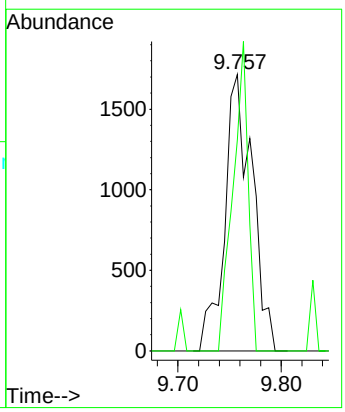


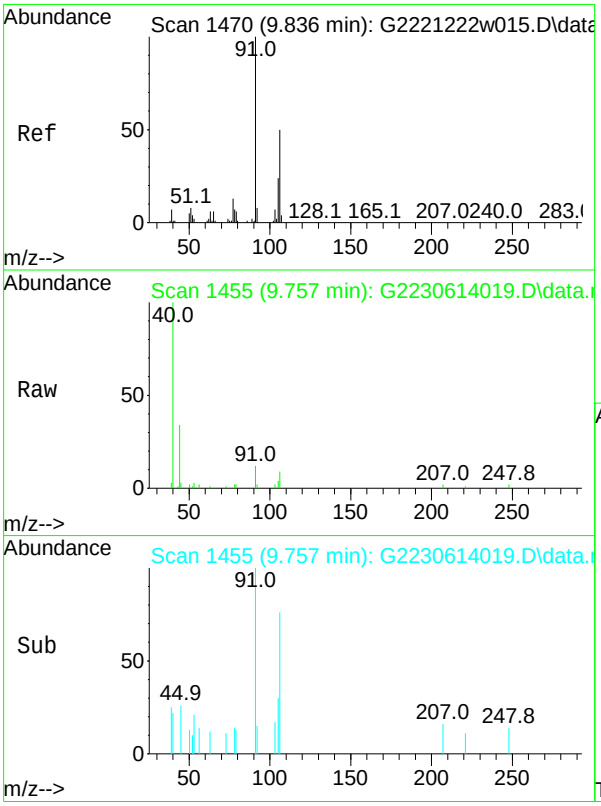


#74
Ethylbenzene
Concen: Below Cal
RT: 9.758 min Scan# 1455
Delta R.T. 0.115 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 91 Resp: 31706

Ion	Ratio	Lower	Upper
91	100		
106	65.0	0.8	60.8#

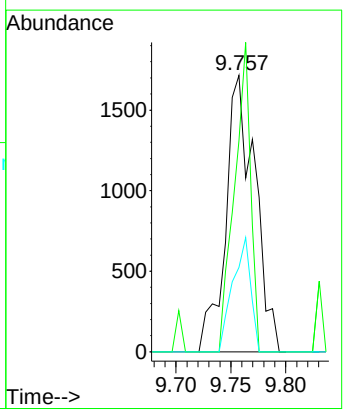


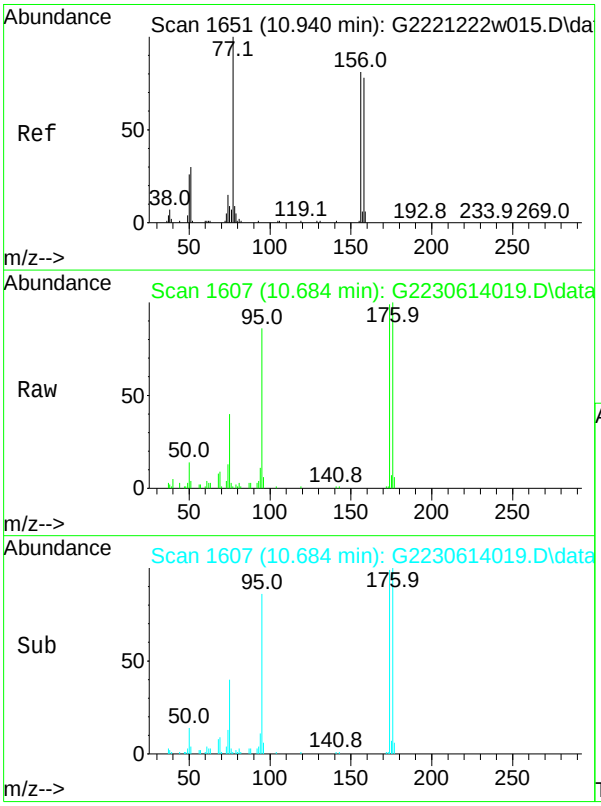


#75
m,p-Xylene
Concen: 0.03 ug/L
RT: 9.758 min Scan# 1455
Delta R.T. -0.006 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 91 Resp: 31704

Ion	Ratio	Lower	Upper
91	100		
106	62.0	19.0	79.0
105	0.0	0.0	52.7

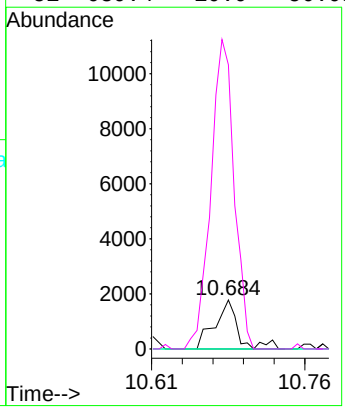




#82
Bromobenzene
Concen: 0.06 ug/L
RT: 10.687 min Scan# 1607
Delta R.T. -0.141 min
Lab File: G2230614019.D
Acq: 14 Jun 2023 15:59

Tgt Ion: 77 Resp: 27881

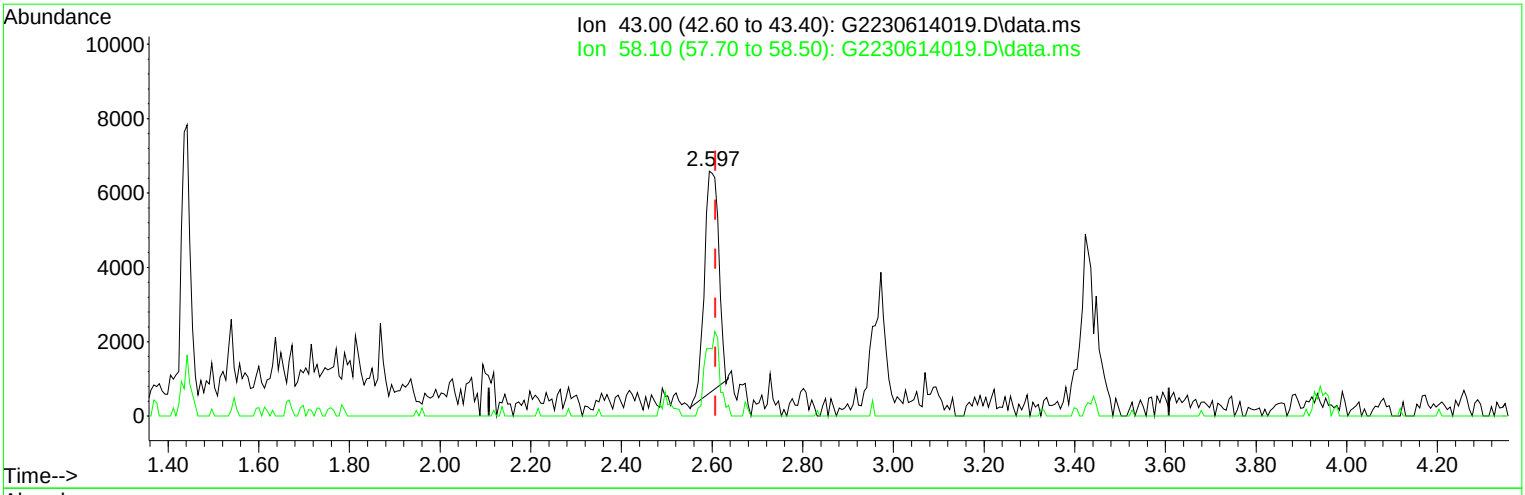
Ion	Ratio	Lower	Upper
77	100		
156	0.0	49.1	89.1#
158	0.0	44.8	84.8#
51	639.4	10.9	50.9#

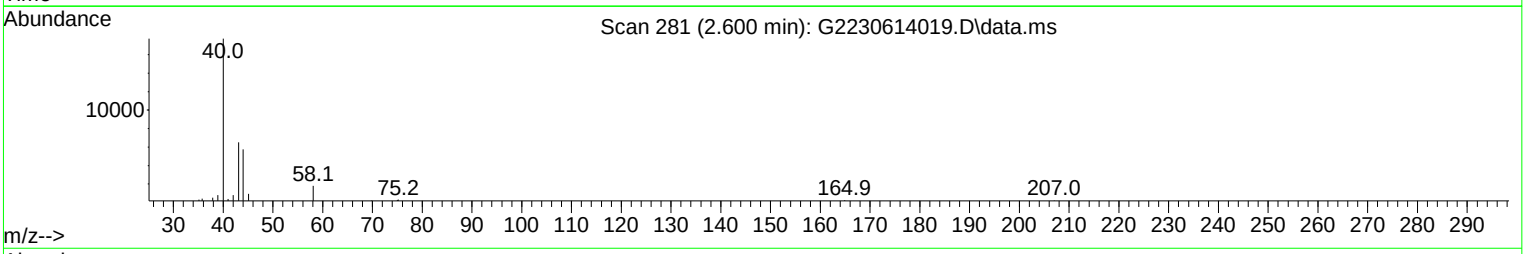


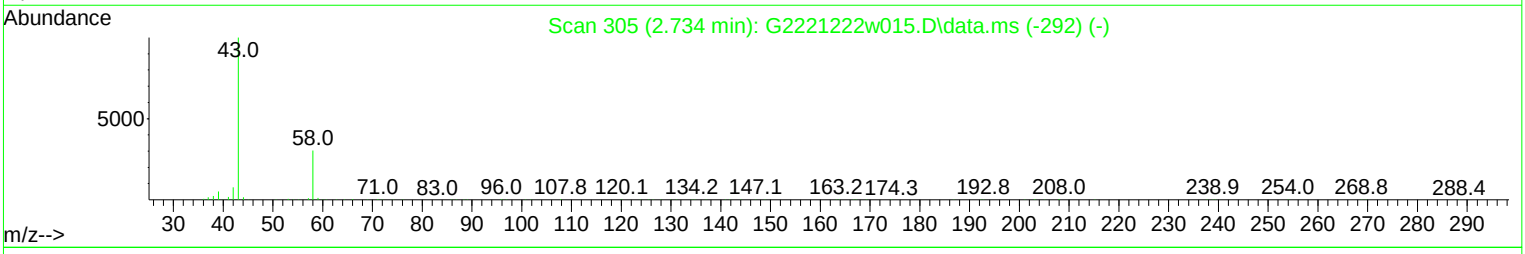
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614019.D
Acq On : 14 Jun 2023 15:59
Operator : PO1/MP3
Sample : 23F0196-09
Misc : 2
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 15 09:42:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614019.D\data.ms

(12) Acetone (T)

2.600min (-0.008) 0.03 ug/L

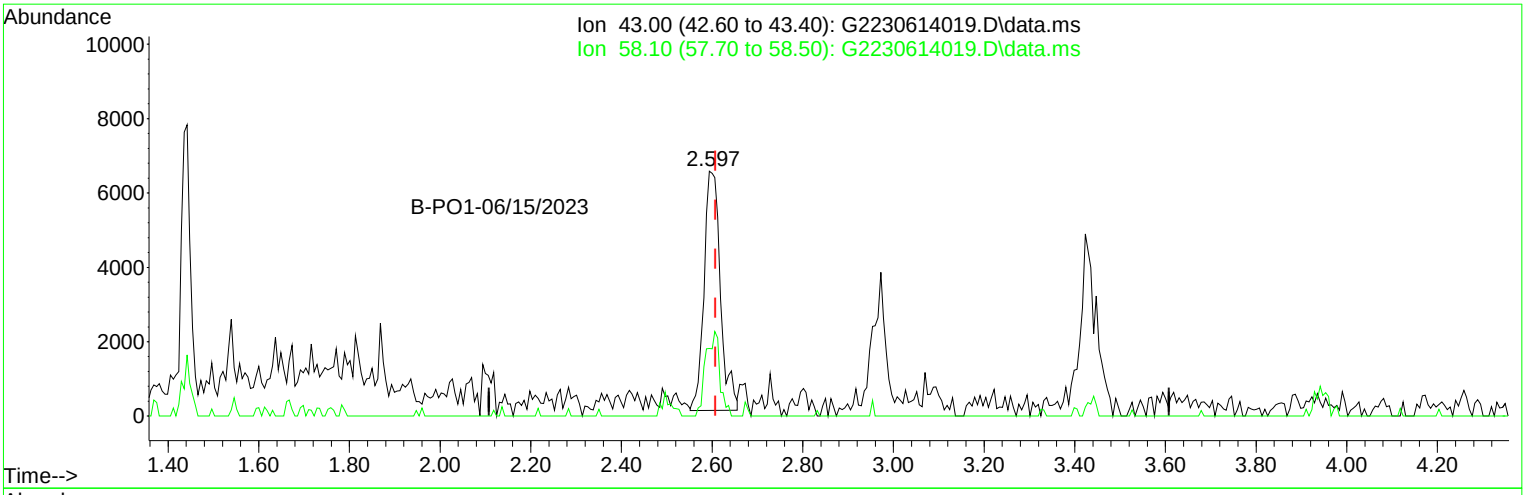
response 128017

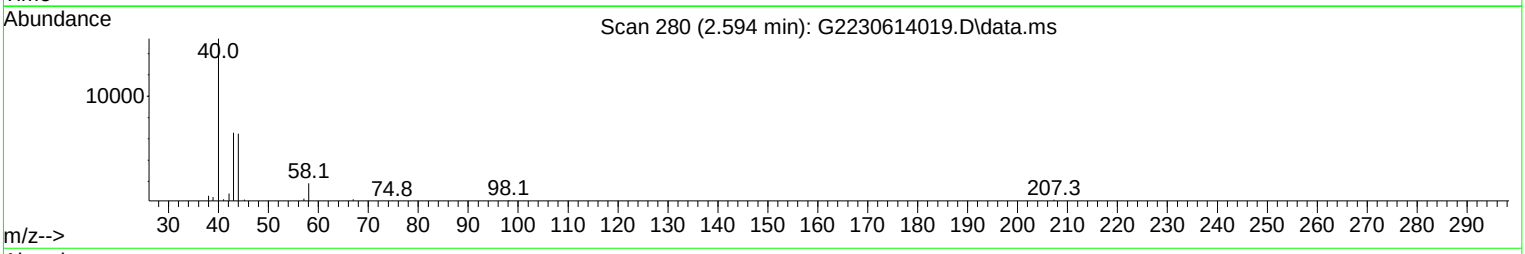
Ion	Exp%	Act%
43.00	100.00	100.00
58.10	29.70	38.37
0.00	0.00	0.00
0.00	0.00	0.00

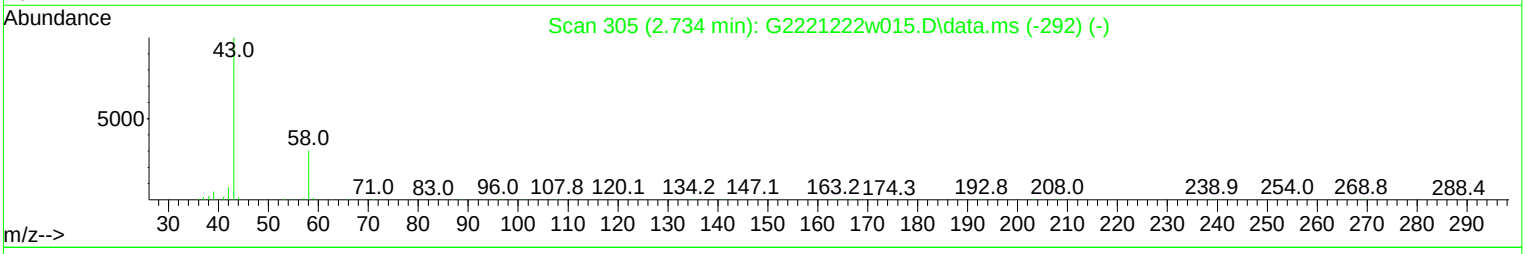
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614019.D
Acq On : 14 Jun 2023 15:59
Operator : PO1/MP3
Sample : 23F0196-09
Misc : 2
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 15 09:42:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614019.D\data.ms

(12) Acetone (T)

2.594min (-0.014) 0.51 ug/L m

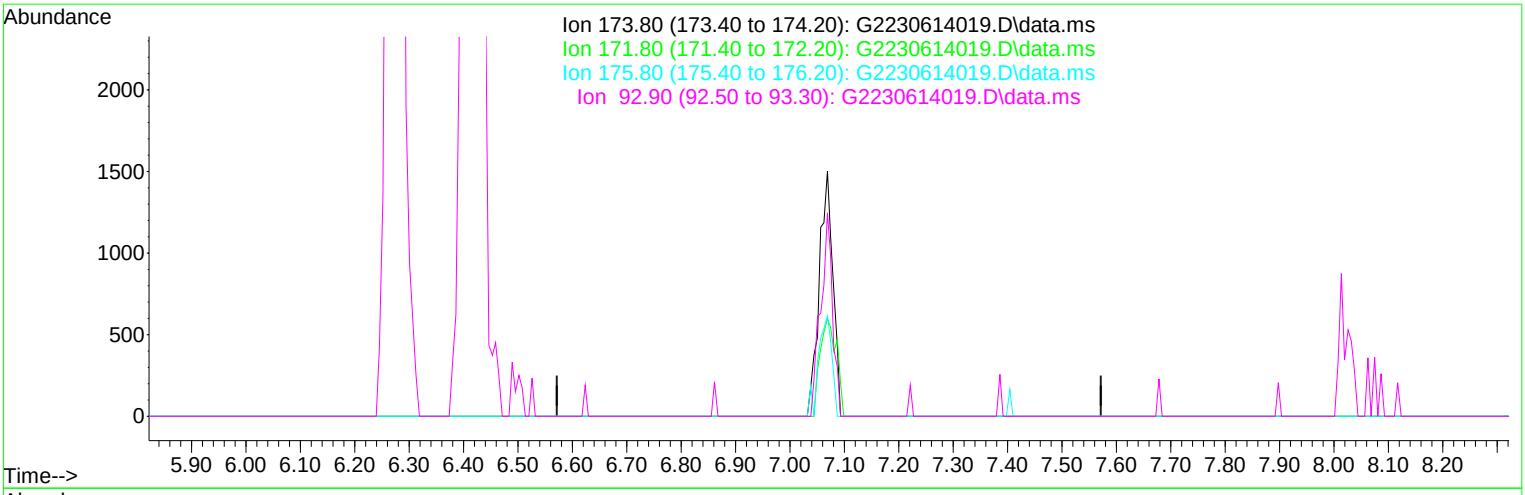
response 162203

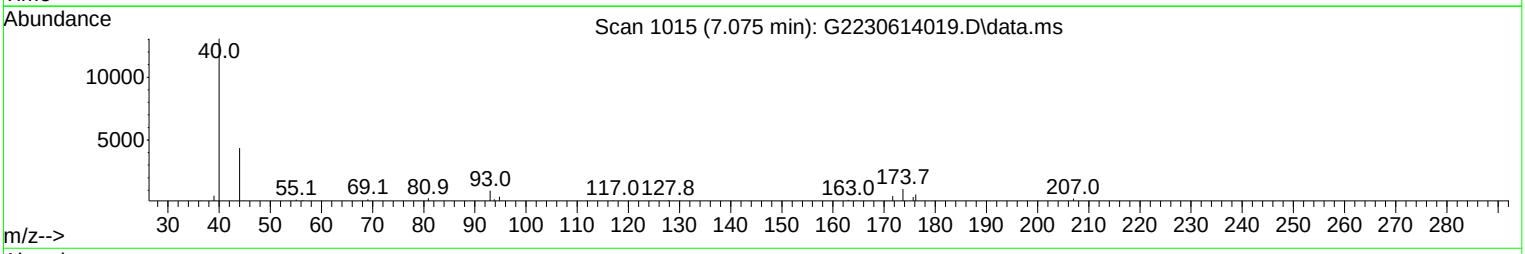
Ion	Exp%	Act%
43.00	100.00	100.00
58.10	29.70	30.28
0.00	0.00	0.00
0.00	0.00	0.00

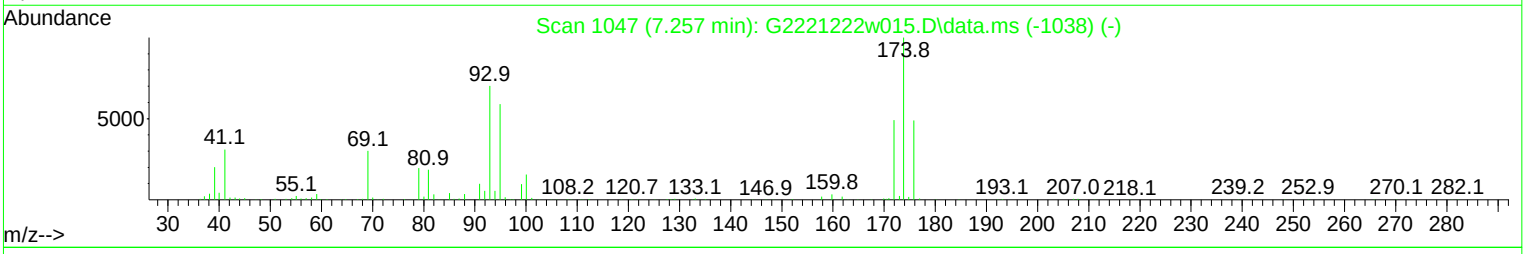
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614019.D
Acq On : 14 Jun 2023 15:59
Operator : PO1/MP3
Sample : 23F0196-09
Misc : 2
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 15 09:42:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614019.D\data.ms

(53) Dibromomethane (T)

7.072min (-7.072) 0.00 ug/L

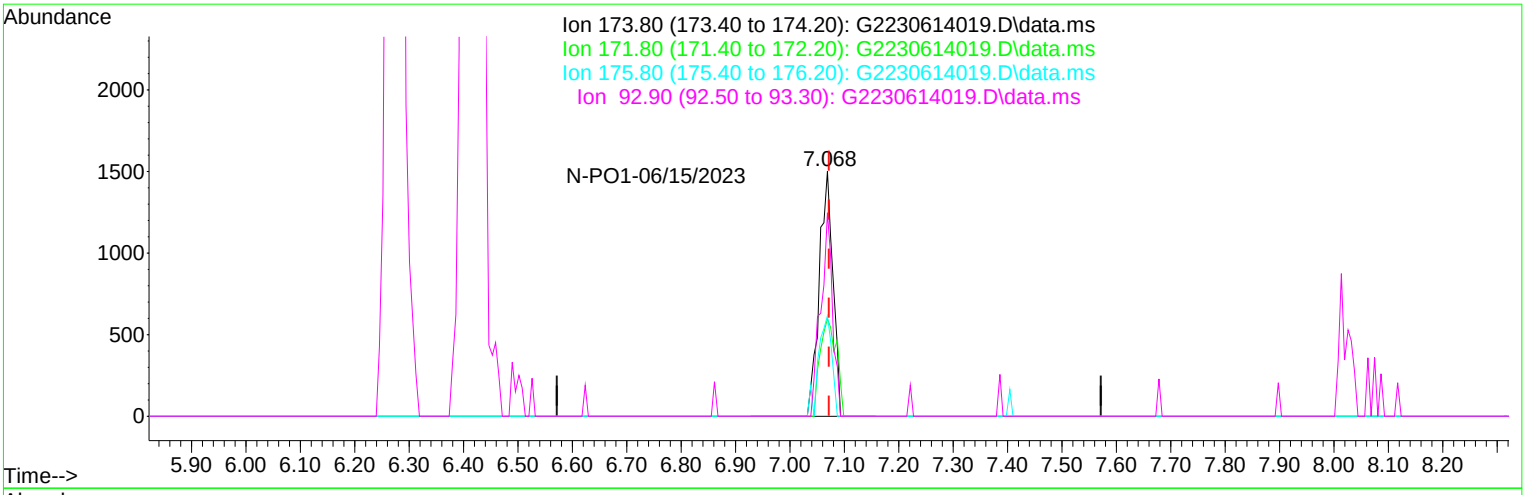
response 0

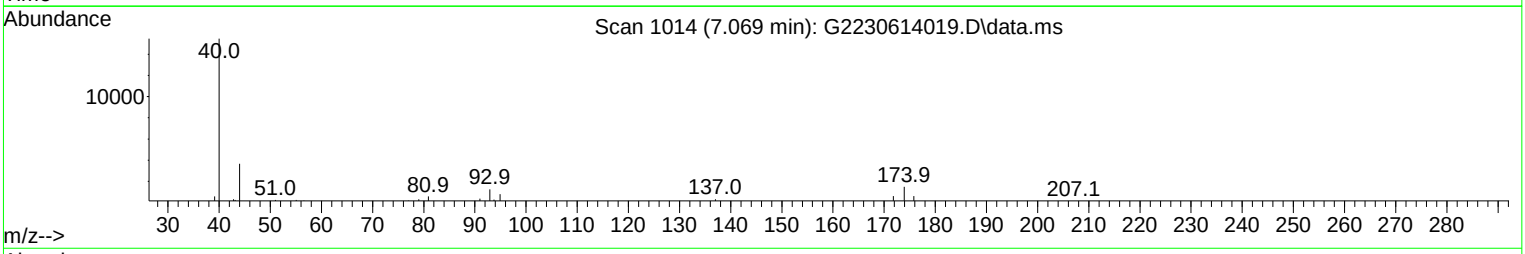
Ion	Exp%	Act%
173.80	100.00	0.00
171.80	51.80	0.00#
175.80	48.10	0.00#
92.90	88.00	0.00#

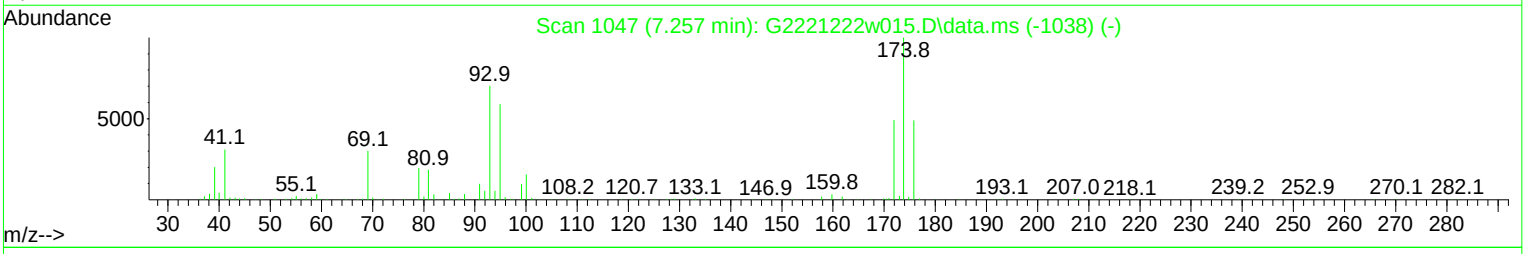
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614019.D
Acq On : 14 Jun 2023 15:59
Operator : PO1/MP3
Sample : 23F0196-09
Misc : 2
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 15 09:42:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614019.D\data.ms

(53) Dibromomethane (T)

7.069min (-0.003) 0.10 ug/L m

response 26280

Ion	Exp%	Act%
173.80	100.00	100.00
171.80	51.80	0.00#
175.80	48.10	0.00#
92.90	88.00	0.00#

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6447WW28

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-10	File ID:	G2230614020.D
Sampled:	06/04/23 12:05	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 16:25
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097	Instrument:	G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
630-20-6	1,1,1,2-Tetrachloroethane		0.130	0.400	1.00	U
71-55-6	1,1,1-Trichloroethane		0.175	0.400	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.124	0.400	1.00	U
79-00-5	1,1,2-Trichloroethane		0.166	0.400	1.00	U
75-34-3	1,1-Dichloroethane		0.134	0.400	1.00	U
75-35-4	1,1-Dichloroethene		0.191	0.400	1.00	U
563-58-6	1,1-Dichloropropene		0.140	0.400	1.00	U
87-61-6	1,2,3-Trichlorobenzene		0.204	0.400	1.00	U
96-18-4	1,2,3-Trichloropropane		0.183	0.400	1.00	U
120-82-1	1,2,4-Trichlorobenzene		0.205	0.600	1.20	U
95-63-6	1,2,4-Trimethylbenzene		0.132	0.400	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane		0.260	1.00	2.00	U
106-93-4	1,2-Dibromoethane		0.106	0.400	1.00	U
95-50-1	1,2-Dichlorobenzene		0.126	0.400	1.00	U
107-06-2	1,2-Dichloroethane		0.212	0.600	1.20	U
78-87-5	1,2-Dichloropropane		0.205	0.600	1.20	U
108-67-8	1,3,5-Trimethylbenzene		0.100	0.400	1.00	U
541-73-1	1,3-Dichlorobenzene		0.145	0.400	1.00	U
142-28-9	1,3-Dichloropropane		0.136	0.400	1.00	U
106-46-7	1,4-Dichlorobenzene		0.184	0.400	1.00	U
594-20-7	2,2-Dichloropropane		0.184	0.400	1.00	U
78-93-3	2-Butanone		0.660	1.40	3.50	U
95-49-8	2-Chlorotoluene		0.147	0.400	1.00	U
591-78-6	2-Hexanone		0.143	1.40	3.50	U
106-43-4	4-Chlorotoluene		0.184	0.400	1.00	U
99-87-6	4-Isopropyltoluene		0.140	0.400	1.00	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6447WW28

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-10	File ID:	G2230614020.D
Sampled:	06/04/23 12:05	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 16:25
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097	Instrument:	G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
108-10-1	4-Methyl-2-pentanone		0.270	1.40	3.50	U
67-64-1	Acetone		1.04	4.00	8.00	U
71-43-2	Benzene		0.101	0.400	1.00	U
108-86-1	Bromobenzene		0.170	0.400	1.00	U
74-97-5	Bromochloromethane		0.134	0.400	1.00	U
75-27-4	Bromodichloromethane		0.106	0.400	1.00	U
75-25-2	Bromoform		0.206	0.400	1.00	U
74-83-9	Bromomethane		0.320	1.00	2.00	U
75-15-0	Carbon disulfide		0.280	1.00	2.00	U
56-23-5	Carbon tetrachloride		0.169	0.400	1.00	U
108-90-7	Chlorobenzene		0.130	0.400	1.00	U
75-00-3	Chloroethane		0.311	0.400	1.00	U
67-66-3	Chloroform		0.203	0.600	1.20	U
74-87-3	Chloromethane		0.384	1.00	2.00	U
156-59-2	cis-1,2-Dichloroethene		0.205	0.600	1.20	U
10061-01-5	cis-1,3-Dichloropropene		0.117	0.400	1.00	U
124-48-1	Dibromochloromethane		0.152	0.400	1.00	U
74-95-3	Dibromomethane		0.163	0.400	1.00	U
75-71-8	Dichlorodifluoromethane		0.259	1.00	2.00	U
100-41-4	Ethylbenzene		0.0600	0.200	0.400	U
87-68-3	Hexachlorobutadiene		0.200	0.400	1.00	U
98-82-8	Isopropylbenzene		0.110	0.400	1.00	U
179601-23-1	m,p-Xylene		0.178	0.800	2.00	U
1634-04-4	Methyl tert-butyl ether		0.106	0.400	1.00	U
75-09-2	Methylene chloride		0.447	1.00	2.00	U
104-51-8	n-Butylbenzene		0.260	1.00	2.00	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6447WW28

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-10	File ID:	G2230614020.D
Sampled:	06/04/23 12:05	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 16:25
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
103-65-1	n-Propylbenzene		0.126	0.400	1.00	U
91-20-3	Naphthalene		0.140	0.400	1.00	U
95-47-6	o-Xylene		0.0832	0.400	1.00	U
135-98-8	sec-Butylbenzene		0.120	0.400	1.00	U
100-42-5	Styrene		0.0906	0.200	0.400	U
98-06-6	tert-Butylbenzene		0.0906	0.400	1.00	U
127-18-4	Tetrachloroethene		0.357	1.00	2.00	Q, U
108-88-3	Toluene		0.114	0.400	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.171	0.400	1.00	U
10061-02-6	trans-1,3-Dichloropropene		0.117	0.400	1.00	U
79-01-6	Trichloroethene		0.156	0.400	1.00	U
75-69-4	Trichlorofluoromethane		0.101	0.400	1.00	U
75-01-4	Vinyl chloride		0.258	1.00	2.00	U

Italicized = secondary result

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614020.D
Acq On : 14 Jun 2023 16:25
Operator : PO1/MP3
Sample : 23F0196-10
Misc : 2
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 15 09:46:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

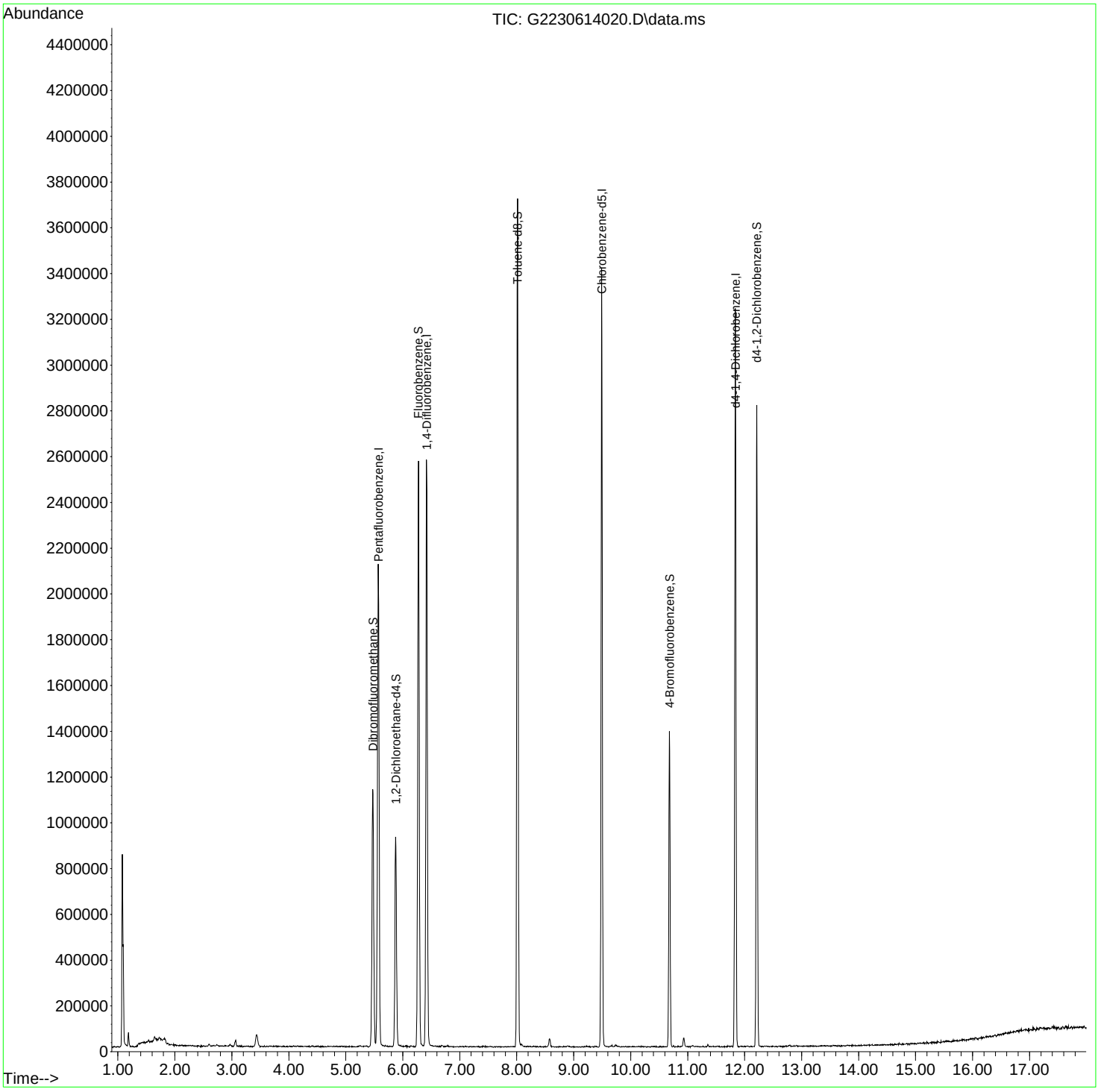
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.573	168	16493099	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.421	114	22653638	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.494	117	19890611	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.839	152	9126312	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.476	111	7158330	19.72	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 98.60%			
43) 1,2-Dichloroethane-d4	5.878	65	6443897	17.96	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 89.80%			
49) Fluorobenzene	6.278	96	24829024	19.23	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.15%			
64) Toluene-d8	8.016	98	24182584	19.29	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.45%			
81) 4-Bromofluorobenzene	10.684	174	4277076	9.92	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 99.20%			
97) d4-1,2-Dichlorobenzene	12.216	152	8037967	20.48	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 102.40%			
Target Compounds						Qvalue
3) Chloromethane	1.359	50	20359	Below Cal	#	41
5) Bromomethane	1.727	94	52963	Below Cal	#	88
18) Methylene chloride	3.067	49	123715	Below Cal		84
21) Methyl tert-butyl ether	3.433	73	727202	Below Cal		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614020.D
Acq On : 14 Jun 2023 16:25
Operator : PO1/MP3
Sample : 23F0196-10
Misc : 2
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 15 09:46:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G



Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614020.D
Acq On : 14 Jun 2023 16:25
Operator : PO1/MP3
Sample : 23F0196-10
Misc : 2
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 15 09:46:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

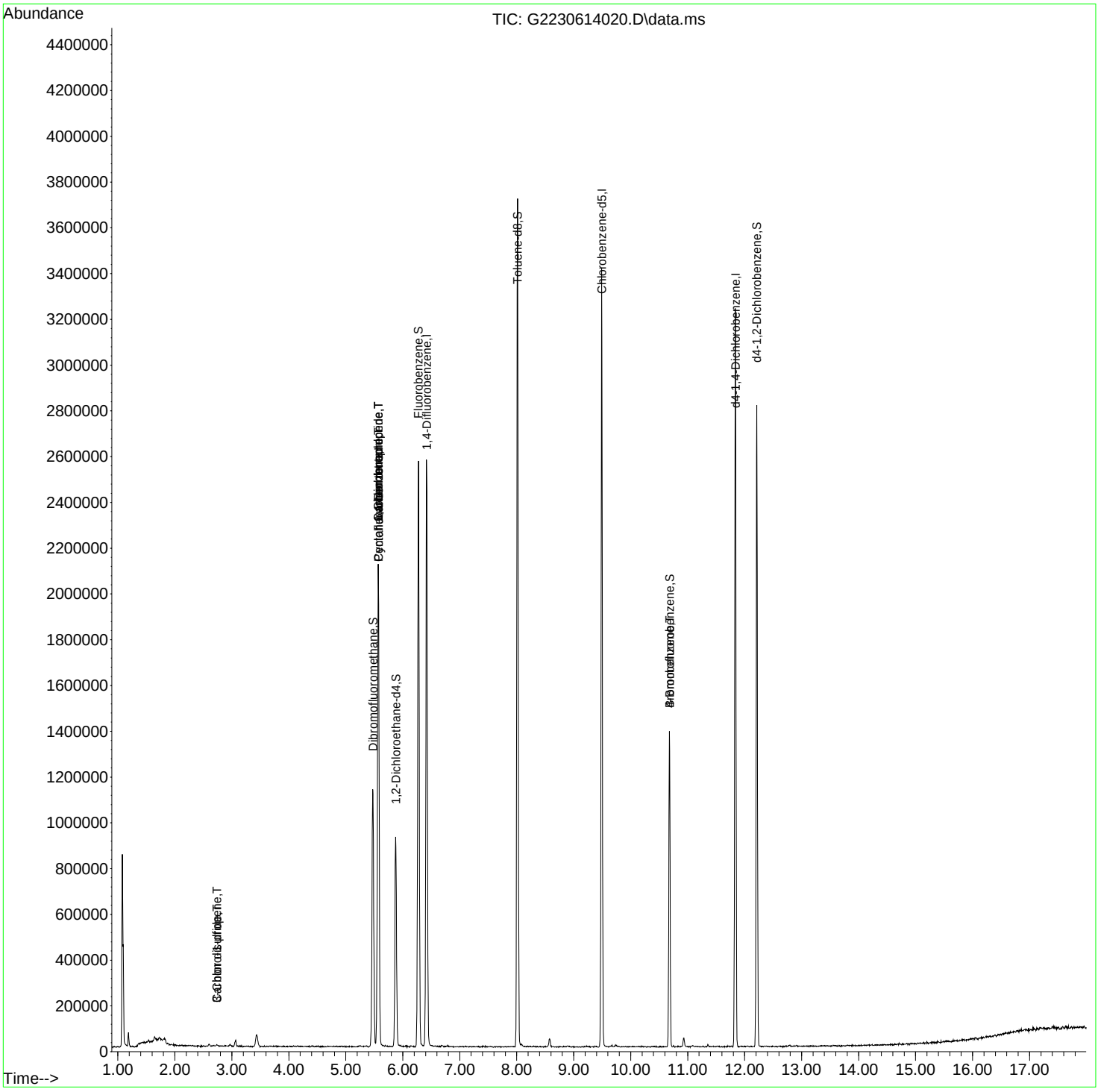
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.573	168	16493099	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.421	114	22653638	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.494	117	19890611	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.839	152	9126312	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.476	111	7158330	19.72	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 98.60%			
43) 1,2-Dichloroethane-d4	5.878	65	6443897	17.96	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 89.80%			
49) Fluorobenzene	6.278	96	24829024	19.23	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.15%			
64) Toluene-d8	8.016	98	24182584	19.29	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.45%			
81) 4-Bromofluorobenzene	10.684	174	4277076	9.92	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 99.20%			
97) d4-1,2-Dichlorobenzene	12.216	152	8037967	20.48	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 102.40%			
Target Compounds						Qvalue
3) Chloromethane	1.359	50	20359	Below Cal	#	41
5) Bromomethane	1.727	94	52963	Below Cal	#	88
12) Acetone	2.602	43	106925	Below Cal		85
14) Carbon disulfide	2.742	76	102219	0.04	ug/L #	74
17) 3-Chloro-1-propene	2.742	76	102219	0.54	ug/L #	53
18) Methylene chloride	3.067	49	123715	Below Cal		84
21) Methyl tert-butyl ether	3.433	73	727202	Below Cal		95
40) Cyclohexane	5.573	84	352459	0.80	ug/L #	32
41) 1-Chlorobutane	5.568	56	219848	0.43	ug/L #	1
42) 1,1-Dichloropropene	5.569	75	900666	2.33	ug/L #	38
47) Carbon tetrachloride	5.572	117	1317899	3.22	ug/L #	17
60) 4-Methyl-2-pentanone	8.014	43	81270	Below Cal	#	1
74) Ethylbenzene	9.494	91	42594	Below Cal	#	44
82) Bromobenzene	10.681	77	26015	0.05	ug/L #	1

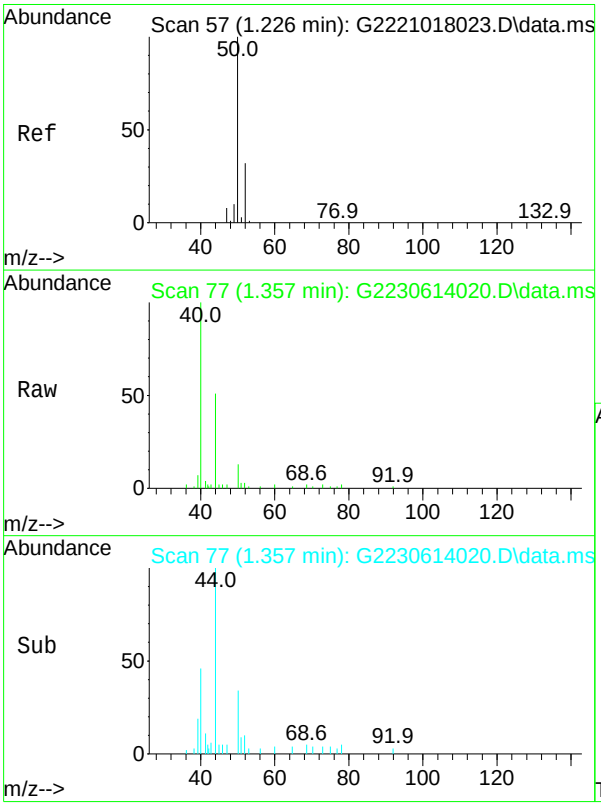
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614020.D
Acq On : 14 Jun 2023 16:25
Operator : PO1/MP3
Sample : 23F0196-10
Misc : 2
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 15 09:46:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

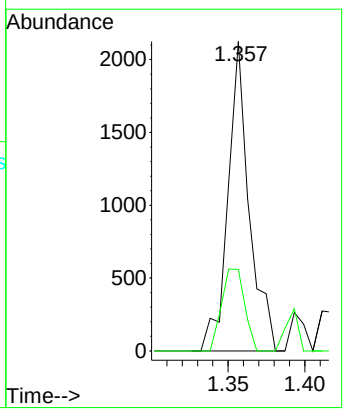


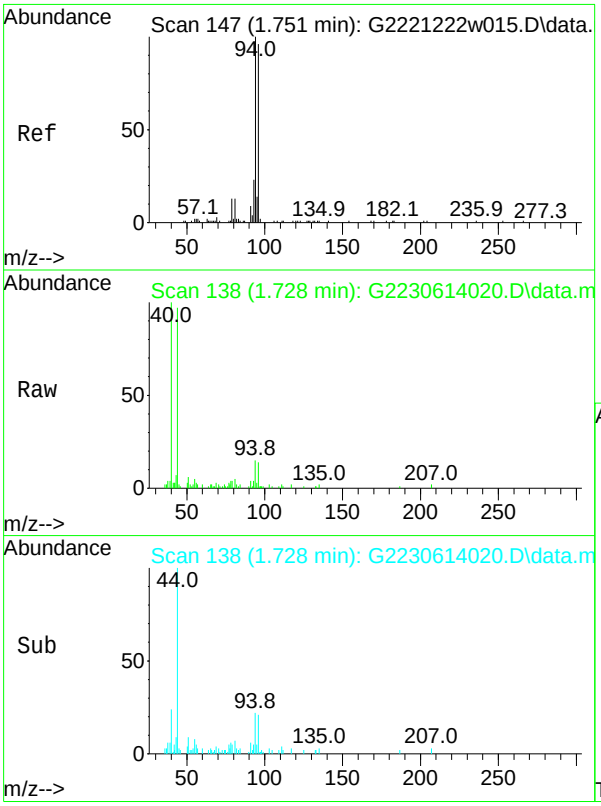


#3
Chloromethane
Concen: Below Cal
RT: 1.359 min Scan# 77
Delta R.T. 0.005 min
Lab File: G2230614020.D
Acq: 14 Jun 2023 16:25

Tgt Ion: 50 Resp: 20359

Ion	Ratio	Lower	Upper
50	100		
52	0.0	3.2	63.2#

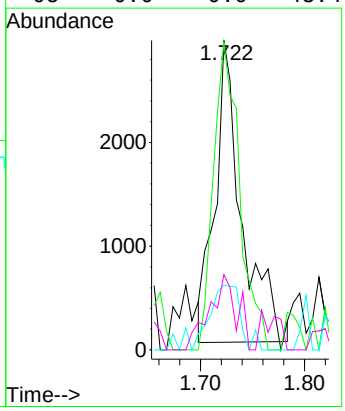


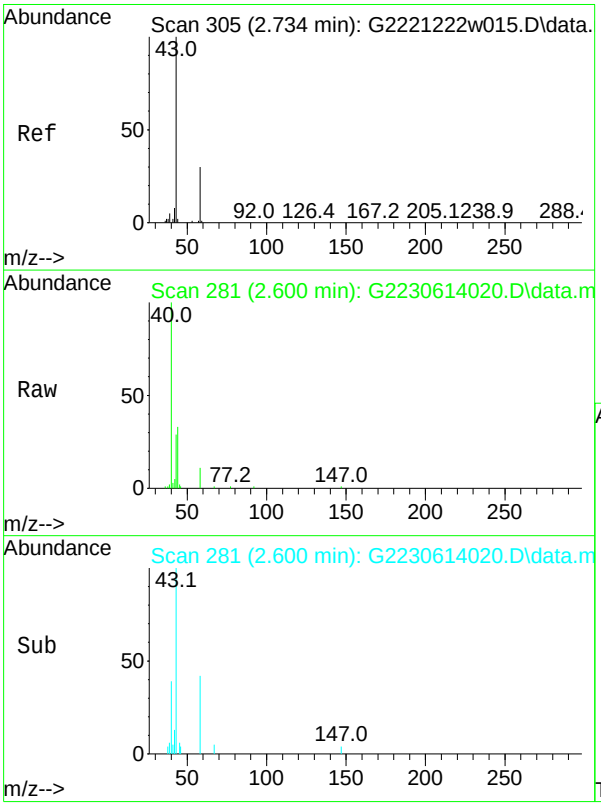


#5
Bromomethane
Concen: Below Cal
RT: 1.727 min Scan# 138
Delta R.T. 0.013 min
Lab File: G2230614020.D
Acq: 14 Jun 2023 16:25

Tgt Ion: 94 Resp: 52963

Ion	Ratio	Lower	Upper
94	100		
96	98.3	65.6	125.6
93	0.0	0.0	49.5
95	0.0	0.0	43.4

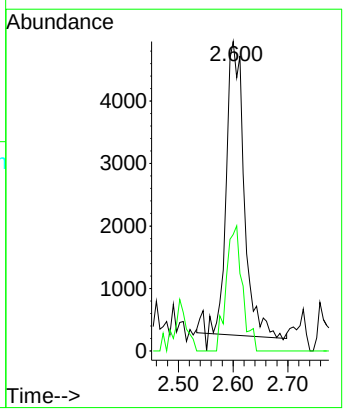


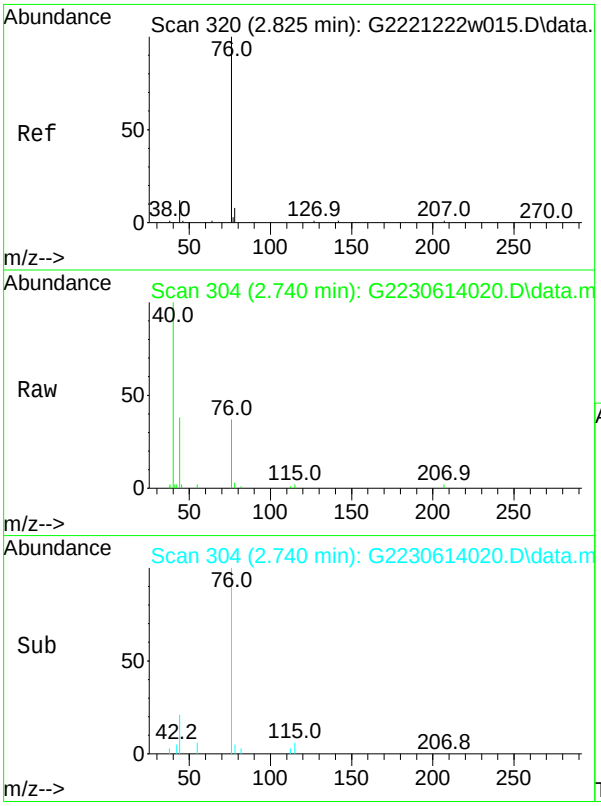


#12
Acetone
Concen: Below Cal
RT: 2.602 min Scan# 281
Delta R.T. -0.006 min
Lab File: G2230614020.D
Acq: 14 Jun 2023 16:25

Tgt Ion: 43 Resp: 106925

Ion	Ratio	Lower	Upper
43	100		
58	38.0	0.0	59.7

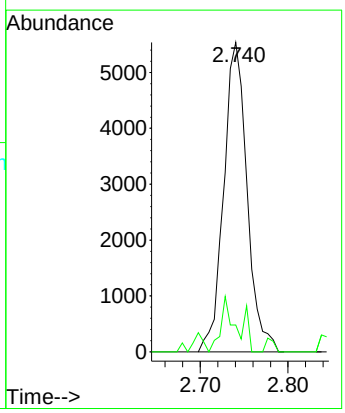


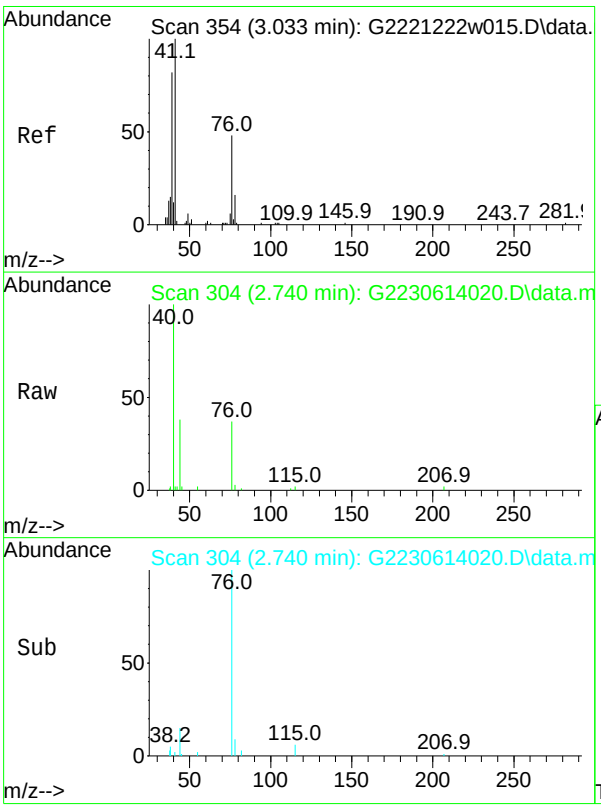


#14
Carbon disulfide
Concen: 0.04 ug/L
RT: 2.742 min Scan# 304
Delta R.T. 0.003 min
Lab File: G2230614020.D
Acq: 14 Jun 2023 16:25

Tgt Ion: 76 Resp: 102219

Ion	Ratio	Lower	Upper
76	100		
78	0.0	0.0	39.3

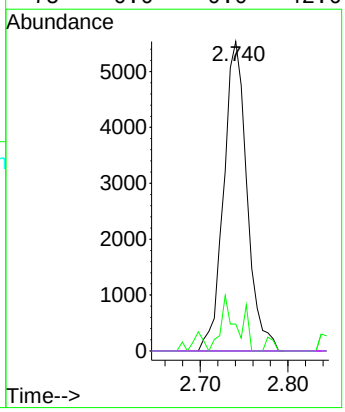


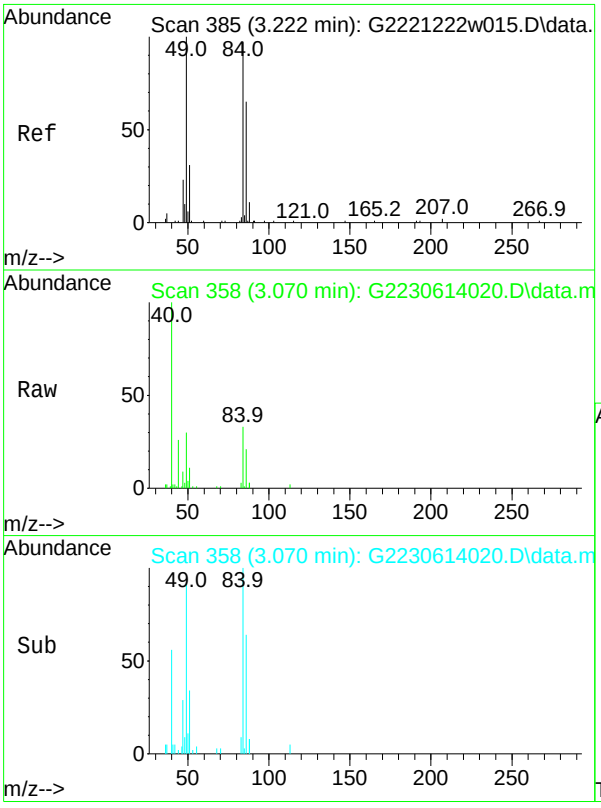


#17
3-Chloro-1-propene
Concen: 0.54 ug/L
RT: 2.742 min Scan# 304
Delta R.T. -0.178 min
Lab File: G2230614020.D
Acq: 14 Jun 2023 16:25

Tgt Ion: 76 Resp: 102219

Ion	Ratio	Lower	Upper
76	100		
78	0.0	2.4	62.4#
49	0.0	0.0	43.0
75	0.0	0.0	42.6

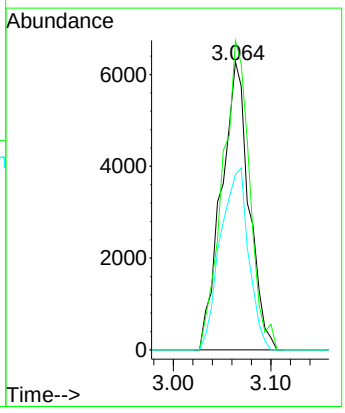


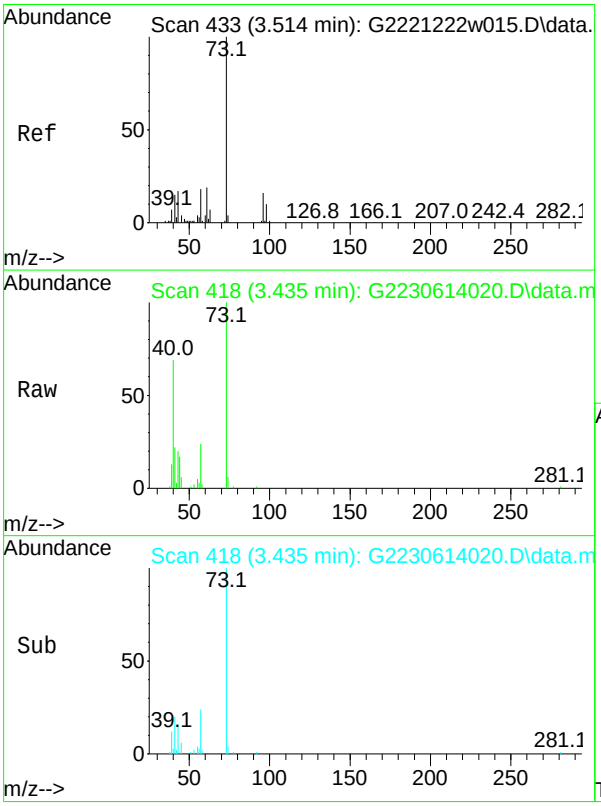


#18
Methylene chloride
Concen: Below Cal
RT: 3.067 min Scan# 358
Delta R.T. 0.005 min
Lab File: G2230614020.D
Acq: 14 Jun 2023 16:25

Tgt Ion: 49 Resp: 123715

Ion	Ratio	Lower	Upper
49	100		
84	105.1	57.9	117.9
86	64.2	24.9	84.9

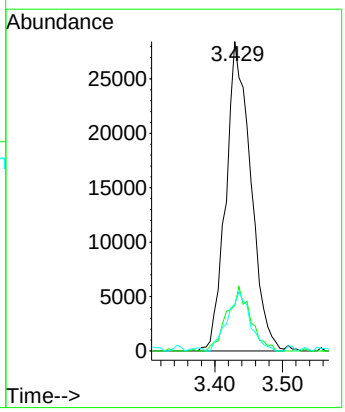


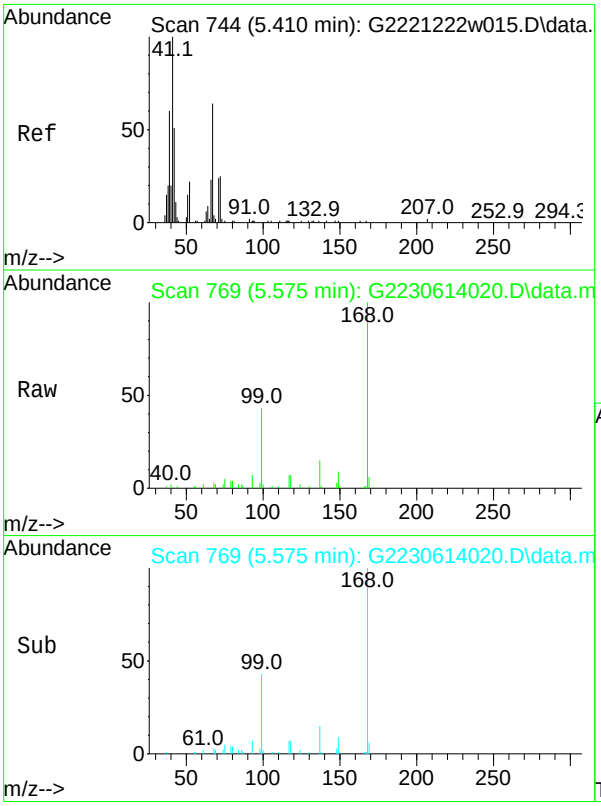


#21
Methyl tert-butyl ether
Concen: Below Cal
RT: 3.433 min Scan# 418
Delta R.T. -0.013 min
Lab File: G2230614020.D
Acq: 14 Jun 2023 16:25

Tgt Ion: 73 Resp: 727202

Ion	Ratio	Lower	Upper
73	100		
57	19.5	0.0	51.7
41	17.8	0.0	50.6

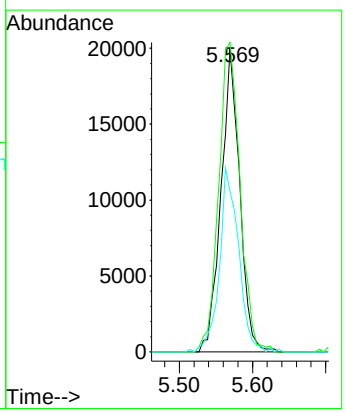


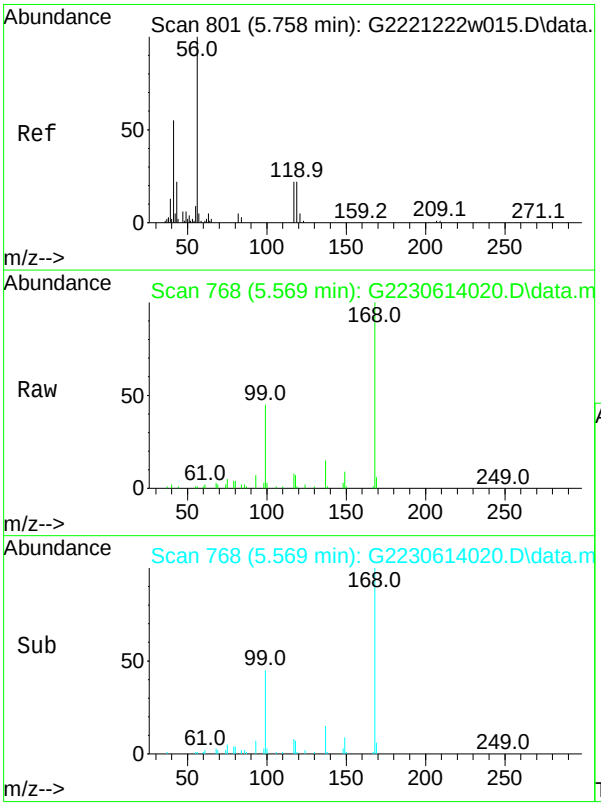


#40
Cyclohexane
Concen: 0.80 ug/L
RT: 5.573 min Scan# 769
Delta R.T. 0.039 min
Lab File: G2230614020.D
Acq: 14 Jun 2023 16:25

Tgt Ion: 84 Resp: 352459

Ion	Ratio	Lower	Upper
84	100		
69	117.1	6.8	66.8#
56	61.9	79.1	139.1#

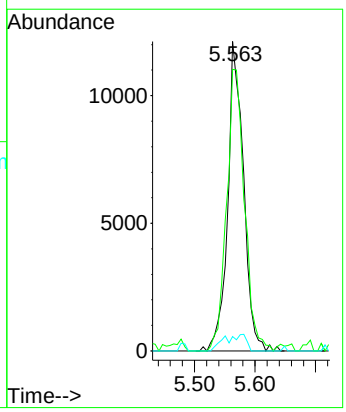


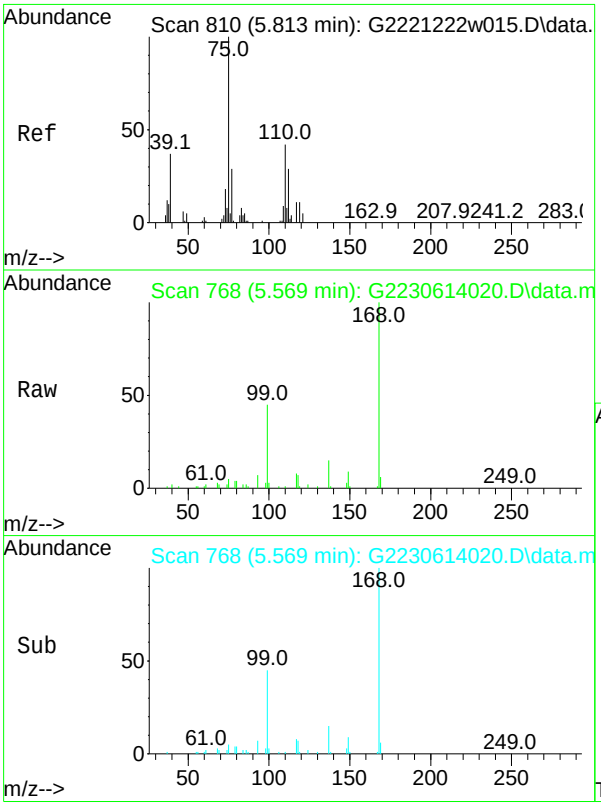


#41
1-Chlorobutane
Concen: 0.43 ug/L
RT: 5.568 min Scan# 768
Delta R.T. -0.062 min
Lab File: G2230614020.D
Acq: 14 Jun 2023 16:25

Tgt Ion: 56 Resp: 219848

Ion	Ratio	Lower	Upper
56	100		
55	102.3	0.0	41.0#
57	0.0	0.0	35.7

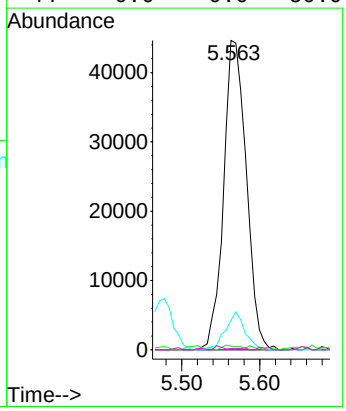


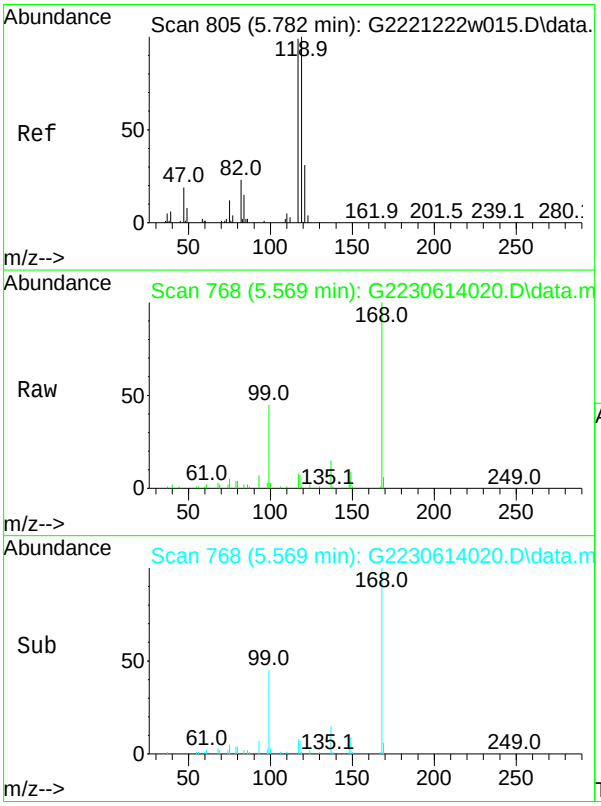


#42
1,1-Dichloropropene
Concen: 2.33 ug/L
RT: 5.569 min Scan# 768
Delta R.T. -0.120 min
Lab File: G2230614020.D
Acq: 14 Jun 2023 16:25

Tgt Ion: 75 Resp: 900666

Ion	Ratio	Lower	Upper
75	100		
39	0.0	25.8	85.8#
110	10.6	9.1	69.1
77	0.0	0.0	59.9

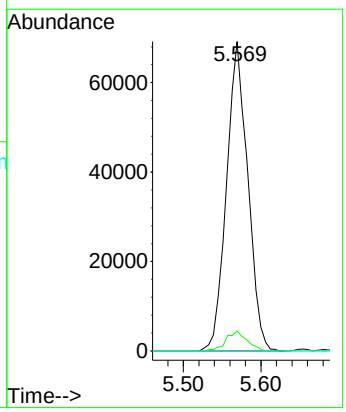


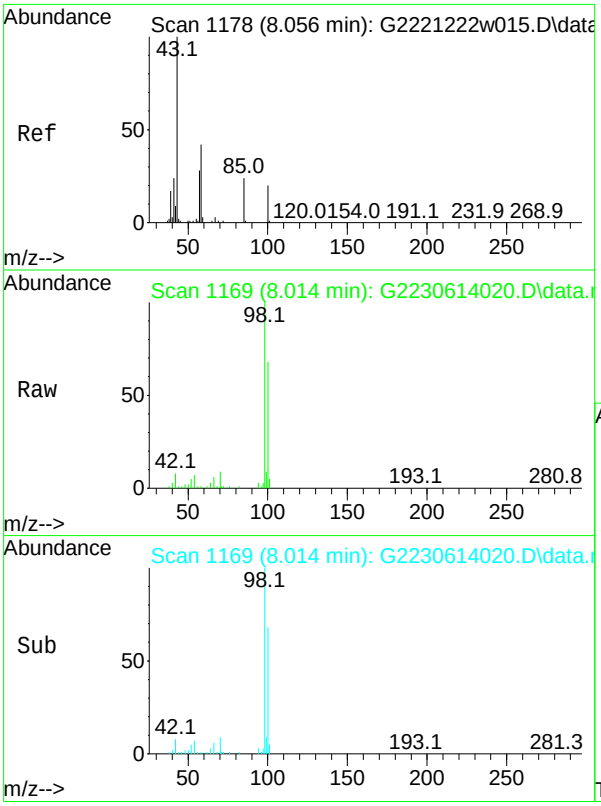


#47
Carbon tetrachloride
Concen: 3.22 ug/L
RT: 5.572 min Scan# 768
Delta R.T. -0.108 min
Lab File: G2230614020.D
Acq: 14 Jun 2023 16:25

Tgt Ion:117 Resp: 1317899

Ion	Ratio	Lower	Upper
117	100		
119	6.3	66.4	126.4#
121	0.0	0.4	60.4#

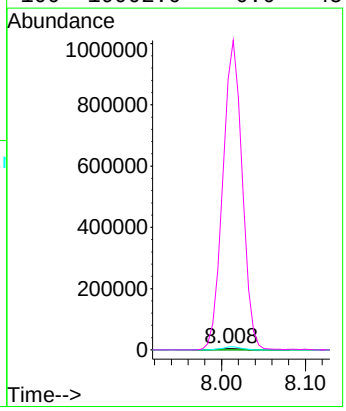


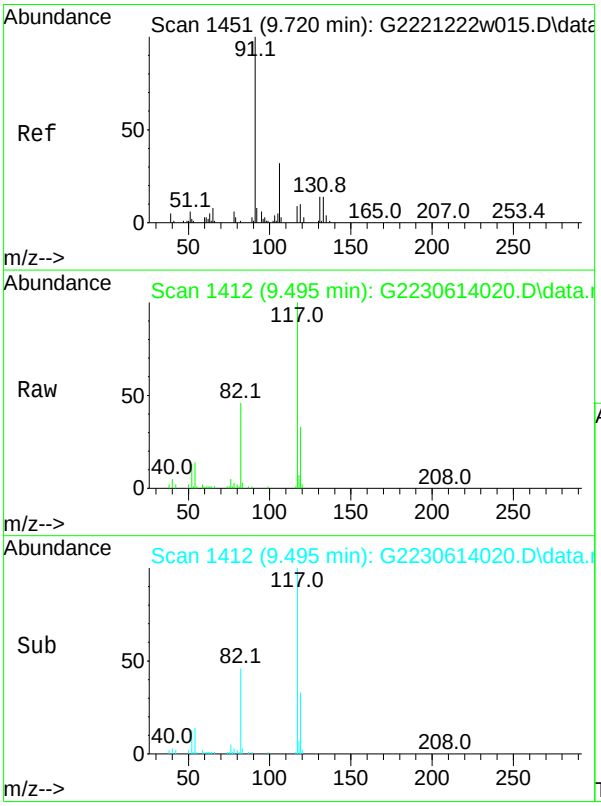


#60
4-Methyl-2-pentanone
Concen: Below Cal
RT: 8.014 min Scan# 1169
Delta R.T. 0.070 min
Lab File: G2230614020.D
Acq: 14 Jun 2023 16:25

Tgt Ion: 43 Resp: 81270

Ion	Ratio	Lower	Upper
43	100		
85	0.0	0.0	47.7
58	192.6	37.0	37.0#
100	19902.0	0.0	45.2#

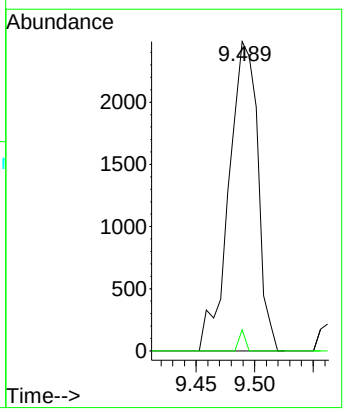


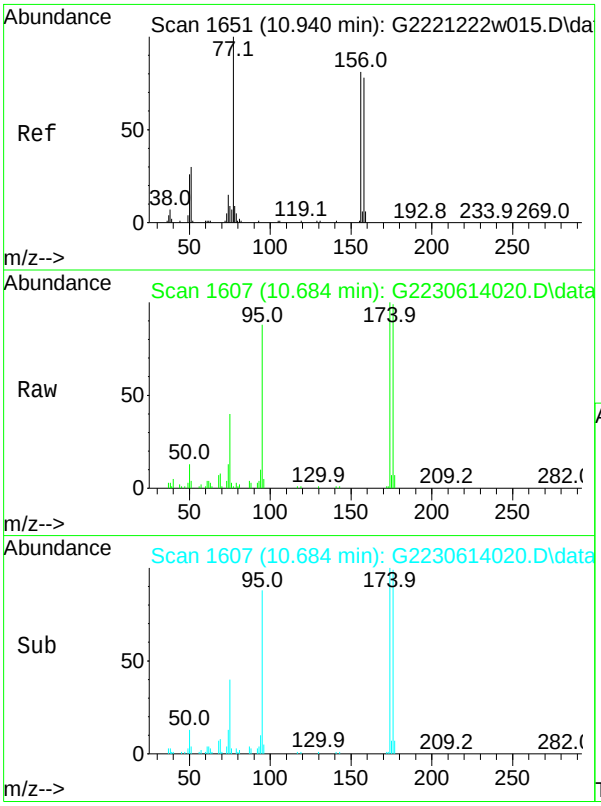


#74
Ethylbenzene
Concen: Below Cal
RT: 9.494 min Scan# 1412
Delta R.T. -0.149 min
Lab File: G2230614020.D
Acq: 14 Jun 2023 16:25

Tgt Ion: 91 Resp: 42594

Ion	Ratio	Lower	Upper
91	100		
106	0.0	0.8	60.8#

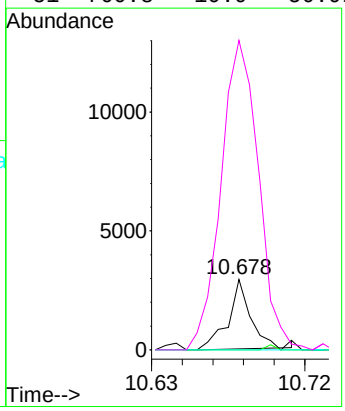




#82
Bromobenzene
Concen: 0.05 ug/L
RT: 10.681 min Scan# 1607
Delta R.T. -0.147 min
Lab File: G2230614020.D
Acq: 14 Jun 2023 16:25

Tgt Ion: 77 Resp: 26015

Ion	Ratio	Lower	Upper
77	100		
156	0.0	49.1	89.1#
158	0.0	44.8	84.8#
51	760.8	10.9	50.9#



1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

65Trip3

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-11	File ID:	G2230614023.D
Sampled:	06/05/23 10:00	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 17:39
		Preparation:	5030_W	Dilution:	1
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097	Instrument:	G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
630-20-6	1,1,1,2-Tetrachloroethane		0.0650	0.200	0.500	U
71-55-6	1,1,1-Trichloroethane		0.0877	0.200	0.500	U
79-34-5	1,1,2,2-Tetrachloroethane		0.0621	0.200	0.500	U
79-00-5	1,1,2-Trichloroethane		0.0832	0.200	0.500	U
75-34-3	1,1-Dichloroethane		0.0669	0.200	0.500	U
75-35-4	1,1-Dichloroethene		0.0954	0.200	0.500	U
563-58-6	1,1-Dichloropropene		0.0699	0.200	0.500	U
87-61-6	1,2,3-Trichlorobenzene		0.102	0.200	0.500	U
96-18-4	1,2,3-Trichloropropane		0.0913	0.200	0.500	U
120-82-1	1,2,4-Trichlorobenzene		0.102	0.300	0.600	U
95-63-6	1,2,4-Trimethylbenzene		0.0661	0.200	0.500	U
96-12-8	1,2-Dibromo-3-chloropropane		0.130	0.500	1.00	U
106-93-4	1,2-Dibromoethane		0.0531	0.200	0.500	U
95-50-1	1,2-Dichlorobenzene		0.0630	0.200	0.500	U
107-06-2	1,2-Dichloroethane		0.106	0.300	0.600	U
78-87-5	1,2-Dichloropropane		0.102	0.300	0.600	U
108-67-8	1,3,5-Trimethylbenzene		0.0500	0.200	0.500	U
541-73-1	1,3-Dichlorobenzene		0.0724	0.200	0.500	U
142-28-9	1,3-Dichloropropane		0.0680	0.200	0.500	U
106-46-7	1,4-Dichlorobenzene		0.0920	0.200	0.500	U
594-20-7	2,2-Dichloropropane		0.0920	0.200	0.500	U
78-93-3	2-Butanone		0.330	0.700	1.75	U
95-49-8	2-Chlorotoluene		0.0733	0.200	0.500	U
591-78-6	2-Hexanone		0.0716	0.700	1.75	U
106-43-4	4-Chlorotoluene		0.0921	0.200	0.500	U
99-87-6	4-Isopropyltoluene		0.0700	0.200	0.500	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

65Trip3

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-11	File ID:	G2230614023.D
Sampled:	06/05/23 10:00	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 17:39
		Preparation:	5030_W	Dilution:	1
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097	Instrument:	G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
108-10-1	4-Methyl-2-pentanone		0.135	0.700	1.75	U
67-64-1	Acetone		0.518	2.00	4.00	U
71-43-2	Benzene		0.0507	0.200	0.500	U
108-86-1	Bromobenzene		0.0848	0.200	0.500	U
74-97-5	Bromochloromethane		0.0669	0.200	0.500	U
75-27-4	Bromodichloromethane		0.0531	0.200	0.500	U
75-25-2	Bromoform		0.103	0.200	0.500	U
74-83-9	Bromomethane		0.160	0.500	1.00	U
75-15-0	Carbon disulfide		0.140	0.500	1.00	U
56-23-5	Carbon tetrachloride		0.0844	0.200	0.500	U
108-90-7	Chlorobenzene		0.0650	0.200	0.500	U
75-00-3	Chloroethane		0.155	0.200	0.500	U
67-66-3	Chloroform		0.101	0.300	0.600	U
74-87-3	Chloromethane		0.192	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene		0.103	0.300	0.600	U
10061-01-5	cis-1,3-Dichloropropene		0.0587	0.200	0.500	U
124-48-1	Dibromochloromethane		0.0759	0.200	0.500	U
74-95-3	Dibromomethane		0.0817	0.200	0.500	U
75-71-8	Dichlorodifluoromethane		0.130	0.500	1.00	U
100-41-4	Ethylbenzene		0.0300	0.100	0.200	U
87-68-3	Hexachlorobutadiene		0.100	0.200	0.500	U
98-82-8	Isopropylbenzene		0.0549	0.200	0.500	U
179601-23-1	m,p-Xylene		0.0889	0.400	1.00	U
1634-04-4	Methyl tert-butyl ether		0.0530	0.200	0.500	U
75-09-2	Methylene chloride		0.224	0.500	1.00	U
104-51-8	n-Butylbenzene		0.130	0.500	1.00	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

65Trip3

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-11	File ID:	G2230614023.D
Sampled:	06/05/23 10:00	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 17:39
		Preparation:	5030_W	Dilution:	1
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
103-65-1	n-Propylbenzene		0.0630	0.200	0.500	U
91-20-3	Naphthalene		0.0700	0.200	0.500	U
95-47-6	o-Xylene		0.0416	0.200	0.500	U
135-98-8	sec-Butylbenzene		0.0598	0.200	0.500	U
100-42-5	Styrene		0.0453	0.100	0.200	U
98-06-6	tert-Butylbenzene		0.0453	0.200	0.500	U
127-18-4	Tetrachloroethene		0.178	0.500	1.00	Q, U
108-88-3	Toluene		0.0572	0.200	0.500	U
156-60-5	trans-1,2-Dichloroethene		0.0855	0.200	0.500	U
10061-02-6	trans-1,3-Dichloropropene		0.0587	0.200	0.500	U
79-01-6	Trichloroethene		0.0781	0.200	0.500	U
75-69-4	Trichlorofluoromethane		0.0505	0.200	0.500	U
75-01-4	Vinyl chloride		0.129	0.500	1.00	U

Italicized = secondary result

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614023.D
Acq On : 14 Jun 2023 17:39
Operator : PO1/MP3
Sample : 23F0196-11
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 15 09:52:56 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

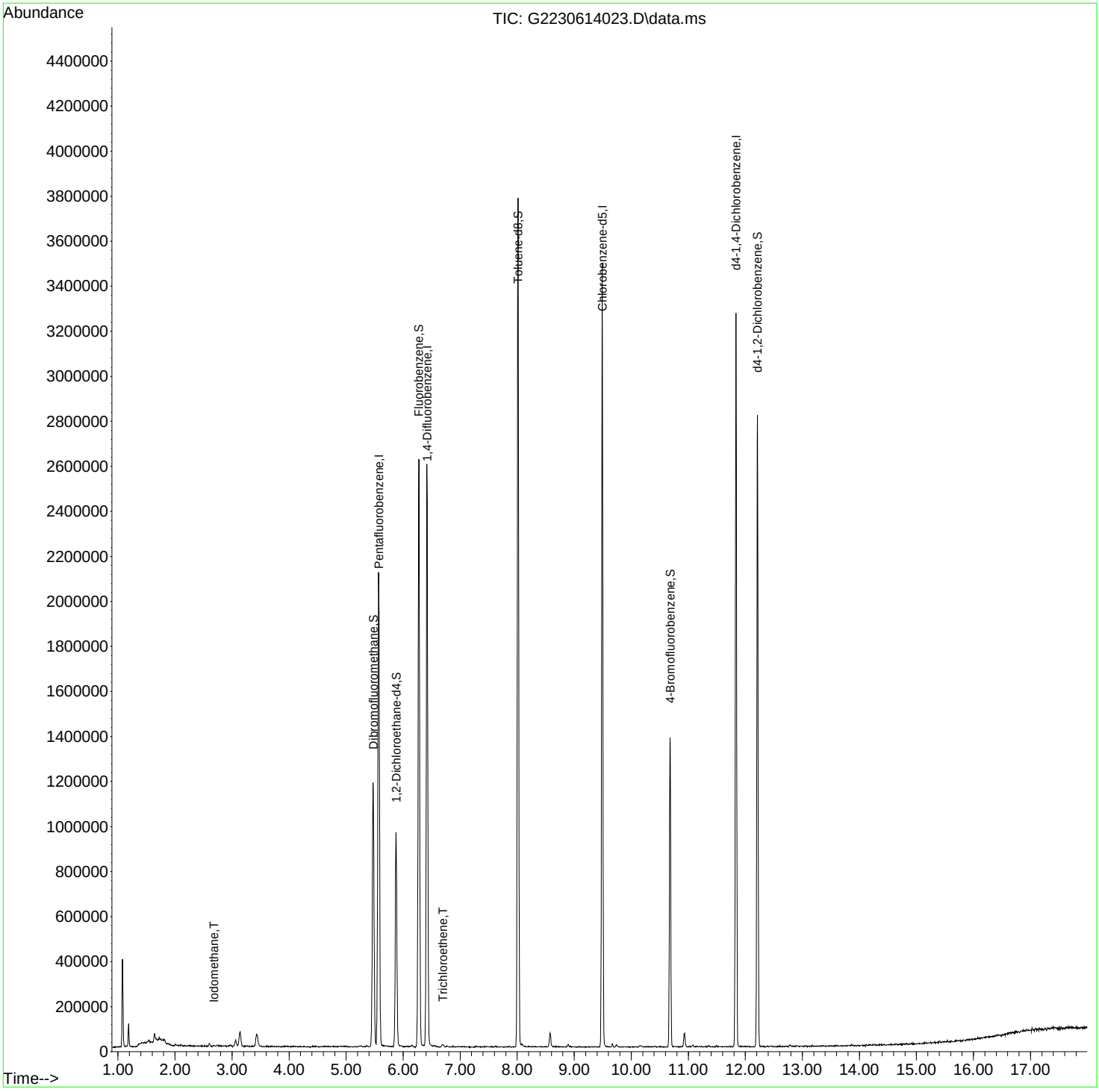
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.573	168	16667450	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.421	114	22702633	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	20205922	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.839	152	9244135	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.476	111	7301272	19.91	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.55%			
43) 1,2-Dichloroethane-d4	5.878	65	6672390	18.41	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 92.05%			
49) Fluorobenzene	6.278	96	24889011	19.24	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.20%			
64) Toluene-d8	8.016	98	24384200	19.15	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 95.75%			
81) 4-Bromofluorobenzene	10.684	174	4331253	9.92	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 99.20%			
97) d4-1,2-Dichlorobenzene	12.215	152	8161535	20.53	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 102.65%			
Target Compounds						Qvalue
3) Chloromethane	1.355	50	22698	Below Cal	#	41
12) Acetone	2.602	43	129697	Below Cal		70
13) Iodomethane	2.679	142	30192	0.08	ug/L #	41
18) Methylene chloride	3.065	49	151608	Below Cal		84
21) Methyl tert-butyl ether	3.437	73	768997	Below Cal		92
50) Trichloroethene	6.698	95	33675	0.03	ug/L #	57
65) Toluene	8.083	91	31874	Below Cal	#	30

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614023.D
Acq On : 14 Jun 2023 17:39
Operator : PO1/MP3
Sample : 23F0196-11
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 15 09:52:56 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G



Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614023.D
Acq On : 14 Jun 2023 17:39
Operator : PO1/MP3
Sample : 23F0196-11
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 15 09:52:56 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

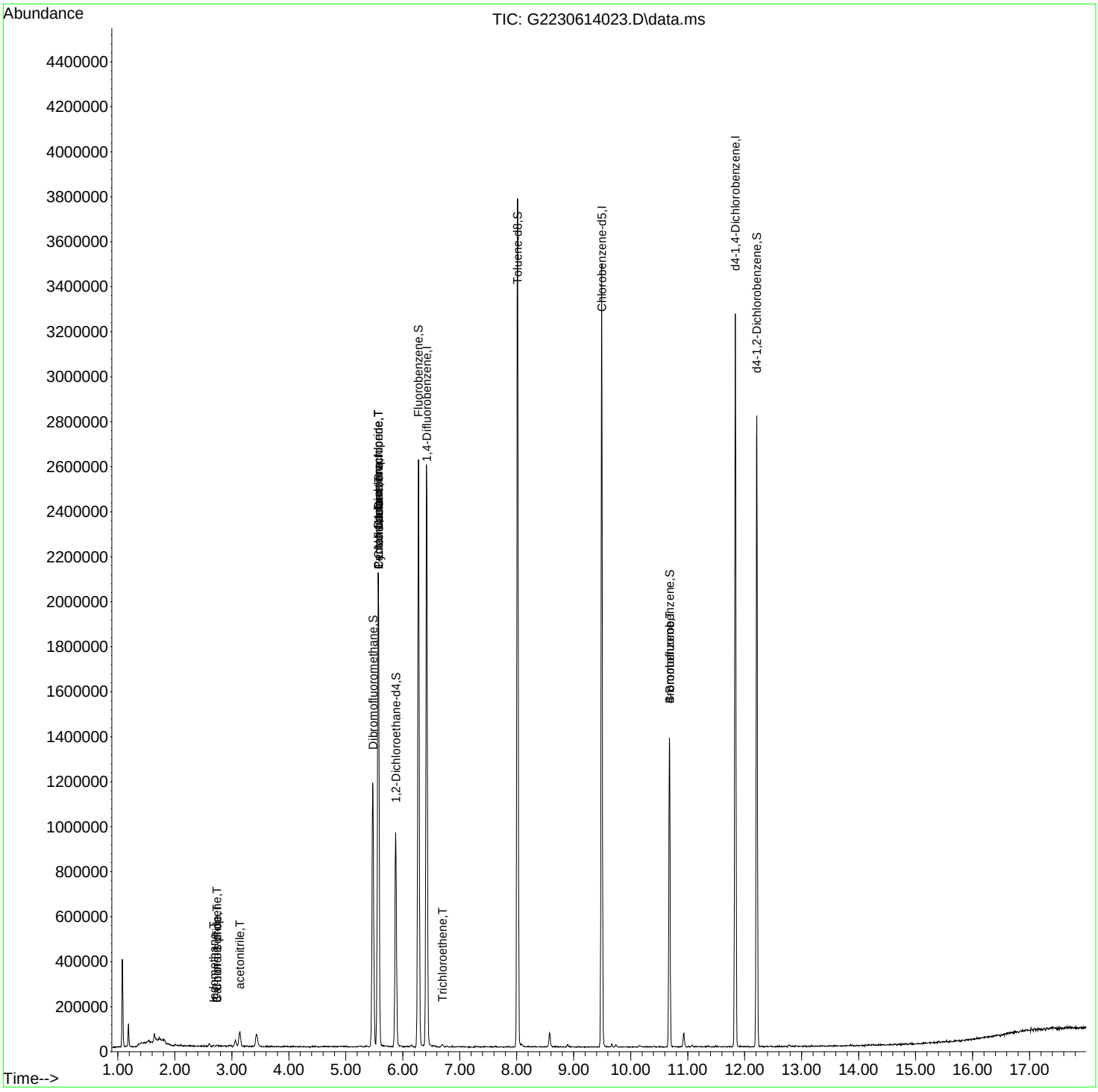
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.573	168	16667450	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.421	114	22702633	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	20205922	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.839	152	9244135	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.476	111	7301272	19.91	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.55%			
43) 1,2-Dichloroethane-d4	5.878	65	6672390	18.41	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 92.05%			
49) Fluorobenzene	6.278	96	24889011	19.24	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.20%			
64) Toluene-d8	8.016	98	24384200	19.15	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 95.75%			
81) 4-Bromofluorobenzene	10.684	174	4331253	9.92	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 99.20%			
97) d4-1,2-Dichlorobenzene	12.215	152	8161535	20.53	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 102.65%			
Target Compounds						Qvalue
3) Chloromethane	1.355	50	22698	Below Cal	#	41
5) Bromomethane	1.730	94	40068	Below Cal	#	81
12) Acetone	2.602	43	129697	Below Cal		70
13) Iodomethane	2.679	142	30192	0.08	ug/L #	41
14) Carbon disulfide	2.740	76	92980	0.03	ug/L #	74
16) acetonitrile	3.141	41	178093	0.61	ug/L	77
17) 3-Chloro-1-propene	2.740	76	92980	0.48	ug/L #	53
18) Methylene chloride	3.065	49	151608	Below Cal		84
21) Methyl tert-butyl ether	3.437	73	768997	Below Cal		92
40) Cyclohexane	5.572	84	376984	0.84	ug/L #	32
41) 1-Chlorobutane	5.573	56	212785	0.41	ug/L #	1
42) 1,1-Dichloropropene	5.571	75	896259	2.30	ug/L #	38
47) Carbon tetrachloride	5.572	117	1324787	3.23	ug/L #	16
50) Trichloroethene	6.698	95	33675	0.03	ug/L #	57
60) 4-Methyl-2-pentanone	8.016	43	81417	Below Cal	#	1
65) Toluene	8.083	91	31874	Below Cal	#	30
74) Ethylbenzene	9.492	91	35275	Below Cal	#	44
82) Bromobenzene	10.682	77	30155	0.06	ug/L #	1
99) n-Butylbenzene	12.217	91	28221	Below Cal	#	53

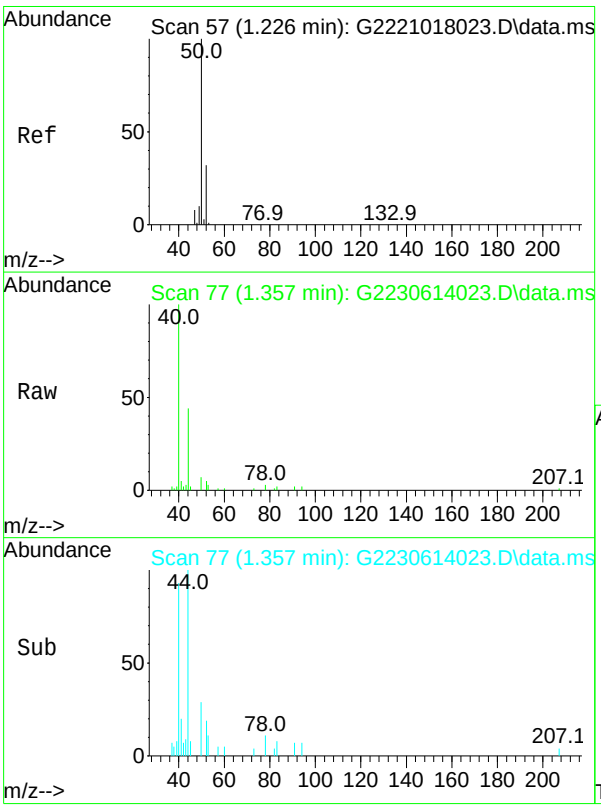
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614023.D
Acq On : 14 Jun 2023 17:39
Operator : PO1/MP3
Sample : 23F0196-11
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 15 09:52:56 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

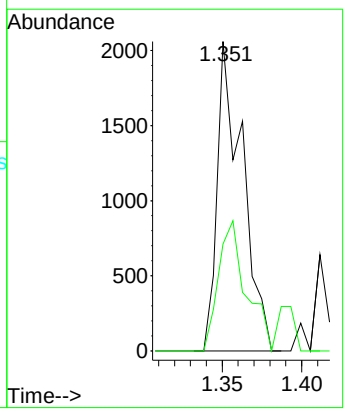


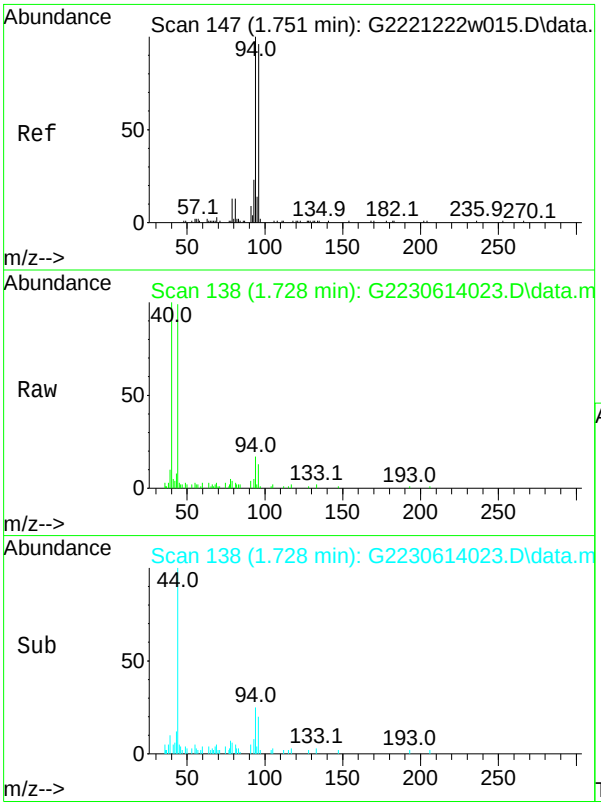


#3
Chloromethane
Concen: Below Cal
RT: 1.355 min Scan# 77
Delta R.T. 0.001 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion: 50 Resp: 22698

Ion	Ratio	Lower	Upper
50	100		
52	0.0	3.2	63.2#

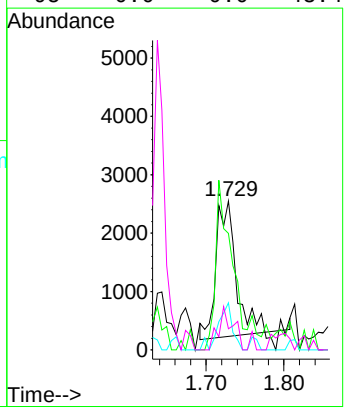


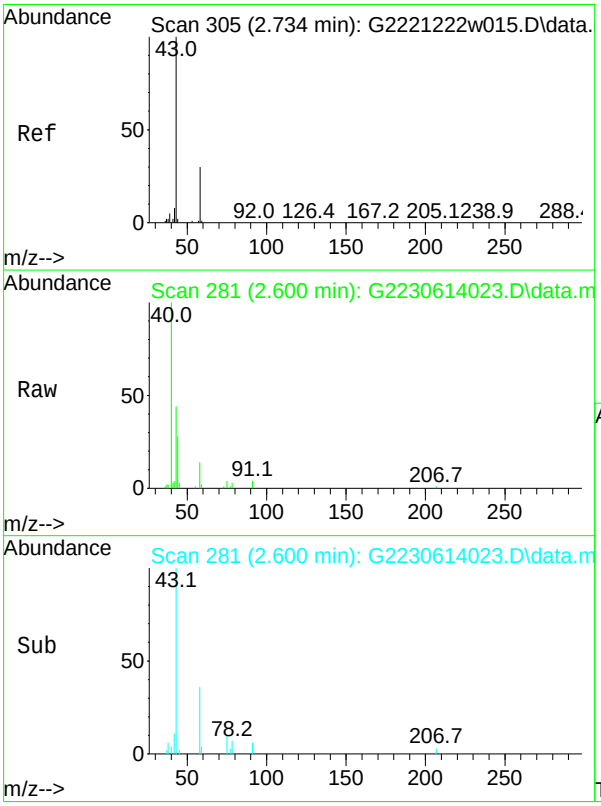


#5
Bromomethane
Concen: Below Cal
RT: 1.730 min Scan# 138
Delta R.T. 0.016 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion: 94 Resp: 40068

Ion	Ratio	Lower	Upper
94	100		
96	84.3	65.6	125.6
93	0.0	0.0	49.5
95	0.0	0.0	43.4

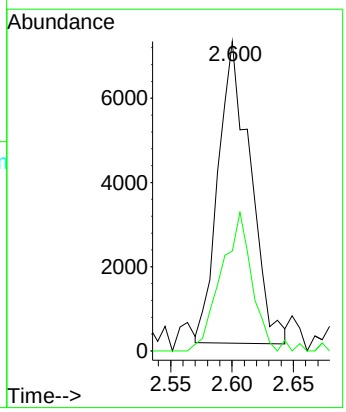


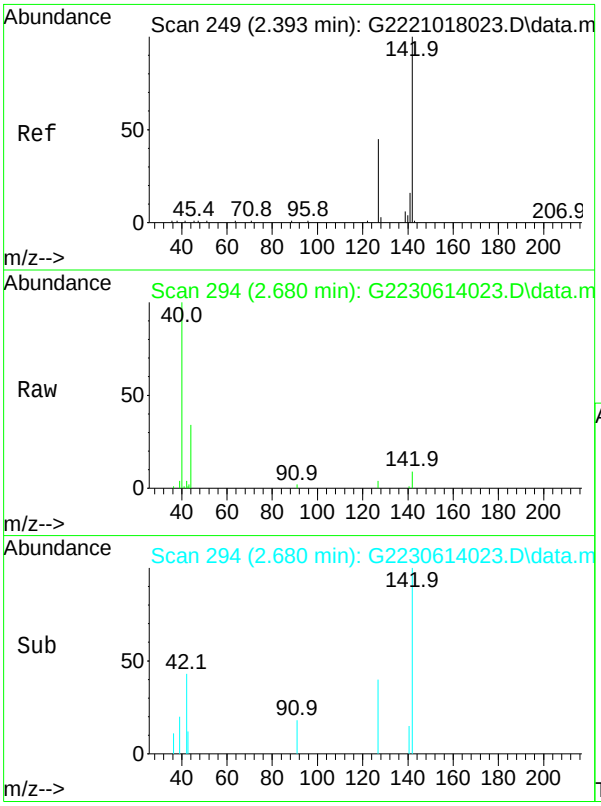


#12
Acetone
Concen: Below Cal
RT: 2.602 min Scan# 281
Delta R.T. -0.006 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion: 43 Resp: 129697

Ion	Ratio	Lower	Upper
43	100		
58	45.9	0.0	59.7

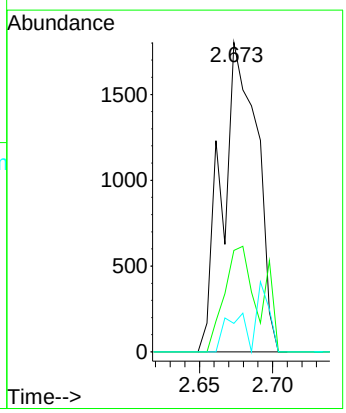


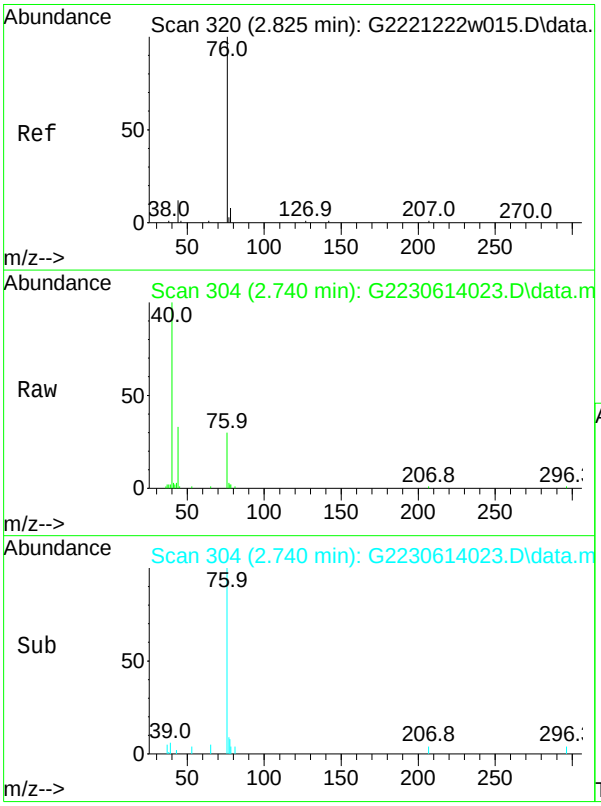


#13
Iodomethane
Concen: 0.08 ug/L
RT: 2.679 min Scan# 294
Delta R.T. 0.003 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion:142 Resp: 30192

Ion	Ratio	Lower	Upper
142	100		
127	0.0	13.3	73.3#
141	0.0	0.0	45.3

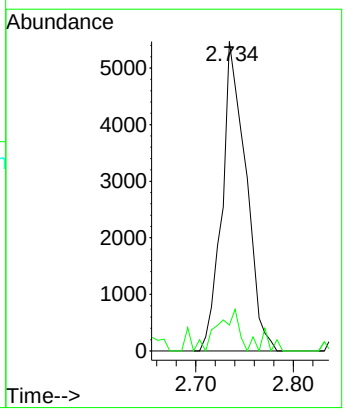


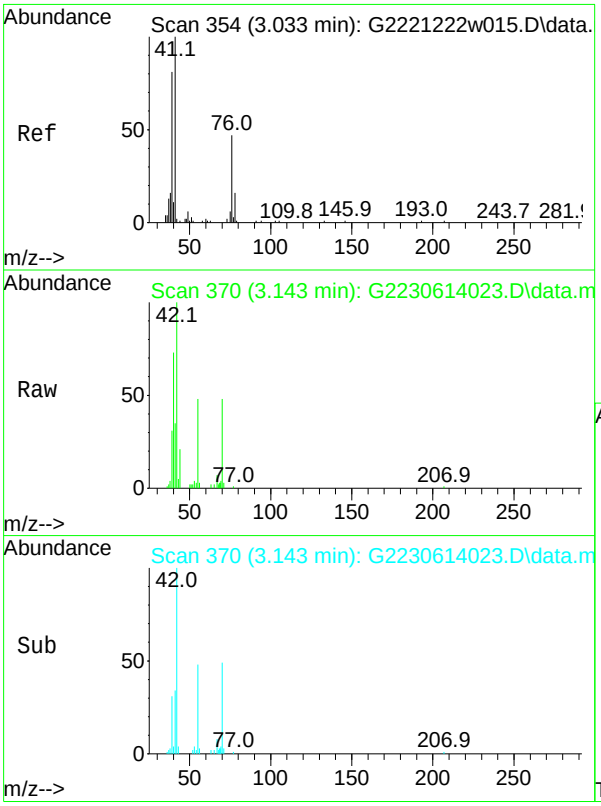


#14
Carbon disulfide
Concen: 0.03 ug/L
RT: 2.740 min Scan# 304
Delta R.T. 0.001 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion: 76 Resp: 92980

Ion	Ratio	Lower	Upper
76	100		
78	0.0	0.0	39.3

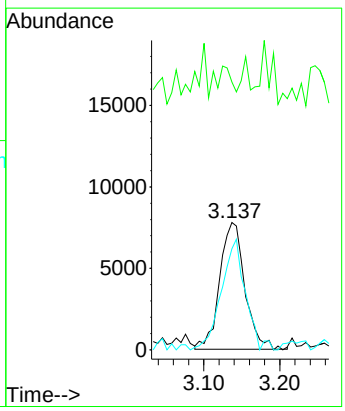


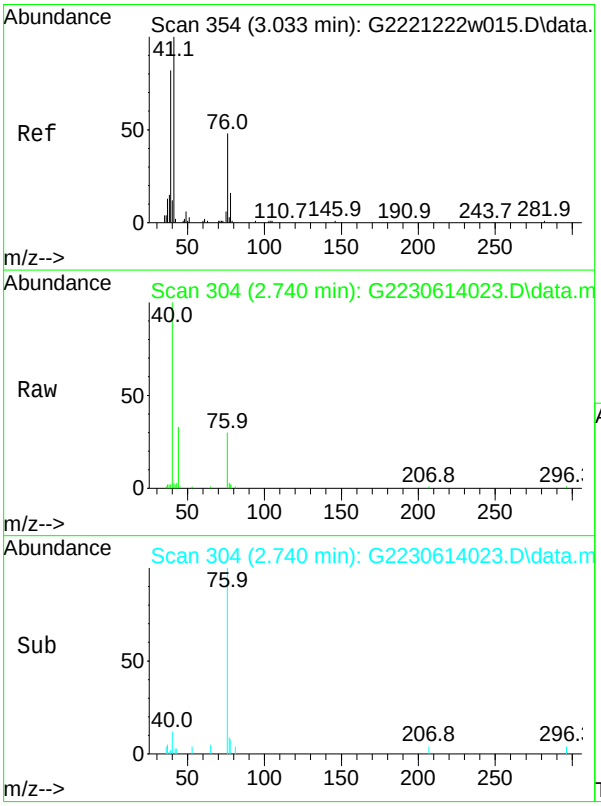


#16
acetonitrile
Concen: 0.61 ug/L
RT: 3.141 min Scan# 370
Delta R.T. 0.223 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion: 41 Resp: 178093

Ion	Ratio	Lower	Upper
41	100		
40	18.5	0.0	54.0
39	78.0	27.5	87.5

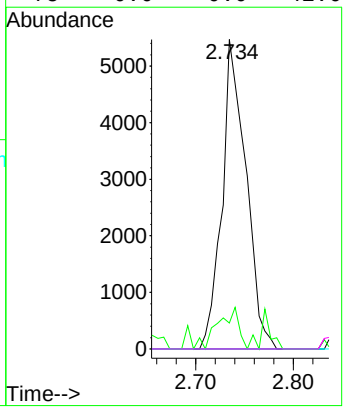


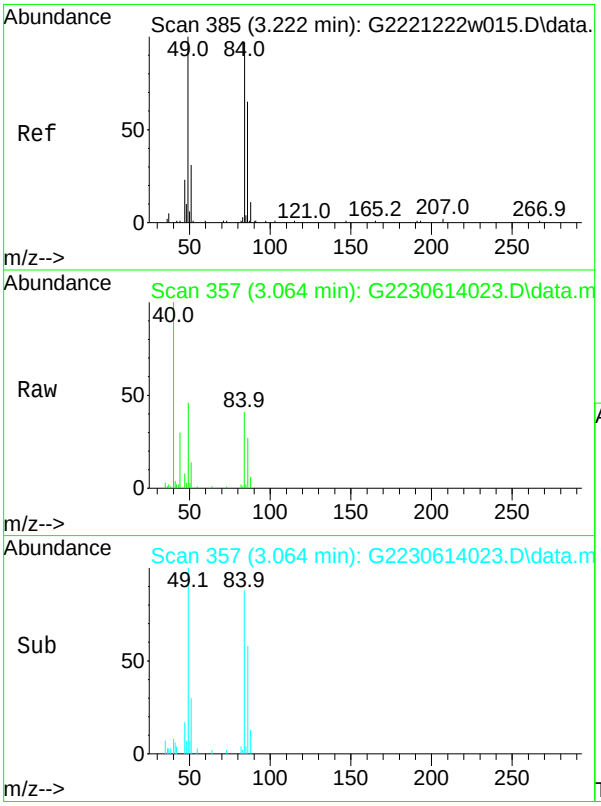


#17
3-Chloro-1-propene
Concen: 0.48 ug/L
RT: 2.740 min Scan# 304
Delta R.T. -0.180 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion: 76 Resp: 92980

Ion	Ratio	Lower	Upper
76	100		
78	0.0	2.4	62.4#
49	0.0	0.0	43.0
75	0.0	0.0	42.6

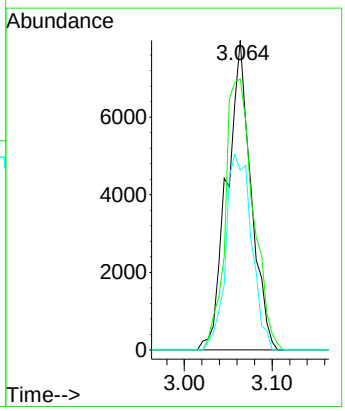


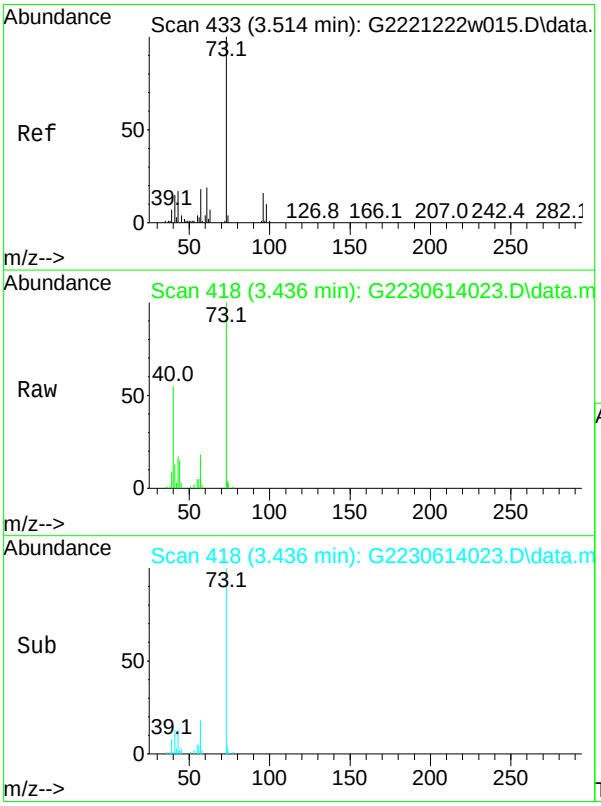


#18
Methylene chloride
Concen: Below Cal
RT: 3.065 min Scan# 357
Delta R.T. 0.003 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion: 49 Resp: 151608

Ion	Ratio	Lower	Upper
49	100		
84	101.5	57.9	117.9
86	68.0	24.9	84.9

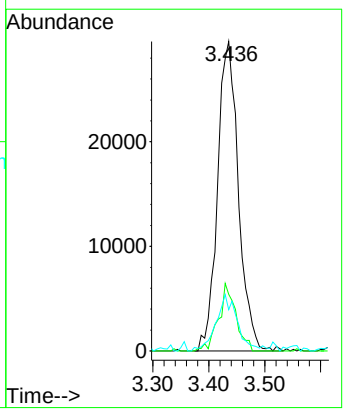


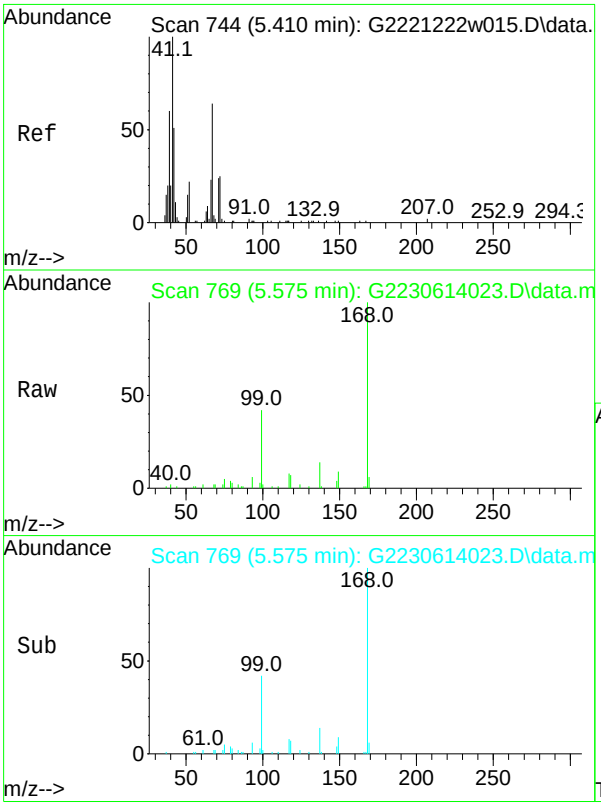


#21
Methyl tert-butyl ether
Concen: Below Cal
RT: 3.437 min Scan# 418
Delta R.T. -0.009 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion: 73 Resp: 768997

Ion	Ratio	Lower	Upper
73	100		
57	17.9	0.0	51.7
41	17.1	0.0	50.6

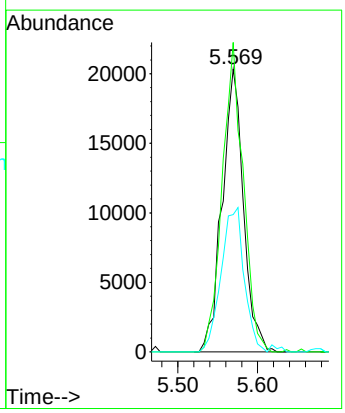


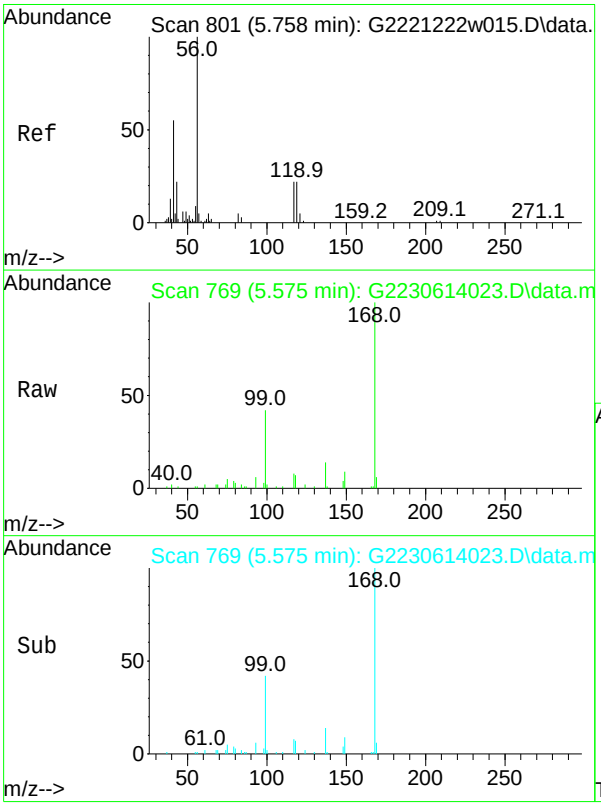


#40
Cyclohexane
Concen: 0.84 ug/L
RT: 5.572 min Scan# 769
Delta R.T. 0.038 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion: 84 Resp: 376984

Ion	Ratio	Lower	Upper
84	100		
69	107.8	6.8	66.8#
56	55.4	79.1	139.1#

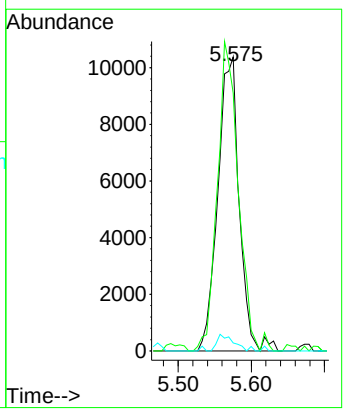


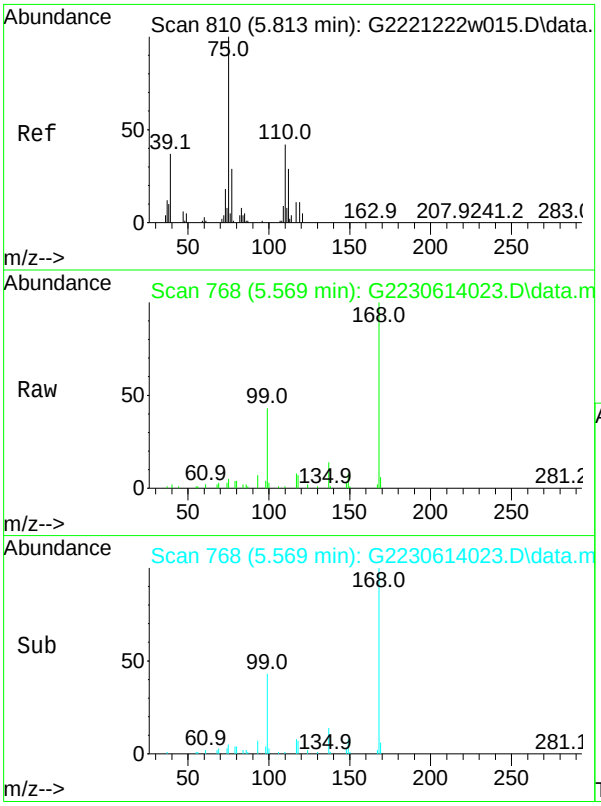


#41
1-Chlorobutane
Concen: 0.41 ug/L
RT: 5.573 min Scan# 769
Delta R.T. -0.057 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion: 56 Resp: 212785

Ion	Ratio	Lower	Upper
56	100		
55	103.6	0.0	41.0#
57	0.0	0.0	35.7

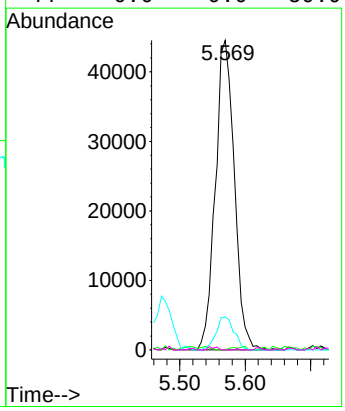


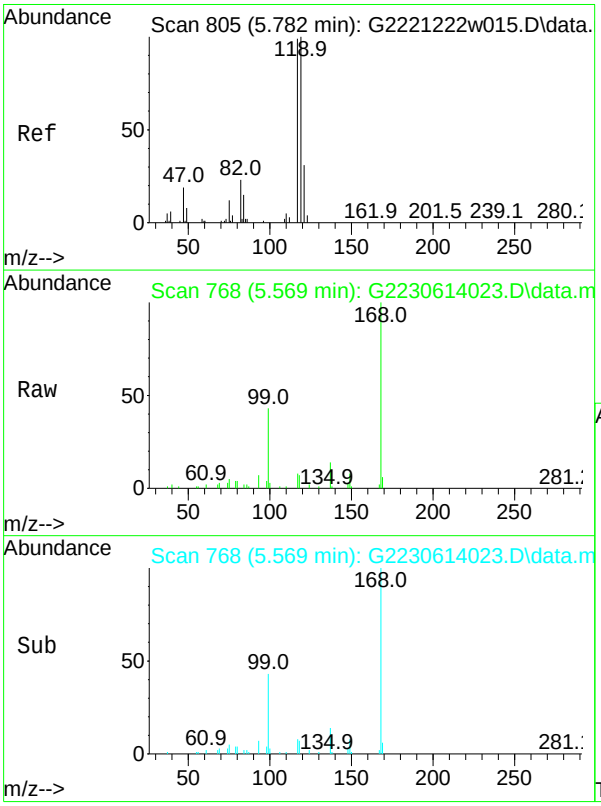


#42
1,1-Dichloropropene
Concen: 2.30 ug/L
RT: 5.571 min Scan# 768
Delta R.T. -0.118 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion: 75 Resp: 896259

Ion	Ratio	Lower	Upper
75	100		
39	0.0	25.8	85.8#
110	10.1	9.1	69.1
77	0.0	0.0	59.9

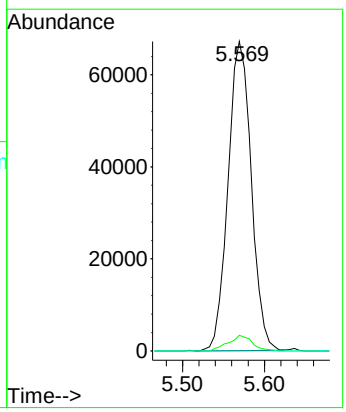


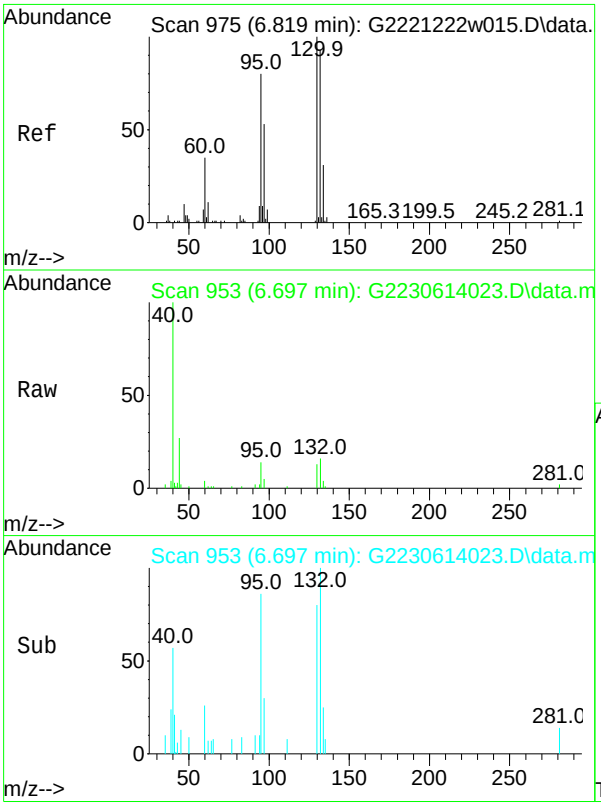


#47
Carbon tetrachloride
Concen: 3.23 ug/L
RT: 5.572 min Scan# 768
Delta R.T. -0.108 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion:117 Resp: 1324787

Ion	Ratio	Lower	Upper
117	100		
119	5.3	66.4	126.4#
121	0.0	0.4	60.4#

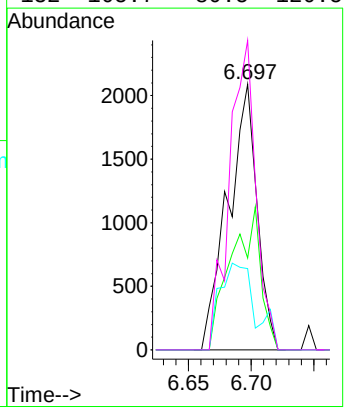


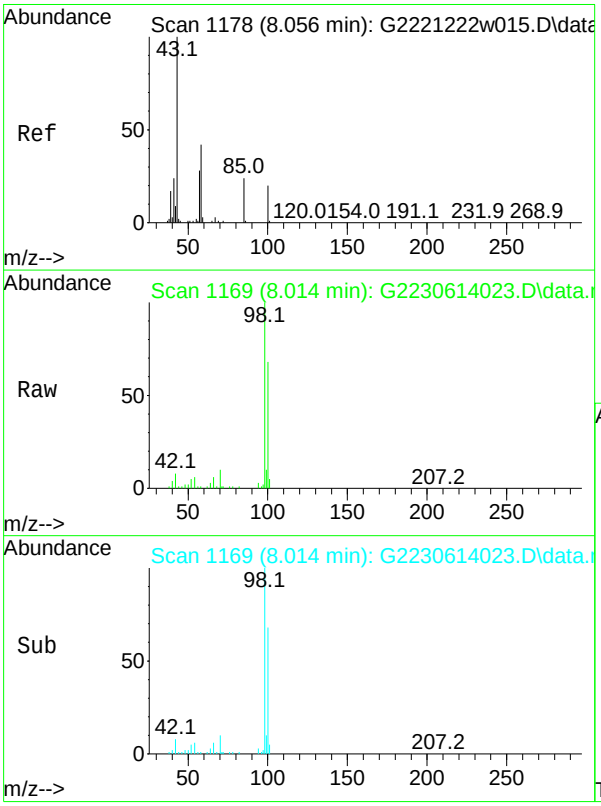


#50
Trichloroethene
Concen: 0.03 ug/L
RT: 6.698 min Scan# 953
Delta R.T. 0.002 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion: 95 Resp: 33675

Ion	Ratio	Lower	Upper
95	100		
97	0.0	35.5	95.5#
60	0.0	14.8	74.8#
132	105.7	80.5	120.5

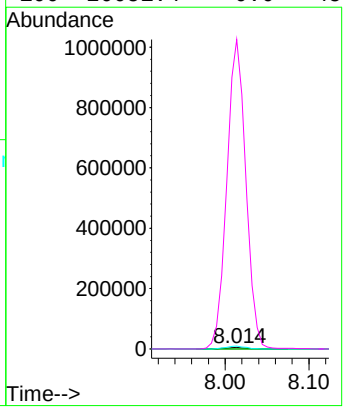


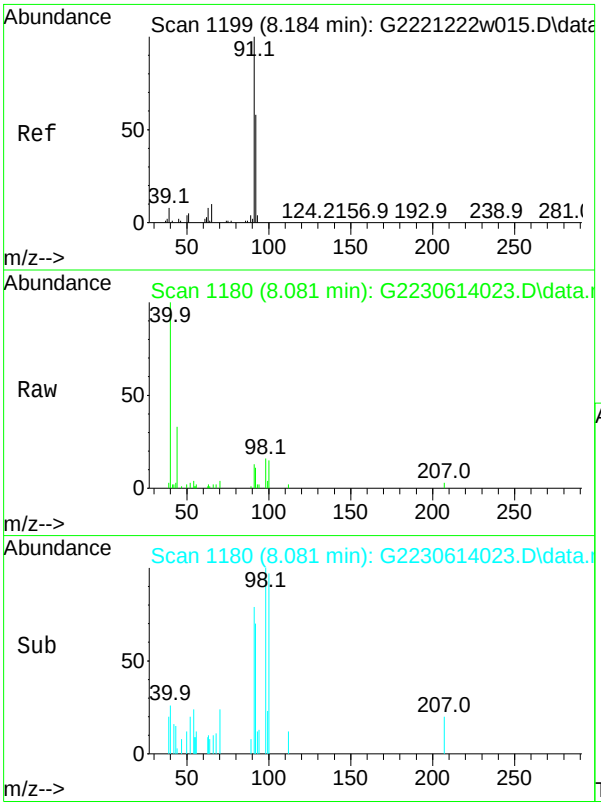


#60
4-Methyl-2-pentanone
Concen: Below Cal
RT: 8.016 min Scan# 1169
Delta R.T. 0.072 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion: 43 Resp: 81417

Ion	Ratio	Lower	Upper
43	100		
85	0.0	0.0	47.7
58	189.1	37.0	37.0#
100	20051.4	0.0	45.2#

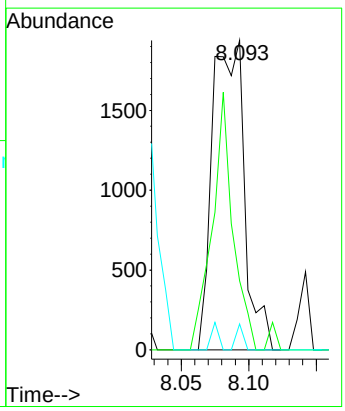


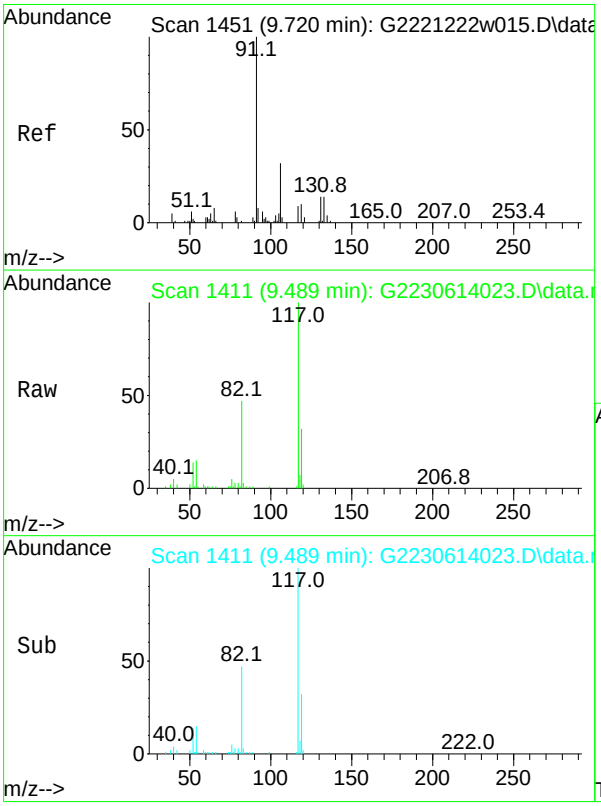


#65
Toluene
Concen: Below Cal
RT: 8.083 min Scan# 1180
Delta R.T. -0.003 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion: 91 Resp: 31874

Ion	Ratio	Lower	Upper
91	100		
92	0.0	27.5	87.5#
65	0.0	0.0	41.4

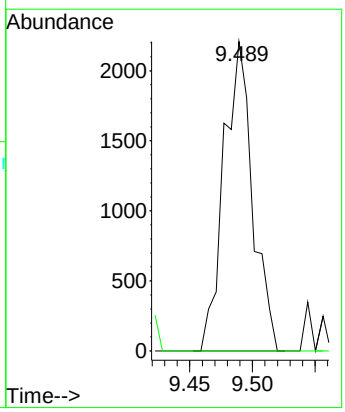


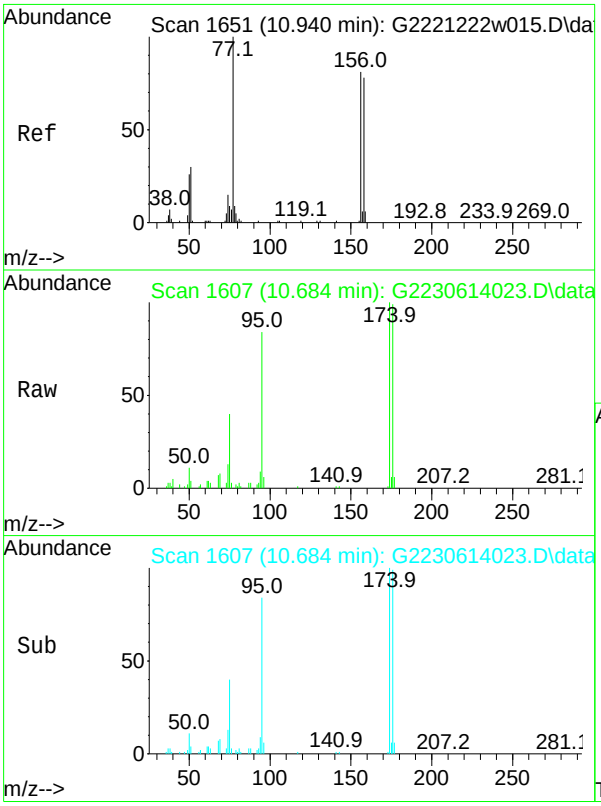


#74
Ethylbenzene
Concen: Below Cal
RT: 9.492 min Scan# 1411
Delta R.T. -0.151 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion: 91 Resp: 35275

Ion	Ratio	Lower	Upper
91	100		
106	0.0	0.8	60.8#

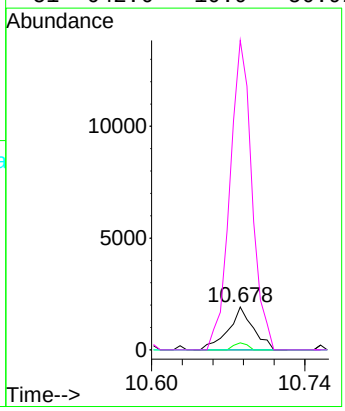


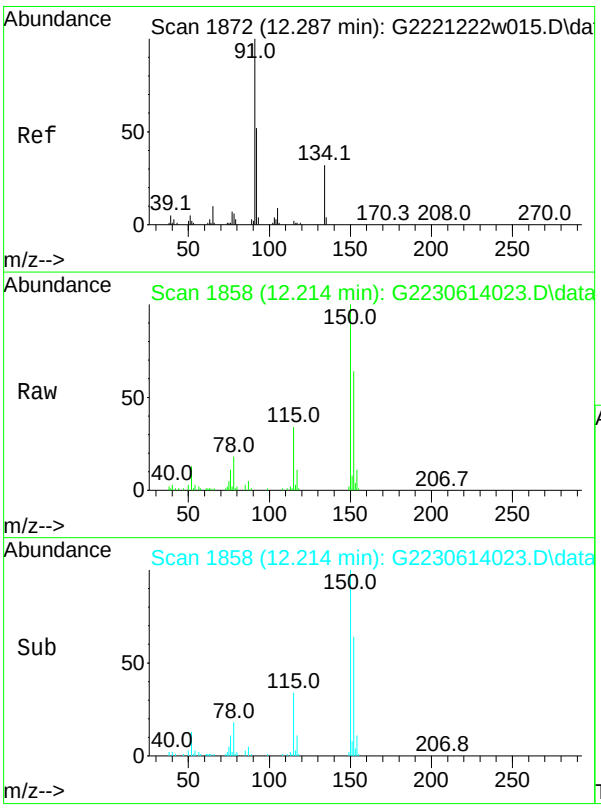


#82
Bromobenzene
Concen: 0.06 ug/L
RT: 10.682 min Scan# 1607
Delta R.T. -0.146 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion: 77 Resp: 30155

Ion	Ratio	Lower	Upper
77	100		
156	0.0	49.1	89.1#
158	0.0	44.8	84.8#
51	642.6	10.9	50.9#

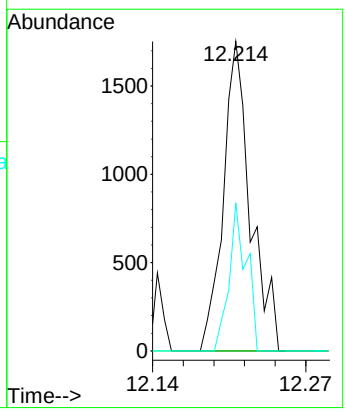




#99
n-Butylbenzene
Concen: Below Cal
RT: 12.217 min Scan# 1858
Delta R.T. -0.014 min
Lab File: G2230614023.D
Acq: 14 Jun 2023 17:39

Tgt Ion: 91 Resp: 28221

Ion	Ratio	Lower	Upper
91	100		
93	0.0	0.0	33.6
134	0.0	0.0	56.6



1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6547WW03

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-12	File ID:	G2230614021.D
Sampled:	06/05/23 11:30	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 16:49
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
630-20-6	1,1,1,2-Tetrachloroethane		0.130	0.400	1.00	U
71-55-6	1,1,1-Trichloroethane		0.175	0.400	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.124	0.400	1.00	U
79-00-5	1,1,2-Trichloroethane		0.166	0.400	1.00	U
75-34-3	1,1-Dichloroethane		0.134	0.400	1.00	U
75-35-4	1,1-Dichloroethene		0.191	0.400	1.00	U
563-58-6	1,1-Dichloropropene		0.140	0.400	1.00	U
87-61-6	1,2,3-Trichlorobenzene		0.204	0.400	1.00	U
96-18-4	1,2,3-Trichloropropane		0.183	0.400	1.00	U
120-82-1	1,2,4-Trichlorobenzene		0.205	0.600	1.20	U
95-63-6	1,2,4-Trimethylbenzene		0.132	0.400	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane		0.260	1.00	2.00	U
106-93-4	1,2-Dibromoethane		0.106	0.400	1.00	U
95-50-1	1,2-Dichlorobenzene		0.126	0.400	1.00	U
107-06-2	1,2-Dichloroethane		0.212	0.600	1.20	U
78-87-5	1,2-Dichloropropane		0.205	0.600	1.20	U
108-67-8	1,3,5-Trimethylbenzene		0.100	0.400	1.00	U
541-73-1	1,3-Dichlorobenzene		0.145	0.400	1.00	U
142-28-9	1,3-Dichloropropane		0.136	0.400	1.00	U
106-46-7	1,4-Dichlorobenzene		0.184	0.400	1.00	U
594-20-7	2,2-Dichloropropane		0.184	0.400	1.00	U
78-93-3	2-Butanone		0.660	1.40	3.50	U
95-49-8	2-Chlorotoluene		0.147	0.400	1.00	U
591-78-6	2-Hexanone		0.143	1.40	3.50	U
106-43-4	4-Chlorotoluene		0.184	0.400	1.00	U
99-87-6	4-Isopropyltoluene		0.140	0.400	1.00	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6547WW03

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-12	File ID:	G2230614021.D
Sampled:	06/05/23 11:30	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 16:49
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
108-10-1	4-Methyl-2-pentanone		0.270	1.40	3.50	U
67-64-1	Acetone		1.04	4.00	8.00	U
71-43-2	Benzene		0.101	0.400	1.00	U
108-86-1	Bromobenzene		0.170	0.400	1.00	U
74-97-5	Bromochloromethane		0.134	0.400	1.00	U
75-27-4	Bromodichloromethane		0.106	0.400	1.00	U
75-25-2	Bromoform		0.206	0.400	1.00	U
74-83-9	Bromomethane		0.320	1.00	2.00	U
75-15-0	Carbon disulfide		0.280	1.00	2.00	U
56-23-5	Carbon tetrachloride		0.169	0.400	1.00	U
108-90-7	Chlorobenzene		0.130	0.400	1.00	U
75-00-3	Chloroethane		0.311	0.400	1.00	U
67-66-3	Chloroform		0.203	0.600	1.20	U
74-87-3	Chloromethane		0.384	1.00	2.00	U
156-59-2	cis-1,2-Dichloroethene		0.205	0.600	1.20	U
10061-01-5	cis-1,3-Dichloropropene		0.117	0.400	1.00	U
124-48-1	Dibromochloromethane		0.152	0.400	1.00	U
74-95-3	Dibromomethane		0.163	0.400	1.00	U
75-71-8	Dichlorodifluoromethane		0.259	1.00	2.00	U
100-41-4	Ethylbenzene		0.0600	0.200	0.400	U
87-68-3	Hexachlorobutadiene		0.200	0.400	1.00	U
98-82-8	Isopropylbenzene		0.110	0.400	1.00	U
179601-23-1	m,p-Xylene		0.178	0.800	2.00	U
1634-04-4	Methyl tert-butyl ether		0.106	0.400	1.00	U
75-09-2	Methylene chloride		0.447	1.00	2.00	U
104-51-8	n-Butylbenzene		0.260	1.00	2.00	U

1 - FORM I
ANALYSIS DATA SHEET

SW8260B/D

6547WW03

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Groundwater	Laboratory ID:	23F0196-12	File ID:	G2230614021.D
Sampled:	06/05/23 11:30	Prepared:	06/14/23 12:08	Analyzed:	06/14/23 16:49
		Preparation:	5030_W	Dilution:	2
Initial/Final:	5 ml / 5 ml				
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
103-65-1	n-Propylbenzene		0.126	0.400	1.00	U
91-20-3	Naphthalene		0.140	0.400	1.00	U
95-47-6	o-Xylene		0.0832	0.400	1.00	U
135-98-8	sec-Butylbenzene		0.120	0.400	1.00	U
100-42-5	Styrene		0.0906	0.200	0.400	U
98-06-6	tert-Butylbenzene		0.0906	0.400	1.00	U
127-18-4	Tetrachloroethene		0.357	1.00	2.00	Q, U
108-88-3	Toluene		0.114	0.400	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.171	0.400	1.00	U
10061-02-6	trans-1,3-Dichloropropene		0.117	0.400	1.00	U
79-01-6	Trichloroethene		0.156	0.400	1.00	U
75-69-4	Trichlorofluoromethane		0.101	0.400	1.00	U
75-01-4	Vinyl chloride		0.258	1.00	2.00	U

Italicized = secondary result

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614021.D
Acq On : 14 Jun 2023 16:49
Operator : PO1/MP3
Sample : 23F0196-12
Misc : 2
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 15 09:48:10 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

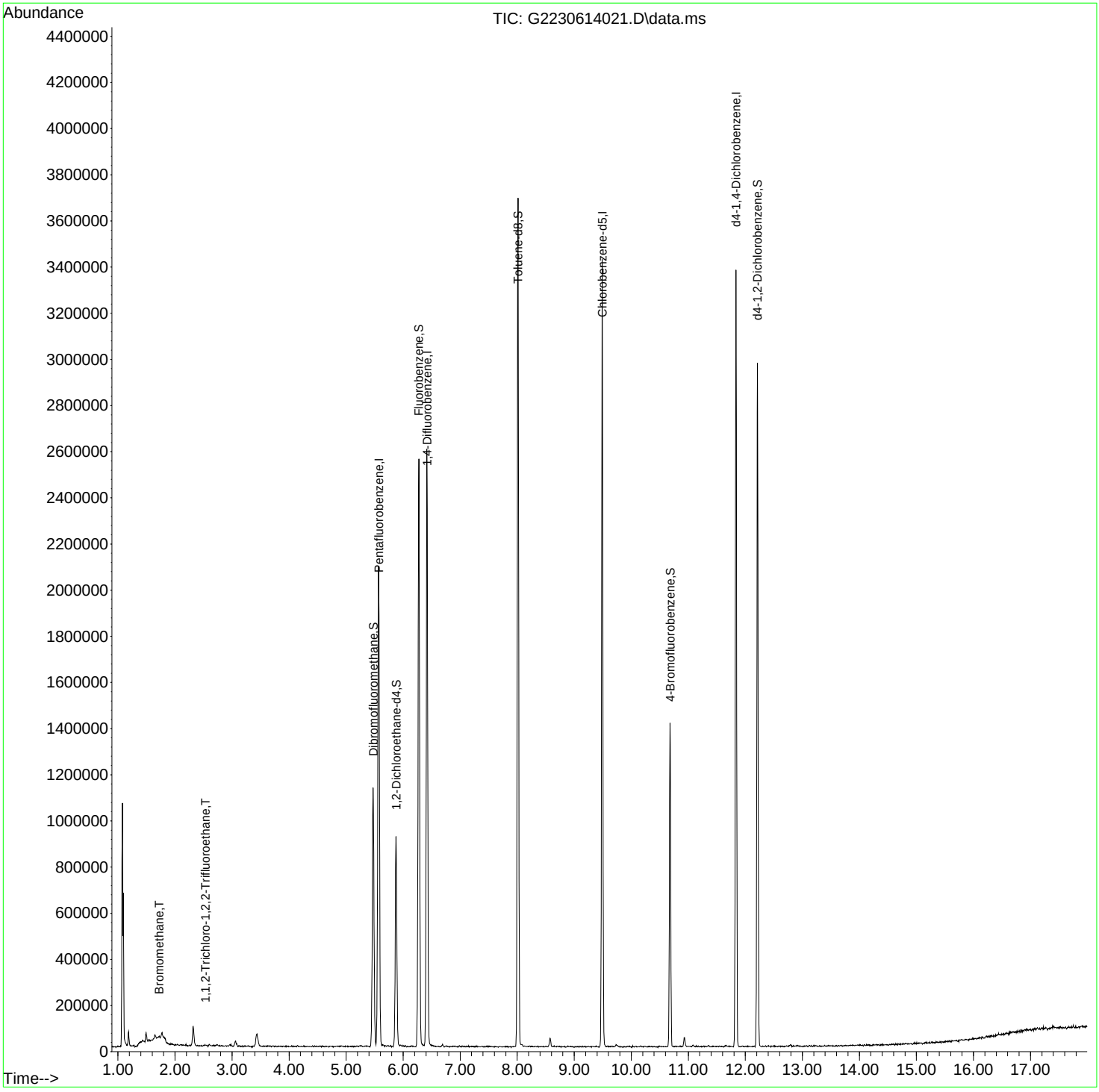
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.573	168	16576929	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.421	114	22409843	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	19722812	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.839	152	9469380	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.476	111	7083171	19.42	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.10%			
43) 1,2-Dichloroethane-d4	5.877	65	6420800	17.81	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 89.05%			
49) Fluorobenzene	6.277	96	24566228	19.24	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.20%			
64) Toluene-d8	8.015	98	24183994	19.45	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.25%			
81) 4-Bromofluorobenzene	10.683	174	4342043	9.71	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 97.10%			
97) d4-1,2-Dichlorobenzene	12.216	152	8408498	20.65	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 103.25%			
Target Compounds						Qvalue
5) Bromomethane	1.722	94	58734m	0.01	ug/L	
11) 1,1,2-Trichloro-1,2,2-...	2.533	101	18802m	0.07	ug/L	
18) Methylene chloride	3.061	49	117264	Below Cal		83
21) Methyl tert-butyl ether	3.436	73	698161	Below Cal		95
65) Toluene	8.085	91	26912	Below Cal	#	30

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614021.D
Acq On : 14 Jun 2023 16:49
Operator : PO1/MP3
Sample : 23F0196-12
Misc : 2
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 15 09:48:10 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G



Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614021.D
Acq On : 14 Jun 2023 16:49
Operator : PO1/MP3
Sample : 23F0196-12
Misc : 2
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 15 09:48:10 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

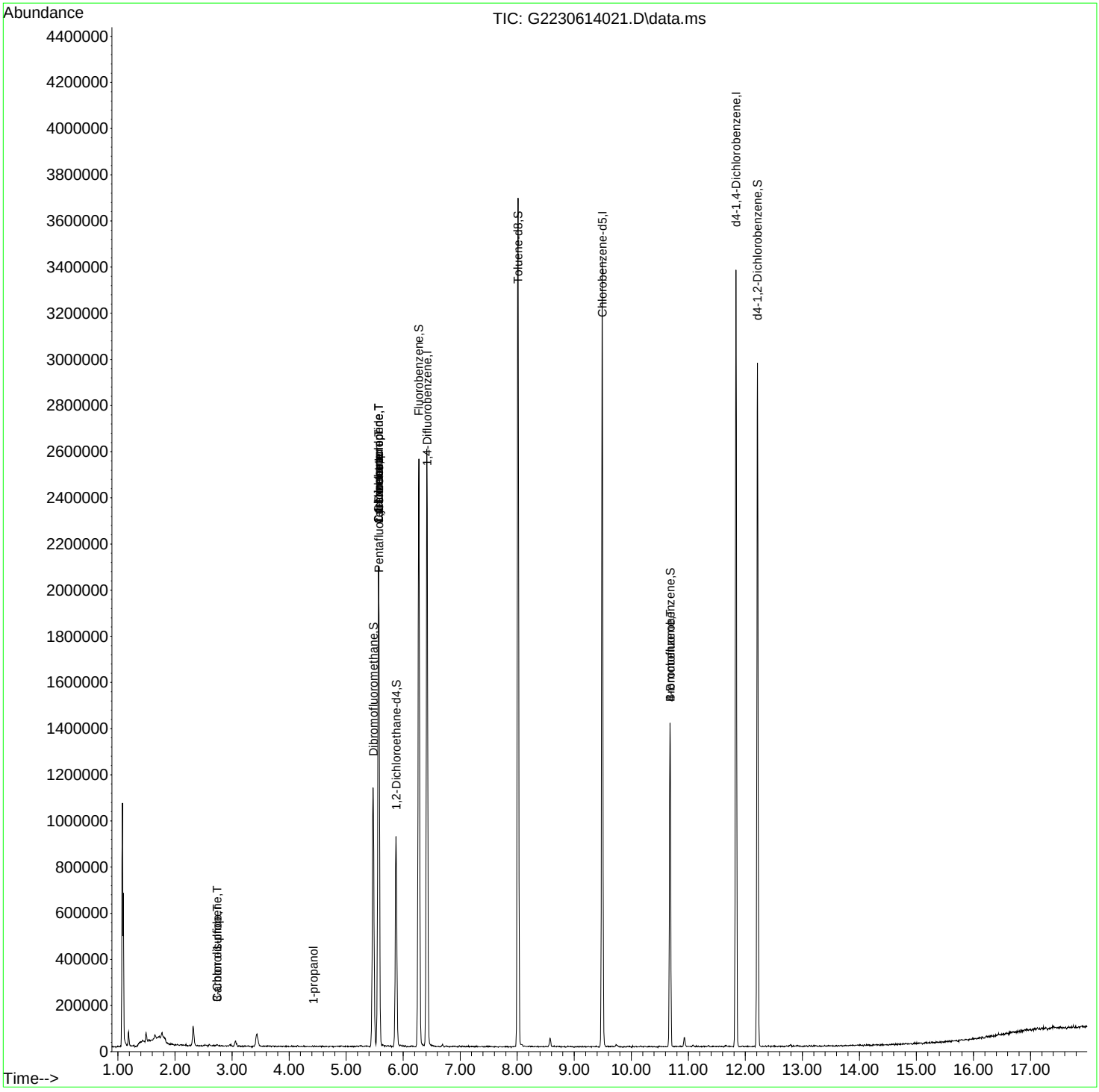
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.573	168	16576929	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.421	114	22409843	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	19722812	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.839	152	9469380	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.476	111	7083171	19.42	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.10%			
43) 1,2-Dichloroethane-d4	5.877	65	6420800	17.81	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 89.05%			
49) Fluorobenzene	6.277	96	24566228	19.24	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.20%			
64) Toluene-d8	8.015	98	24183994	19.45	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.25%			
81) 4-Bromofluorobenzene	10.683	174	4342043	9.71	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 97.10%			
97) d4-1,2-Dichlorobenzene	12.216	152	8408498	20.65	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 103.25%			
Target Compounds						Qvalue
12) Acetone	2.602	43	79108	Below Cal	#	45
14) Carbon disulfide	2.741	76	102319	0.04	ug/L #	74
17) 3-Chloro-1-propene	2.741	76	102319	0.54	ug/L #	53
18) Methylene chloride	3.061	49	117264	Below Cal		83
21) Methyl tert-butyl ether	3.436	73	698161	Below Cal		95
26) 1-propanol	4.431	59	758	0.44	ug/L #	100
40) Cyclohexane	5.572	84	355449	0.80	ug/L #	27
41) 1-Chlorobutane	5.571	56	197605	0.38	ug/L #	1
42) 1,1-Dichloropropene	5.570	75	846880	2.18	ug/L #	38
47) Carbon tetrachloride	5.572	117	1325007	3.28	ug/L #	16
60) 4-Methyl-2-pentanone	8.008	43	68575	Below Cal	#	1
65) Toluene	8.085	91	26912	Below Cal	#	30
74) Ethylbenzene	9.489	91	46575	Below Cal	#	44
82) Bromobenzene	10.686	77	26958	0.05	ug/L #	1

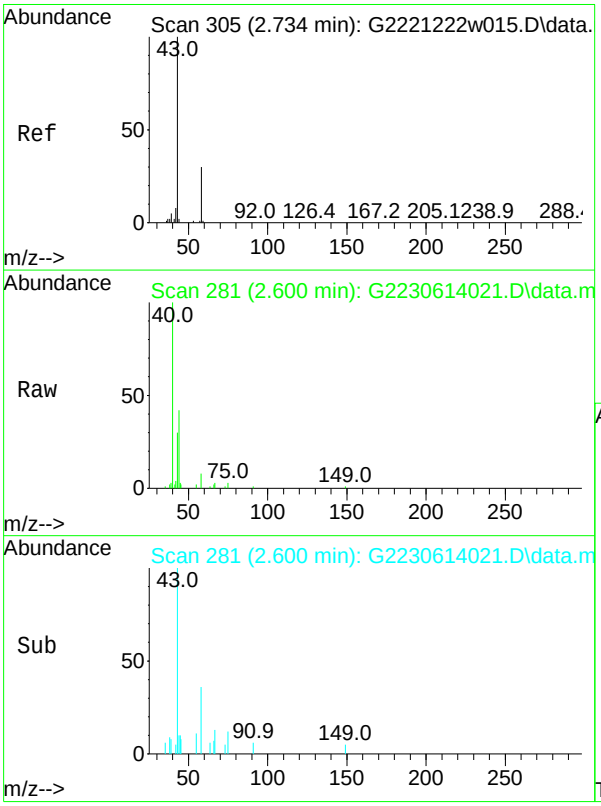
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614021.D
Acq On : 14 Jun 2023 16:49
Operator : PO1/MP3
Sample : 23F0196-12
Misc : 2
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 15 09:48:10 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

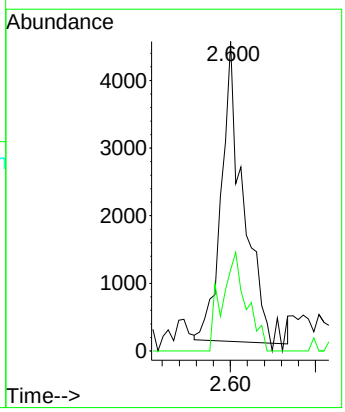


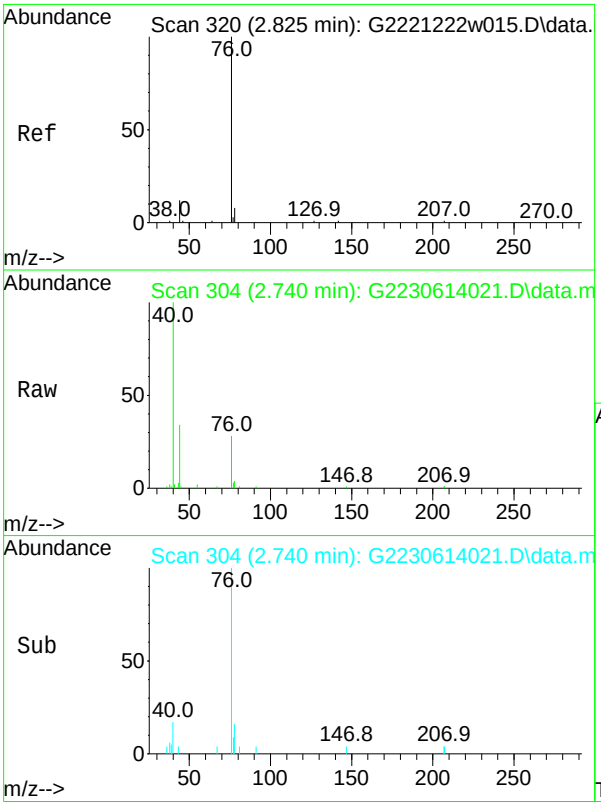


#12
Acetone
Concen: Below Cal
RT: 2.602 min Scan# 281
Delta R.T. -0.006 min
Lab File: G2230614021.D
Acq: 14 Jun 2023 16:49

Tgt Ion: 43 Resp: 79108

Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	59.7

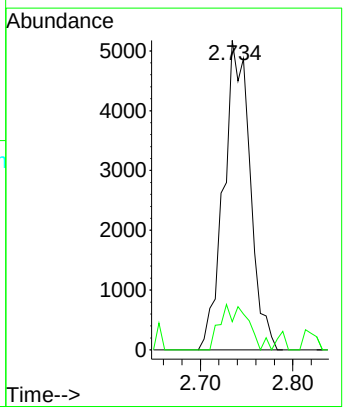


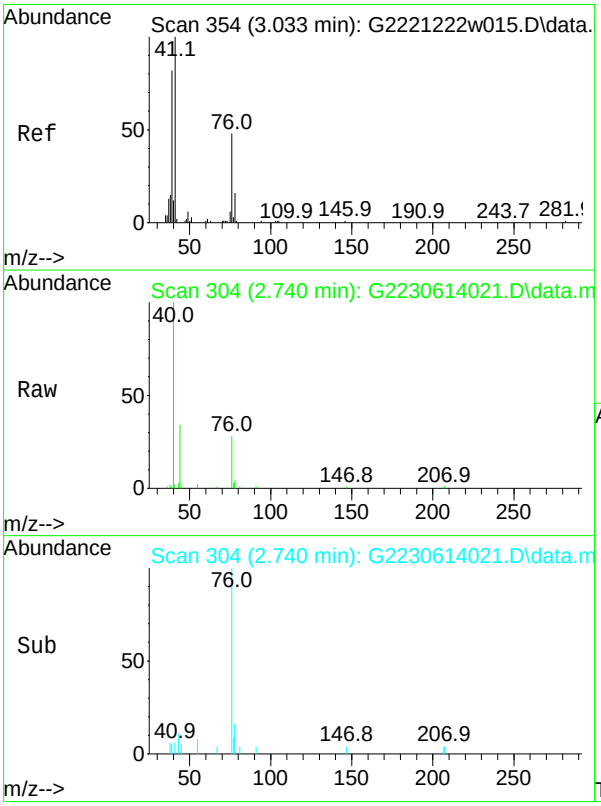


#14
Carbon disulfide
Concen: 0.04 ug/L
RT: 2.741 min Scan# 304
Delta R.T. 0.002 min
Lab File: G2230614021.D
Acq: 14 Jun 2023 16:49

Tgt Ion: 76 Resp: 102319

Ion	Ratio	Lower	Upper
76	100		
78	0.0	0.0	39.3

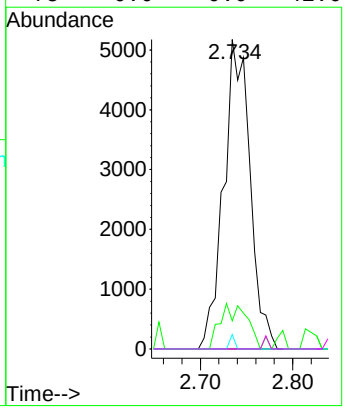


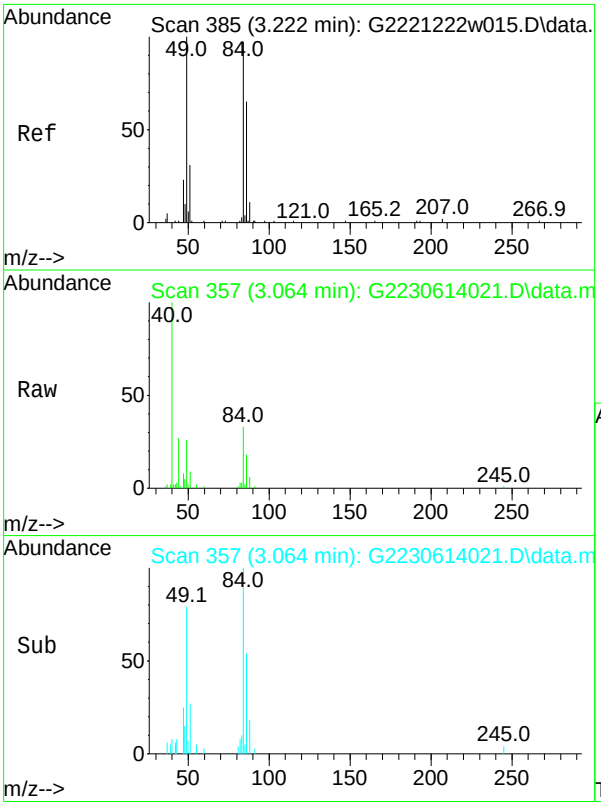


#17
3-Chloro-1-propene
Concen: 0.54 ug/L
RT: 2.741 min Scan# 304
Delta R.T. -0.179 min
Lab File: G2230614021.D
Acq: 14 Jun 2023 16:49

Tgt Ion: 76 Resp: 102319

Ion	Ratio	Lower	Upper
76	100		
78	0.0	2.4	62.4#
49	0.0	0.0	43.0
75	0.0	0.0	42.6

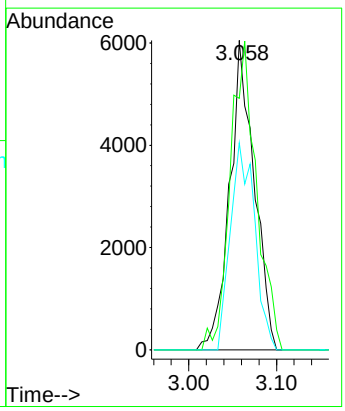


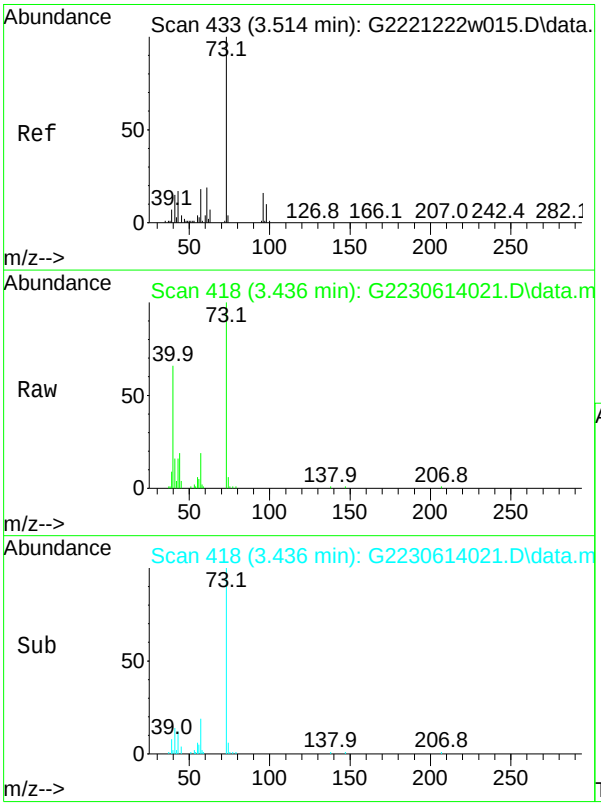


#18
Methylene chloride
Concen: Below Cal
RT: 3.061 min Scan# 357
Delta R.T. -0.001 min
Lab File: G2230614021.D
Acq: 14 Jun 2023 16:49

Tgt Ion: 49 Resp: 117264

Ion	Ratio	Lower	Upper
49	100		
84	104.0	57.9	117.9
86	66.3	24.9	84.9

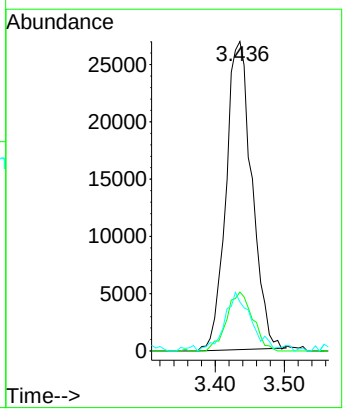


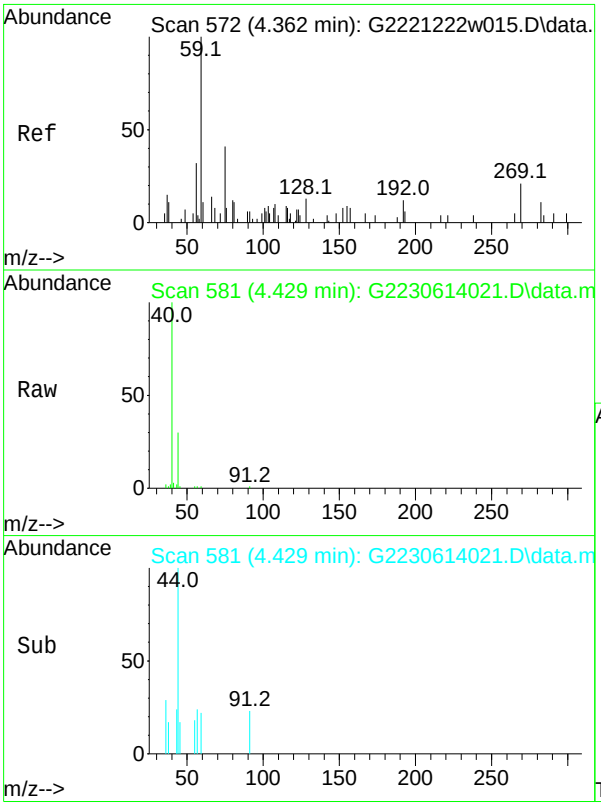


#21
Methyl tert-butyl ether
Concen: Below Cal
RT: 3.436 min Scan# 418
Delta R.T. -0.010 min
Lab File: G2230614021.D
Acq: 14 Jun 2023 16:49

Tgt Ion: 73 Resp: 698161

Ion	Ratio	Lower	Upper
73	100		
57	19.4	0.0	51.7
41	18.3	0.0	50.6

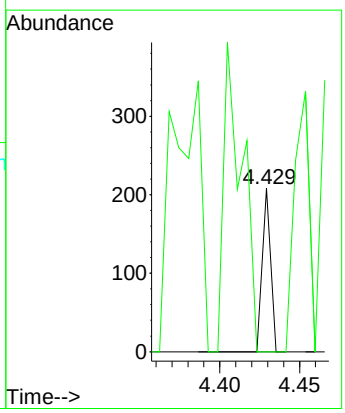


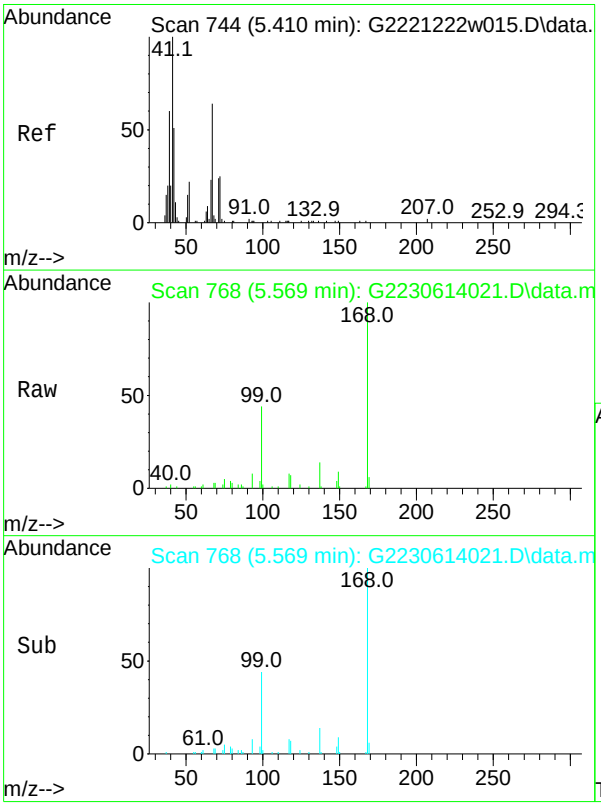


#26
1-propanol
Concen: 0.44 ug/L
RT: 4.431 min Scan# 581
Delta R.T. 0.142 min
Lab File: G2230614021.D
Acq: 14 Jun 2023 16:49

Tgt Ion: 59 Resp: 758

Ion	Ratio	Lower	Upper
59	100		
42	0.0	0.0	50.0

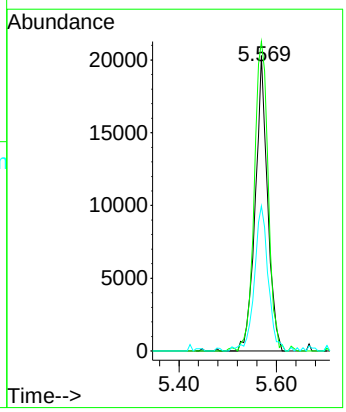


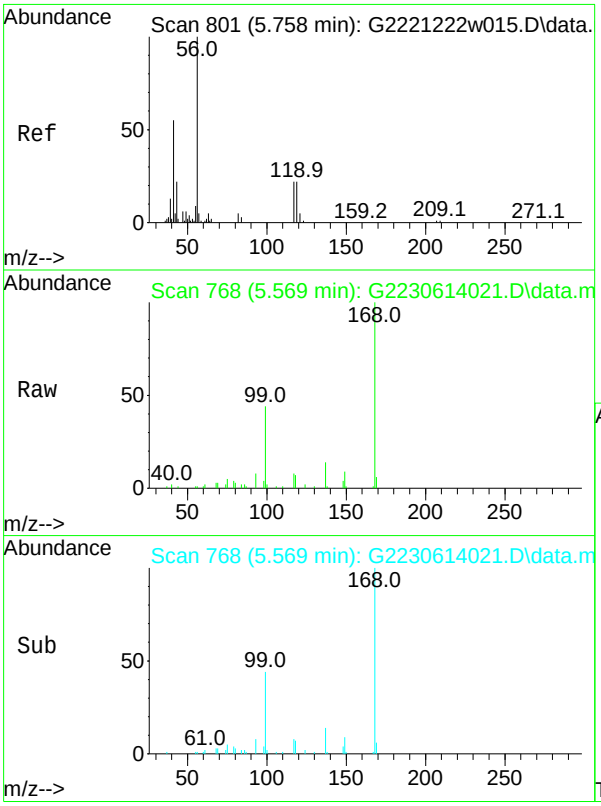


#40
Cyclohexane
Concen: 0.80 ug/L
RT: 5.572 min Scan# 768
Delta R.T. 0.038 min
Lab File: G2230614021.D
Acq: 14 Jun 2023 16:49

Tgt Ion: 84 Resp: 355449

Ion	Ratio	Lower	Upper
84	100		
69	118.0	6.8	66.8#
56	54.9	79.1	139.1#

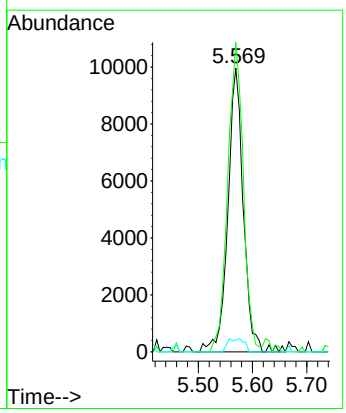


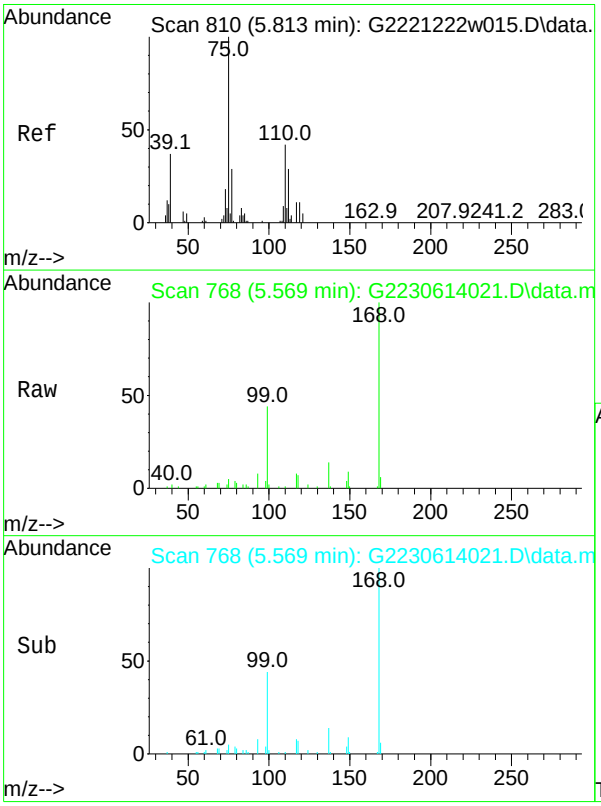


#41
1-Chlorobutane
Concen: 0.38 ug/L
RT: 5.571 min Scan# 768
Delta R.T. -0.059 min
Lab File: G2230614021.D
Acq: 14 Jun 2023 16:49

Tgt Ion: 56 Resp: 197605

Ion	Ratio	Lower	Upper
56	100		
55	110.0	0.0	41.0#
57	0.0	0.0	35.7

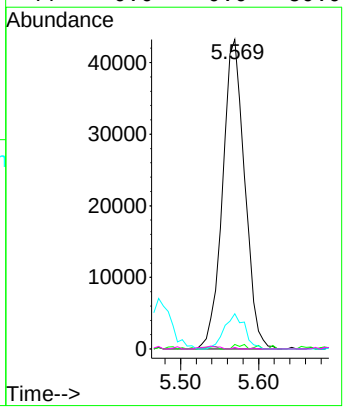


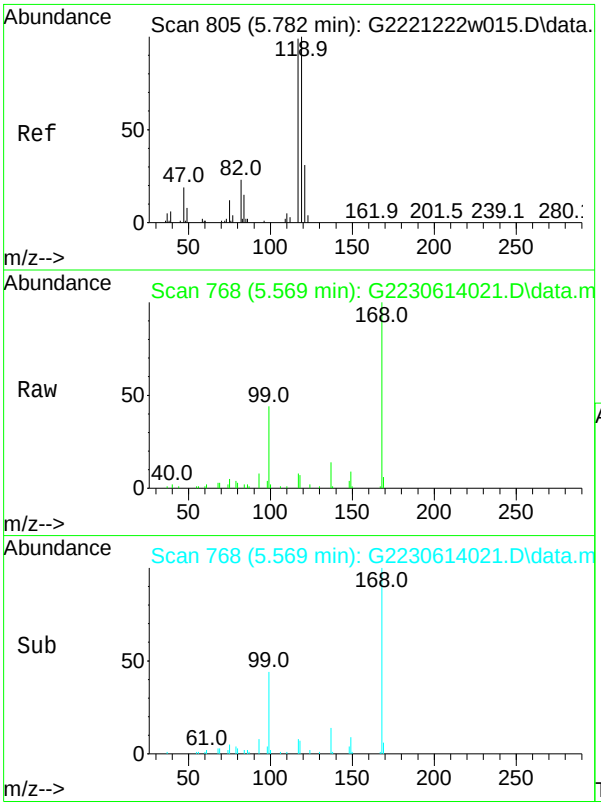


#42
1,1-Dichloropropene
Concen: 2.18 ug/L
RT: 5.570 min Scan# 768
Delta R.T. -0.119 min
Lab File: G2230614021.D
Acq: 14 Jun 2023 16:49

Tgt Ion: 75 Resp: 846880

Ion	Ratio	Lower	Upper
75	100		
39	0.0	25.8	85.8#
110	10.6	9.1	69.1
77	0.0	0.0	59.9

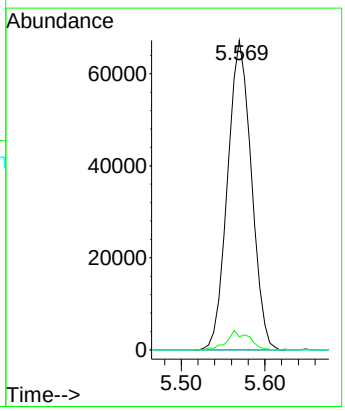


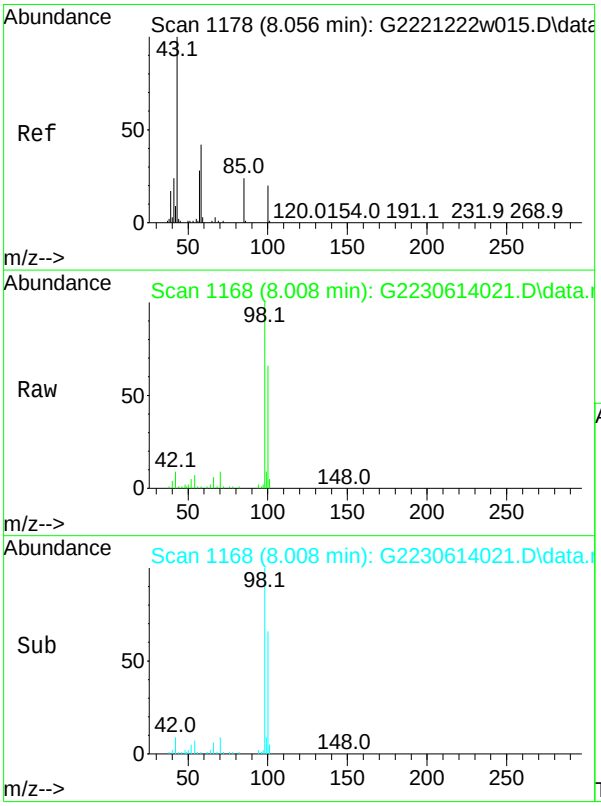


#47
Carbon tetrachloride
Concen: 3.28 ug/L
RT: 5.572 min Scan# 768
Delta R.T. -0.108 min
Lab File: G2230614021.D
Acq: 14 Jun 2023 16:49

Tgt Ion:117 Resp: 1325007

Ion	Ratio	Lower	Upper
117	100		
119	5.8	66.4	126.4#
121	0.0	0.4	60.4#

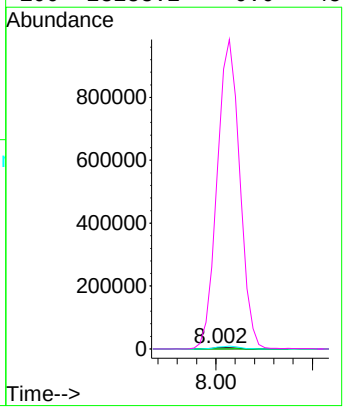


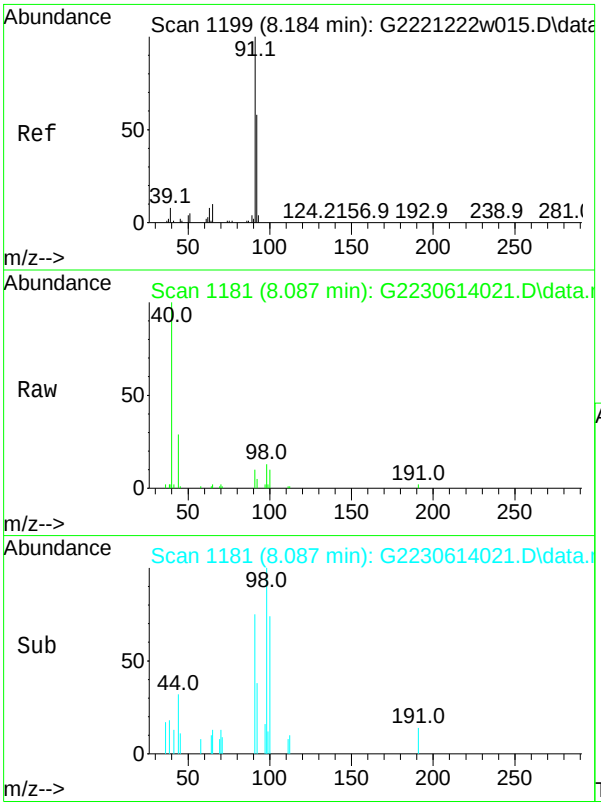


#60
4-Methyl-2-pentanone
Concen: Below Cal
RT: 8.008 min Scan# 1168
Delta R.T. 0.064 min
Lab File: G2230614021.D
Acq: 14 Jun 2023 16:49

Tgt Ion: 43 Resp: 68575

Ion	Ratio	Lower	Upper
43	100		
85	0.0	0.0	47.7
58	211.5	37.0	37.0#
100	23283.2	0.0	45.2#

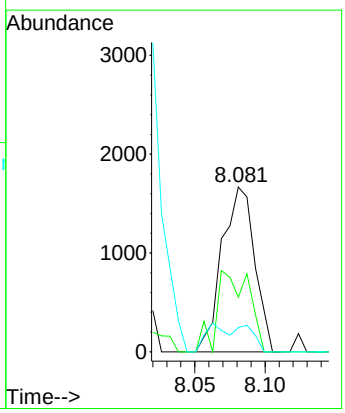


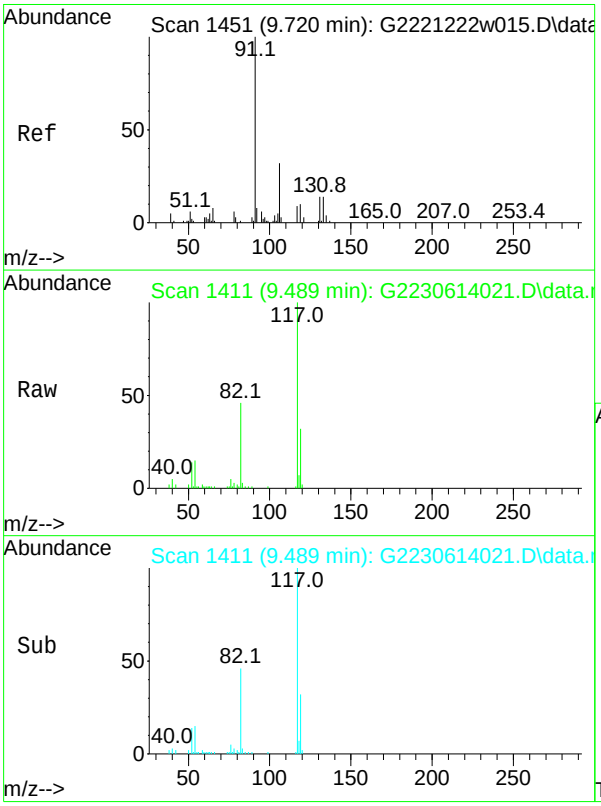


#65
Toluene
Concen: Below Cal
RT: 8.085 min Scan# 1181
Delta R.T. -0.001 min
Lab File: G2230614021.D
Acq: 14 Jun 2023 16:49

Tgt Ion: 91 Resp: 26912

Ion	Ratio	Lower	Upper
91	100		
92	0.0	27.5	87.5#
65	0.0	0.0	41.4

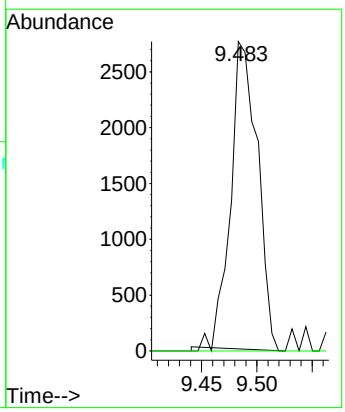


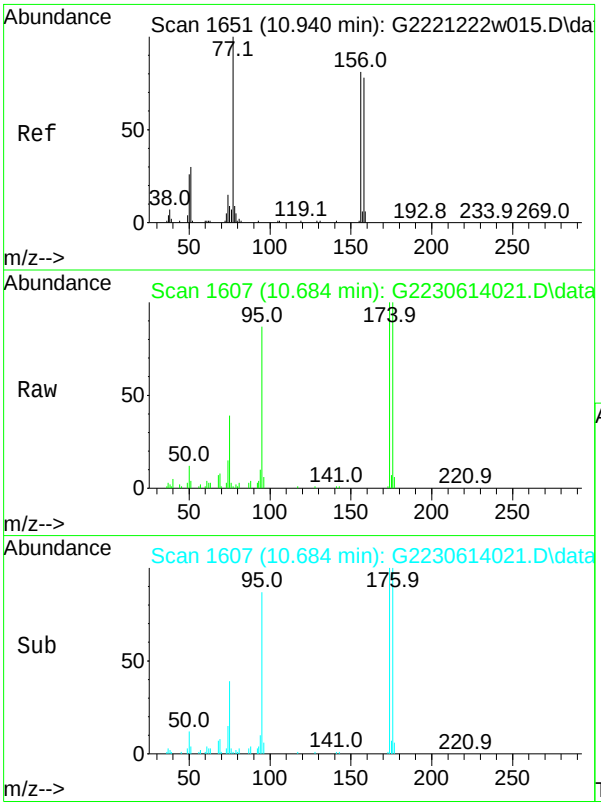


#74
Ethylbenzene
Concen: Below Cal
RT: 9.489 min Scan# 1411
Delta R.T. -0.154 min
Lab File: G2230614021.D
Acq: 14 Jun 2023 16:49

Tgt Ion: 91 Resp: 46575

Ion	Ratio	Lower	Upper
91	100		
106	0.0	0.8	60.8#

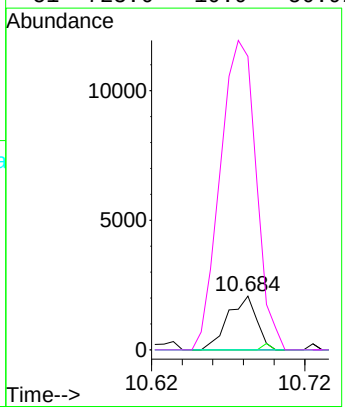




#82
Bromobenzene
Concen: 0.05 ug/L
RT: 10.686 min Scan# 1607
Delta R.T. -0.142 min
Lab File: G2230614021.D
Acq: 14 Jun 2023 16:49

Tgt Ion: 77 Resp: 26958

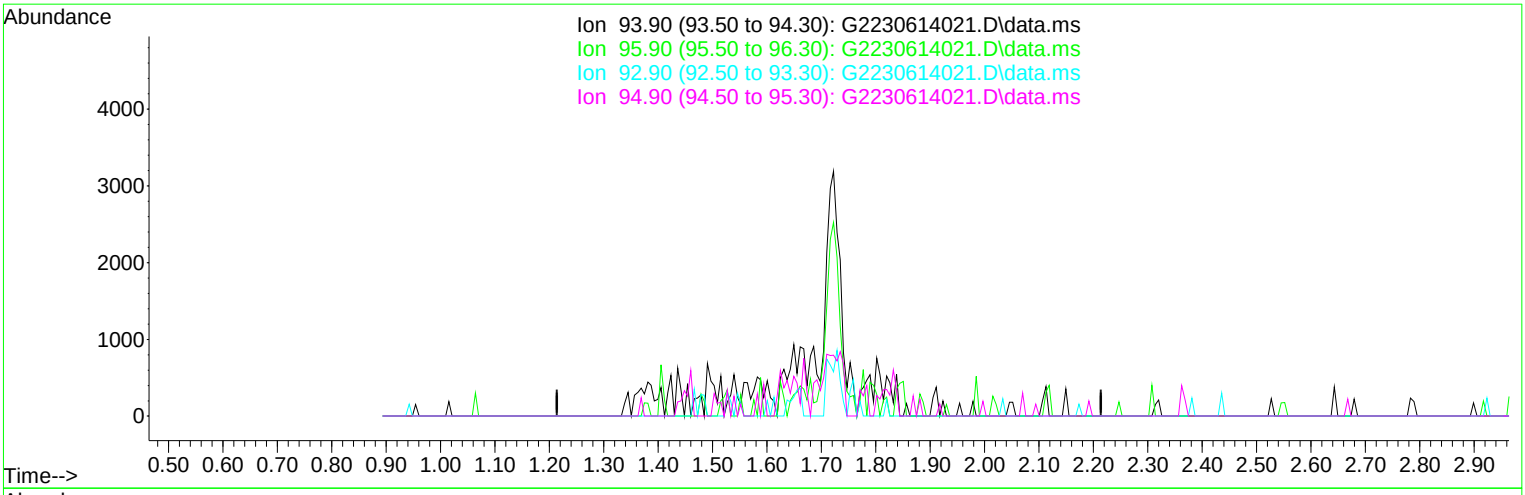
Ion	Ratio	Lower	Upper
77	100		
156	0.0	49.1	89.1#
158	0.0	44.8	84.8#
51	723.6	10.9	50.9#

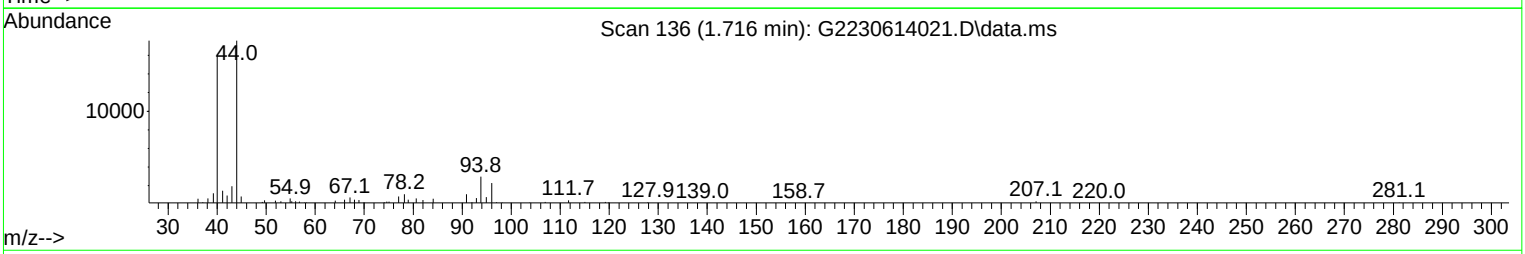


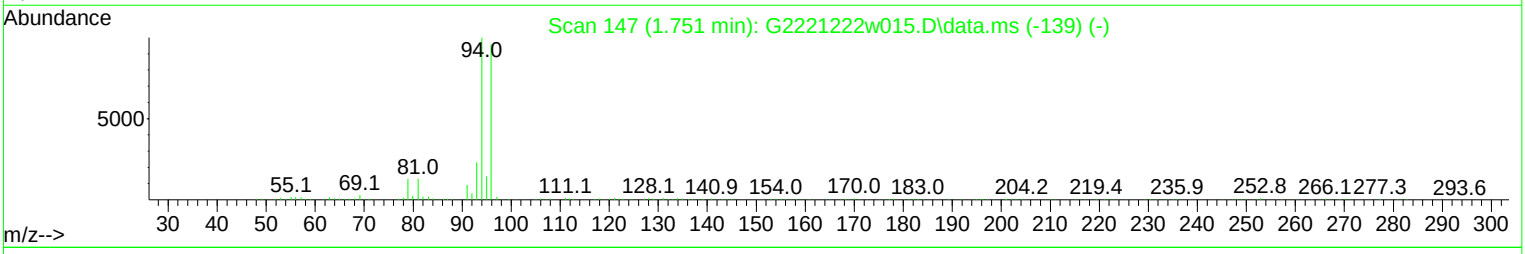
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614021.D
Acq On : 14 Jun 2023 16:49
Operator : PO1/MP3
Sample : 23F0196-12
Misc : 2
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 15 09:48:10 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614021.D\data.ms

(5) Bromomethane (T)

1.714min (-1.714) 0.00 ug/L

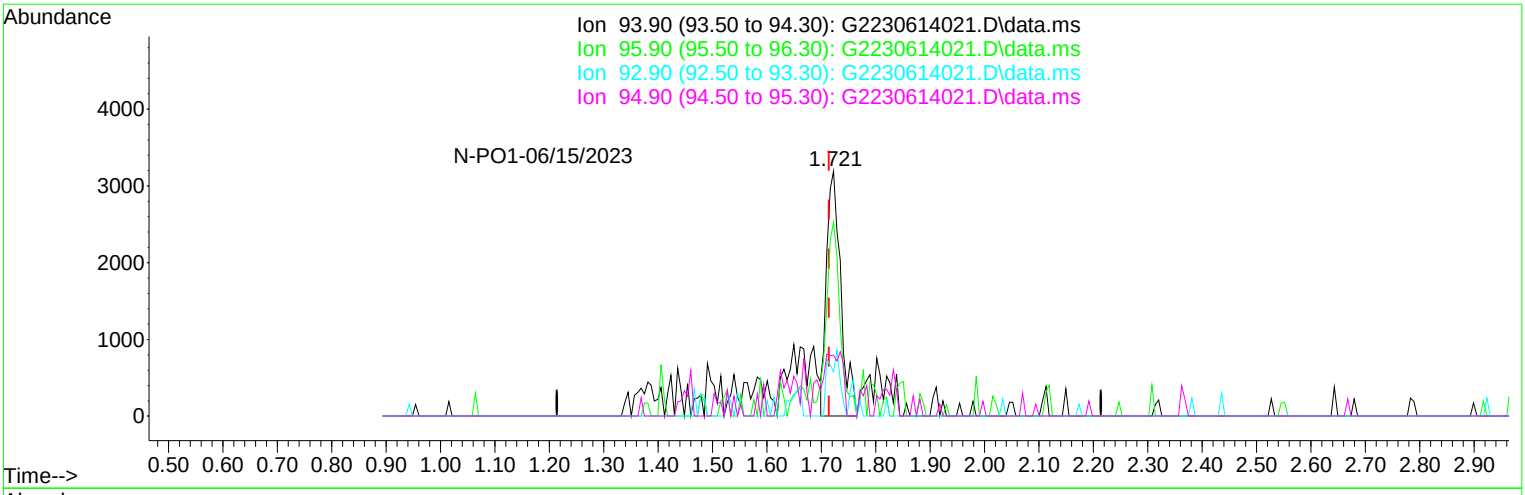
response 0

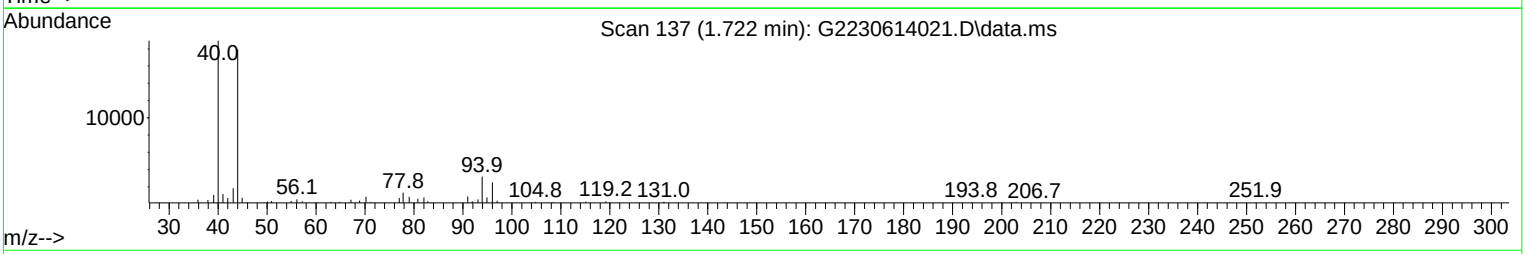
Ion	Exp%	Act%
93.90	100.00	0.00
95.90	95.60	0.00#
92.90	19.50	0.00
94.90	13.40	0.00

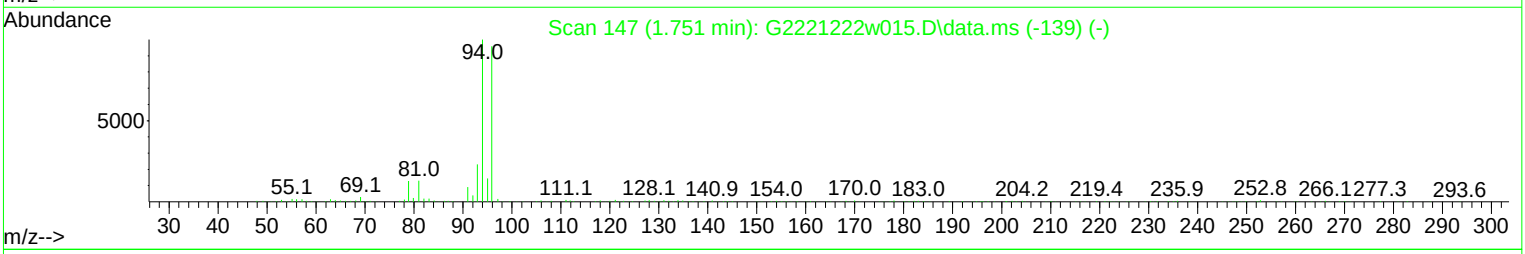
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614021.D
Acq On : 14 Jun 2023 16:49
Operator : PO1/MP3
Sample : 23F0196-12
Misc : 2
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 15 09:48:10 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614021.D\data.ms

(5) Bromomethane (T)

1.722min (+ 0.008) 0.01 ug/L m

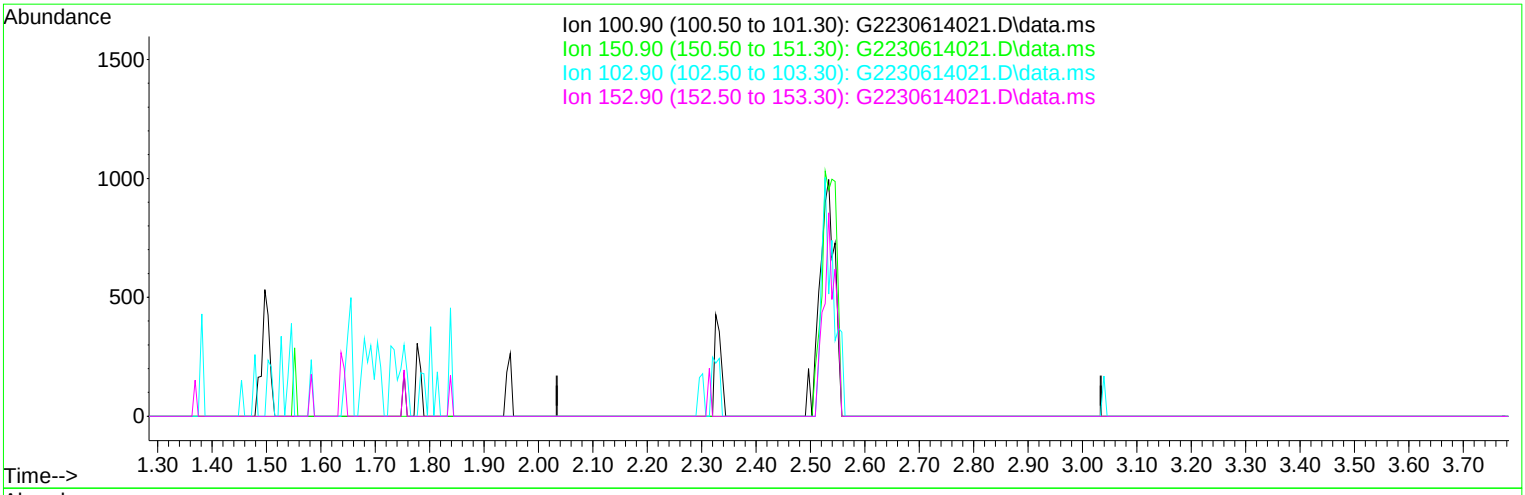
response 58734

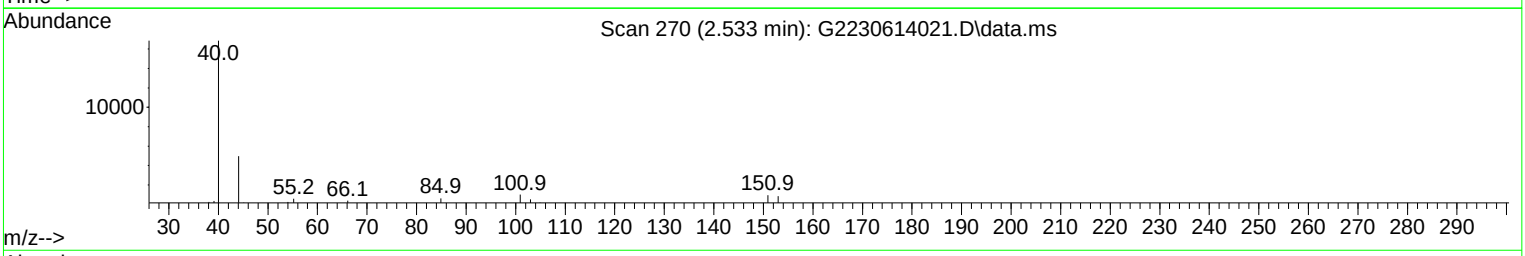
Ion	Exp%	Act%
93.90	100.00	100.00
95.90	95.60	0.00#
92.90	19.50	0.00
94.90	13.40	0.00

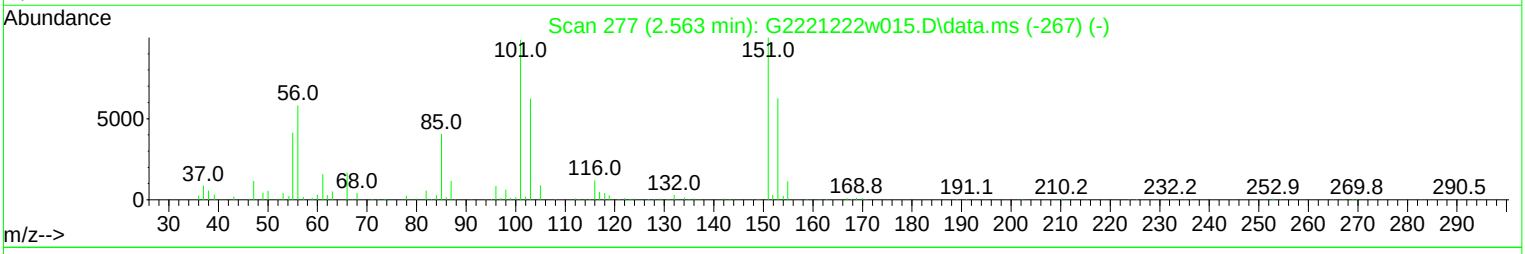
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614021.D
Acq On : 14 Jun 2023 16:49
Operator : PO1/MP3
Sample : 23F0196-12
Misc : 2
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 15 09:48:10 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614021.D\data.ms

(11) 1,1,2-Trichloro-1,2,2-Trifluoroethane (T)

2.534min (-2.534) 0.00 ug/L

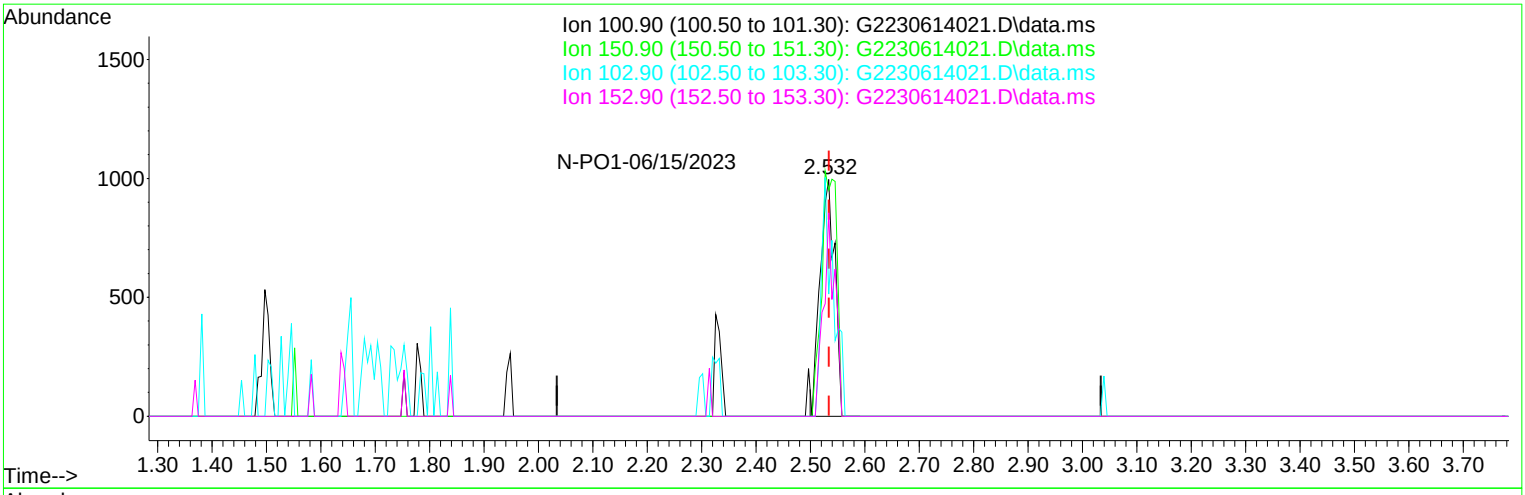
response 0

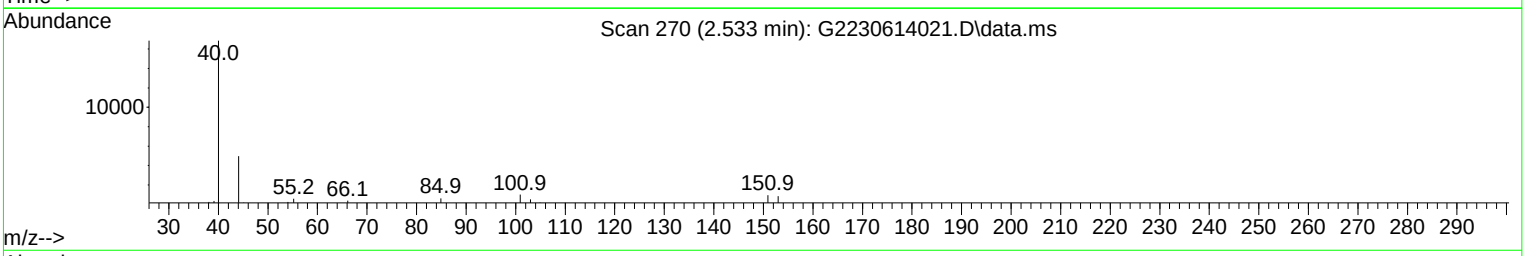
Ion	Exp%	Act%
100.90	100.00	0.00
150.90	86.00	0.00#
102.90	65.70	0.00#
152.90	57.00	0.00#

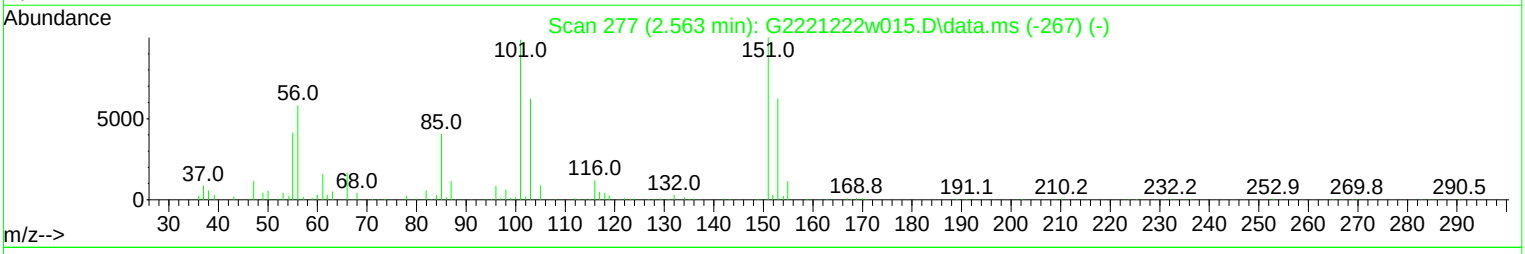
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614021.D
Acq On : 14 Jun 2023 16:49
Operator : PO1/MP3
Sample : 23F0196-12
Misc : 2
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 15 09:48:10 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614021.D\data.ms

(11) 1,1,2-Trichloro-1,2,2-Trifluoroethane (T)

2.533min (-0.001) 0.07 ug/L m

response 18802

Ion	Exp%	Act%
100.90	100.00	100.00
150.90	86.00	0.00#
102.90	65.70	0.00#
152.90	57.00	0.00#

1 - FORM I
ANALYSIS DATA SHEET

Blank

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0436-BLK1	File ID:	G2230614009.D
		Prepared:	06/14/23 08:15	Analyzed:	06/14/23 11:52
		Preparation:	5030_W	Dilution:	1

Batch: B3F0436 Sequence: S3F0256 Calibration: EE30097 Instrument: G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
630-20-6	1,1,1,2-Tetrachloroethane		0.0650	0.200	0.500	U
71-55-6	1,1,1-Trichloroethane		0.0877	0.200	0.500	U
79-34-5	1,1,2,2-Tetrachloroethane		0.0621	0.200	0.500	U
79-00-5	1,1,2-Trichloroethane		0.0832	0.200	0.500	U
75-34-3	1,1-Dichloroethane		0.0669	0.200	0.500	U
75-35-4	1,1-Dichloroethene		0.0954	0.200	0.500	U
563-58-6	1,1-Dichloropropene		0.0699	0.200	0.500	U
87-61-6	1,2,3-Trichlorobenzene		0.102	0.200	0.500	U
96-18-4	1,2,3-Trichloropropane		0.0913	0.200	0.500	U
120-82-1	1,2,4-Trichlorobenzene		0.102	0.300	0.600	U
95-63-6	1,2,4-Trimethylbenzene		0.0661	0.200	0.500	U
96-12-8	1,2-Dibromo-3-chloropropane		0.130	0.500	1.00	U
106-93-4	1,2-Dibromoethane		0.0531	0.200	0.500	U
95-50-1	1,2-Dichlorobenzene		0.0630	0.200	0.500	U
107-06-2	1,2-Dichloroethane		0.106	0.300	0.600	U
78-87-5	1,2-Dichloropropane		0.102	0.300	0.600	U
108-67-8	1,3,5-Trimethylbenzene		0.0500	0.200	0.500	U
541-73-1	1,3-Dichlorobenzene		0.0724	0.200	0.500	U
142-28-9	1,3-Dichloropropane		0.0680	0.200	0.500	U
106-46-7	1,4-Dichlorobenzene		0.0920	0.200	0.500	U
594-20-7	2,2-Dichloropropane		0.0920	0.200	0.500	U
78-93-3	2-Butanone		0.330	0.700	1.75	U
95-49-8	2-Chlorotoluene		0.0733	0.200	0.500	U
591-78-6	2-Hexanone		0.0716	0.700	1.75	U
106-43-4	4-Chlorotoluene		0.0921	0.200	0.500	U
99-87-6	4-Isopropyltoluene		0.0700	0.200	0.500	U

1 - FORM I
ANALYSIS DATA SHEET

Blank

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0436-BLK1	File ID:	G2230614009.D
		Prepared:	06/14/23 08:15	Analyzed:	06/14/23 11:52
		Preparation:	5030_W	Dilution:	1
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
108-10-1	4-Methyl-2-pentanone		0.135	0.700	1.75	U
67-64-1	Acetone		0.518	2.00	4.00	U
71-43-2	Benzene		0.0507	0.200	0.500	U
108-86-1	Bromobenzene		0.0848	0.200	0.500	U
74-97-5	Bromochloromethane		0.0669	0.200	0.500	U
75-27-4	Bromodichloromethane		0.0531	0.200	0.500	U
75-25-2	Bromoform		0.103	0.200	0.500	U
74-83-9	Bromomethane		0.160	0.500	1.00	U
75-15-0	Carbon disulfide		0.140	0.500	1.00	U
56-23-5	Carbon tetrachloride		0.0844	0.200	0.500	U
108-90-7	Chlorobenzene		0.0650	0.200	0.500	U
75-00-3	Chloroethane		0.155	0.200	0.500	U
67-66-3	Chloroform	0.180	0.101	0.300	0.600	J
74-87-3	Chloromethane		0.192	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene		0.103	0.300	0.600	U
10061-01-5	cis-1,3-Dichloropropene		0.0587	0.200	0.500	U
124-48-1	Dibromochloromethane		0.0759	0.200	0.500	U
74-95-3	Dibromomethane		0.0817	0.200	0.500	U
75-71-8	Dichlorodifluoromethane		0.130	0.500	1.00	U
100-41-4	Ethylbenzene		0.0300	0.100	0.200	U
87-68-3	Hexachlorobutadiene		0.100	0.200	0.500	U
98-82-8	Isopropylbenzene		0.0549	0.200	0.500	U
179601-23-1	m,p-Xylene		0.0889	0.400	1.00	U
1634-04-4	Methyl tert-butyl ether		0.0530	0.200	0.500	U
75-09-2	Methylene chloride		0.224	0.500	1.00	U
104-51-8	n-Butylbenzene		0.130	0.500	1.00	U

1 - FORM I
ANALYSIS DATA SHEET

Blank

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0436-BLK1	File ID:	G2230614009.D
		Prepared:	06/14/23 08:15	Analyzed:	06/14/23 11:52
		Preparation:	5030_W	Dilution:	1
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
103-65-1	n-Propylbenzene		0.0630	0.200	0.500	U
91-20-3	Naphthalene		0.0700	0.200	0.500	U
95-47-6	o-Xylene		0.0416	0.200	0.500	U
135-98-8	sec-Butylbenzene		0.0598	0.200	0.500	U
100-42-5	Styrene		0.0453	0.100	0.200	U
98-06-6	tert-Butylbenzene		0.0453	0.200	0.500	U
127-18-4	Tetrachloroethene		0.178	0.500	1.00	U
108-88-3	Toluene		0.0572	0.200	0.500	U
156-60-5	trans-1,2-Dichloroethene		0.0855	0.200	0.500	U
10061-02-6	trans-1,3-Dichloropropene		0.0587	0.200	0.500	U
79-01-6	Trichloroethene		0.0781	0.200	0.500	U
75-69-4	Trichlorofluoromethane		0.0505	0.200	0.500	U
75-01-4	Vinyl chloride		0.129	0.500	1.00	U

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614009.D
Acq On : 14 Jun 2023 11:52
Operator : PO1/MP3
Sample : BATCH-BLK1
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 15 08:36:32 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

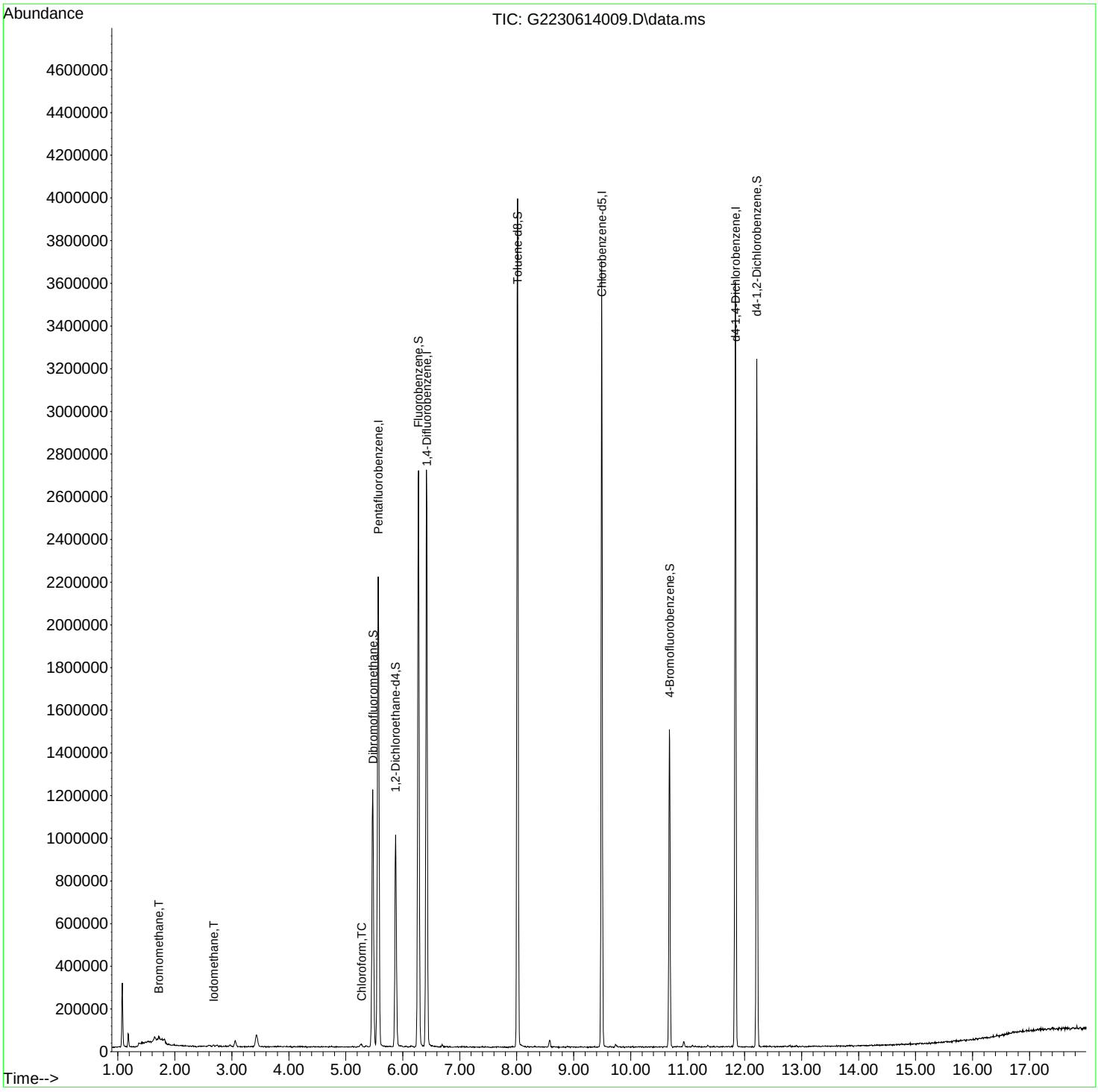
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.572	168	17628788	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.421	114	23832238	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	21202811	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.840	152	10257486	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.475	111	7571727	19.52	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.60%			
43) 1,2-Dichloroethane-d4	5.877	65	6899355	18.00	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 90.00%			
49) Fluorobenzene	6.277	96	26387779	19.43	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.15%			
64) Toluene-d8	8.016	98	25697156	19.23	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.15%			
81) 4-Bromofluorobenzene	10.684	174	4668705	9.64	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 96.40%			
97) d4-1,2-Dichlorobenzene	12.216	152	9064696	20.55	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 102.75%			
Target Compounds						Qvalue
5) Bromomethane	1.716	94	78829m	0.09	ug/L	
13) Iodomethane	2.677	142	72719	0.18	ug/L #	41
18) Methylene chloride	3.062	49	146675	Below Cal		79
21) Methyl tert-butyl ether	3.436	73	771727	Below Cal		90
37) Chloroform	5.276	83	106661	0.18	ug/L #	88
50) Trichloroethene	6.698	95	24725	Below Cal	#	12

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614009.D
Acq On : 14 Jun 2023 11:52
Operator : PO1/MP3
Sample : BATCH-BLK1
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 15 08:36:32 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G



Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614009.D
Acq On : 14 Jun 2023 11:52
Operator : PO1/MP3
Sample : BATCH-BLK1
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 15 08:36:32 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

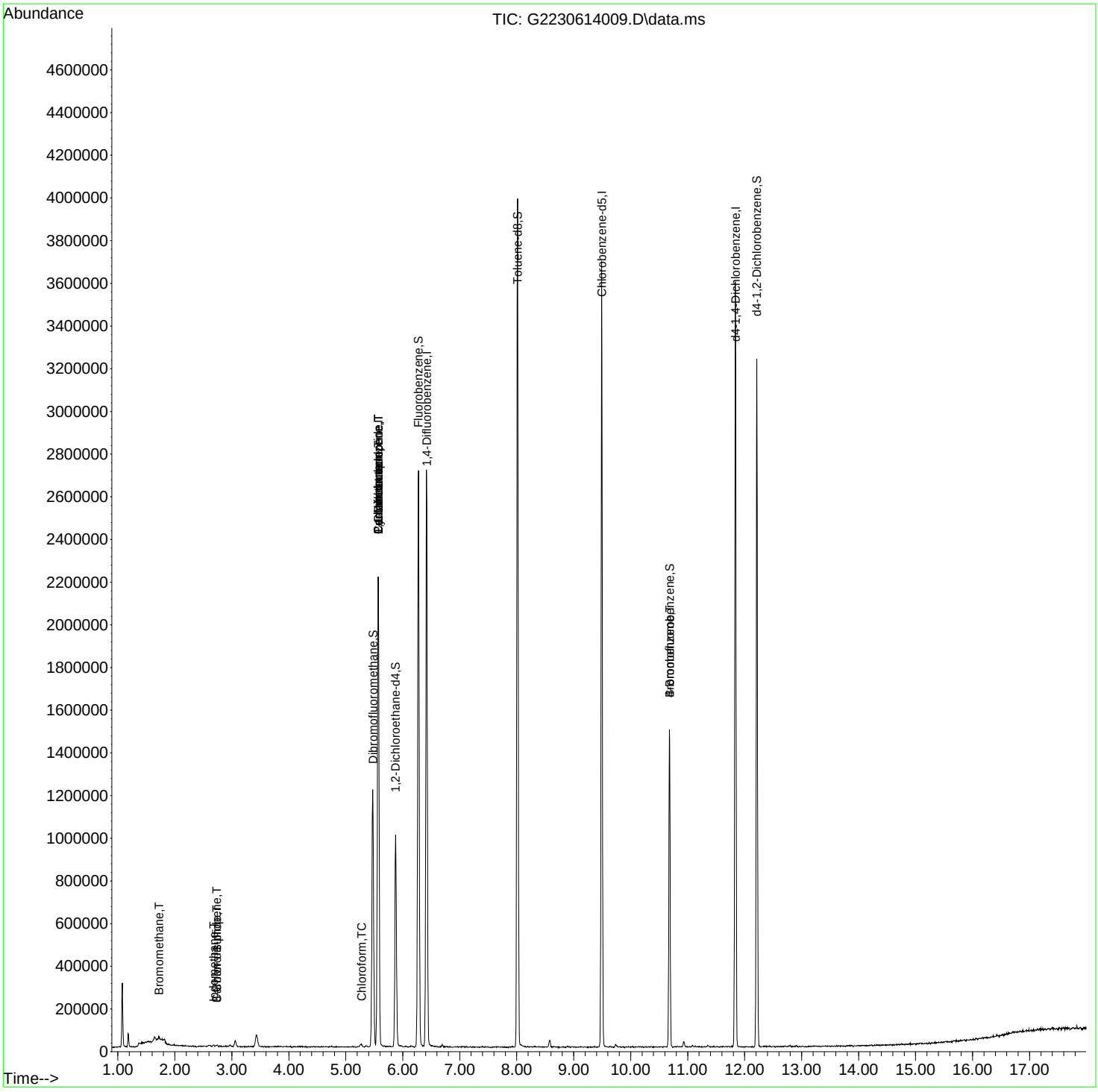
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene	5.572	168	17628788	20.00	ug/L		0.00
46) 1,4-Difluorobenzene	6.421	114	23832238	20.00	ug/L		0.00
63) Chlorobenzene-d5	9.493	117	21202811	20.00	ug/L		0.00
78) d4-1,4-Dichlorobenzene	11.840	152	10257486	20.00	ug/L		0.00
System Monitoring Compounds							
38) Dibromofluoromethane	5.475	111	7571727	19.52	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.60%				
43) 1,2-Dichloroethane-d4	5.877	65	6899355	18.00	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 90.00%				
49) Fluorobenzene	6.277	96	26387779	19.43	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.15%				
64) Toluene-d8	8.016	98	25697156	19.23	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.15%				
81) 4-Bromofluorobenzene	10.684	174	4668705	9.64	ug/L		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 96.40%				
97) d4-1,2-Dichlorobenzene	12.216	152	9064696	20.55	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 102.75%				
Target Compounds							Qvalue
5) Bromomethane	1.721	94	93869	0.15	ug/L	#	86
8) Ethyl ether	2.103	59	782	Below Cal		#	13
12) Acetone	2.607	43	71601	Below Cal		#	45
13) Iodomethane	2.677	142	72719	0.18	ug/L	#	41
14) Carbon disulfide	2.737	76	107150	0.04	ug/L	#	74
17) 3-Chloro-1-propene	2.737	76	107131	0.53	ug/L	#	53
18) Methylene chloride	3.062	49	146675	Below Cal			79
21) Methyl tert-butyl ether	3.436	73	771727	Below Cal			90
37) Chloroform	5.276	83	106661	0.18	ug/L	#	88
40) Cyclohexane	5.571	84	378049	0.80	ug/L	#	37
41) 1-Chlorobutane	5.571	56	239300	0.44	ug/L	#	1
42) 1,1-Dichloropropene	5.569	75	925030	2.24	ug/L	#	38
47) Carbon tetrachloride	5.569	117	1389083	3.23	ug/L	#	16
50) Trichloroethene	6.698	95	24725	Below Cal		#	12
60) 4-Methyl-2-pentanone	8.013	43	76249	Below Cal		#	1
74) Ethylbenzene	9.492	91	42209	Below Cal		#	44
82) Bromobenzene	10.681	77	34331	0.06	ug/L	#	1
99) n-Butylbenzene	12.212	91	32831	Below Cal		#	53

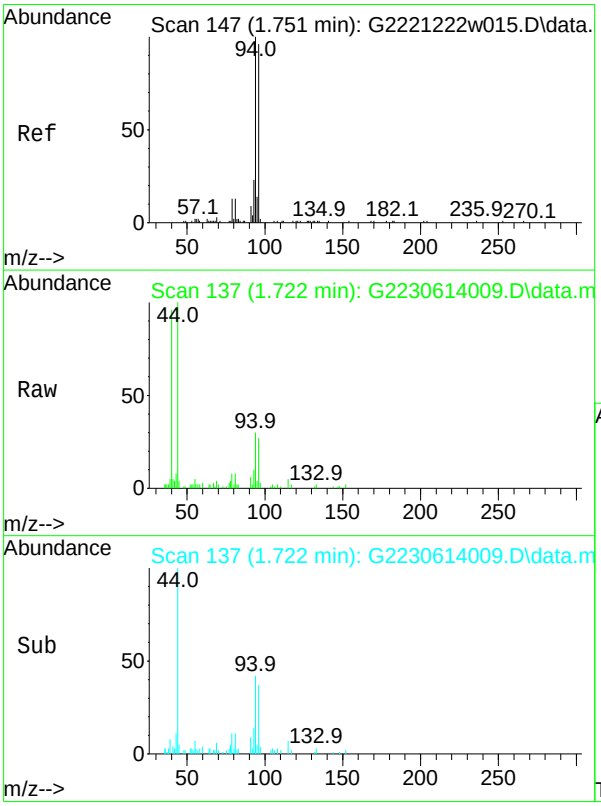
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614009.D
Acq On : 14 Jun 2023 11:52
Operator : PO1/MP3
Sample : BATCH-BLK1
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 15 08:36:32 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

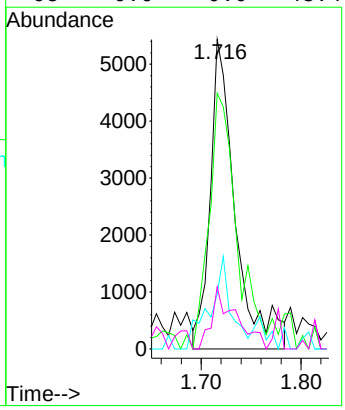


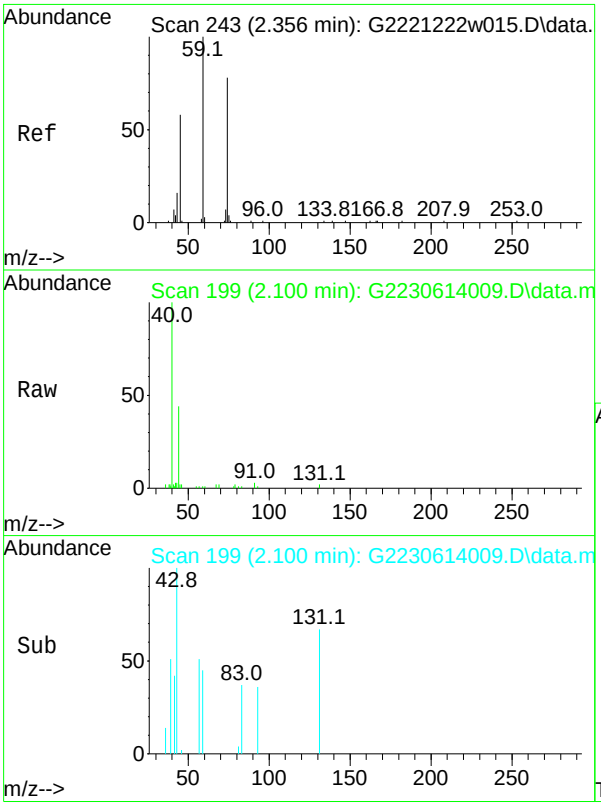


#5
Bromomethane
Concen: 0.15 ug/L
RT: 1.721 min Scan# 137
Delta R.T. 0.007 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion: 94 Resp: 93869

Ion	Ratio	Lower	Upper
94	100		
96	101.5	65.6	125.6
93	0.0	0.0	49.5
95	0.0	0.0	43.4

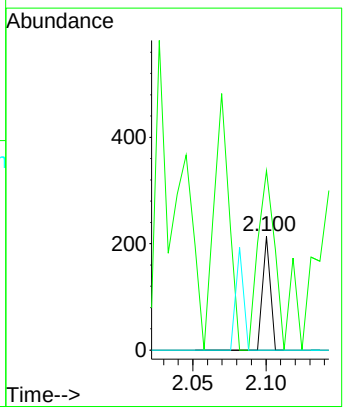


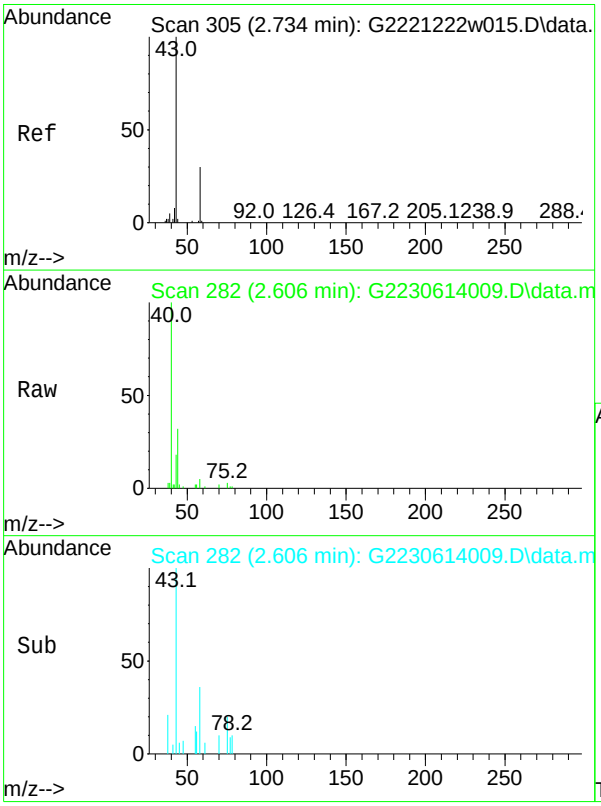


#8
Ethyl ether
Concen: Below Cal
RT: 2.103 min Scan# 199
Delta R.T. -0.215 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion: 59 Resp: 782

Ion	Ratio	Lower	Upper
59	100		
45	0.0	41.5	101.5#
74	0.0	43.4	103.4#

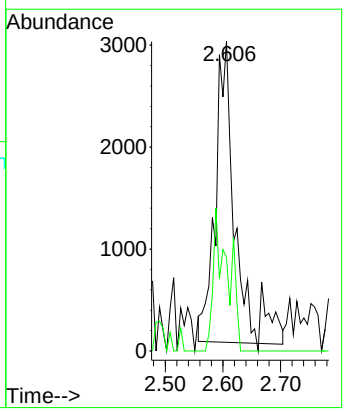


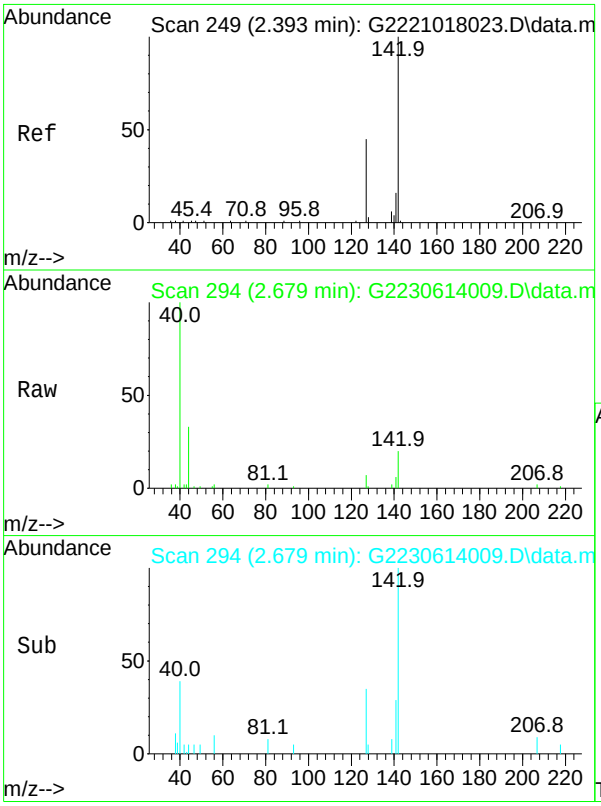


#12
Acetone
Concen: Below Cal
RT: 2.607 min Scan# 282
Delta R.T. -0.001 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion: 43 Resp: 71601

Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	59.7

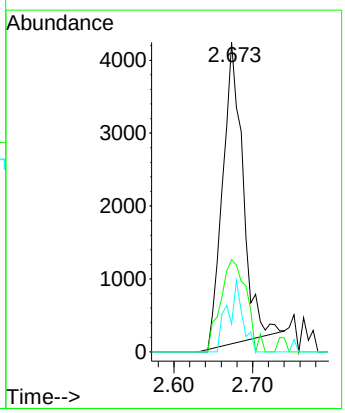


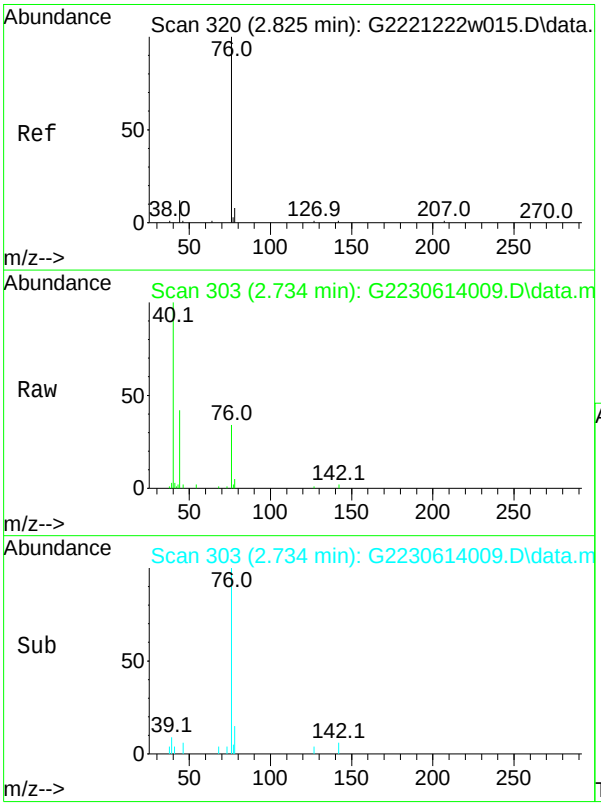


#13
Iodomethane
Concen: 0.18 ug/L
RT: 2.677 min Scan# 294
Delta R.T. 0.001 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion:142 Resp: 72719

Ion	Ratio	Lower	Upper
142	100		
127	0.0	13.3	73.3#
141	0.0	0.0	45.3

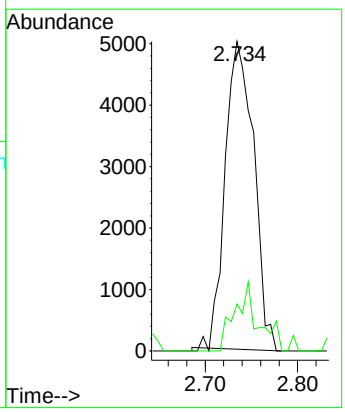


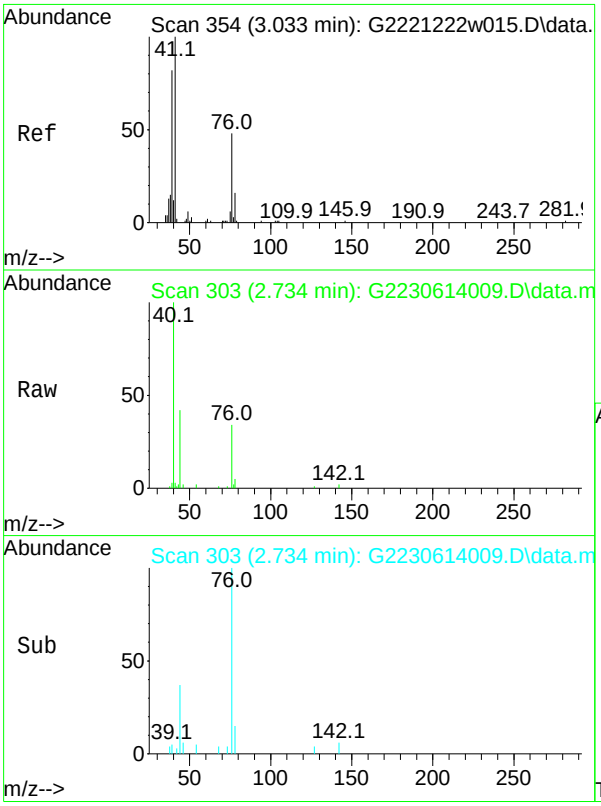


#14
Carbon disulfide
Concen: 0.04 ug/L
RT: 2.737 min Scan# 303
Delta R.T. -0.002 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion: 76 Resp: 107150

Ion	Ratio	Lower	Upper
76	100		
78	0.0	0.0	39.3

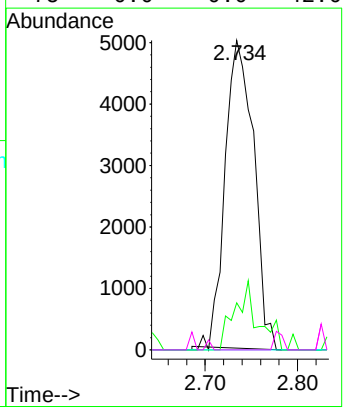


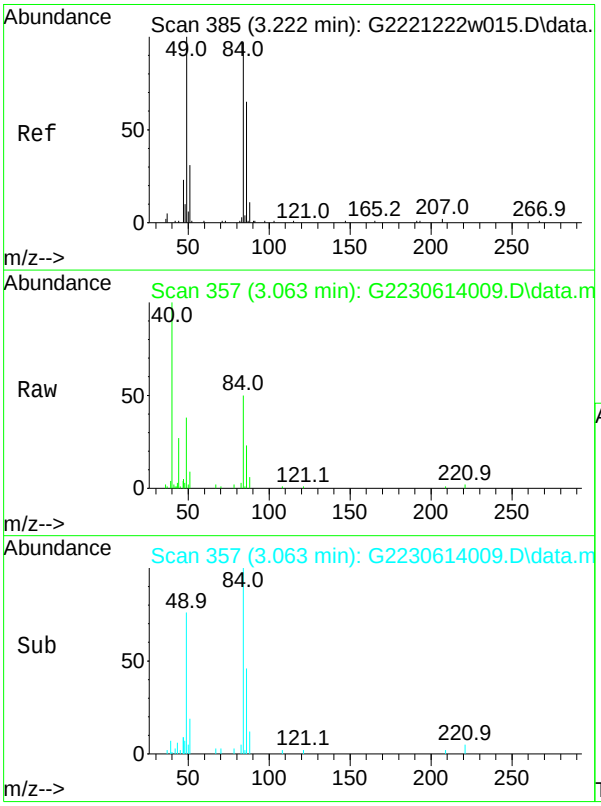


#17
3-Chloro-1-propene
Concen: 0.53 ug/L
RT: 2.737 min Scan# 303
Delta R.T. -0.183 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion: 76 Resp: 107131

Ion	Ratio	Lower	Upper
76	100		
78	0.0	2.4	62.4#
49	0.0	0.0	43.0
75	0.0	0.0	42.6

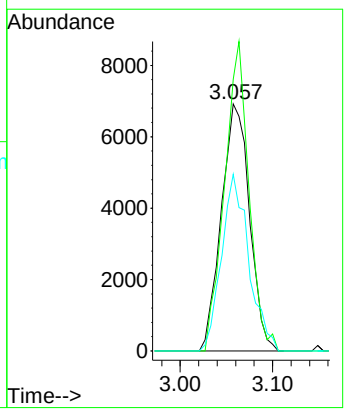


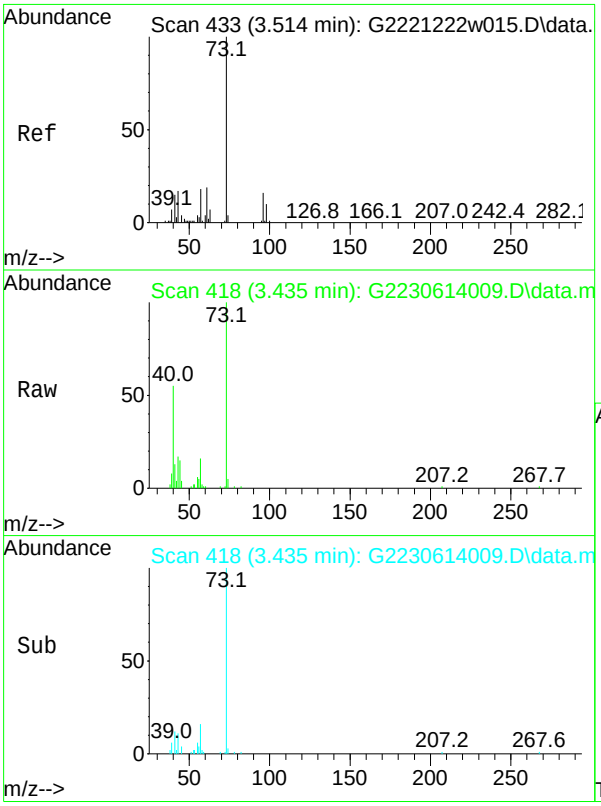


#18
Methylene chloride
Concen: Below Cal
RT: 3.062 min Scan# 357
Delta R.T. 0.000 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion: 49 Resp: 146675

Ion	Ratio	Lower	Upper
49	100		
84	108.2	57.9	117.9
86	69.0	24.9	84.9

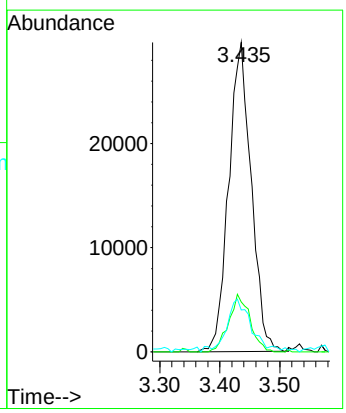


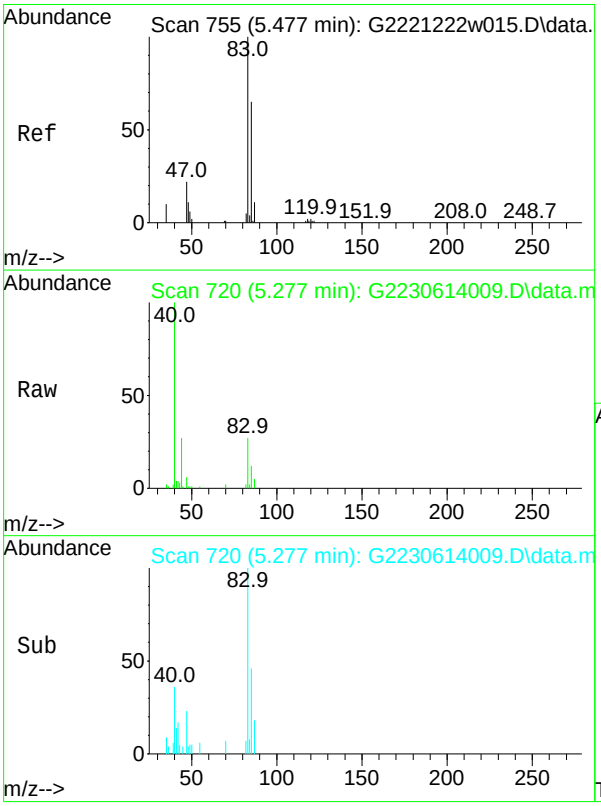


#21
Methyl tert-butyl ether
Concen: Below Cal
RT: 3.436 min Scan# 418
Delta R.T. -0.010 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion: 73 Resp: 771727

Ion	Ratio	Lower	Upper
73	100		
57	17.6	0.0	51.7
41	15.5	0.0	50.6

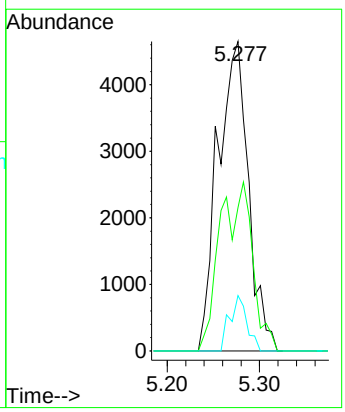


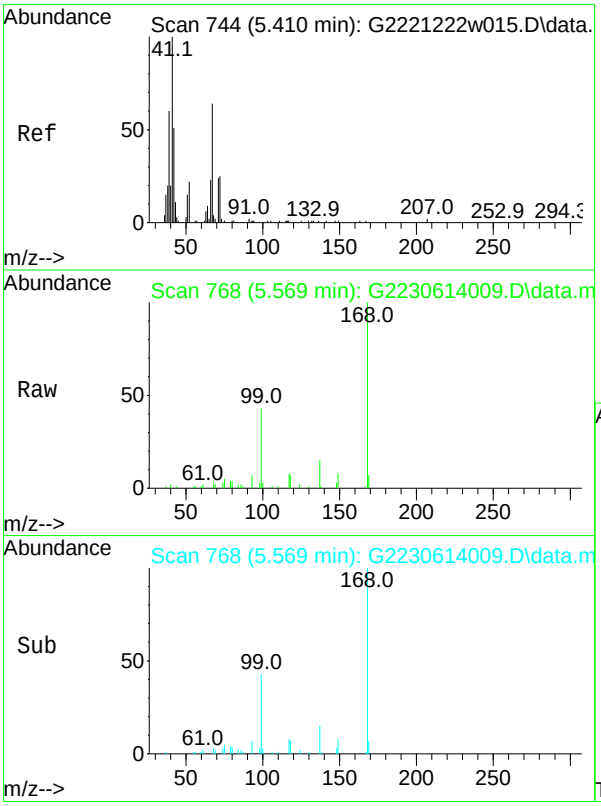


#37
Chloroform
Concen: 0.18 ug/L
RT: 5.276 min Scan# 720
Delta R.T. 0.000 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion: 83 Resp: 106661

Ion	Ratio	Lower	Upper
83	100		
85	58.3	35.4	95.4
87	0.0	0.0	40.8

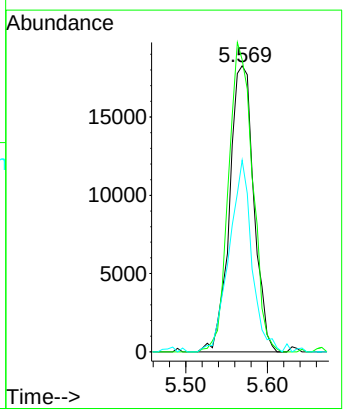


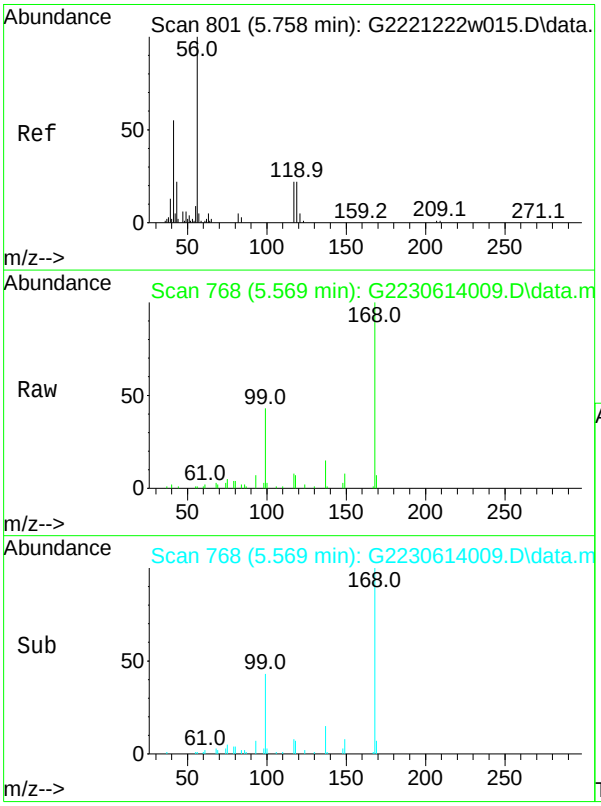


#40
Cyclohexane
Concen: 0.80 ug/L
RT: 5.571 min Scan# 768
Delta R.T. 0.037 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion: 84 Resp: 378049

Ion	Ratio	Lower	Upper
84	100		
69	107.2	6.8	66.8#
56	62.4	79.1	139.1#

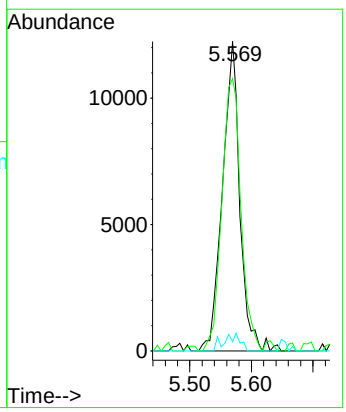


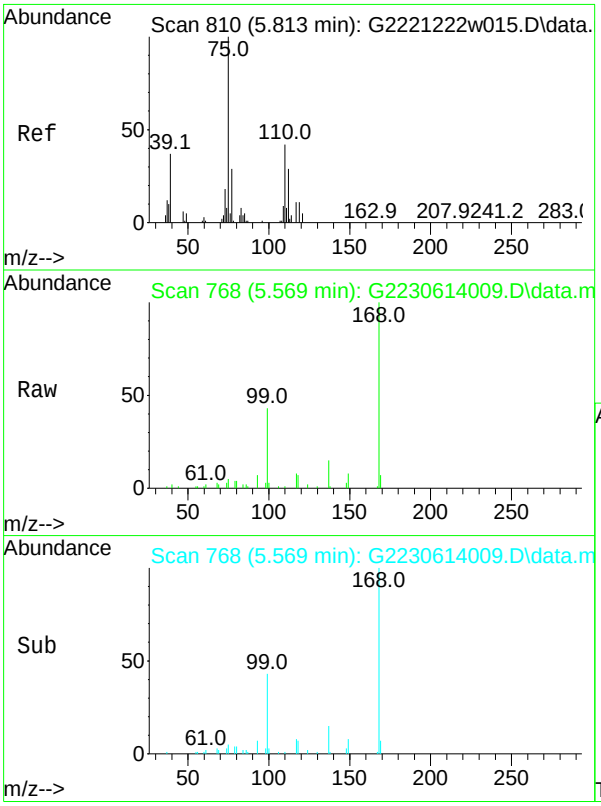


#41
1-Chlorobutane
Concen: 0.44 ug/L
RT: 5.571 min Scan# 768
Delta R.T. -0.059 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion: 56 Resp: 239300

Ion	Ratio	Lower	Upper
56	100		
55	97.8	0.0	41.0#
57	0.0	0.0	35.7

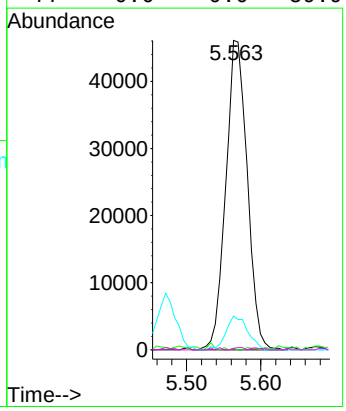


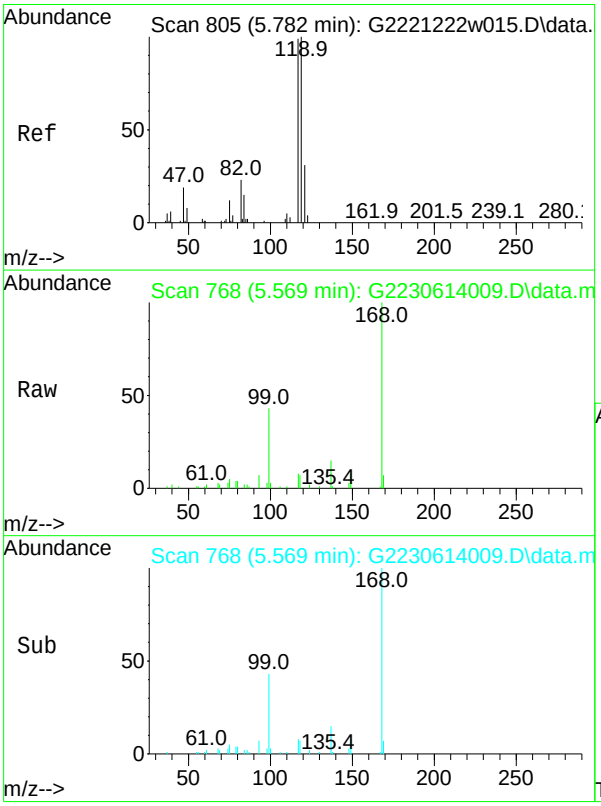


#42
1,1-Dichloropropene
Concen: 2.24 ug/L
RT: 5.569 min Scan# 768
Delta R.T. -0.120 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion: 75 Resp: 925030

Ion	Ratio	Lower	Upper
75	100		
39	0.0	25.8	85.8#
110	11.0	9.1	69.1
77	0.0	0.0	59.9

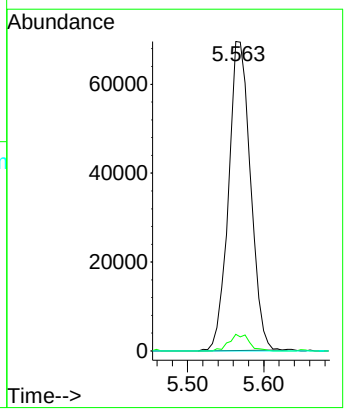


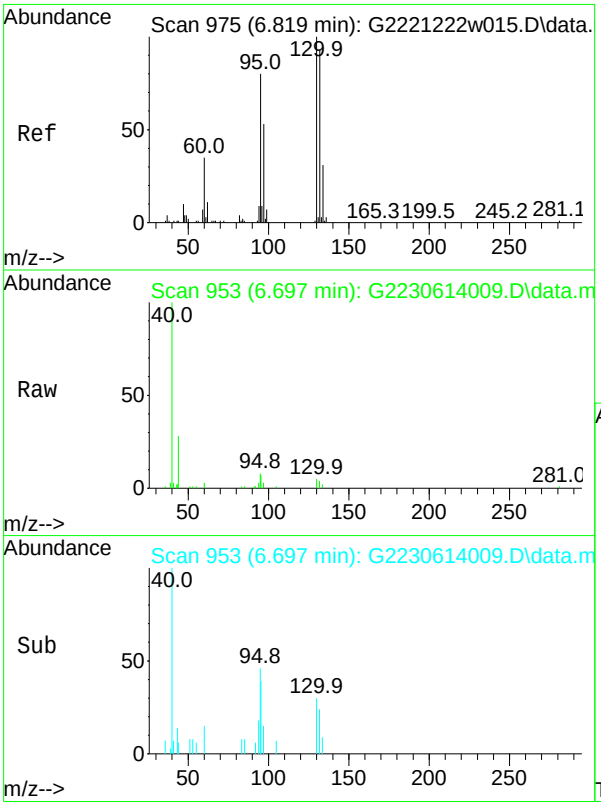


#47
Carbon tetrachloride
Concen: 3.23 ug/L
RT: 5.569 min Scan# 768
Delta R.T. -0.111 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion:117 Resp: 1389083

Ion	Ratio	Lower	Upper
117	100		
119	5.0	66.4	126.4#
121	0.0	0.4	60.4#

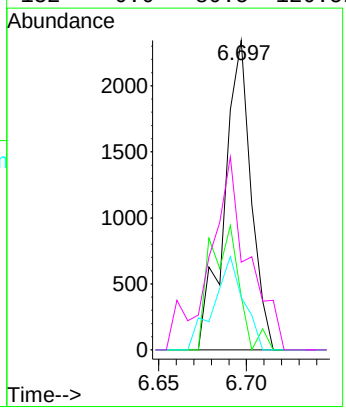


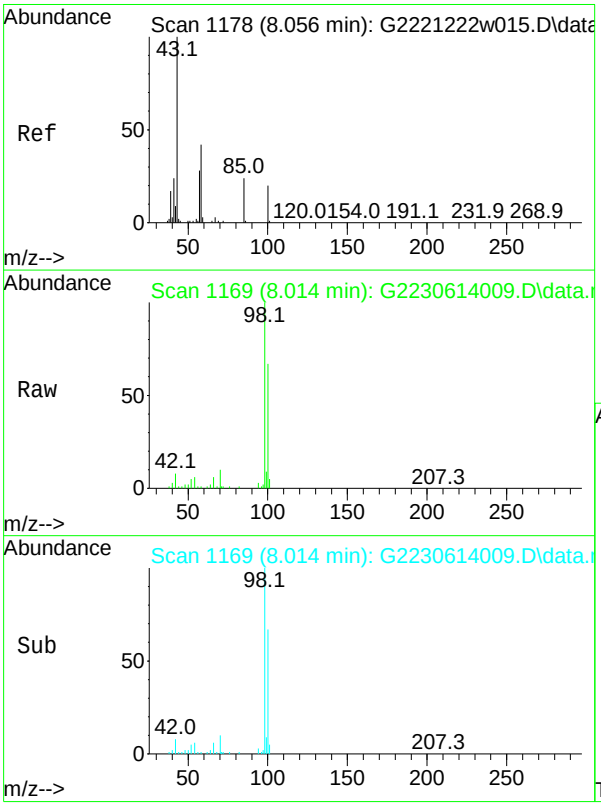


#50
Trichloroethene
Concen: Below Cal
RT: 6.698 min Scan# 953
Delta R.T. 0.002 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion: 95 Resp: 24725

Ion	Ratio	Lower	Upper
95	100		
97	0.0	35.5	95.5#
60	0.0	14.8	74.8#
132	0.0	80.5	120.5#

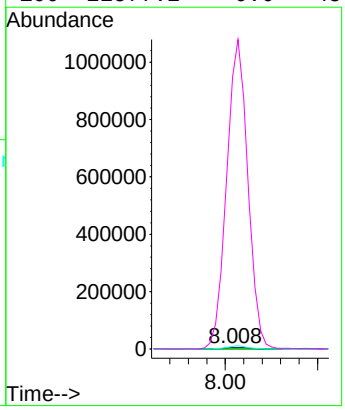


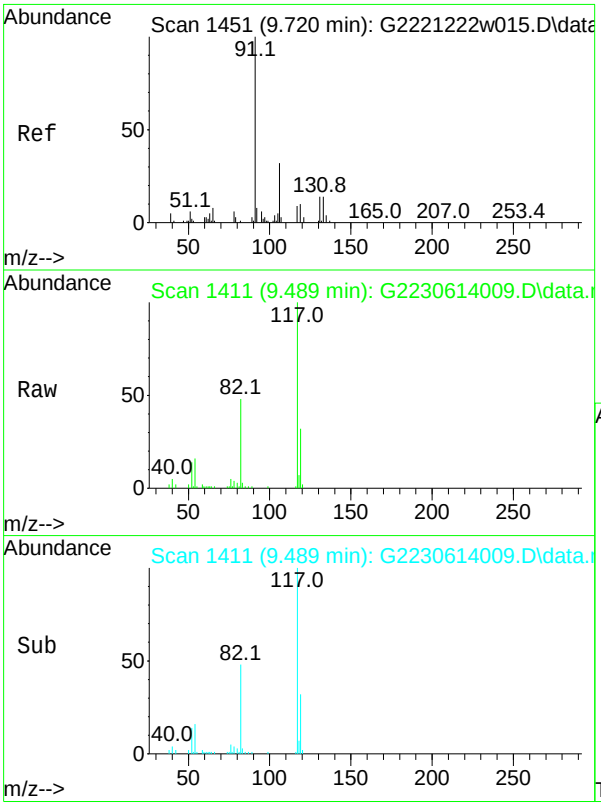


#60
4-Methyl-2-pentanone
Concen: Below Cal
RT: 8.013 min Scan# 1169
Delta R.T. 0.069 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion: 43 Resp: 76249

Ion	Ratio	Lower	Upper
43	100		
85	0.0	0.0	47.7
58	212.9	37.0	37.0#
100	22577.2	0.0	45.2#

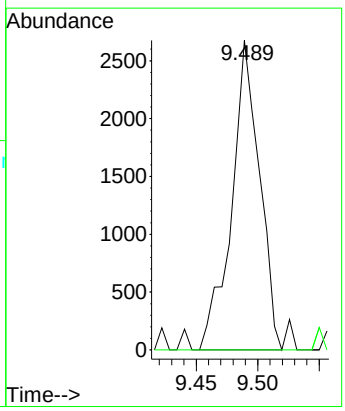


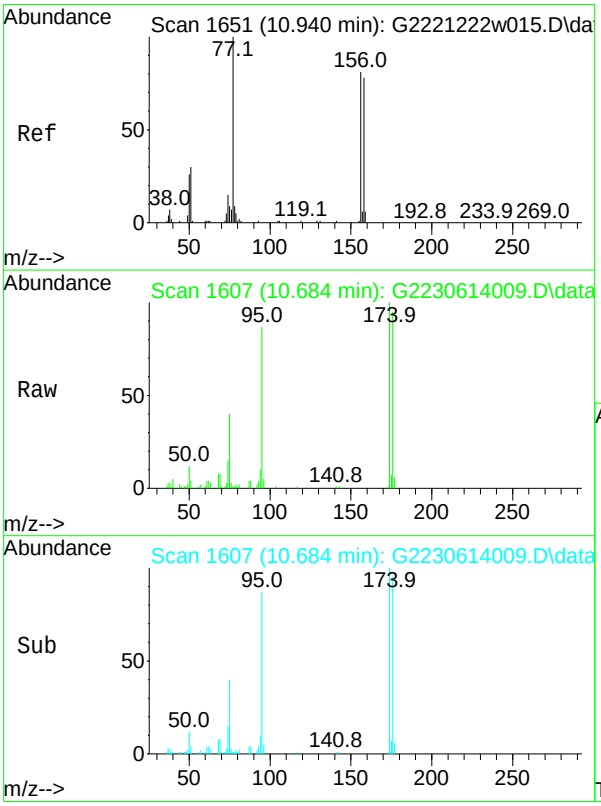


#74
Ethylbenzene
Concen: Below Cal
RT: 9.492 min Scan# 1411
Delta R.T. -0.151 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion: 91 Resp: 42209

Ion	Ratio	Lower	Upper
91	100		
106	0.0	0.8	60.8#

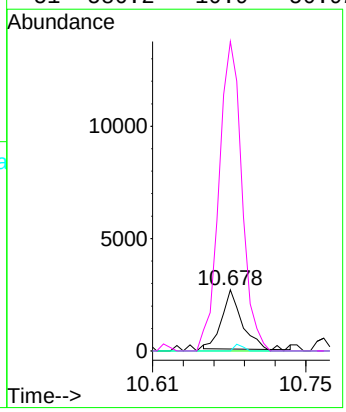


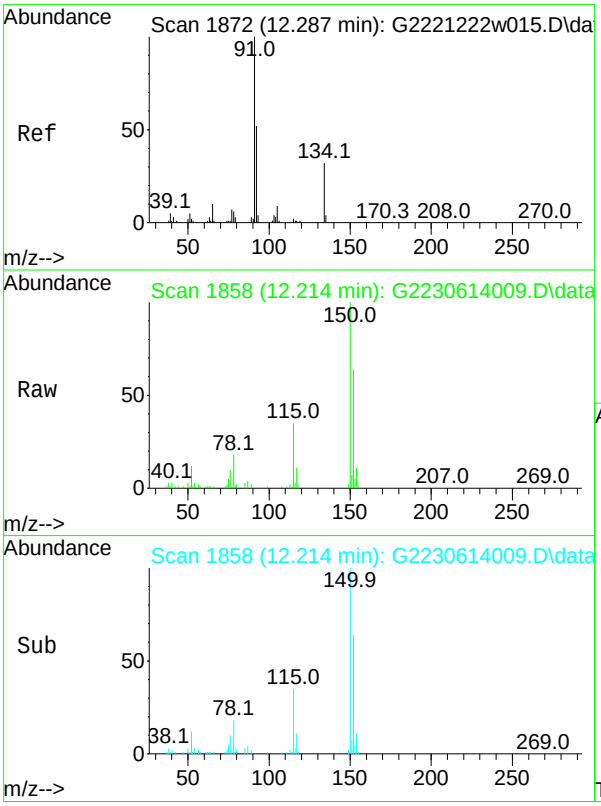


#82
Bromobenzene
Concen: 0.06 ug/L
RT: 10.681 min Scan# 1607
Delta R.T. -0.147 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion: 77 Resp: 34331

Ion	Ratio	Lower	Upper
77	100		
156	0.0	49.1	89.1#
158	0.0	44.8	84.8#
51	586.2	10.9	50.9#

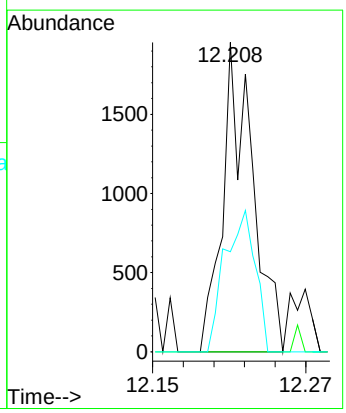




#99
n-Butylbenzene
Concen: Below Cal
RT: 12.212 min Scan# 1858
Delta R.T. -0.019 min
Lab File: G2230614009.D
Acq: 14 Jun 2023 11:52

Tgt Ion: 91 Resp: 32831

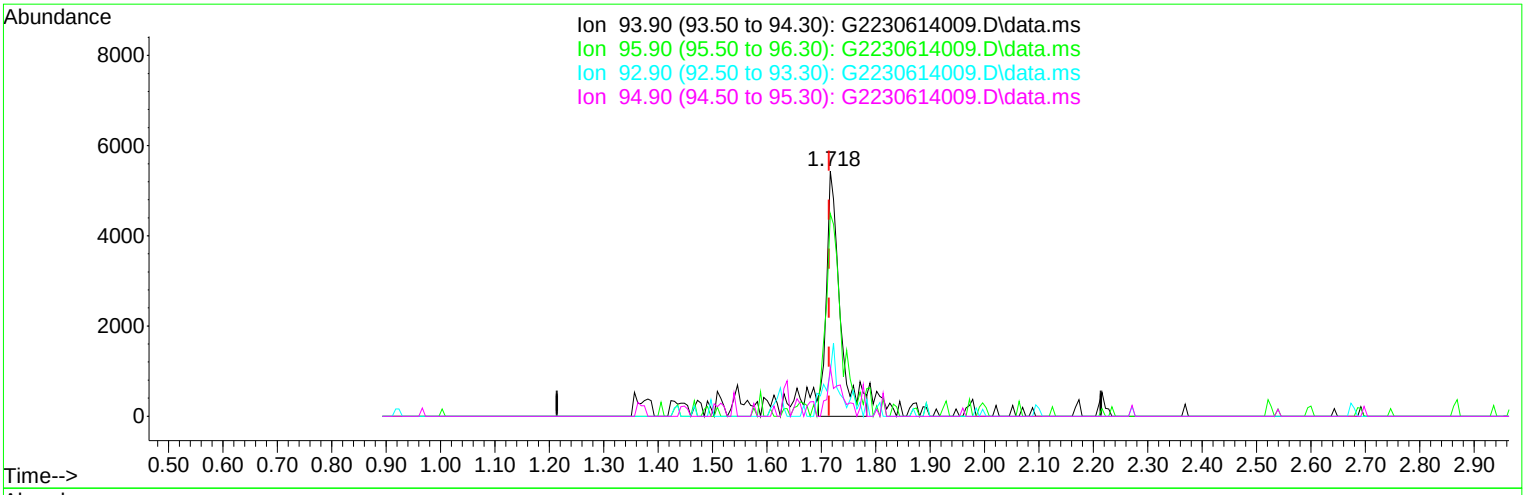
Ion	Ratio	Lower	Upper
91	100		
93	0.0	0.0	33.6
134	0.0	0.0	56.6

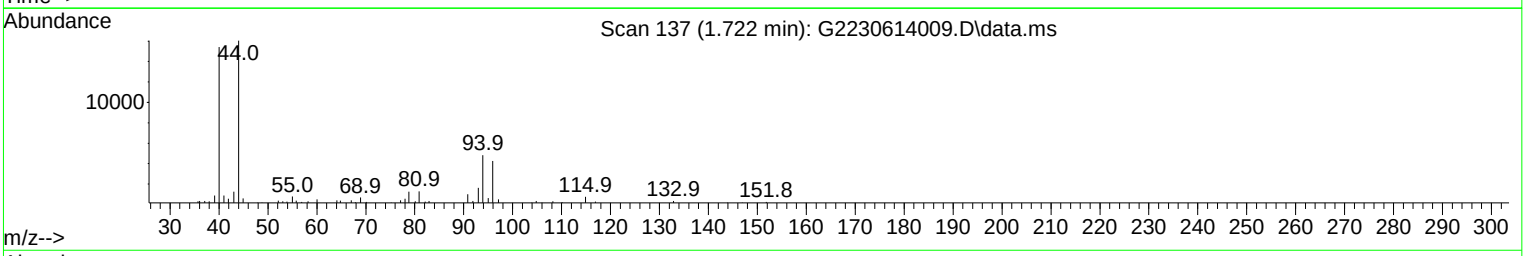


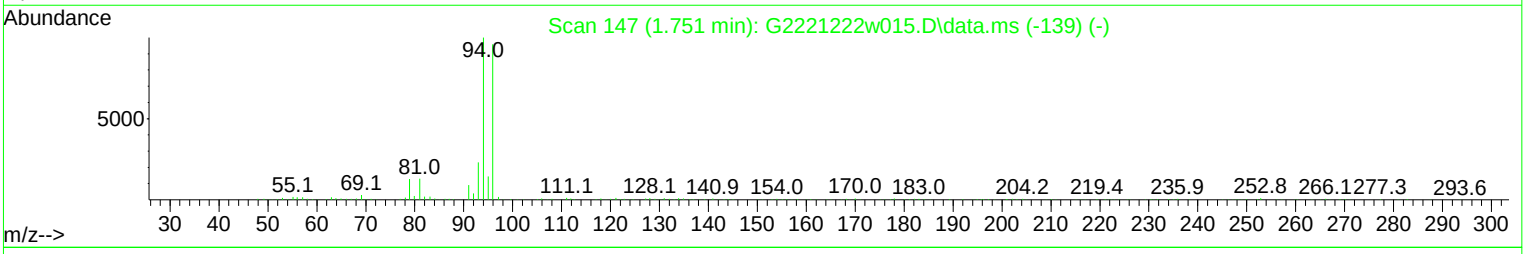
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614009.D
Acq On : 14 Jun 2023 11:52
Operator : PO1/MP3
Sample : BATCH-BLK1
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 15 08:36:32 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614009.D\data.ms

(5) Bromomethane (T)

1.721min (+ 0.007) 0.15 ug/L

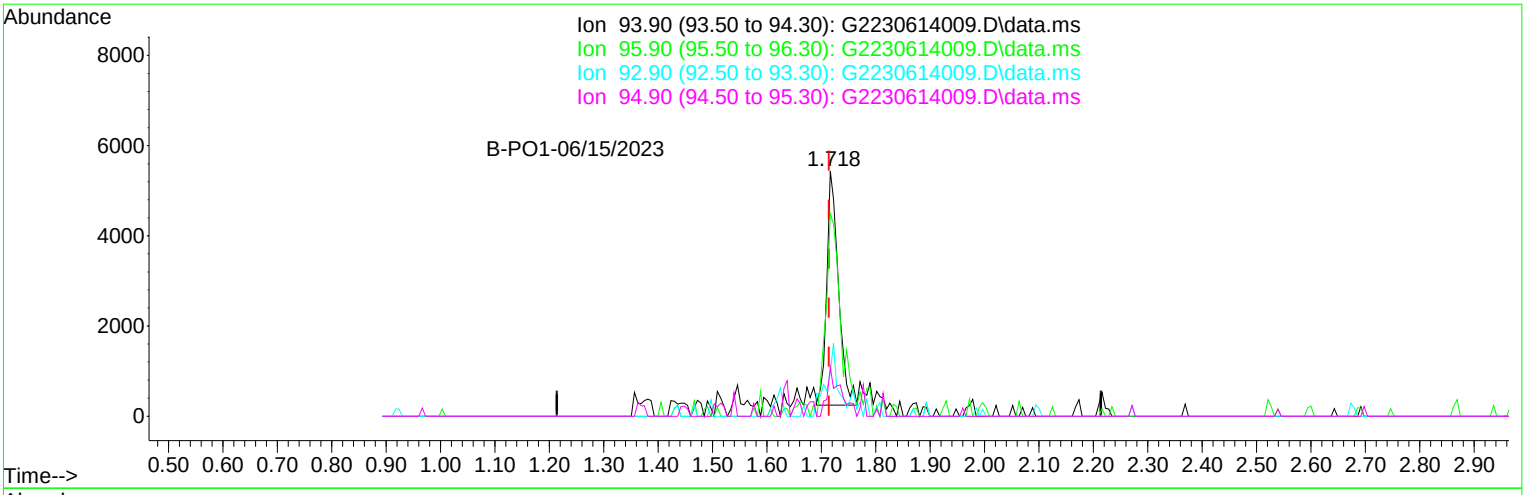
response 93869

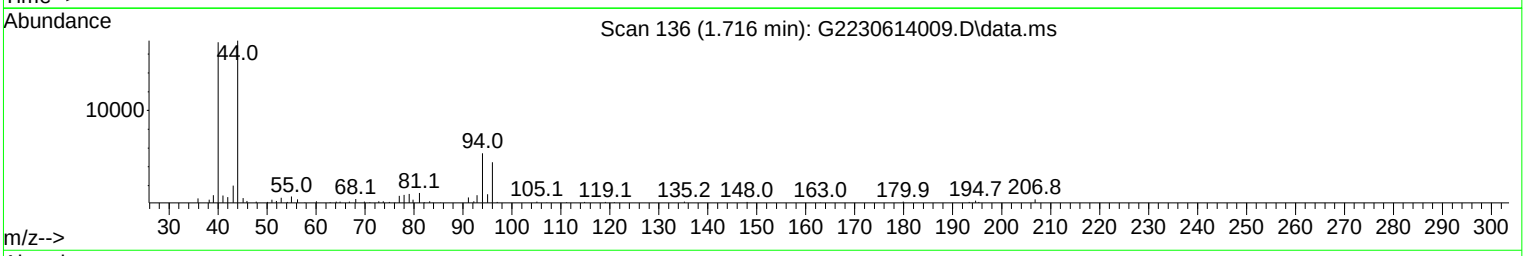
Ion	Exp%	Act%
93.90	100.00	100.00
95.90	95.60	101.50
92.90	19.50	0.00
94.90	13.40	0.00

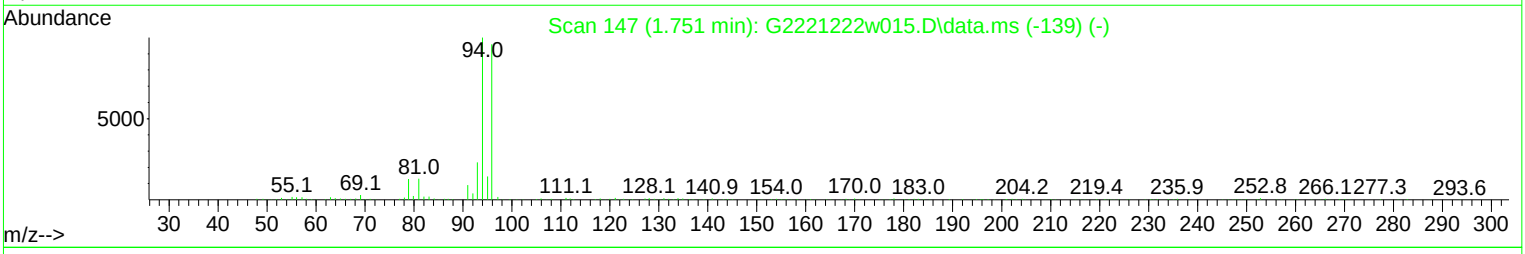
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614009.D
Acq On : 14 Jun 2023 11:52
Operator : PO1/MP3
Sample : BATCH-BLK1
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 15 08:36:32 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614009.D\data.ms

(5) Bromomethane (T)

1.716min (+ 0.002) 0.09 ug/L m

response 78829

Ion	Exp%	Act%
93.90	100.00	100.00
95.90	95.60	120.87
92.90	19.50	0.00
94.90	13.40	0.00

1 - FORM I
ANALYSIS DATA SHEET

LCS

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0436-BS1	File ID:	G2230614006.D
		Prepared:	06/14/23 08:15	Analyzed:	06/14/23 10:38
		Preparation:	5030_W	Dilution:	1

Batch: B3F0436 Sequence: S3F0256 Calibration: EE30097 Instrument: G2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
630-20-6	1,1,1,2-Tetrachloroethane	14.5	0.0650	0.200	0.500	
71-55-6	1,1,1-Trichloroethane	13.8	0.0877	0.200	0.500	
79-34-5	1,1,2,2-Tetrachloroethane	13.6	0.0621	0.200	0.500	
79-00-5	1,1,2-Trichloroethane	14.2	0.0832	0.200	0.500	
75-34-3	1,1-Dichloroethane	13.0	0.0669	0.200	0.500	
75-35-4	1,1-Dichloroethene	12.6	0.0954	0.200	0.500	
563-58-6	1,1-Dichloropropene	13.8	0.0699	0.200	0.500	
87-61-6	1,2,3-Trichlorobenzene	14.2	0.102	0.200	0.500	
96-18-4	1,2,3-Trichloropropane	14.4	0.0913	0.200	0.500	
120-82-1	1,2,4-Trichlorobenzene	14.8	0.102	0.300	0.600	
95-63-6	1,2,4-Trimethylbenzene	13.5	0.0661	0.200	0.500	
96-12-8	1,2-Dibromo-3-chloropropane	15.6	0.130	0.500	1.00	
106-93-4	1,2-Dibromoethane	13.9	0.0531	0.200	0.500	
95-50-1	1,2-Dichlorobenzene	15.4	0.0630	0.200	0.500	
107-06-2	1,2-Dichloroethane	13.4	0.106	0.300	0.600	
78-87-5	1,2-Dichloropropane	13.8	0.102	0.300	0.600	
108-67-8	1,3,5-Trimethylbenzene	13.7	0.0500	0.200	0.500	
541-73-1	1,3-Dichlorobenzene	14.6	0.0724	0.200	0.500	
142-28-9	1,3-Dichloropropane	13.8	0.0680	0.200	0.500	
106-46-7	1,4-Dichlorobenzene	15.0	0.0920	0.200	0.500	
594-20-7	2,2-Dichloropropane	12.4	0.0920	0.200	0.500	
78-93-3	2-Butanone	48.7	0.330	0.700	1.75	
95-49-8	2-Chlorotoluene	13.4	0.0733	0.200	0.500	
591-78-6	2-Hexanone	45.1	0.0716	0.700	1.75	
106-43-4	4-Chlorotoluene	13.8	0.0921	0.200	0.500	
99-87-6	4-Isopropyltoluene	14.2	0.0700	0.200	0.500	

1 - FORM I
ANALYSIS DATA SHEET

LCS

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0436-BS1	File ID:	G2230614006.D
		Prepared:	06/14/23 08:15	Analyzed:	06/14/23 10:38
		Preparation:	5030_W	Dilution:	1
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
108-10-1	4-Methyl-2-pentanone	45.0	0.135	0.700	1.75	
67-64-1	Acetone	49.0	0.518	2.00	4.00	
71-43-2	Benzene	13.6	0.0507	0.200	0.500	
108-86-1	Bromobenzene	12.8	0.0848	0.200	0.500	
74-97-5	Bromochloromethane	13.5	0.0669	0.200	0.500	
75-27-4	Bromodichloromethane	15.1	0.0531	0.200	0.500	
75-25-2	Bromoform	14.5	0.103	0.200	0.500	
74-83-9	Bromomethane	15.3	0.160	0.500	1.00	
75-15-0	Carbon disulfide	12.7	0.140	0.500	1.00	
56-23-5	Carbon tetrachloride	15.7	0.0844	0.200	0.500	
108-90-7	Chlorobenzene	14.3	0.0650	0.200	0.500	
75-00-3	Chloroethane	13.6	0.155	0.200	0.500	
67-66-3	Chloroform	13.6	0.101	0.300	0.600	
74-87-3	Chloromethane	12.5	0.192	0.500	1.00	
156-59-2	cis-1,2-Dichloroethene	12.6	0.103	0.300	0.600	
10061-01-5	cis-1,3-Dichloropropene	13.4	0.0587	0.200	0.500	
124-48-1	Dibromochloromethane	15.1	0.0759	0.200	0.500	
74-95-3	Dibromomethane	15.5	0.0817	0.200	0.500	
75-71-8	Dichlorodifluoromethane	13.1	0.130	0.500	1.00	
100-41-4	Ethylbenzene	14.5	0.0300	0.100	0.200	
87-68-3	Hexachlorobutadiene	17.1	0.100	0.200	0.500	
98-82-8	Isopropylbenzene	13.5	0.0549	0.200	0.500	
179601-23-1	m,p-Xylene	27.9	0.0889	0.400	1.00	
1634-04-4	Methyl tert-butyl ether	12.7	0.0530	0.200	0.500	
75-09-2	Methylene chloride	13.1	0.224	0.500	1.00	
104-51-8	n-Butylbenzene	14.2	0.130	0.500	1.00	

1 - FORM I
ANALYSIS DATA SHEET

LCS

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0436-BS1	File ID:	G2230614006.D
		Prepared:	06/14/23 08:15	Analyzed:	06/14/23 10:38
		Preparation:	5030_W	Dilution:	1
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
103-65-1	n-Propylbenzene	13.6	0.0630	0.200	0.500	
91-20-3	Naphthalene	13.7	0.0700	0.200	0.500	
95-47-6	o-Xylene	13.2	0.0416	0.200	0.500	
135-98-8	sec-Butylbenzene	13.9	0.0598	0.200	0.500	
100-42-5	Styrene	13.8	0.0453	0.100	0.200	
98-06-6	tert-Butylbenzene	13.9	0.0453	0.200	0.500	
127-18-4	Tetrachloroethene	16.1	0.178	0.500	1.00	
108-88-3	Toluene	14.6	0.0572	0.200	0.500	
156-60-5	trans-1,2-Dichloroethene	12.2	0.0855	0.200	0.500	
10061-02-6	trans-1,3-Dichloropropene	13.2	0.0587	0.200	0.500	
79-01-6	Trichloroethene	15.1	0.0781	0.200	0.500	
75-69-4	Trichlorofluoromethane	15.1	0.0505	0.200	0.500	
75-01-4	Vinyl chloride	12.6	0.129	0.500	1.00	

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614006.D
Acq On : 14 Jun 2023 10:38
Operator : PO1/MP3
Sample : BATCH-BS1
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 15 08:34:40 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.571	168	17998689	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.419	114	23807141	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.494	117	21266047	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.839	152	9940586	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.473	111	7457665	18.83	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 94.15%			
43) 1,2-Dichloroethane-d4	5.876	65	6878758	17.57	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 87.85%			
49) Fluorobenzene	6.276	96	26580014	19.59	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.95%			
64) Toluene-d8	8.015	98	26188315	19.54	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.70%			
81) 4-Bromofluorobenzene	10.685	174	4706607	10.03	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 100.30%			
97) d4-1,2-Dichlorobenzene	12.217	152	8712732	20.38	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 101.90%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.212	85	4792638	13.07	ug/L	98
3) Chloromethane	1.353	50	3705646	12.48	ug/L	100
4) Vinyl chloride	1.444	62	4438090	12.55	ug/L	99
5) Bromomethane	1.716	94	3490067	15.31	ug/L	98
6) Chloroethane	1.803	64	2938327	13.64	ug/L	98
7) Trichlorofluoromethane	2.028	101	8194367	15.11	ug/L	98
8) Ethyl ether	2.310	59	2900282	12.14	ug/L	86
9) Acrolein	2.433	56	1805072	37.45	ug/L	97
10) 1,1-Dichloroethene	2.521	61	4859446	12.61	ug/L	86
11) 1,1,2-Trichloro-1,2,2-...	2.532	101	4021949	13.65	ug/L	94
12) Acetone	2.596	43	4062019	49.04	ug/L	90
13) Iodomethane	2.674	142	5227630	12.47	ug/L	96
14) Carbon disulfide	2.737	76	10066400	12.74	ug/L	99
15) Isopropanol	2.780	45	1033957	71.58	ug/L	79
16) acetonitrile	2.915	41	5024646	29.82	ug/L	88
17) 3-Chloro-1-propene	2.916	76	2331626	12.84	ug/L	98
18) Methylene chloride	3.058	49	4339809	13.13	ug/L	77
19) Acrylonitrile	3.383	53	1668287	12.19	ug/L	96
20) trans-1,2-Dichloroethene	3.398	61	4752131	12.18	ug/L	85
21) Methyl tert-butyl ether	3.429	73	13664557	12.69	ug/L	91
22) Hexane	3.787	57	3921884	12.80	ug/L	94
23) 1,1-Dichloroethane	3.995	63	6530036	13.03	ug/L	95
24) Vinyl acetate	4.121	43	7112129	11.62	ug/L	89
25) 2-Chloro-1,3-butadiene	4.131	53	4996033	12.24	ug/L	83
27) 2,2-Dichloropropane	4.824	77	6229140	12.45	ug/L	92
28) cis-1,2-Dichloroethene	4.832	61	5709201	12.59	ug/L	84
29) 2-Butanone	4.900	72	2191790	48.71	ug/L	91
30) Propionitrile	4.970	54	588754	13.63	ug/L	98

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614006.D
Acq On : 14 Jun 2023 10:38
Operator : PO1/MP3
Sample : BATCH-BS1
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 15 08:34:40 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
31) Ethyl acetate	5.007	61	672620	12.41	ug/L		80
32) Methylacrylate	5.031	55	4143608	12.16	ug/L		93
33) 1-Bromopropane	5.073	41	2208176	11.99	ug/L		64
34) Bromochloromethane	5.146	130	3612642	13.52	ug/L		99
35) Methacrylonitrile	5.167	67	2072015	12.56	ug/L		91
36) Tetrahydrofuran	5.238	42	1103508	11.64	ug/L		73
37) Chloroform	5.273	83	8063937	13.64	ug/L		98
39) 1,1,1-Trichloroethane	5.477	97	7523894	13.85	ug/L		96
40) Cyclohexane	5.532	84	6637804	13.73	ug/L		82
41) 1-Chlorobutane	5.627	56	6969851	12.42	ug/L		98
42) 1,1-Dichloropropene	5.686	75	5656688	13.81	ug/L		91
44) 1,2-Dichloroethane	5.967	62	5588672	13.41	ug/L		98
47) Carbon tetrachloride	5.677	117	6736995	15.68	ug/L		99
48) Benzene	5.932	78	16288377	13.65	ug/L		100
50) Trichloroethene	6.693	95	4751760	15.12	ug/L		90
52) 1,2-Dichloropropane	6.943	63	3726588	13.81	ug/L		89
53) Dibromomethane	7.069	174	4395156	15.50	ug/L	#	91
54) Methyl methacrylate	7.123	69	3483889	12.51	ug/L		90
55) 1,4-dioxane	7.124	88	382034m	136.16	ug/L		
56) Bromodichloromethane	7.257	83	6303291	15.07	ug/L		99
57) 2-Nitropropane	7.519	43	1511353	12.56	ug/L		97
58) 2-Chloroethyl vinyl ether	7.611	63	2764734	11.98	ug/L		99
59) cis-1,3-Dichloropropene	7.743	75	7042563	13.36	ug/L		96
60) 4-Methyl-2-pentanone	7.933	43	14552149	44.96	ug/L	#	87
61) trans-1,3-Dichloropropene	8.332	75	6631066	13.15	ug/L		87
62) 1,1,2-Trichloroethane	8.517	97	4478559	14.24	ug/L		93
65) Toluene	8.084	91	19131575	14.65	ug/L		98
66) Ethylmethacrylate	8.454	69	6024804	12.82	ug/L		87
67) Tetrachloroethene	8.645	166	6622386	16.07	ug/L		94
68) 1,3-Dichloropropane	8.685	76	6889307	13.84	ug/L		86
69) 2-Hexanone	8.798	43	9562457	45.13	ug/L		87
70) Dibromochloromethane	8.910	129	5948579	15.07	ug/L		99
71) 1,2-Dibromoethane	9.016	107	5005171	13.87	ug/L		98
72) Chlorobenzene	9.522	112	13372341	14.33	ug/L		93
73) 1,1,1,2-Tetrachloroethane	9.612	131	5280643	14.46	ug/L		96
74) Ethylbenzene	9.641	91	20527654	14.47	ug/L		95
75) m,p-Xylene	9.762	91	31765304	27.90	ug/L		95
76) Styrene	10.175	104	13862194	13.82	ug/L		92
77) Bromoform	10.352	173	4810384	14.51	ug/L		97
79) o-Xylene	10.159	91	16086873	13.15	ug/L		95
80) Isopropylbenzene	10.534	105	19323065	13.53	ug/L		96
82) Bromobenzene	10.826	77	6905932	12.82	ug/L	#	79
83) 1,1,2,2-Tetrachloroethane	10.840	83	5885407	13.62	ug/L		99
84) 1,2,3-Trichloropropane	10.878	110	2155184	14.39	ug/L		98
85) trans-1,4-Dichloro-2-b...	10.899	53	1366812	11.80	ug/L		70
86) n-Propylbenzene	10.947	91	21627603	13.60	ug/L		94
87) 2-Chlorotoluene	11.026	91	12860330	13.45	ug/L		93
88) 4-Chlorotoluene	11.136	91	14990510	13.84	ug/L		94
89) 1,3,5-Trimethylbenzene	11.127	105	15137079	13.67	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614006.D
Acq On : 14 Jun 2023 10:38
Operator : PO1/MP3
Sample : BATCH-BS1
Misc :
ALS Vial : 6 Sample Multiplier: 1

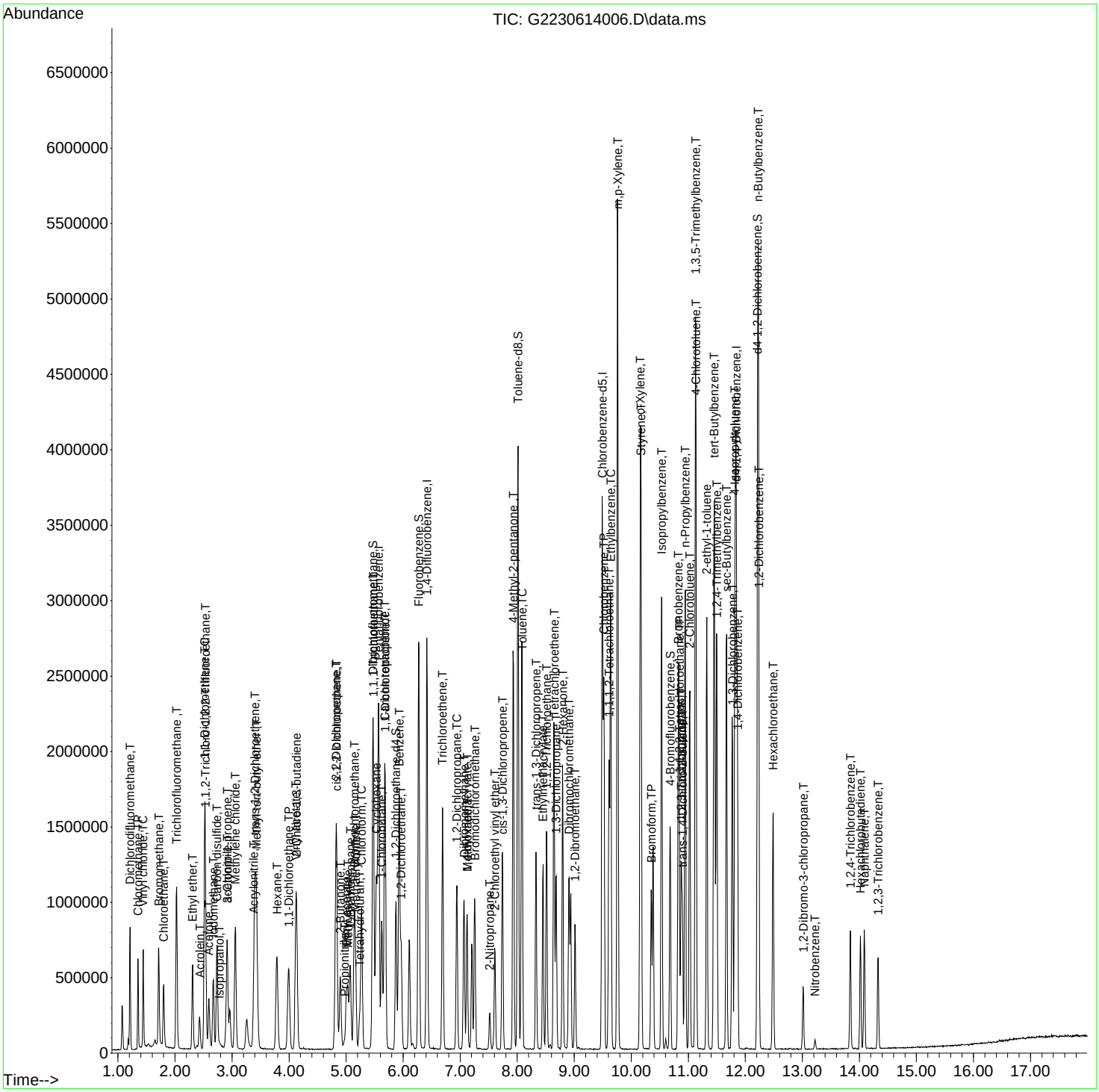
Quant Time: Jun 15 08:34:40 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
90) 2-ethyl-1-toluene	11.327	105	17430772	12.92	ug/L	97
91) tert-Butylbenzene	11.453	119	16562690	13.94	ug/L	90
92) 1,2,4-Trimethylbenzene	11.500	105	14997943	13.54	ug/L	92
93) sec-Butylbenzene	11.672	105	18800789	13.88	ug/L	97
94) 1,3-Dichlorobenzene	11.774	146	9633526	14.61	ug/L	98
95) 4-Isopropyltoluene	11.820	119	15922180	14.21	ug/L	97
96) 1,4-Dichlorobenzene	11.864	146	9596193	14.97	ug/L	97
98) 1,2-Dichlorobenzene	12.236	146	8742108	15.40	ug/L	98
99) n-Butylbenzene	12.229	91	11452292	14.18	ug/L	91
100) Hexachloroethane	12.490	201	3130128	15.19	ug/L	97
101) 1,2-Dibromo-3-chloropr...	13.017	157	1337721	15.59	ug/L	98
102) Nitrobenzene	13.223	77	293063	10.42	ug/L	87
103) 1,2,4-Trichlorobenzene	13.845	180	2633853	14.77	ug/L	97
104) Hexachlorobutadiene	14.021	225	1503594	17.13	ug/L	98
105) Naphthalene	14.088	128	6343353	13.67	ug/L	99
106) 1,2,3-Trichlorobenzene	14.331	180	2028426	14.15	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614006.D
Acq On : 14 Jun 2023 10:38
Operator : PO1/MP3
Sample : BATCH-BS1
Misc :
ALS Vial : 6 Sample Multiplier: 1

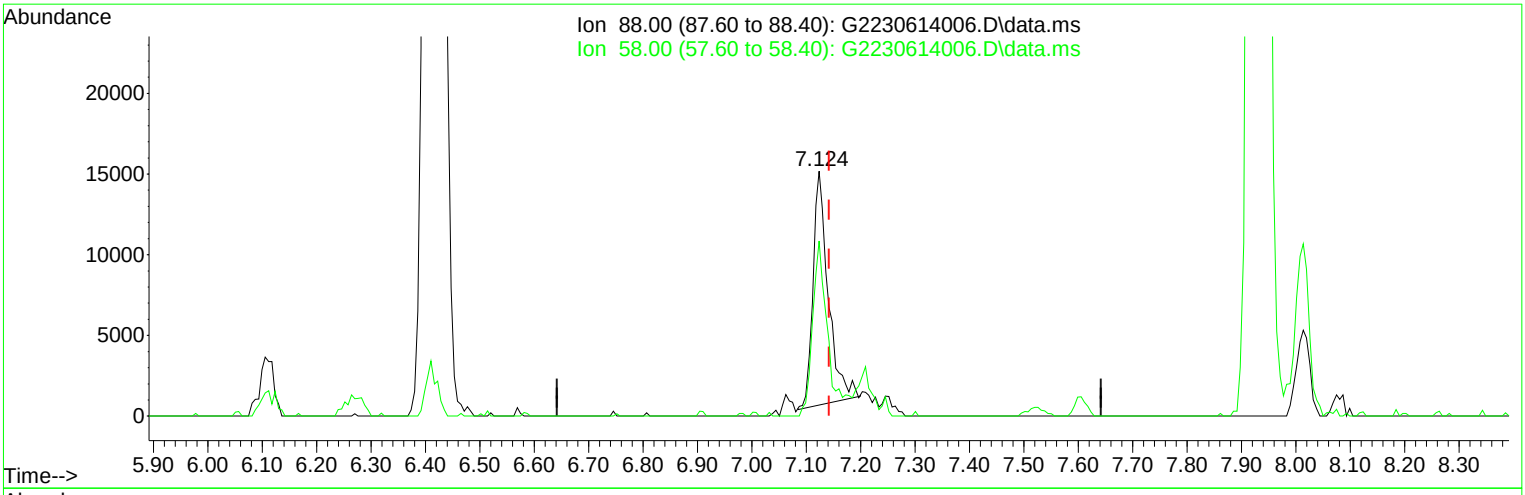
Quant Time: Jun 15 08:34:40 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

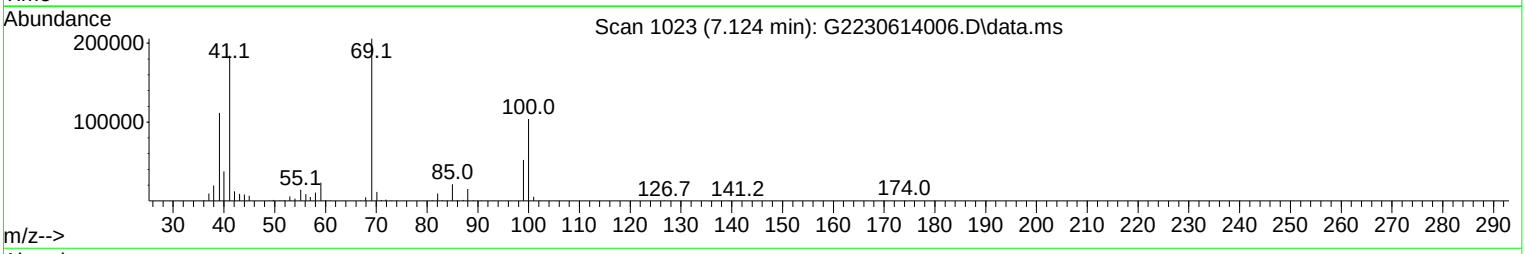


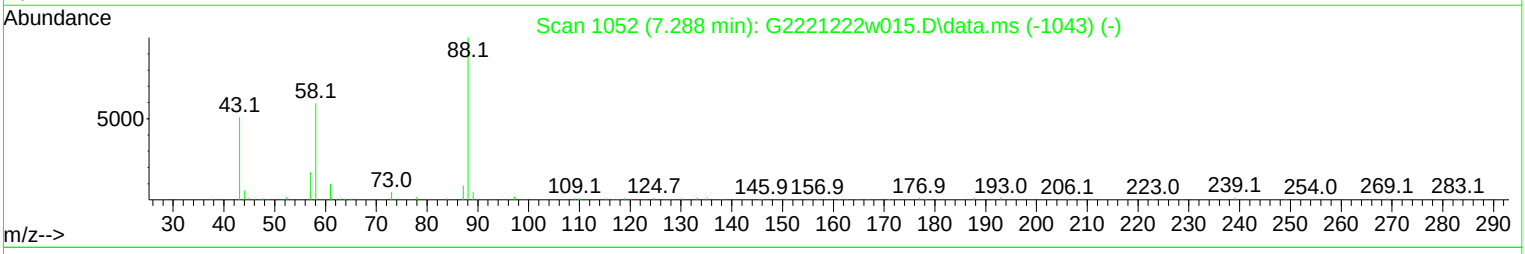
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614006.D
Acq On : 14 Jun 2023 10:38
Operator : PO1/MP3
Sample : BATCH-BS1
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 15 08:34:40 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614006.D\data.ms

(55) 1,4-dioxane (T)

7.126min (-0.016) 99.68 ug/L

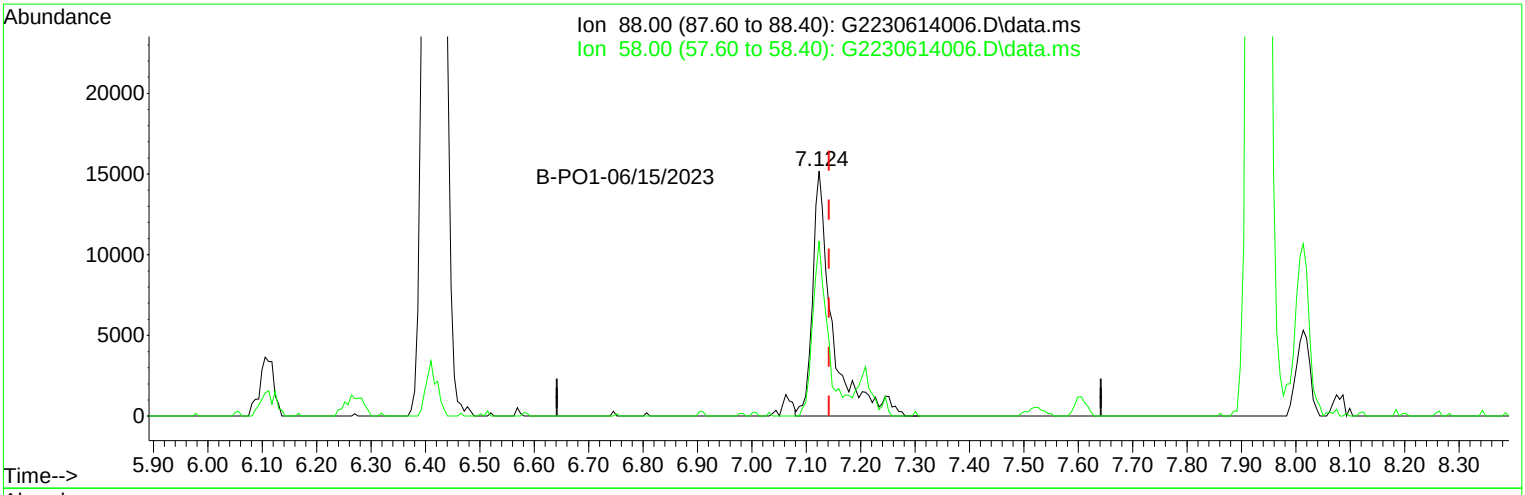
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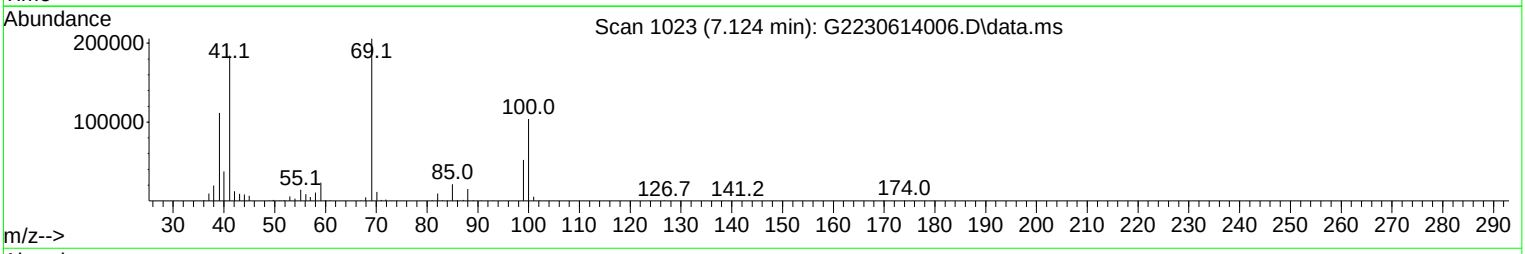
Ion	Exp%	Act%
88.00	100.00	100.00
58.00	56.10	75.69
0.00	0.00	0.00
0.00	0.00	0.00

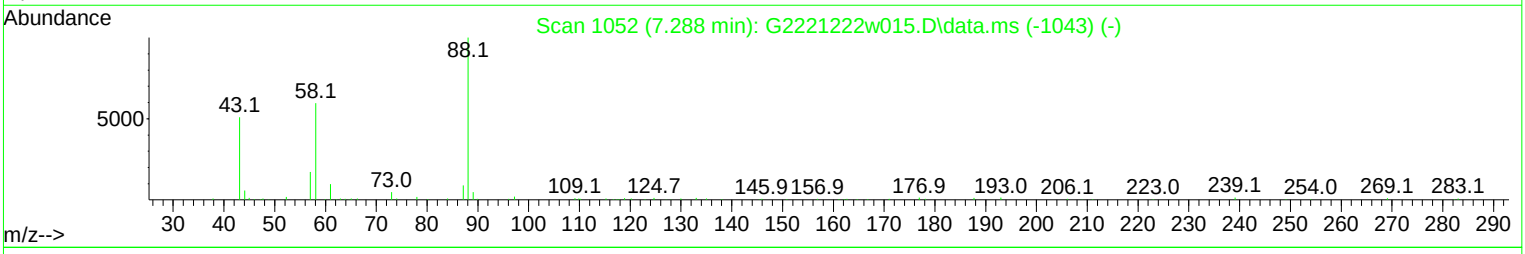
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614006.D
Acq On : 14 Jun 2023 10:38
Operator : PO1/MP3
Sample : BATCH-BS1
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 15 08:34:40 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614006.D\data.ms

(55) 1,4-dioxane (T)

7.124min (-0.018) 136.16 ug/L m

response 382034

Ion	Exp%	Act%
88.00	100.00	100.00
58.00	56.10	55.41
0.00	0.00	0.00
0.00	0.00	0.00

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0436-MS1	File ID:	G2230614010.D
		Prepared:	06/14/23 11:50	Analyzed:	06/14/23 12:16
		Preparation:	5030_W	Dilution:	1
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
630-20-6	1,1,1,2-Tetrachloroethane	15.5	0.0650	0.200	0.500	
71-55-6	1,1,1-Trichloroethane	15.2	0.0877	0.200	0.500	
79-34-5	1,1,2,2-Tetrachloroethane	14.7	0.0621	0.200	0.500	
79-00-5	1,1,2-Trichloroethane	15.6	0.0832	0.200	0.500	
75-34-3	1,1-Dichloroethane	13.9	0.0669	0.200	0.500	
75-35-4	1,1-Dichloroethene	13.9	0.0954	0.200	0.500	
563-58-6	1,1-Dichloropropene	14.7	0.0699	0.200	0.500	
87-61-6	1,2,3-Trichlorobenzene	15.5	0.102	0.200	0.500	
96-18-4	1,2,3-Trichloropropane	14.3	0.0913	0.200	0.500	
120-82-1	1,2,4-Trichlorobenzene	15.7	0.102	0.300	0.600	
95-63-6	1,2,4-Trimethylbenzene	14.0	0.0661	0.200	0.500	
96-12-8	1,2-Dibromo-3-chloropropane	15.5	0.130	0.500	1.00	
106-93-4	1,2-Dibromoethane	14.8	0.0531	0.200	0.500	
95-50-1	1,2-Dichlorobenzene	16.1	0.0630	0.200	0.500	
107-06-2	1,2-Dichloroethane	14.3	0.106	0.300	0.600	
78-87-5	1,2-Dichloropropane	14.6	0.102	0.300	0.600	
108-67-8	1,3,5-Trimethylbenzene	14.1	0.0500	0.200	0.500	
541-73-1	1,3-Dichlorobenzene	15.2	0.0724	0.200	0.500	
142-28-9	1,3-Dichloropropane	14.6	0.0680	0.200	0.500	
106-46-7	1,4-Dichlorobenzene	15.7	0.0920	0.200	0.500	
594-20-7	2,2-Dichloropropane	14.4	0.0920	0.200	0.500	
78-93-3	2-Butanone	48.9	0.330	0.700	1.75	
95-49-8	2-Chlorotoluene	13.9	0.0733	0.200	0.500	
591-78-6	2-Hexanone	45.2	0.0716	0.700	1.75	
106-43-4	4-Chlorotoluene	14.2	0.0921	0.200	0.500	
99-87-6	4-Isopropyltoluene	14.8	0.0700	0.200	0.500	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0436-MS1	File ID:	G2230614010.D
		Prepared:	06/14/23 11:50	Analyzed:	06/14/23 12:16
		Preparation:	5030_W	Dilution:	1
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
108-10-1	4-Methyl-2-pentanone	46.9	0.135	0.700	1.75	
67-64-1	Acetone	48.2	0.518	2.00	4.00	
71-43-2	Benzene	14.6	0.0507	0.200	0.500	
108-86-1	Bromobenzene	13.2	0.0848	0.200	0.500	
74-97-5	Bromochloromethane	14.2	0.0669	0.200	0.500	
75-27-4	Bromodichloromethane	15.8	0.0531	0.200	0.500	
75-25-2	Bromoform	15.2	0.103	0.200	0.500	
74-83-9	Bromomethane	16.4	0.160	0.500	1.00	
75-15-0	Carbon disulfide	13.7	0.140	0.500	1.00	
56-23-5	Carbon tetrachloride	16.9	0.0844	0.200	0.500	
108-90-7	Chlorobenzene	15.1	0.0650	0.200	0.500	
75-00-3	Chloroethane	14.1	0.155	0.200	0.500	
67-66-3	Chloroform	14.3	0.101	0.300	0.600	
74-87-3	Chloromethane	13.2	0.192	0.500	1.00	
156-59-2	cis-1,2-Dichloroethene	15.8	0.103	0.300	0.600	
10061-01-5	cis-1,3-Dichloropropene	14.4	0.0587	0.200	0.500	
124-48-1	Dibromochloromethane	16.2	0.0759	0.200	0.500	
74-95-3	Dibromomethane	16.4	0.0817	0.200	0.500	
75-71-8	Dichlorodifluoromethane	14.2	0.130	0.500	1.00	
100-41-4	Ethylbenzene	15.5	0.0300	0.100	0.200	
87-68-3	Hexachlorobutadiene	18.9	0.100	0.200	0.500	
98-82-8	Isopropylbenzene	14.0	0.0549	0.200	0.500	
179601-23-1	m,p-Xylene	30.0	0.0889	0.400	1.00	
1634-04-4	Methyl tert-butyl ether	13.4	0.0530	0.200	0.500	
75-09-2	Methylene chloride	13.9	0.224	0.500	1.00	
104-51-8	n-Butylbenzene	15.0	0.130	0.500	1.00	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0436-MS1	File ID:	G2230614010.D
		Prepared:	06/14/23 11:50	Analyzed:	06/14/23 12:16
		Preparation:	5030_W	Dilution:	1
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
103-65-1	n-Propylbenzene	14.3	0.0630	0.200	0.500	
91-20-3	Naphthalene	14.4	0.0700	0.200	0.500	
95-47-6	o-Xylene	13.5	0.0416	0.200	0.500	
135-98-8	sec-Butylbenzene	14.6	0.0598	0.200	0.500	
100-42-5	Styrene	14.6	0.0453	0.100	0.200	
98-06-6	tert-Butylbenzene	14.5	0.0453	0.200	0.500	
127-18-4	Tetrachloroethene	17.0	0.178	0.500	1.00	
108-88-3	Toluene	15.6	0.0572	0.200	0.500	
156-60-5	trans-1,2-Dichloroethene	13.1	0.0855	0.200	0.500	
10061-02-6	trans-1,3-Dichloropropene	14.1	0.0587	0.200	0.500	
79-01-6	Trichloroethene	43.2	0.0781	0.200	0.500	E
75-69-4	Trichlorofluoromethane	16.5	0.0505	0.200	0.500	
75-01-4	Vinyl chloride	13.4	0.129	0.500	1.00	

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614010.D
Acq On : 14 Jun 2023 12:16
Operator : PO1/MP3
Sample : BATCH-MS1
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 15 08:41:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.570	168	17143201	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.418	114	22745287	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	20378832	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.839	152	9929884	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.472	111	7201532	19.09	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 95.45%			
43) 1,2-Dichloroethane-d4	5.874	65	6607725	17.72	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 88.60%			
49) Fluorobenzene	6.275	96	25190638	19.44	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.20%			
64) Toluene-d8	8.015	98	25026543	19.48	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.40%			
81) 4-Bromofluorobenzene	10.684	174	4562791	9.73	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 97.30%			
97) d4-1,2-Dichlorobenzene	12.216	152	8366381	19.59	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.95%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.210	85	4957348	14.19	ug/L	98
3) Chloromethane	1.350	50	3741998	13.24	ug/L	99
4) Vinyl chloride	1.442	62	4530320	13.45	ug/L	99
5) Bromomethane	1.711	94	3553778	16.38	ug/L	99
6) Chloroethane	1.800	64	2896198	14.12	ug/L	99
7) Trichlorofluoromethane	2.025	101	8525225	16.51	ug/L	98
8) Ethyl ether	2.309	59	3004796	13.21	ug/L	87
9) Acrolein	2.431	56	1757113	38.29	ug/L	98
10) 1,1-Dichloroethene	2.518	61	5104538	13.91	ug/L	85
11) 1,1,2-Trichloro-1,2,2-...	2.528	101	4296505	15.31	ug/L	95
12) Acetone	2.596	43	3806675	48.22	ug/L	88
13) Iodomethane	2.670	142	5103784	12.79	ug/L	95
14) Carbon disulfide	2.735	76	10277476	13.66	ug/L	100
15) Isopropanol	2.787	45	947849	68.89	ug/L	94
16) acetonitrile	2.911	41	5036697	31.42	ug/L	86
17) 3-Chloro-1-propene	2.913	76	2426199	14.04	ug/L	98
18) Methylene chloride	3.056	49	4354409	13.92	ug/L	77
19) Acrylonitrile	3.378	53	1653712	12.69	ug/L	96
20) trans-1,2-Dichloroethene	3.396	61	4857039	13.07	ug/L	84
21) Methyl tert-butyl ether	3.428	73	13662223	13.37	ug/L	92
22) Hexane	3.785	57	4212639	14.45	ug/L	94
23) 1,1-Dichloroethane	3.990	63	6646250	13.93	ug/L	95
24) Vinyl acetate	4.117	43	7309765	12.54	ug/L	92
25) 2-Chloro-1,3-butadiene	4.128	53	5101435	13.13	ug/L	81
27) 2,2-Dichloropropane	4.822	77	6852218	14.38	ug/L	91
28) cis-1,2-Dichloroethene	4.831	61	6794224	15.76	ug/L	82
29) 2-Butanone	4.900	72	2097148	48.94	ug/L	90
30) Propionitrile	4.971	54	536257	13.03	ug/L	97

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614010.D
Acq On : 14 Jun 2023 12:16
Operator : PO1/MP3
Sample : BATCH-MS1
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 15 08:41:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
31) Ethyl acetate	5.006	61	673939	13.07	ug/L		79
32) Methylacrylate	5.033	55	4019906	12.38	ug/L		90
33) 1-Bromopropane	5.070	41	2333105	13.31	ug/L		66
34) Bromochloromethane	5.144	130	3615258	14.20	ug/L		98
35) Methacrylonitrile	5.166	67	2117315	13.48	ug/L		89
36) Tetrahydrofuran	5.234	42	1069145	11.85	ug/L		74
37) Chloroform	5.271	83	8077341	14.34	ug/L		100
39) 1,1,1-Trichloroethane	5.474	97	7851235	15.17	ug/L		95
40) Cyclohexane	5.530	84	6888020	14.96	ug/L		81
41) 1-Chlorobutane	5.625	56	7205424	13.48	ug/L		98
42) 1,1-Dichloropropene	5.685	75	5740943	14.72	ug/L		92
44) 1,2-Dichloroethane	5.967	62	5664711	14.28	ug/L		98
47) Carbon tetrachloride	5.676	117	6947410	16.93	ug/L		99
48) Benzene	5.931	78	16649230	14.61	ug/L		99
50) Trichloroethene	6.693	95	12924938	43.20	ug/L		90
52) 1,2-Dichloropropane	6.941	63	3758641	14.59	ug/L		88
53) Dibromomethane	7.068	174	4431589	16.36	ug/L	#	91
54) Methyl methacrylate	7.122	69	3515055	13.21	ug/L		90
55) 1,4-dioxane	7.130	88	388507	144.93	ug/L		99
56) Bromodichloromethane	7.256	83	6298137	15.76	ug/L		99
57) 2-Nitropropane	7.518	43	1507213	13.11	ug/L		94
59) cis-1,3-Dichloropropene	7.742	75	7252632	14.40	ug/L		95
60) 4-Methyl-2-pentanone	7.933	43	14511281	46.94	ug/L	#	88
61) trans-1,3-Dichloropropene	8.331	75	6771632	14.06	ug/L		89
62) 1,1,2-Trichloroethane	8.515	97	4679085	15.57	ug/L		94
65) Toluene	8.084	91	19563093	15.63	ug/L		97
66) Ethylmethacrylate	8.453	69	6093700	13.53	ug/L		87
67) Tetrachloroethene	8.645	166	6691016	16.95	ug/L		94
68) 1,3-Dichloropropane	8.683	76	6973534	14.63	ug/L		87
69) 2-Hexanone	8.798	43	9168485	45.16	ug/L		87
70) Dibromochloromethane	8.909	129	6119624	16.18	ug/L		98
71) 1,2-Dibromoethane	9.015	107	5101040	14.75	ug/L		100
72) Chlorobenzene	9.522	112	13506634	15.11	ug/L		92
73) 1,1,1,2-Tetrachloroethane	9.611	131	5428673	15.51	ug/L		97
74) Ethylbenzene	9.641	91	21098373	15.52	ug/L		95
75) m,p-Xylene	9.761	91	32751635	30.02	ug/L		94
76) Styrene	10.174	104	13985317	14.55	ug/L		93
77) Bromoform	10.352	173	4832215	15.21	ug/L		97
79) o-Xylene	10.159	91	16465690	13.48	ug/L		95
80) Isopropylbenzene	10.534	105	19896594	13.95	ug/L		96
82) Bromobenzene	10.825	77	7096413	13.19	ug/L	#	79
83) 1,1,2,2-Tetrachloroethane	10.839	83	6332712	14.67	ug/L		98
84) 1,2,3-Trichloropropane	10.878	110	2141187	14.32	ug/L		95
85) trans-1,4-Dichloro-2-b...	10.898	53	1416918	12.25	ug/L		73
86) n-Propylbenzene	10.946	91	22689091	14.28	ug/L		95
87) 2-Chlorotoluene	11.025	91	13274834	13.90	ug/L		94
88) 4-Chlorotoluene	11.135	91	15374829	14.21	ug/L		93
89) 1,3,5-Trimethylbenzene	11.127	105	15573696	14.08	ug/L		94
90) 2-ethyl-1-toluene	11.326	105	17989239	13.35	ug/L		98

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614010.D
Acq On : 14 Jun 2023 12:16
Operator : PO1/MP3
Sample : BATCH-MS1
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 15 08:41:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

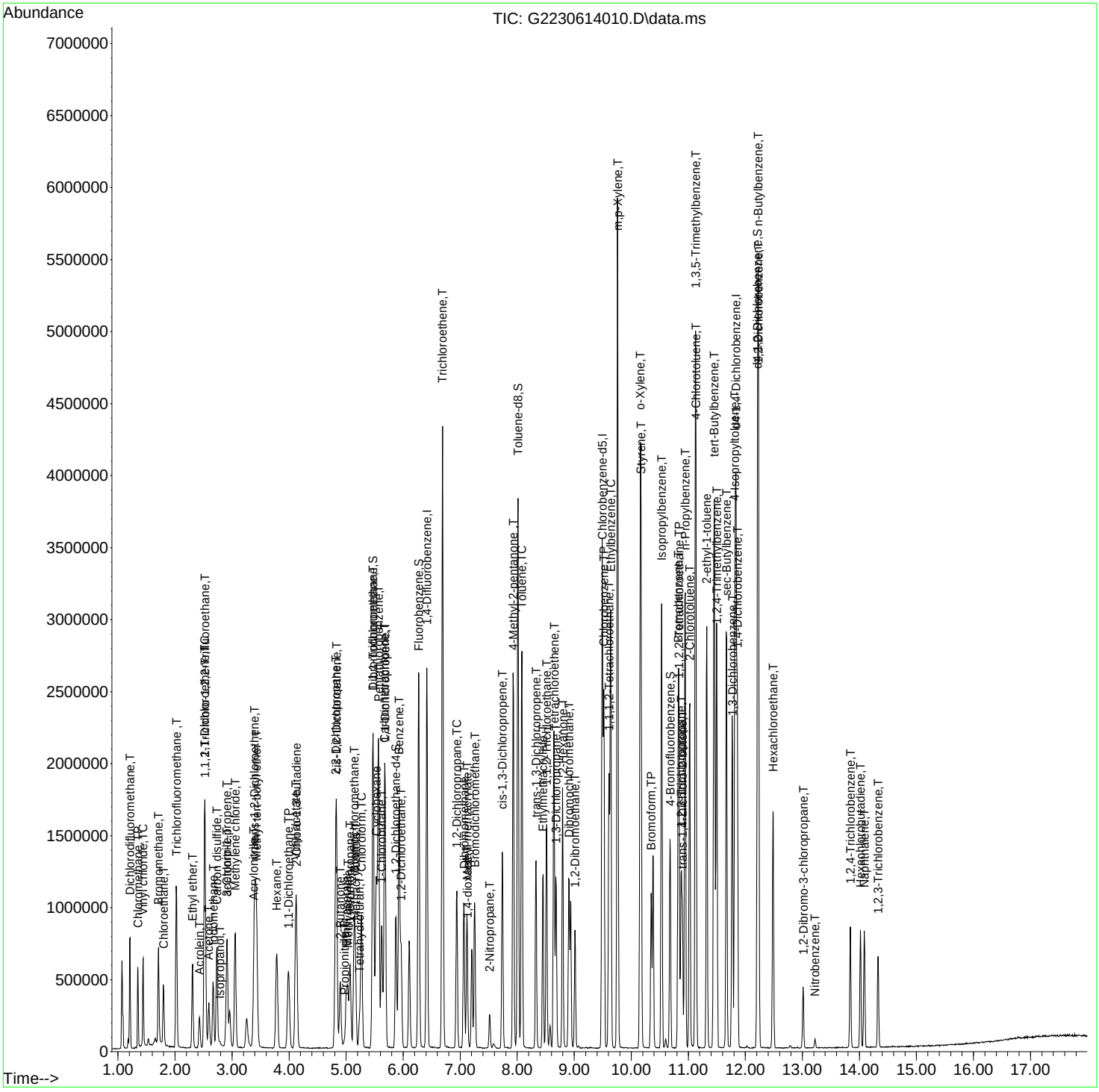
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
91) tert-Butylbenzene	11.452	119	17164346	14.46	ug/L	90
92) 1,2,4-Trimethylbenzene	11.499	105	15488781	13.99	ug/L	92
93) sec-Butylbenzene	11.671	105	19786120	14.62	ug/L	97
94) 1,3-Dichlorobenzene	11.773	146	10019724	15.22	ug/L	97
95) 4-Isopropyltoluene	11.820	119	16521281	14.76	ug/L	97
96) 1,4-Dichlorobenzene	11.863	146	10044999	15.69	ug/L	97
98) 1,2-Dichlorobenzene	12.234	146	9134994	16.12	ug/L	97
99) n-Butylbenzene	12.229	91	12072448	14.97	ug/L	91
100) Hexachloroethane	12.490	201	3234152	15.71	ug/L	99
101) 1,2-Dibromo-3-chloropr...	13.016	157	1325926	15.47	ug/L	95
102) Nitrobenzene	13.222	77	276985	9.81	ug/L	89
103) 1,2,4-Trichlorobenzene	13.843	180	2791757	15.67	ug/L	97
104) Hexachlorobutadiene	14.021	225	1657665	18.92	ug/L	97
105) Naphthalene	14.089	128	6697052	14.45	ug/L	98
106) 1,2,3-Trichlorobenzene	14.331	180	2219972	15.51	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614010.D
Acq On : 14 Jun 2023 12:16
Operator : PO1/MP3
Sample : BATCH-MS1
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 15 08:41:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G



1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0436-MSD1	File ID:	G2230614011.D
		Prepared:	06/14/23 11:50	Analyzed:	06/14/23 12:41
		Preparation:	5030_W	Dilution:	1
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
630-20-6	1,1,1,2-Tetrachloroethane	15.0	0.0650	0.200	0.500	
71-55-6	1,1,1-Trichloroethane	14.5	0.0877	0.200	0.500	
79-34-5	1,1,2,2-Tetrachloroethane	14.9	0.0621	0.200	0.500	
79-00-5	1,1,2-Trichloroethane	15.4	0.0832	0.200	0.500	
75-34-3	1,1-Dichloroethane	13.8	0.0669	0.200	0.500	
75-35-4	1,1-Dichloroethene	13.7	0.0954	0.200	0.500	
563-58-6	1,1-Dichloropropene	14.8	0.0699	0.200	0.500	
87-61-6	1,2,3-Trichlorobenzene	13.9	0.102	0.200	0.500	
96-18-4	1,2,3-Trichloropropane	14.5	0.0913	0.200	0.500	
120-82-1	1,2,4-Trichlorobenzene	14.3	0.102	0.300	0.600	
95-63-6	1,2,4-Trimethylbenzene	13.9	0.0661	0.200	0.500	
96-12-8	1,2-Dibromo-3-chloropropane	14.1	0.130	0.500	1.00	
106-93-4	1,2-Dibromoethane	14.5	0.0531	0.200	0.500	
95-50-1	1,2-Dichlorobenzene	15.7	0.0630	0.200	0.500	
107-06-2	1,2-Dichloroethane	14.2	0.106	0.300	0.600	
78-87-5	1,2-Dichloropropane	14.7	0.102	0.300	0.600	
108-67-8	1,3,5-Trimethylbenzene	14.0	0.0500	0.200	0.500	
541-73-1	1,3-Dichlorobenzene	15.1	0.0724	0.200	0.500	
142-28-9	1,3-Dichloropropane	14.5	0.0680	0.200	0.500	
106-46-7	1,4-Dichlorobenzene	15.3	0.0920	0.200	0.500	
594-20-7	2,2-Dichloropropane	13.9	0.0920	0.200	0.500	
78-93-3	2-Butanone	46.5	0.330	0.700	1.75	
95-49-8	2-Chlorotoluene	13.9	0.0733	0.200	0.500	
591-78-6	2-Hexanone	43.4	0.0716	0.700	1.75	
106-43-4	4-Chlorotoluene	14.3	0.0921	0.200	0.500	
99-87-6	4-Isopropyltoluene	14.6	0.0700	0.200	0.500	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0436-MSD1	File ID:	G2230614011.D
		Prepared:	06/14/23 11:50	Analyzed:	06/14/23 12:41
		Preparation:	5030_W	Dilution:	1
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
108-10-1	4-Methyl-2-pentanone	44.9	0.135	0.700	1.75	
67-64-1	Acetone	45.6	0.518	2.00	4.00	
71-43-2	Benzene	14.4	0.0507	0.200	0.500	
108-86-1	Bromobenzene	13.3	0.0848	0.200	0.500	
74-97-5	Bromochloromethane	14.2	0.0669	0.200	0.500	
75-27-4	Bromodichloromethane	15.6	0.0531	0.200	0.500	
75-25-2	Bromoform	13.6	0.103	0.200	0.500	
74-83-9	Bromomethane	16.8	0.160	0.500	1.00	
75-15-0	Carbon disulfide	14.0	0.140	0.500	1.00	
56-23-5	Carbon tetrachloride	16.8	0.0844	0.200	0.500	
108-90-7	Chlorobenzene	15.0	0.0650	0.200	0.500	
75-00-3	Chloroethane	14.0	0.155	0.200	0.500	
67-66-3	Chloroform	14.1	0.101	0.300	0.600	
74-87-3	Chloromethane	13.2	0.192	0.500	1.00	
156-59-2	cis-1,2-Dichloroethene	15.8	0.103	0.300	0.600	
10061-01-5	cis-1,3-Dichloropropene	13.9	0.0587	0.200	0.500	
124-48-1	Dibromochloromethane	15.6	0.0759	0.200	0.500	
74-95-3	Dibromomethane	16.0	0.0817	0.200	0.500	
75-71-8	Dichlorodifluoromethane	14.0	0.130	0.500	1.00	
100-41-4	Ethylbenzene	15.2	0.0300	0.100	0.200	
87-68-3	Hexachlorobutadiene	16.5	0.100	0.200	0.500	
98-82-8	Isopropylbenzene	14.2	0.0549	0.200	0.500	
179601-23-1	m,p-Xylene	29.4	0.0889	0.400	1.00	
1634-04-4	Methyl tert-butyl ether	13.2	0.0530	0.200	0.500	
75-09-2	Methylene chloride	13.2	0.224	0.500	1.00	
104-51-8	n-Butylbenzene	14.6	0.130	0.500	1.00	

1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory:	Environmental Monitoring and Technologies, Inc			SDG:	23F0196
Client:	HDR			Project:	Longhorn AAP
Matrix:	Water	Laboratory ID:	B3F0436-MSD1	File ID:	G2230614011.D
		Prepared:	06/14/23 11:50	Analyzed:	06/14/23 12:41
		Preparation:	5030_W	Dilution:	1
Batch:	B3F0436	Sequence:	S3F0256	Calibration:	EE30097
Instrument:	G2				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	LOD	LOQ	Q
103-65-1	n-Propylbenzene	14.2	0.0630	0.200	0.500	
91-20-3	Naphthalene	13.1	0.0700	0.200	0.500	
95-47-6	o-Xylene	13.7	0.0416	0.200	0.500	
135-98-8	sec-Butylbenzene	14.6	0.0598	0.200	0.500	
100-42-5	Styrene	14.4	0.0453	0.100	0.200	
98-06-6	tert-Butylbenzene	14.7	0.0453	0.200	0.500	
127-18-4	Tetrachloroethene	16.6	0.178	0.500	1.00	
108-88-3	Toluene	15.5	0.0572	0.200	0.500	
156-60-5	trans-1,2-Dichloroethene	13.0	0.0855	0.200	0.500	
10061-02-6	trans-1,3-Dichloropropene	13.8	0.0587	0.200	0.500	
79-01-6	Trichloroethene	42.6	0.0781	0.200	0.500	E
75-69-4	Trichlorofluoromethane	15.8	0.0505	0.200	0.500	
75-01-4	Vinyl chloride	13.1	0.129	0.500	1.00	

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614011.D
Acq On : 14 Jun 2023 12:41
Operator : PO1/MP3
Sample : BATCH-MSD1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 15 08:49:04 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.572	168	17412431	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.420	114	22989740	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.494	117	20405187	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.840	152	9525058	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.475	111	7364688	19.22	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.10%			
43) 1,2-Dichloroethane-d4	5.877	65	6740681	17.80	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 89.00%			
49) Fluorobenzene	6.277	96	25577520	19.52	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.60%			
64) Toluene-d8	8.015	98	25322162	19.69	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 98.45%			
81) 4-Bromofluorobenzene	10.684	174	4510664	10.03	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 100.30%			
97) d4-1,2-Dichlorobenzene	12.216	152	8216743	20.06	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.30%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.214	85	4961283	13.98	ug/L	100
3) Chloromethane	1.354	50	3796660	13.23	ug/L	99
4) Vinyl chloride	1.447	62	4467791	13.06	ug/L	97
5) Bromomethane	1.717	94	3704703	16.82	ug/L	99
6) Chloroethane	1.805	64	2908135	13.96	ug/L	96
7) Trichlorofluoromethane	2.031	101	8280302	15.79	ug/L	98
8) Ethyl ether	2.312	59	2973333	12.87	ug/L	84
9) Acrolein	2.434	56	1705067	36.56	ug/L	98
10) 1,1-Dichloroethene	2.523	61	5109474	13.71	ug/L	87
11) 1,1,2-Trichloro-1,2,2-...	2.534	101	4197251	14.72	ug/L	96
12) Acetone	2.598	43	3663608	45.60	ug/L	90
13) Iodomethane	2.675	142	5202445	12.83	ug/L	95
14) Carbon disulfide	2.739	76	10713434	14.02	ug/L	100
15) Isopropanol	2.779	45	975990	69.84	ug/L	100
16) acetonitrile	2.918	41	4999626	30.69	ug/L	87
17) 3-Chloro-1-propene	2.918	76	2379824	13.55	ug/L	98
18) Methylene chloride	3.060	49	4223275	13.22	ug/L	75
19) Acrylonitrile	3.382	53	1655177	12.50	ug/L	96
20) trans-1,2-Dichloroethene	3.401	61	4890486	12.96	ug/L	85
21) Methyl tert-butyl ether	3.430	73	13685886	13.18	ug/L	92
22) Hexane	3.789	57	4084552	13.79	ug/L	94
23) 1,1-Dichloroethane	3.997	63	6685362	13.79	ug/L	97
24) Vinyl acetate	4.122	43	7118328	12.03	ug/L	91
25) 2-Chloro-1,3-butadiene	4.133	53	5047309	12.79	ug/L	81
27) 2,2-Dichloropropane	4.825	77	6731880	13.91	ug/L	91
28) cis-1,2-Dichloroethene	4.835	61	6905075	15.76	ug/L	85
29) 2-Butanone	4.902	72	2026426	46.53	ug/L	90
30) Propionitrile	4.975	54	525420	12.56	ug/L	91

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614011.D
Acq On : 14 Jun 2023 12:41
Operator : PO1/MP3
Sample : BATCH-MSD1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 15 08:49:04 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
31) Ethyl acetate	5.007	61	703940	13.44	ug/L		78
32) Methylacrylate	5.034	55	3975096	12.05	ug/L		92
33) 1-Bromopropane	5.075	41	2272279	12.76	ug/L		62
34) Bromochloromethane	5.148	130	3661260	14.16	ug/L		98
35) Methacrylonitrile	5.168	67	2094790	13.13	ug/L		89
36) Tetrahydrofuran	5.239	42	1091270	11.91	ug/L		80
37) Chloroform	5.274	83	8075185	14.12	ug/L		100
39) 1,1,1-Trichloroethane	5.478	97	7645240	14.54	ug/L		96
40) Cyclohexane	5.535	84	6740334	14.41	ug/L		81
41) 1-Chlorobutane	5.629	56	7098006	13.07	ug/L		97
42) 1,1-Dichloropropene	5.688	75	5847559	14.76	ug/L		91
44) 1,2-Dichloroethane	5.968	62	5742861	14.25	ug/L		97
47) Carbon tetrachloride	5.679	117	6950218	16.75	ug/L		100
48) Benzene	5.933	78	16565362	14.38	ug/L		100
50) Trichloroethene	6.694	95	12892666	42.63	ug/L		90
52) 1,2-Dichloropropane	6.943	63	3833846	14.72	ug/L		90
53) Dibromomethane	7.070	174	4385354	16.02	ug/L	#	91
54) Methyl methacrylate	7.123	69	3479723	12.94	ug/L		90
55) 1,4-dioxane	7.130	88	380704m	140.51	ug/L		
56) Bromodichloromethane	7.258	83	6299398	15.60	ug/L		99
57) 2-Nitropropane	7.520	43	1464583	12.60	ug/L		95
59) cis-1,3-Dichloropropene	7.743	75	7054113	13.86	ug/L		96
60) 4-Methyl-2-pentanone	7.933	43	14030573	44.89	ug/L	#	87
61) trans-1,3-Dichloropropene	8.332	75	6727327	13.82	ug/L		88
62) 1,1,2-Trichloroethane	8.517	97	4664557	15.36	ug/L		92
65) Toluene	8.084	91	19459883	15.53	ug/L		97
66) Ethylmethacrylate	8.454	69	5991088	13.29	ug/L		86
67) Tetrachloroethene	8.646	166	6570449	16.62	ug/L		94
68) 1,3-Dichloropropane	8.684	76	6933424	14.52	ug/L		86
69) 2-Hexanone	8.798	43	8836657	43.45	ug/L		87
70) Dibromochloromethane	8.910	129	5913816	15.62	ug/L		98
71) 1,2-Dibromoethane	9.016	107	5021467	14.50	ug/L		99
72) Chlorobenzene	9.522	112	13431544	15.00	ug/L		92
73) 1,1,1,2-Tetrachloroethane	9.612	131	5269608	15.04	ug/L		97
74) Ethylbenzene	9.642	91	20637680	15.16	ug/L		95
75) m,p-Xylene	9.761	91	32092959	29.38	ug/L		94
76) Styrene	10.175	104	13843165	14.39	ug/L		92
77) Bromoform	10.352	173	4337177	13.64	ug/L		98
79) o-Xylene	10.159	91	16018820	13.67	ug/L		95
80) Isopropylbenzene	10.534	105	19419312	14.19	ug/L		96
82) Bromobenzene	10.825	77	6876513	13.32	ug/L	#	79
83) 1,1,2,2-Tetrachloroethane	10.840	83	6159474	14.88	ug/L		100
84) 1,2,3-Trichloropropane	10.878	110	2080120	14.50	ug/L		99
85) trans-1,4-Dichloro-2-b...	10.899	53	1054722	9.50	ug/L		67
86) n-Propylbenzene	10.947	91	21704600	14.24	ug/L		95
87) 2-Chlorotoluene	11.025	91	12763860	13.94	ug/L		94
88) 4-Chlorotoluene	11.135	91	14809162	14.27	ug/L		93
89) 1,3,5-Trimethylbenzene	11.127	105	14870366	14.01	ug/L		94
90) 2-ethyl-1-toluene	11.327	105	17246657	13.34	ug/L		97

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614011.D
Acq On : 14 Jun 2023 12:41
Operator : PO1/MP3
Sample : BATCH-MSD1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 15 08:49:04 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

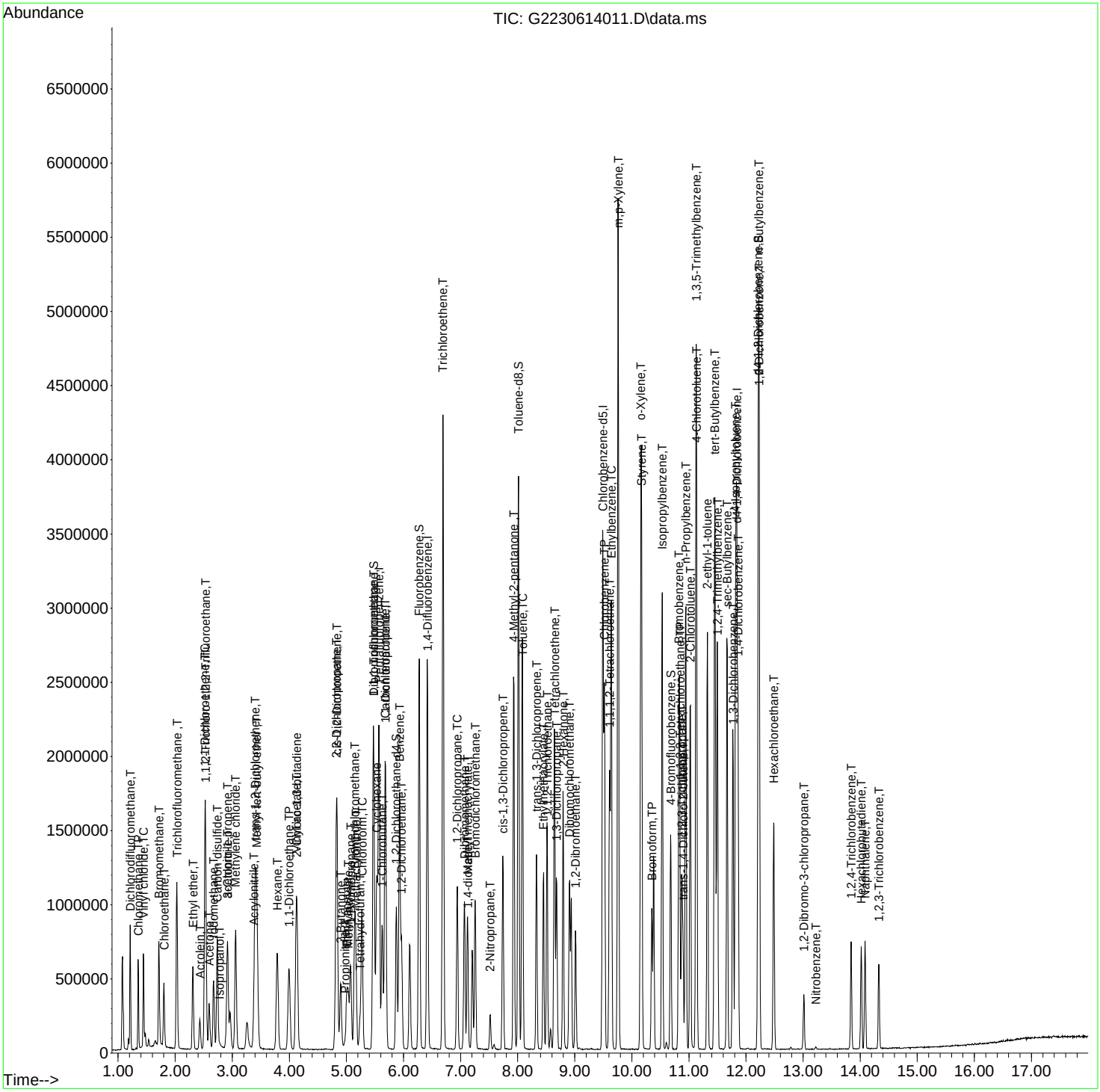
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
91) tert-Butylbenzene	11.453	119	16760984	14.72	ug/L		89
92) 1,2,4-Trimethylbenzene	11.499	105	14742151	13.89	ug/L		94
93) sec-Butylbenzene	11.671	105	18901185	14.56	ug/L		97
94) 1,3-Dichlorobenzene	11.773	146	9540328	15.10	ug/L		98
95) 4-Isopropyltoluene	11.819	119	15698693	14.62	ug/L		97
96) 1,4-Dichlorobenzene	11.863	146	9385699	15.28	ug/L		97
98) 1,2-Dichlorobenzene	12.235	146	8546756	15.72	ug/L		97
99) n-Butylbenzene	12.229	91	11318699	14.63	ug/L		92
100) Hexachloroethane	12.489	201	3008728	15.24	ug/L		97
101) 1,2-Dibromo-3-chloropr...	13.016	157	1163426	14.14	ug/L		97
102) Nitrobenzene	13.225	77	69620	2.28	ug/L	#	65
103) 1,2,4-Trichlorobenzene	13.844	180	2439767	14.27	ug/L		96
104) Hexachlorobutadiene	14.021	225	1385724	16.47	ug/L		97
105) Naphthalene	14.088	128	5813079	13.07	ug/L		99
106) 1,2,3-Trichlorobenzene	14.330	180	1906875	13.89	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614011.D
Acq On : 14 Jun 2023 12:41
Operator : PO1/MP3
Sample : BATCH-MSD1
Misc :
ALS Vial : 11 Sample Multiplier: 1

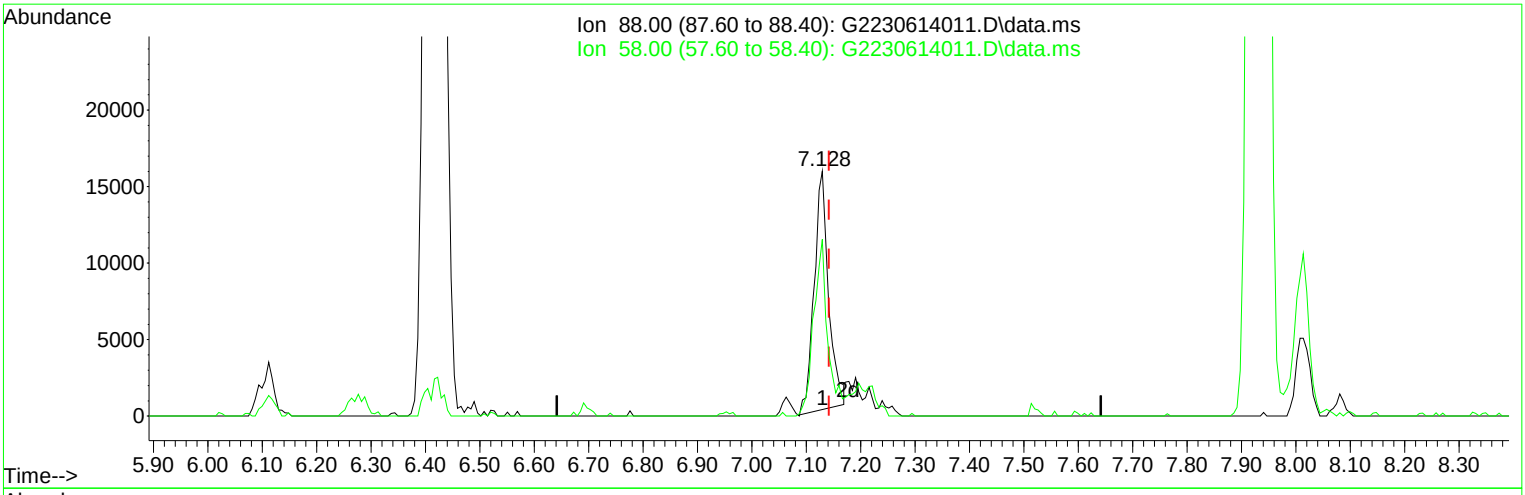
Quant Time: Jun 15 08:49:04 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

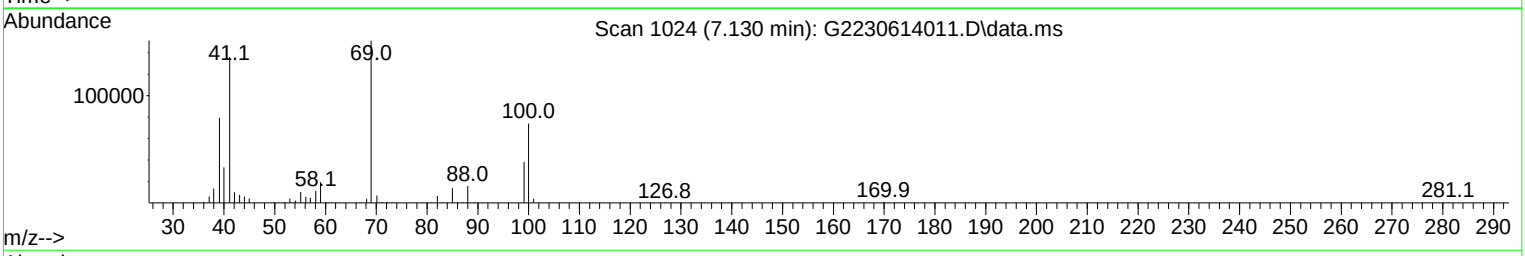


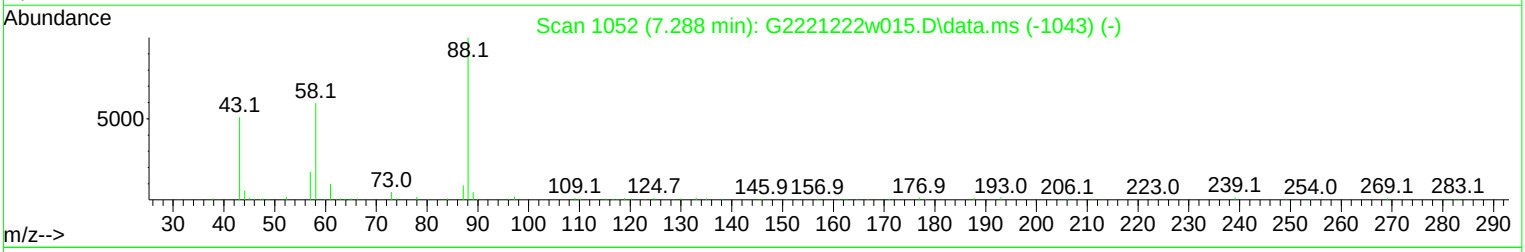
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614011.D
Acq On : 14 Jun 2023 12:41
Operator : PO1/MP3
Sample : BATCH-MSD1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 15 08:49:04 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614011.D\data.ms

(55) 1,4-dioxane (T)

7.131min (-0.011) 104.49 ug/L

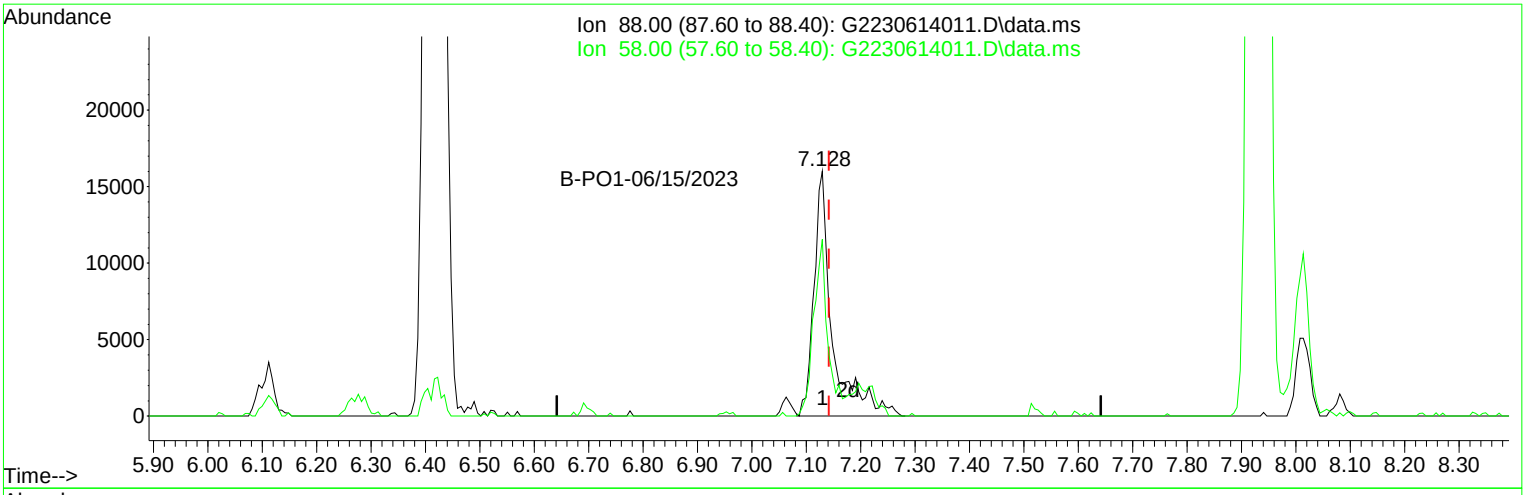
response 283098

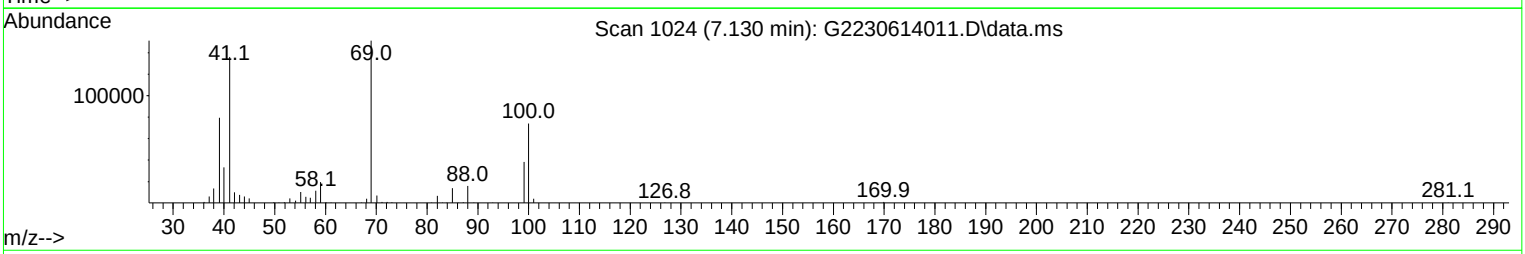
Ion	Exp%	Act%
88.00	100.00	100.00
58.00	56.10	58.74
0.00	0.00	0.00
0.00	0.00	0.00

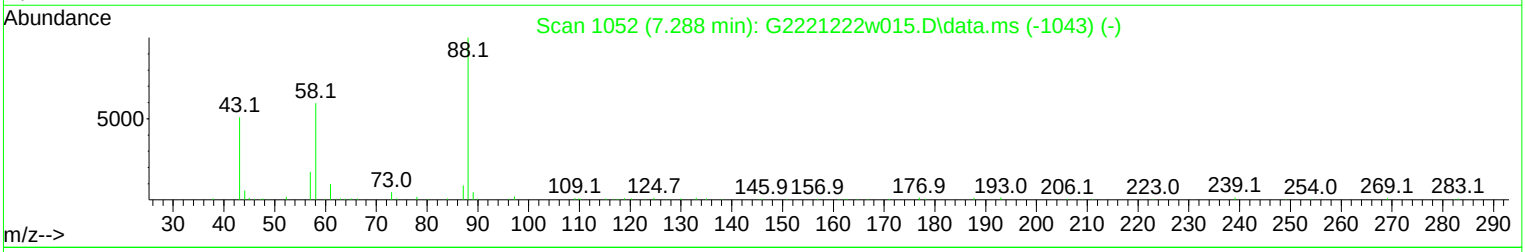
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614011.D
Acq On : 14 Jun 2023 12:41
Operator : PO1/MP3
Sample : BATCH-MSD1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 15 08:49:04 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614011.D\data.ms

(55) 1,4-dioxane (T)

7.130min (-0.012) 140.51 ug/L m

response 380704

Ion	Exp%	Act%
88.00	100.00	100.00
58.00	56.10	43.68
0.00	0.00	0.00
0.00	0.00	0.00

SURROGATE SUMMARY SHEET

SW8260B/D

Client: HDR
SDG: 23F0196
Project: Longhorn AAP

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
LCS (B3F0436-BS1) ug/L		Lab File ID: G2230614006.D		Analyzed: 06/14/23 10:38
Dibromofluoromethane	20.00	94	80 - 119	
1,2-Dichloroethane-d4	20.00	88	81 - 118	
Fluorobenzene	20.00	98	80 - 116	
Toluene-d8	20.00	98	89 - 112	
4-Bromofluorobenzene	10.00	100	85 - 114	
1,2-Dichlorobenzene-d4	20.00	102	87 - 138	
Blank (B3F0436-BLK1) ug/L		Lab File ID: G2230614009.D		Analyzed: 06/14/23 11:52
Dibromofluoromethane	20.00	98	80 - 119	
1,2-Dichloroethane-d4	20.00	90	81 - 118	
Fluorobenzene	20.00	97	80 - 116	
Toluene-d8	20.00	96	89 - 112	
4-Bromofluorobenzene	10.00	96	85 - 114	
1,2-Dichlorobenzene-d4	20.00	103	87 - 138	
Matrix Spike (B3F0436-MS1) ug/L		Lab File ID: G2230614010.D		Analyzed: 06/14/23 12:16
Dibromofluoromethane	20.00	95	80 - 119	
1,2-Dichloroethane-d4	20.00	89	81 - 118	
Fluorobenzene	20.00	97	80 - 116	
Toluene-d8	20.00	97	89 - 112	
4-Bromofluorobenzene	10.00	97	85 - 114	
1,2-Dichlorobenzene-d4	20.00	98	87 - 138	
Matrix Spike Dup (B3F0436-MSD1) ug/L		Lab File ID: G2230614011.D		Analyzed: 06/14/23 12:41
Dibromofluoromethane	20.00	96	80 - 119	
1,2-Dichloroethane-d4	20.00	89	81 - 118	
Fluorobenzene	20.00	98	80 - 116	
Toluene-d8	20.00	98	89 - 112	
4-Bromofluorobenzene	10.00	100	85 - 114	
1,2-Dichlorobenzene-d4	20.00	100	87 - 138	
6247WW36 (23F0196-01) ug/L		Lab File ID: G2230614013.D		Analyzed: 06/14/23 13:30
Dibromofluoromethane	20.00	91	80 - 119	
1,2-Dichloroethane-d4	20.00	88	81 - 118	
Fluorobenzene	20.00	96	80 - 116	
Toluene-d8	20.00	98	89 - 112	
4-Bromofluorobenzene	10.00	98	85 - 114	
1,2-Dichlorobenzene-d4	20.00	103	87 - 138	
6247WW35 (23F0196-02) ug/L		Lab File ID: G2230614014.D		Analyzed: 06/14/23 13:55
Dibromofluoromethane	20.00	98	80 - 119	
1,2-Dichloroethane-d4	20.00	89	81 - 118	
Fluorobenzene	20.00	96	80 - 116	
Toluene-d8	20.00	97	89 - 112	
4-Bromofluorobenzene	10.00	99	85 - 114	
1,2-Dichlorobenzene-d4	20.00	101	87 - 138	

SURROGATE SUMMARY SHEET

SW8260B/D

Client: HDR
SDG: 23F0196
Project: Longhorn AAP

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
6247WW32 (23F0196-04) ug/L		Lab File ID: G2230614015.D		Analyzed: 06/14/23 14:20
Dibromofluoromethane	20.00	96	80 - 119	
1,2-Dichloroethane-d4	20.00	88	81 - 118	
Fluorobenzene	20.00	96	80 - 116	
Toluene-d8	20.00	97	89 - 112	
4-Bromofluorobenzene	10.00	96	85 - 114	
1,2-Dichlorobenzene-d4	20.00	103	87 - 138	
6247WW47 (23F0196-05) ug/L		Lab File ID: G2230614016.D		Analyzed: 06/14/23 14:45
Dibromofluoromethane	20.00	96	80 - 119	
1,2-Dichloroethane-d4	20.00	87	81 - 118	
Fluorobenzene	20.00	97	80 - 116	
Toluene-d8	20.00	97	89 - 112	
4-Bromofluorobenzene	10.00	97	85 - 114	
1,2-Dichlorobenzene-d4	20.00	102	87 - 138	
6347WW44 (23F0196-06) ug/L		Lab File ID: G2230614017.D		Analyzed: 06/14/23 15:10
Dibromofluoromethane	20.00	96	80 - 119	
1,2-Dichloroethane-d4	20.00	87	81 - 118	
Fluorobenzene	20.00	96	80 - 116	
Toluene-d8	20.00	98	89 - 112	
4-Bromofluorobenzene	10.00	98	85 - 114	
1,2-Dichlorobenzene-d4	20.00	101	87 - 138	
6347WW21 (23F0196-07) ug/L		Lab File ID: G2230614018.D		Analyzed: 06/14/23 15:35
Dibromofluoromethane	20.00	94	80 - 119	
1,2-Dichloroethane-d4	20.00	88	81 - 118	
Fluorobenzene	20.00	97	80 - 116	
Toluene-d8	20.00	96	89 - 112	
4-Bromofluorobenzene	10.00	97	85 - 114	
1,2-Dichlorobenzene-d4	20.00	105	87 - 138	
6447WW60 (23F0196-09) ug/L		Lab File ID: G2230614019.D		Analyzed: 06/14/23 15:59
Dibromofluoromethane	20.00	95	80 - 119	
1,2-Dichloroethane-d4	20.00	85	81 - 118	
Fluorobenzene	20.00	96	80 - 116	
Toluene-d8	20.00	98	89 - 112	
4-Bromofluorobenzene	10.00	99	85 - 114	
1,2-Dichlorobenzene-d4	20.00	102	87 - 138	
6447WW28 (23F0196-10) ug/L		Lab File ID: G2230614020.D		Analyzed: 06/14/23 16:25
Dibromofluoromethane	20.00	99	80 - 119	
1,2-Dichloroethane-d4	20.00	90	81 - 118	
Fluorobenzene	20.00	96	80 - 116	
Toluene-d8	20.00	96	89 - 112	
4-Bromofluorobenzene	10.00	99	85 - 114	
1,2-Dichlorobenzene-d4	20.00	102	87 - 138	

SURROGATE SUMMARY SHEET

SW8260B/D

Client: HDR
SDG: 23F0196
Project: Longhorn AAP

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
6547WW03 (23F0196-12) ug/L		Lab File ID: G2230614021.D		Analyzed: 06/14/23 16:49
Dibromofluoromethane	20.00	97	80 - 119	
1,2-Dichloroethane-d4	20.00	89	81 - 118	
Fluorobenzene	20.00	96	80 - 116	
Toluene-d8	20.00	97	89 - 112	
4-Bromofluorobenzene	10.00	97	85 - 114	
1,2-Dichlorobenzene-d4	20.00	103	87 - 138	
63LHSMWW45 (23F0196-08) ug/L		Lab File ID: G2230614022.D		Analyzed: 06/14/23 17:14
Dibromofluoromethane	20.00	96	80 - 119	
1,2-Dichloroethane-d4	20.00	88	81 - 118	
Fluorobenzene	20.00	96	80 - 116	
Toluene-d8	20.00	96	89 - 112	
4-Bromofluorobenzene	10.00	98	85 - 114	
1,2-Dichlorobenzene-d4	20.00	101	87 - 138	
65Trip3 (23F0196-11) ug/L		Lab File ID: G2230614023.D		Analyzed: 06/14/23 17:39
Dibromofluoromethane	20.00	100	80 - 119	
1,2-Dichloroethane-d4	20.00	92	81 - 118	
Fluorobenzene	20.00	96	80 - 116	
Toluene-d8	20.00	96	89 - 112	
4-Bromofluorobenzene	10.00	99	85 - 114	
1,2-Dichlorobenzene-d4	20.00	103	87 - 138	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Analysis Method:	SW8260B/D
Prep Batch:	B3F0436	Prep Method:	5030_W
Percent Solids:		Laboratory ID:	B3F0436-MS1
		Source Sample ID:	23F0309-01

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,1,1,2-Tetrachloroethane	15.00	ND	15.5	103	78 - 124
1,1,1-Trichloroethane	15.00	ND	15.2	101	74 - 131
1,1,2,2-Tetrachloroethane	15.00	0.980	14.7	91	71 - 121
1,1,2-Trichloroethane	15.00	0.500	15.6	100	80 - 119
1,1-Dichloroethane	15.00	ND	13.9	93	77 - 125
1,1-Dichloroethene	15.00	0.230	13.9	91	71 - 131
1,1-Dichloropropene	15.00	ND	14.7	98	79 - 125
1,2,3-Trichlorobenzene	15.00	ND	15.5	103	69 - 129
1,2,3-Trichloropropane	15.00	ND	14.3	95	73 - 122
1,2,4-Trichlorobenzene	15.00	ND	15.7	104	69 - 130
1,2,4-Trimethylbenzene	15.00	ND	14.0	93	76 - 124
1,2-Dibromo-3-chloropropane	15.00	ND	15.5	103	62 - 128
1,2-Dibromoethane	15.00	ND	14.8	98	77 - 121
1,2-Dichlorobenzene	15.00	ND	16.1	107	80 - 119
1,2-Dichloroethane	15.00	ND	14.3	95	73 - 128
1,2-Dichloropropane	15.00	ND	14.6	97	78 - 122
1,3,5-Trimethylbenzene	15.00	ND	14.1	94	75 - 124
1,3-Dichlorobenzene	15.00	ND	15.2	101	80 - 119
1,3-Dichloropropane	15.00	ND	14.6	98	80 - 119
1,4-Dichlorobenzene	15.00	ND	15.7	105	79 - 118
2,2-Dichloropropane	15.00	ND	14.4	96	60 - 139
2-Butanone	52.50	ND	48.9	93	56 - 143
2-Chlorotoluene	15.00	ND	13.9	93	79 - 122
2-Hexanone	52.50	ND	45.2	86	57 - 139
4-Chlorotoluene	15.00	ND	14.2	95	78 - 122
4-Isopropyltoluene	15.00	ND	14.8	98	77 - 127
4-Methyl-2-pentanone	52.50	ND	46.9	89	67 - 130
Acetone	52.50	2.13	48.2	88	39 - 160
Benzene	15.00	ND	14.6	97	79 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Analysis Method:	SW8260B/D
Prep Batch:	B3F0436	Prep Method:	5030_W
Percent Solids:		Laboratory ID:	B3F0436-MS1
		Source Sample ID:	23F0309-01

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
Bromobenzene	15.00	ND	13.2	88	80 - 120
Bromochloromethane	15.00	ND	14.2	95	78 - 123
Bromodichloromethane	15.00	ND	15.8	105	79 - 125
Bromoform	15.00	ND	15.2	101	66 - 130
Bromomethane	15.00	0.190	16.4	108	53 - 141
Carbon disulfide	15.00	ND	13.7	91	64 - 133
Carbon tetrachloride	15.00	ND	16.9	113	72 - 136
Chlorobenzene	15.00	ND	15.1	101	82 - 118
Chloroethane	15.00	ND	14.1	94	60 - 138
Chloroform	15.00	0.190	14.3	94	79 - 124
Chloromethane	15.00	ND	13.2	88	50 - 139
cis-1,2-Dichloroethene	15.00	2.39	15.8	89	78 - 123
cis-1,3-Dichloropropene	15.00	ND	14.4	96	75 - 124
Dibromochloromethane	15.00	ND	16.2	108	74 - 126
Dibromomethane	15.00	ND	16.4	109	79 - 123
Dichlorodifluoromethane	15.00	ND	14.2	95	32 - 152
Ethylbenzene	15.00	ND	15.5	103	79 - 121
Hexachlorobutadiene	15.00	ND	18.9	126	66 - 134
Isopropylbenzene	15.00	ND	14.0	93	72 - 131
m,p-Xylene	30.00	ND	30.0	100	80 - 121
Methyl tert-butyl ether	15.00	ND	13.4	89	71 - 124
Methylene chloride	15.00	ND	13.9	93	74 - 124
n-Butylbenzene	15.00	ND	15.0	100	75 - 128
n-Propylbenzene	15.00	ND	14.3	95	76 - 126
Naphthalene	15.00	ND	14.4	96	61 - 128
o-Xylene	15.00	ND	13.5	90	78 - 122
sec-Butylbenzene	15.00	ND	14.6	97	77 - 126
Styrene	15.00	ND	14.6	97	78 - 123
tert-Butylbenzene	15.00	ND	14.5	96	78 - 124
Tetrachloroethene	15.00	ND	17.0	113	74 - 129

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Analysis Method:	SW8260B/D
Prep Batch:	B3F0436	Prep Method:	5030_W
Percent Solids:		Laboratory ID:	B3F0436-MS1
		Source Sample ID:	23F0309-01

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
Toluene	15.00	ND	15.6	104	80 - 121
trans-1,2-Dichloroethene	15.00	0.180	13.1	86	75 - 124
trans-1,3-Dichloropropene	15.00	ND	14.1	94	73 - 127
Trichloroethene	15.00	30.8	43.2	82	79 - 123
Trichlorofluoromethane	15.00	ND	16.5	110	65 - 141
Vinyl chloride	15.00	0.150	13.4	89	58 - 137

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike Dup

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Analysis Method:	SW8260B/D
Prep Batch:	B3F0436	Prep Method:	5030_W
Percent Solids:		Laboratory ID:	B3F0436-MSD1
		Source Sample ID:	23F0309-01

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	QC LIMITS RPD	QC LIMITS REC.
1,1,1,2-Tetrachloroethane	15.00	15.0	100	3	20	78 - 124
1,1,1-Trichloroethane	15.00	14.5	97	4	20	74 - 131
1,1,2,2-Tetrachloroethane	15.00	14.9	93	1	20	71 - 121
1,1,2-Trichloroethane	15.00	15.4	99	1	20	80 - 119
1,1-Dichloroethane	15.00	13.8	92	1	20	77 - 125
1,1-Dichloroethene	15.00	13.7	90	1	20	71 - 131
1,1-Dichloropropene	15.00	14.8	98	0.3	20	79 - 125
1,2,3-Trichlorobenzene	15.00	13.9	93	11	20	69 - 129
1,2,3-Trichloropropane	15.00	14.5	97	1	20	73 - 122
1,2,4-Trichlorobenzene	15.00	14.3	95	9	20	69 - 130
1,2,4-Trimethylbenzene	15.00	13.9	93	0.7	20	76 - 124
1,2-Dibromo-3-chloropropane	15.00	14.1	94	9	20	62 - 128
1,2-Dibromoethane	15.00	14.5	97	2	20	77 - 121
1,2-Dichlorobenzene	15.00	15.7	105	3	20	80 - 119
1,2-Dichloroethane	15.00	14.2	95	0.2	20	73 - 128
1,2-Dichloropropane	15.00	14.7	98	0.9	20	78 - 122
1,3,5-Trimethylbenzene	15.00	14.0	93	0.5	20	75 - 124
1,3-Dichlorobenzene	15.00	15.1	101	0.8	20	80 - 119
1,3-Dichloropropane	15.00	14.5	97	0.8	20	80 - 119
1,4-Dichlorobenzene	15.00	15.3	102	3	20	79 - 118
2,2-Dichloropropane	15.00	13.9	93	3	20	60 - 139
2-Butanone	52.50	46.5	89	5	20	56 - 143
2-Chlorotoluene	15.00	13.9	93	0.3	20	79 - 122
2-Hexanone	52.50	43.4	83	4	20	57 - 139
4-Chlorotoluene	15.00	14.3	95	0.4	20	78 - 122
4-Isopropyltoluene	15.00	14.6	97	1	20	77 - 127
4-Methyl-2-pentanone	52.50	44.9	86	4	20	67 - 130
Acetone	52.50	45.6	83	6	20	39 - 160
Benzene	15.00	14.4	96	2	20	79 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike Dup

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Analysis Method:	SW8260B/D
Prep Batch:	B3F0436	Prep Method:	5030_W
Percent Solids:		Laboratory ID:	B3F0436-MSD1
		Source Sample ID:	23F0309-01

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	QC LIMITS RPD	QC LIMITS REC.
Bromobenzene	15.00	13.3	89	1	20	80 - 120
Bromochloromethane	15.00	14.2	94	0.3	20	78 - 123
Bromodichloromethane	15.00	15.6	104	1	20	79 - 125
Bromoform	15.00	13.6	91	11	20	66 - 130
Bromomethane	15.00	16.8	111	3	20	53 - 141
Carbon disulfide	15.00	14.0	93	3	20	64 - 133
Carbon tetrachloride	15.00	16.8	112	1	20	72 - 136
Chlorobenzene	15.00	15.0	100	0.7	20	82 - 118
Chloroethane	15.00	14.0	93	1	20	60 - 138
Chloroform	15.00	14.1	93	2	20	79 - 124
Chloromethane	15.00	13.2	88	0.08	20	50 - 139
cis-1,2-Dichloroethene	15.00	15.8	89	0	20	78 - 123
cis-1,3-Dichloropropene	15.00	13.9	92	4	20	75 - 124
Dibromochloromethane	15.00	15.6	104	4	20	74 - 126
Dibromomethane	15.00	16.0	107	2	20	79 - 123
Dichlorodifluoromethane	15.00	14.0	93	1	20	32 - 152
Ethylbenzene	15.00	15.2	101	2	20	79 - 121
Hexachlorobutadiene	15.00	16.5	110	14	20	66 - 134
Isopropylbenzene	15.00	14.2	95	2	20	72 - 131
m,p-Xylene	30.00	29.4	98	2	20	80 - 121
Methyl tert-butyl ether	15.00	13.2	88	1	20	71 - 124
Methylene chloride	15.00	13.2	88	5	20	74 - 124
n-Butylbenzene	15.00	14.6	98	2	20	75 - 128
n-Propylbenzene	15.00	14.2	95	0.3	20	76 - 126
Naphthalene	15.00	13.1	87	10	20	61 - 128
o-Xylene	15.00	13.7	91	1	20	78 - 122
sec-Butylbenzene	15.00	14.6	97	0.4	20	77 - 126
Styrene	15.00	14.4	96	1	20	78 - 123
tert-Butylbenzene	15.00	14.7	98	2	20	78 - 124

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike Dup

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Analysis Method:	SW8260B/D
Prep Batch:	B3F0436	Prep Method:	5030_W
Percent Solids:		Laboratory ID:	B3F0436-MSD1
		Source Sample ID:	23F0309-01

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	15.00	16.6	111	2	20	74 - 129
Toluene	15.00	15.5	104	0.6	20	80 - 121
trans-1,2-Dichloroethene	15.00	13.0	85	0.8	20	75 - 124
trans-1,3-Dichloropropene	15.00	13.8	92	2	20	73 - 127
Trichloroethene	15.00	42.6	79	1	20	79 - 123
Trichlorofluoromethane	15.00	15.8	105	4	20	65 - 141
Vinyl chloride	15.00	13.1	86	3	20	58 - 137

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

SW8260B/D

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Prep Method:	5030_W
Prep Batch:	B3F0436	Lab Sample ID:	B3F0436-BS1

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
1,1,1,2-Tetrachloroethane	15.00	14.5	96	78 - 124
1,1,1-Trichloroethane	15.00	13.8	92	74 - 131
1,1,2,2-Tetrachloroethane	15.00	13.6	91	71 - 121
1,1,2-Trichloroethane	15.00	14.2	95	80 - 119
1,1-Dichloroethane	15.00	13.0	87	77 - 125
1,1-Dichloroethene	15.00	12.6	84	71 - 131
1,1-Dichloropropene	15.00	13.8	92	79 - 125
1,2,3-Trichlorobenzene	15.00	14.2	94	69 - 129
1,2,3-Trichloropropane	15.00	14.4	96	73 - 122
1,2,4-Trichlorobenzene	15.00	14.8	98	69 - 130
1,2,4-Trimethylbenzene	15.00	13.5	90	76 - 124
1,2-Dibromo-3-chloropropane	15.00	15.6	104	62 - 128
1,2-Dibromoethane	15.00	13.9	92	77 - 121
1,2-Dichlorobenzene	15.00	15.4	103	80 - 119
1,2-Dichloroethane	15.00	13.4	89	73 - 128
1,2-Dichloropropane	15.00	13.8	92	78 - 122
1,3,5-Trimethylbenzene	15.00	13.7	91	75 - 124
1,3-Dichlorobenzene	15.00	14.6	97	80 - 119
1,3-Dichloropropane	15.00	13.8	92	80 - 119
1,4-Dichlorobenzene	15.00	15.0	100	79 - 118
2,2-Dichloropropane	15.00	12.4	83	60 - 139
2-Butanone	52.50	48.7	93	56 - 143
2-Chlorotoluene	15.00	13.4	90	79 - 122
2-Hexanone	52.50	45.1	86	57 - 139
4-Chlorotoluene	15.00	13.8	92	78 - 122
4-Isopropyltoluene	15.00	14.2	95	77 - 127
4-Methyl-2-pentanone	52.50	45.0	86	67 - 130
Acetone	52.50	49.0	93	39 - 160
Benzene	15.00	13.6	91	79 - 120
Bromobenzene	15.00	12.8	85	80 - 120
Bromochloromethane	15.00	13.5	90	78 - 123
Bromodichloromethane	15.00	15.1	100	79 - 125
Bromoform	15.00	14.5	97	66 - 130
Bromomethane	15.00	15.3	102	53 - 141
Carbon disulfide	15.00	12.7	85	64 - 133
Carbon tetrachloride	15.00	15.7	105	72 - 136
Chlorobenzene	15.00	14.3	96	82 - 118

LCS / LCS DUPLICATE RECOVERY

SW8260B/D

Client: HDR
Project: Longhorn AAP
SDG: 23F0196

Matrix:	Water	Prep Method:	5030_W
Prep Batch:	B3F0436	Lab Sample ID:	B3F0436-BS1

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Chloroethane	15.00	13.6	91	60 - 138
Chloroform	15.00	13.6	91	79 - 124
Chloromethane	15.00	12.5	83	50 - 139
cis-1,2-Dichloroethene	15.00	12.6	84	78 - 123
cis-1,3-Dichloropropene	15.00	13.4	89	75 - 124
Dibromochloromethane	15.00	15.1	100	74 - 126
Dibromomethane	15.00	15.5	103	79 - 123
Dichlorodifluoromethane	15.00	13.1	87	32 - 152
Ethylbenzene	15.00	14.5	96	79 - 121
Hexachlorobutadiene	15.00	17.1	114	66 - 134
Isopropylbenzene	15.00	13.5	90	72 - 131
m,p-Xylene	30.00	27.9	93	80 - 121
Methyl tert-butyl ether	15.00	12.7	85	71 - 124
Methylene chloride	15.00	13.1	88	74 - 124
n-Butylbenzene	15.00	14.2	95	75 - 128
n-Propylbenzene	15.00	13.6	91	76 - 126
Naphthalene	15.00	13.7	91	61 - 128
o-Xylene	15.00	13.2	88	78 - 122
sec-Butylbenzene	15.00	13.9	93	77 - 126
Styrene	15.00	13.8	92	78 - 123
tert-Butylbenzene	15.00	13.9	93	78 - 124
Tetrachloroethene	15.00	16.1	107	74 - 129
Toluene	15.00	14.6	98	80 - 121
trans-1,2-Dichloroethene	15.00	12.2	81	75 - 124
trans-1,3-Dichloropropene	15.00	13.2	88	73 - 127
Trichloroethene	15.00	15.1	101	79 - 123
Trichlorofluoromethane	15.00	15.1	101	65 - 141
Vinyl chloride	15.00	12.6	84	58 - 137

* Values outside of QC limits

4 - FORM IV
METHOD BLANK SUMMARY

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	Work Order:	23F0196
Client:	HDR	Project:	Longhorn AAP
Blank ID:	B3F0436-BLK1	Batch:	B3F0436

Client Sample ID	Laboratory Sample ID	Lab File ID	Time Analyzed
6547WW03	23F0196-12	G2230614021.D	16:49
65Trip3	23F0196-11	G2230614023.D	17:39
6447WW28	23F0196-10	G2230614020.D	16:25
6447WW60	23F0196-09	G2230614019.D	15:59
63LHSMWW45	23F0196-08	G2230614022.D	17:14
6347WW21	23F0196-07	G2230614018.D	15:35
6347WW44	23F0196-06	G2230614017.D	15:10
6247WW47	23F0196-05	G2230614016.D	14:45
6247WW32	23F0196-04	G2230614015.D	14:20
6247WW35	23F0196-02	G2230614014.D	13:55
6247WW36	23F0196-01	G2230614013.D	13:30
Matrix Spike Dup	B3F0436-MSD1	G2230614011.D	12:41
Matrix Spike	B3F0436-MS1	G2230614010.D	12:16
LCS	B3F0436-BS1	G2230614006.D	10:38

5 - FORM V
INSTRUMENT PERFORMANCE CHECK

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Lab File ID:	G2230524004.D	Injection Date:	05/24/23
Instrument ID:	G2	Injection Time:	16:45
Sequence:	S3E0428	Lab Sample ID:	S3E0428-TUN1

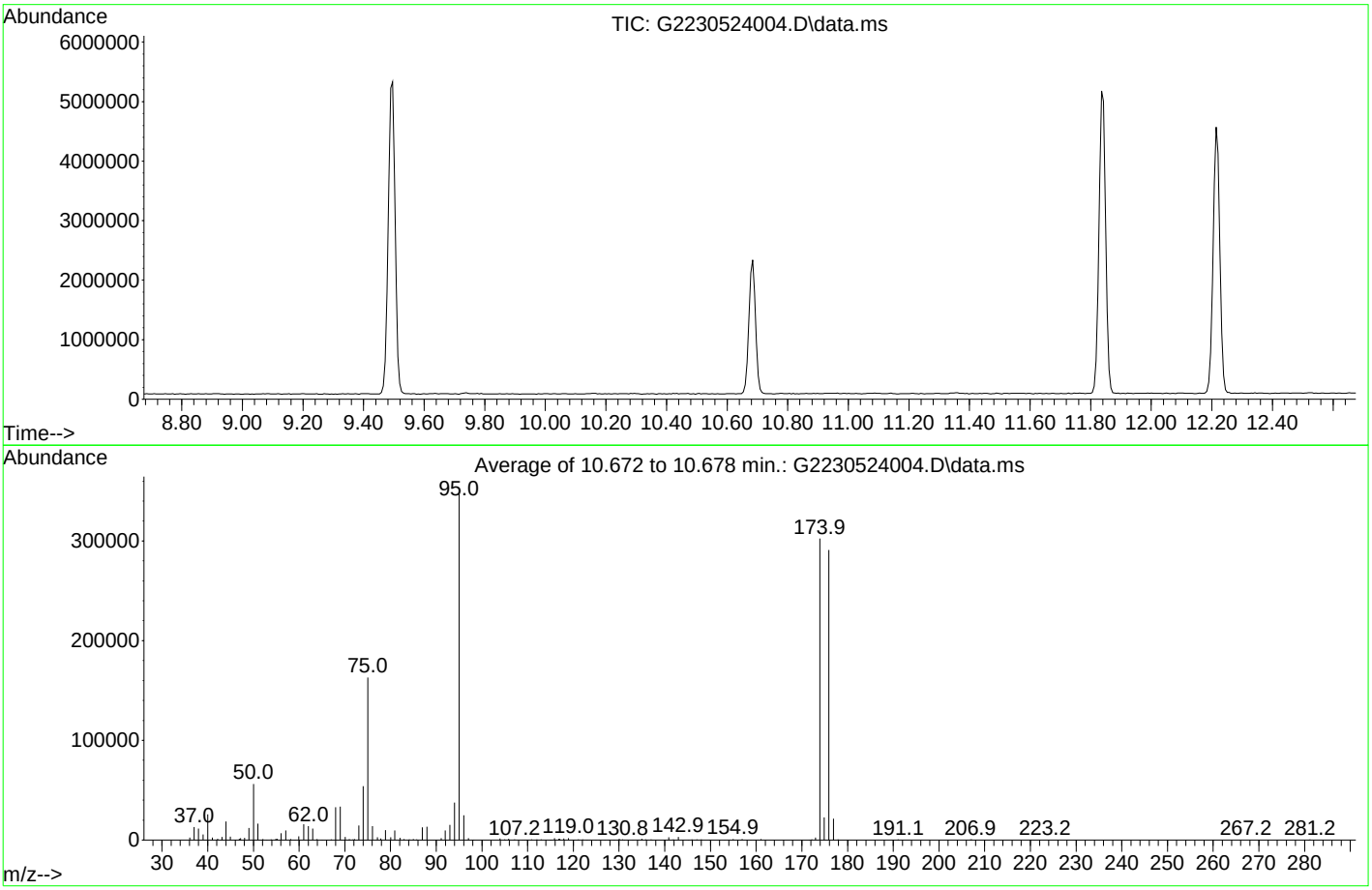
m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	PASS/FAIL
50	15 - 40% of 95	16.2	PASS
75	30 - 60% of 95	47	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	7.16	PASS
173	Less than 2% of 174	0.804	PASS
174	50 - 100% of 95	87.1	PASS
175	5 - 9% of 174	7.47	PASS
176	95 - 101% of 174	96.2	PASS
177	5 - 9% of 176	7.32	PASS

Client ID	Sample ID	File ID	Date Analyzed	Time Analyzed
Cal Standard	S3E0428-CAL1	G2230524005.D	05/24/2023	17:09:00
Cal Standard	S3E0428-CAL2	G2230524006.D	05/24/2023	17:33:00
Cal Standard	S3E0428-CAL3	G2230524007.D	05/24/2023	17:57:00
Cal Standard	S3E0428-CAL4	G2230524008.D	05/24/2023	18:22:00
Cal Standard	S3E0428-CAL5	G2230524009.D	05/24/2023	18:46:00
Cal Standard	S3E0428-CAL6	G2230524010.D	05/24/2023	19:10:00
Cal Standard	S3E0428-CAL7	G2230524011.D	05/24/2023	19:34:00
Cal Standard	S3E0428-CAL8	G2230524012.D	05/24/2023	19:58:00

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524004.D
Acq On : 24 May 2023 16:45
Operator : PO1
Sample : SEQ-TUN1
Misc :
ALS Vial : 4 Sample Multiplier: 1

Integration File: events.e

Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Title : 8260B Calibration
Last Update : Thu May 25 10:19:42 2023



Spectrum Information: Average of 10.672 to 10.678 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.2	56220	PASS
75	95	30	60	47.0	163052	PASS
95	95	100	100	100.0	347168	PASS
96	95	5	9	7.2	24852	PASS
173	174	0.00	2	0.8	2432	PASS
174	95	50	100	87.1	302432	PASS
175	174	5	9	7.5	22584	PASS
176	174	95	101	96.2	291072	PASS
177	176	5	9	7.3	21318	PASS

5 - FORM V
INSTRUMENT PERFORMANCE CHECK

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Lab File ID:	G2230525004.D	Injection Date:	05/25/23
Instrument ID:	G2	Injection Time:	13:24
Sequence:	S3E0429	Lab Sample ID:	S3E0429-TUN1

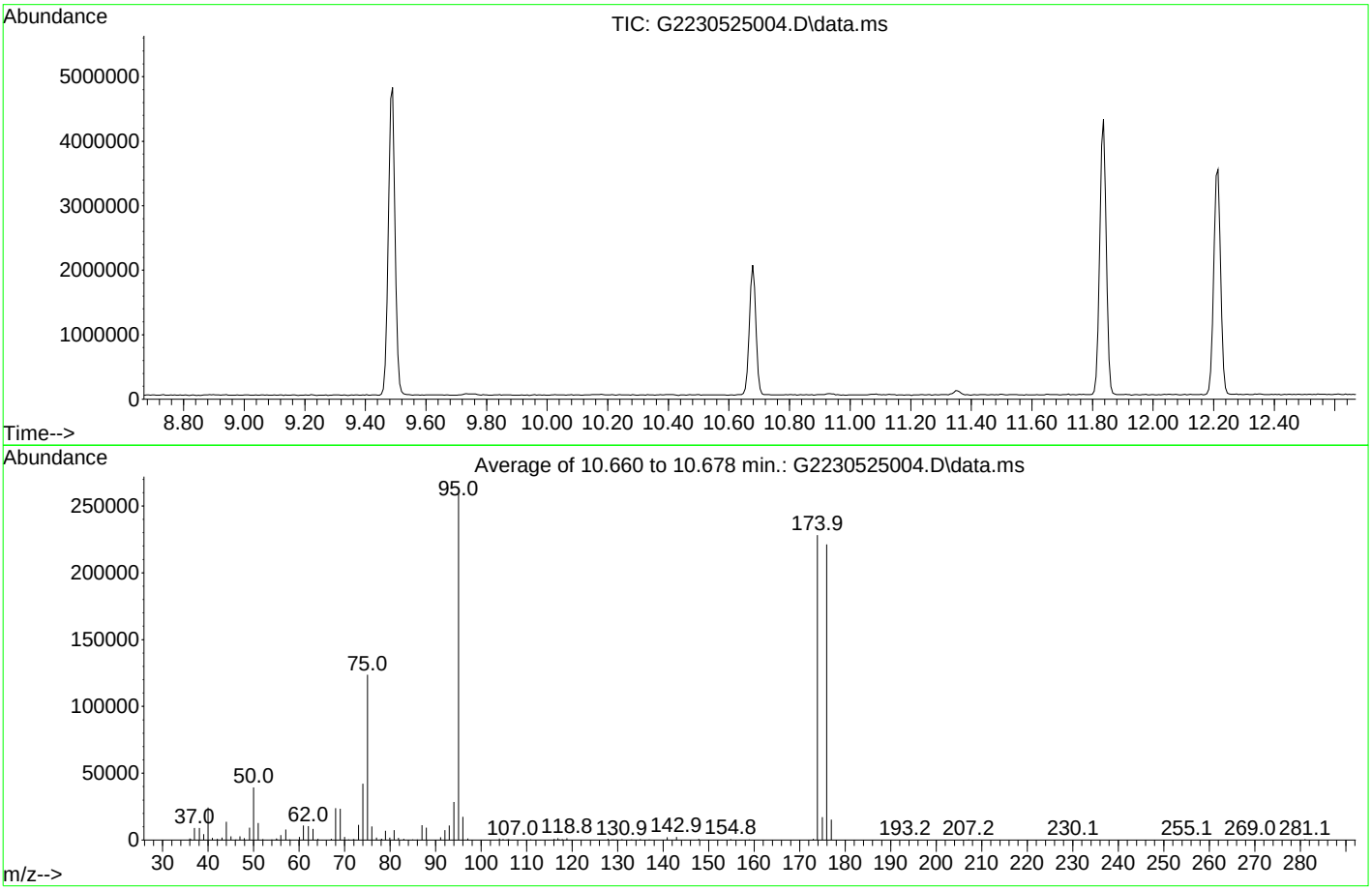
m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	PASS/FAIL
50	15 - 40% of 95	15.2	PASS
75	30 - 60% of 95	47.8	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.73	PASS
173	Less than 2% of 174	0.427	PASS
174	50 - 100% of 95	88.1	PASS
175	5 - 9% of 174	7.56	PASS
176	95 - 101% of 174	96.9	PASS
177	5 - 9% of 176	6.97	PASS

Client ID	Sample ID	File ID	Date Analyzed	Time Analyzed
SEQ-CAL9	S3E0429-CAL1	G2230525005.D	05/25/2023	13:48:00
SEQ-CALA	S3E0429-CAL2	G2230525006.D	05/25/2023	14:12:00
Initial Cal Check	S3E0429-ICV1	G2230525008.D	05/25/2023	15:01:00

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525004.D
Acq On : 25 May 2023 13:24
Operator : PO1
Sample : SEQ-TUN1
Misc :
ALS Vial : 4 Sample Multiplier: 1

Integration File: events.e

Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Title : 8260B Calibration
Last Update : Thu May 25 15:53:31 2023



Spectrum Information: Average of 10.660 to 10.678 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.2	39436	PASS
75	95	30	60	47.8	123708	PASS
95	95	100	100	100.0	259044	PASS
96	95	5	9	6.7	17433	PASS
173	174	0.00	2	0.4	974	PASS
174	95	50	100	88.1	228316	PASS
175	174	5	9	7.6	17257	PASS
176	174	95	101	96.9	221184	PASS
177	176	5	9	7.0	15418	PASS

5 - FORM V
INSTRUMENT PERFORMANCE CHECK

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Lab File ID:	G2230614004.D	Injection Date:	06/14/23
Instrument ID:	G2	Injection Time:	09:48
Sequence:	S3F0256	Lab Sample ID:	S3F0256-TUN1

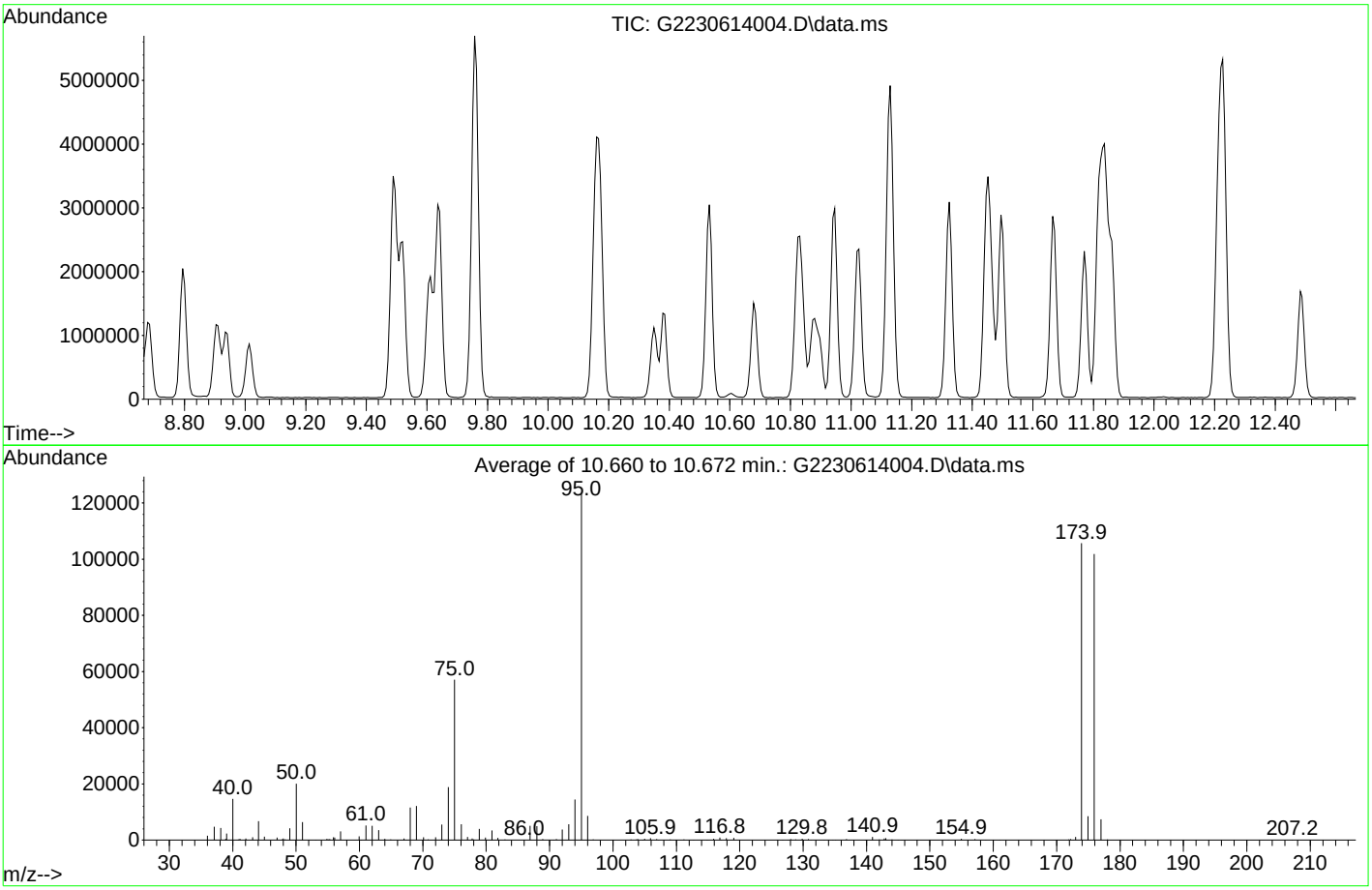
m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	PASS/FAIL
50	15 - 40% of 95	16.3	PASS
75	30 - 60% of 95	46.3	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.99	PASS
173	Less than 2% of 174	0.995	PASS
174	50 - 100% of 95	85.7	PASS
175	5 - 9% of 174	8.02	PASS
176	95 - 101% of 174	96.4	PASS
177	5 - 9% of 176	7.26	PASS

Client ID	Sample ID	File ID	Date Analyzed	Time Analyzed
Calibration Check	S3F0256-CCV1	G2230614005.D	06/14/2023	10:13:00
LCS	B3F0436-BS1	G2230614006.D	06/14/2023	10:38:00
Blank	B3F0436-BLK1	G2230614009.D	06/14/2023	11:52:00
Matrix Spike	B3F0436-MS1	G2230614010.D	06/14/2023	12:16:00
Matrix Spike Dup	B3F0436-MSD1	G2230614011.D	06/14/2023	12:41:00
6247WW36	23F0196-01	G2230614013.D	06/14/2023	13:30:00
6247WW35	23F0196-02	G2230614014.D	06/14/2023	13:55:00
6247WW32	23F0196-04	G2230614015.D	06/14/2023	14:20:00
6247WW47	23F0196-05	G2230614016.D	06/14/2023	14:45:00
6347WW44	23F0196-06	G2230614017.D	06/14/2023	15:10:00
6347WW21	23F0196-07	G2230614018.D	06/14/2023	15:35:00
6447WW60	23F0196-09	G2230614019.D	06/14/2023	15:59:00
6447WW28	23F0196-10	G2230614020.D	06/14/2023	16:25:00
6547WW03	23F0196-12	G2230614021.D	06/14/2023	16:49:00
63LHSMWW45	23F0196-08	G2230614022.D	06/14/2023	17:14:00
65Trip3	23F0196-11	G2230614023.D	06/14/2023	17:39:00
High Cal Check	S3F0256-HCV1	G2230614025.D	06/14/2023	18:28:00
High Cal Check	S3F0256-HCV2	G2230614026.D	06/14/2023	18:53:00
High Cal Check	S3F0256-HCV3	G2230614027.D	06/14/2023	19:17:00

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614004.D
Acq On : 14 Jun 2023 09:48
Operator : PO1/MP3
Sample : SEQ-TUN1
Misc :
ALS Vial : 4 Sample Multiplier: 1

Integration File: events.e

Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Title : 8260B Calibration
Last Update : Thu May 25 16:51:34 2023



Spectrum Information: Average of 10.660 to 10.672 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.3	20035	PASS
75	95	30	60	46.3	57067	PASS
95	95	100	100	100.0	123259	PASS
96	95	5	9	7.0	8612	PASS
173	174	0.00	2	1.0	1052	PASS
174	95	50	100	85.7	105680	PASS
175	174	5	9	8.0	8472	PASS
176	174	95	101	96.4	101915	PASS
177	176	5	9	7.3	7400	PASS

6 - FORM VI
INITIAL CALIBRATION DATA SHEET

SW8260B/D

Client: HDR SDG: 23F0196

Project: Longhorn AAP

Calibration: EE30097 Instrument: G2

Calibration Date: 5/24/2023 1:00:54PM

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
1,1,1,2-Tetrachloroethane	0.2	0.3581356	0.5	0.3858481	1	0.3602054	2	0.3636168	5	0.3195019	10	0.3287639
1,1,1-Trichloroethane	0.2	0.6714798	0.5	0.6985764	1	0.6230597	2	0.6333208	5	0.5586263	10	0.5593087
1,1,2,2-Tetrachloroethane	0.2	0.8470064	0.5	0.9647343	1	0.99033	2	0.8813175	5	0.7958467	10	0.8188133
1,1,2-Trichloro-1,2,2-Trifluoroeth	0.2	0.4049113	0.5	0.3796747	1	0.2929596	2	0.3415367	5	0.3029143	10	0.2976362
1,1,2-Trichloroethane	0.2	0.2873522	0.5	0.3151418	1	0.2794718	2	0.2670818	5	0.241348	10	0.2503436
1,1-Dichloroethane	0.2	0.7254857	0.5	0.6523123	1	0.6323436	2	0.603672	5	0.5522968	10	0.5599407
1,1-Dichloroethene	0.2	0.5417679	0.5	0.5383049	1	0.4645478	2	0.4664756	5	0.4250411	10	0.4189638
1,1-Dichloropropene	0.2	0.5953645	0.5	0.5461463	1	0.4938026	2	0.5122666	5	0.4332443	10	0.4483727
1,2,3-Trichlorobenzene	0.2	0.3029487	0.5	0.310841	1	0.3207101	2	0.3211484	5	0.2592978	10	0.2708672
1,2,3-Trichloropropane	0.2	0.4380568	0.5	0.4084882	1	0.345764	2	0.3421127	5	0.2886587	10	0.2907692
1,2,4-Trichlorobenzene	0.2	0.3586562	0.5	0.3981395	1	0.4123848	2	0.3880182	5	0.3231857	10	0.3581615
1,2,4-Trimethylbenzene	0.2	2.486058	0.5	2.533289	1	2.337965	2	2.300875	5	2.072068	10	2.087482
1,2-Dibromo-3-chloropropane	0.2	0.206581	0.5	0.1925978	1	0.2243729	2	0.2102235	5	0.1744373	10	0.1932497
1,2-Dibromoethane	0.2	0.3958937	0.5	0.3770785	1	0.3627208	2	0.3555519	5	0.3057881	10	0.3160249
1,2-Dichlorobenzene	0.2	1.320268	0.5	1.303943	1	1.324195	2	1.254777	5	1.115666	10	1.13992
1,2-Dichloroethane	0.2	0.6058152	0.5	0.5864665	1	0.5239123	2	0.5239267	5	0.4717342	10	0.4730922
1,2-Dichloropropane	0.2	0.266435	0.5	0.2798619	1	0.2591731	2	0.2499525	5	0.221074	10	0.2289106
1,3,5-Trimethylbenzene	0.2	2.426048	0.5	2.438042	1	2.362966	2	2.326273	5	2.036698	10	2.097186
1,3-Dichlorobenzene	0.2	1.420855	0.5	1.447019	1	1.442766	2	1.36313	5	1.219158	10	1.259101
1,3-Dichloropropane	0.2	0.5305095	0.5	0.5394412	1	0.5552758	2	0.505359	5	0.4544446	10	0.469532
1,4-Dioxane	2		5		10	2.726891E-03	20	2.594547E-03	50	2.333581E-03	100	2.421761E-03
1,4-Dichlorobenzene	0.2	1.388254	0.5	1.389299	1	1.385416	2	1.353403	5	1.191378	10	1.221544
1-Butanol	2		5		10	8.095983E-03	20	8.026551E-03	50	5.687616E-03	100	6.861377E-03
1-Propanol	2		5		10		20		50	2.342093E-03	100	2.030342E-03
2,2-Dichloropropane	0.2	0.6040747	0.5	0.6248628	1	0.6098687	2	0.5730346	5	0.5093378	10	0.5081643
2-Butanone	0.7	8.281434E-02	1.75	5.993206E-02	3.5	6.618436E-02	7	5.645747E-02	17.5	5.020629E-02	35	5.145356E-02
2-Chloroethyl vinyl ether	0.2	0.2317956	0.5	0.2076949	1	0.2213486	2	0.1907279	5	0.1608234	10	0.178278
2-Chlorotoluene	0.2	2.017892	0.5	2.149192	1	1.982665	2	2.012089	5	1.77679	10	1.791827
2-Hexanone	0.7	0.225825	1.75	0.2370008	3.5	0.2520308	7	0.2299966	17.5	0.1963938	35	0.2058782
4-Chlorotoluene	0.2	2.32937	0.5	2.318981	1	2.260369	2	2.253114	5	2.010914	10	2.055098
4-Isopropyltoluene	0.2	2.388847	0.5	2.401003	1	2.420861	2	2.316555	5	2.12286	10	2.168298

6 - FORM VI
INITIAL CALIBRATION DATA SHEET

SW8260B/D

Client: HDR SDG: 23F0196

Project: Longhorn AAP

Calibration: EE30097 Instrument: G2

Calibration Date: 5/24/2023 1:00:54PM

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
4-Methyl-2-pentanone	0.7	0.3359565	1.75	0.3145117	3.5	0.3347694	7	0.3065724	17.5	0.263585	35	0.2822768
Acetone	0.7	0.2870964	1.75	0.1816311	3.5	0.1494085	7	0.1193188	17.5	9.689579E-02	35	9.695988E-02
Acetonitrile	0.5		1.25	0.2649204	2.5	0.2229569	5	0.2098485	12.5	0.1862969	25	0.1856522
Acrolein	0.5		1.25	7.739452E-02	2.5	5.876077E-02	5	6.074003E-02	12.5	0.0526869	25	5.555354E-02
Acrylonitrile	0.2	0.1433416	0.5	0.1651238	1	0.1785738	2	0.167399	5	0.1481112	10	0.1500985
Benzene	0.2	1.11754	0.5	1.145184	1	1.04805	2	1.041494	5	0.9223053	10	0.949501
Bromobenzene	0.2	1.200235	0.5	1.193307	1	1.111287	2	1.115411	5	0.9946147	10	0.9986193
Bromochloromethane	0.2	0.3380705	0.5	0.3402629	1	0.3100668	2	0.3085591	5	0.273419	10	0.2785478
Bromodichloromethane	0.2	0.4169639	0.5	0.3896904	1	0.397208	2	0.4107761	5	0.3408729	10	0.3470955
Bromoform	0.2	0.3155098	0.5	0.3492395	1	0.349122	2	0.3244173	5	0.2799342	10	0.3029189
Bromomethane	0.2	0.5678231	0.5	0.4050404	1	0.3424239	2	0.3072018	5	0.2432783	10	0.2151892
Carbon disulfide	0.2	1.128994	0.5	1.138078	1	0.979273	2	0.9868793	5	0.8600965	10	0.8690915
Carbon tetrachloride	0.2	0.3908851	0.5	0.3858918	1	0.350485	2	0.3760025	5	0.3366869	10	0.3447393
Chlorobenzene	0.2	0.9466566	0.5	1.022664	1	0.9195812	2	0.9139018	5	0.7991272	10	0.8304369
Chloroethane	0.2	0.2530105	0.5	0.2629065	1	0.2902844	2	0.2386694	5	0.2039156	10	0.2189574
Chloroform	0.2	0.7028915	0.5	0.7286826	1	0.7138543	2	0.6729865	5	0.6125384	10	0.6256179
Chloromethane	0.2	0.4499248	0.5	0.4098383	1	0.4198693	2	0.3547858	5	0.3062154	10	0.3111271
cis-1,2-Dichloroethene	0.2	0.6529109	0.5	0.6014552	1	0.5637903	2	0.5545411	5	0.4953256	10	0.499738
cis-1,3-Dichloropropene	0.2	0.4744589	0.5	0.4969547	1	0.4638492	2	0.458332	5	0.4094385	10	0.4227711
Cyclohexane	0.2	0.6206131	0.5	0.4869323	1	0.5036307	2	0.5679021	5	0.5706731	10	0.5255139
Dibromochloromethane	0.2	0.4663799	0.5	0.4155519	1	0.4293308	2	0.4023359	5	0.3547112	10	0.3667488
Dibromomethane	0.2	0.2599663	0.5	0.256825	1	0.2463597	2	0.2481517	5	0.2248301	10	0.229216
Dichlorodifluoromethane	0.2	0.4515779	0.5	0.4737883	1	0.4743194	2	0.408288	5	0.3581545	10	0.3562857
Ethylbenzene	0.2	1.579872	0.5	1.588339	1	1.48904	2	1.468425	5	1.291302	10	1.32542
Ethyl ether	0.2	0.3047156	0.5	0.3255024	1	0.317341	2	0.297217	5	0.2641274	10	0.2657119
Hexachlorobutadiene	0.2	0.2562047	0.5	0.2135492	1	0.2052246	2	0.2107028	5	0.1661805	10	0.183114
Hexachloroethane	0.2	0.4330019	0.5	0.4451845	1	0.4354866	2	0.4275364	5	0.3815825	10	0.3974231
Hexane	0.2	0.5020194	0.5	0.4343298	1	0.3190474	2	0.3742333	5	0.3189872	10	0.3161373
Isobutanol	2		5	1.632729E-02	10	1.513549E-02	20	1.397563E-02	50	1.349705E-02	100	1.237341E-02
Isopropanol	2		5		10	2.031994E-02	20	1.717066E-02	50	0.01438	100	0.0164382
Isopropylbenzene	0.2	3.217188	0.5	3.124245	1	2.897744	2	2.905937	5	2.663519	10	2.636794

6 - FORM VI
INITIAL CALIBRATION DATA SHEET

SW8260B/D

Client: HDR SDG: 23F0196

Project: Longhorn AAP

Calibration: EE30097 Instrument: G2

Calibration Date: 5/24/2023 1:00:54PM

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
m,p-Xylene	0.4	1.168169	1	1.194365	2	1.15499	4	1.146141	10	0.986136	20	1.018312
Methyl tert-butyl ether	0.2	6.2355	0.5	3.311554	1	2.32365	2	1.733387	5	1.294762	10	1.235893
Methylene chloride	0.2	~~2.889255~~	0.5	~~1.15816~~	1	0.8630258	2	0.6825805	5	0.4448692	10	0.4112875
n-Butylbenzene	0.2	2.094759	0.5	1.932414	1	1.870953	2	1.82417	5	1.587872	10	1.634649
n-Propylbenzene	0.2	3.563366	0.5	3.566645	1	3.187185	2	3.282684	5	2.936538	10	2.964655
Naphthalene	0.2	1.213459	0.5	1.162619	1	1.275186	2	1.130877	5	0.9246166	10	0.9766803
o-Xylene	0.2	2.692832	0.5	2.668849	1	2.55371	2	2.493438	5	2.285629	10	2.267192
sec-Butylbenzene	0.2	2.964871	0.5	3.017674	1	2.778352	2	2.848336	5	2.544162	10	2.54422
Styrene	0.2	1.098726	0.5	1.049539	1	0.9771588	2	0.9929332	5	0.8646377	10	0.8904722
tert-Butylbenzene	0.2	2.744306	0.5	2.521163	1	2.42973	2	2.488758	5	2.106766	10	2.248043
Tetrachloroethene	0.2	0.4606659	0.5	0.6021357	1	0.415543	2	0.4148088	5	0.455735	10	0.3701087
Tetrahydrofuran	0.2	~~0.2610928~~	0.5	0.2216019	1	0.1560981	2	0.1260098	5	0.1047923	10	0.1112233
Toluene	0.2	1.510031	0.5	1.507234	1	1.390956	2	1.354054	5	1.19346	10	1.217782
trans-1,2-Dichloroethene	0.2	0.4913978	0.5	0.4960733	1	0.4730678	2	0.4428924	5	0.3916462	10	0.4051107
trans-1,3-Dichloropropene	0.2	0.4844776	0.5	0.4558332	1	0.4620611	2	0.4419272	5	0.3846404	10	0.3973563
Trichloroethene	0.2	0.3342364	0.5	0.3222068	1	0.2972074	2	0.2914104	5	0.2594414	10	0.2573127
Trichlorofluoromethane	0.2	0.6524262	0.5	0.6451945	1	0.7004871	2	0.6004703	5	0.5096656	10	0.5385262
Vinyl acetate	0.2	0.7589717	0.5	0.6607313	1	0.7057294	2	0.6868042	5	0.6058205	10	0.6771529
Vinyl chloride	0.2	0.4405867	0.5	0.4328703	1	0.4443605	2	0.3914205	5	0.3405654	10	0.3565298
Xylenes, Total	0.6	1.192321	1.5	1.218186	3	1.176678	6	1.157354	15	1.00542	30	1.037045
1,2-Dichloroethene, Total	0.4	0.5721544	1	0.5487642	2	0.518429	4	0.4987168	10	0.4434859	20	0.4524243
1,3-Dichloropropene, Total	0.4	0.4794683	1	0.476394	2	0.4629551	4	0.4501296	10	0.3970394	20	0.4100637
Dibromofluoromethane	20	0.4369441	20	0.4381279	20	0.4433601	20	0.4412121	20	0.4414151	20	0.4485563
1,2-Dichloroethane-d4	20	0.4356614	20	0.4339657	20	0.4363573	20	0.4383219	20	0.4388346	20	0.4434164
Fluorobenzene	20	1.131285	20	1.144428	20	1.136739	20	1.140729	20	1.13953	20	1.143425
Toluene-d8	20	1.2529	20	1.27678	20	1.260418	20	1.267786	20	1.253089	20	1.256174
4-Bromofluorobenzene	10	0.9310802	10	0.9220044	10	0.9251503	10	0.9124534	10	0.9329093	10	0.934728
1,2-Dichlorobenzene-d4	20	0.8553083	20	0.8655983	20	0.8758636	20	0.8727067	20	0.864487	20	0.8681487

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW8260B/D

Client: HDR SDG: 23F0196

Project: Longhorn AAP

Calibration: EE30097 Instrument: G2

Calibration Date: 5/24/2023 1:00:54PM

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
1,1,1,2-Tetrachloroethane	15	0.3325154	20	0.3166119	25	0.3288039	30	0.3403357				
1,1,1-Trichloroethane	15	0.5898587	20	0.5673427	25	0.5542291	30	0.5824283				
1,1,2,2-Tetrachloroethane	15	0.8292592	20	0.8275261	25	0.8780105	30	0.8606559				
1,1,2-Trichloro-1,2,2-Trifluoroeth	15	0.3195072	20	0.3036257	25	0.3127337	30	0.319153				
1,1,2-Trichloroethane	15	0.256509	20	0.2459271	25	0.2444638	30	0.2549168				
1,1-Dichloroethane	15	0.5760483	20	0.5564951	25	0.5342331	30	0.5609608				
1,1-Dichloroethene	15	0.4380278	20	0.4256099	25	0.4156166	30	0.4346609				
1,1-Dichloropropene	15	0.4657054	20	0.4520407	25	0.4457322	30	0.4605515				
1,2,3-Trichlorobenzene	15	0.2896037	20	0.2591423	25	0.2701666	30	0.2785794				
1,2,3-Trichloropropane	15	0.2940716	20	0.2881999	25	0.3109573	30	0.3070414				
1,2,4-Trichlorobenzene	15	0.3672769	20	0.3128008	25	0.3207442	30	0.3495461				
1,2,4-Trimethylbenzene	15	2.125858	20	2.068927	25	2.122497	30	2.157254				
1,2-Dibromo-3-chloropropane	15	0.187208	20	0.1575837	25	0.1594393	30	0.1763523				
1,2-Dibromoethane	15	0.3247455	20	0.3066369	25	0.3195991	30	0.3306279				
1,2-Dichlorobenzene	15	1.165708	20	1.097444	25	1.122484	30	1.170433				
1,2-Dichloroethane	15	0.4774924	20	0.4591831	25	0.4455601	30	0.4622925				
1,2-Dichloropropane	15	0.2342484	20	0.2232905	25	0.2193803	30	0.2287292				
1,3,5-Trimethylbenzene	15	2.128013	20	2.100607	25	2.167312	30	2.200662				
1,3-Dichlorobenzene	15	1.274375	20	1.238989	25	1.279937	30	1.317105				
1,3-Dichloropropane	15	0.4779421	20	0.4522305	25	0.4585463	30	0.4784381				
1,4-Dioxane	150	2.338922E-03	200	2.066409E-03	250	2.160766E-03	300	2.213545E-03				
1,4-Dichlorobenzene	15	1.251116	20	1.192278	25	1.243539	30	1.277486				
1-Butanol	150	6.510928E-03	200	5.904811E-03	250	5.191738E-03	300	5.598362E-03				
1-Propanol	150	2.238033E-03	200	1.77626E-03	250	1.973673E-03	300	2.12558E-03				
2,2-Dichloropropane	15	0.5251214	20	0.5120633	25	0.5359409	30	0.5570256				
2-Butanone	52.5	5.216453E-02	70	4.846093E-02	87.5	4.710997E-02	105	5.104841E-02				
2-Chloroethyl vinyl ether	15	0.189961	20	0.1794896	25	0.1883938	30	0.1910041				
2-Chlorotoluene	15	1.84444	20	1.834386	25	1.929898	30	1.891869				
2-Hexanone	52.5	0.2060667	70	0.1876891	87.5	0.1943696	105	0.2022334				
4-Chlorotoluene	15	2.113551	20	2.088147	25	2.191439	30	2.173882				
4-Isopropyltoluene	15	2.203541	20	2.111558	25	2.174422	30	2.240869				

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW8260B/D

Client: HDR SDG: 23F0196

Project: Longhorn AAP

Calibration: EE30097 Instrument: G2

Calibration Date: 5/24/2023 1:00:54PM

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
4-Methyl-2-pentanone	52.5	0.2819214	70	0.262483	87.5	0.2622003	105	0.2748351				
Acetone	52.5	9.480281E-02	70	8.938955E-02	87.5	8.691926E-02	105	9.109845E-02				
Acetonitrile	37.5	0.1923502	50	0.1865223	62.5	0.1802285	75	0.1874498				
Acrolein	37.5	5.507868E-02	50	5.237685E-02	62.5	5.158504E-02	75	5.427644E-02				
Acrylonitrile	15	0.149781	20	0.1426589	25	0.1340608	30	0.1416782				
Benzene	15	0.9649439	20	0.9361097	25	0.9361219	30	0.9603559				
Bromobenzene	15	1.036998	20	1.043107	25	1.07267	30	1.070271				
Bromochloromethane	15	0.2907848	20	0.279698	25	0.2711473	30	0.279327				
Bromodichloromethane	15	0.3567401	20	0.3469857	25	0.3449669	30	0.3559908				
Bromoform	15	0.3051982	20	0.2846233	25	0.2954841	30	0.3108533				
Bromomethane	15	0.2458826	20	0.2483125	25	0.260944	30	0.2639354				
Carbon disulfide	15	0.9016756	20	0.8845974	25	0.8451698	30	0.8828204				
Carbon tetrachloride	15	0.3570443	20	0.347369	25	0.3524483	30	0.3673706				
Chlorobenzene	15	0.8444551	20	0.804991	25	0.8297859	30	0.8624242				
Chloroethane	15	0.2368308	20	0.225953	25	0.2309487	30	0.2320939				
Chloroform	15	0.6445981	20	0.6276587	25	0.6086532	30	0.6318383				
Chloromethane	15	0.3450953	20	0.3325804	25	0.3234341	30	0.330584				
cis-1,2-Dichloroethene	15	0.523698	20	0.4975314	25	0.4909072	30	0.5053574				
cis-1,3-Dichloropropene	15	0.4339581	20	0.4148634	25	0.4210186	30	0.4331181				
Cyclohexane	15	0.5477602	20	0.5136579	25	0.5057579	30	0.5298687				
Dibromochloromethane	15	0.3742309	20	0.35886	25	0.3682396	30	0.3815497				
Dibromomethane	15	0.2356693	20	0.2220503	25	0.2227743	30	0.2358187				
Dichlorodifluoromethane	15	0.3946357	20	0.3826067	25	0.3896399	30	0.3865486				
Ethylbenzene	15	1.366001	20	1.289874	25	1.311623	30	1.364344				
Ethyl ether	15	0.2723053	20	0.2643567	25	0.2568471	30	0.2656054				
Hexachlorobutadiene	15	0.1885109	20	0.1615924	25	0.1687925	30	0.1848729				
Hexachloroethane	15	0.4084506	20	0.3888143	25	0.4067104	30	0.4216298				
Hexane	15	0.3404406	20	0.3286091	25	0.3428235	30	0.3552206				
Isobutanol	150	1.252547E-02	200	1.192588E-02	250	1.055183E-02	300	0.0113926				
Isopropanol	150	1.621515E-02	200	1.439277E-02	250	1.408635E-02	300	1.540312E-02				
Isopropylbenzene	15	2.738173	20	2.760124	25	2.931152	30	2.858971				

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW8260B/D

Client: HDR SDG: 23F0196

Project: Longhorn AAP

Calibration: EE30097 Instrument: G2

Calibration Date: 5/24/2023 1:00:54PM

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
m,p-Xylene	30	1.040913	40	0.9780072	50	0.9925752	60	1.026809				
Methyl tert-butyl ether	15	1.226174	20	1.162434	25	1.109959	30	1.154973				
Methylene chloride	15	0.392354	20	0.3428851	25	0.3234496	30	0.341198				
n-Butylbenzene	15	1.654917	20	1.556031	25	1.586897	30	1.67069				
n-Propylbenzene	15	3.038514	20	3.060475	25	3.211311	30	3.187957				
Naphthalene	15	1.001447	20	0.8679077	25	0.8860025	30	0.9494236				
o-Xylene	15	2.337989	20	2.378278	25	2.492927	30	2.433826				
sec-Butylbenzene	15	2.635266	20	2.565742	25	2.663161	30	2.692333				
Styrene	15	0.9174934	20	0.8555601	25	0.8704257	30	0.9147931				
tert-Butylbenzene	15	2.319665	20	2.279937	25	2.387185	30	2.382016				
Tetrachloroethene	15	0.3816889	20	0.3764826	25	0.3811738	30	0.3955235				
Tetrahydrofuran	15	0.1149196	20	0.1007926	25	9.602485E-02	30	0.1040078				
Toluene	15	1.245389	20	1.189963	25	1.215927	30	1.253672				
trans-1,2-Dichloroethene	15	0.420477	20	0.407524	25	0.39675	30	0.4095922				
trans-1,3-Dichloropropene	15	0.4140236	20	0.3890022	25	0.3948514	30	0.4104575				
Trichloroethene	15	0.2675363	20	0.2590597	25	0.2590002	30	0.2703235				
Trichlorofluoromethane	15	0.5885336	20	0.5712762	25	0.6103822	30	0.6081919				
Vinyl acetate	15	0.7034323	20	0.6624869	25	0.6520354	30	0.6856169				
Vinyl chloride	15	0.3876069	20	0.3743368	25	0.3762659	30	0.3861395				
Xylenes, Total	45	1.059222	60	0.9959061	75	1.008458	90	1.047547				
1,2-Dichloroethene, Total	30	0.4720875	40	0.4525279	50	0.4438286	60	0.4574747				
1,3-Dichloropropene, Total	30	0.4239907	40	0.4019328	50	0.407935	60	0.4217879				
Dibromofluoromethane	20	0.4442057	20	0.4481741	20	0.4296556	20	0.42978				
1,2-Dichloroethane-d4	20	0.4421667	20	0.4399393	20	0.4209905	20	0.420009				
Fluorobenzene	20	1.144738	20	1.138753	20	1.142007	20	1.134796				
Toluene-d8	20	1.270448	20	1.249455	20	1.267442	20	1.251623				
4-Bromofluorobenzene	10	0.9301694	10	0.9665329	10	1.01376	10	0.9752663				
1,2-Dichlorobenzene-d4	20	0.861512	20	0.8441646	20	0.8434719	20	0.8500327				

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Calibration:	EE30097	Instrument:	G2
		Calibration Date:	5/24/2023 1:00:54PM

COMPOUND	Cal Type	Mean RF	RF RSD	Linear r	Quad COD	Weighting	LIMIT	Q
1,1,1,2-Tetrachloroethane	AVG	0.3434339	6.5				15	
1,1,1-Trichloroethane	AVG	0.603823	8.4				15	
1,1,2,2-Tetrachloroethane	AVG	0.86935	7.3				SPCC (0.3)	
1,1,2-Trichloro-1,2,2-Trifluoroethane	AVG	0.3274653	11.4				15	
1,1,2-Trichloroethane	AVG	0.2642556	8.9				15	
1,1-Dichloroethane	LRI1	0.5953788	9.9	0.999		*1/X*	SPCC (0.1)	
1,1-Dichloroethene	LRI1	0.4569016	10.3	0.999		*1/X*	CCC (30)	
1,1-Dichloropropene	LRI1	0.4853227	10.7	0.999		*1/X*	0.99	
1,2,3-Trichlorobenzene	AVG	0.2883305	8.4				15	
1,2,3-Trichloropropane	LRI1	0.331412	16.0	0.998		*1/X*	0.99	
1,2,4-Trichlorobenzene	AVG	0.3588914	9.4				15	
1,2,4-Trimethylbenzene	AVG	2.229227	7.8				15	
1,2-Dibromo-3-chloropropane	LRI1	0.1882045	11.6	0.990		*1/X*	0.99	
1,2-Dibromoethane	AVG	0.3394667	9.2				15	
1,2-Dichlorobenzene	LRI1	1.201484	7.5	0.999		*1/X*	0.99	
1,2-Dichloroethane	LRI1	0.5029475	11.1	0.999		*1/X*	0.99	
1,2-Dichloropropane	LRI1	0.2411055	8.8	0.999		*1/X*	CCC (30)	
1,3,5-Trimethylbenzene	AVG	2.228381	6.6				15	
1,3-Dichlorobenzene	AVG	1.326244	6.5				15	
1,3-Dichloropropane	LRI1	0.4921719	7.7	0.999		*1/X*	0.99	
1,4-Dioxane	AVG	2.357053E-03	9.4				15	
1,4-Dichlorobenzene	AVG	1.289371	6.4				15	
1-Butanol	QRI1	6.484671E-03	17.0		0.990	*1/X*	0.99	
1-Propanol	AVG	2.080997E-03	9.7				15	
2,2-Dichloropropane	AVG	0.5559494	8.0				15	
2-Butanone	LRI1	5.658319E-02	19.2	0.997		*1/X*	0.99	
2-Chloroethyl vinyl ether	AVG	0.1939517	10.9				15	
2-Chlorotoluene	AVG	1.923105	6.1				15	
2-Hexanone	LRI1	0.2137484	9.9	0.998		*1/X*	0.99	
4-Chlorotoluene	AVG	2.179486	5.1				15	
4-Isopropyltoluene	AVG	2.254881	5.2				15	

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Calibration:	EE30097	Instrument:	G2
		Calibration Date:	5/24/2023 1:00:54PM

COMPOUND	Cal Type	Mean RF	RF RSD	Linear r	Quad COD	Weighting	LIMIT	Q
4-Methyl-2-pentanone	LRI1	0.2919112	9.9	0.998		*1/X*	0.99	
Acetone	LRI1	0.1293521	49.1	0.998		*1/X*	0.99	
Acetonitrile	LRI1	0.2018029	13.6	0.999		*1/X*	0.99	
Acrolein	LRI1	5.760586E-02	13.9	0.998		*1/X*	0.99	
Acrylonitrile	AVG	0.1520827	9.1				15	
Benzene	AVG	1.002161	8.0				15	
Bromobenzene	AVG	1.083652	6.6				15	
Bromochloromethane	AVG	0.2969883	8.8				15	
Bromodichloromethane	LRI1	0.370729	8.0	0.999		*1/X*	0.99	
Bromoform	AVG	0.3117301	7.6				SPCC (0.1)	
Bromomethane	LRI1	0.3100031	34.4	0.995		*1/X*	0.99	
Carbon disulfide	LRI1	0.9476676	11.5	0.999		*1/X*	0.99	
Carbon tetrachloride	AVG	0.3608923	5.1				15	
Chlorobenzene	AVG	0.8774024	8.2				SPCC (0.3)	
Chloroethane	AVG	0.239357	10.2				15	
Chloroform	AVG	0.656932	6.7				CCC (30)	
Chloromethane	LRI1	0.3583454	14.0	0.999		*1/X*	SPCC (0.1)	
cis-1,2-Dichloroethene	LRI1	0.5385255	10.1	0.999		*1/X*	0.99	
cis-1,3-Dichloropropene	AVG	0.4428763	6.5				15	
Cyclohexane	AVG	0.537231	7.5				15	
Dibromochloromethane	LRI1	0.3917939	9.2	0.999		*1/X*	0.99	
Dibromomethane	AVG	0.2381661	5.9				15	
Dichlorodifluoromethane	AVG	0.4075845	10.8				15	
Ethylbenzene	LRI1	1.407424	8.2	0.999		*1/X*	CCC (30)	
Ethyl ether	LRI1	0.283373	8.9	0.999		*1/X*	0.99	
Hexachlorobutadiene	LRI1	0.1938745	14.7	0.993		*1/X*	0.99	
Hexachloroethane	AVG	0.414582	5.1				15	
Hexane	LRI1	0.3631848	16.6	0.997		*1/X*	0.99	
Isobutanol	LRI1	1.307829E-02	14.1	0.992		*1/X*	0.99	
Isopropanol	AVG	1.605077E-02	12.8				15	
Isopropylbenzene	AVG	2.873385	6.5				15	

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Calibration:	EE30097	Instrument:	G2
		Calibration Date:	5/24/2023 1:00:54PM

COMPOUND	Cal Type	Mean RF	RF RSD	Linear r	Quad COD	Weighting	LIMIT	Q
m,p-Xylene	AVG	1.070642	7.9				15	
Methyl tert-butyl ether	LRI1	2.078829	78.0	0.999		*1/X*	0.99	
Methylene chloride	LRI1	0.4752062	40.8	0.992		*1/X*	0.99	
n-Butylbenzene	LRI1	1.741335	10.3	0.998		*1/X*	0.99	
n-Propylbenzene	AVG	3.199933	6.9				15	
Naphthalene	LRI1	1.038822	14.0	0.995		*1/X*	0.99	
o-Xylene	AVG	2.460467	6.0				15	
sec-Butylbenzene	AVG	2.725412	6.3				15	
Styrene	AVG	0.9431739	8.8				15	
tert-Butylbenzene	AVG	2.390757	7.3				15	
Tetrachloroethene	LRI1	0.4253866	16.4	0.998		*1/X*	0.99	
Tetrahydrofuran	LRI1	0.1261634	31.8	0.994		*1/X*	0.99	
Toluene	LRI1	1.307847	9.5	0.999		*1/X*	CCC (30)	
trans-1,2-Dichloroethene	AVG	0.4334531	9.2				15	
trans-1,3-Dichloropropene	AVG	0.423463	8.3				15	
Trichloroethene	LRI1	0.2817735	10.0	0.999		*1/X*	0.99	
Trichlorofluoromethane	AVG	0.6025154	9.2				15	
Vinyl acetate	AVG	0.6798782	5.9				15	
Vinyl chloride	AVG	0.3930682	9.0				CCC (30)	
Xylenes, Total	AVG	1.089814	7.9				15	
1,2-Dichloroethene, Total	AVG	0.4859893	9.6				15	
1,3-Dichloropropene, Total	AVG	0.4331696	7.2				15	
Dibromofluoromethane	AVG	0.4401431	1.5				15	
1,2-Dichloroethane-d4	AVG	0.4349663	1.9				15	
Fluorobenzene	AVG	1.139643	0.4				15	
Toluene-d8	AVG	1.260611	0.7				15	
4-Bromofluorobenzene	AVG	0.9444054	3.3				15	
1,2-Dichlorobenzene-d4	AVG	0.8601294	1.3				15	

Cal Types

AVG = Average Response Factor
LRI = Linear Regression through the intercept
QRI = Quadratic through the intercept
LR0 = Linear Regression forced through zero.
LRI1 = Linear Regression forced through the intercept with 1/x weighting (first order)
LRI2 = Linear Regression forced through the intercept with 1/x squared weighting (second order)
LRI01 = Linear Regression forced through zero with 1/x weighting (first order)
LRI02 = Linear Regression forced through zero with 1/x-squared weighting (second order)
QR0 = Quadratic forced through zero
QRI1 = Quadratic through the intercept weighted by 1/X
QRI2 = Quadratic through the intercept weighted by 1/X^2
QRI01 = Quadratic forced through zero weighted by 1/X
QRI02 = Quadratic forced through zero weighted by 1/X^2

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene	5.575	168	25165759	20.00	ug/L		0.00
46) 1,4-Difluorobenzene	6.422	114	35803095	20.00	ug/L		0.00
63) Chlorobenzene-d5	9.496	117	31431671	20.00	ug/L		0.00
78) d4-1,4-Dichlorobenzene	11.842	152	14480996	20.00	ug/L		0.00
System Monitoring Compounds							
38) Dibromofluoromethane	5.477	111	10996032	19.71	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 98.55%				
43) 1,2-Dichloroethane-d4	5.880	65	10963745	19.87	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.35%				
49) Fluorobenzene	6.279	96	40503506	19.82	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.10%				
64) Toluene-d8	8.018	98	39380726	19.87	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.35%				
81) 4-Bromofluorobenzene	10.686	174	6741486	9.89	ug/L		0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 98.90%				
97) d4-1,2-Dichlorobenzene	12.219	152	12385722	19.76	ug/L		0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 98.80%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.213	85	113643	0.22	ug/L		88
3) Chloromethane	1.355	50	113227	0.26	ug/L		99
4) Vinyl chloride	1.446	62	110877	0.23	ug/L		93
5) Bromomethane	1.722	94	142897	0.41	ug/L		91
6) Chloroethane	1.802	64	63672m	0.21	ug/L		
7) Trichlorofluoromethane	2.031	101	164188	0.22	ug/L		93
8) Ethyl ether	2.320	59	76684m	0.21	ug/L		
10) 1,1-Dichloroethene	2.525	61	136340	0.24	ug/L		91
11) 1,1,2-Trichloro-1,2,2-...	2.532	101	101899	0.25	ug/L		94
12) Acetone	2.612	43	252875m	1.75	ug/L		
13) Iodomethane	2.682	142	134588	0.23	ug/L	#	88
14) Carbon disulfide	2.741	76	284120	0.24	ug/L		93
17) 3-Chloro-1-propene	2.909	76	64671	0.24	ug/L	#	53
18) Methylene chloride	3.062	49	727103	1.03	ug/L		86
19) Acrylonitrile	3.387	53	36073m	0.18	ug/L		
20) trans-1,2-Dichloroethene	3.397	61	123664	0.23	ug/L		94
21) Methyl tert-butyl ether	3.451	73	1569211	0.76	ug/L		96
22) Hexane	3.789	57	126337m	0.29	ug/L		
23) 1,1-Dichloroethane	4.000	63	182574	0.25	ug/L	#	78
24) Vinyl acetate	4.138	43	191001	0.23	ug/L	#	73
25) 2-Chloro-1,3-butadiene	4.130	53	127506m	0.22	ug/L		
27) 2,2-Dichloropropane	4.826	77	152020	0.22	ug/L		85
28) cis-1,2-Dichloroethene	4.833	61	164310	0.24	ug/L		91
29) 2-Butanone	4.918	72	72943	1.06	ug/L		93
31) Ethyl acetate	5.027	61	28891m	0.34	ug/L		
32) Methylacrylate	5.052	55	94205	0.19	ug/L	#	65
33) 1-Bromopropane	5.063	41	68663m	0.24	ug/L		
34) Bromochloromethane	5.149	130	85078m	0.23	ug/L		

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Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
35) Methacrylonitrile	5.173	67	70945m	0.29	ug/L		
36) Tetrahydrofuran	5.277	42	65706m	0.41	ug/L		
37) Chloroform	5.273	83	176888	0.21	ug/L	#	90
39) 1,1,1-Trichloroethane	5.477	97	168983	0.22	ug/L	#	92
40) Cyclohexane	5.545	84	156182m	0.23	ug/L		
41) 1-Chlorobutane	5.633	56	157805	0.20	ug/L	#	75
42) 1,1-Dichloropropene	5.691	75	149828	0.25	ug/L		84
44) 1,2-Dichloroethane	5.965	62	152458m	0.24	ug/L		
47) Carbon tetrachloride	5.686	117	139949	0.22	ug/L		96
48) Benzene	5.934	78	400114	0.22	ug/L		95
50) Trichloroethene	6.693	95	119667	0.24	ug/L	#	81
52) 1,2-Dichloropropane	6.947	63	95392	0.22	ug/L		85
53) Dibromomethane	7.072	174	93076	0.22	ug/L	#	92
54) Methyl methacrylate	7.131	69	87161	0.21	ug/L	#	65
56) Bromodichloromethane	7.258	83	149286	0.22	ug/L		95
57) 2-Nitropropane	7.526	43	52634m	0.26	ug/L		
58) 2-Chloroethyl vinyl ether	7.612	63	82990	0.24	ug/L		92
59) cis-1,3-Dichloropropene	7.742	75	169871	0.21	ug/L		79
60) 4-Methyl-2-pentanone	7.947	43	420990	0.81	ug/L	#	89
61) trans-1,3-Dichloropropene	8.331	75	173458m	0.23	ug/L		
62) 1,1,2-Trichloroethane	8.517	97	102881	0.22	ug/L		98
65) Toluene	8.087	91	474628	0.23	ug/L		96
66) Ethylmethacrylate	8.465	69	172278	0.23	ug/L		87
67) Tetrachloroethene	8.646	166	144795	0.20	ug/L		98
68) 1,3-Dichloropropane	8.688	76	166748	0.21	ug/L		94
69) 2-Hexanone	8.812	43	248432	0.73	ug/L		84
70) Dibromochloromethane	8.914	129	146591	0.24	ug/L		84
71) 1,2-Dibromoethane	9.019	107	124436	0.24	ug/L		97
72) Chlorobenzene	9.525	112	297550	0.22	ug/L	#	21
73) 1,1,1,2-Tetrachloroethane	9.614	131	112568	0.21	ug/L		94
74) Ethylbenzene	9.643	91	496580	0.22	ug/L		95
75) m,p-Xylene	9.764	91	734350	0.44	ug/L		93
76) Styrene	10.175	104	345348	0.23	ug/L		97
77) Bromoform	10.354	173	99170	0.20	ug/L	#	83
79) o-Xylene	10.161	91	389949	0.22	ug/L		94
80) Isopropylbenzene	10.536	105	465881	0.23	ug/L		98
82) Bromobenzene	10.827	77	173806	0.22	ug/L		93
83) 1,1,2,2-Tetrachloroethane	10.843	83	122655m	0.19	ug/L		
84) 1,2,3-Trichloropropane	10.883	110	63435	0.27	ug/L		90
85) trans-1,4-Dichloro-2-b...	10.895	53	33235	0.20	ug/L	#	52
86) n-Propylbenzene	10.948	91	516011	0.22	ug/L		97
87) 2-Chlorotoluene	11.029	91	292211	0.21	ug/L		89
88) 4-Chlorotoluene	11.138	91	337316	0.21	ug/L	#	89
89) 1,3,5-Trimethylbenzene	11.130	105	351316	0.22	ug/L		92
90) 2-ethyl-1-toluene	11.329	105	435076	0.22	ug/L		100
91) tert-Butylbenzene	11.455	119	397403	0.24	ug/L		90
92) 1,2,4-Trimethylbenzene	11.501	105	360006	0.22	ug/L		95
93) sec-Butylbenzene	11.674	105	429343	0.22	ug/L		88
94) 1,3-Dichlorobenzene	11.772	146	205754	0.21	ug/L		95

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G

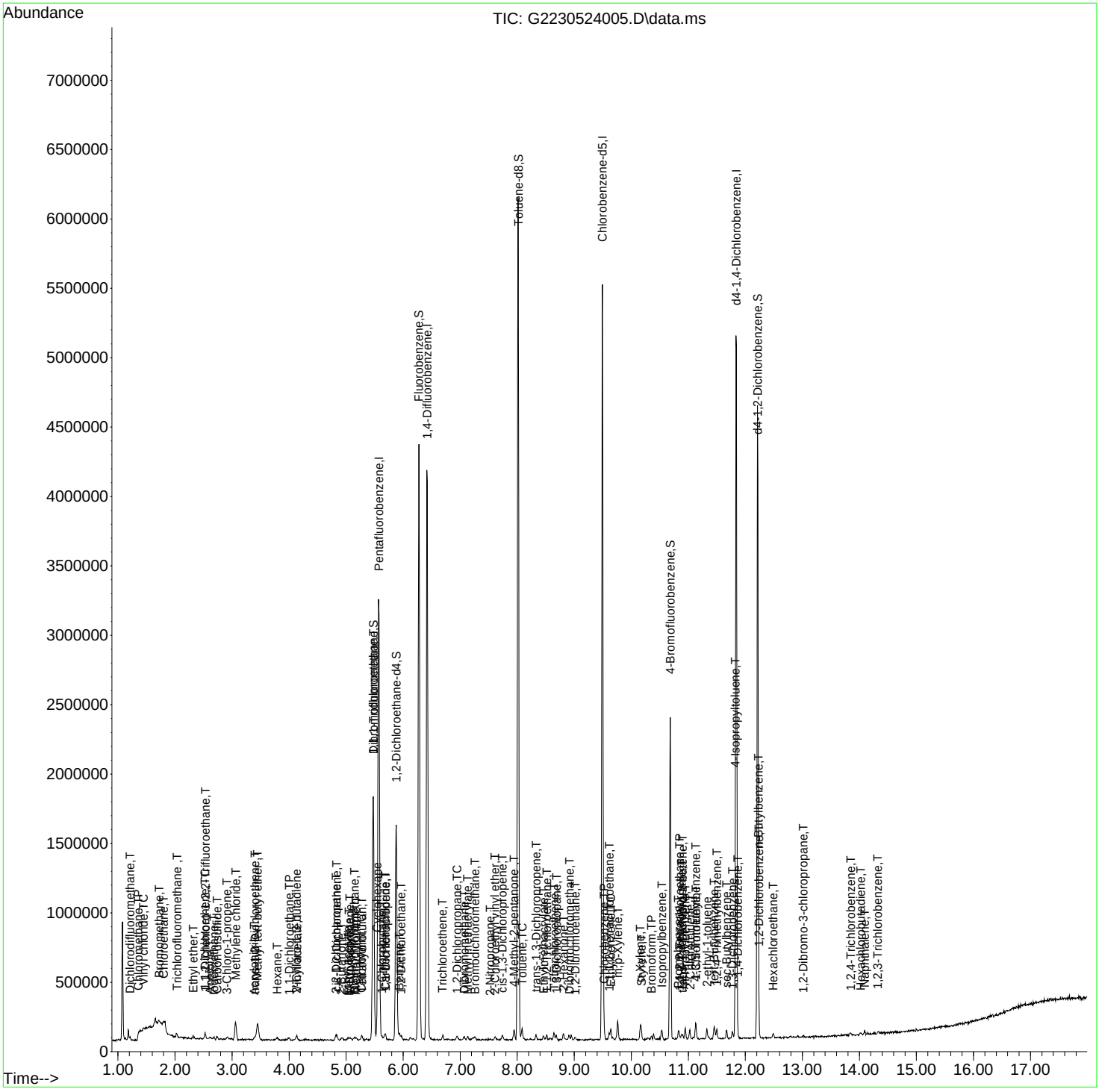
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
95)	4-Isopropyltoluene	11.823	119	345929	0.21	ug/L		75
96)	1,4-Dichlorobenzene	11.865	146	201033	0.22	ug/L	#	38
98)	1,2-Dichlorobenzene	12.238	146	191188	0.22	ug/L	#	31
99)	n-Butylbenzene	12.231	91	303342	0.24	ug/L	#	90
100)	Hexachloroethane	12.488	201	62703	0.21	ug/L		89
101)	1,2-Dibromo-3-chloropr...	13.013	157	29915m	0.22	ug/L		
103)	1,2,4-Trichlorobenzene	13.847	180	51937	0.20	ug/L	#	71
104)	Hexachlorobutadiene	14.023	225	37101	0.27	ug/L	#	24
105)	Naphthalene	14.092	128	175721	0.23	ug/L	#	75
106)	1,2,3-Trichlorobenzene	14.324	180	43870m	0.21	ug/L		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

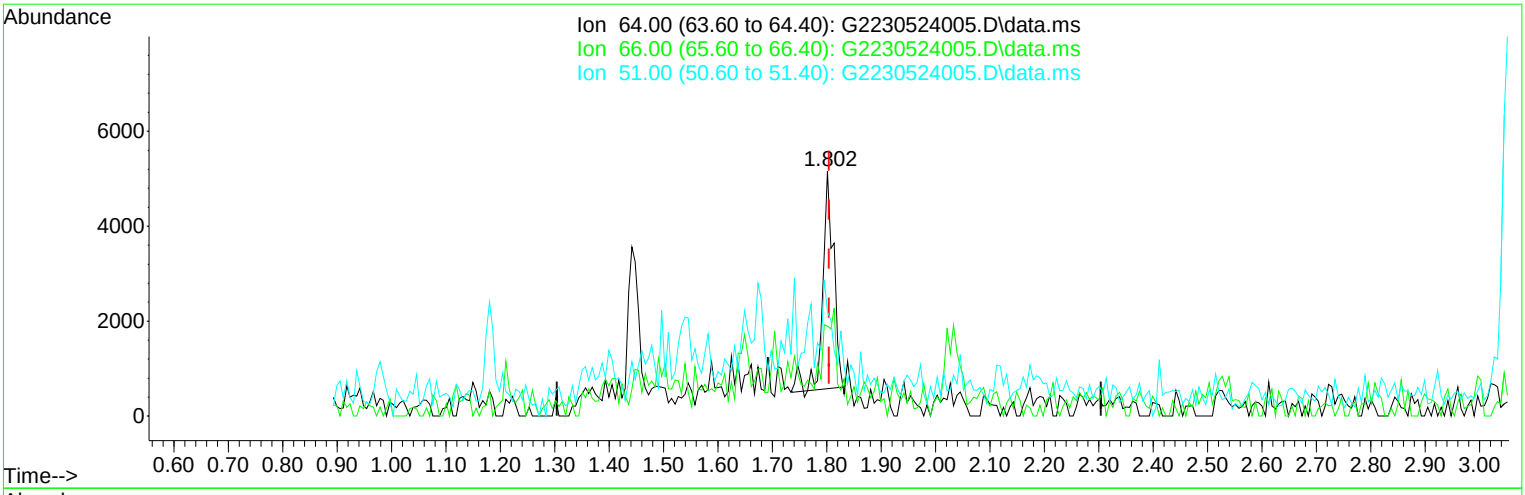
Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
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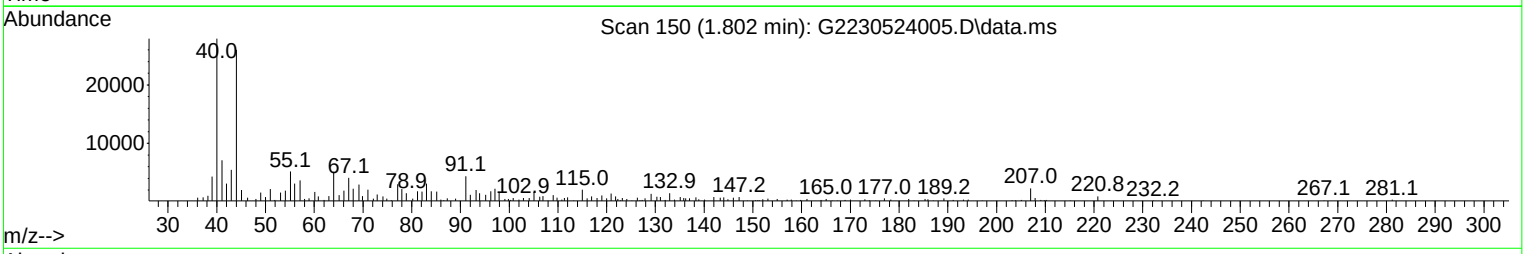


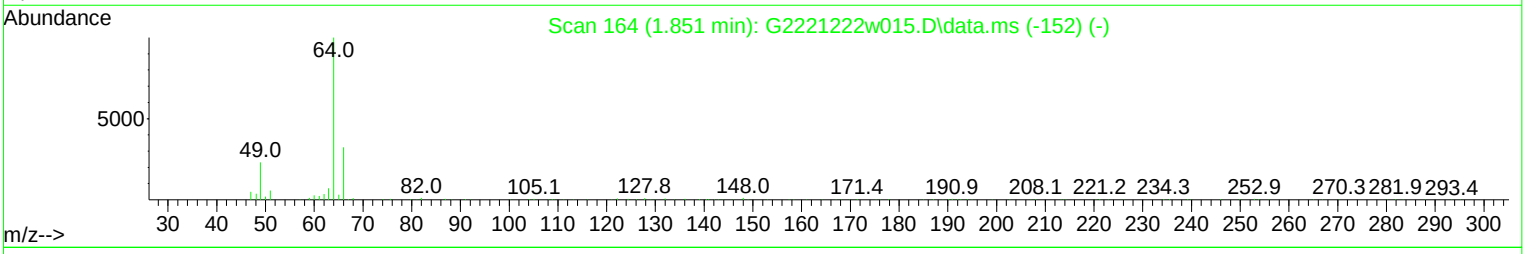
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(6) Chloroethane (T)

1.804min (+ 0.000) 0.21 ug/L

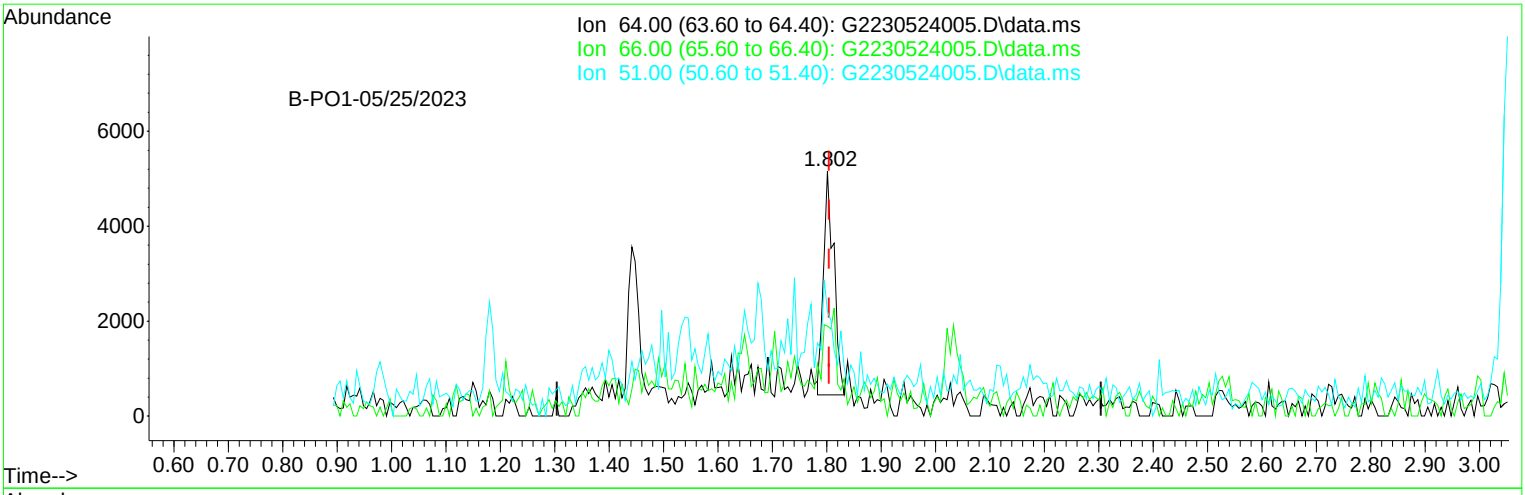
response 63679

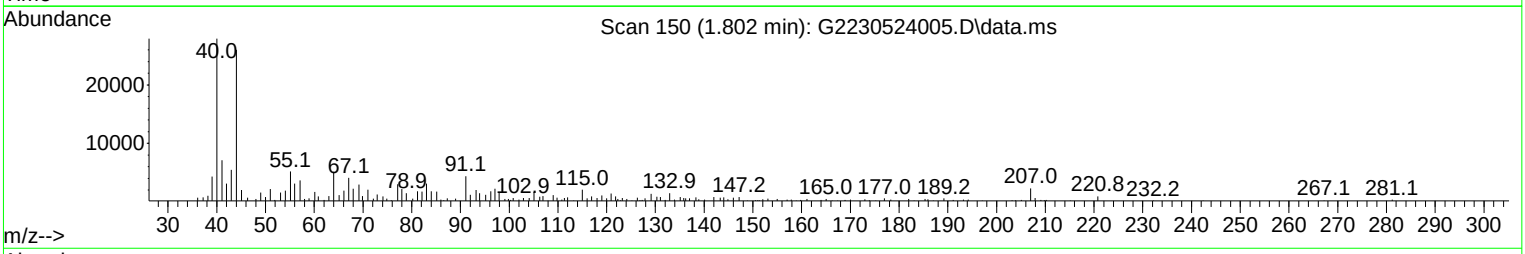
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66.00	34.30	0.00#
51.00	8.60	0.00
0.00	0.00	0.00

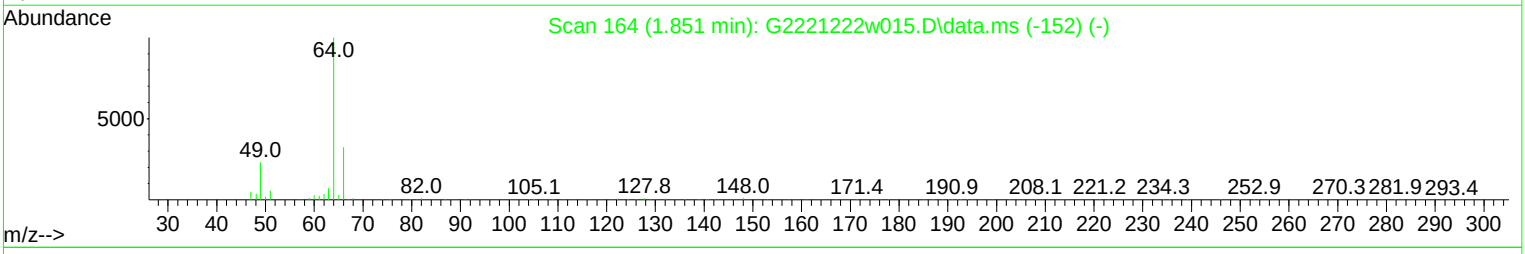
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
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Sample : SEQ-CAL1@@0.2
Misc :
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InstName : G







TIC: G2230524005.D\data.ms

(6) Chloroethane (T)

1.802min (-0.003) 0.21 ug/L m

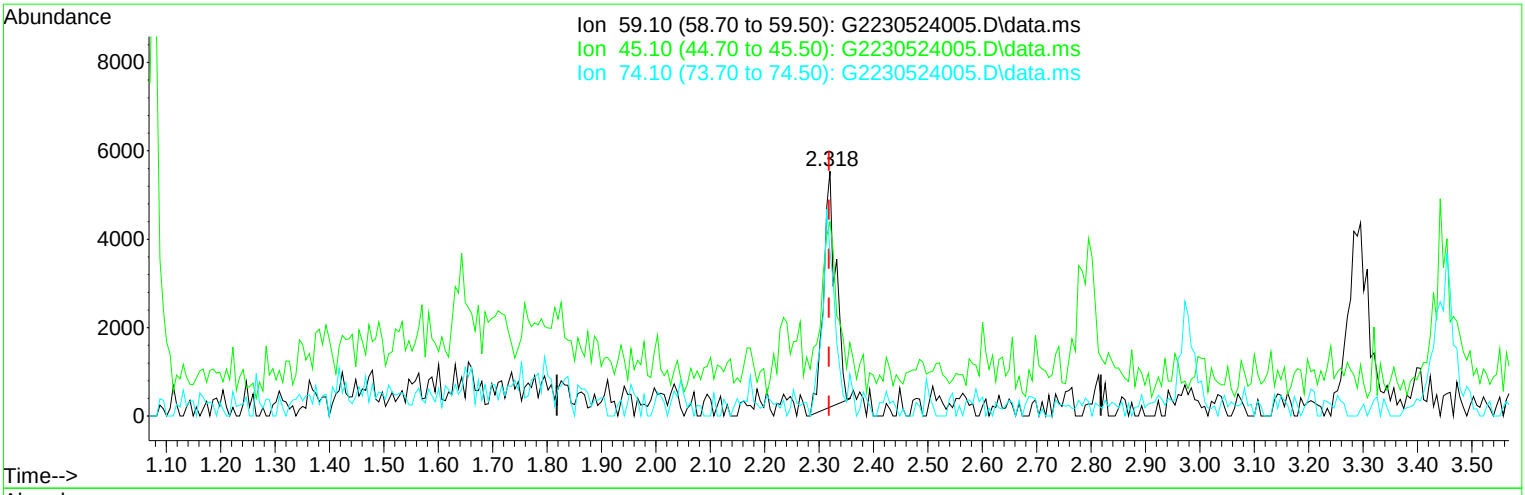
response 63672

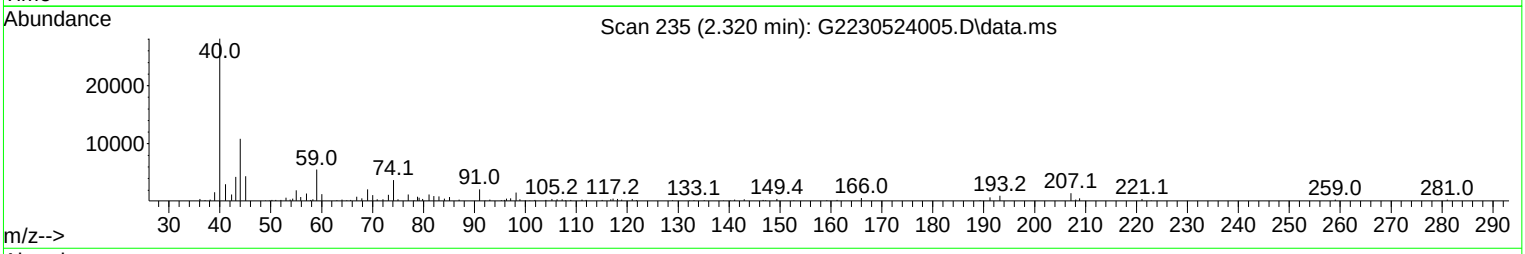
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66.00	34.30	0.00#
51.00	8.60	0.00
0.00	0.00	0.00

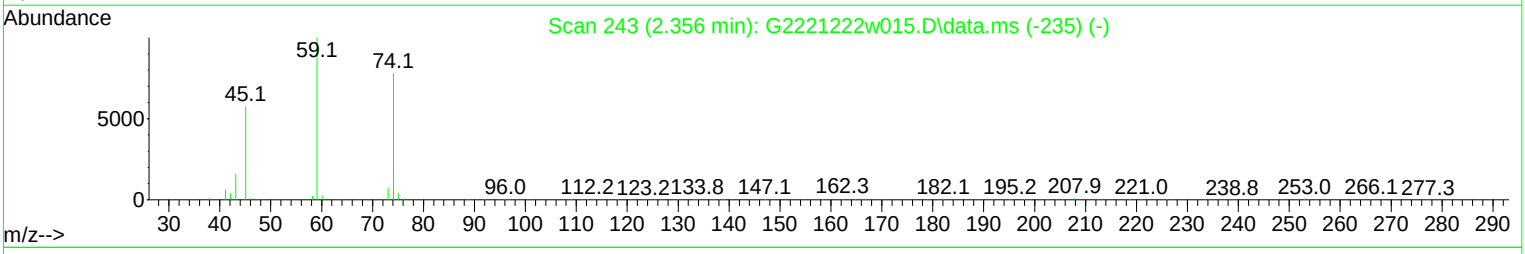
Quantitation Report (Qedit)

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QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(8) Ethyl ether (T)

2.320min (+ 0.002) 0.23 ug/L

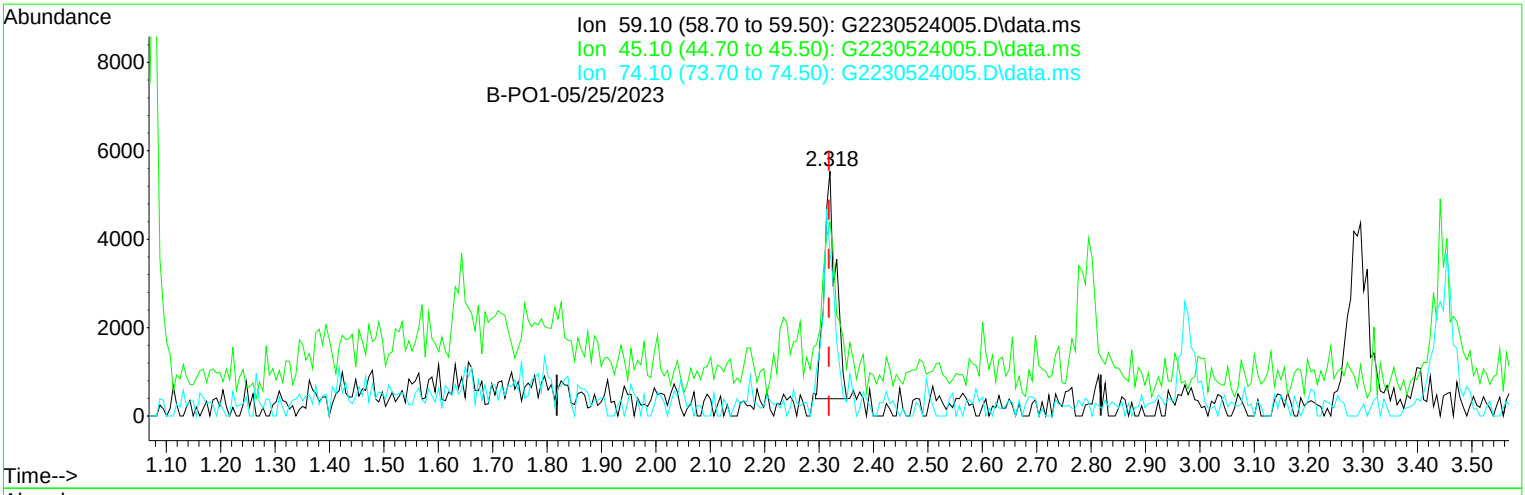
response 84134

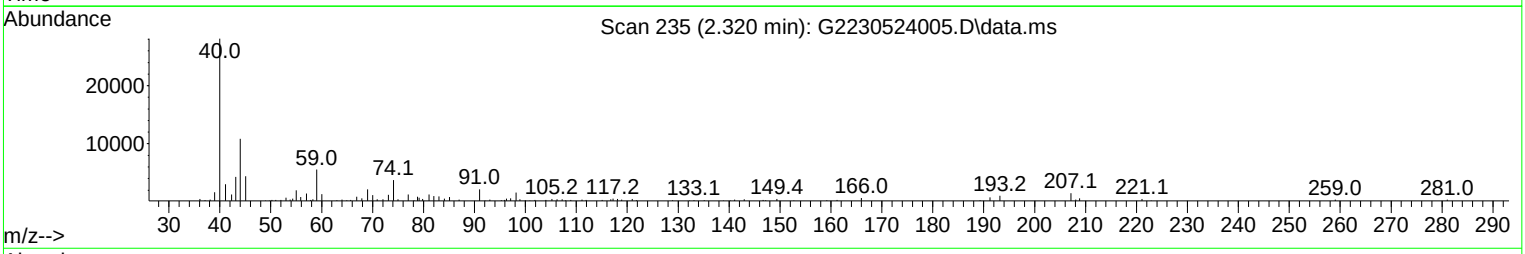
Ion	Exp%	Act%
59.10	100.00	100.00
45.10	71.50	79.34
74.10	73.40	76.52
0.00	0.00	0.00

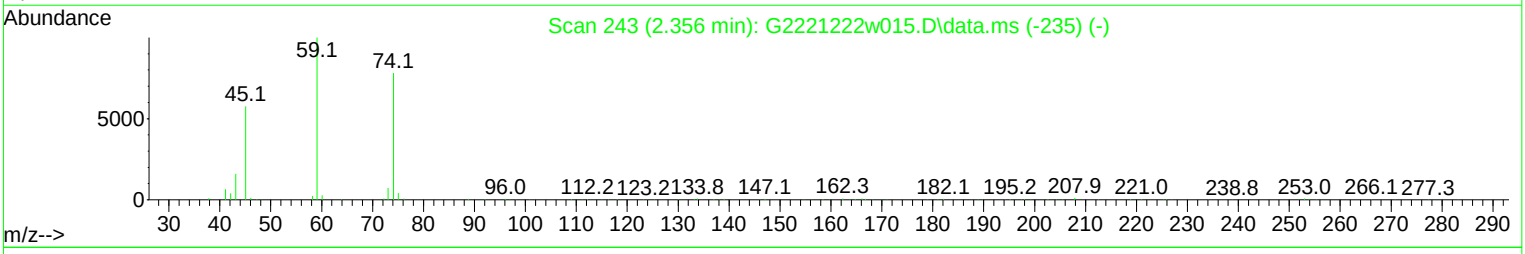
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(8) Ethyl ether (T)

2.320min (+ 0.002) 0.21 ug/L m

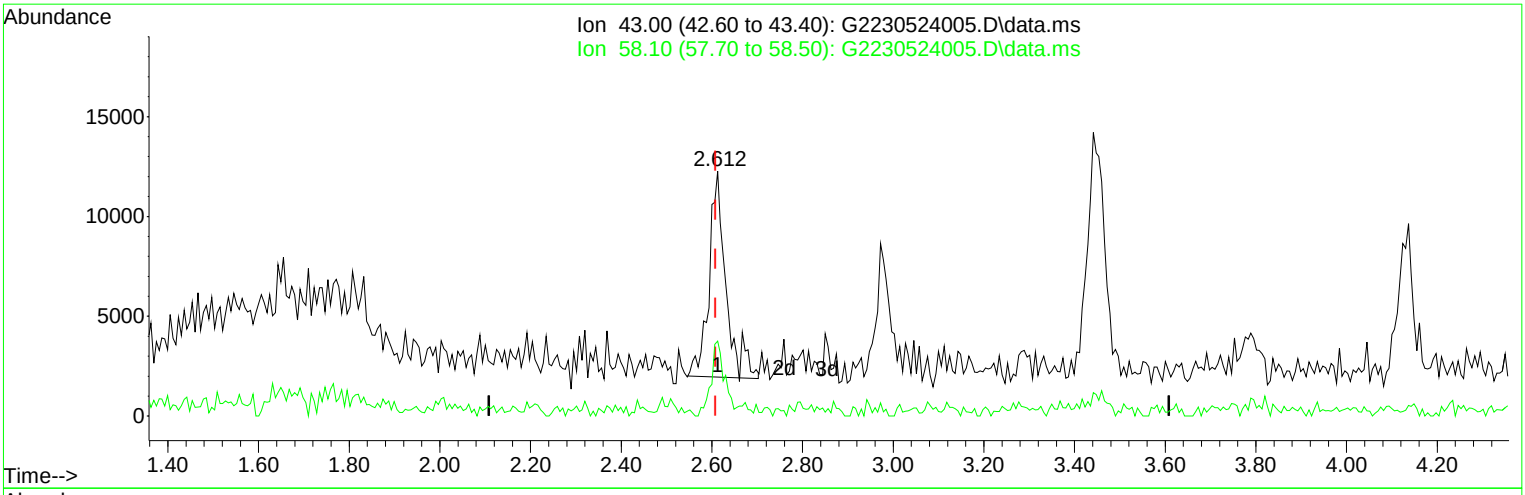
response 76684

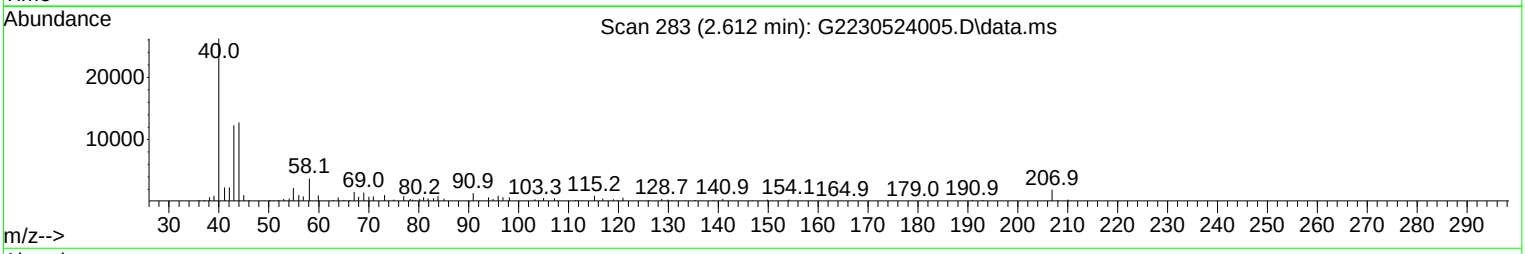
Ion	Exp%	Act%
59.10	100.00	100.00
45.10	71.50	87.05
74.10	73.40	83.95
0.00	0.00	0.00

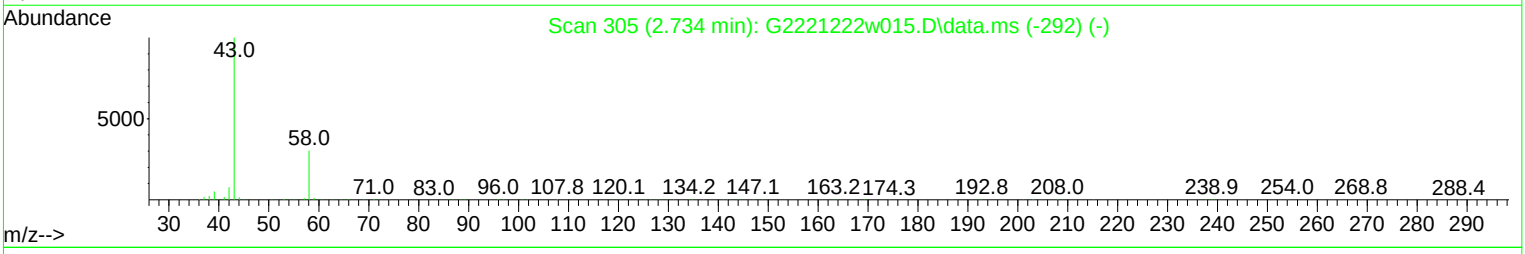
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(12) Acetone (T)

2.613min (+ 0.005) 1.84 ug/L

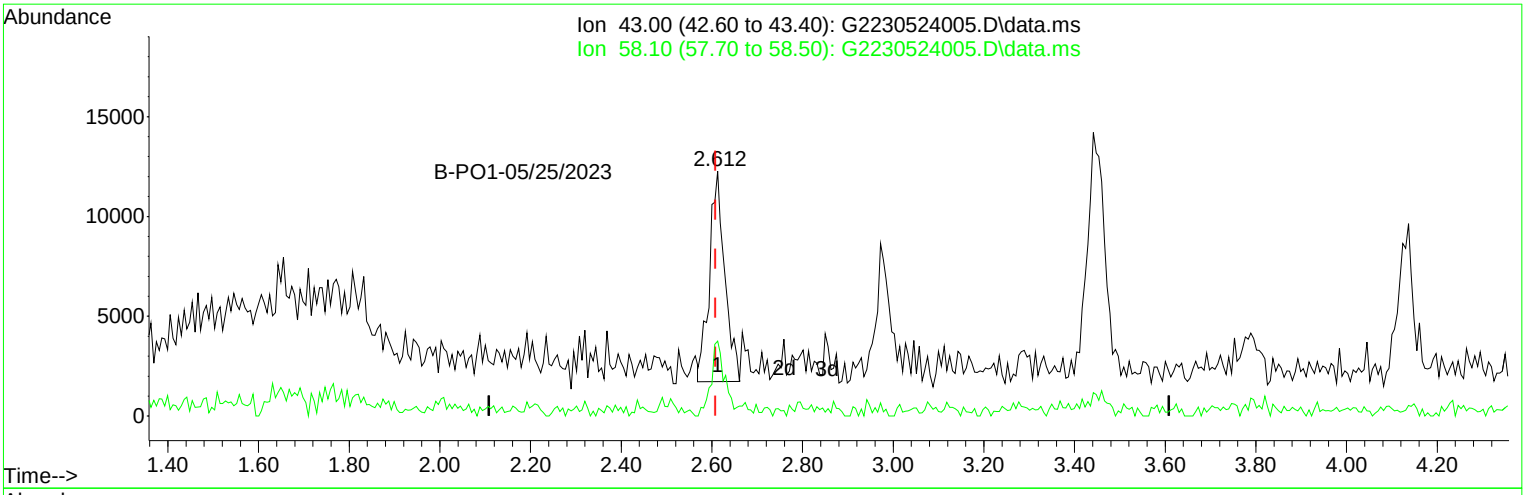
response 265498

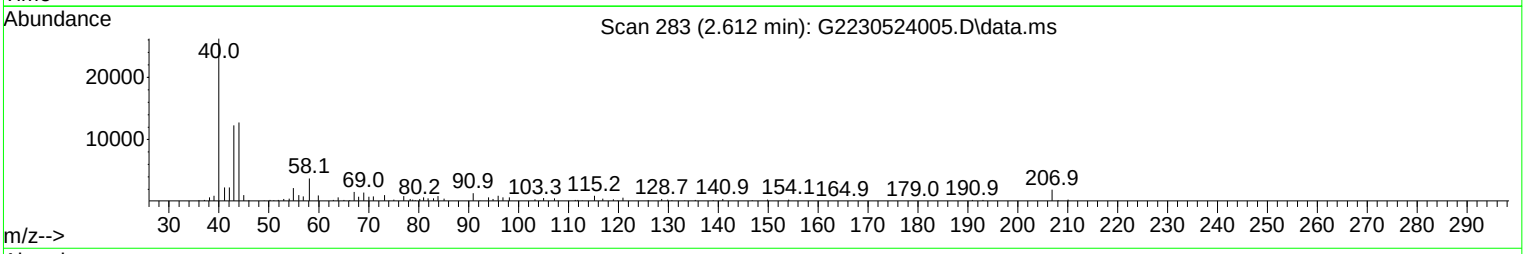
Ion	Exp%	Act%
43.00	100.00	100.00
58.10	29.70	25.80
0.00	0.00	0.00
0.00	0.00	0.00

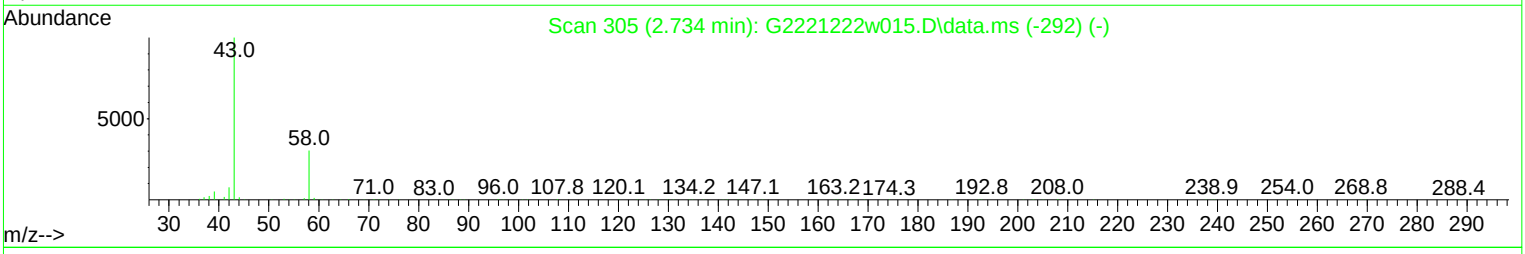
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(12) Acetone (T)

2.612min (+ 0.004) 1.75 ug/L m

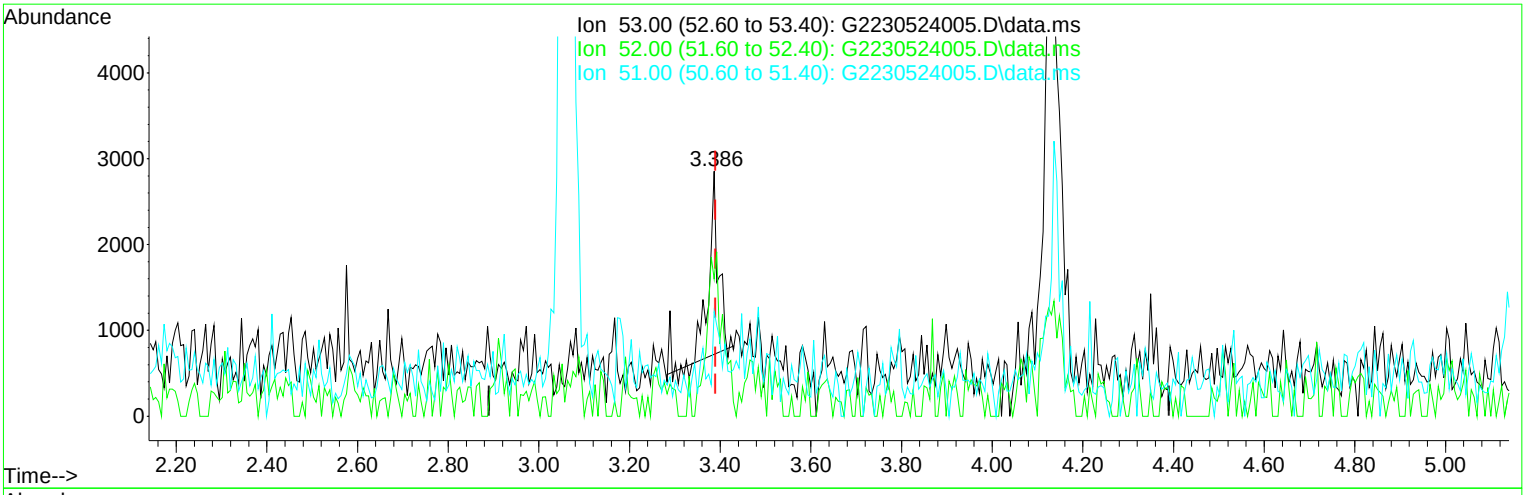
response 252875

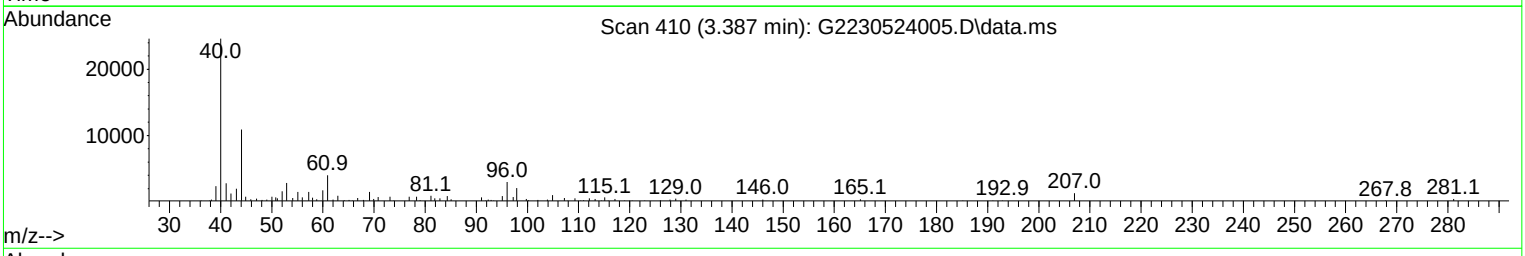
Ion	Exp%	Act%
43.00	100.00	100.00
58.10	29.70	27.09
0.00	0.00	0.00
0.00	0.00	0.00

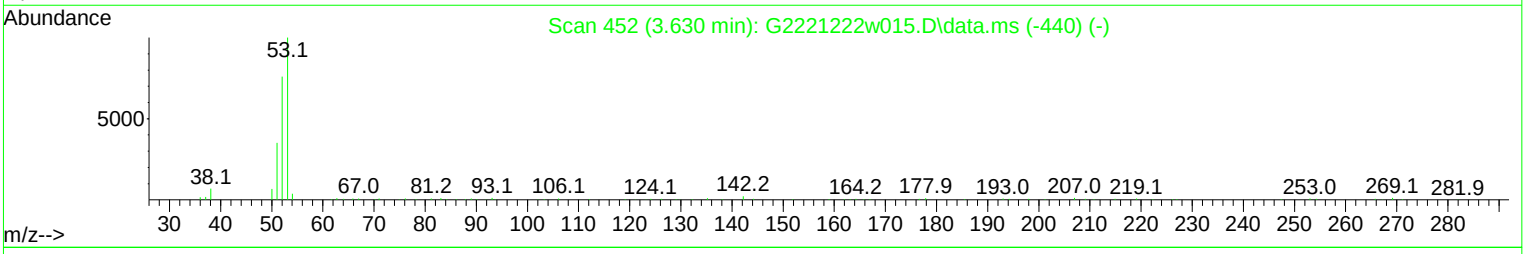
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(19) Acrylonitrile (T)

3.389min (-0.001) 0.16 ug/L

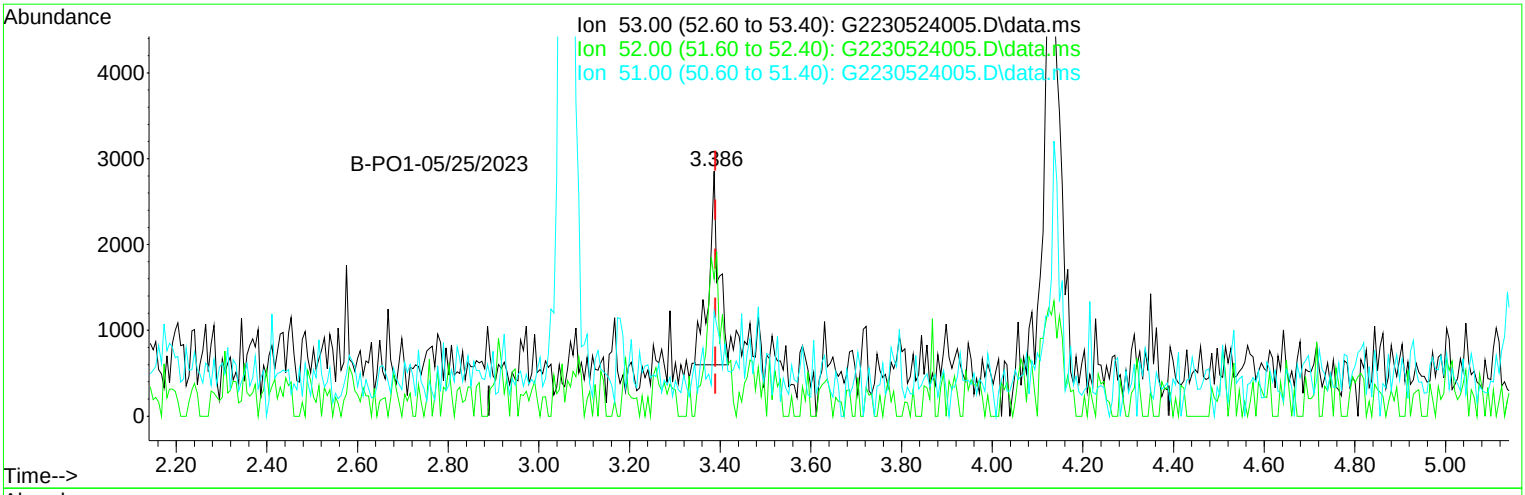
response 32273

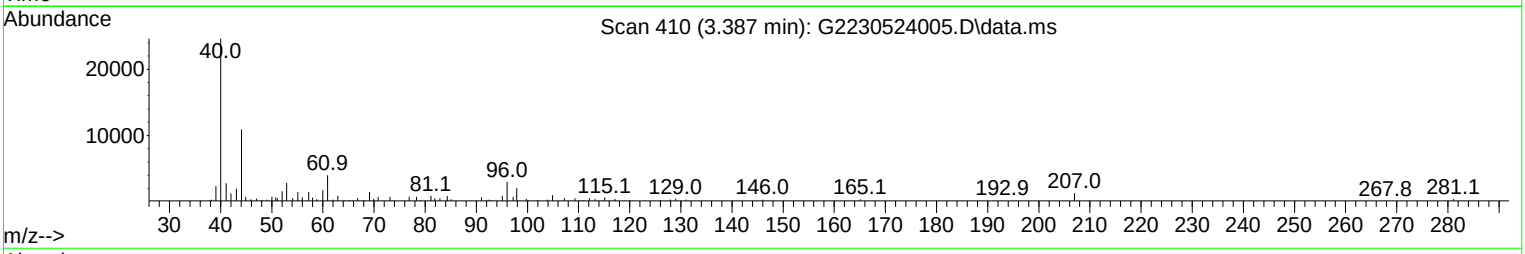
Ion	Exp%	Act%
53.00	100.00	100.00
52.00	82.20	131.23#
51.00	38.40	0.00#
0.00	0.00	0.00

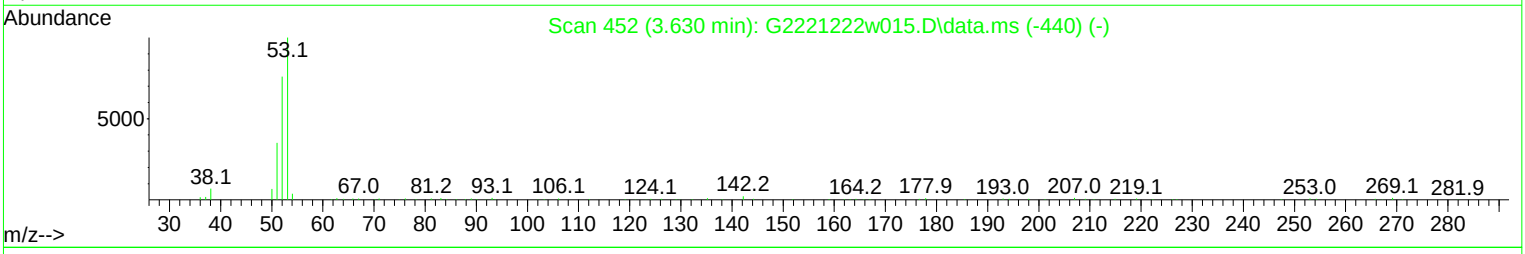
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(19) Acrylonitrile (T)

3.387min (-0.003) 0.18 ug/L m

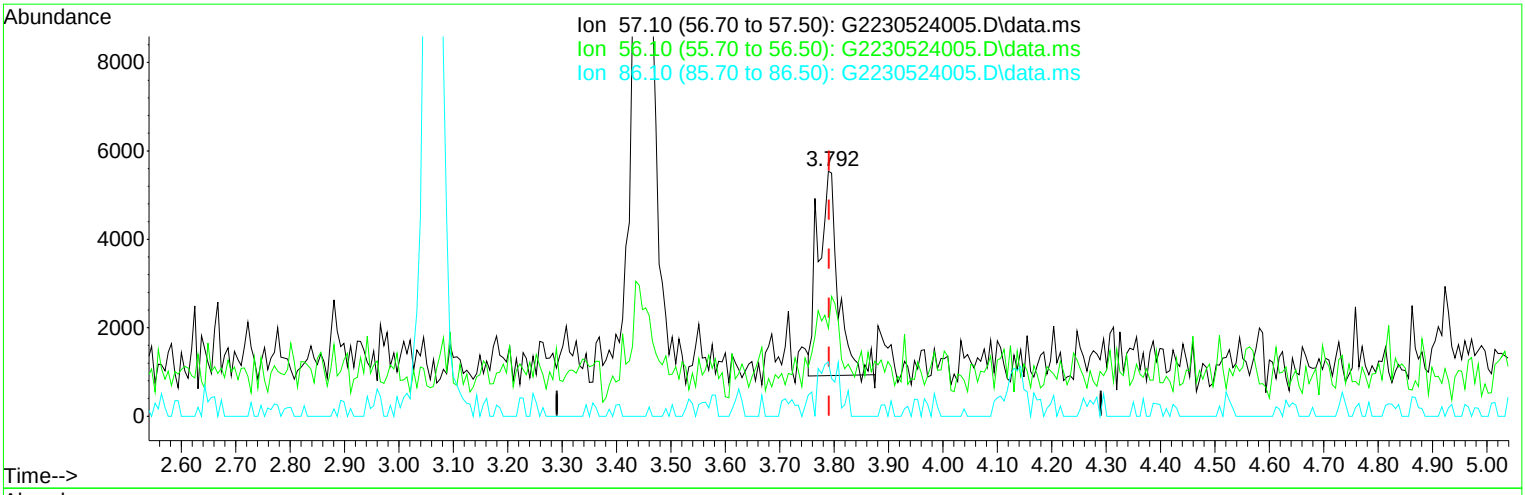
response 36073

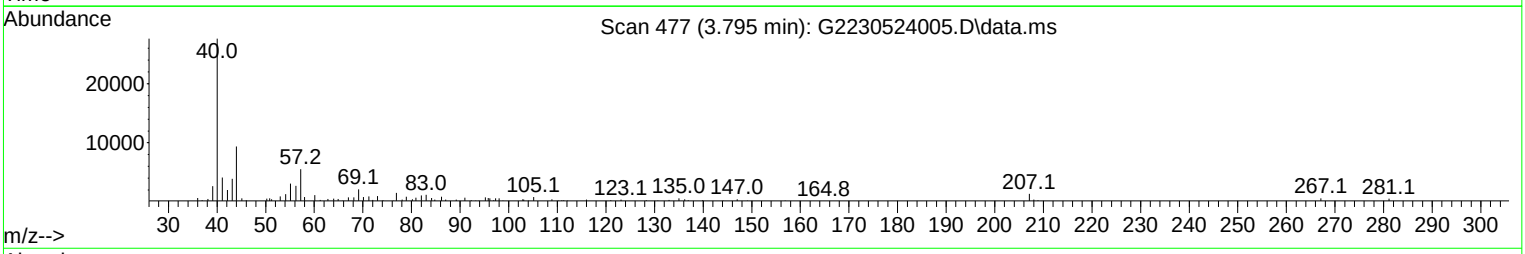
Ion	Exp%	Act%
53.00	100.00	100.00
52.00	82.20	117.41#
51.00	38.40	0.00#
0.00	0.00	0.00

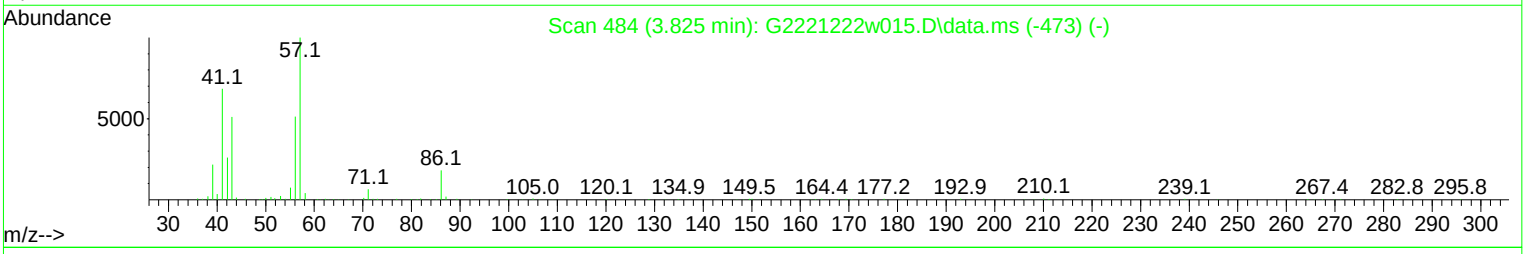
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(22) Hexane (T)

3.794min (+ 0.003) 0.27 ug/L

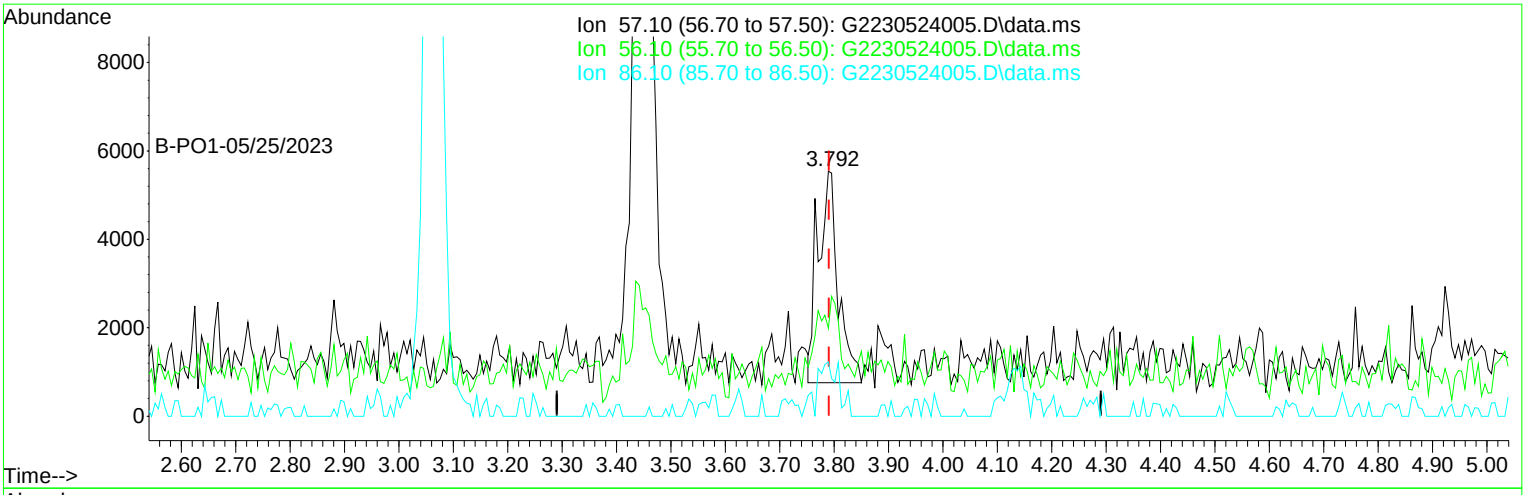
response 118693

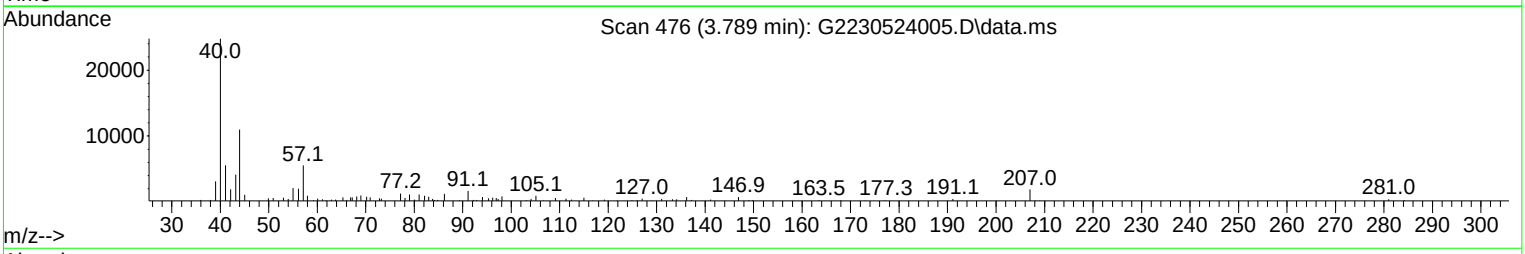
Ion	Exp%	Act%
57.10	100.00	100.00
56.10	50.40	40.10
86.10	18.10	0.00
0.00	0.00	0.00

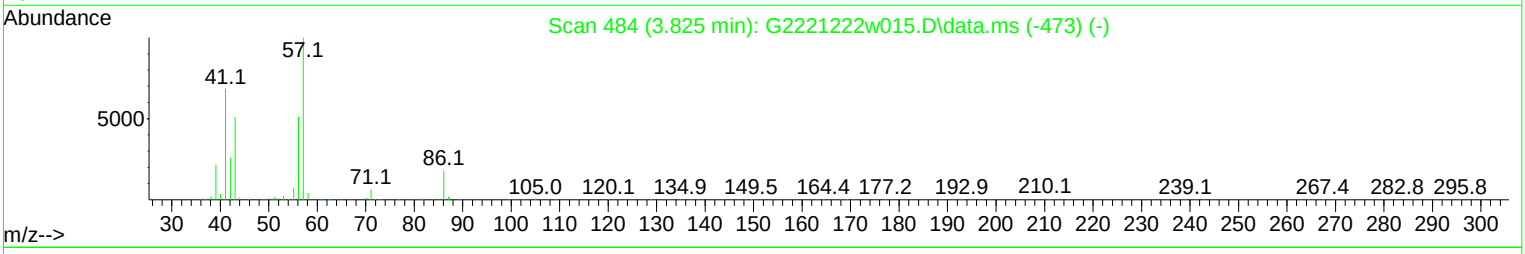
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(22) Hexane (T)

3.789min (-0.001) 0.29 ug/L m

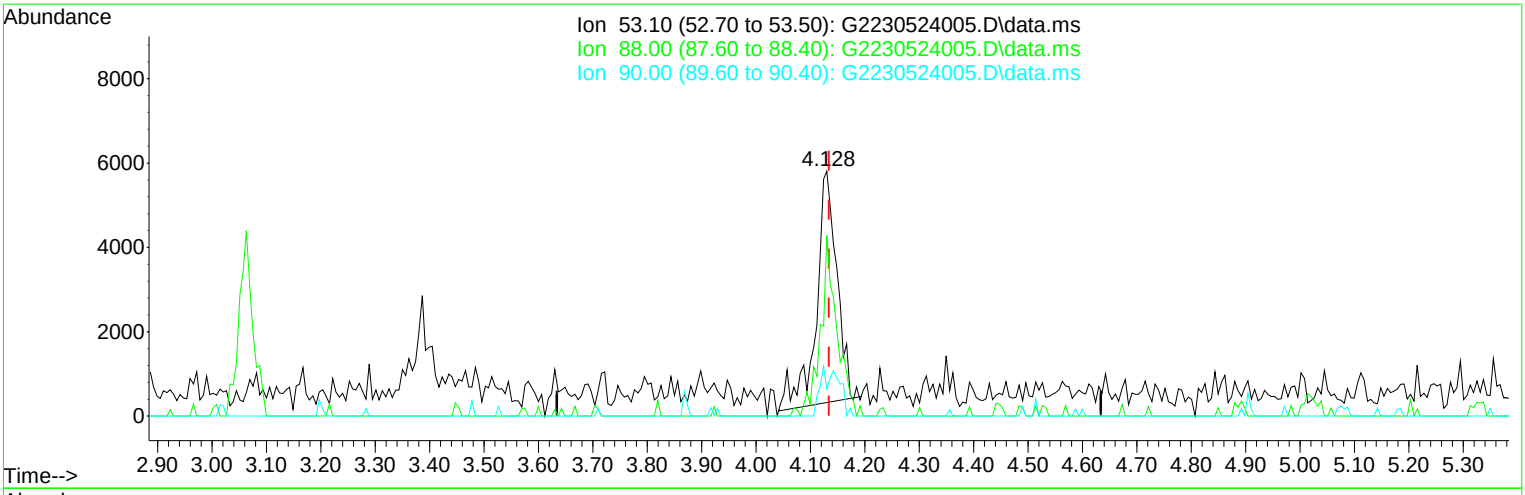
response 126337

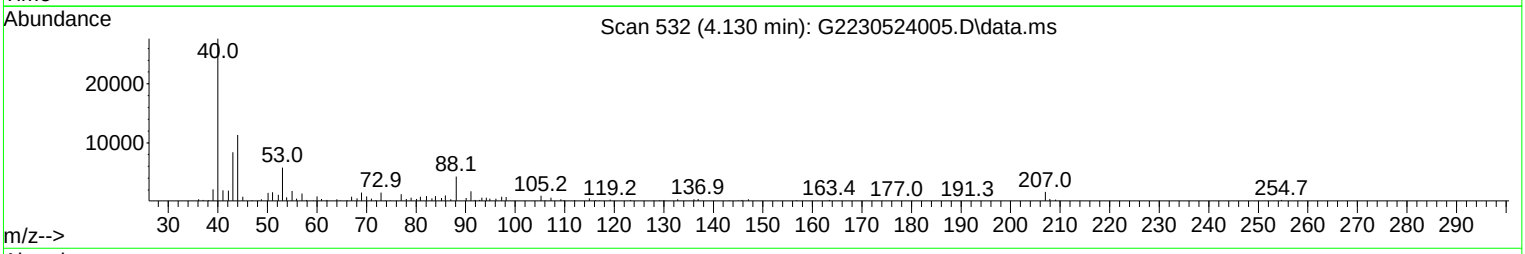
Ion	Exp%	Act%
57.10	100.00	100.00
56.10	50.40	37.67
86.10	18.10	0.00
0.00	0.00	0.00

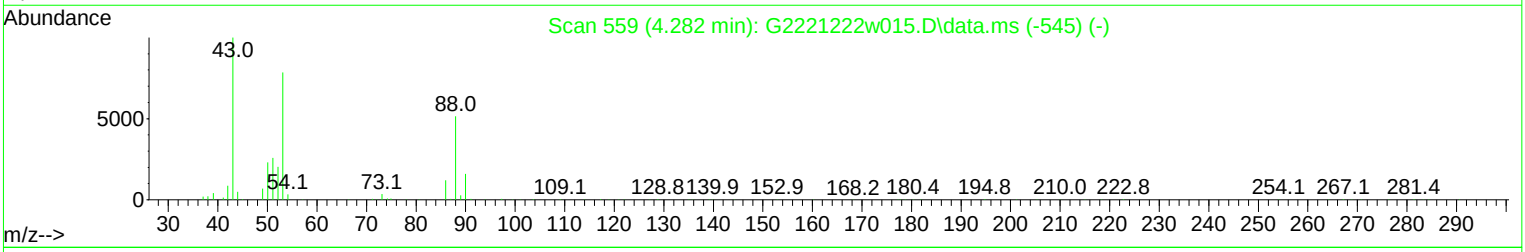
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(25) 2-Chloro-1,3-butadiene

4.131min (-0.003) 0.25 ug/L

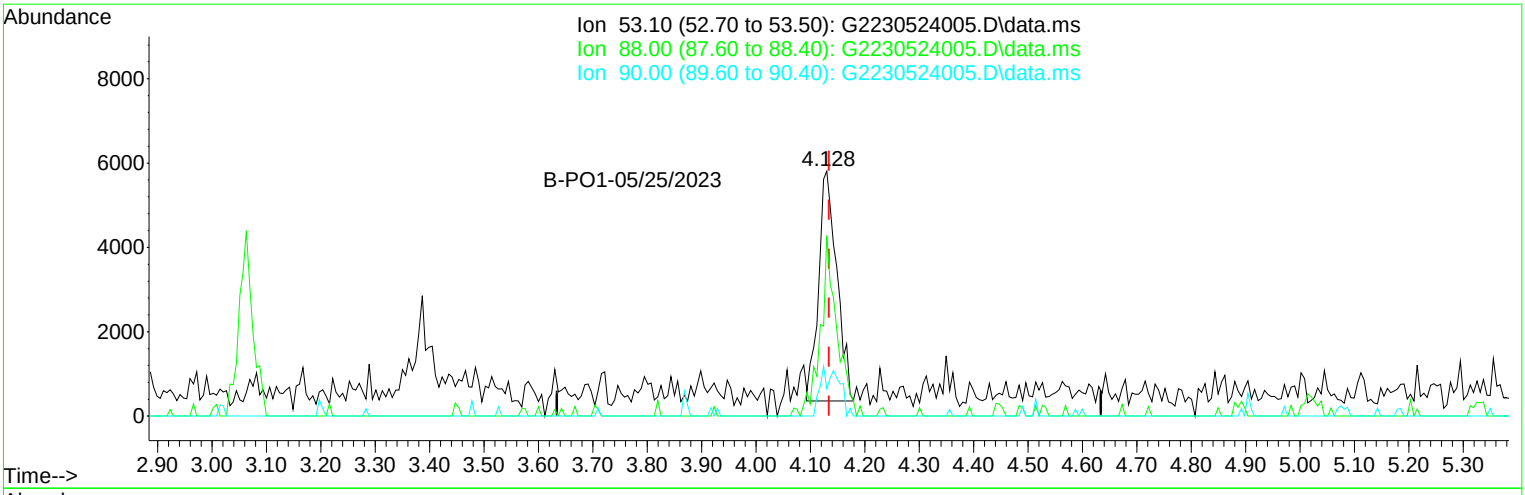
response 144251

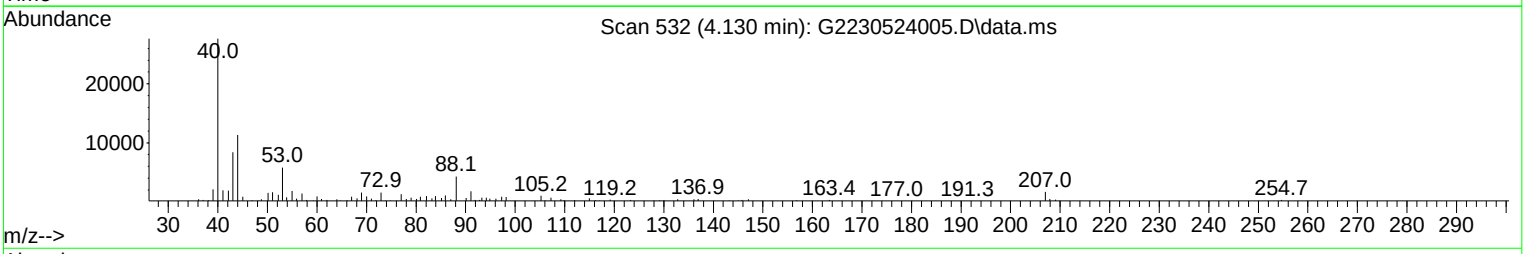
Ion	Exp%	Act%
53.10	100.00	100.00
88.00	59.00	63.65
90.00	18.70	19.36
0.00	0.00	0.00

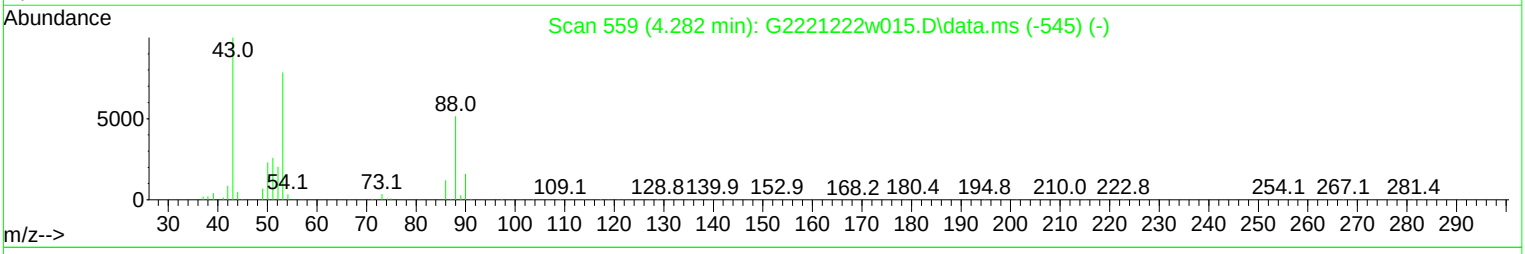
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(25) 2-Chloro-1,3-butadiene

4.130min (-0.004) 0.22 ug/L m

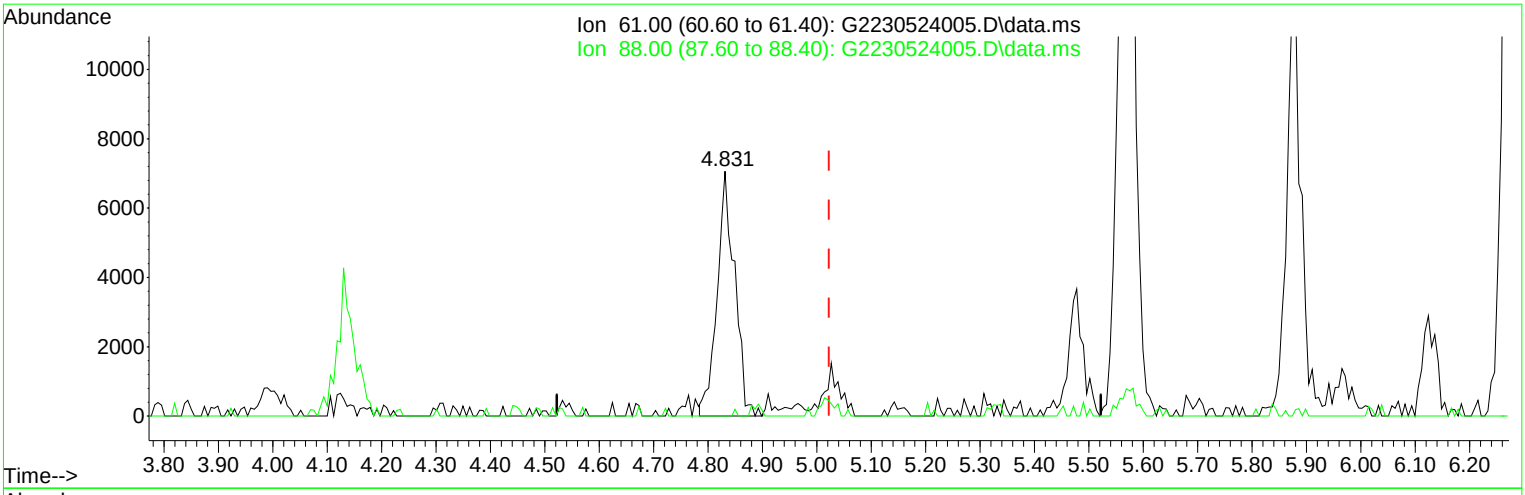
response 127506

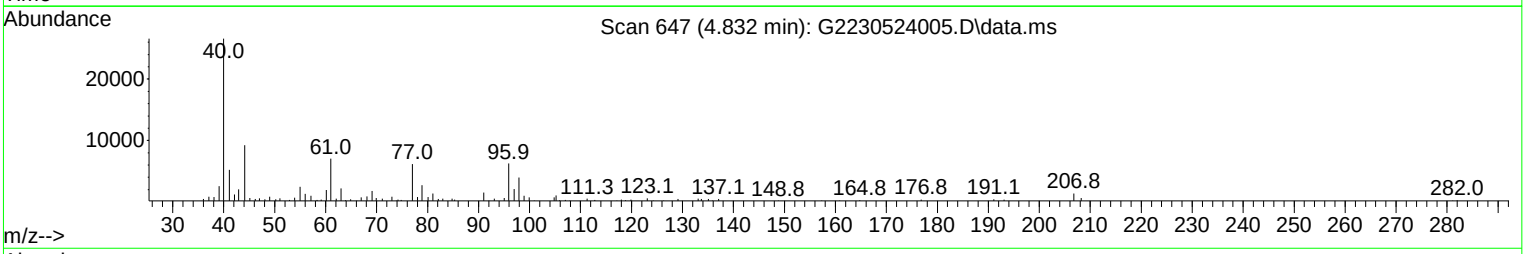
Ion	Exp%	Act%
53.10	100.00	100.00
88.00	59.00	72.01
90.00	18.70	21.90
0.00	0.00	0.00

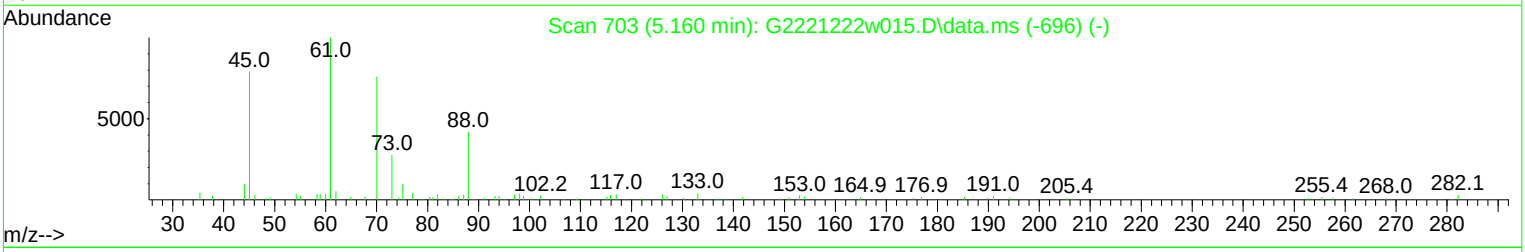
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(31) Ethyl acetate

4.834min (-0.189) 1.87 ug/L

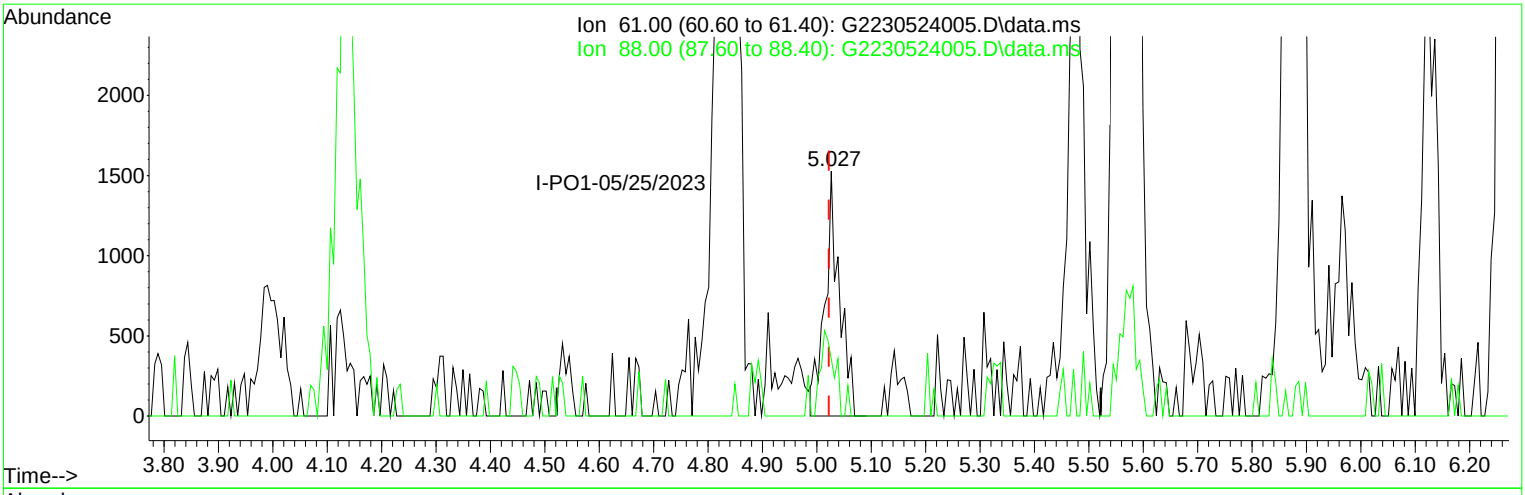
response 159612

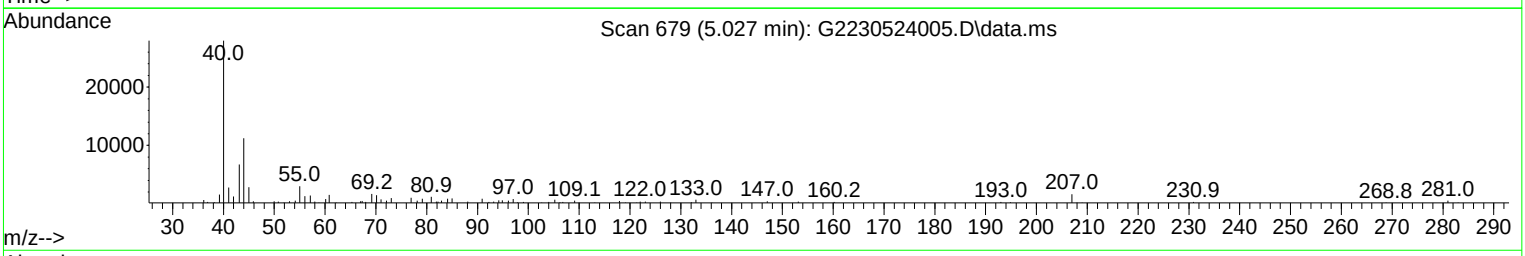
Ion	Exp%	Act%
61.00	100.00	100.00
88.00	30.10	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

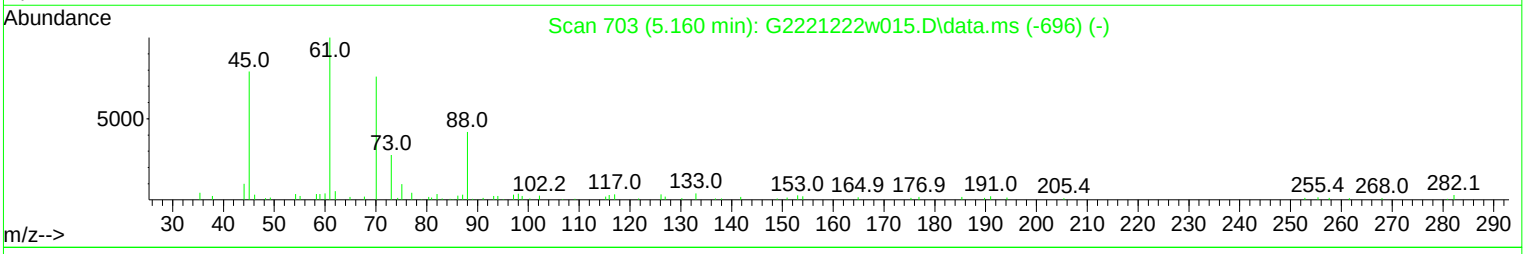
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(31) Ethyl acetate

5.027min (+ 0.004) 0.34 ug/L m

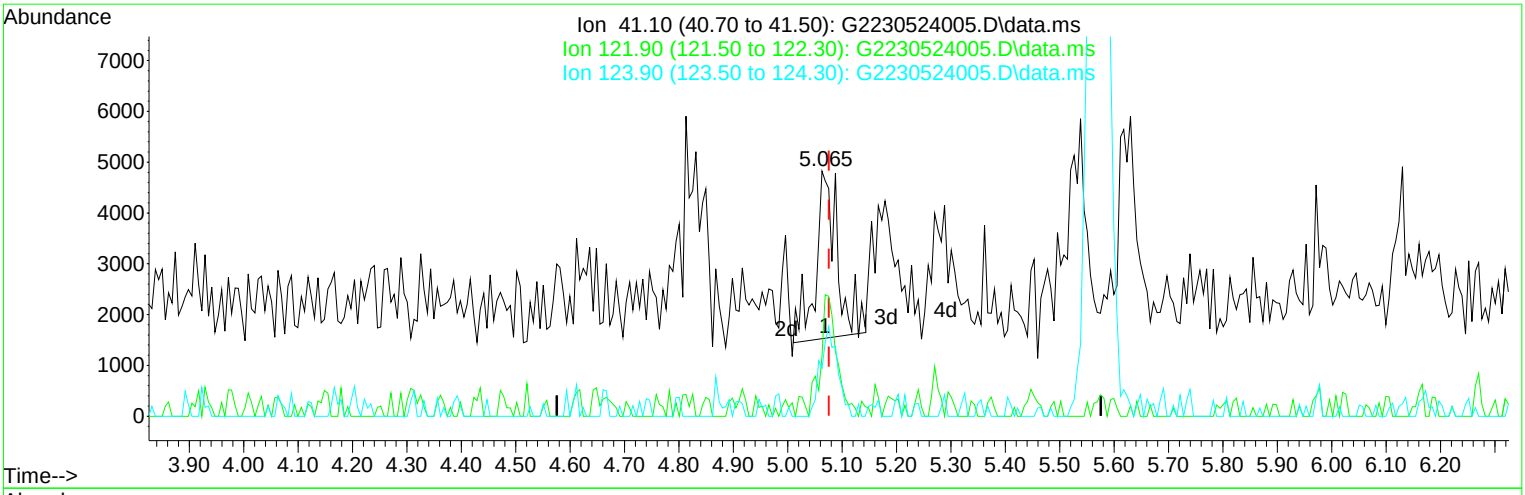
response 28891

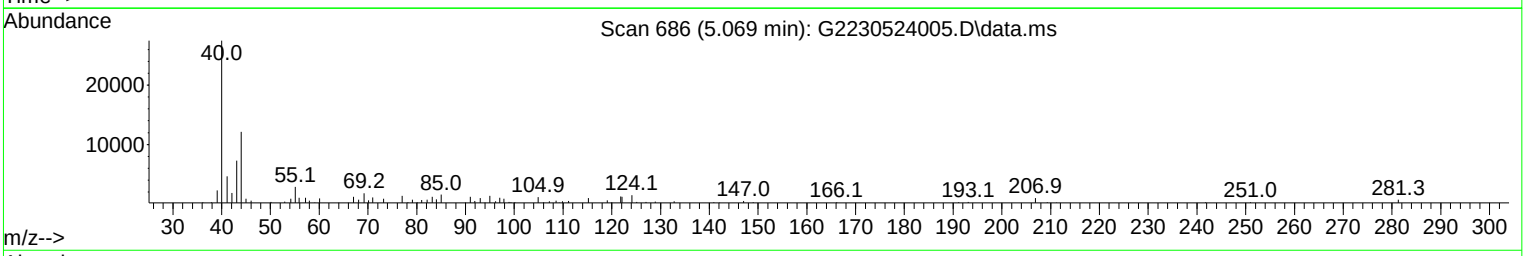
Ion	Exp%	Act%
61.00	100.00	100.00
88.00	30.10	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

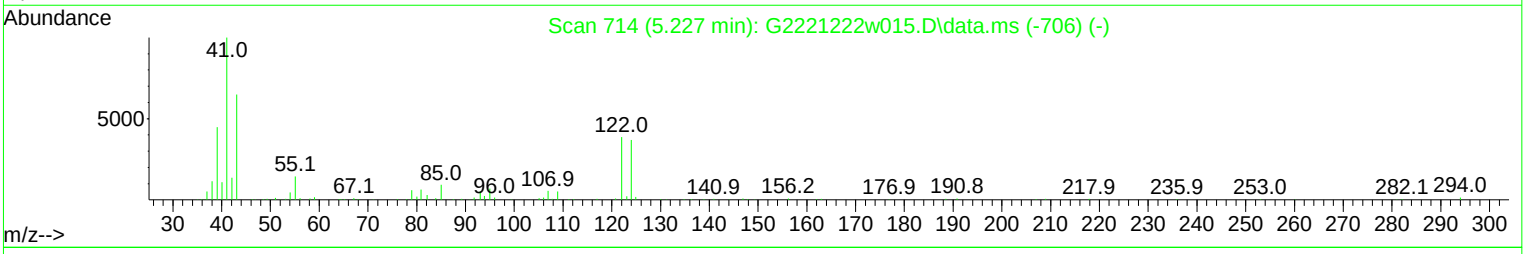
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(33) 1-Bromopropane (T)

5.069min (-0.007) 0.32 ug/L

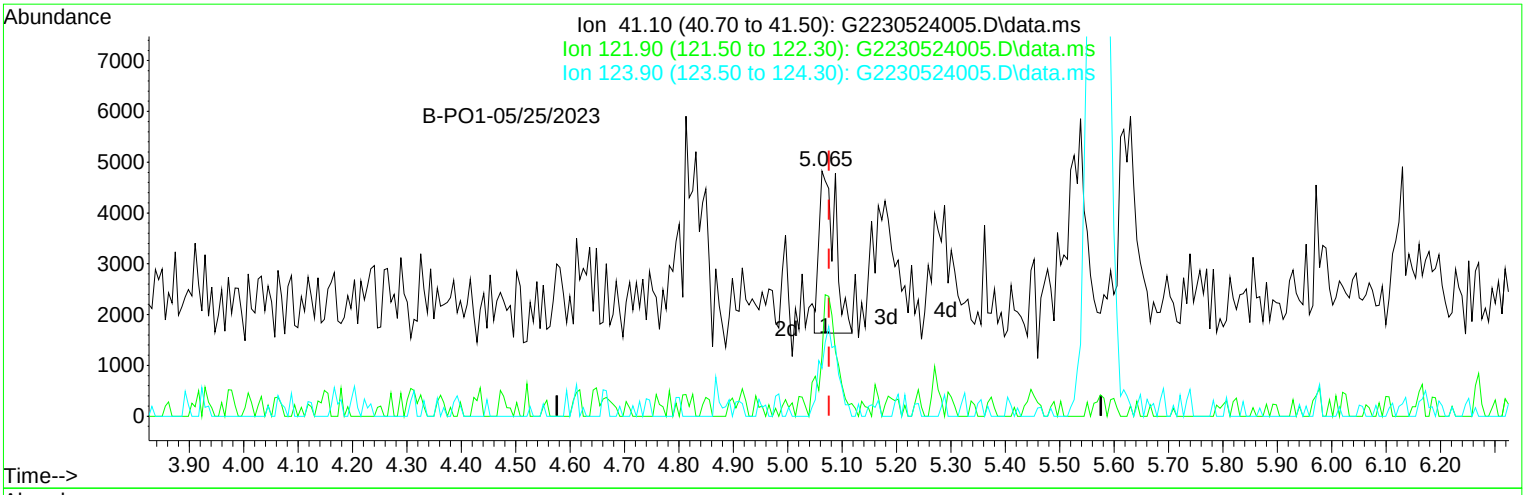
response 90110

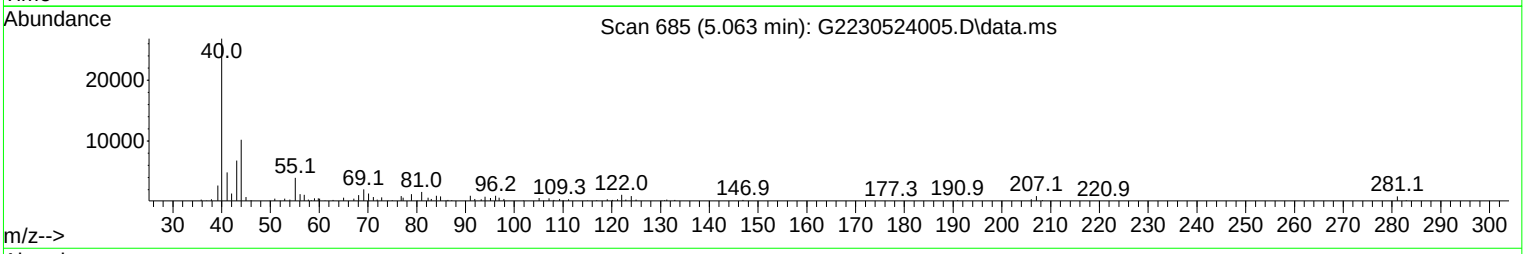
Ion	Exp%	Act%
41.10	100.00	100.00
121.90	35.60	47.56
123.90	33.80	42.91
0.00	0.00	0.00

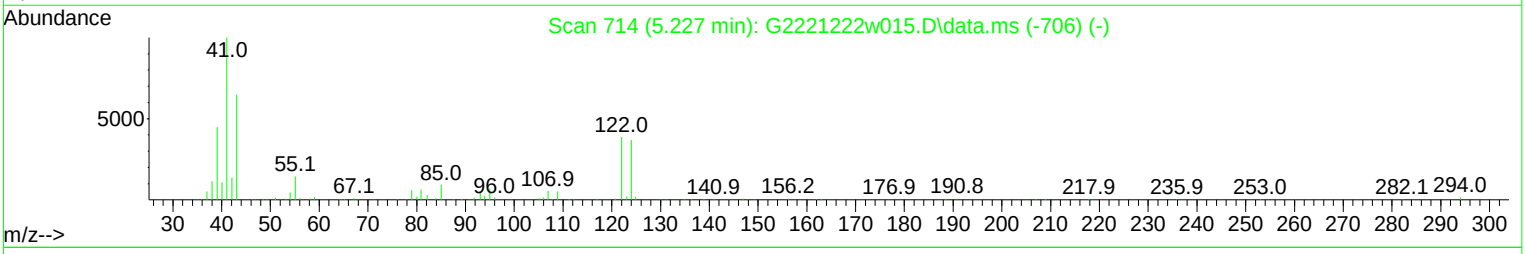
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(33) 1-Bromopropane (T)

5.063min (-0.013) 0.24 ug/L m

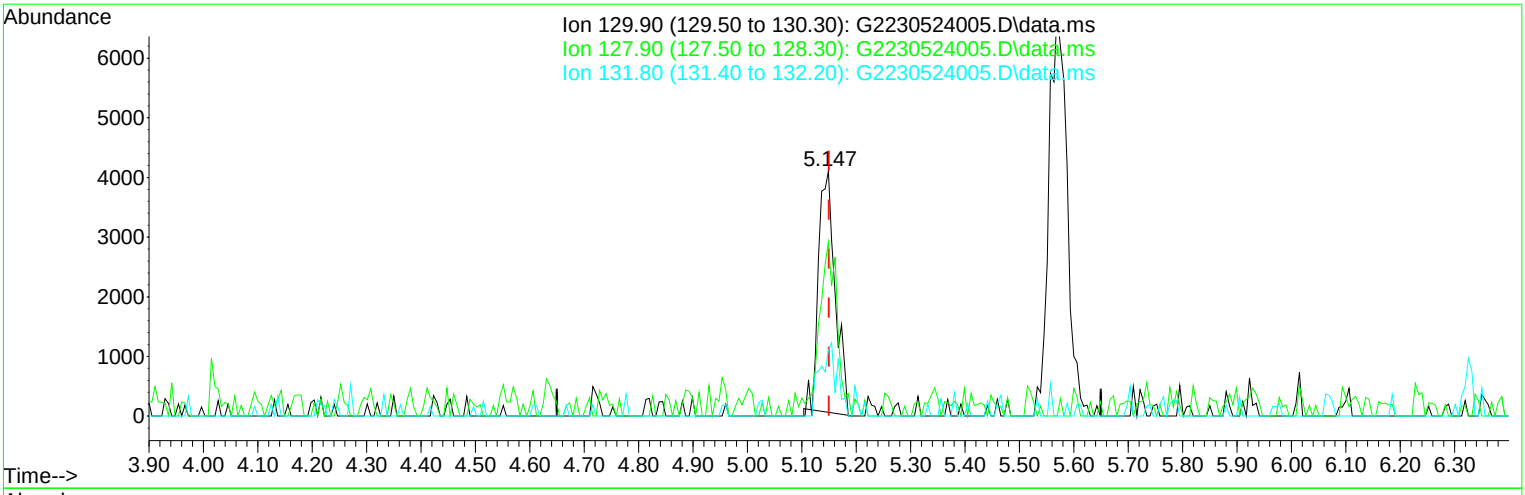
response 68663

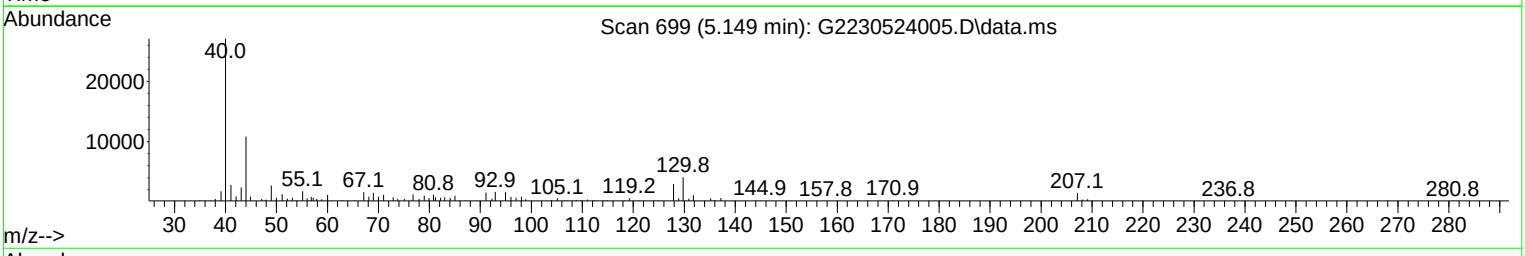
Ion	Exp%	Act%
41.10	100.00	100.00
121.90	35.60	62.41
123.90	33.80	56.31
0.00	0.00	0.00

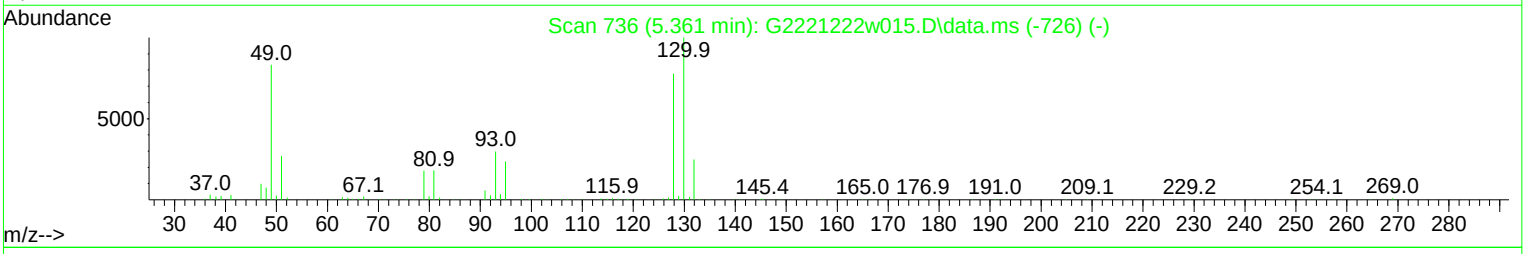
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(34) Bromochloromethane (T)

5.148min (-0.002) 0.23 ug/L

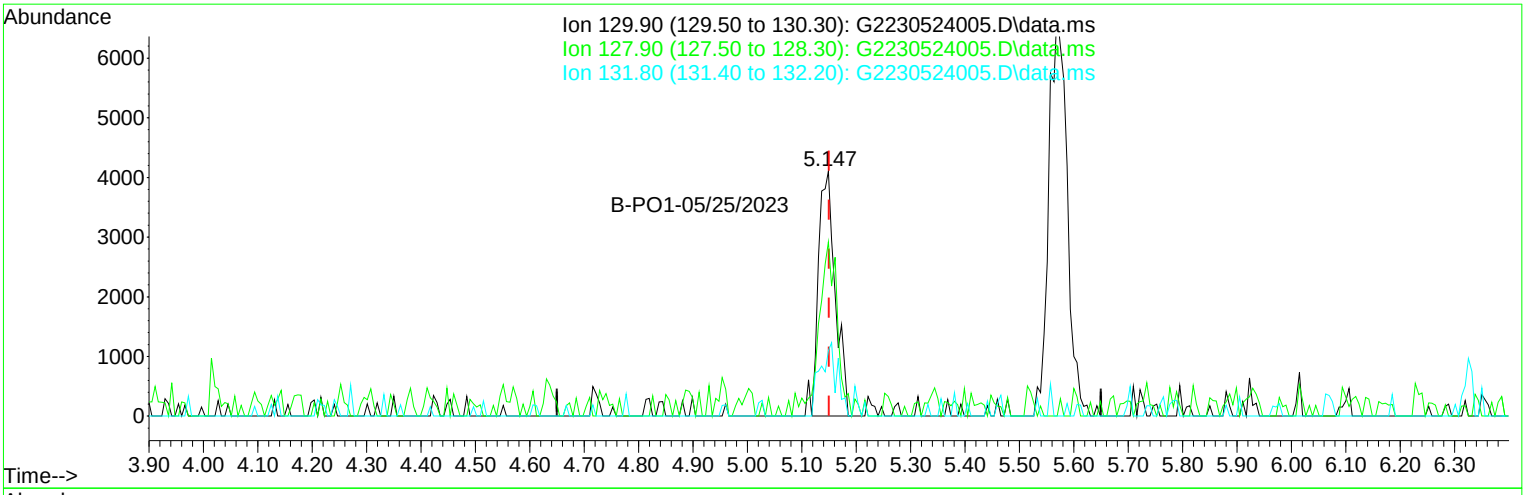
response 85081

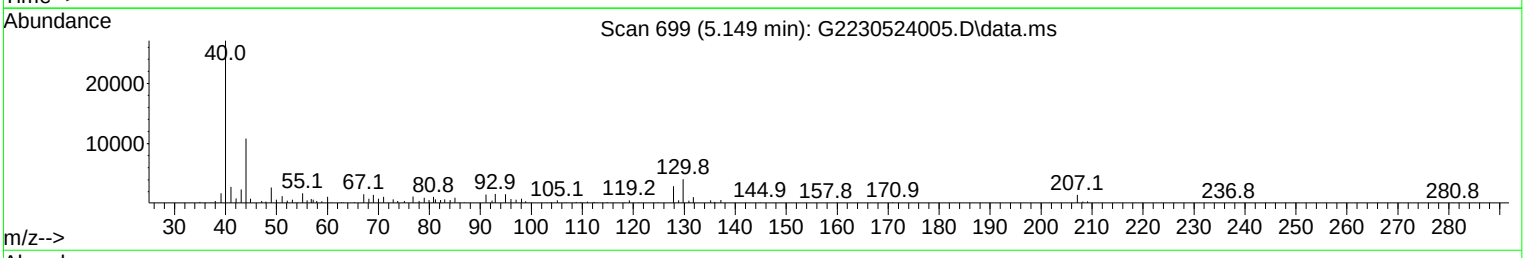
Ion	Exp%	Act%
129.90	100.00	100.00
127.90	76.00	85.78
131.80	24.10	0.00
0.00	0.00	0.00

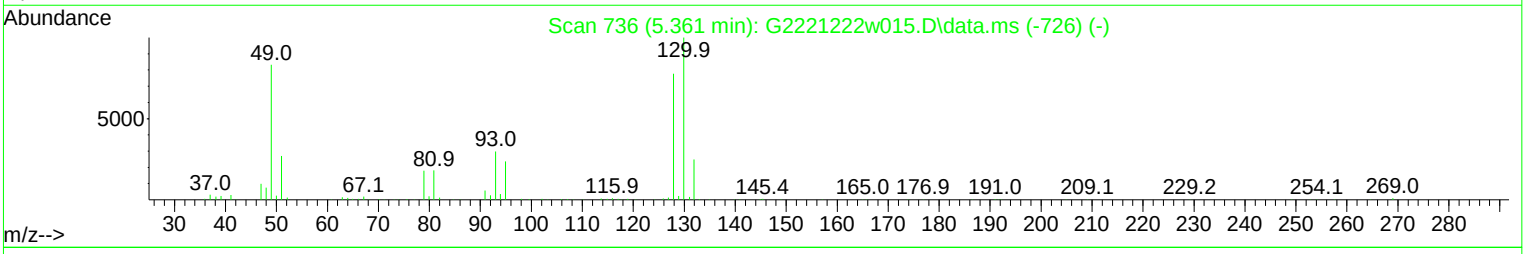
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(34) Bromochloromethane (T)

5.149min (-0.001) 0.23 ug/L m

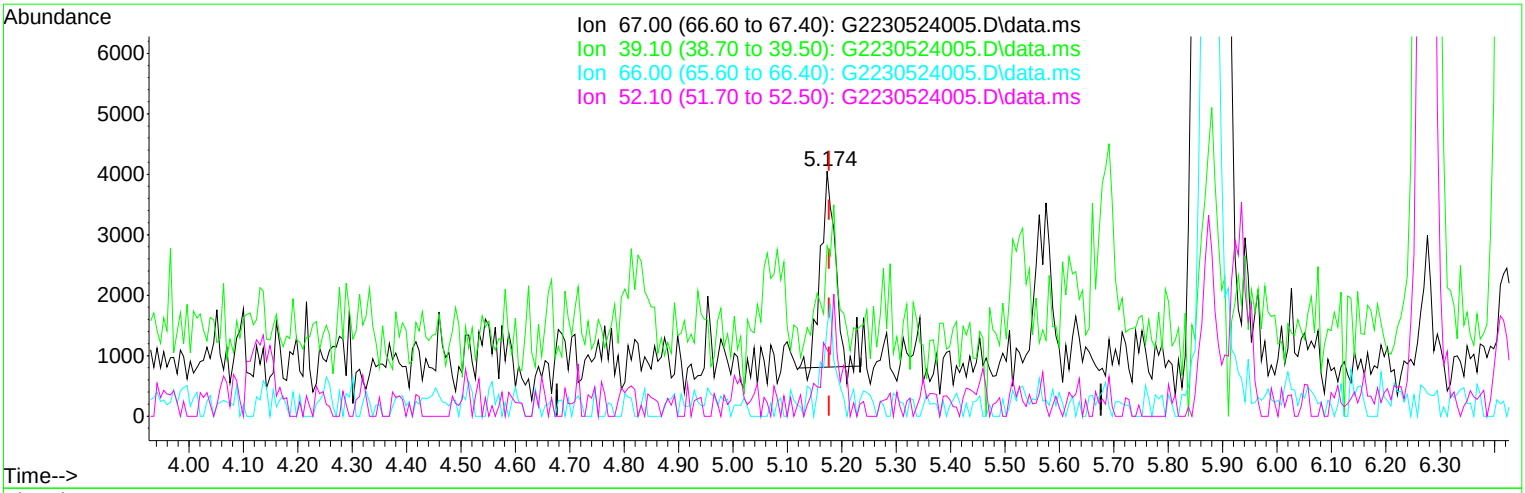
response 85078

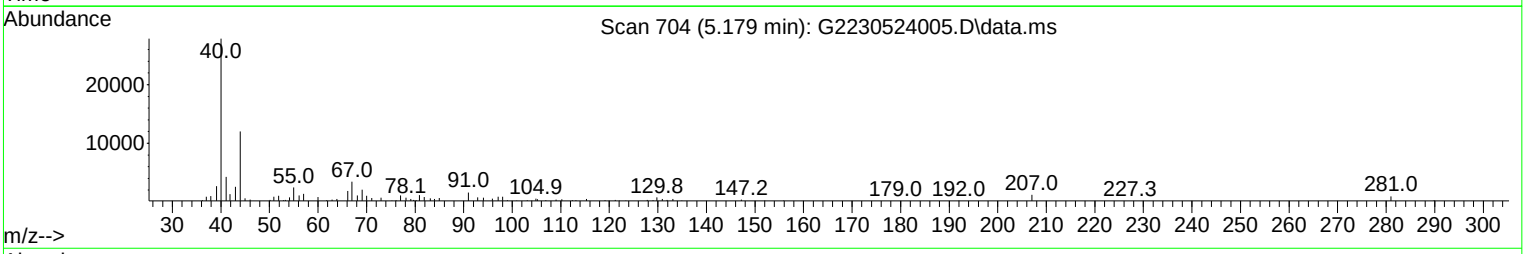
Ion	Exp%	Act%
129.90	100.00	100.00
127.90	76.00	85.78
131.80	24.10	0.00
0.00	0.00	0.00

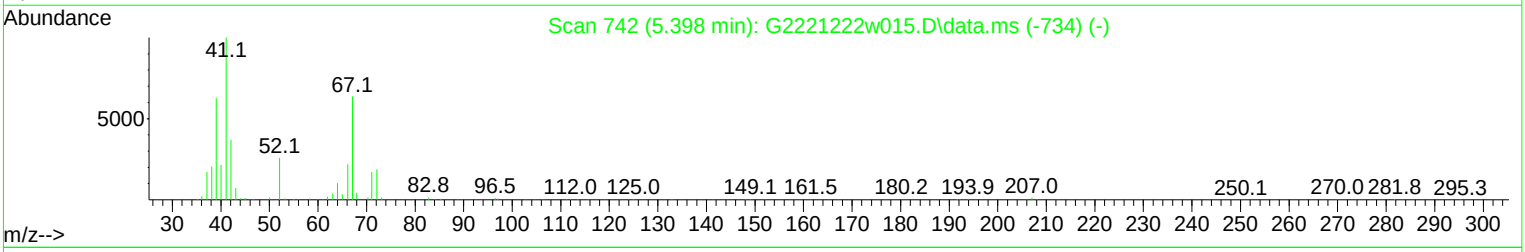
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(35) Methacrylonitrile (T)

5.176min (-0.000) 0.24 ug/L

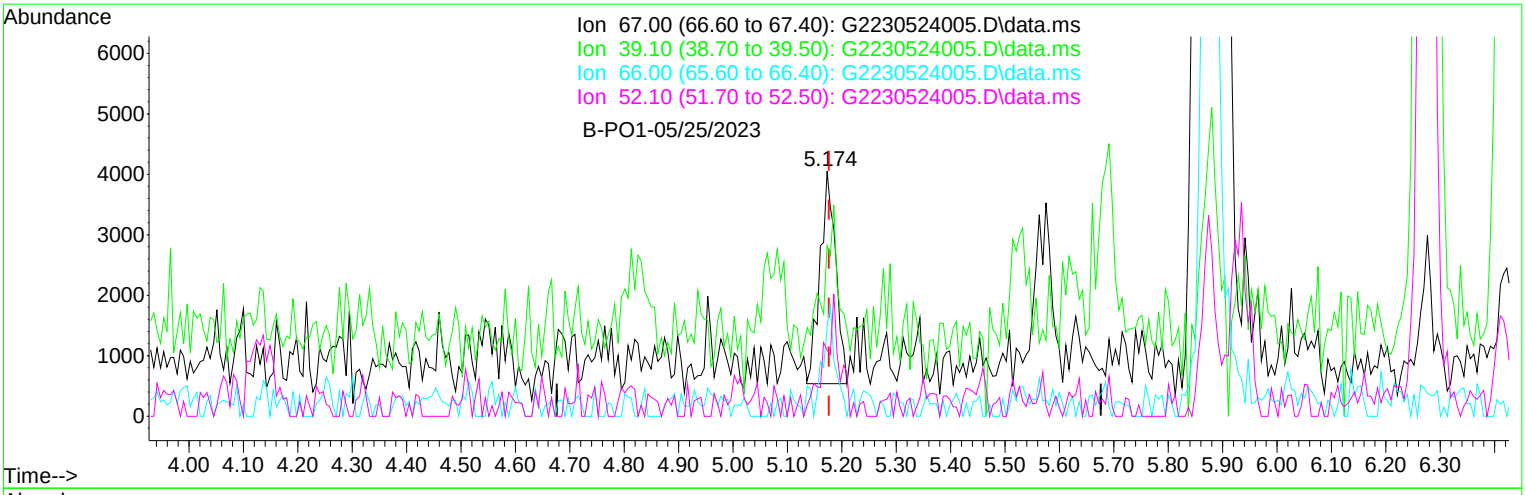
response 60757

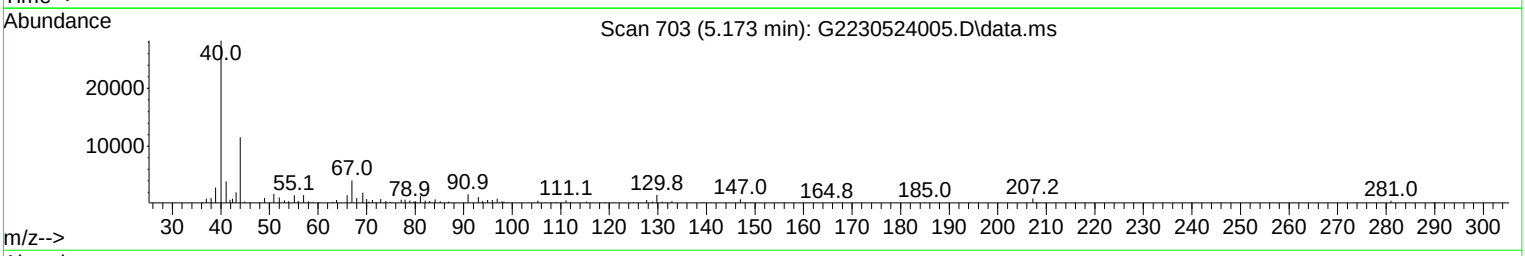
Ion	Exp%	Act%
67.00	100.00	100.00
39.10	72.40	50.71
66.00	35.80	0.00#
52.10	41.40	59.90

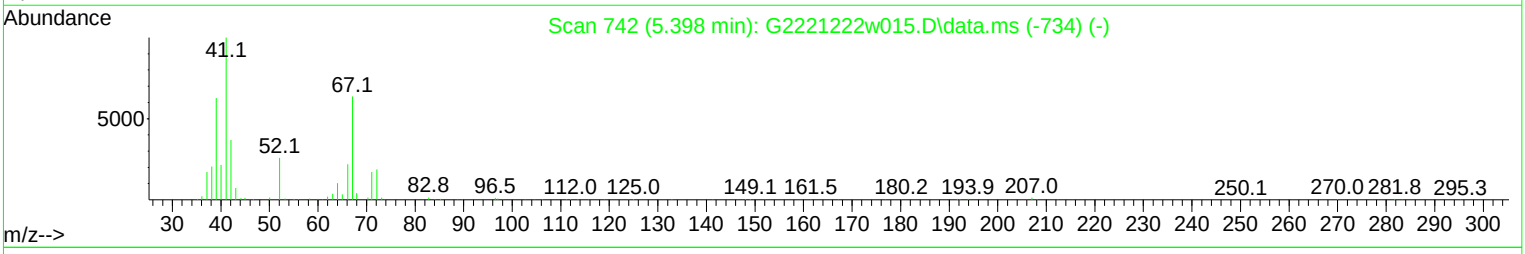
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(35) Methacrylonitrile (T)

5.173min (-0.004) 0.29 ug/L m

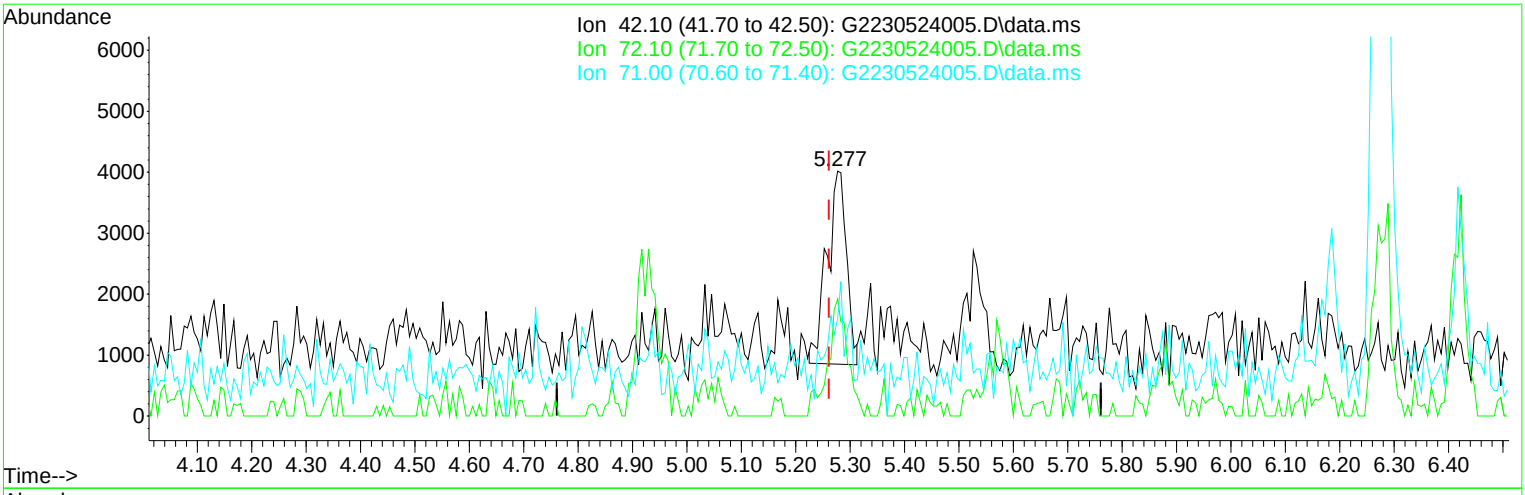
response 70945

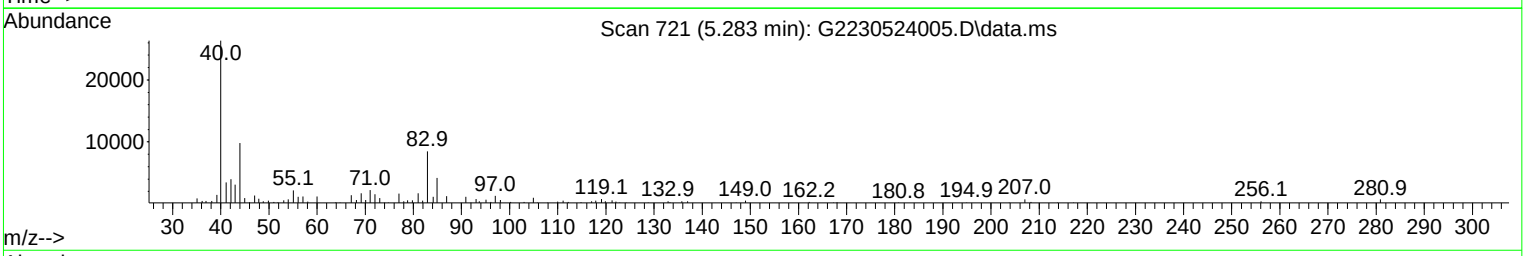
Ion	Exp%	Act%
67.00	100.00	100.00
39.10	72.40	43.43
66.00	35.80	0.00#
52.10	41.40	51.30

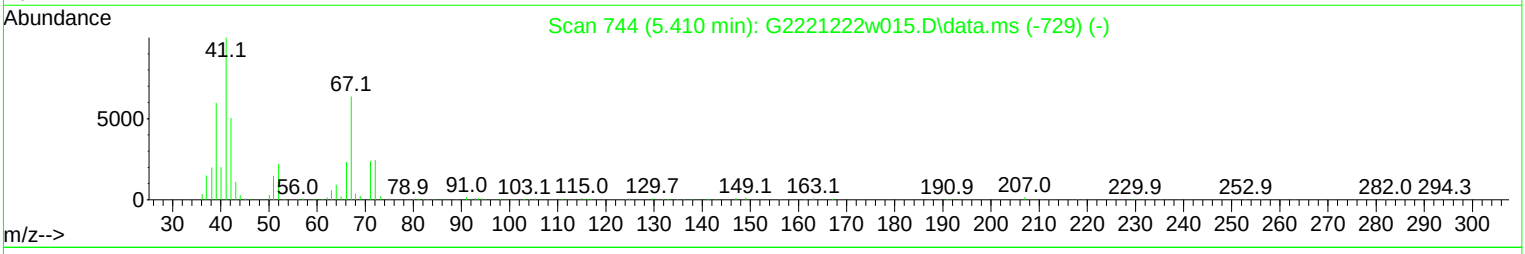
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(36) Tetrahydrofuran (T)

5.281min (+ 0.020) 0.48 ug/L

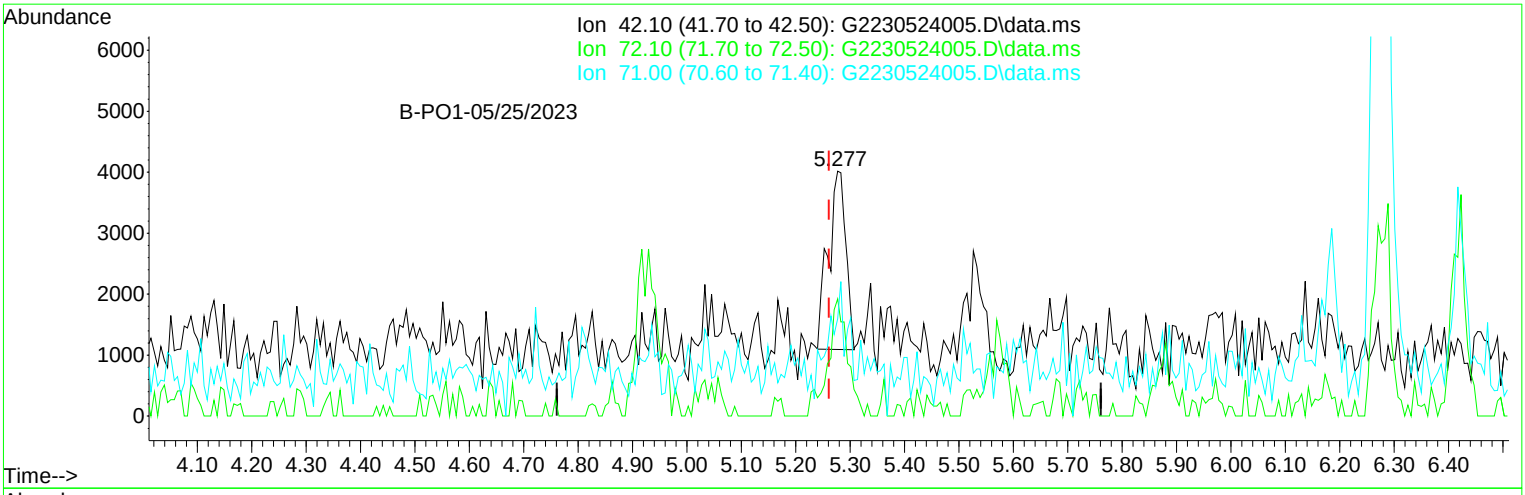
response 78502

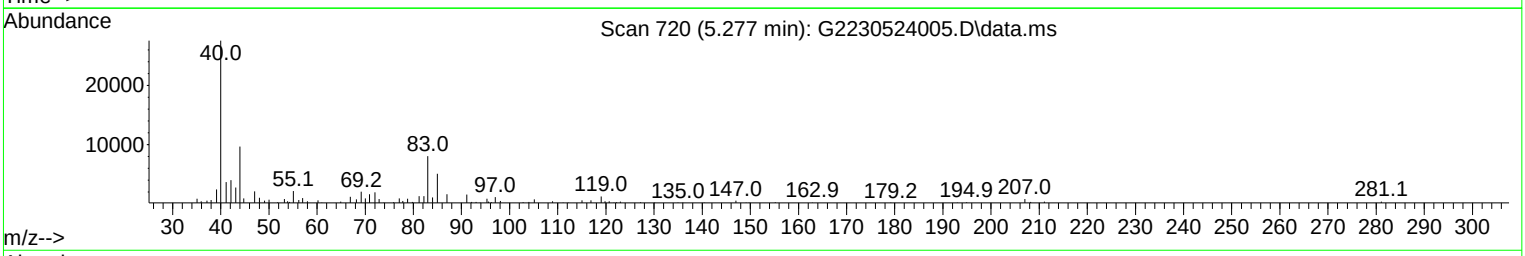
Ion	Exp%	Act%
42.10	100.00	100.00
72.10	48.80	62.45
71.00	44.70	57.84
0.00	0.00	0.00

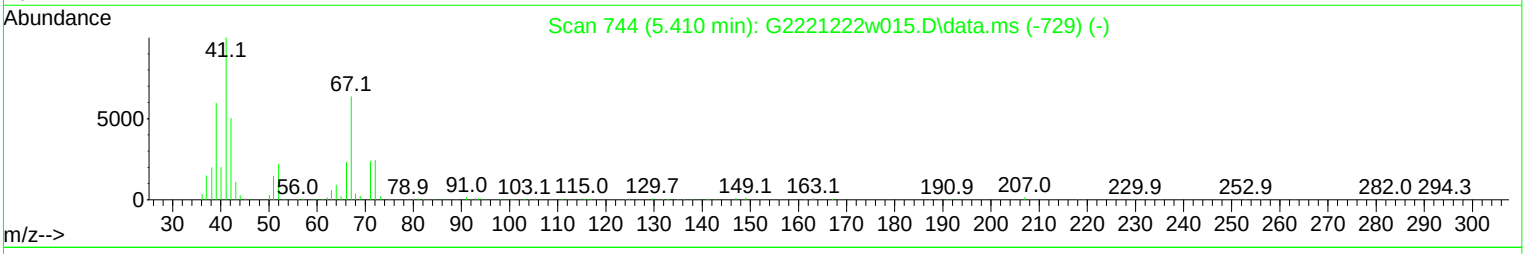
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(36) Tetrahydrofuran (T)

5.277min (+ 0.016) 0.41 ug/L m

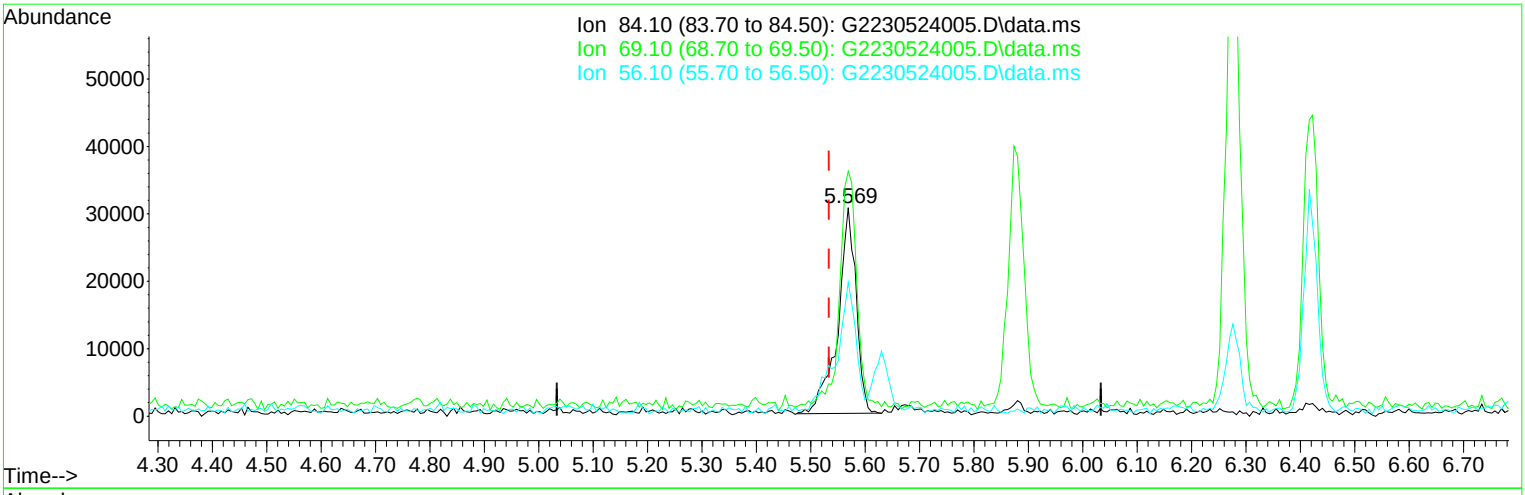
response 65706

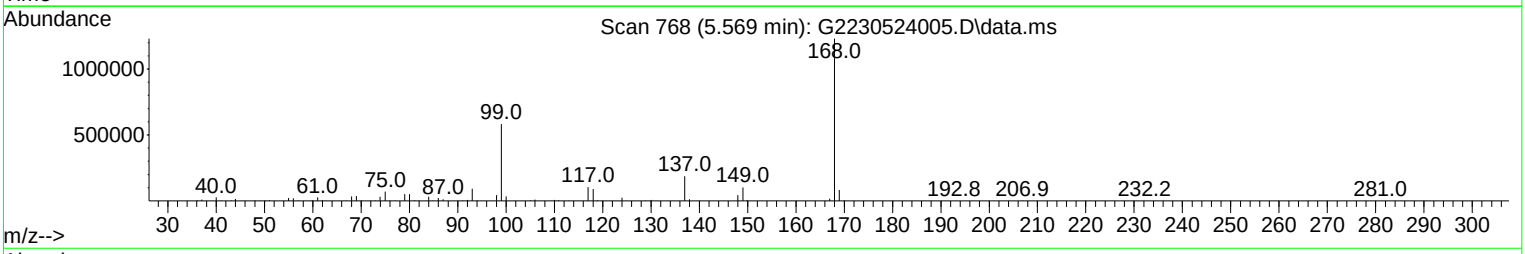
Ion	Exp%	Act%
42.10	100.00	100.00
72.10	48.80	74.61
71.00	44.70	69.10
0.00	0.00	0.00

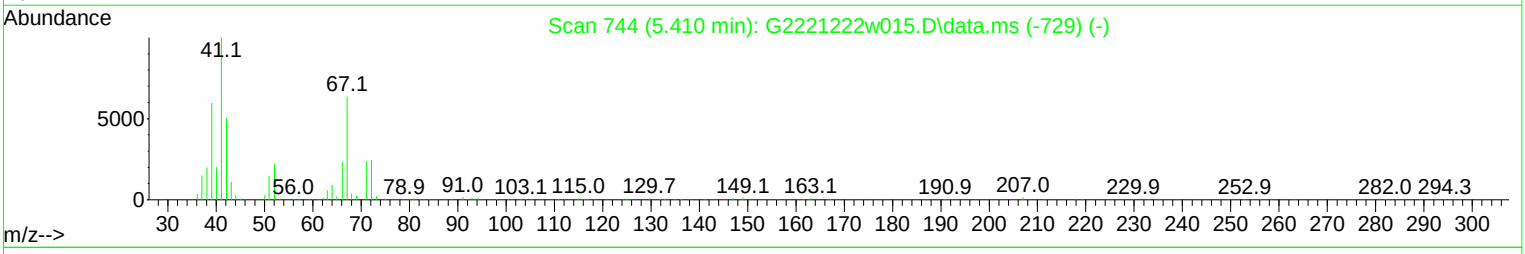
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(40) Cyclohexane

5.572min (+ 0.038) 1.06 ug/L

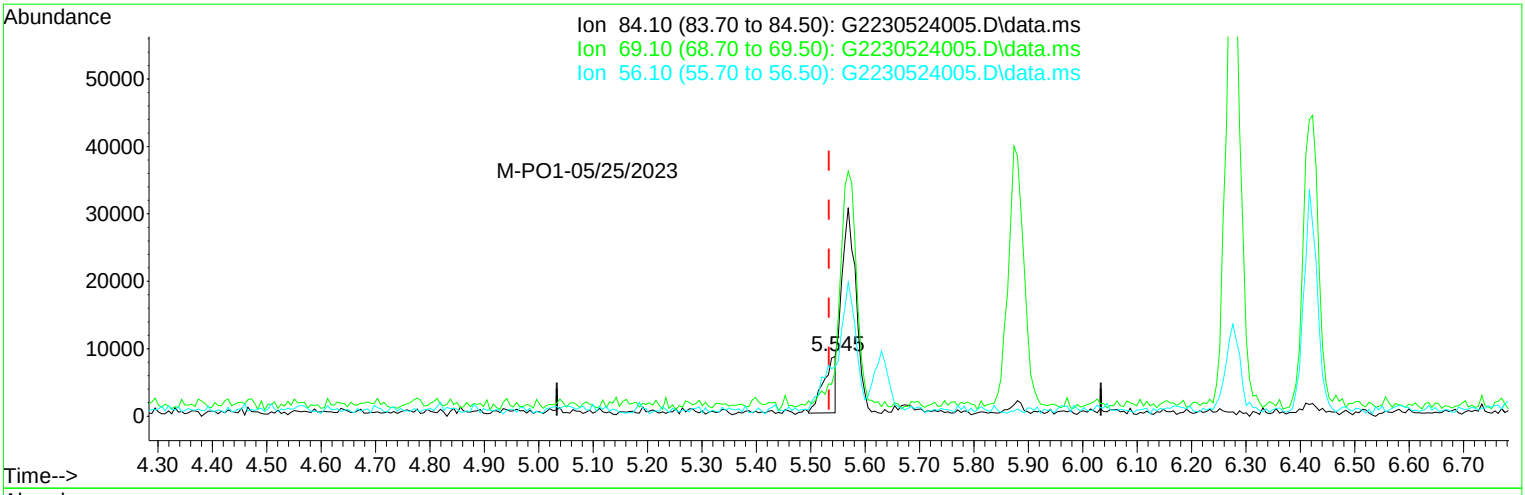
response 712017

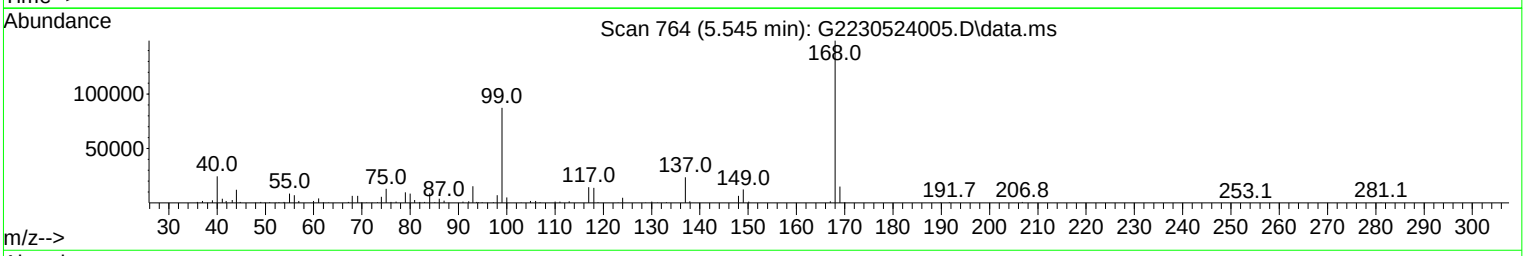
Ion	Exp%	Act%
84.10	100.00	100.00
69.10	36.80	108.00#
56.10	109.10	66.31#
0.00	0.00	0.00

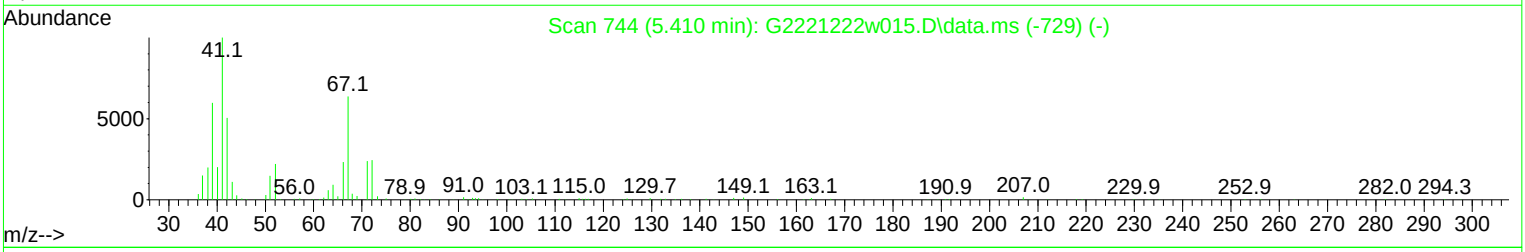
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(40) Cyclohexane

5.545min (+ 0.011) 0.23 ug/L m

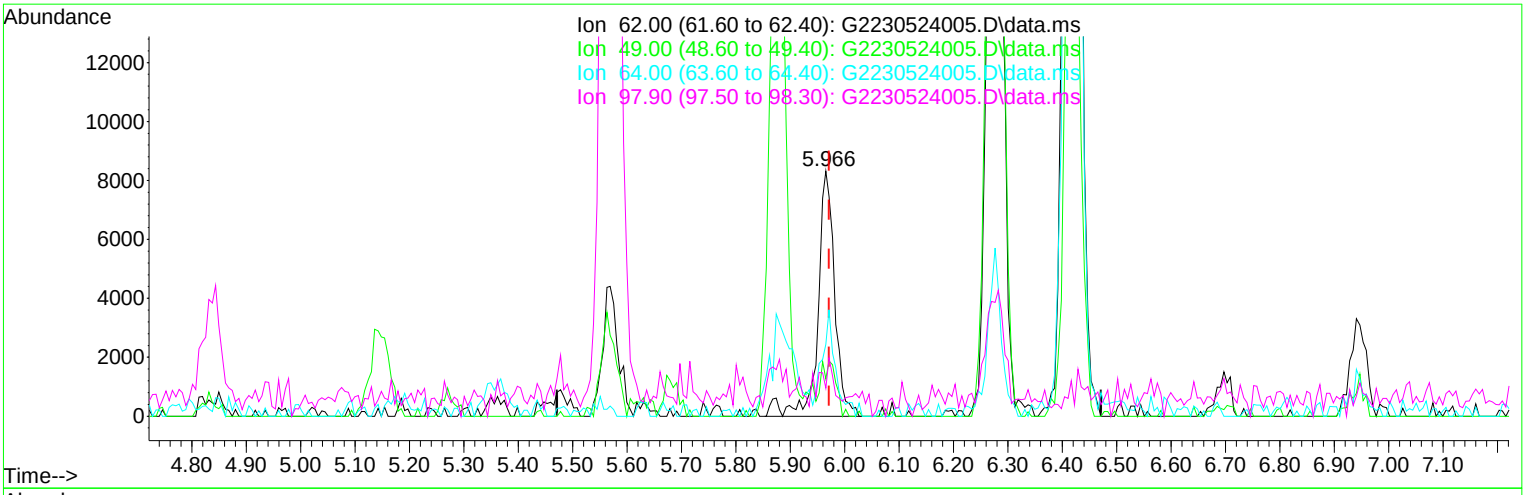
response 156182

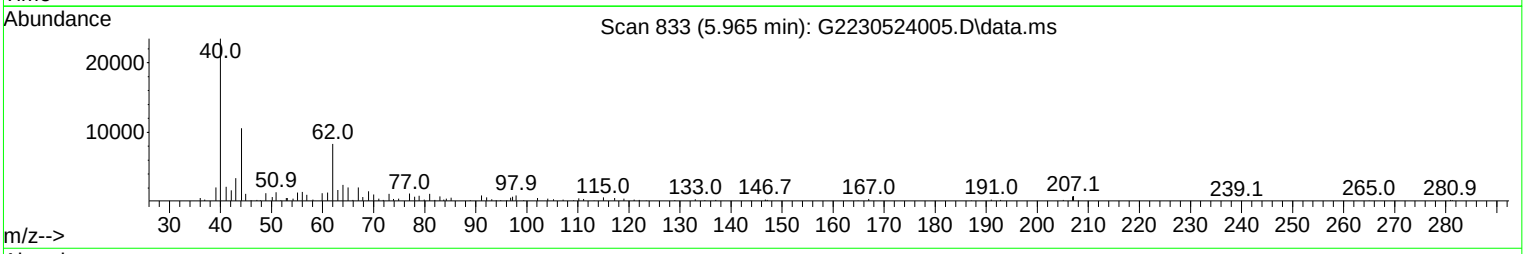
Ion	Exp%	Act%
84.10	100.00	100.00
69.10	36.80	492.38#
56.10	109.10	302.29#
0.00	0.00	0.00

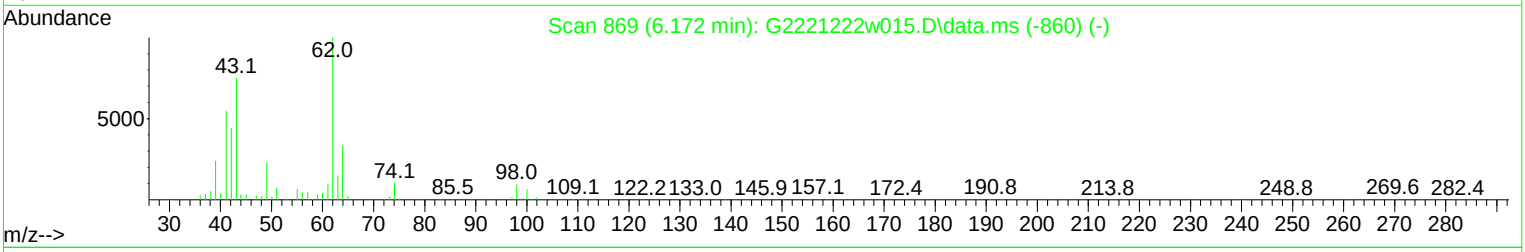
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(44) 1,2-Dichloroethane (T)

5.968min (-0.003) 0.28 ug/L

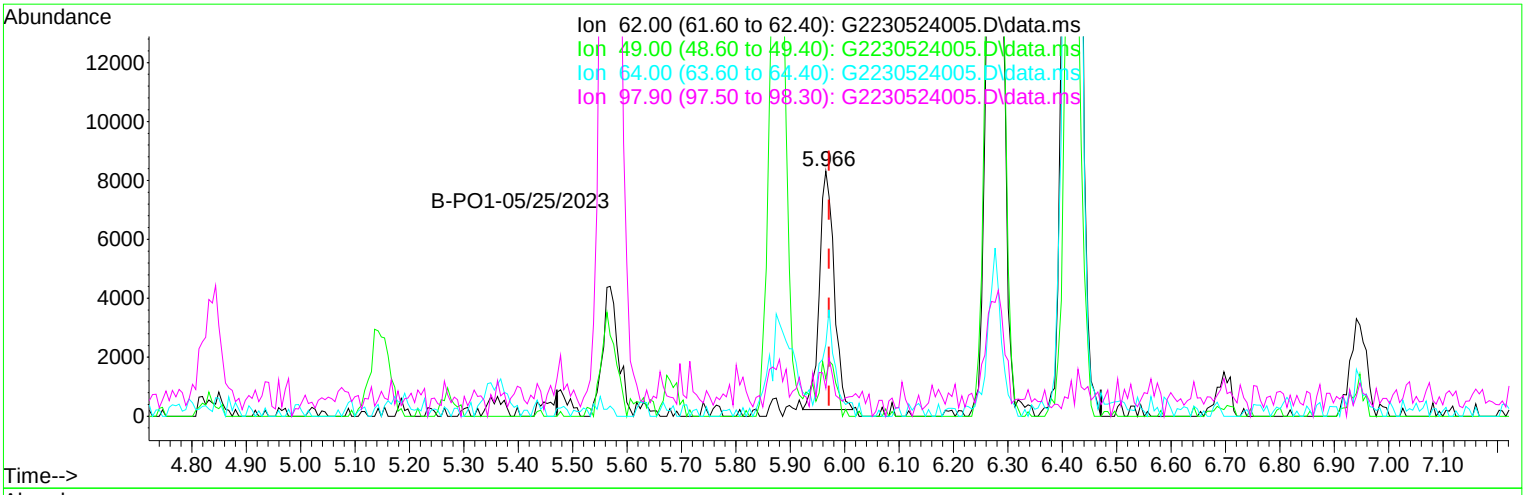
response 179449

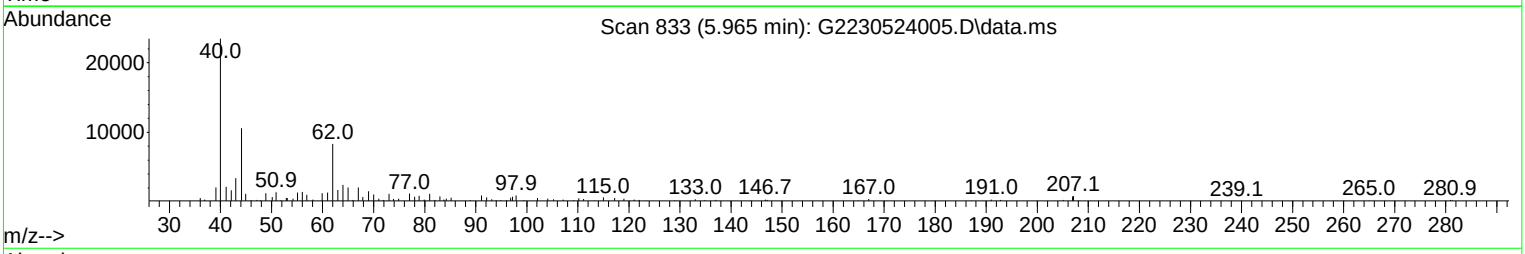
Ion	Exp%	Act%
62.00	100.00	100.00
49.00	30.20	19.89
64.00	33.00	35.44
97.90	9.10	0.00

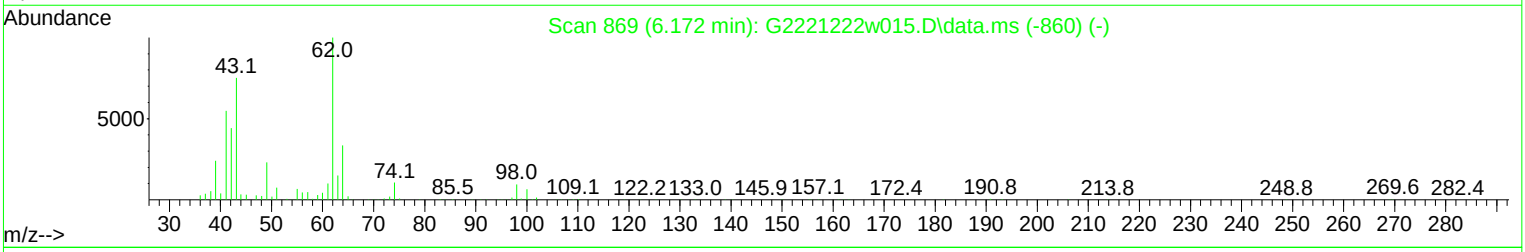
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(44) 1,2-Dichloroethane (T)

5.965min (-0.006) 0.24 ug/L m

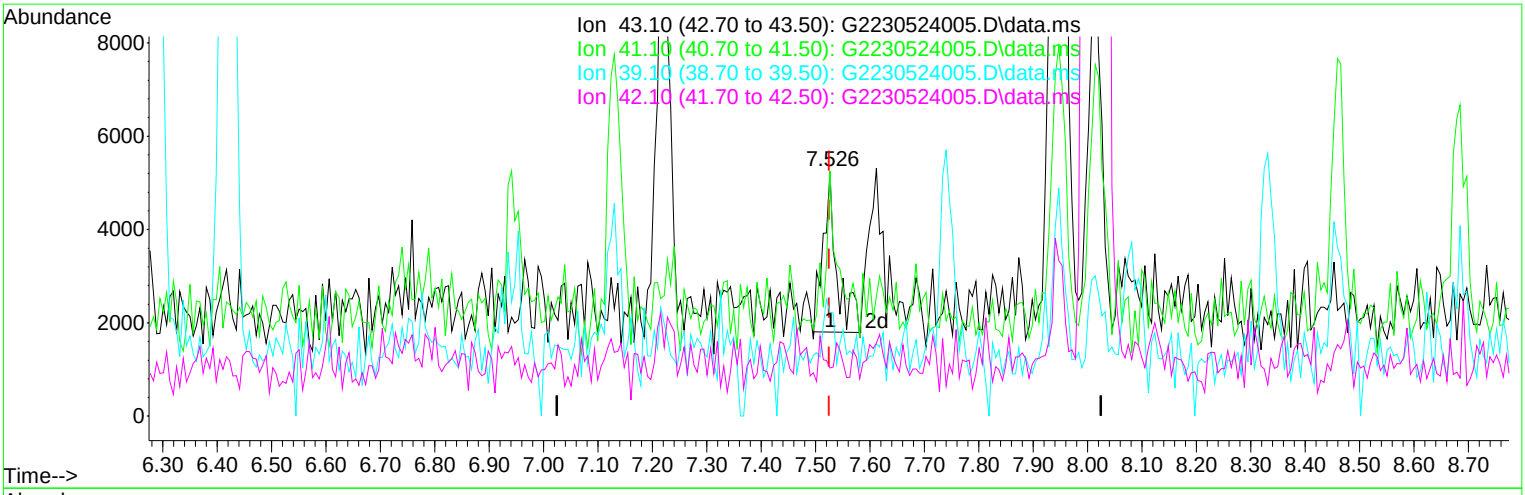
response 152458

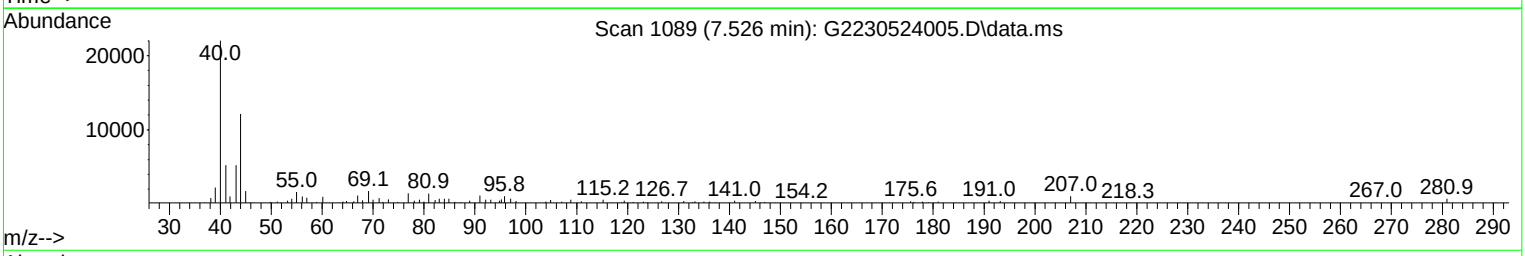
Ion	Exp%	Act%
62.00	100.00	100.00
49.00	30.20	23.42
64.00	33.00	41.72
97.90	9.10	0.00

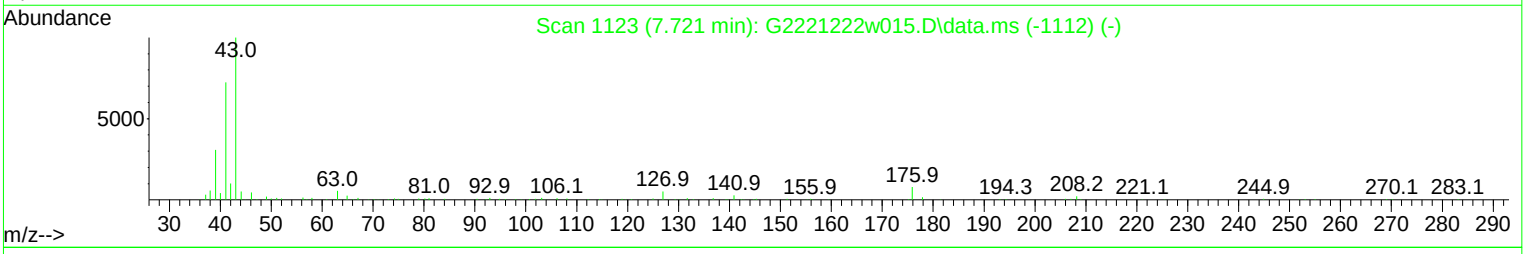
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(57) 2-Nitropropane (T)

7.528min (+ 0.003) 0.30 ug/L

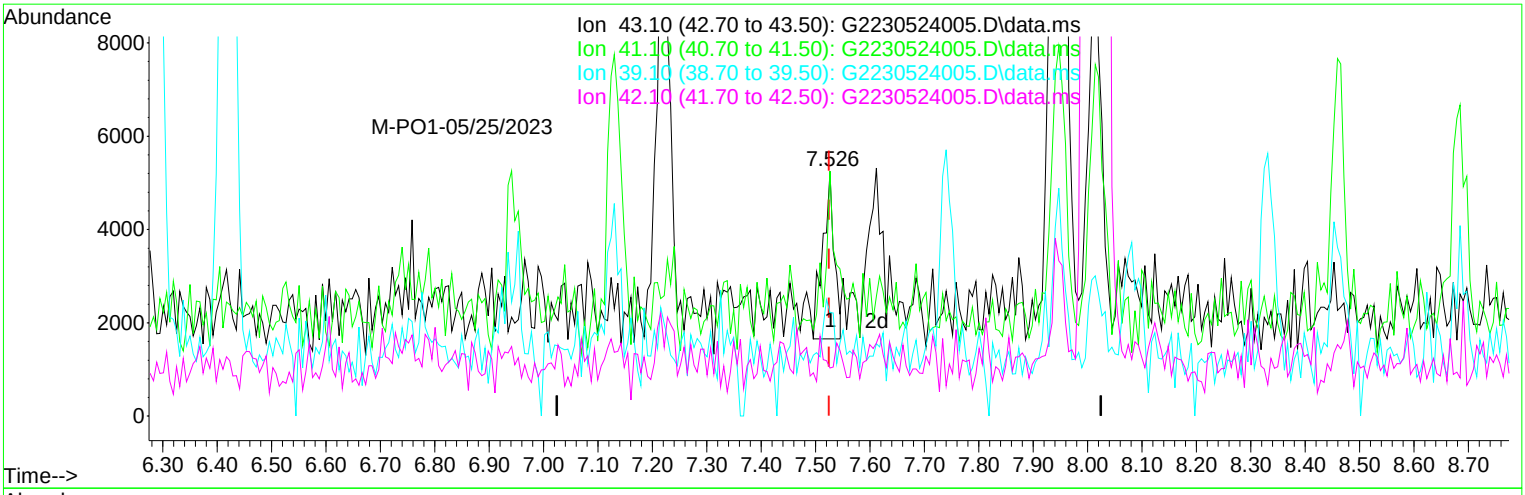
response 61326

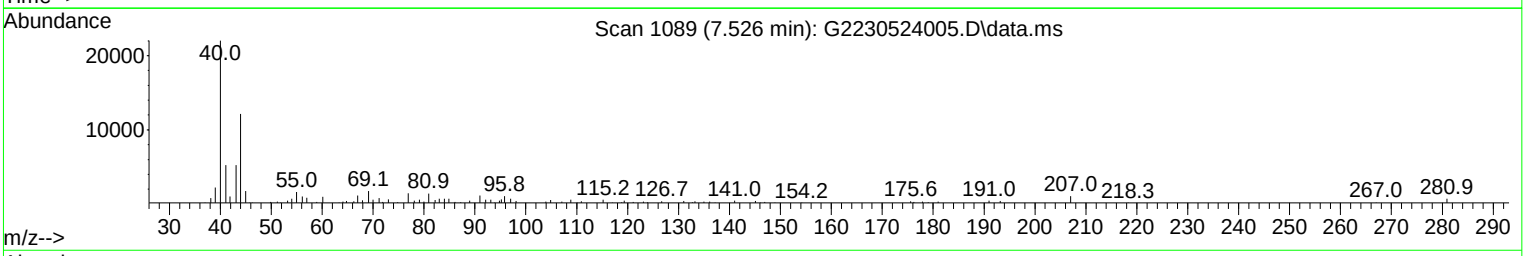
Ion	Exp%	Act%
43.10	100.00	100.00
41.10	88.20	78.82
39.10	33.10	65.49#
42.10	18.00	0.00

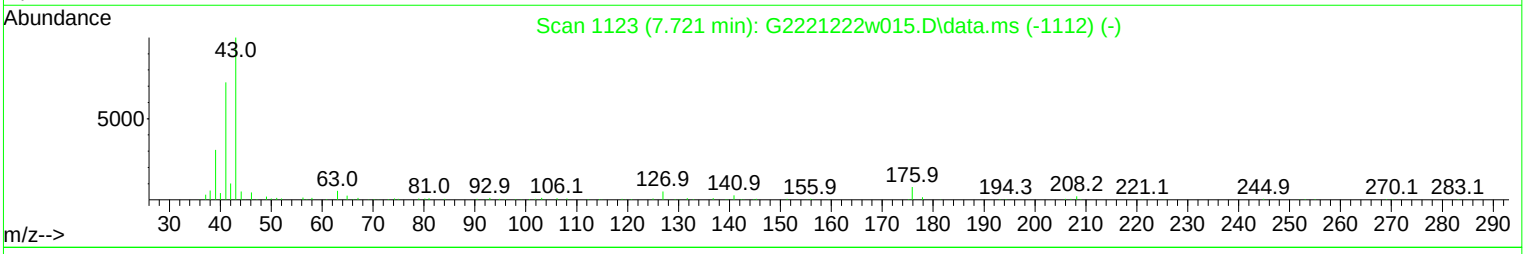
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(57) 2-Nitropropane (T)

7.526min (+ 0.002) 0.26 ug/L m

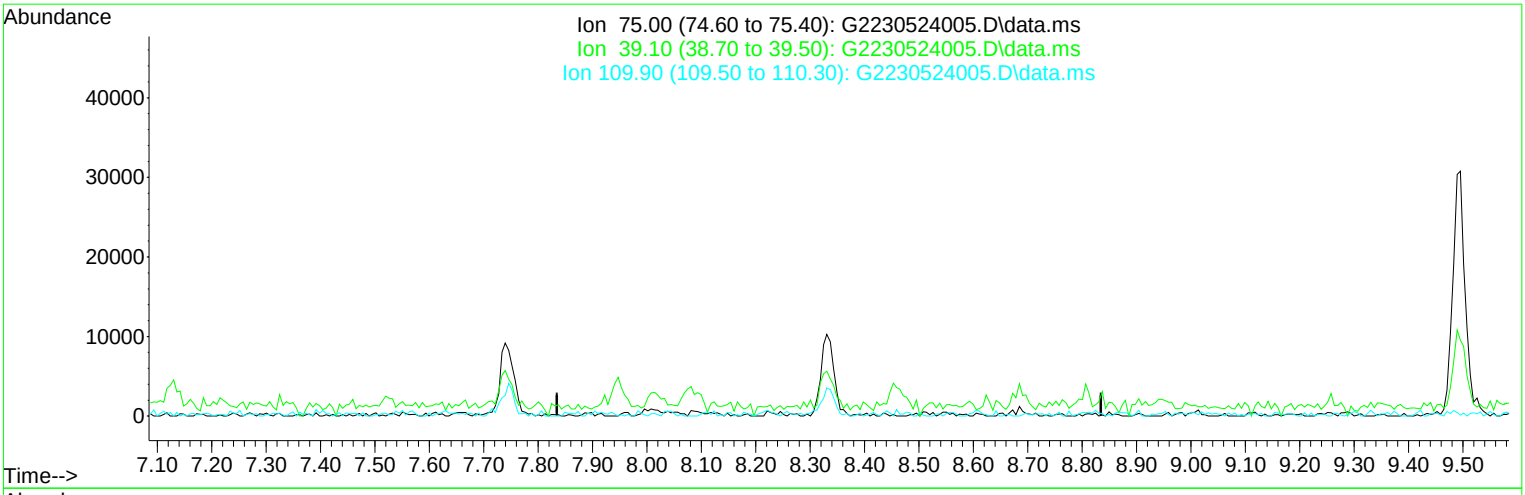
response 52634

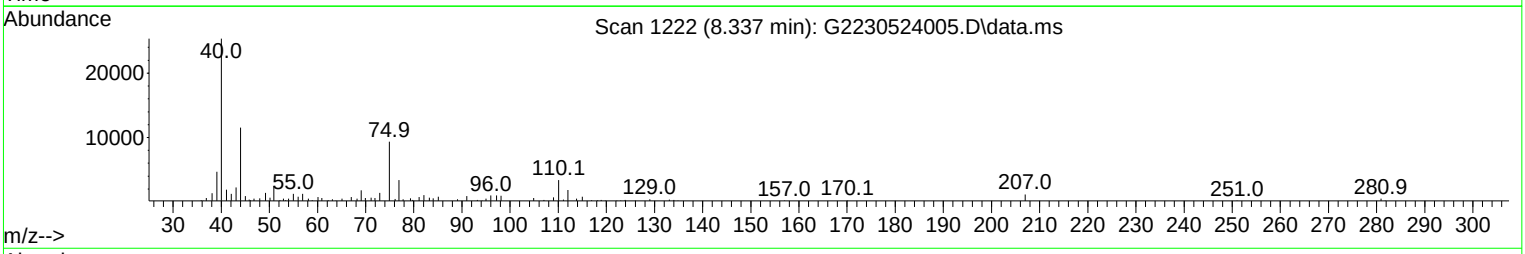
Ion	Exp%	Act%
43.10	100.00	100.00
41.10	88.20	91.84
39.10	33.10	76.31#
42.10	18.00	0.00

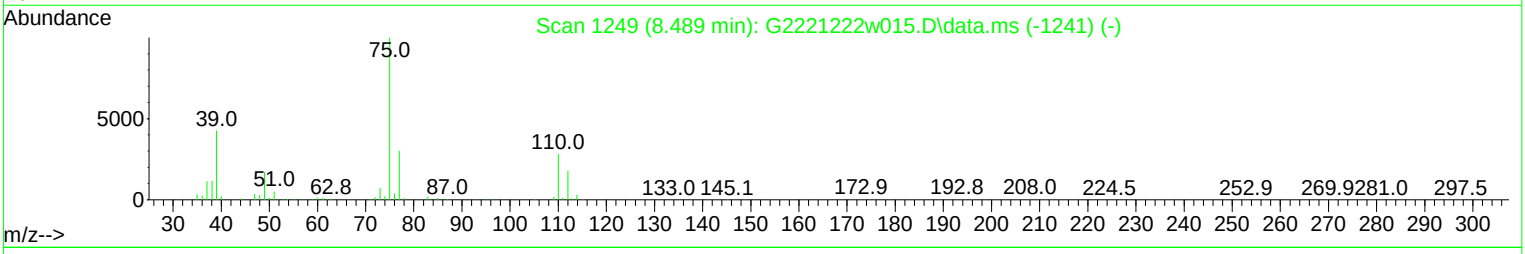
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(61) trans-1,3-Dichloropropene (T)

8.335min (-8.335) 0.00 ug/L

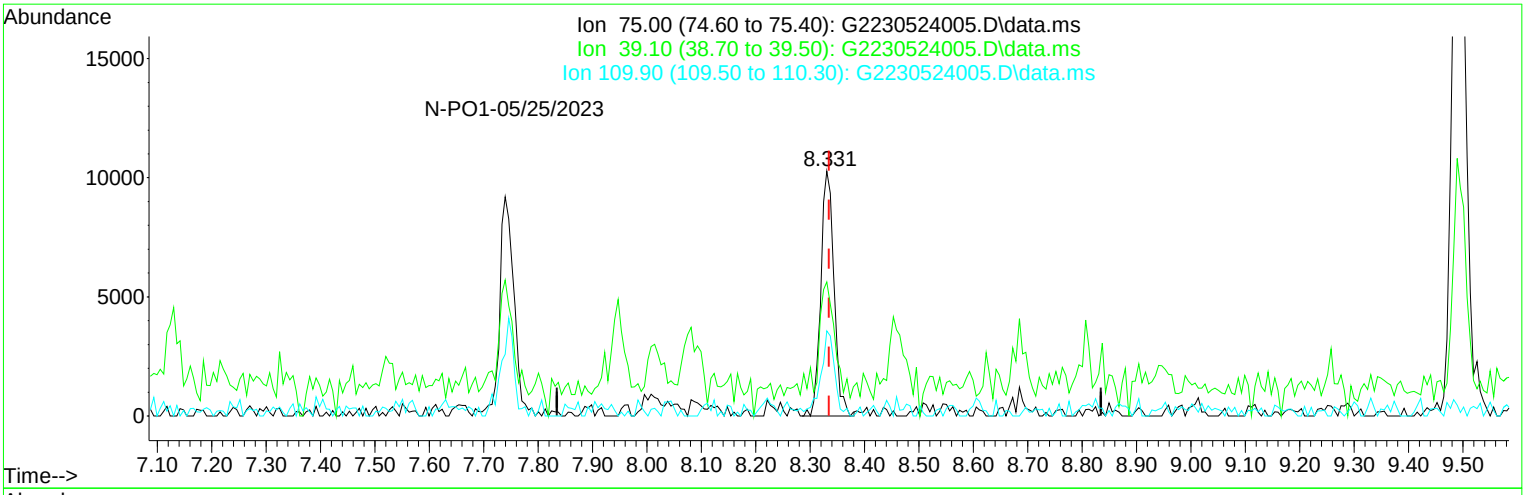
response 0

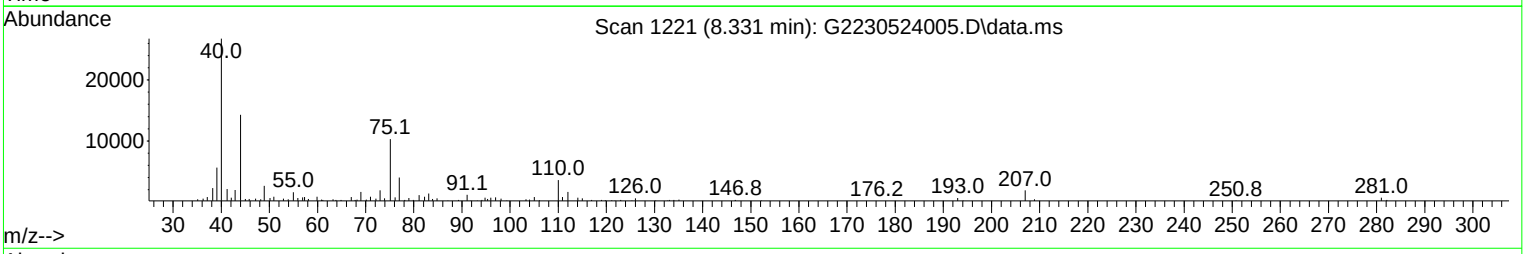
Ion	Exp%	Act%
75.00	100.00	0.00
39.10	45.00	0.00#
109.90	25.10	0.00
0.00	0.00	0.00

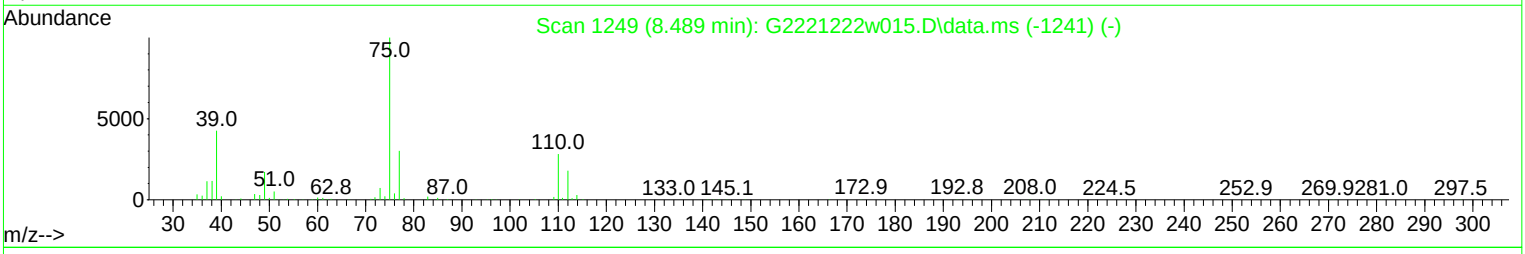
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(61) trans-1,3-Dichloropropene (T)

8.331min (-0.004) 0.23 ug/L m

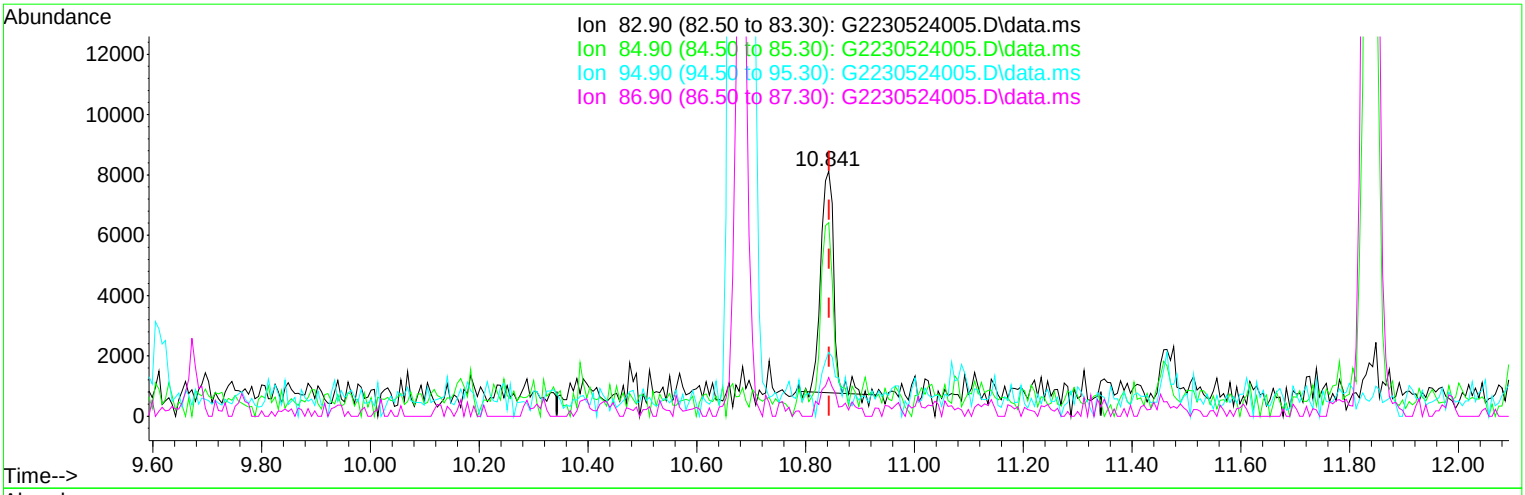
response 173458

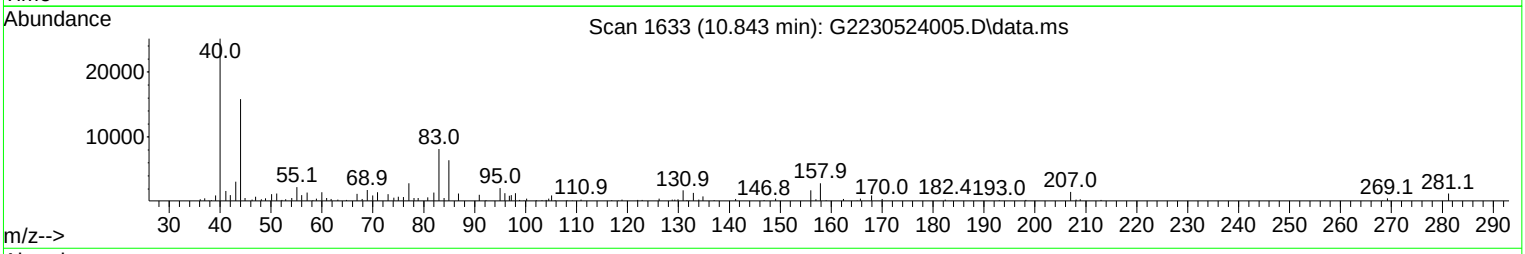
Ion	Exp%	Act%
75.00	100.00	100.00
39.10	45.00	0.00#
109.90	25.10	0.00
0.00	0.00	0.00

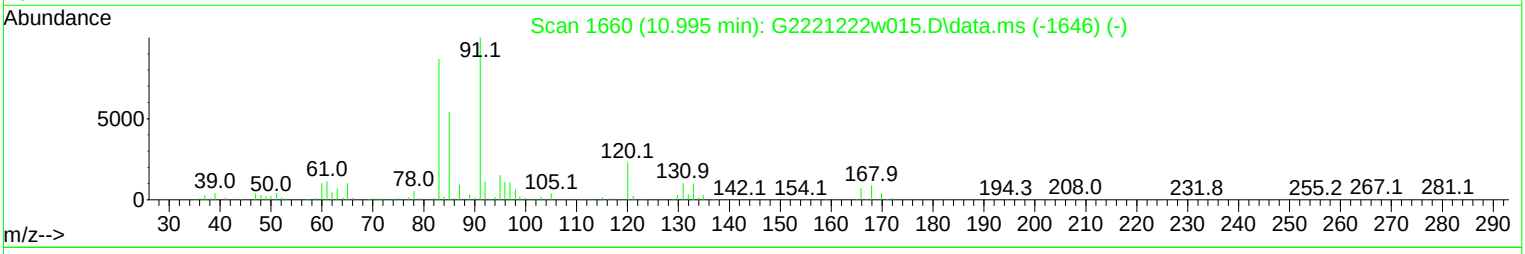
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(83) 1,1,2,2-Tetrachloroethane (TP)

10.843min (+ 0.000) 0.19 ug/L

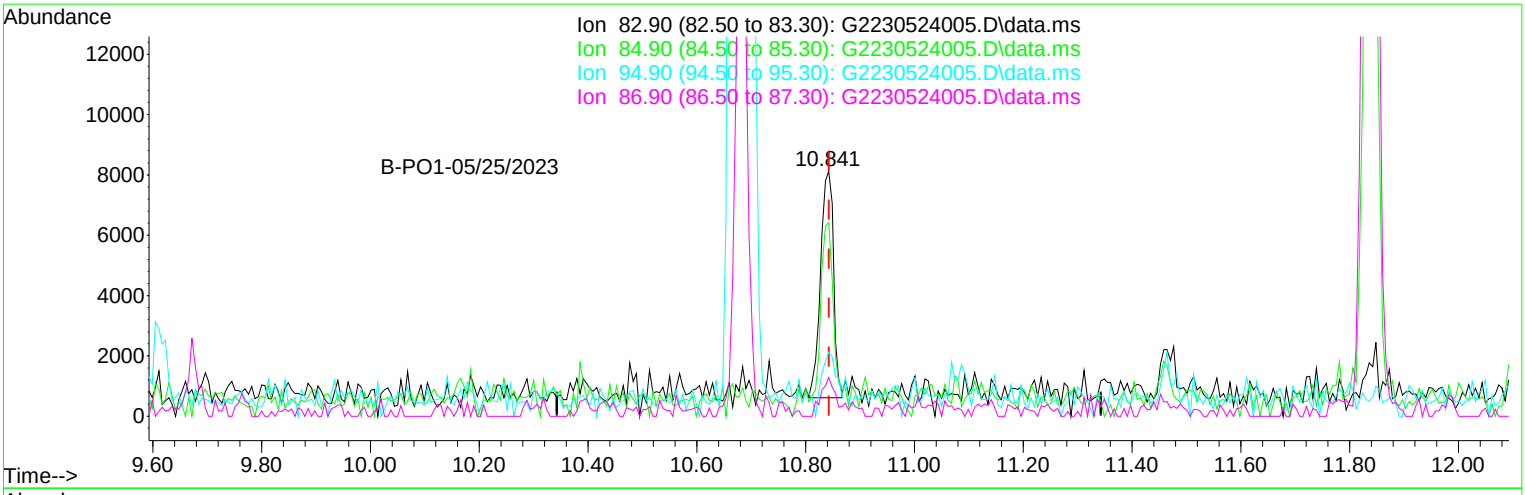
response 120657

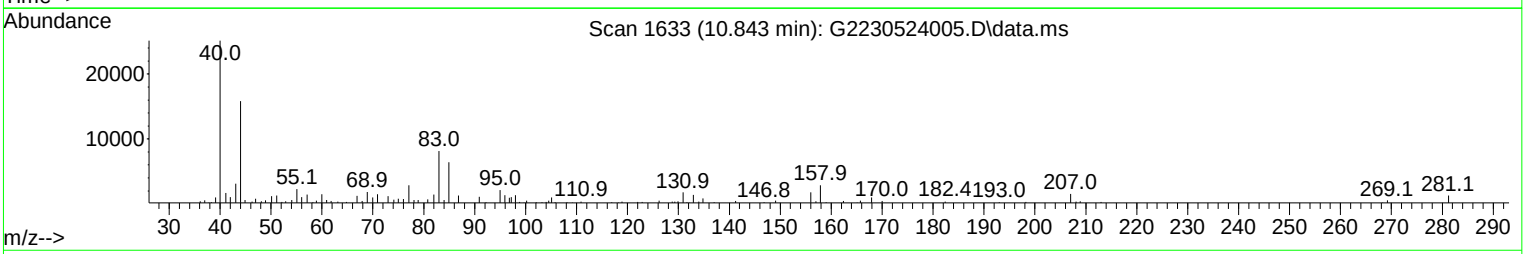
Ion	Exp%	Act%
82.90	100.00	100.00
84.90	66.30	93.96
94.90	17.20	27.36
86.90	10.50	0.00

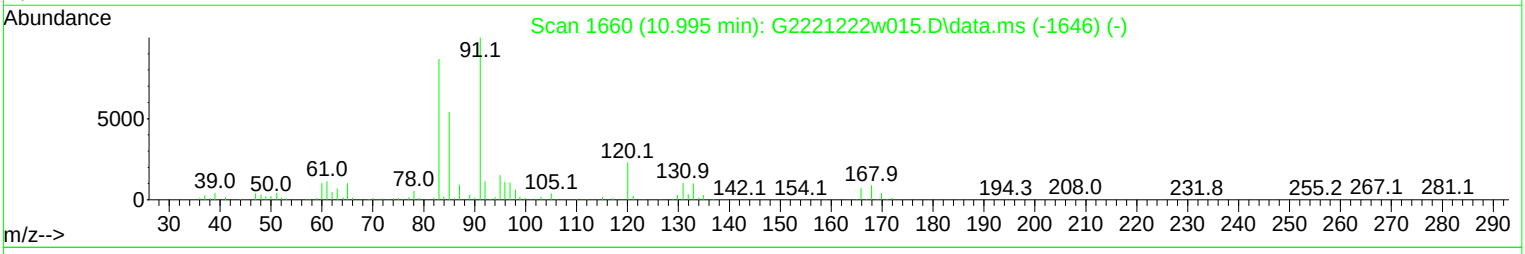
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(83) 1,1,2,2-Tetrachloroethane (TP)

10.843min (-0.000) 0.19 ug/L m

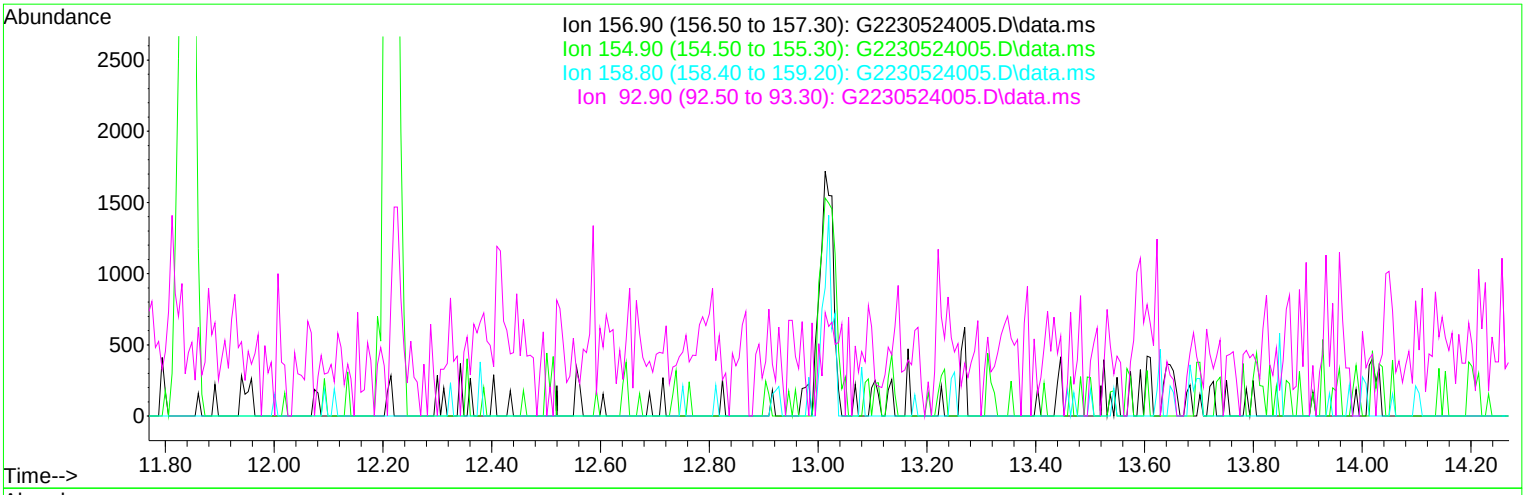
response 122655

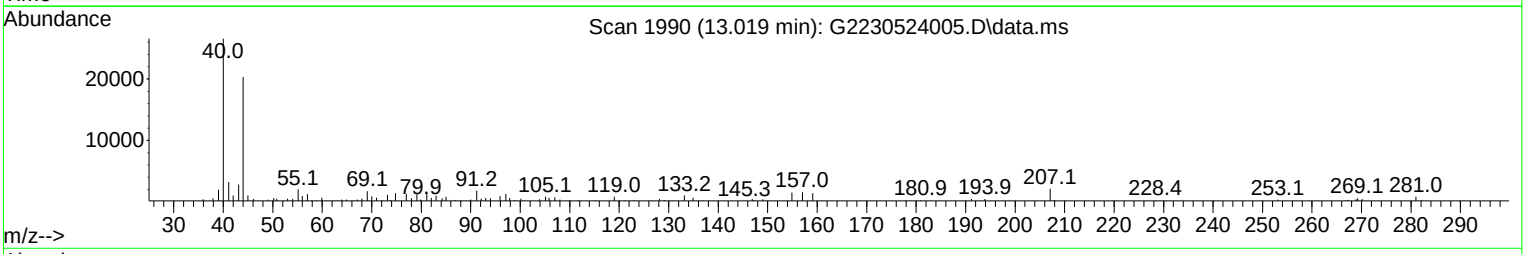
Ion	Exp%	Act%
82.90	100.00	100.00
84.90	66.30	92.43
94.90	17.20	26.92
86.90	10.50	0.00

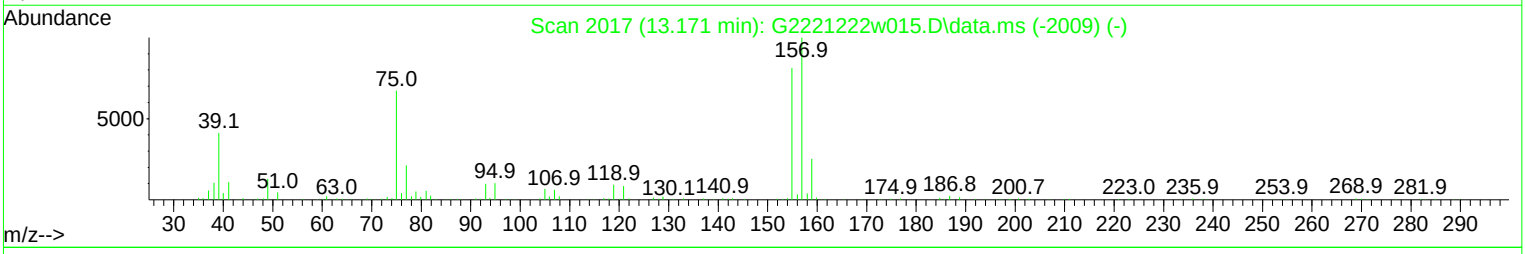
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(101) 1,2-Dibromo-3-chloropropane (T)

13.020min (-13.020) 0.00 ug/L

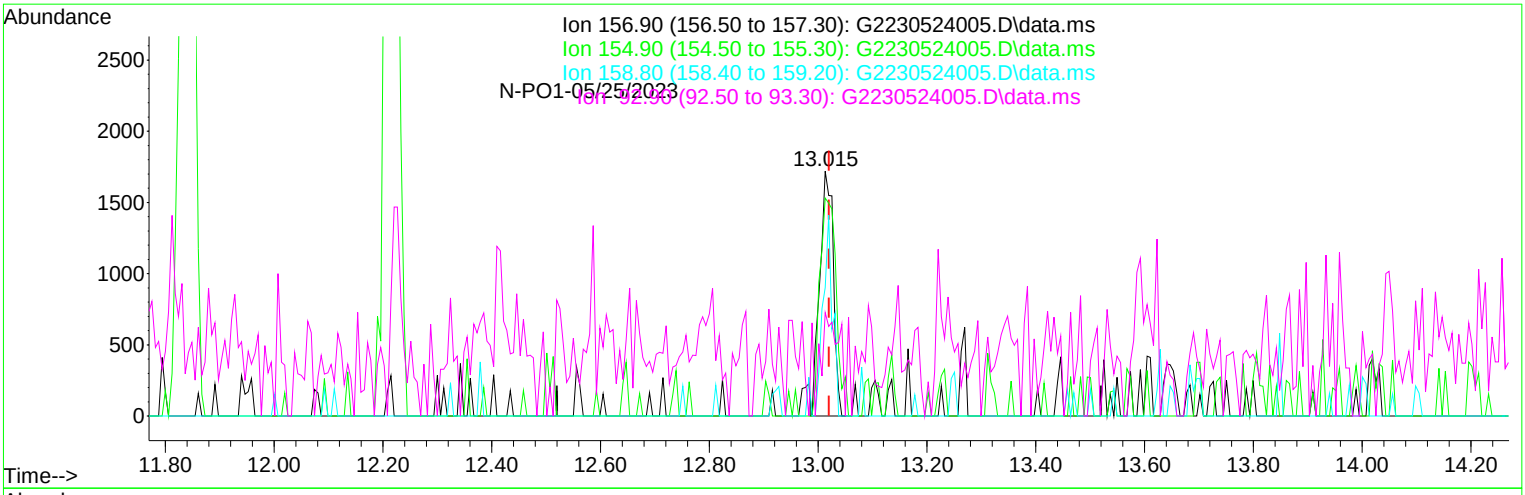
response 0

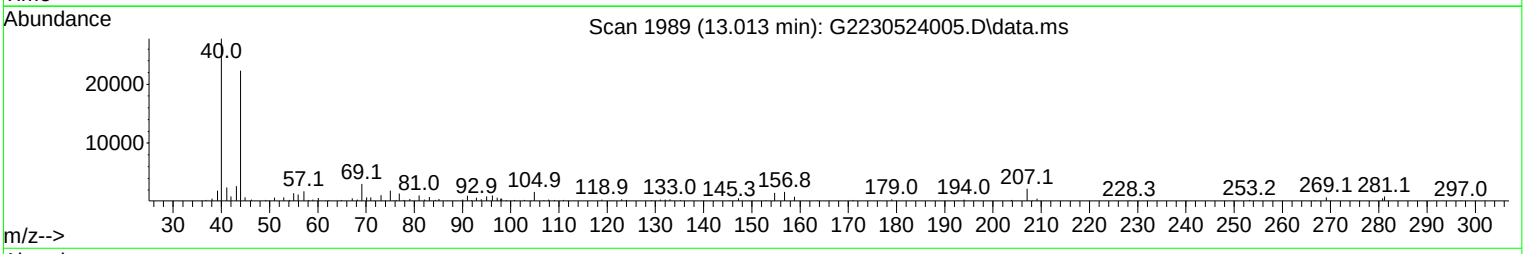
Ion	Exp%	Act%
156.90	100.00	0.00
154.90	76.00	0.00#
158.80	22.60	0.00
92.90	10.90	0.00

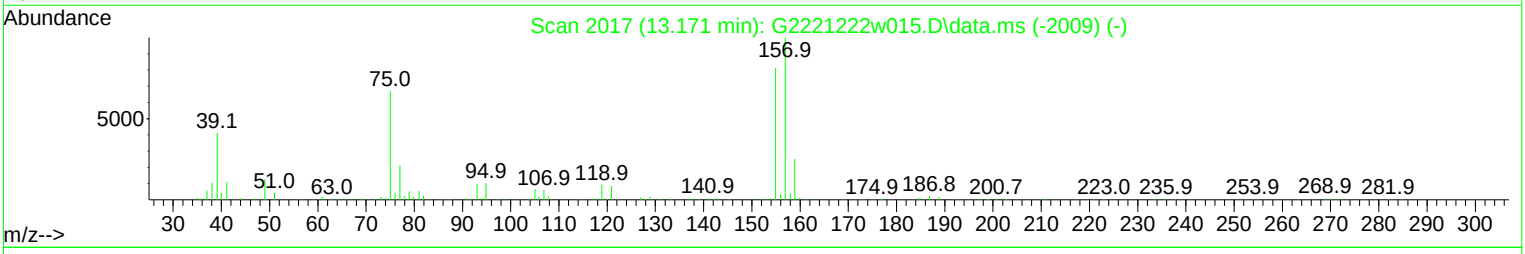
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(101) 1,2-Dibromo-3-chloropropane (T)

13.013min (-0.007) 0.22 ug/L m

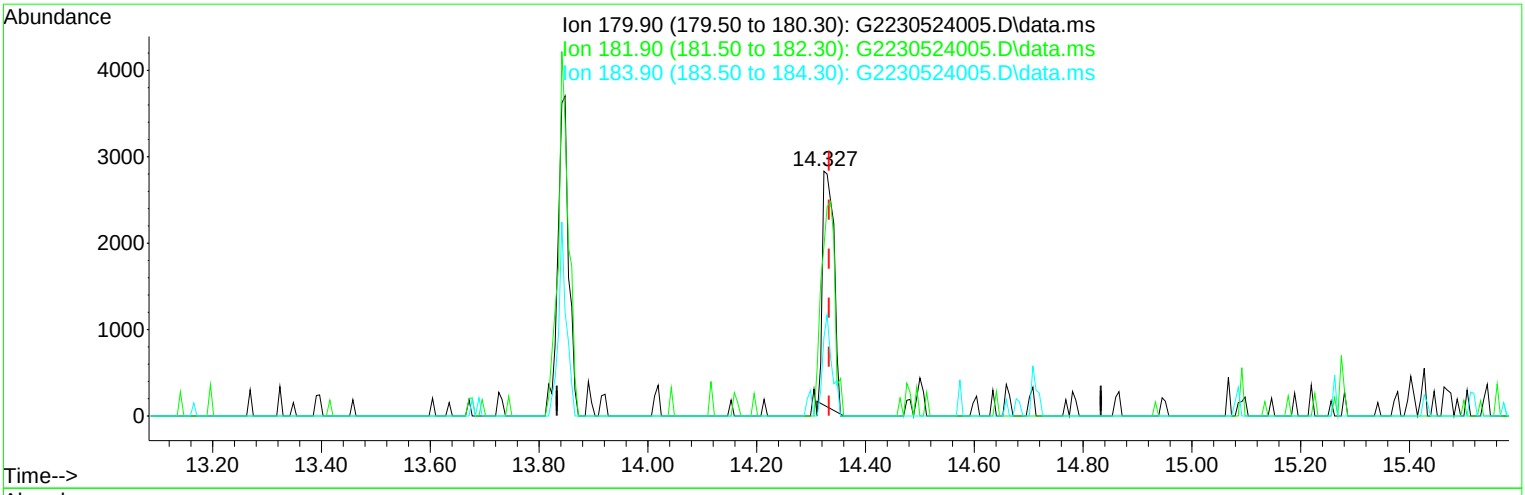
response 29915

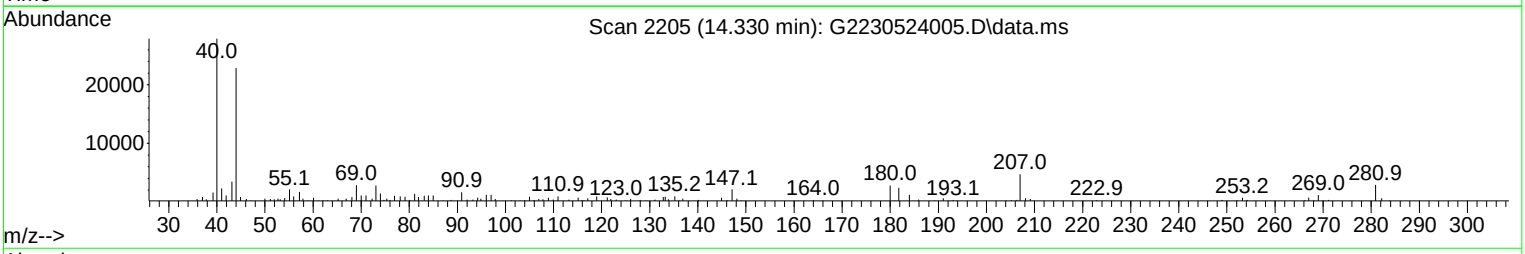
Ion	Exp%	Act%
156.90	100.00	100.00
154.90	76.00	0.00#
158.80	22.60	0.00
92.90	10.90	0.00

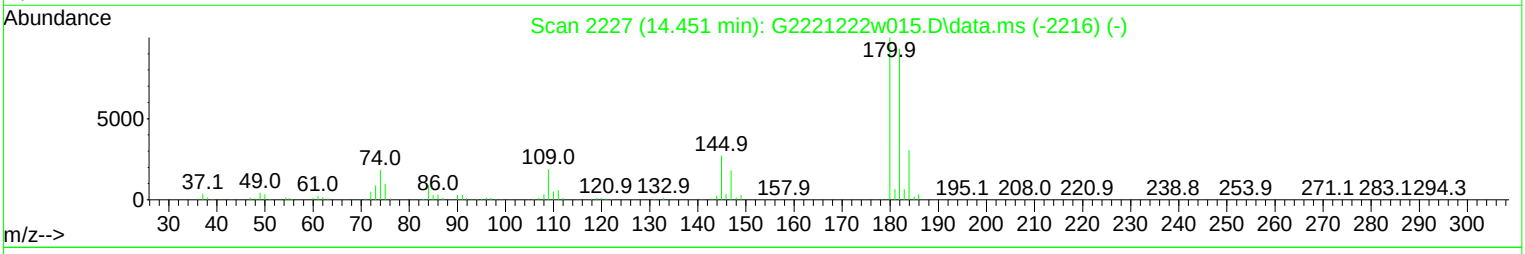
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(106) 1,2,3-Trichlorobenzene (T)

14.331min (-0.002) 0.19 ug/L

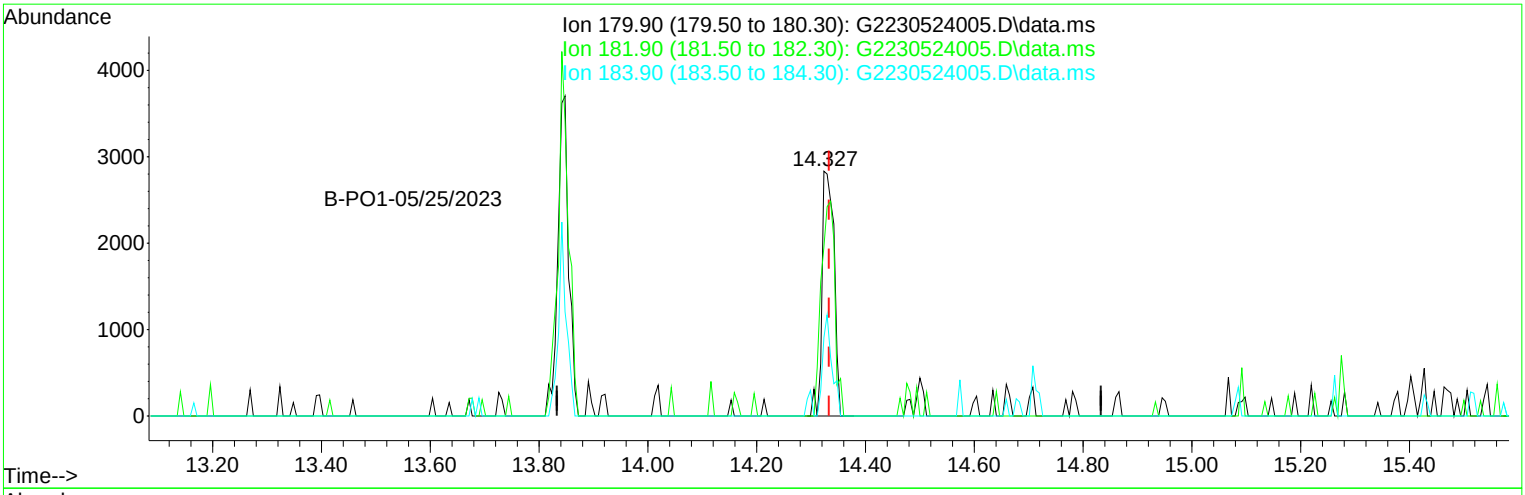
response 40411

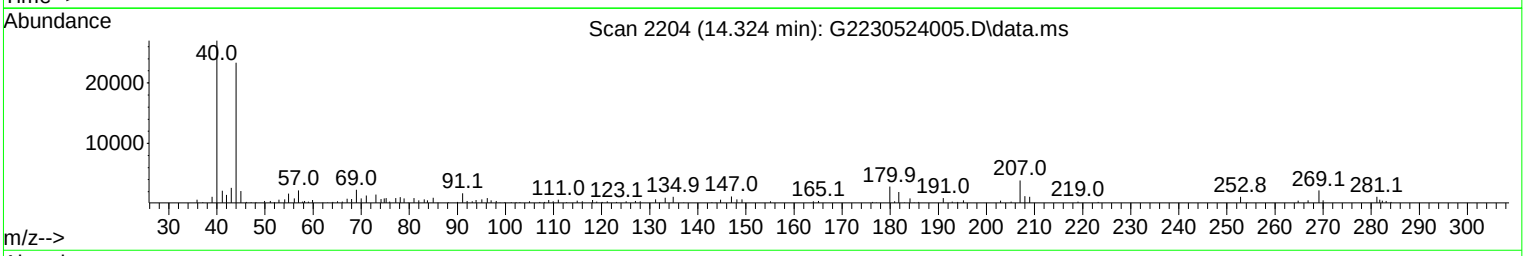
Ion	Exp%	Act%
179.90	100.00	100.00
181.90	91.80	106.96
183.90	30.70	0.00#
0.00	0.00	0.00

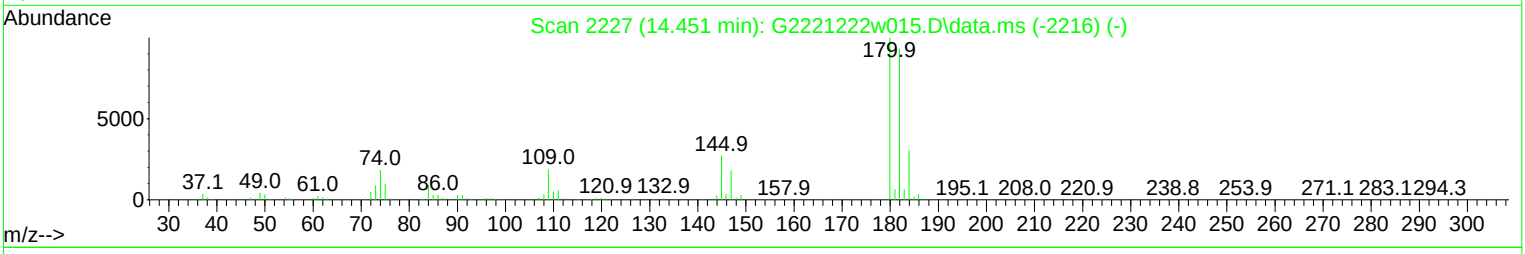
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524005.D
Acq On : 24 May 2023 17:09
Operator : PO1
Sample : SEQ-CAL1@@0.2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 09:29:01 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 09:28:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524005.D\data.ms

(106) 1,2,3-Trichlorobenzene (T)

14.324min (-0.009) 0.21 ug/L m

response 43870

Ion	Exp%	Act%
179.90	100.00	100.00
181.90	91.80	98.53
183.90	30.70	0.00#
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524006.D
Acq On : 24 May 2023 17:33
Operator : PO1
Sample : SEQ-CAL2@@0.5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 08:55:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:55:46 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.575	168	25760793	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.423	114	36161116	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.496	117	31554280	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.843	152	14966108	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.478	111	11286521	19.74	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 98.70%			
43) 1,2-Dichloroethane-d4	5.881	65	11179295	19.77	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 98.85%			
49) Fluorobenzene	6.280	96	41383797	20.06	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.30%			
64) Toluene-d8	8.018	98	40287889	20.28	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 101.40%			
81) 4-Bromofluorobenzene	10.687	174	6899410	9.77	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 97.70%			
97) d4-1,2-Dichlorobenzene	12.219	152	12954640	20.00	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.210	85	305129m	0.60	ug/L	
3) Chloromethane	1.357	50	263944m	0.60	ug/L	
4) Vinyl chloride	1.447	62	278777	0.56	ug/L	84
5) Bromomethane	1.722	94	260854	0.77	ug/L	97
6) Chloroethane	1.802	64	169317m	0.56	ug/L	
7) Trichlorofluoromethane	2.035	101	415518	0.55	ug/L	95
8) Ethyl ether	2.322	59	209630	0.58	ug/L	87
9) Acrolein	2.448	56	124609m	1.74	ug/L	
10) 1,1-Dichloroethene	2.525	61	346679	0.61	ug/L	94
11) 1,1,2-Trichloro-1,2,2-...	2.541	101	244518	0.60	ug/L	97
12) Acetone	2.611	43	409409	2.98	ug/L	91
13) Iodomethane	2.679	142	314411	0.52	ug/L	94
14) Carbon disulfide	2.739	76	732945	0.62	ug/L	90
16) acetonitrile	2.919	41	426535	1.67	ug/L	83
17) 3-Chloro-1-propene	2.916	76	160733	0.60	ug/L #	83
18) Methylene chloride	3.065	49	745878	1.20	ug/L	86
19) Acrylonitrile	3.391	53	106343	0.53	ug/L	79
20) trans-1,2-Dichloroethene	3.402	61	319481	0.58	ug/L	94
21) Methyl tert-butyl ether	3.450	73	2132706	1.16	ug/L	98
22) Hexane	3.791	57	279717	0.64	ug/L	91
23) 1,1-Dichloroethane	3.998	63	420102	0.56	ug/L	96
24) Vinyl acetate	4.138	43	425524	0.50	ug/L	88
25) 2-Chloro-1,3-butadiene	4.133	53	327845	0.57	ug/L	85
27) 2,2-Dichloropropane	4.833	77	402424	0.58	ug/L	79
28) cis-1,2-Dichloroethene	4.837	61	387349	0.57	ug/L	94
29) 2-Butanone	4.927	72	135091	1.94	ug/L	74
30) Propionitrile	4.994	54	41849	0.63	ug/L #	63
31) Ethyl acetate	5.020	61	63318m	0.77	ug/L	

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524006.D
Acq On : 24 May 2023 17:33
Operator : PO1
Sample : SEQ-CAL2@@0.5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 08:55:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:55:46 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
32) Methylacrylate	5.054	55	279666	0.57	ug/L	#	88
33) 1-Bromopropane	5.078	41	193733	0.70	ug/L		90
34) Bromochloromethane	5.152	130	219136	0.58	ug/L		97
35) Methacrylonitrile	5.181	67	136220	0.54	ug/L		82
36) Tetrahydrofuran	5.277	42	142716	0.95	ug/L		99
37) Chloroform	5.274	83	469286	0.56	ug/L		93
39) 1,1,1-Trichloroethane	5.482	97	449897	0.59	ug/L		96
40) Cyclohexane	5.537	84	313594	0.45	ug/L	#	7
41) 1-Chlorobutane	5.631	56	463062	0.58	ug/L		98
42) 1,1-Dichloropropene	5.692	75	351729	0.58	ug/L		96
44) 1,2-Dichloroethane	5.973	62	377696	0.60	ug/L		97
45) Isobutanol	5.971	43	105151	6.17	ug/L		93
47) Carbon tetrachloride	5.680	117	348857	0.54	ug/L		98
48) Benzene	5.936	78	1035278	0.58	ug/L		99
50) Trichloroethene	6.697	95	291284	0.58	ug/L		91
52) 1,2-Dichloropropane	6.947	63	253003	0.59	ug/L		88
53) Dibromomethane	7.075	174	232177	0.54	ug/L	#	94
54) Methyl methacrylate	7.133	69	249308	0.60	ug/L		87
56) Bromodichloromethane	7.261	83	352291	0.53	ug/L		93
57) 2-Nitropropane	7.527	43	143008	0.73	ug/L	#	77
58) 2-Chloroethyl vinyl ether	7.613	63	187762	0.55	ug/L		96
59) cis-1,3-Dichloropropene	7.744	75	449261	0.57	ug/L		94
60) 4-Methyl-2-pentanone	7.947	43	995146	1.91	ug/L	#	86
61) trans-1,3-Dichloropropene	8.337	75	412086m	0.55	ug/L		
62) 1,1,2-Trichloroethane	8.519	97	284897	0.61	ug/L		96
65) Toluene	8.086	91	1188992	0.59	ug/L		100
66) Ethylmethacrylate	8.462	69	426930	0.58	ug/L		90
67) Tetrachloroethene	8.649	166	474999	0.68	ug/L		98
68) 1,3-Dichloropropane	8.688	76	425542	0.55	ug/L		92
69) 2-Hexanone	8.813	43	654359	1.94	ug/L		88
70) Dibromochloromethane	8.912	129	327811	0.54	ug/L		99
71) 1,2-Dibromoethane	9.019	107	297461	0.57	ug/L		99
72) Chlorobenzene	9.524	112	806736	0.59	ug/L		84
73) 1,1,1,2-Tetrachloroethane	9.613	131	304379	0.57	ug/L		97
74) Ethylbenzene	9.643	91	1252972	0.57	ug/L		93
75) m,p-Xylene	9.764	91	1884366	1.13	ug/L		94
76) Styrene	10.178	104	827936	0.57	ug/L		98
77) Bromoform	10.356	173	275500	0.56	ug/L		96
79) o-Xylene	10.161	91	998557	0.55	ug/L		97
80) Isopropylbenzene	10.537	105	1168945	0.55	ug/L		98
82) Bromobenzene	10.828	77	446479	0.56	ug/L		95
83) 1,1,2,2-Tetrachloroethane	10.842	83	360958	0.56	ug/L		88
84) 1,2,3-Trichloropropane	10.883	110	152837	0.66	ug/L		97
85) trans-1,4-Dichloro-2-b...	10.901	53	107418	0.63	ug/L		50
86) n-Propylbenzene	10.949	91	1334470	0.57	ug/L		93
87) 2-Chlorotoluene	11.028	91	804126	0.57	ug/L		99
88) 4-Chlorotoluene	11.139	91	867653	0.54	ug/L		95
89) 1,3,5-Trimethylbenzene	11.130	105	912200	0.55	ug/L		98
90) 2-ethyl-1-toluene	11.329	105	1106829	0.55	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524006.D
Acq On : 24 May 2023 17:33
Operator : PO1
Sample : SEQ-CAL2@@0.5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 08:55:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:55:46 2023
Response via : Initial Calibration
InstName : G

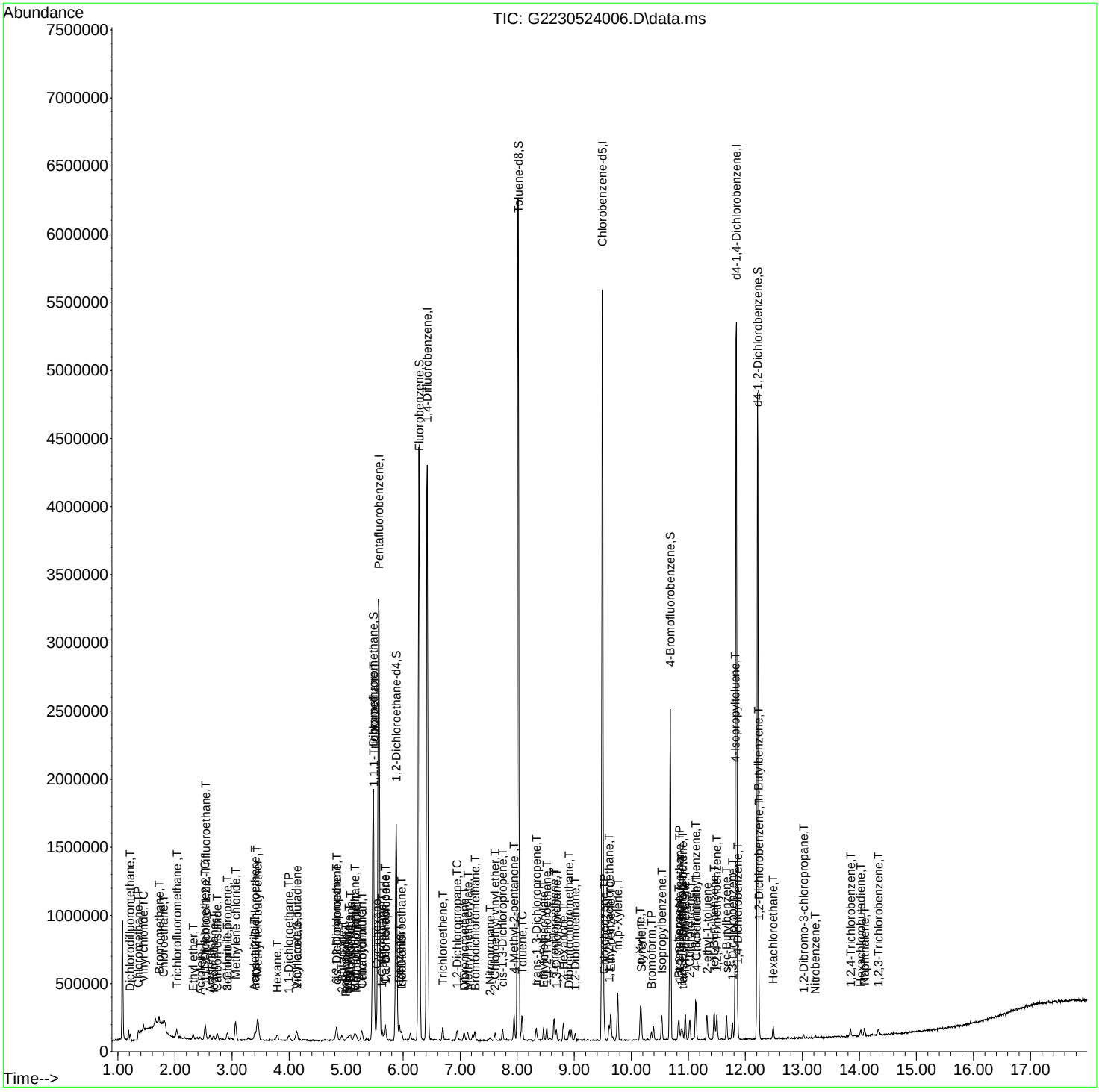
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
91) tert-Butylbenzene	11.455	119	943300	0.55	ug/L		93
92) 1,2,4-Trimethylbenzene	11.503	105	947837	0.58	ug/L		96
93) sec-Butylbenzene	11.674	105	1129071	0.56	ug/L		96
94) 1,3-Dichlorobenzene	11.775	146	541406	0.55	ug/L		99
95) 4-Isopropyltoluene	11.823	119	898342	0.53	ug/L		87
96) 1,4-Dichlorobenzene	11.866	146	519810	0.54	ug/L	#	71
98) 1,2-Dichlorobenzene	12.237	146	487874	0.55	ug/L	#	79
99) n-Butylbenzene	12.233	91	723018	0.57	ug/L		89
100) Hexachloroethane	12.491	201	166567	0.54	ug/L		96
101) 1,2-Dibromo-3-chloropr...	13.022	157	72061	0.51	ug/L	#	76
102) Nitrobenzene	13.227	77	23685	0.51	ug/L	#	32
103) 1,2,4-Trichlorobenzene	13.848	180	148965	0.55	ug/L		94
104) Hexachlorobutadiene	14.026	225	79900	0.57	ug/L		90
105) Naphthalene	14.091	128	434997	0.57	ug/L		94
106) 1,2,3-Trichlorobenzene	14.335	180	116302	0.54	ug/L		87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524006.D
Acq On : 24 May 2023 17:33
Operator : PO1
Sample : SEQ-CAL2@@0.5
Misc :
ALS Vial : 6 Sample Multiplier: 1

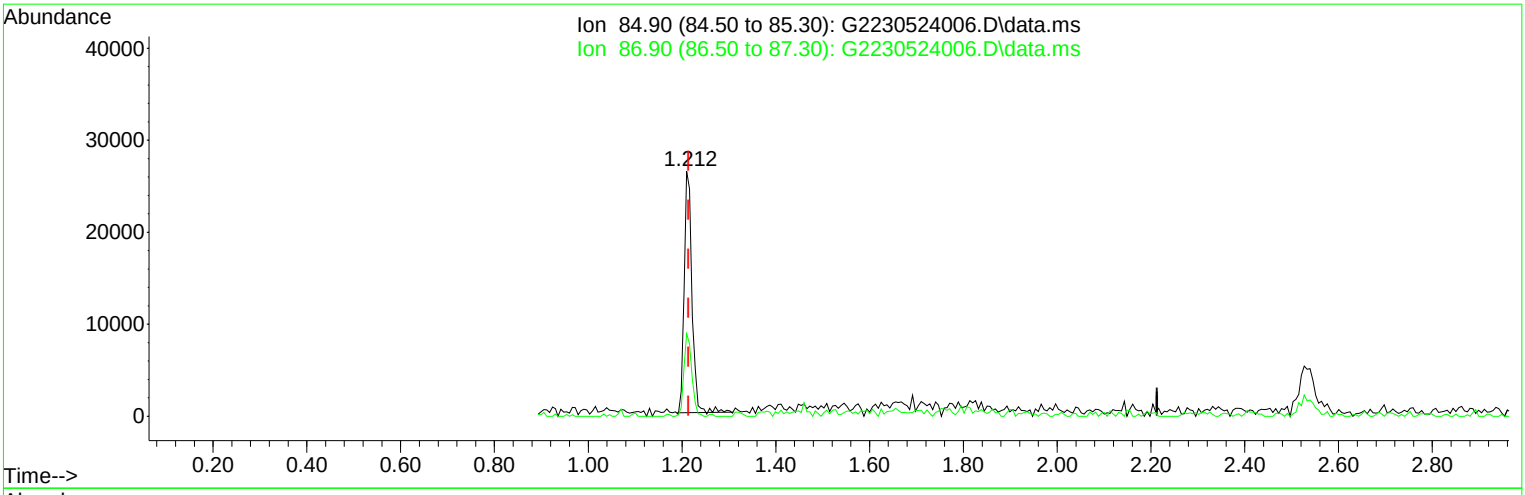
Quant Time: May 25 08:55:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:55:46 2023
Response via : Initial Calibration
InstName : G

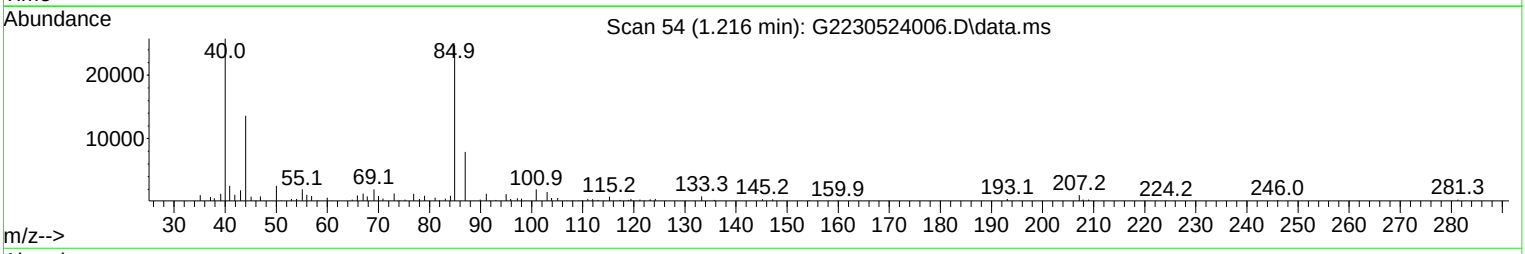


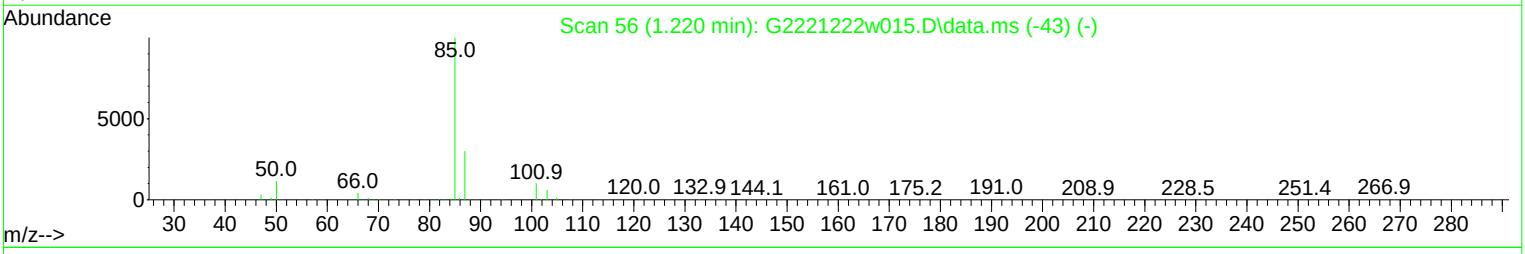
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524006.D
Acq On : 24 May 2023 17:33
Operator : PO1
Sample : SEQ-CAL2@@0.5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 08:55:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:55:46 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524006.D\data.ms

(2) Dichlorodifluoromethane (T)

1.215min (+ 0.002) 0.60 ug/L

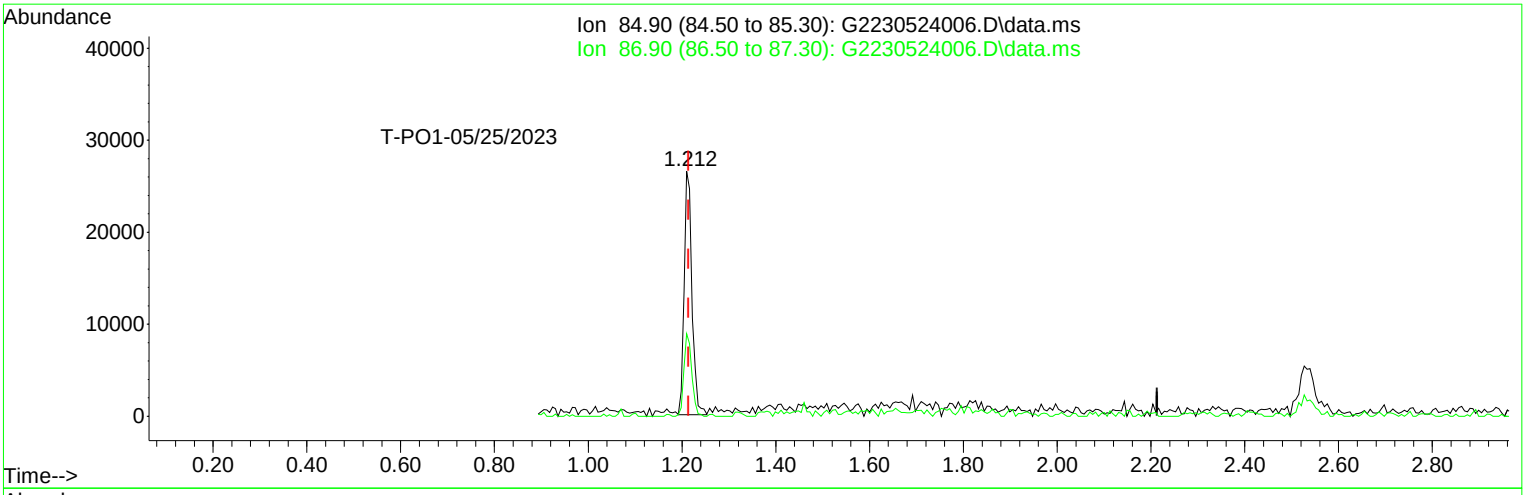
response 307682

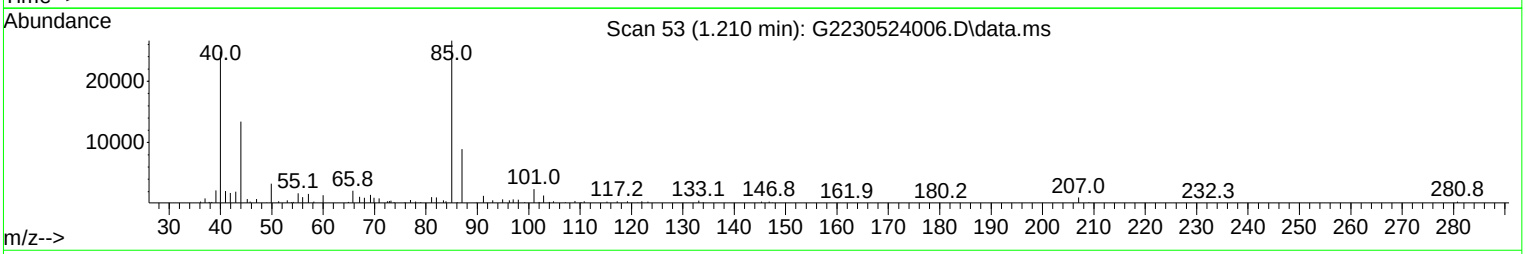
Ion	Exp%	Act%
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86.90	32.30	34.57
0.00	0.00	0.00
0.00	0.00	0.00

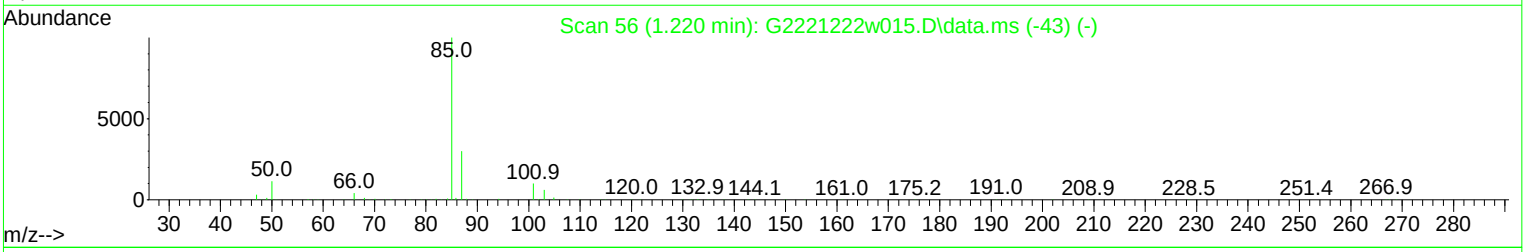
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524006.D
Acq On : 24 May 2023 17:33
Operator : PO1
Sample : SEQ-CAL2@@0.5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 08:55:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:55:46 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524006.D\data.ms

(2) Dichlorodifluoromethane (T)

1.210min (-0.003) 0.60 ug/L m

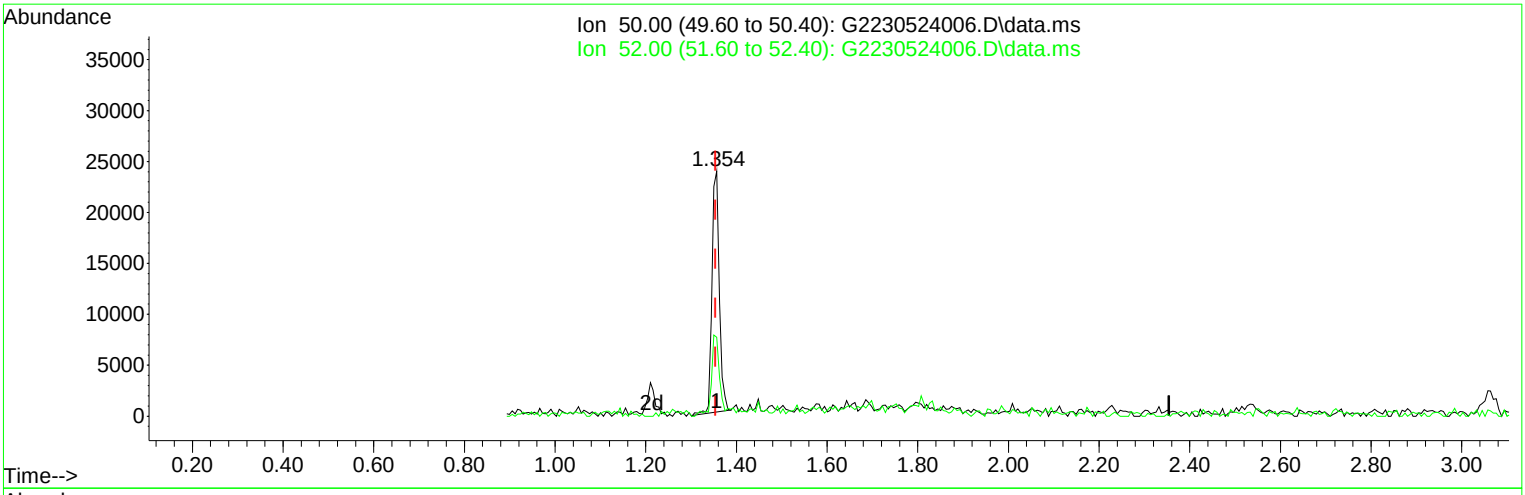
response 305129

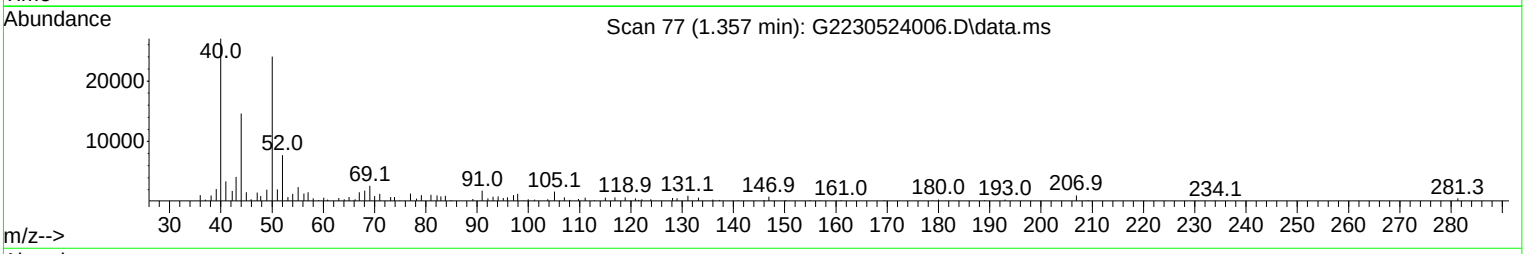
Ion	Exp%	Act%
84.90	100.00	100.00
86.90	32.30	34.86
0.00	0.00	0.00
0.00	0.00	0.00

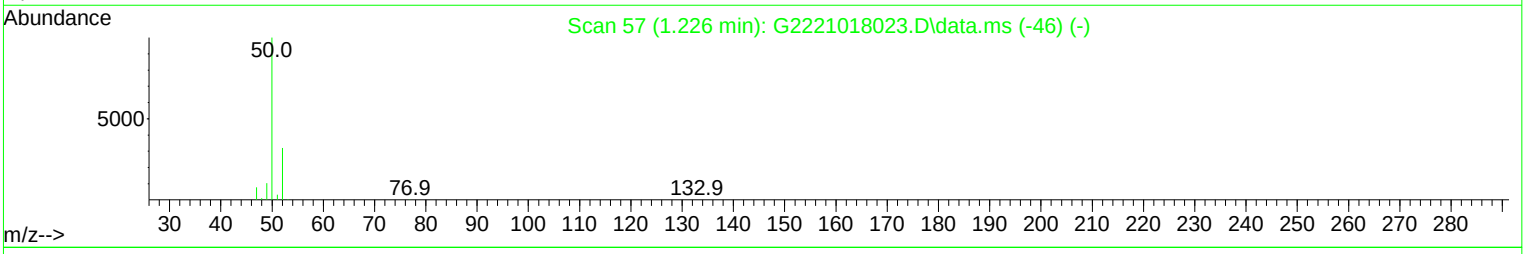
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524006.D
Acq On : 24 May 2023 17:33
Operator : PO1
Sample : SEQ-CAL2@@0.5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 08:55:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:55:46 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524006.D\data.ms

(3) Chloromethane (TP)

1.357min (+ 0.002) 0.60 ug/L

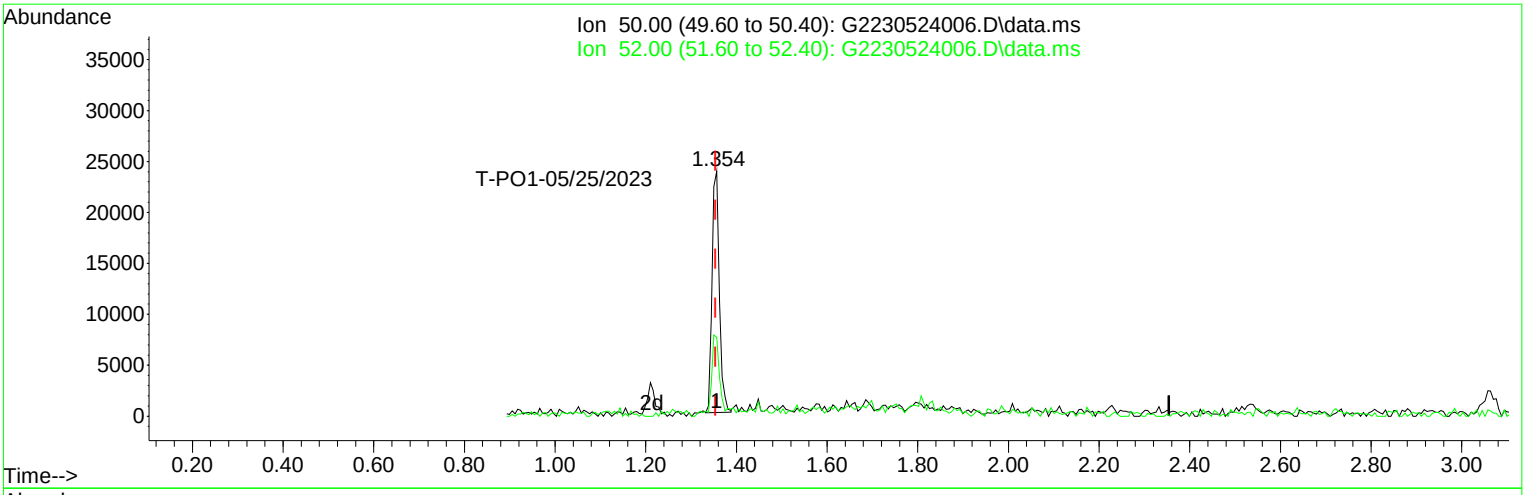
response 263514

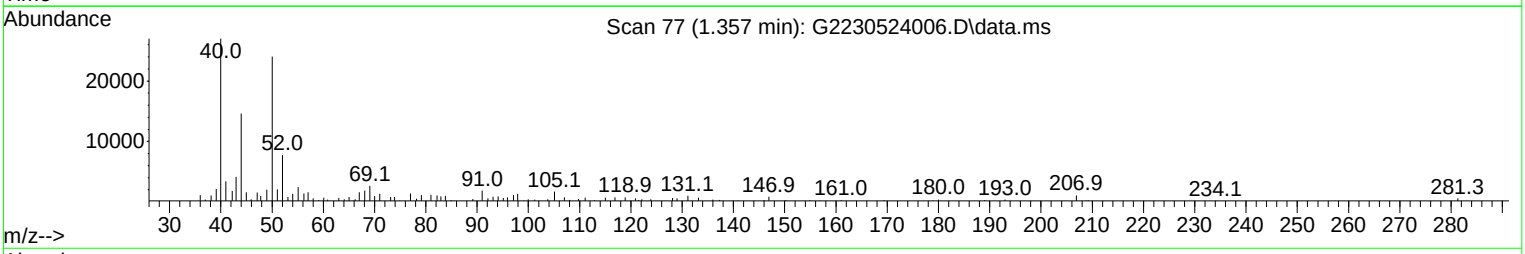
Ion	Exp%	Act%
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52.00	33.20	35.73
0.00	0.00	0.00
0.00	0.00	0.00

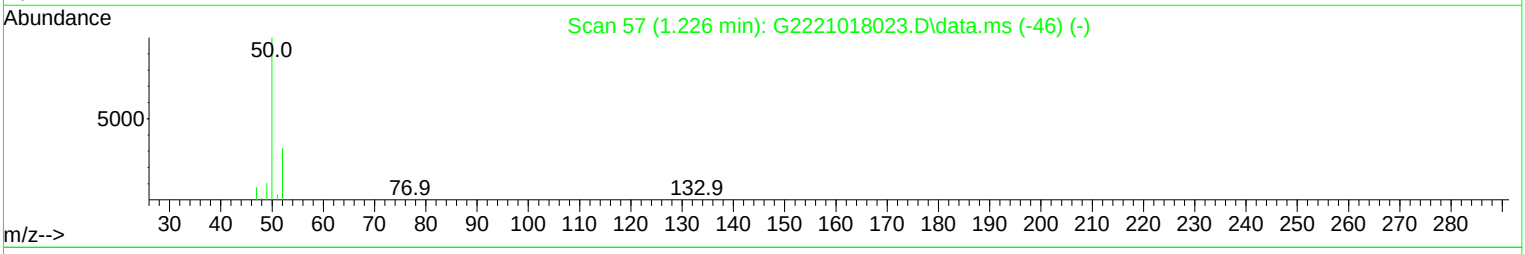
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524006.D
Acq On : 24 May 2023 17:33
Operator : PO1
Sample : SEQ-CAL2@@0.5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 08:55:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:55:46 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524006.D\data.ms

(3) Chloromethane (TP)

1.357min (+ 0.002) 0.60 ug/L m

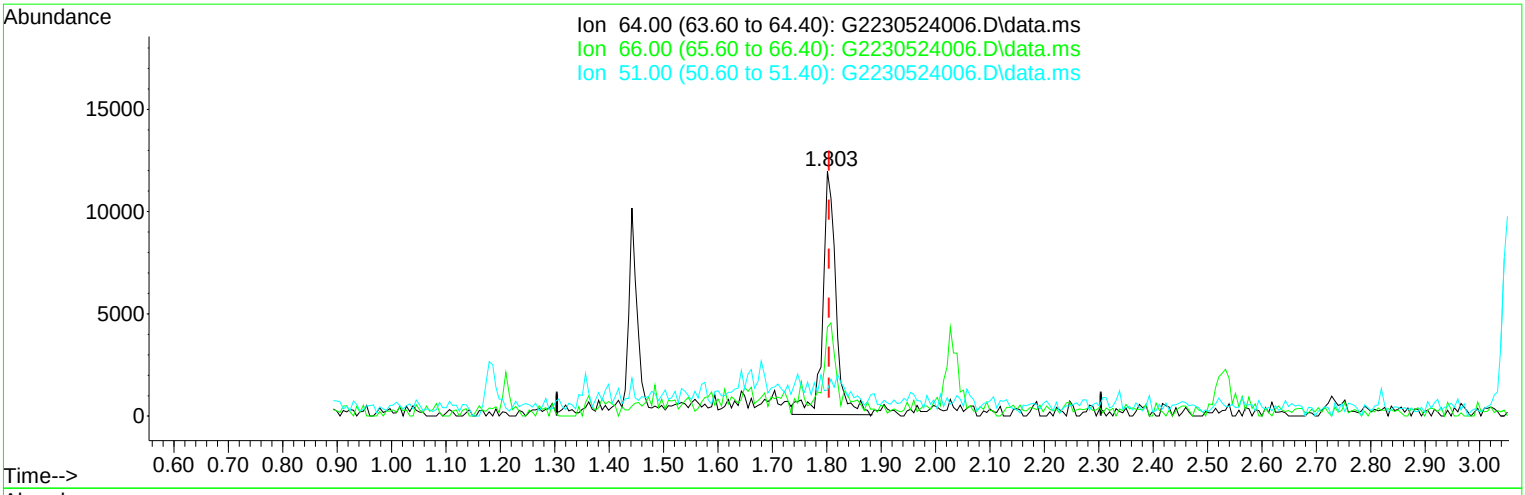
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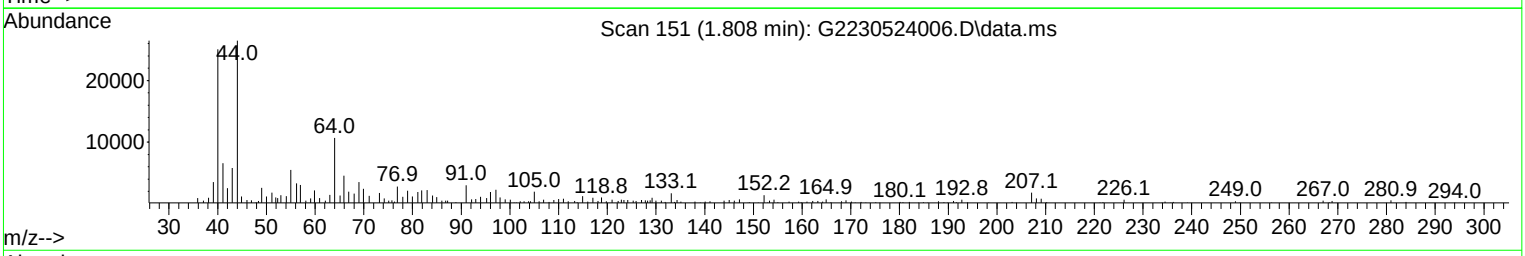
Ion	Exp%	Act%
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52.00	33.20	35.67
0.00	0.00	0.00
0.00	0.00	0.00

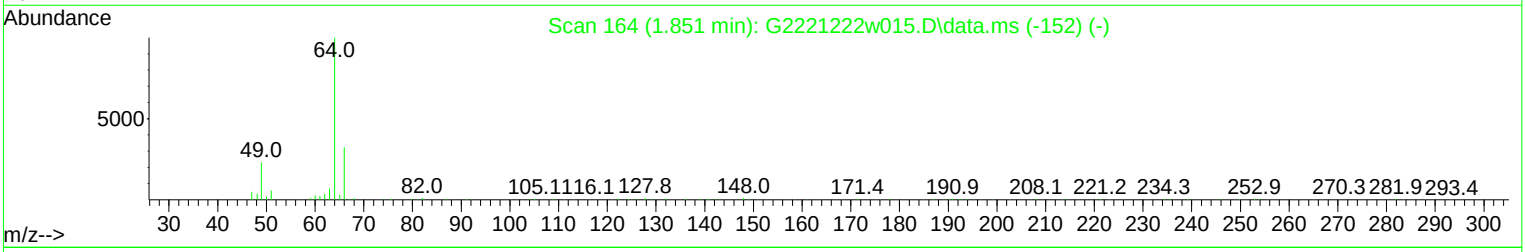
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524006.D
Acq On : 24 May 2023 17:33
Operator : PO1
Sample : SEQ-CAL2@@0.5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 08:55:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:55:46 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524006.D\data.ms

(6) Chloroethane (T)

1.807min (+ 0.002) 0.67 ug/L

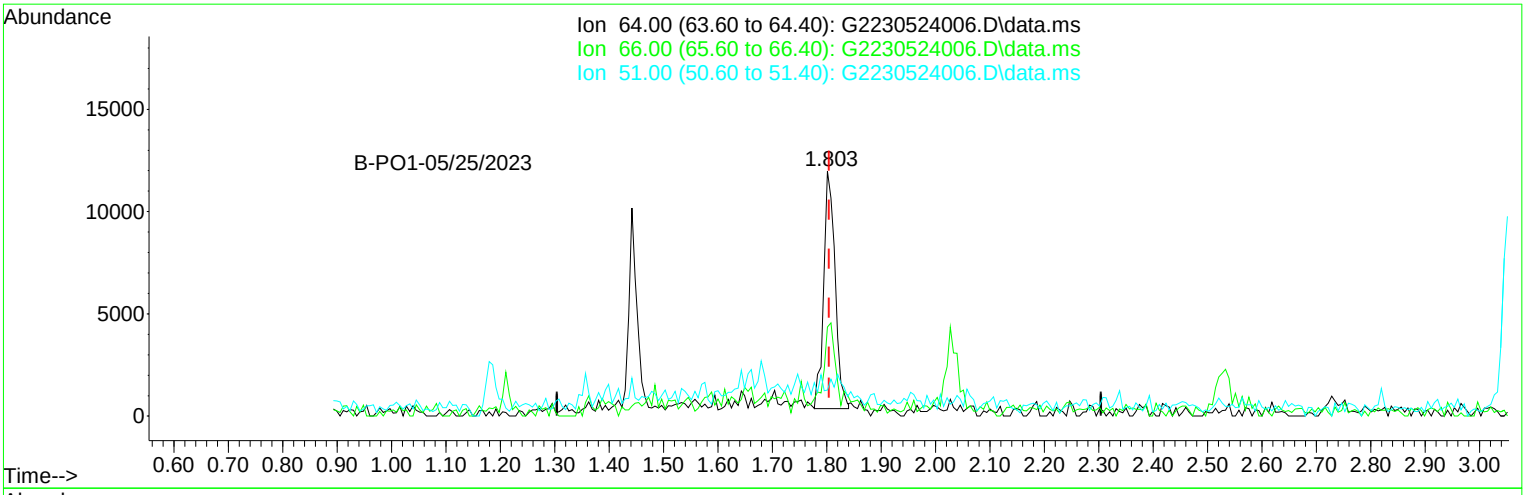
response 202190

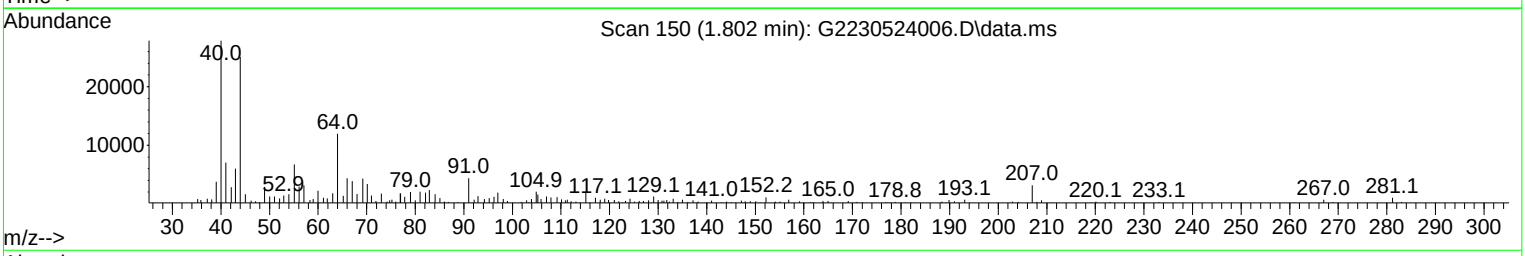
Ion	Exp%	Act%
64.00	100.00	100.00
66.00	34.30	23.82
51.00	8.60	0.00
0.00	0.00	0.00

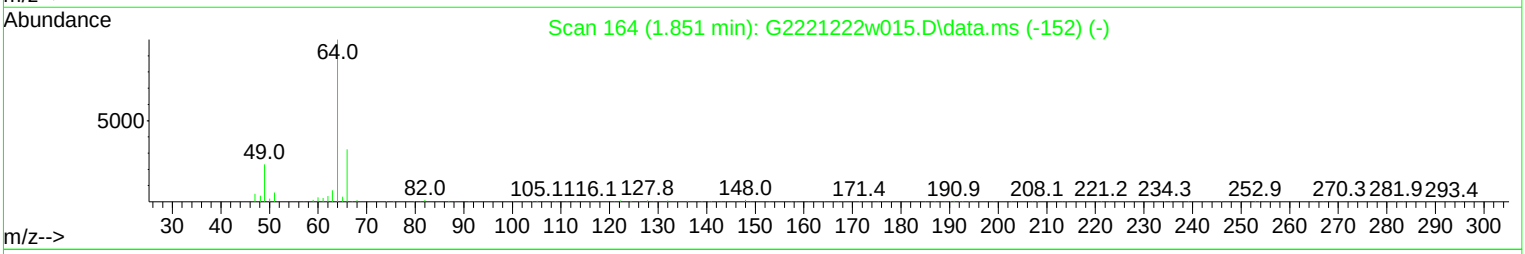
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524006.D
Acq On : 24 May 2023 17:33
Operator : PO1
Sample : SEQ-CAL2@@0.5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 08:55:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:55:46 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524006.D\data.ms

(6) Chloroethane (T)

1.802min (-0.003) 0.56 ug/L m

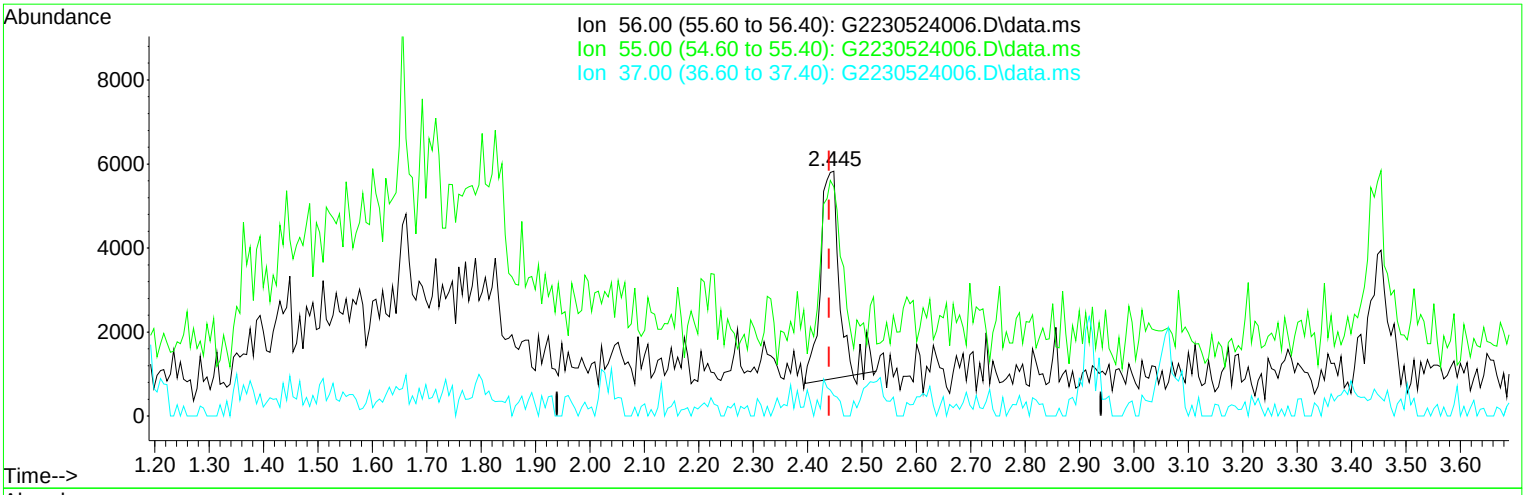
response 169317

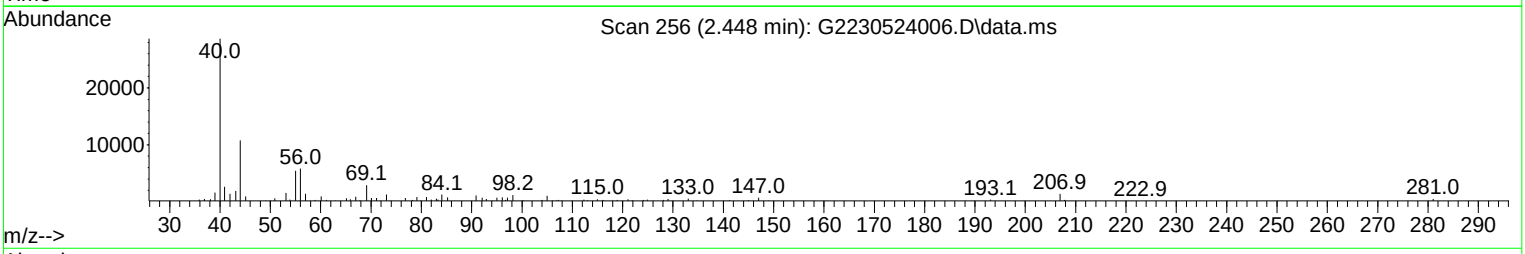
Ion	Exp%	Act%
64.00	100.00	100.00
66.00	34.30	28.44
51.00	8.60	0.00
0.00	0.00	0.00

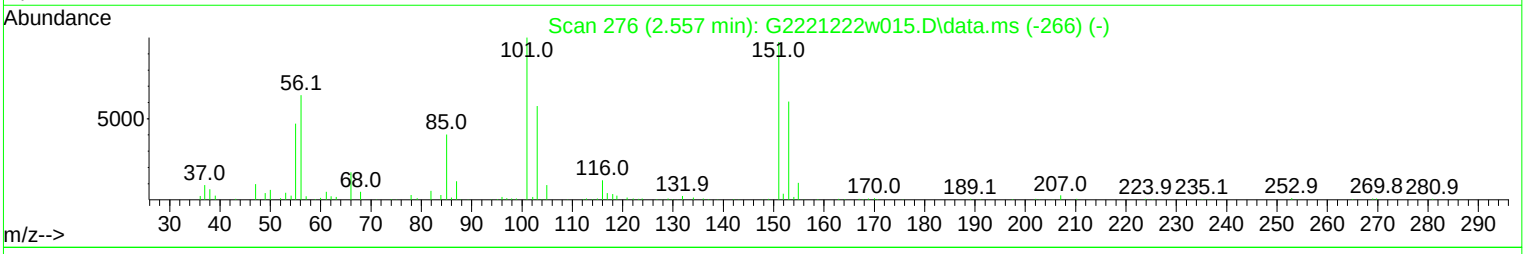
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524006.D
Acq On : 24 May 2023 17:33
Operator : PO1
Sample : SEQ-CAL2@@0.5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 08:55:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:55:46 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524006.D\data.ms

(9) Acrolein (T)

2.445min (+ 0.006) 1.66 ug/L

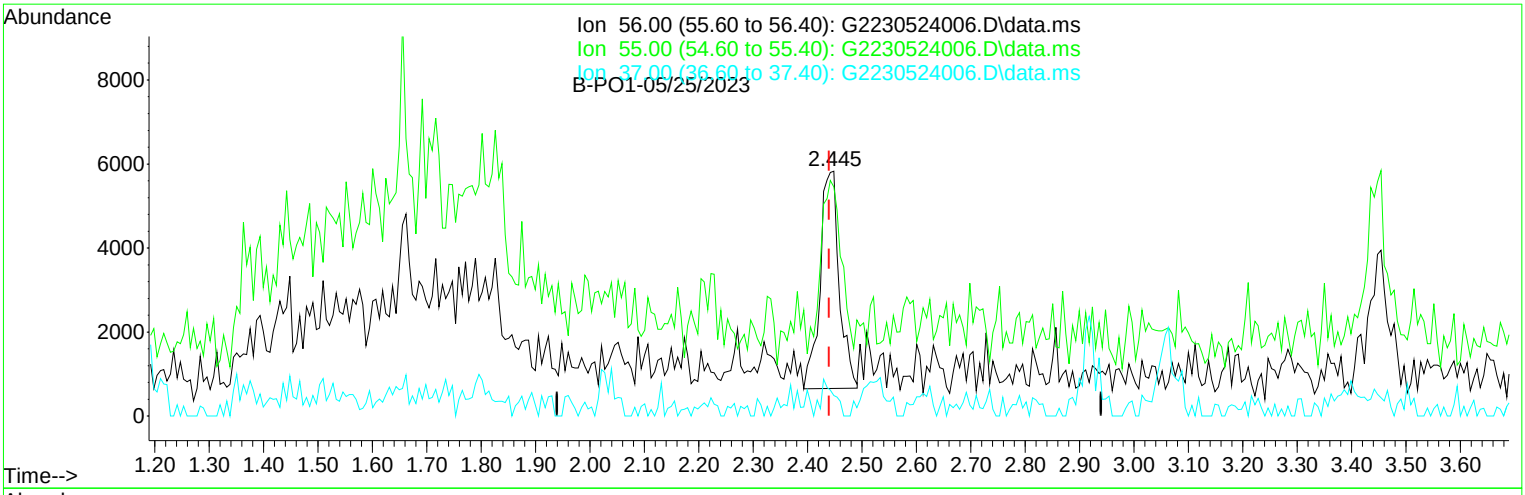
response 119118

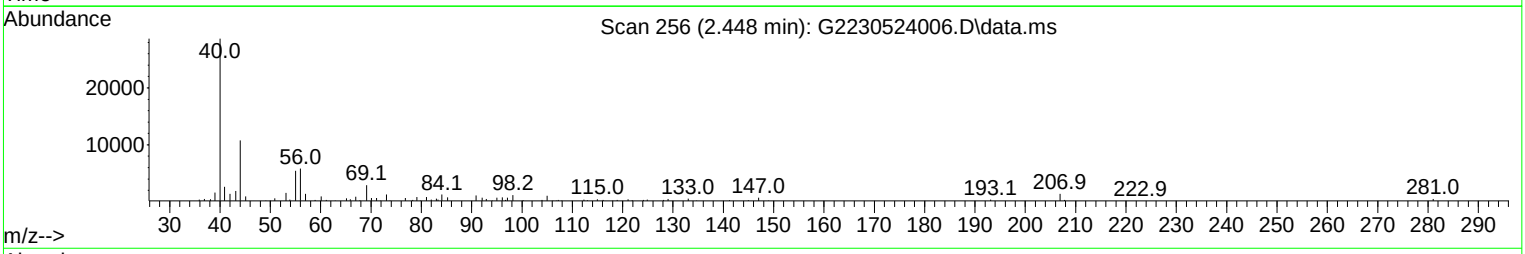
Ion	Exp%	Act%
56.00	100.00	100.00
55.00	73.50	80.32
37.00	10.50	0.00
0.00	0.00	0.00

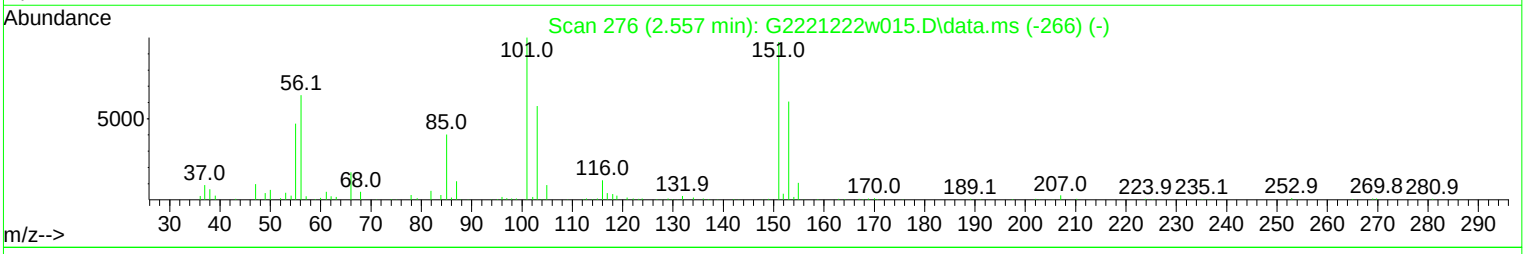
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524006.D
Acq On : 24 May 2023 17:33
Operator : PO1
Sample : SEQ-CAL2@@0.5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 08:55:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:55:46 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524006.D\data.ms

(9) Acrolein (T)

2.448min (+ 0.009) 1.74 ug/L m

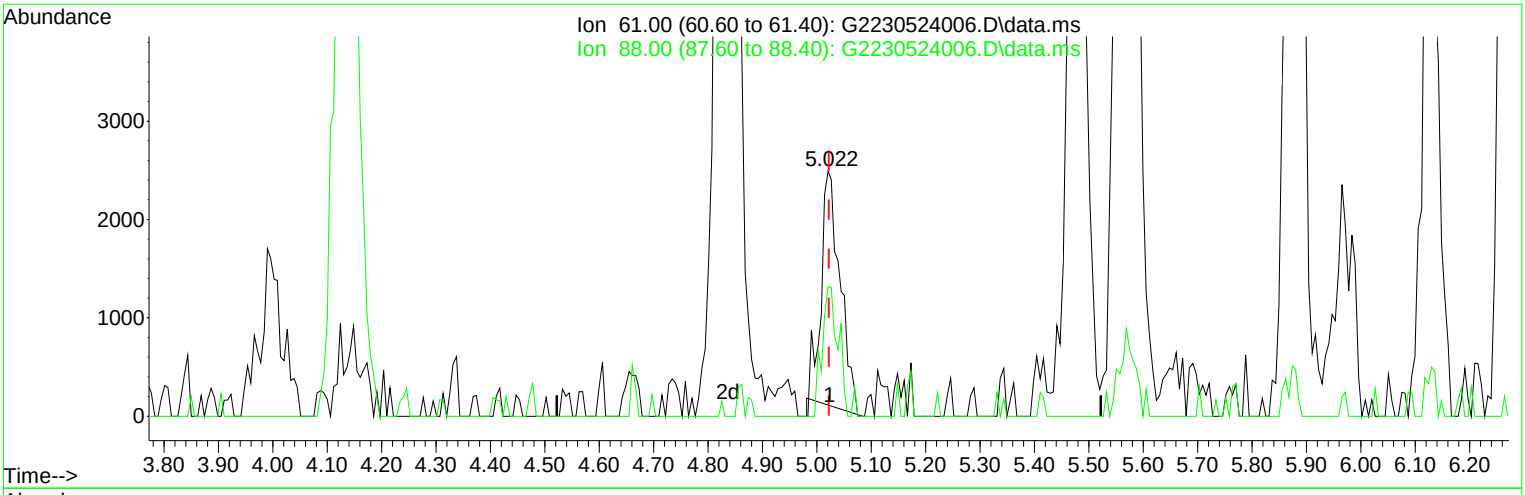
response 124609

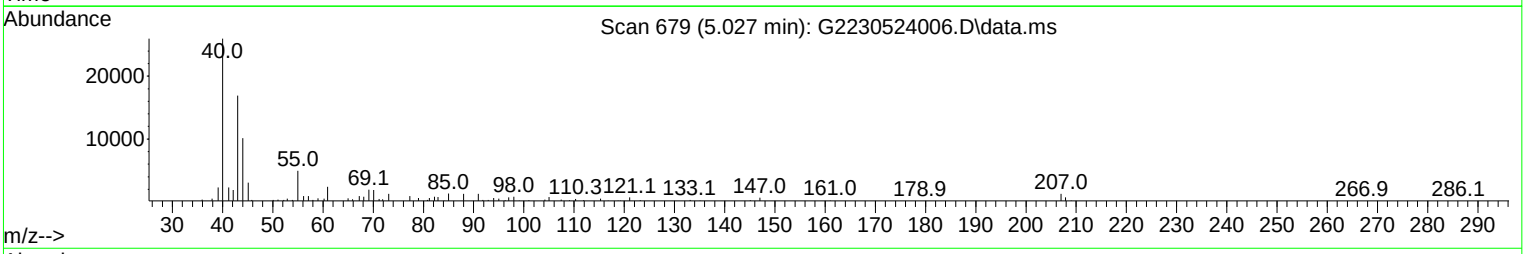
Ion	Exp%	Act%
56.00	100.00	100.00
55.00	73.50	76.78
37.00	10.50	0.00
0.00	0.00	0.00

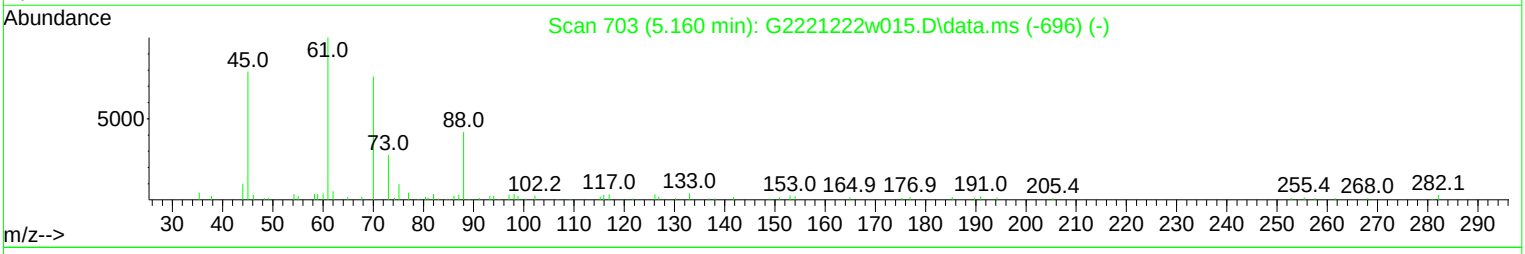
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524006.D
Acq On : 24 May 2023 17:33
Operator : PO1
Sample : SEQ-CAL2@@0.5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 08:55:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:55:46 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524006.D\data.ms

(31) Ethyl acetate

5.024min (+ 0.002) 0.69 ug/L

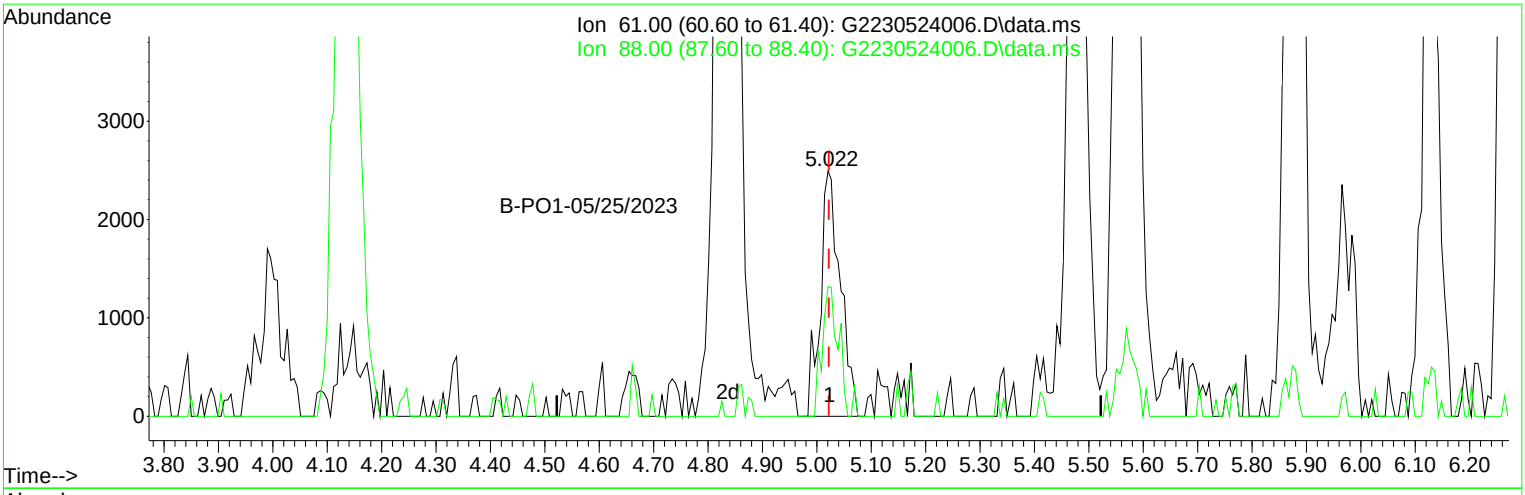
response 56740

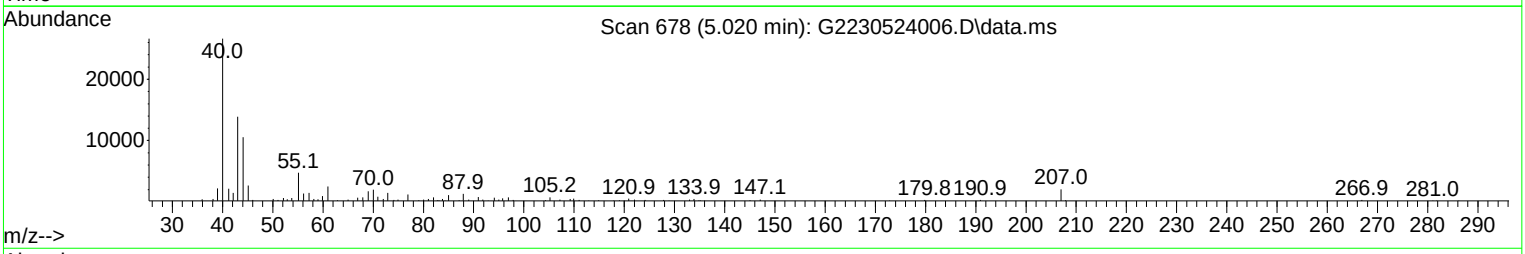
Ion	Exp%	Act%
61.00	100.00	100.00
88.00	30.10	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

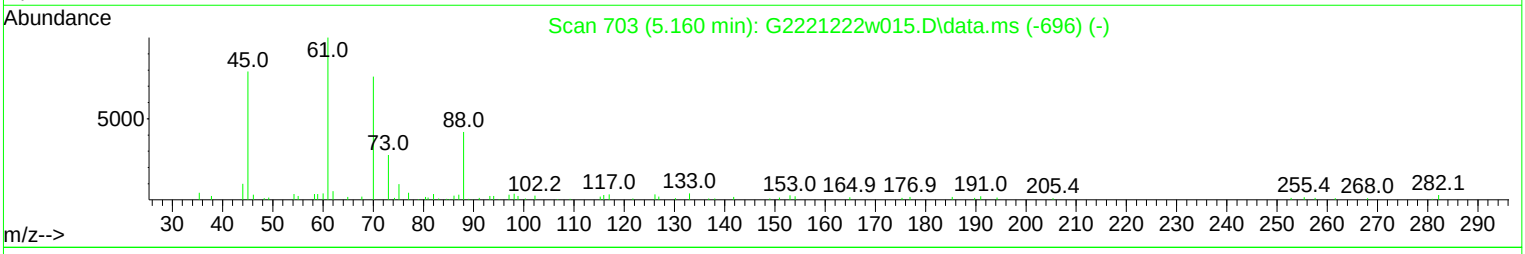
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524006.D
Acq On : 24 May 2023 17:33
Operator : PO1
Sample : SEQ-CAL2@@0.5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 08:55:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:55:46 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524006.D\data.ms

(31) Ethyl acetate

5.020min (-0.002) 0.77 ug/L m

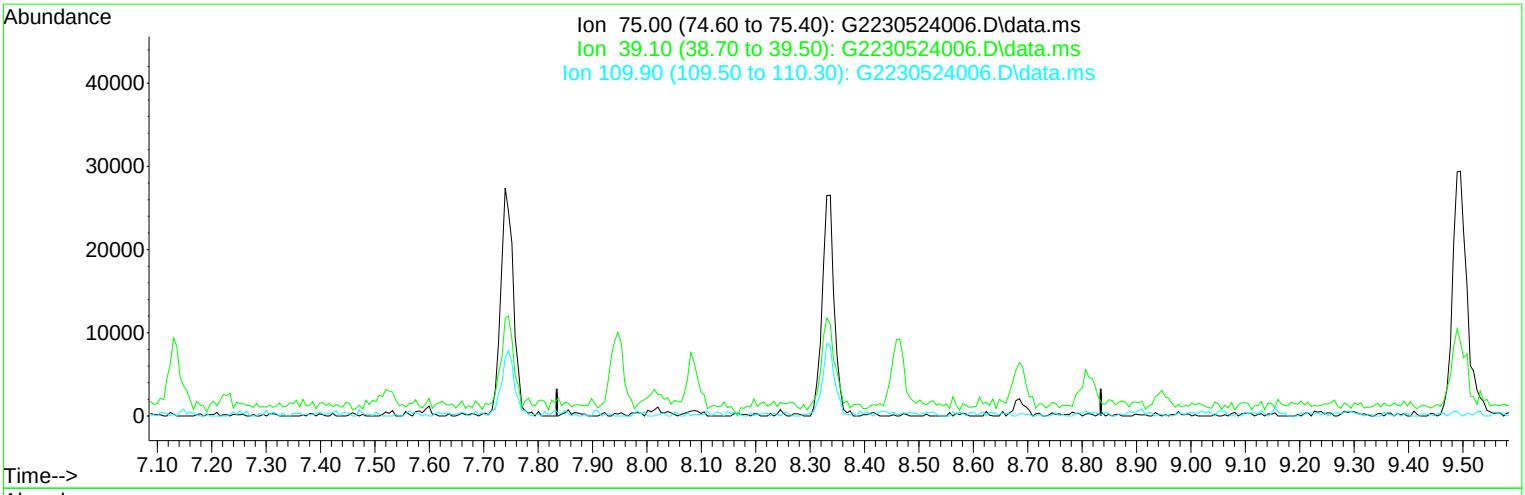
response 63318

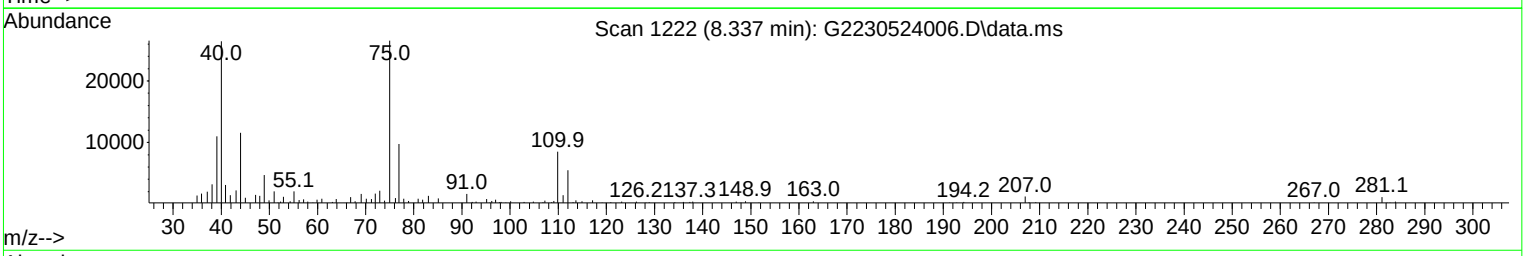
Ion	Exp%	Act%
61.00	100.00	100.00
88.00	30.10	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

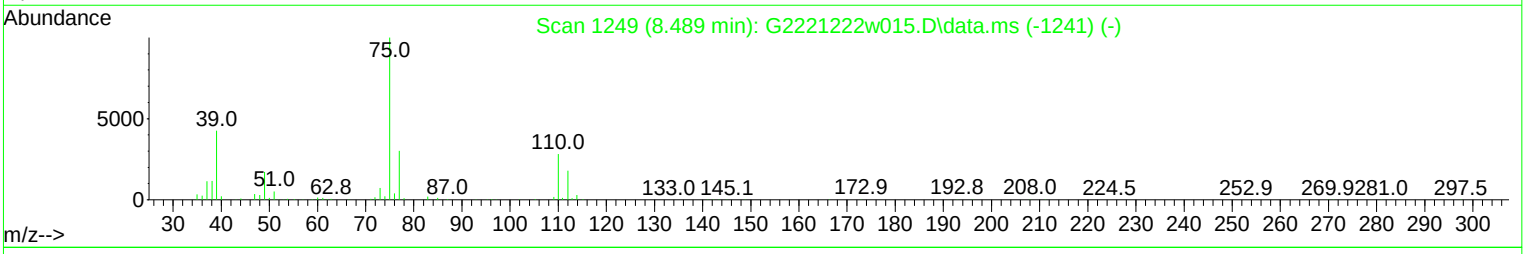
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524006.D
Acq On : 24 May 2023 17:33
Operator : PO1
Sample : SEQ-CAL2@@0.5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 08:55:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:55:46 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524006.D\data.ms

(61) trans-1,3-Dichloropropene (T)

8.335min (-8.335) 0.00 ug/L

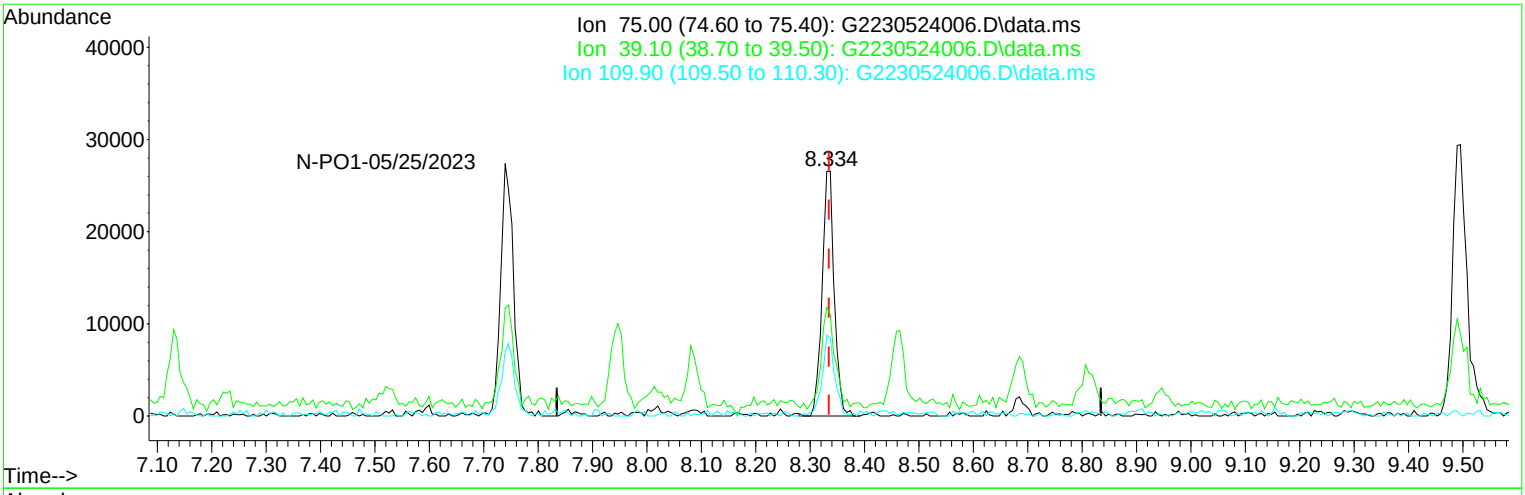
response 0

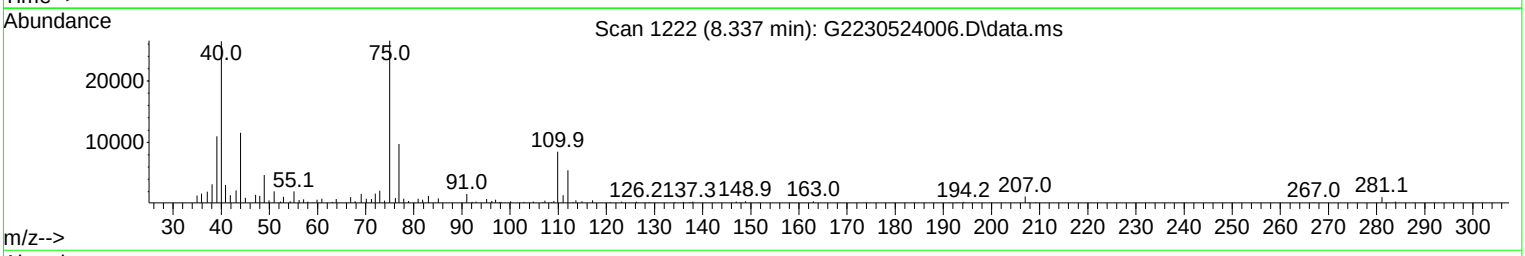
Ion	Exp%	Act%
75.00	100.00	0.00
39.10	45.00	0.00#
109.90	25.10	0.00
0.00	0.00	0.00

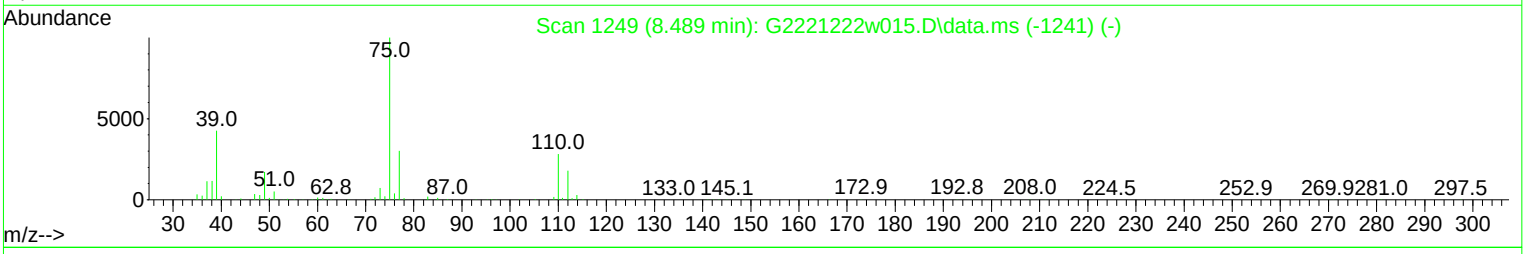
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524006.D
Acq On : 24 May 2023 17:33
Operator : PO1
Sample : SEQ-CAL2@@0.5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 08:55:58 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:55:46 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524006.D\data.ms

(61) trans-1,3-Dichloropropene (T)

8.337min (+ 0.002) 0.55 ug/L m

response 412086

Ion	Exp%	Act%
75.00	100.00	100.00
39.10	45.00	0.00#
109.90	25.10	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524007.D
Acq On : 24 May 2023 17:57
Operator : PO1
Sample : SEQ-CAL3@@1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 25 08:49:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:48:52 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.571	168	24401446	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.421	114	34785400	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.495	117	30580660	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.842	152	14610136	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.474	111	10818625	19.97	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.85%			
43) 1,2-Dichloroethane-d4	5.877	65	10647753	19.86	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.30%			
49) Fluorobenzene	6.277	96	39541939	19.91	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.55%			
64) Toluene-d8	8.016	98	38544409	20.02	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.10%			
81) 4-Bromofluorobenzene	10.686	174	6758288	9.77	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 97.70%			
97) d4-1,2-Dichlorobenzene	12.219	152	12796487	20.27	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 101.35%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.209	85	578704	1.23	ug/L	94
3) Chloromethane	1.350	50	512271	1.26	ug/L	93
4) Vinyl chloride	1.441	62	542152	1.18	ug/L	98
5) Bromomethane	1.713	94	417782	1.36	ug/L	96
6) Chloroethane	1.802	64	354168	1.27	ug/L	86
7) Trichlorofluoromethane	2.026	101	854645	1.22	ug/L	95
8) Ethyl ether	2.315	59	387179	1.15	ug/L	94
9) Acrolein	2.436	56	179231	2.66	ug/L #	89
10) 1,1-Dichloroethene	2.518	61	566782	1.05	ug/L	87
11) 1,1,2-Trichloro-1,2,2-...	2.529	101	357432	0.92	ug/L	91
12) Acetone	2.608	43	638012	5.20	ug/L	96
13) Iodomethane	2.671	142	539313	0.93	ug/L	99
14) Carbon disulfide	2.733	76	1194784	1.07	ug/L	95
15) Isopropanol	2.795	45	247918m	12.77	ug/L	
16) acetonitrile	2.911	41	680059	2.87	ug/L	84
17) 3-Chloro-1-propene	2.919	76	269278	1.07	ug/L	92
18) Methylene chloride	3.057	49	1052954	2.01	ug/L	85
19) Acrylonitrile	3.384	53	217873	1.17	ug/L	88
20) trans-1,2-Dichloroethene	3.398	61	577177	1.13	ug/L	93
21) Methyl tert-butyl ether	3.447	73	2835021	1.79	ug/L	96
22) Hexane	3.788	57	389261	0.93	ug/L	95
23) 1,1-Dichloroethane	3.996	63	771505	1.10	ug/L	89
24) Vinyl acetate	4.131	43	861041	1.07	ug/L	90
25) 2-Chloro-1,3-butadiene	4.130	53	573510	1.05	ug/L	87
27) 2,2-Dichloropropane	4.822	77	744084	1.15	ug/L	95
28) cis-1,2-Dichloroethene	4.833	61	687865	1.09	ug/L	87
29) 2-Butanone	4.930	72	282624	4.44	ug/L	82
30) Propionitrile	4.986	54	69361	1.12	ug/L #	63

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524007.D
Acq On : 24 May 2023 17:57
Operator : PO1
Sample : SEQ-CAL3@@1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 25 08:49:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:48:52 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
31) Ethyl acetate	5.026	61	86766	1.12	ug/L	#	45
32) Methylacrylate	5.047	55	482551	1.05	ug/L	#	86
33) 1-Bromopropane	5.071	41	271405	1.04	ug/L		74
34) Bromochloromethane	5.145	130	378304	1.07	ug/L		96
35) Methacrylonitrile	5.177	67	261930	1.11	ug/L		90
36) Tetrahydrofuran	5.264	42	190451	1.40	ug/L		84
37) Chloroform	5.274	83	870954	1.10	ug/L		97
39) 1,1,1-Trichloroethane	5.477	97	760178	1.05	ug/L		97
40) Cyclohexane	5.534	84	614466	0.92	ug/L	#	72
41) 1-Chlorobutane	5.630	56	811059	1.07	ug/L		95
42) 1,1-Dichloropropene	5.685	75	602475	1.05	ug/L		93
44) 1,2-Dichloroethane	5.969	62	639211	1.08	ug/L		94
45) Isobutanol	5.975	43	184664	11.68	ug/L		90
47) Carbon tetrachloride	5.678	117	609588	0.97	ug/L		97
48) Benzene	5.934	78	1822842	1.07	ug/L		97
50) Trichloroethene	6.693	95	516924	1.09	ug/L		92
51) 1-Butanol	6.758	56	140811m	12.48	ug/L		
52) 1,2-Dichloropropane	6.945	63	450772	1.11	ug/L		89
53) Dibromomethane	7.070	174	428486	1.05	ug/L	#	97
54) Methyl methacrylate	7.133	69	425627	1.07	ug/L		89
55) 1,4-dioxane	7.157	88	47428	11.65	ug/L	#	23
56) Bromodichloromethane	7.258	83	690852	1.09	ug/L		95
57) 2-Nitropropane	7.524	43	218603	1.19	ug/L	#	89
58) 2-Chloroethyl vinyl ether	7.613	63	384985	1.21	ug/L		88
59) cis-1,3-Dichloropropene	7.743	75	806759	1.07	ug/L		94
60) 4-Methyl-2-pentanone	7.946	43	2037890	4.16	ug/L	#	88
61) trans-1,3-Dichloropropene	8.331	75	803649m	1.12	ug/L		
62) 1,1,2-Trichloroethane	8.519	97	486077	1.09	ug/L		96
65) Toluene	8.085	91	2126818	1.11	ug/L		99
66) Ethylmethacrylate	8.461	69	817998	1.18	ug/L		88
67) Tetrachloroethene	8.648	166	635379	0.92	ug/L		93
68) 1,3-Dichloropropane	8.687	76	849035	1.16	ug/L		91
69) 2-Hexanone	8.810	43	1348772	4.25	ug/L		91
70) Dibromochloromethane	8.912	129	656461	1.14	ug/L		96
71) 1,2-Dibromoethane	9.019	107	554612	1.11	ug/L		100
72) Chlorobenzene	9.523	112	1406070	1.08	ug/L		90
73) 1,1,1,2-Tetrachloroethane	9.614	131	550766	1.07	ug/L		95
74) Ethylbenzene	9.642	91	2276792	1.09	ug/L		98
75) m,p-Xylene	9.763	91	3532035	2.21	ug/L		97
76) Styrene	10.176	104	1494108	1.07	ug/L		96
77) Bromoform	10.355	173	533819	1.15	ug/L		98
79) o-Xylene	10.160	91	1865503	1.06	ug/L		99
80) Isopropylbenzene	10.536	105	2116822	1.03	ug/L		97
82) Bromobenzene	10.828	77	811803	1.05	ug/L		88
83) 1,1,2,2-Tetrachloroethane	10.842	83	723443	1.17	ug/L		96
84) 1,2,3-Trichloropropane	10.881	110	252583	1.13	ug/L		95
85) trans-1,4-Dichloro-2-b...	10.903	53	180246	1.10	ug/L		65
86) n-Propylbenzene	10.949	91	2328261	1.02	ug/L		94
87) 2-Chlorotoluene	11.027	91	1448351	1.05	ug/L		95

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524007.D
Acq On : 24 May 2023 17:57
Operator : PO1
Sample : SEQ-CAL3@@1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 25 08:49:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:48:52 2023
Response via : Initial Calibration
InstName : G

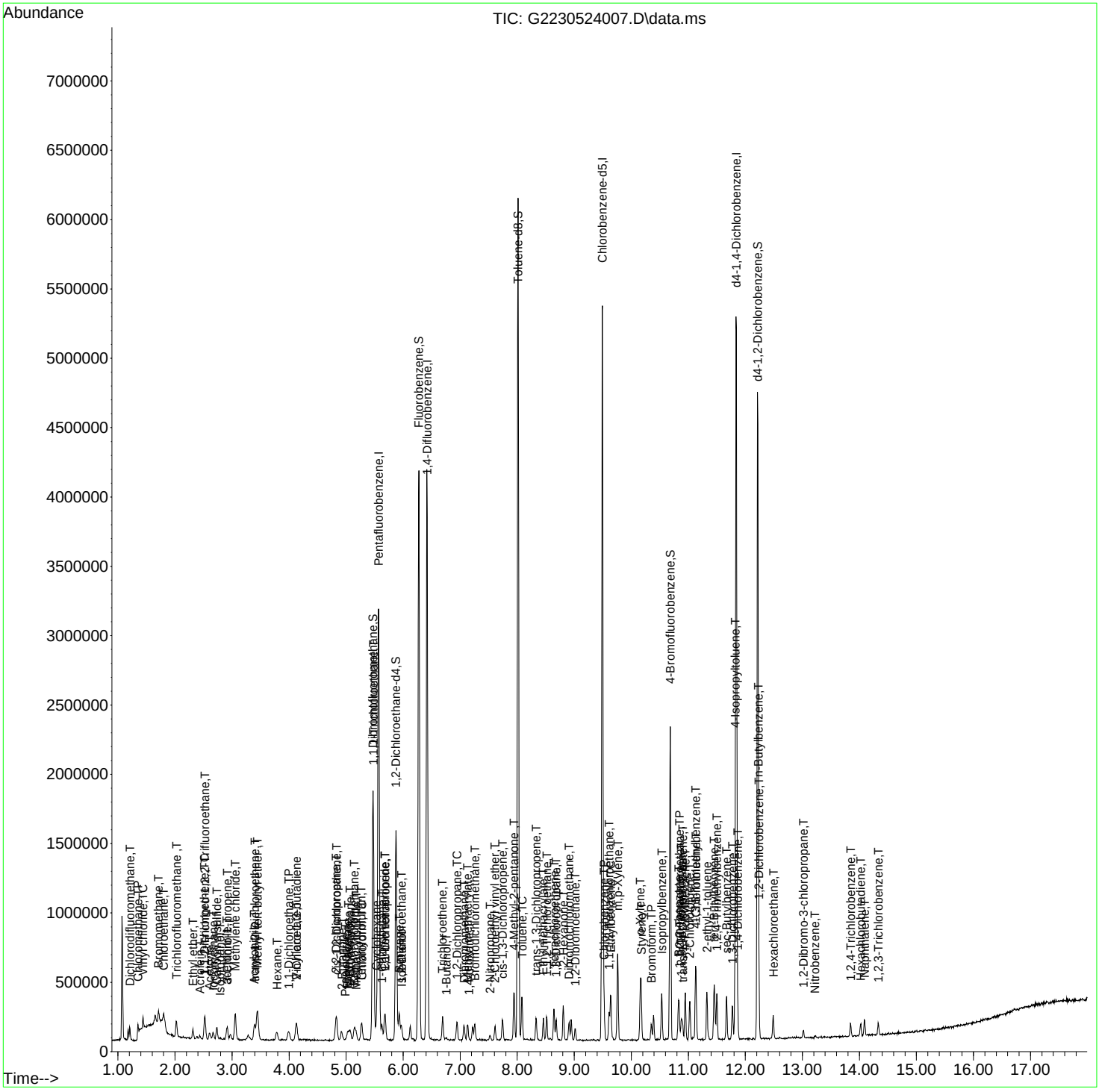
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
88) 4-Chlorotoluene	11.137	91	1651215	1.05	ug/L		94
89) 1,3,5-Trimethylbenzene	11.129	105	1726163	1.08	ug/L		96
90) 2-ethyl-1-toluene	11.329	105	2135617	1.11	ug/L		99
91) tert-Butylbenzene	11.454	119	1774935	1.06	ug/L		91
92) 1,2,4-Trimethylbenzene	11.503	105	1707900	1.08	ug/L		93
93) sec-Butylbenzene	11.673	105	2029606	1.04	ug/L		98
94) 1,3-Dichlorobenzene	11.776	146	1053951	1.11	ug/L		100
95) 4-Isopropyltoluene	11.822	119	1768456	1.09	ug/L		96
96) 1,4-Dichlorobenzene	11.865	146	1012056	1.10	ug/L		88
98) 1,2-Dichlorobenzene	12.238	146	967334	1.13	ug/L		92
99) n-Butylbenzene	12.232	91	1366744	1.12	ug/L		93
100) Hexachloroethane	12.492	201	318126	1.06	ug/L		98
101) 1,2-Dibromo-3-chloropr...	13.019	157	163906	1.22	ug/L	#	96
102) Nitrobenzene	13.220	77	64552m	1.50	ug/L		
103) 1,2,4-Trichlorobenzene	13.848	180	301250	1.17	ug/L		94
104) Hexachlorobutadiene	14.025	225	149918	1.11	ug/L		89
105) Naphthalene	14.092	128	931532	1.30	ug/L		97
106) 1,2,3-Trichlorobenzene	14.334	180	234281	1.14	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524007.D
Acq On : 24 May 2023 17:57
Operator : PO1
Sample : SEQ-CAL3@@1
Misc :
ALS Vial : 7 Sample Multiplier: 1

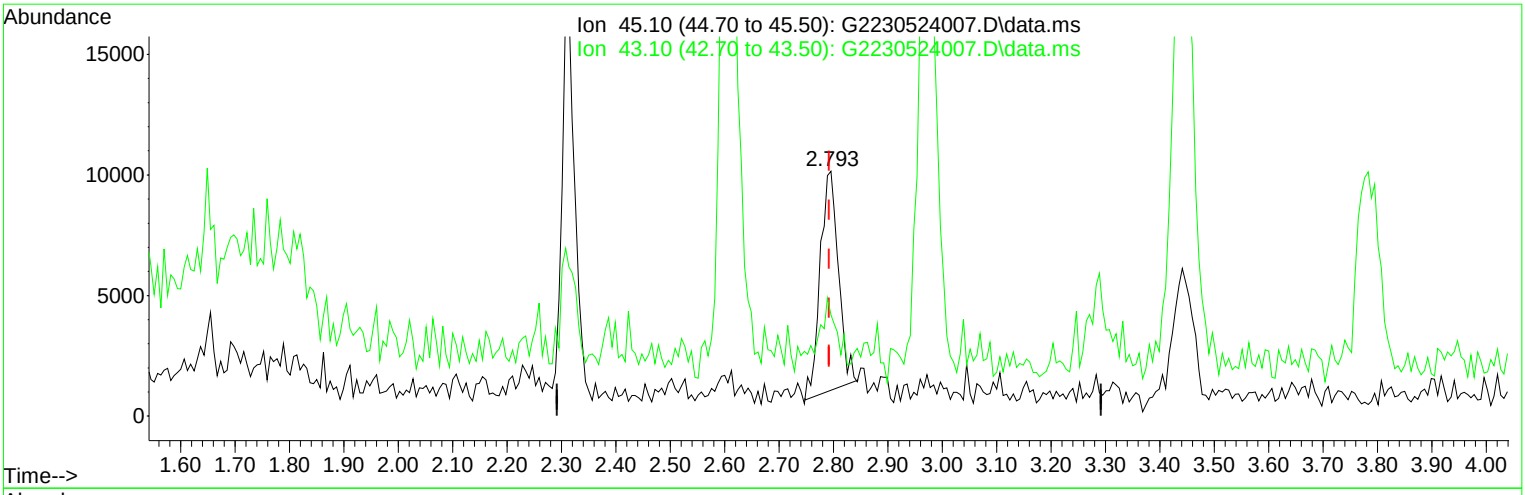
Quant Time: May 25 08:49:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:48:52 2023
Response via : Initial Calibration
InstName : G

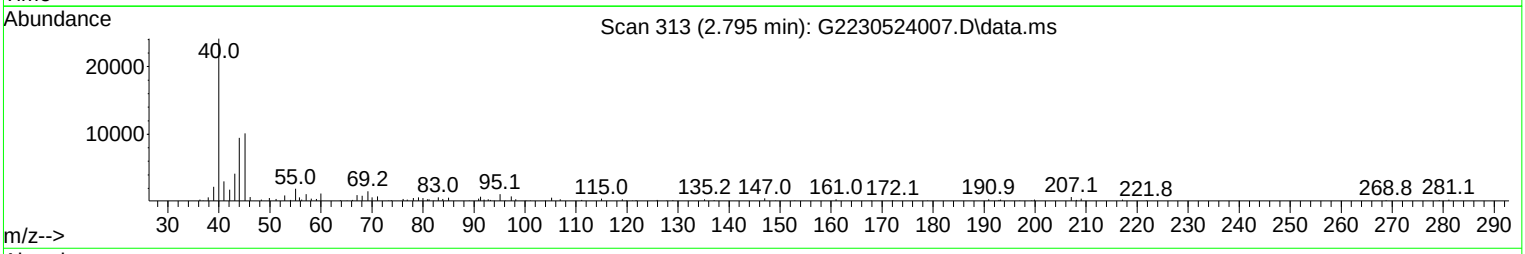


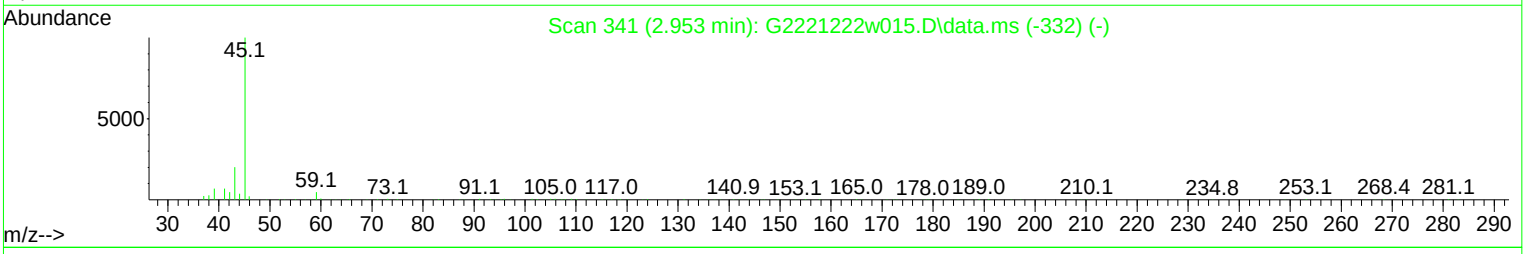
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524007.D
Acq On : 24 May 2023 17:57
Operator : PO1
Sample : SEQ-CAL3@@1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 25 08:49:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:48:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524007.D\data.ms

(15) Isopropanol (T)

2.795min (+ 0.004) 10.81 ug/L

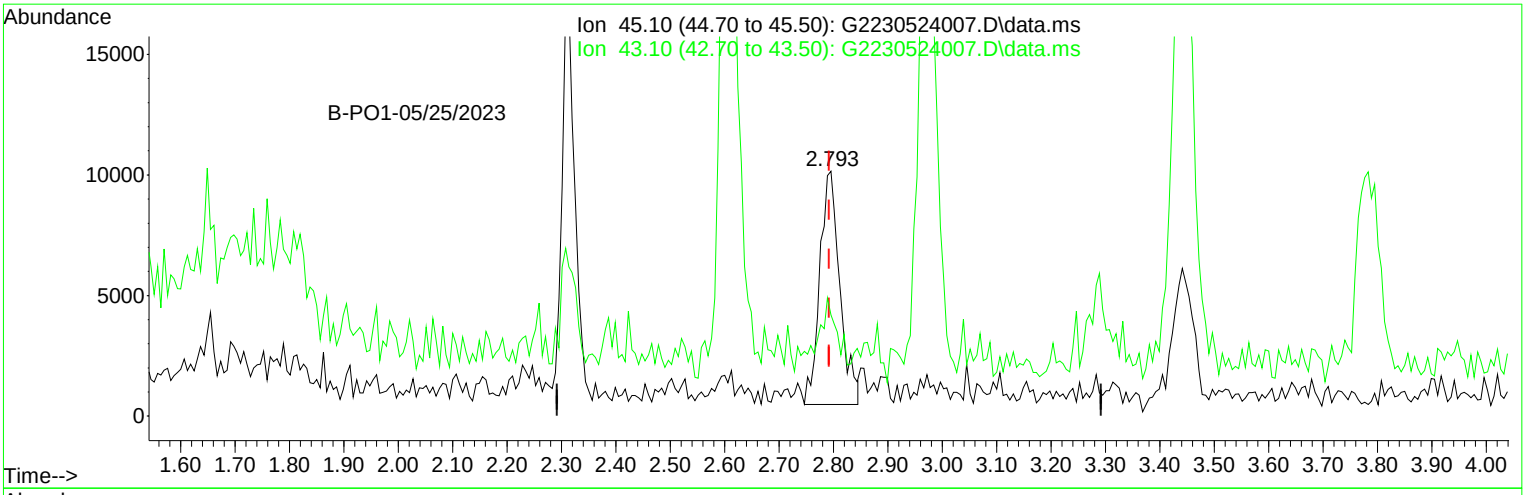
response 209801

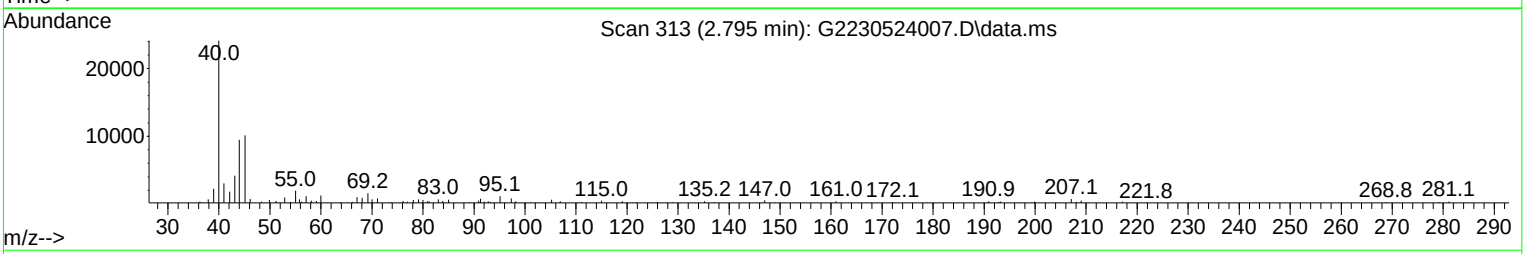
Ion	Exp%	Act%
45.10	100.00	100.00
43.10	20.30	45.81
0.00	0.00	0.00
0.00	0.00	0.00

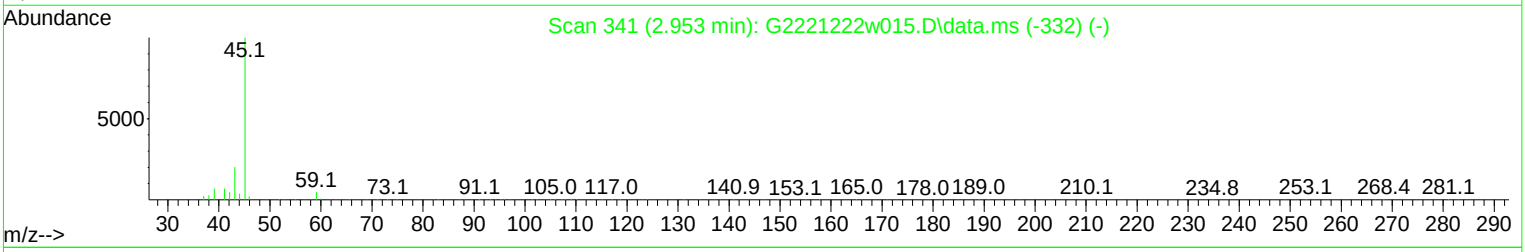
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524007.D
Acq On : 24 May 2023 17:57
Operator : PO1
Sample : SEQ-CAL3@@1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 25 08:49:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:48:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524007.D\data.ms

(15) Isopropanol (T)

2.795min (+ 0.003) 12.77 ug/L m

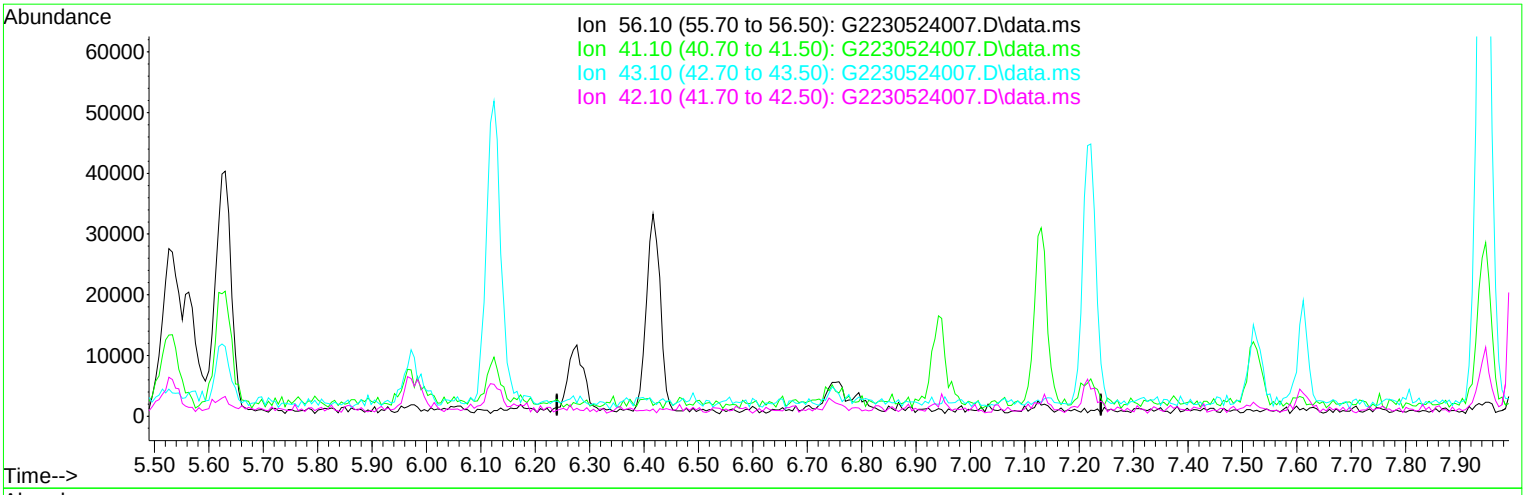
response 247918

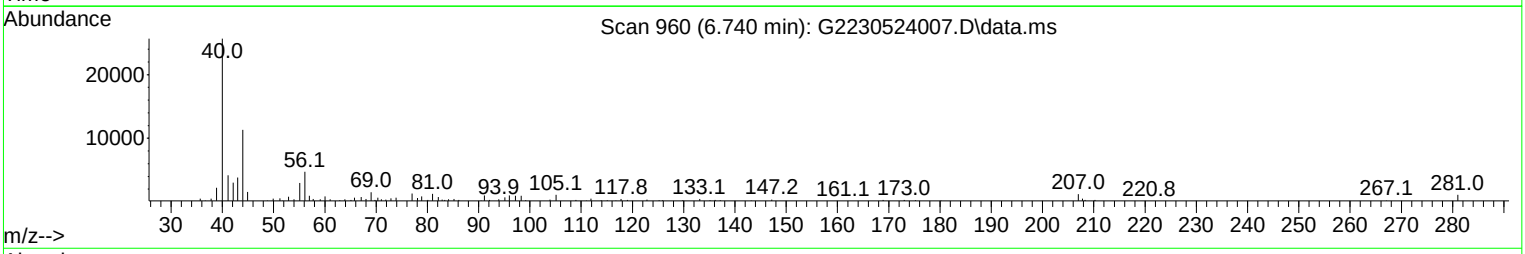
Ion	Exp%	Act%
45.10	100.00	100.00
43.10	20.30	38.76
0.00	0.00	0.00
0.00	0.00	0.00

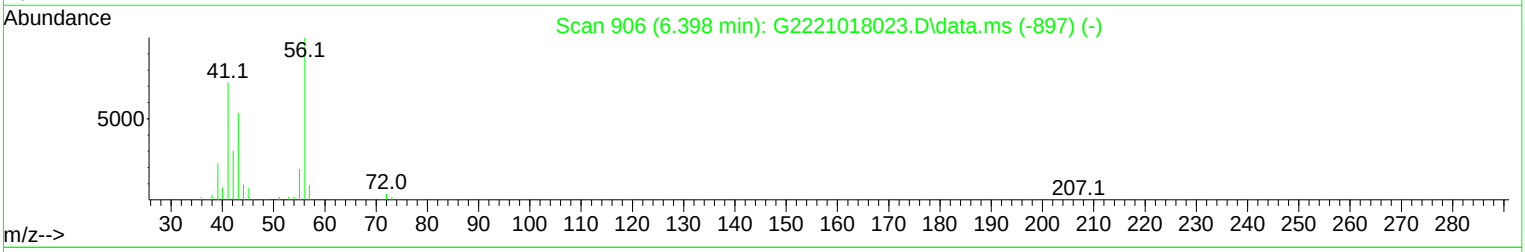
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524007.D
Acq On : 24 May 2023 17:57
Operator : PO1
Sample : SEQ-CAL3@@1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 25 08:49:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:48:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524007.D\data.ms

(51) 1-Butanol (T)

6.740min (-6.740) 0.00 ug/L

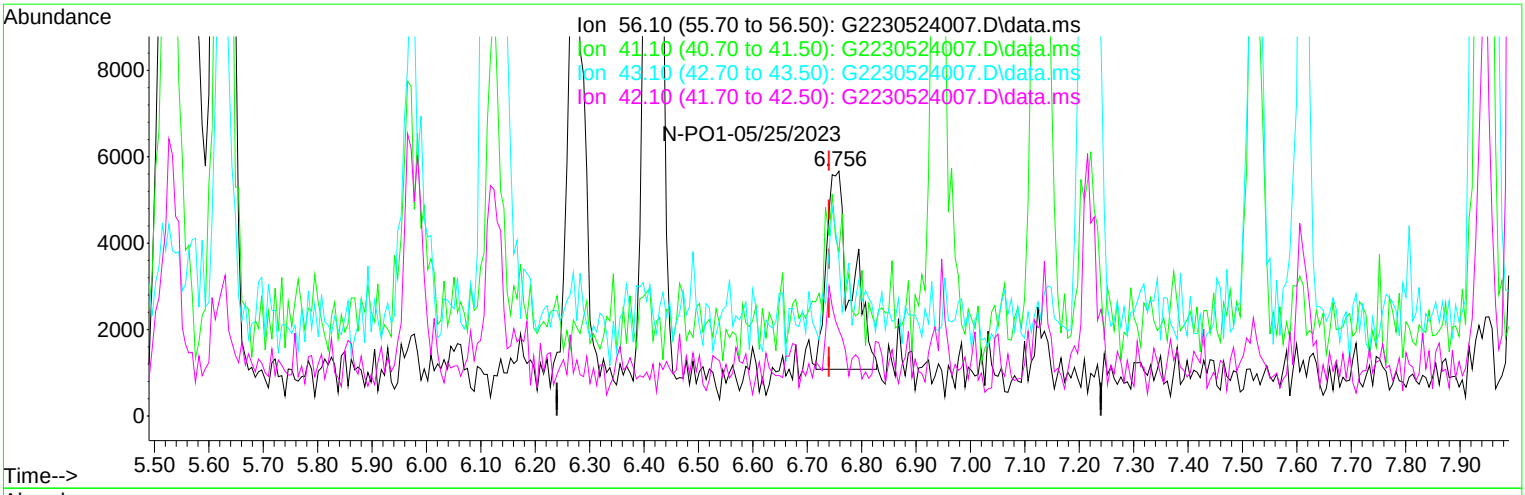
response 0

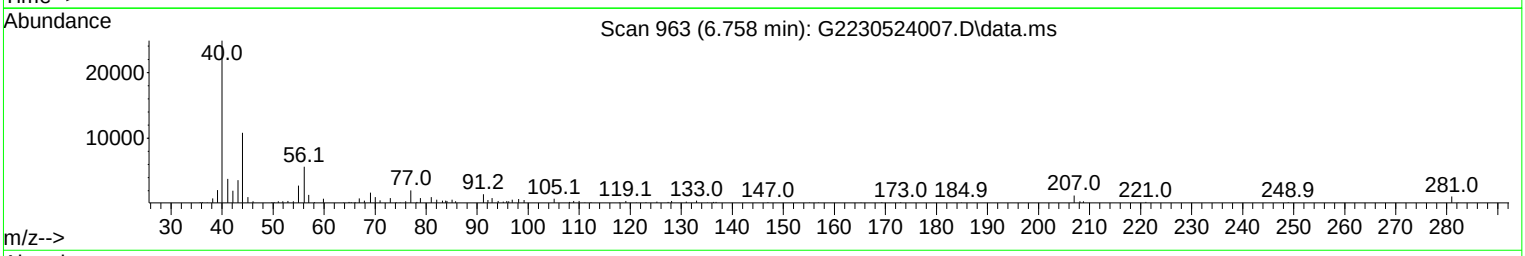
Ion	Exp%	Act%
56.10	100.00	0.00
41.10	69.10	0.00#
43.10	53.20	0.00#
42.10	27.70	0.00

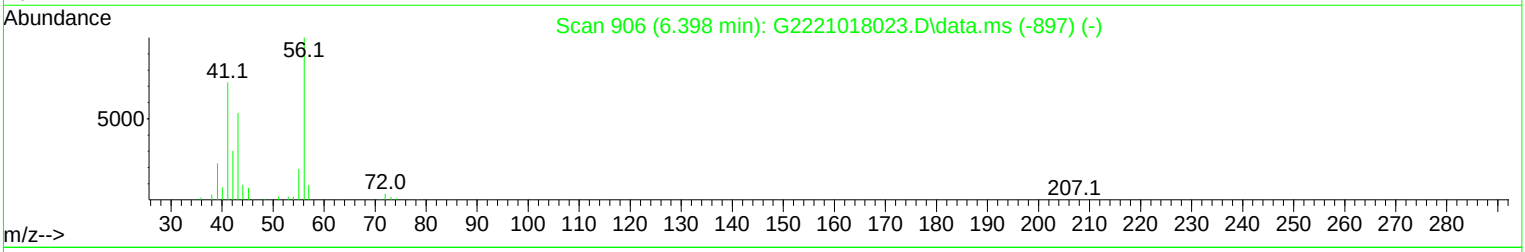
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524007.D
Acq On : 24 May 2023 17:57
Operator : PO1
Sample : SEQ-CAL3@@1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 25 08:49:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:48:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524007.D\data.ms

(51) 1-Butanol (T)

6.758min (+ 0.018) 12.48 ug/L m

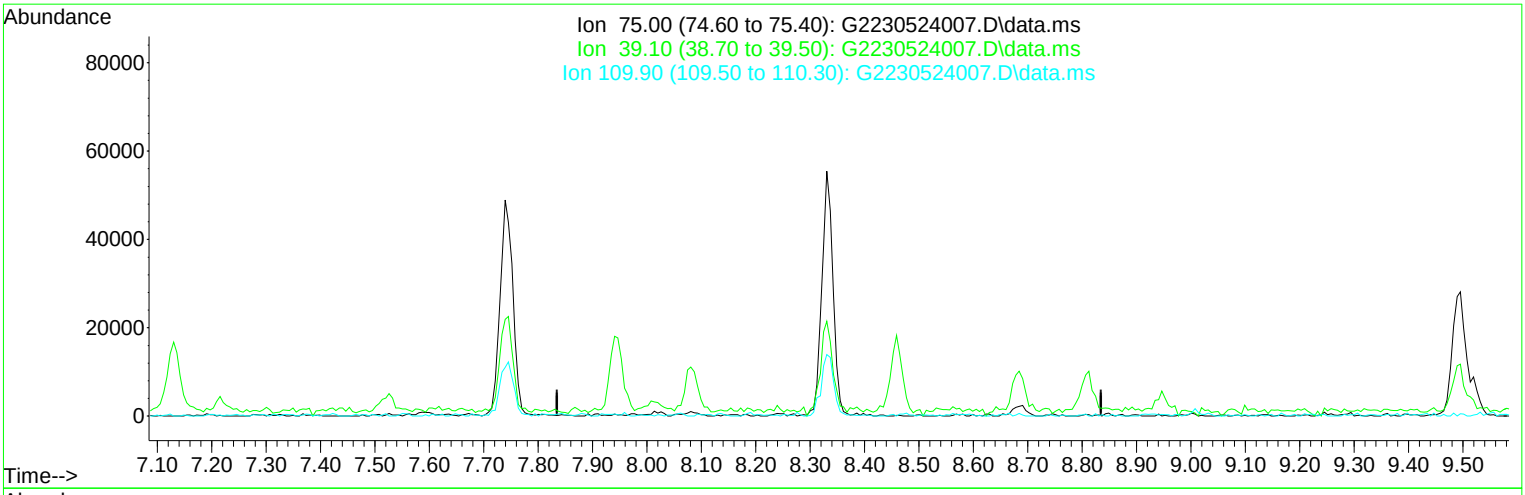
response 140811

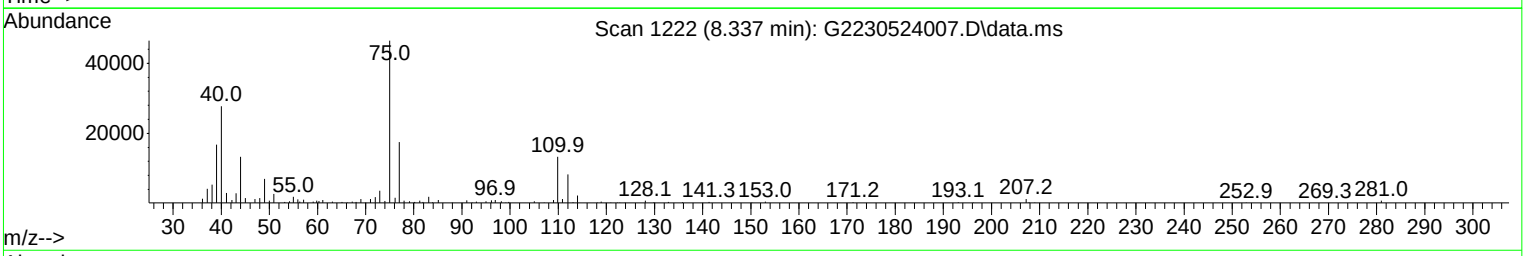
Ion	Exp%	Act%
56.10	100.00	100.00
41.10	69.10	0.00#
43.10	53.20	0.00#
42.10	27.70	0.00

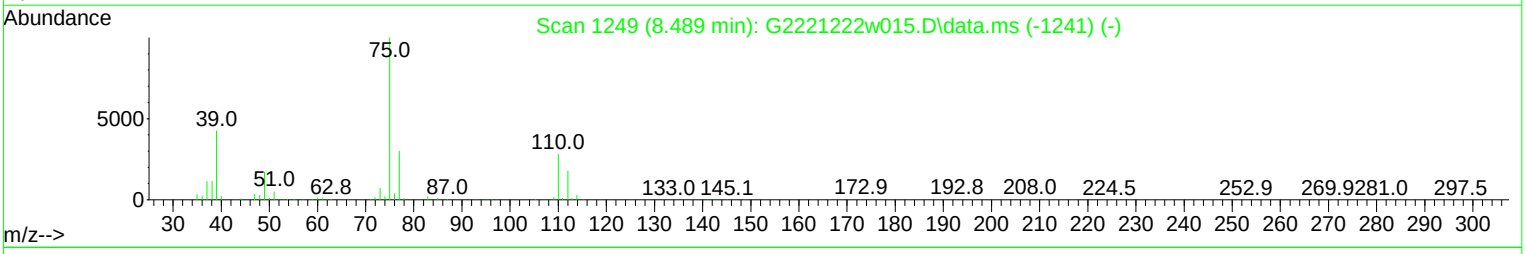
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524007.D
Acq On : 24 May 2023 17:57
Operator : PO1
Sample : SEQ-CAL3@@1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 25 08:49:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:48:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524007.D\data.ms

(61) trans-1,3-Dichloropropene (T)

8.335min (-8.335) 0.00 ug/L

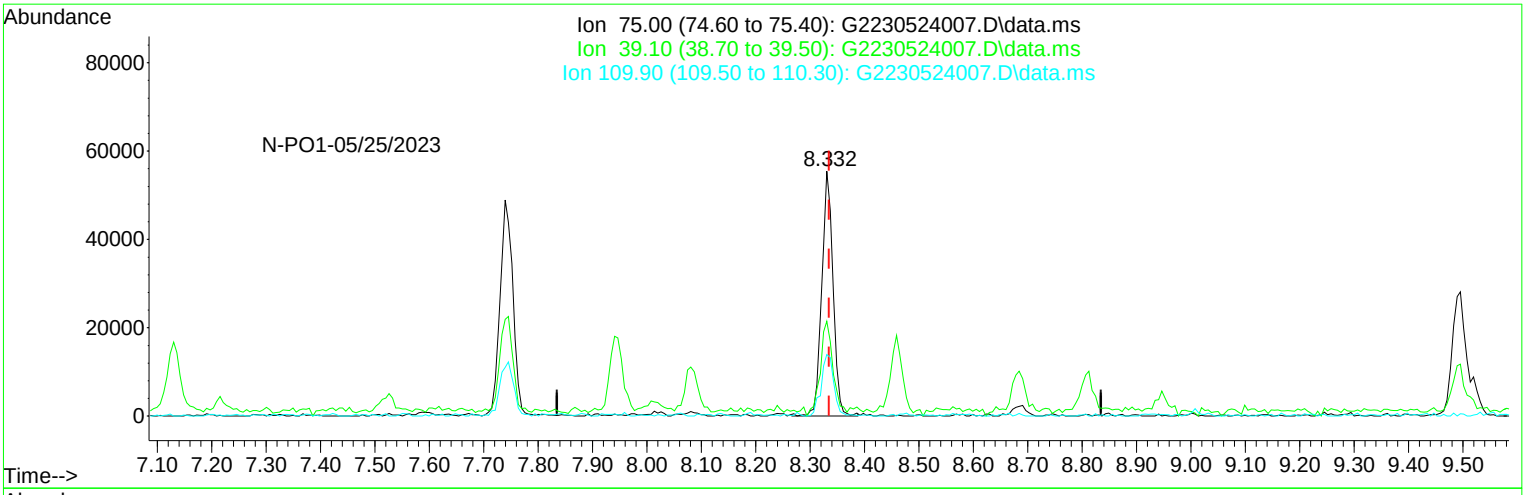
response 0

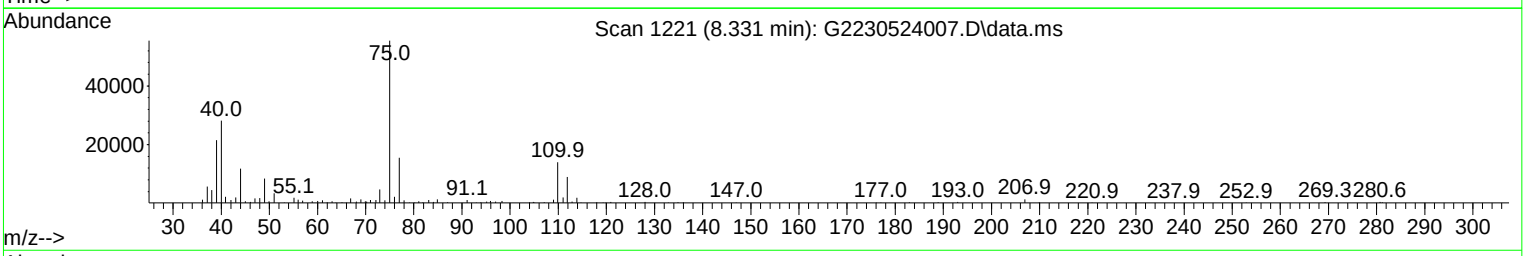
Ion	Exp%	Act%
75.00	100.00	0.00
39.10	45.00	0.00#
109.90	25.10	0.00
0.00	0.00	0.00

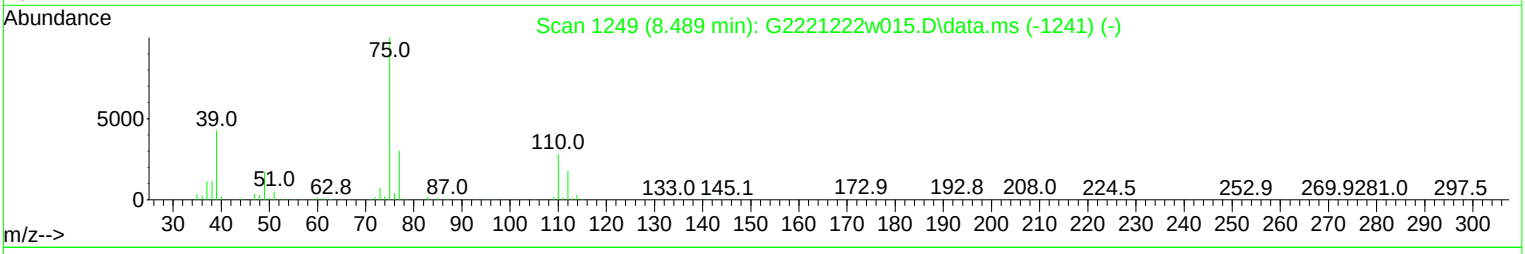
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524007.D
Acq On : 24 May 2023 17:57
Operator : PO1
Sample : SEQ-CAL3@@1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 25 08:49:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:48:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524007.D\data.ms

(61) trans-1,3-Dichloropropene (T)

8.331min (-0.004) 1.12 ug/L m

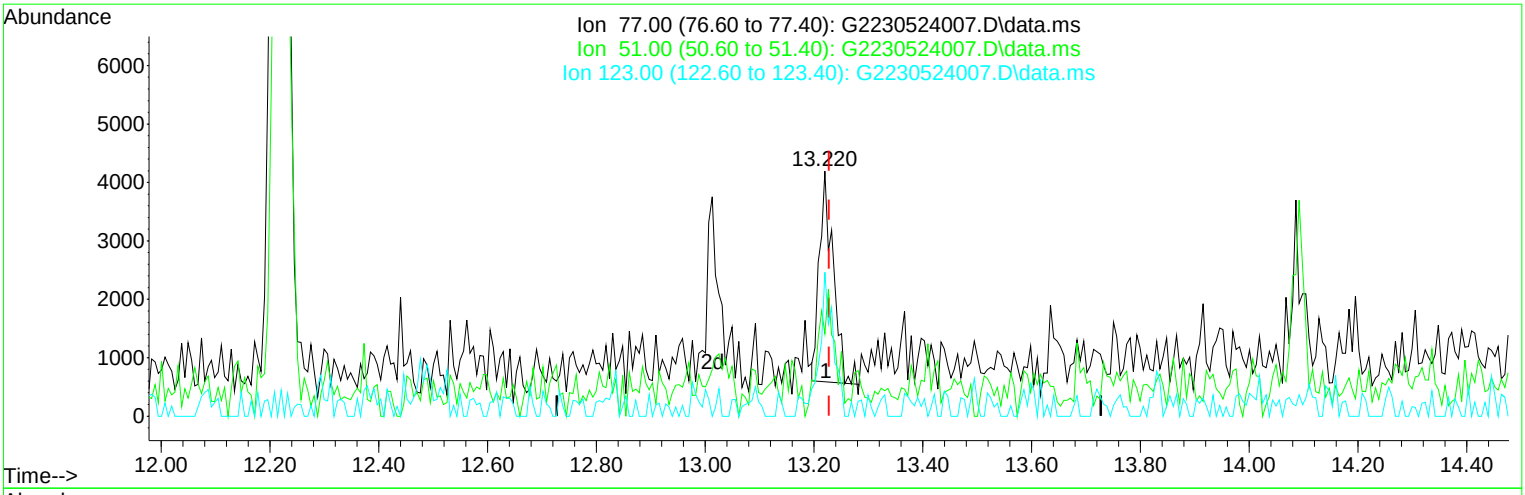
response 803649

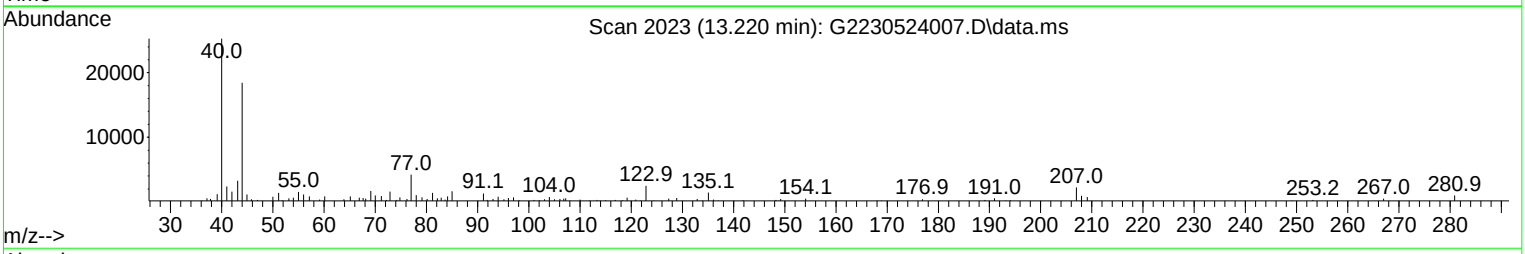
Ion	Exp%	Act%
75.00	100.00	100.00
39.10	45.00	0.00#
109.90	25.10	0.00
0.00	0.00	0.00

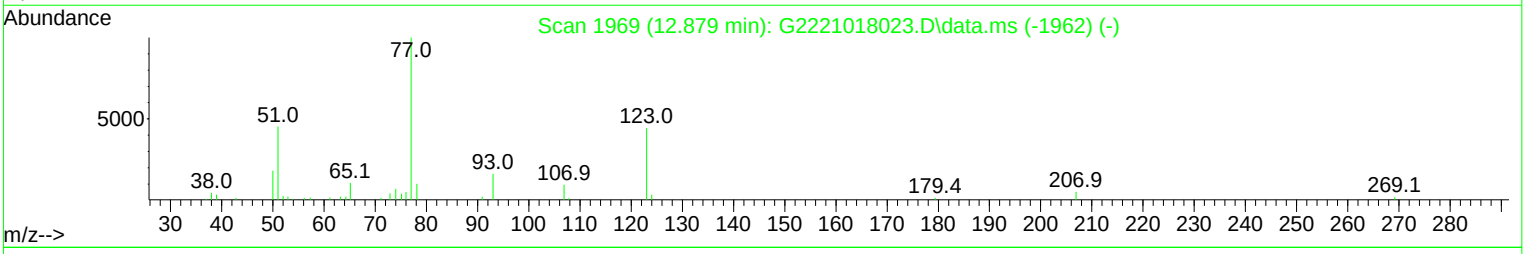
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524007.D
Acq On : 24 May 2023 17:57
Operator : PO1
Sample : SEQ-CAL3@@1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 25 08:49:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:48:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524007.D\data.ms

(102) Nitrobenzene (T)

13.222min (-0.006) 1.49 ug/L

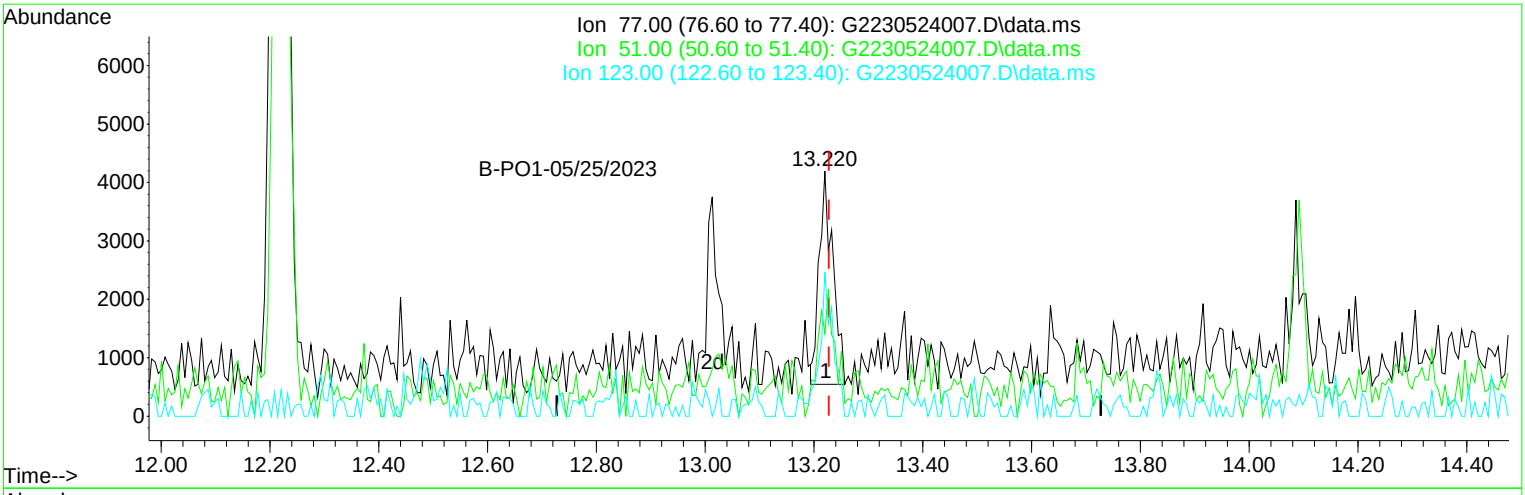
response 64184

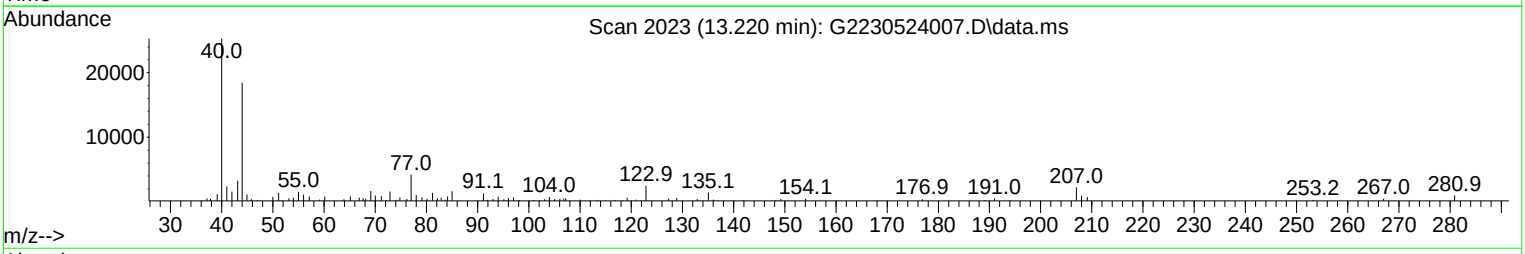
Ion	Exp%	Act%
77.00	100.00	100.00
51.00	43.20	60.78
123.00	45.20	65.96
0.00	0.00	0.00

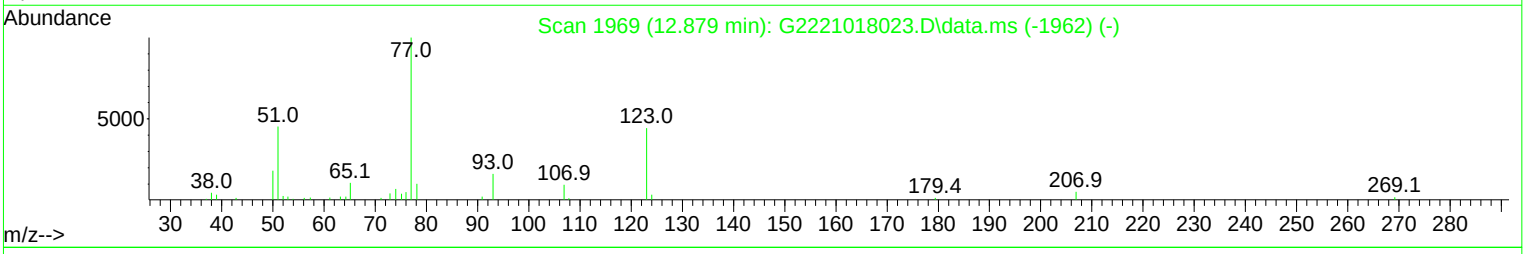
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524007.D
Acq On : 24 May 2023 17:57
Operator : PO1
Sample : SEQ-CAL3@@1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 25 08:49:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:48:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524007.D\data.ms

(102) Nitrobenzene (T)

13.220min (-0.007) 1.50 ug/L m

response 64552

Ion	Exp%	Act%
77.00	100.00	100.00
51.00	43.20	60.43
123.00	45.20	65.58
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524008.D
Acq On : 24 May 2023 18:22
Operator : PO1
Sample : SEQ-CAL4@@2
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 25 08:45:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:44:54 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.572	168	24305885	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.421	114	34313122	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.495	117	30074604	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.842	152	14229900	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.475	111	10724051	19.85	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.25%			
43) 1,2-Dichloroethane-d4	5.878	65	10653795	19.94	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.70%			
49) Fluorobenzene	6.278	96	39141974	19.98	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.90%			
64) Toluene-d8	8.017	98	38128160	20.16	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.80%			
81) 4-Bromofluorobenzene	10.686	174	6492060	9.58	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 95.80%			
97) d4-1,2-Dichlorobenzene	12.219	152	12418527	20.23	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 101.15%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.210	85	992380	2.14	ug/L	100
3) Chloromethane	1.351	50	862338	2.16	ug/L	100
4) Vinyl chloride	1.442	62	951382	2.10	ug/L	93
5) Bromomethane	1.715	94	746681	2.53	ug/L	96
6) Chloroethane	1.803	64	580107	2.11	ug/L	98
7) Trichlorofluoromethane	2.027	101	1459496	2.11	ug/L	98
8) Ethyl ether	2.317	59	722412	2.18	ug/L	92
9) Acrolein	2.440	56	369085	5.60	ug/L	98
10) 1,1-Dichloroethene	2.521	61	1133810	2.14	ug/L	89
11) 1,1,2-Trichloro-1,2,2-...	2.533	101	830135	2.17	ug/L	95
12) Acetone	2.610	43	1015052	8.58	ug/L	92
13) Iodomethane	2.673	142	1048540	1.79	ug/L	95
14) Carbon disulfide	2.736	76	2398697	2.19	ug/L	99
15) Isopropanol	2.793	45	417348	21.87	ug/L	94
16) acetonitrile	2.916	41	1275138	5.48	ug/L	87
17) 3-Chloro-1-propene	2.918	76	551982	2.25	ug/L	94
18) Methylene chloride	3.059	49	1659072	3.52	ug/L	86
19) Acrylonitrile	3.385	53	406878	2.23	ug/L	92
20) trans-1,2-Dichloroethene	3.400	61	1076489	2.13	ug/L	89
21) Methyl tert-butyl ether	3.444	73	4213150	2.82	ug/L	95
22) Hexane	3.787	57	909607	2.22	ug/L	93
23) 1,1-Dichloroethane	3.998	63	1467278	2.11	ug/L	94
24) Vinyl acetate	4.127	43	1669338	2.09	ug/L	92
25) 2-Chloro-1,3-butadiene	4.132	53	1169027	2.18	ug/L	90
27) 2,2-Dichloropropane	4.825	77	1392811	2.20	ug/L	95
28) cis-1,2-Dichloroethene	4.834	61	1347861	2.16	ug/L	91
29) 2-Butanone	4.922	72	480287	7.67	ug/L	95
30) Propionitrile	4.978	54	141576m	2.35	ug/L	

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524008.D
Acq On : 24 May 2023 18:22
Operator : PO1
Sample : SEQ-CAL4@@2
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 25 08:45:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:44:54 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
31) Ethyl acetate	5.032	61	173243	2.30	ug/L		84
32) Methylacrylate	5.044	55	979286	2.16	ug/L		94
33) 1-Bromopropane	5.077	41	582398	2.29	ug/L		79
34) Bromochloromethane	5.148	130	749980	2.16	ug/L		97
35) Methacrylonitrile	5.176	67	540091	2.37	ug/L		92
36) Tetrahydrofuran	5.271	42	306278	2.31	ug/L		85
37) Chloroform	5.274	83	1635753	2.09	ug/L		95
39) 1,1,1-Trichloroethane	5.478	97	1539342	2.17	ug/L		96
40) Cyclohexane	5.533	84	1380336m	2.09	ug/L		
41) 1-Chlorobutane	5.629	56	1594511	2.14	ug/L		98
42) 1,1-Dichloropropene	5.687	75	1245109	2.21	ug/L		95
44) 1,2-Dichloroethane	5.970	62	1273450	2.19	ug/L		99
45) Isobutanol	5.972	43	339690	21.85	ug/L		88
47) Carbon tetrachloride	5.678	117	1290182	2.10	ug/L		98
48) Benzene	5.935	78	3573691	2.15	ug/L		100
50) Trichloroethene	6.693	95	999920	2.16	ug/L		91
51) 1-Butanol	6.746	56	275416m	25.76	ug/L		
52) 1,2-Dichloropropane	6.945	63	857665	2.16	ug/L		93
53) Dibromomethane	7.071	174	851486	2.13	ug/L	#	93
54) Methyl methacrylate	7.133	69	895773	2.33	ug/L		92
55) 1,4-dioxane	7.142	88	89027m	22.59	ug/L		
56) Bromodichloromethane	7.258	83	1409501	2.30	ug/L		95
57) 2-Nitropropane	7.525	43	407291	2.30	ug/L		95
58) 2-Chloroethyl vinyl ether	7.613	63	654447	2.10	ug/L		93
59) cis-1,3-Dichloropropene	7.745	75	1572680	2.13	ug/L		95
60) 4-Methyl-2-pentanone	7.946	43	3681810	7.72	ug/L	#	86
61) trans-1,3-Dichloropropene	8.334	75	1516390	2.18	ug/L		97
62) 1,1,2-Trichloroethane	8.519	97	916441	2.10	ug/L		95
65) Toluene	8.086	91	4072264	2.19	ug/L		97
66) Ethylmethacrylate	8.461	69	1539150	2.30	ug/L		90
67) Tetrachloroethene	8.647	166	1247521	1.82	ug/L		96
68) 1,3-Dichloropropane	8.687	76	1519847	2.13	ug/L		93
69) 2-Hexanone	8.810	43	2420970	7.89	ug/L		93
70) Dibromochloromethane	8.912	129	1210009	2.16	ug/L		99
71) 1,2-Dibromoethane	9.018	107	1069308	2.21	ug/L		98
72) Chlorobenzene	9.524	112	2748523	2.17	ug/L		96
73) 1,1,1,2-Tetrachloroethane	9.614	131	1093563	2.19	ug/L		98
74) Ethylbenzene	9.643	91	4416229	2.17	ug/L		95
75) m,p-Xylene	9.763	91	6893948	4.47	ug/L		96
76) Styrene	10.176	104	2986207	2.20	ug/L		94
77) Bromoform	10.354	173	975672	2.16	ug/L		97
79) o-Xylene	10.161	91	3548137	2.08	ug/L		95
80) Isopropylbenzene	10.536	105	4135119	2.08	ug/L		98
82) Bromobenzene	10.828	77	1587218	2.13	ug/L		92
83) 1,1,2,2-Tetrachloroethane	10.843	83	1254106	2.10	ug/L		98
84) 1,2,3-Trichloropropane	10.882	110	486823	2.29	ug/L		98
85) trans-1,4-Dichloro-2-b...	10.903	53	352226	2.24	ug/L		78
86) n-Propylbenzene	10.949	91	4671226	2.12	ug/L		97
87) 2-Chlorotoluene	11.028	91	2863182	2.15	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524008.D
Acq On : 24 May 2023 18:22
Operator : PO1
Sample : SEQ-CAL4@@2
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 25 08:45:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:44:54 2023
Response via : Initial Calibration
InstName : G

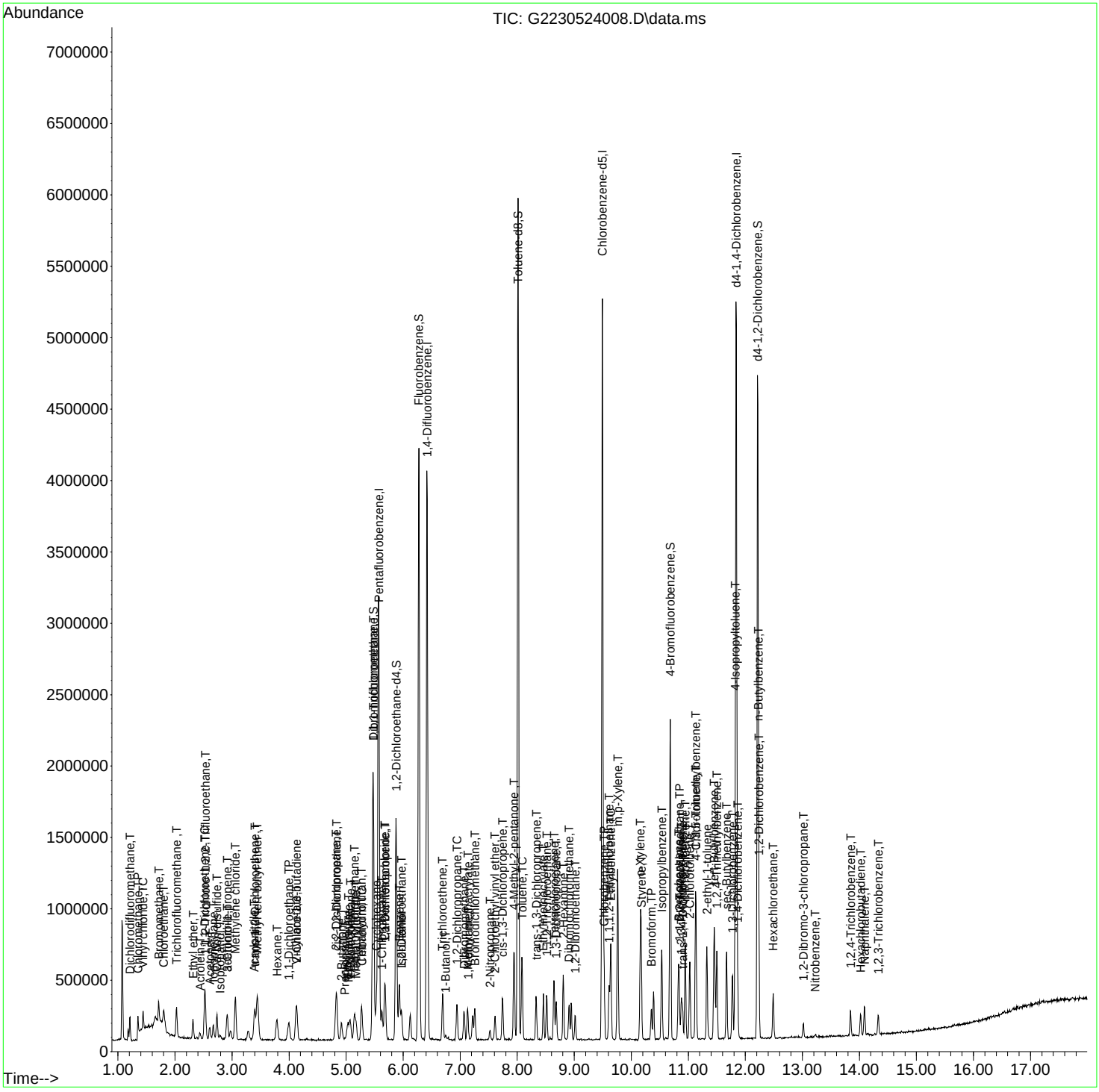
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
88) 4-Chlorotoluene	11.137	91	3206158	2.11 ug/L	96
89) 1,3,5-Trimethylbenzene	11.129	105	3310264	2.16 ug/L	97
90) 2-ethyl-1-toluene	11.328	105	3922678	2.10 ug/L	98
91) tert-Butylbenzene	11.455	119	3541478	2.21 ug/L	92
92) 1,2,4-Trimethylbenzene	11.502	105	3274122	2.15 ug/L	95
93) sec-Butylbenzene	11.673	105	4053154	2.15 ug/L	98
94) 1,3-Dichlorobenzene	11.775	146	1939721	2.12 ug/L	97
95) 4-Isopropyltoluene	11.823	119	3296435	2.10 ug/L	96
96) 1,4-Dichlorobenzene	11.866	146	1925879	2.17 ug/L	95
98) 1,2-Dichlorobenzene	12.237	146	1785535	2.16 ug/L	94
99) n-Butylbenzene	12.232	91	2595775	2.22 ug/L	95
100) Hexachloroethane	12.492	201	608380	2.09 ug/L	97
101) 1,2-Dibromo-3-chloropr...	13.019	157	299146	2.34 ug/L	94
102) Nitrobenzene	13.226	77	118551m	3.04 ug/L	
103) 1,2,4-Trichlorobenzene	13.847	180	552146	2.24 ug/L	96
104) Hexachlorobutadiene	14.025	225	299828	2.34 ug/L	98
105) Naphthalene	14.091	128	1609227	2.37 ug/L	99
106) 1,2,3-Trichlorobenzene	14.335	180	456991	2.34 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524008.D
Acq On : 24 May 2023 18:22
Operator : PO1
Sample : SEQ-CAL4@@2
Misc :
ALS Vial : 8 Sample Multiplier: 1

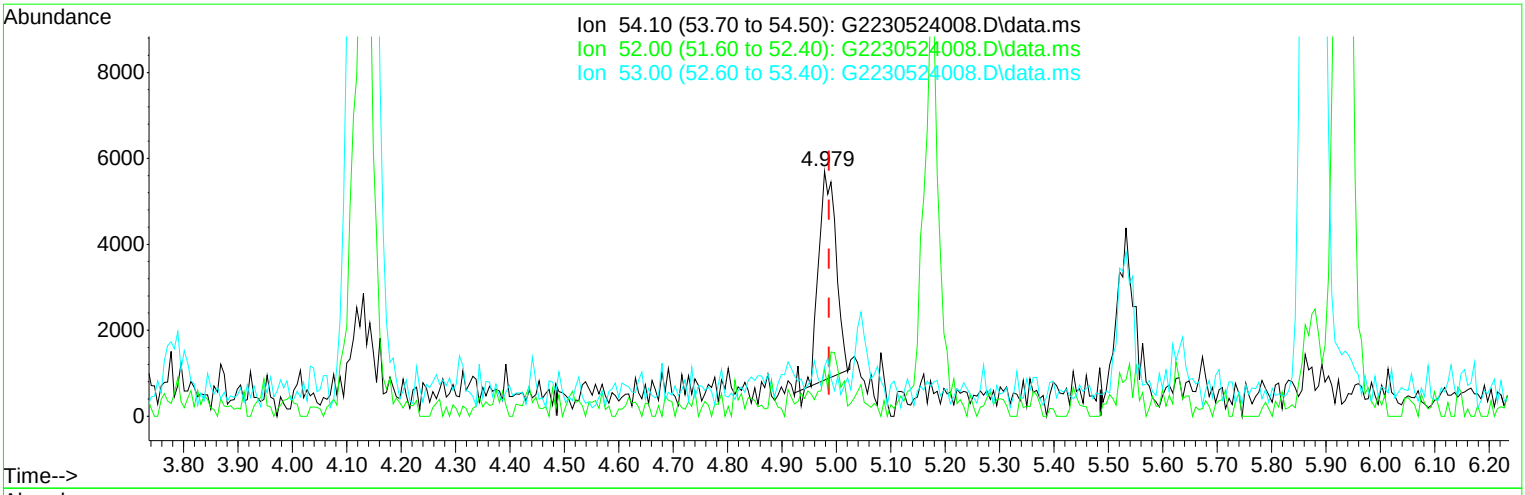
Quant Time: May 25 08:45:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:44:54 2023
Response via : Initial Calibration
InstName : G

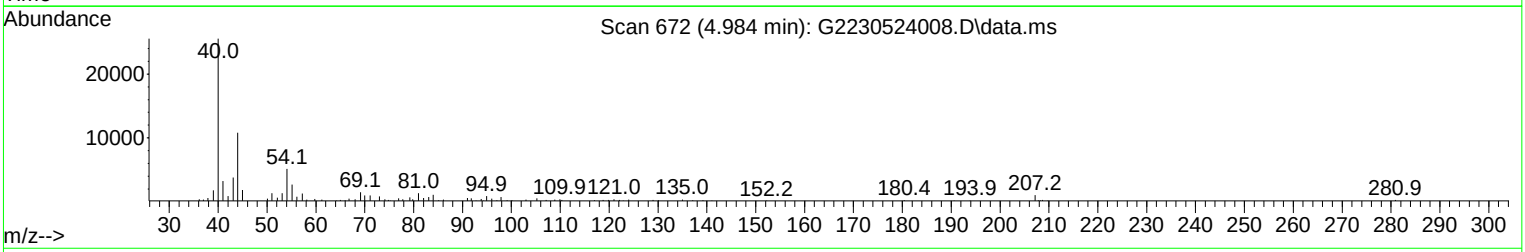


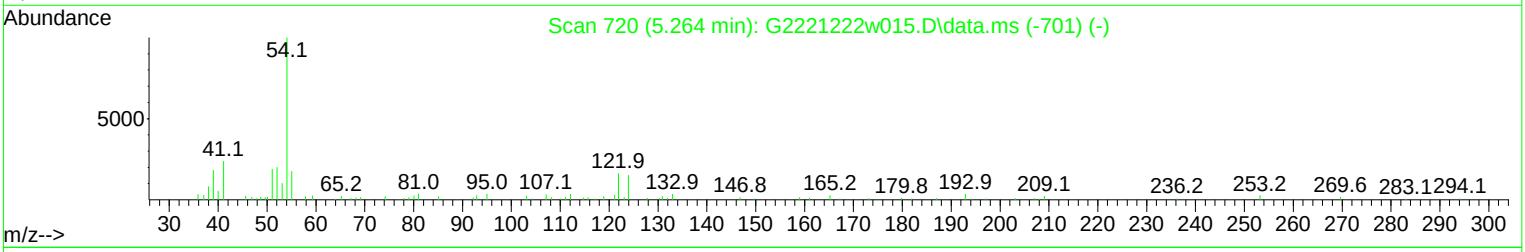
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524008.D
Acq On : 24 May 2023 18:22
Operator : PO1
Sample : SEQ-CAL4@@2
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 25 08:45:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:44:54 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524008.D\data.ms

(30) Propionitrile (T)

4.982min (-0.004) 1.77 ug/L

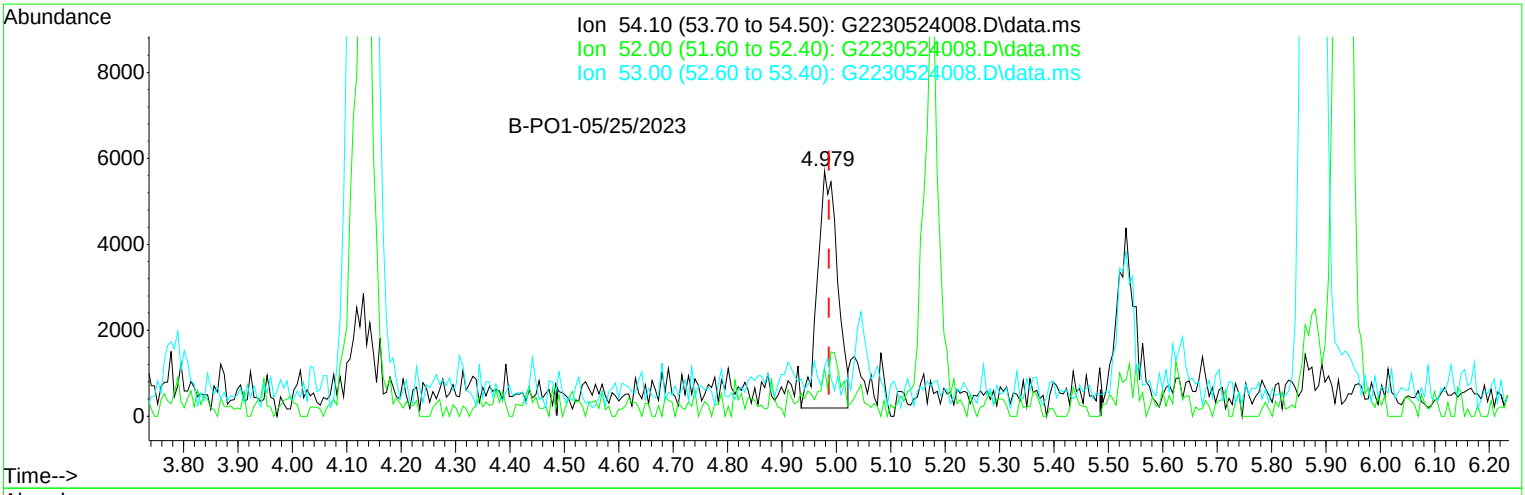
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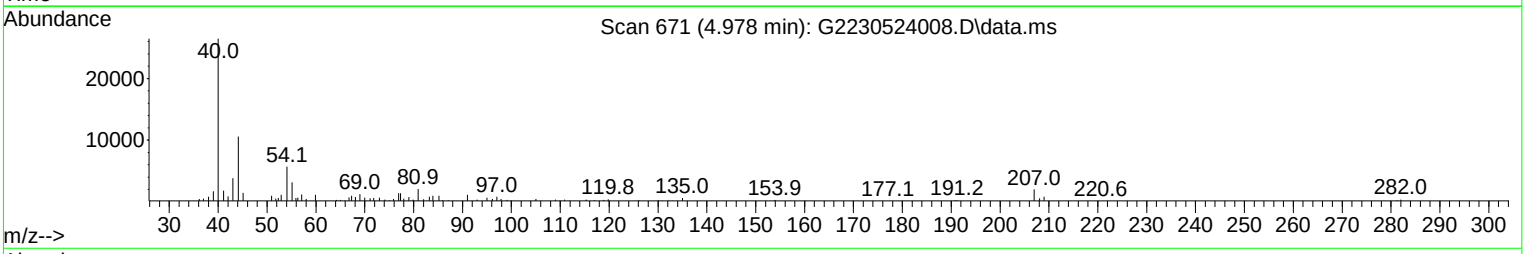
Ion	Exp%	Act%
54.10	100.00	100.00
52.00	18.10	0.00
53.00	12.00	0.00
0.00	0.00	0.00

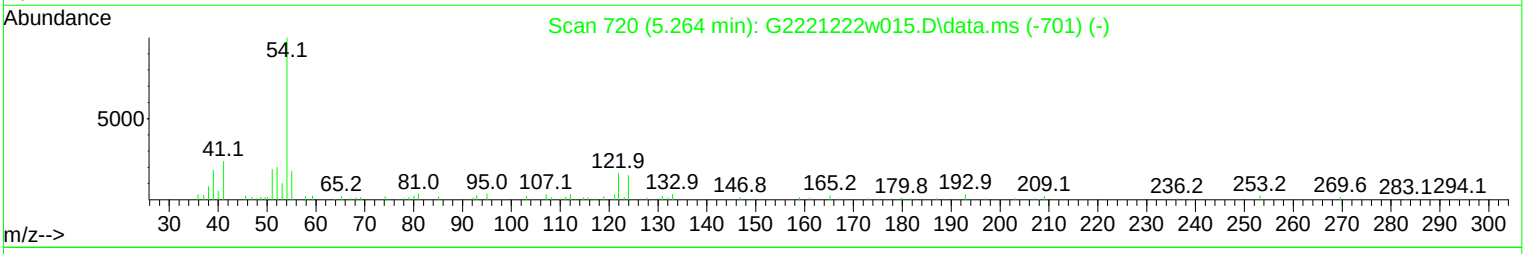
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524008.D
Acq On : 24 May 2023 18:22
Operator : PO1
Sample : SEQ-CAL4@@2
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 25 08:45:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:44:54 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524008.D\data.ms

(30) Propionitrile (T)

4.978min (-0.009) 2.35 ug/L m

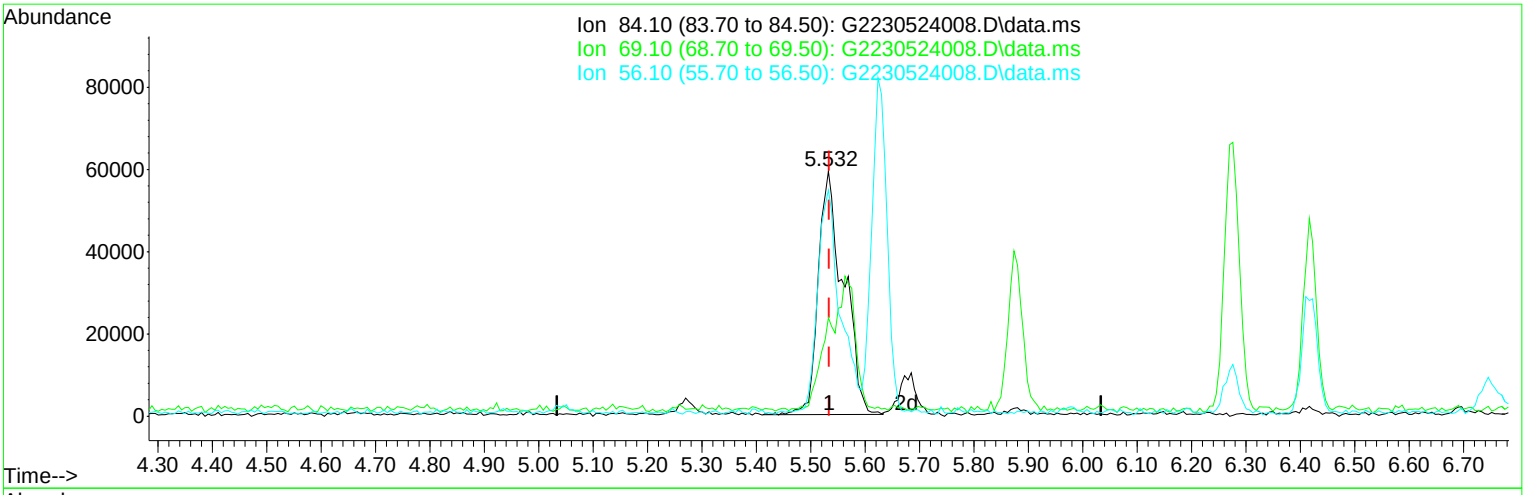
response 141576

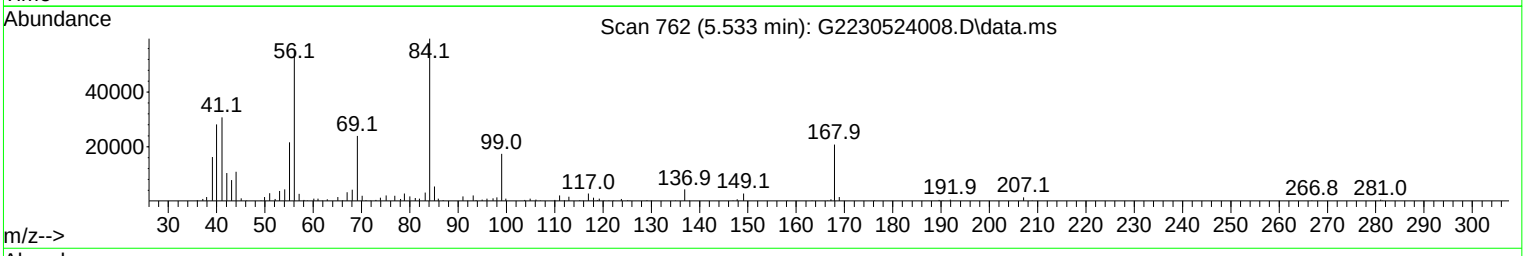
Ion	Exp%	Act%
54.10	100.00	100.00
52.00	18.10	0.00
53.00	12.00	0.00
0.00	0.00	0.00

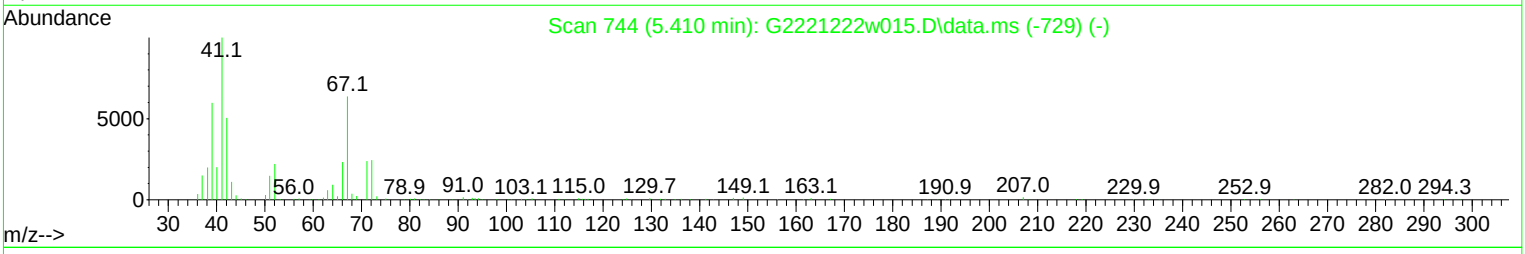
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524008.D
Acq On : 24 May 2023 18:22
Operator : PO1
Sample : SEQ-CAL4@@2
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 25 08:45:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:44:54 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524008.D\data.ms

(40) Cyclohexane

5.535min (+ 0.001) 2.90 ug/L

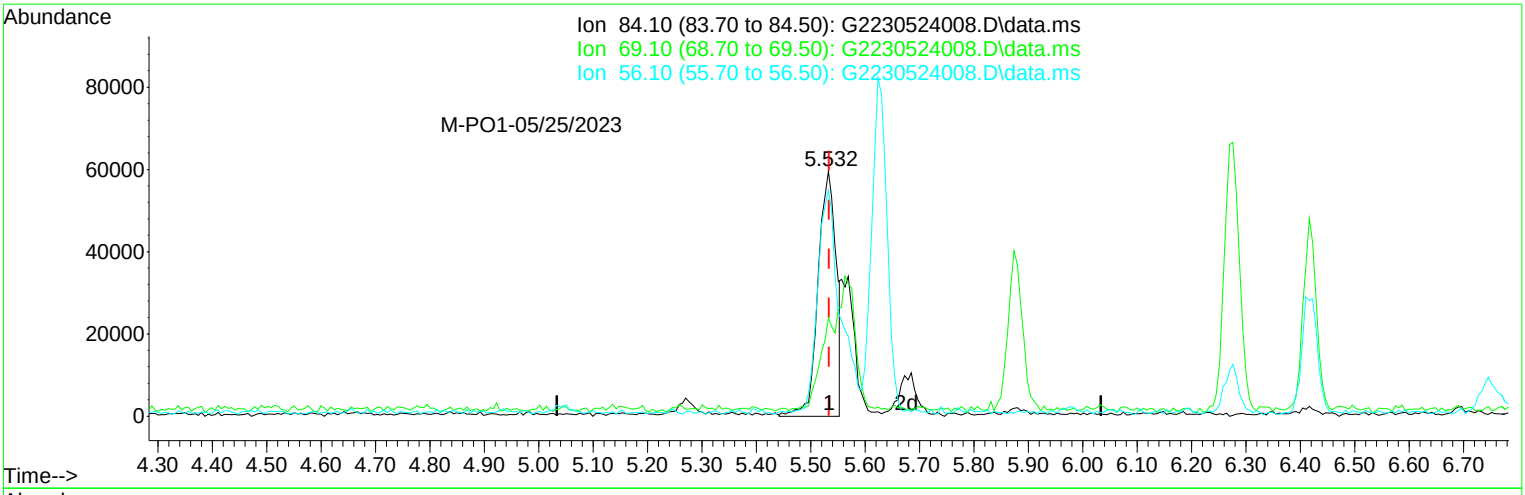
response 1913053

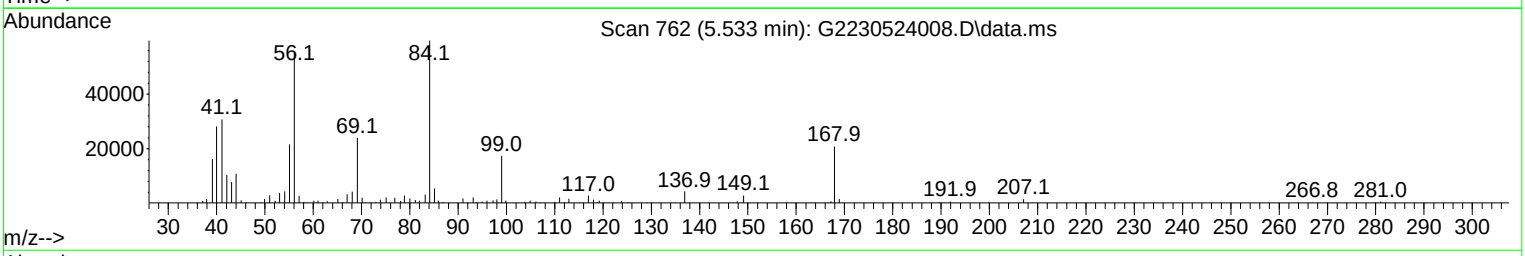
Ion	Exp%	Act%
84.10	100.00	100.00
69.10	36.80	19.82
56.10	109.10	81.65
0.00	0.00	0.00

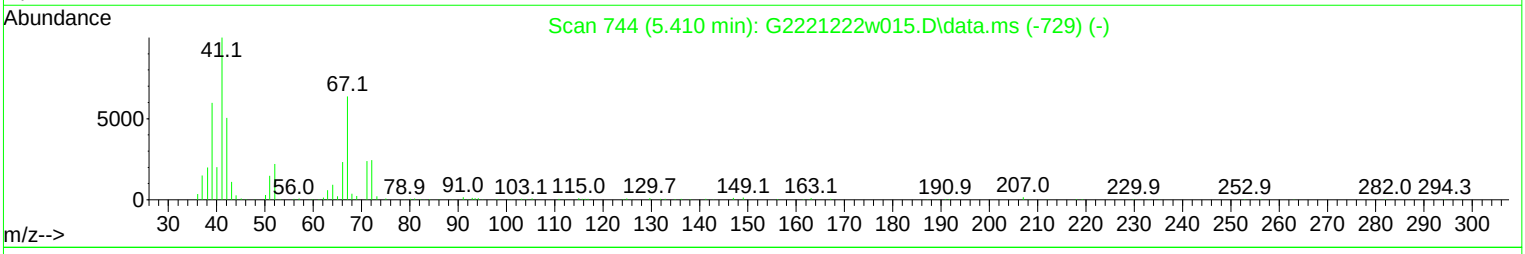
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524008.D
Acq On : 24 May 2023 18:22
Operator : PO1
Sample : SEQ-CAL4@@2
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 25 08:45:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:44:54 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524008.D\data.ms

(40) Cyclohexane

5.533min (-0.001) 2.09 ug/L m

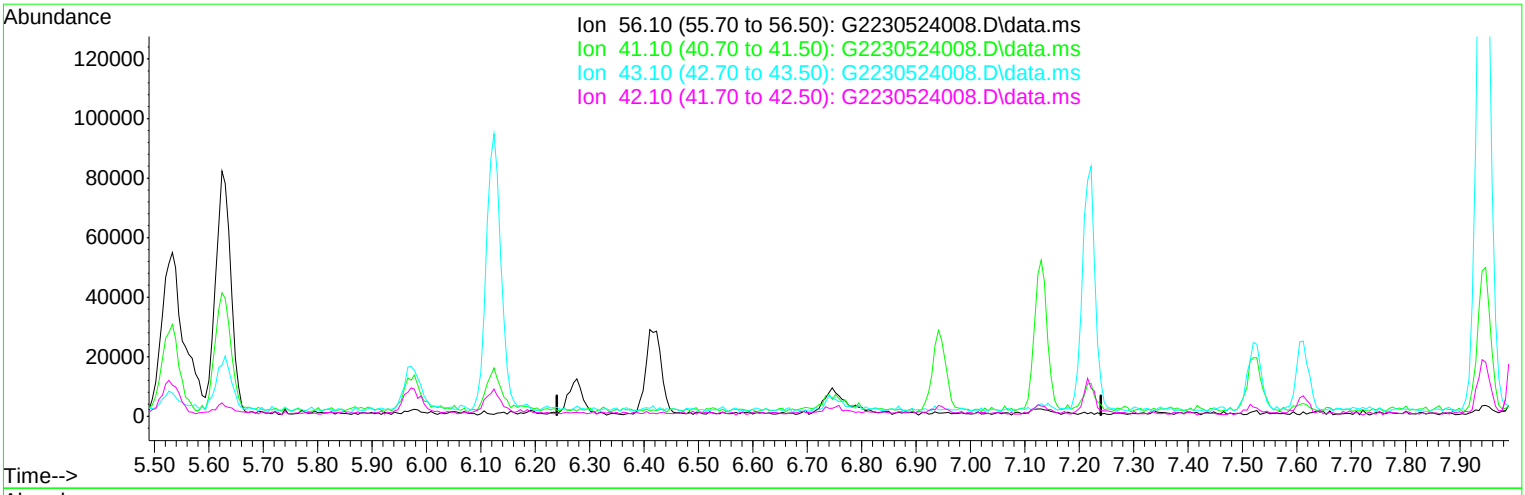
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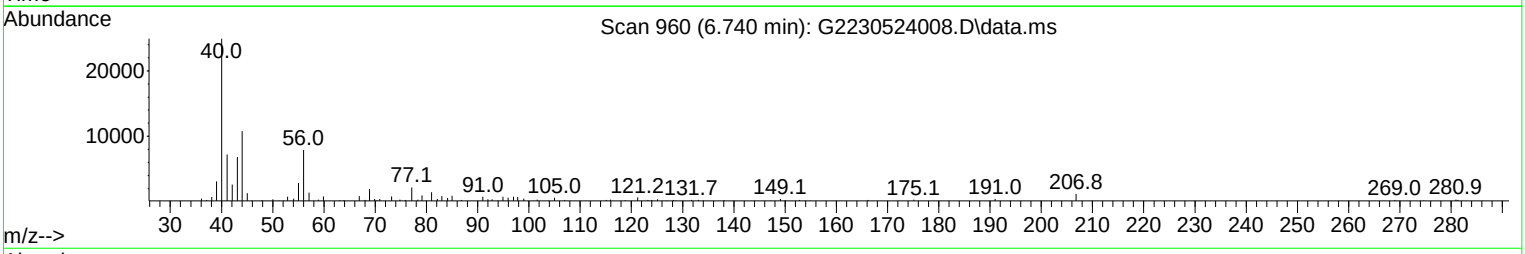
Ion	Exp%	Act%
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69.10	36.80	27.47
56.10	109.10	113.16
0.00	0.00	0.00

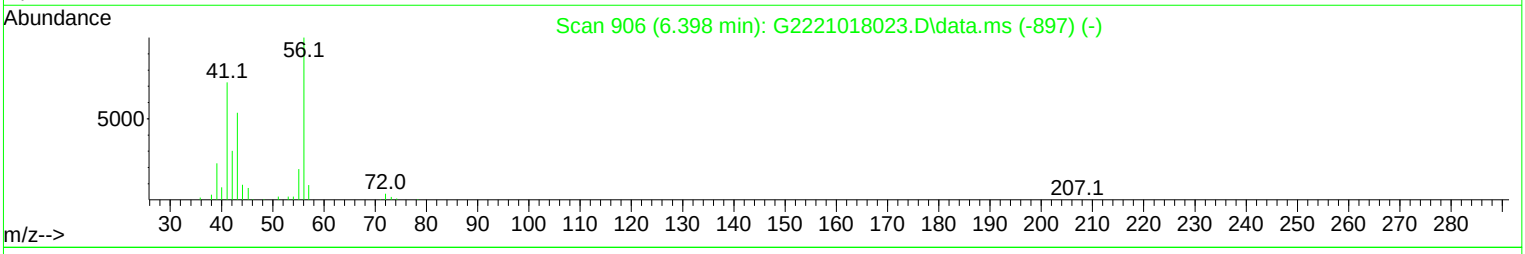
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524008.D
Acq On : 24 May 2023 18:22
Operator : PO1
Sample : SEQ-CAL4@@2
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 25 08:45:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
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Response via : Initial Calibration
InstName : G







TIC: G2230524008.D\data.ms

(51) 1-Butanol (T)

6.740min (-6.740) 0.00 ug/L

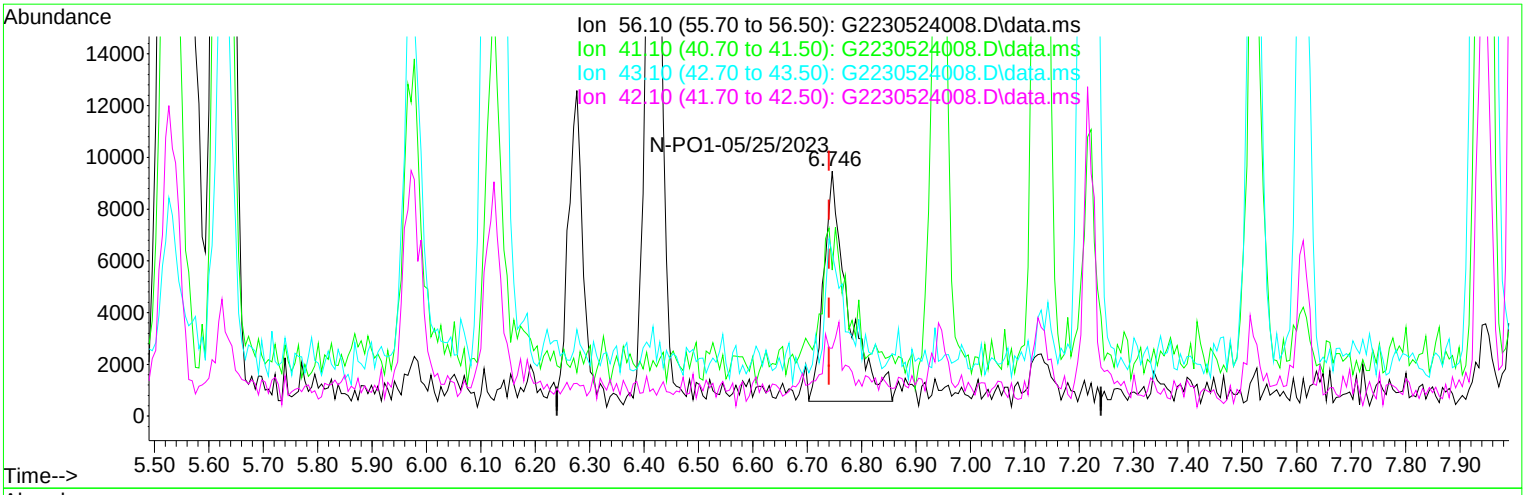
response 0

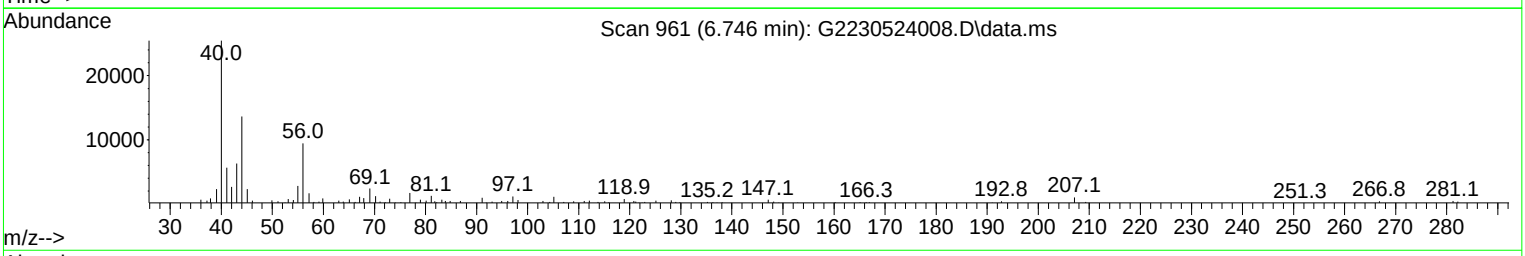
Ion	Exp%	Act%
56.10	100.00	0.00
41.10	69.10	0.00#
43.10	53.20	0.00#
42.10	27.70	0.00

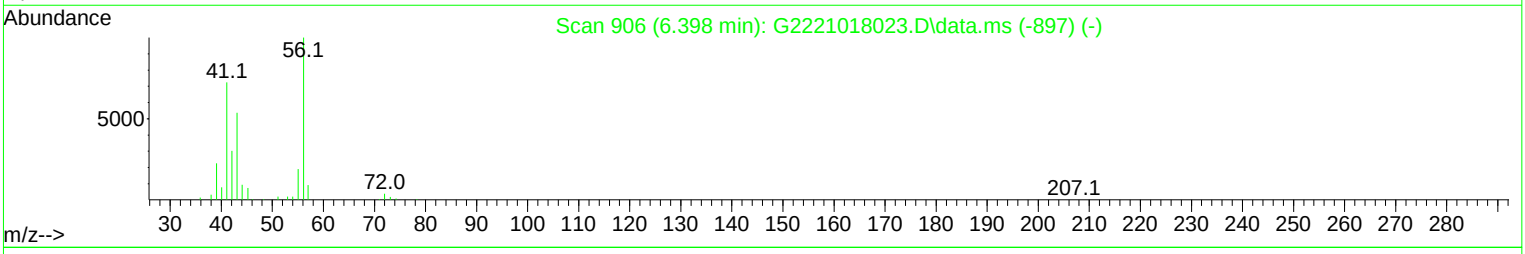
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524008.D
Acq On : 24 May 2023 18:22
Operator : PO1
Sample : SEQ-CAL4@@2
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 25 08:45:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:44:54 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524008.D\data.ms

(51) 1-Butanol (T)

6.746min (+ 0.006) 25.76 ug/L m

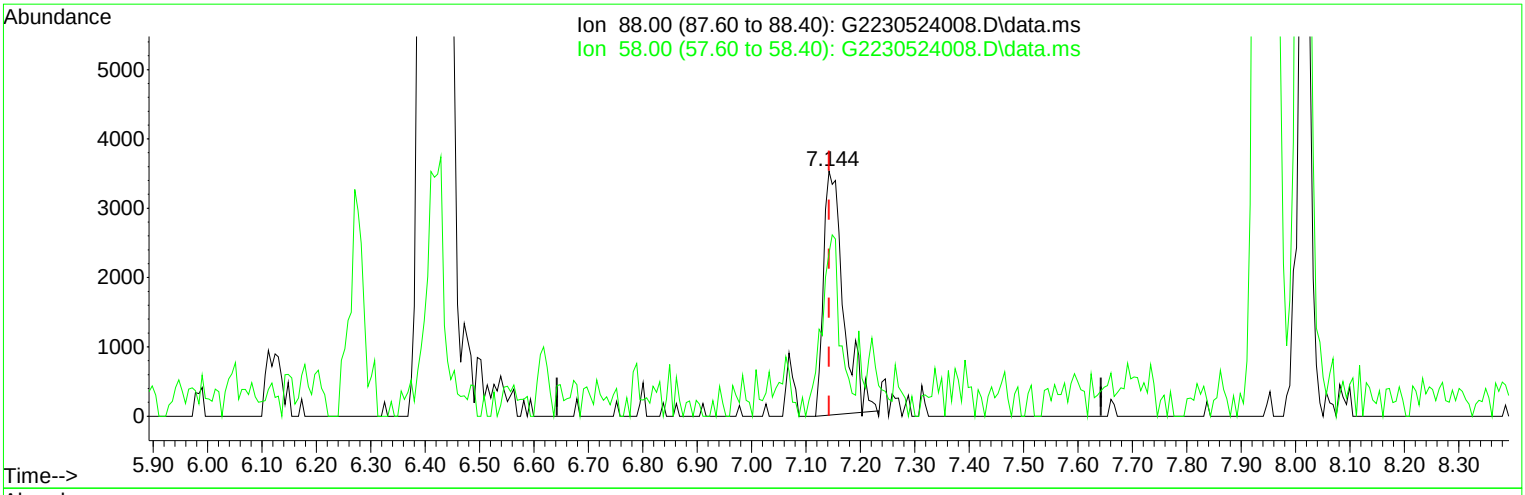
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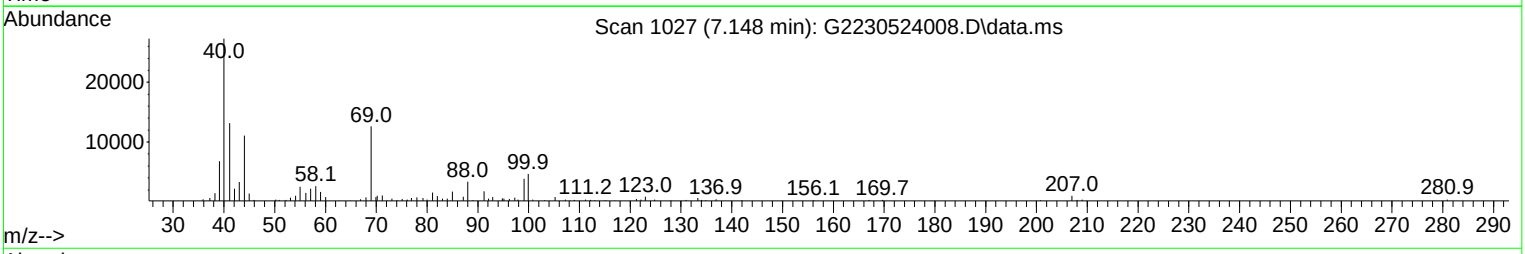
Ion	Exp%	Act%
56.10	100.00	100.00
41.10	69.10	0.00#
43.10	53.20	0.00#
42.10	27.70	0.00

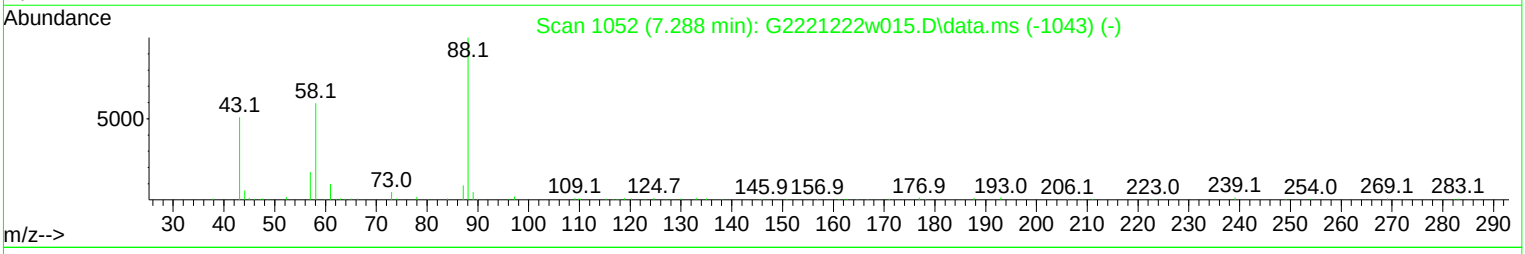
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524008.D
Acq On : 24 May 2023 18:22
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InstName : G







TIC: G2230524008.D\data.ms

(55) 1,4-dioxane (T)

7.148min (+ 0.006) 22.77 ug/L

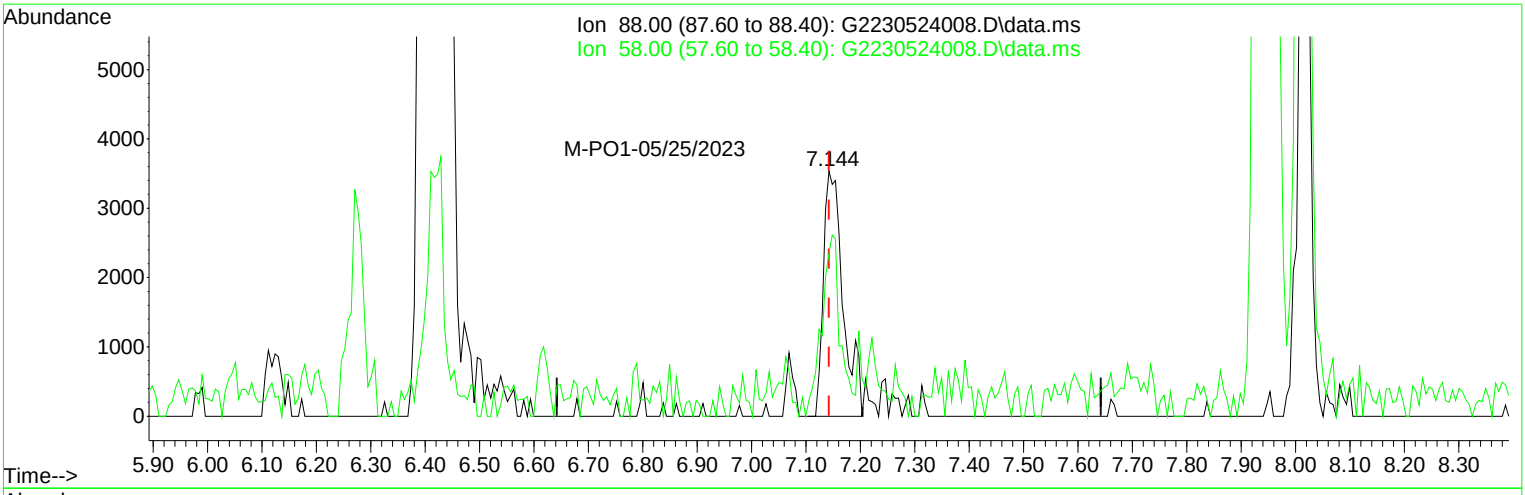
response 89730

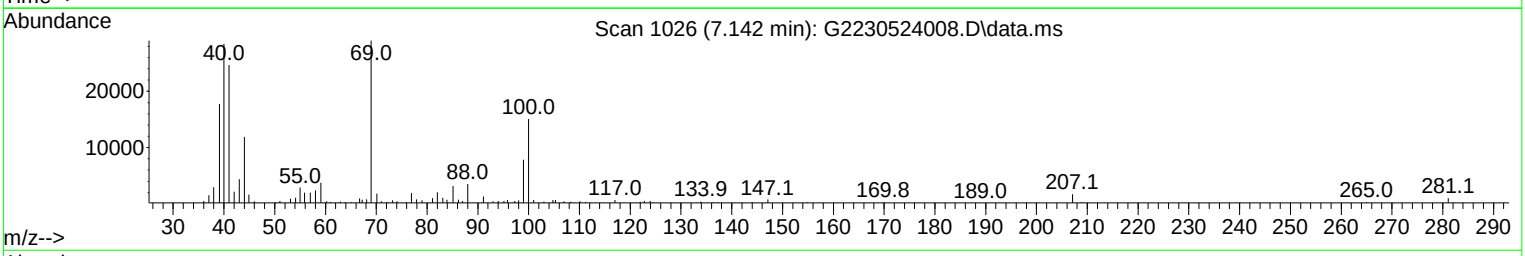
Ion	Exp%	Act%
88.00	100.00	100.00
58.00	56.10	59.91
0.00	0.00	0.00
0.00	0.00	0.00

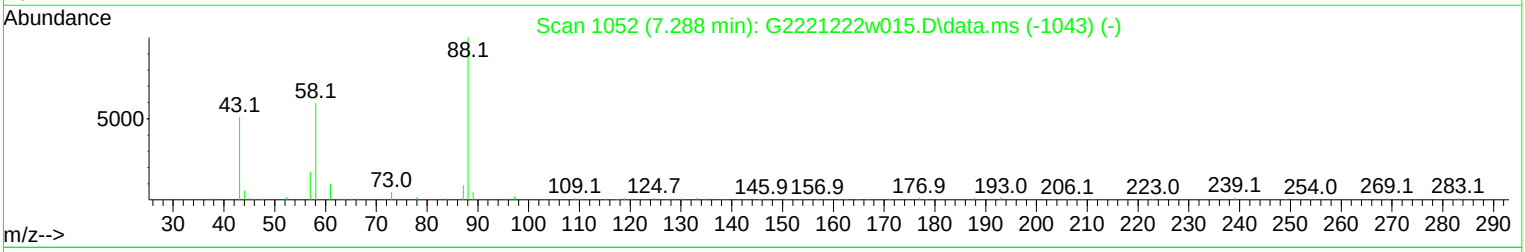
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524008.D
Acq On : 24 May 2023 18:22
Operator : PO1
Sample : SEQ-CAL4@@2
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 25 08:45:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:44:54 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524008.D\data.ms

(55) 1,4-dioxane (T)

7.142min (-0.000) 22.59 ug/L m

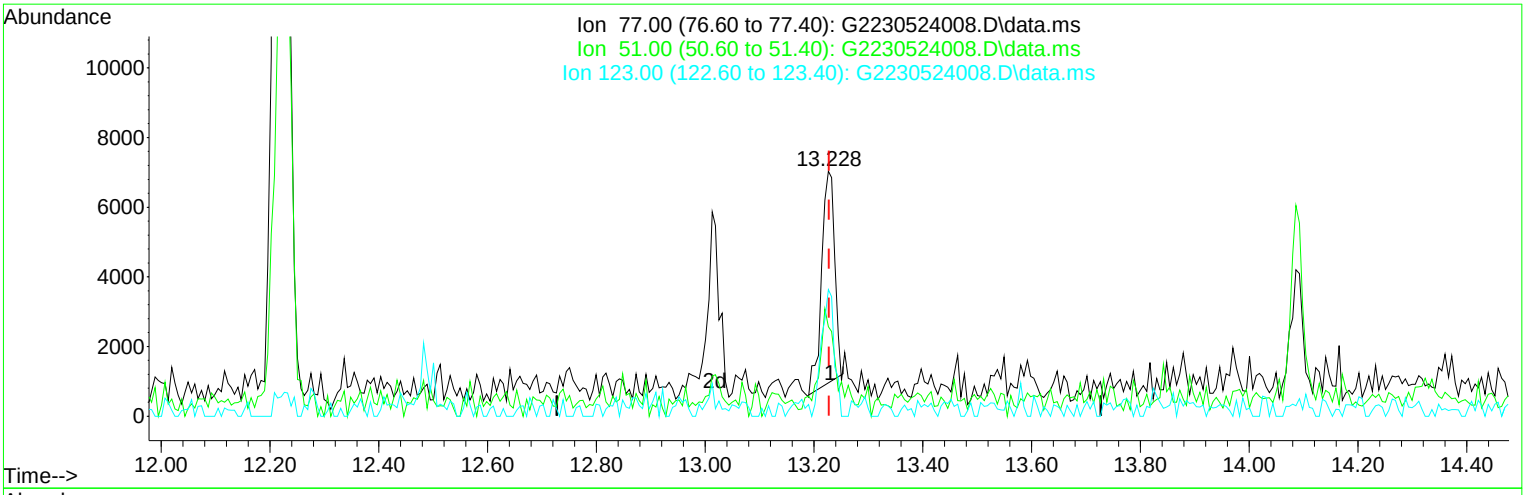
response 89027

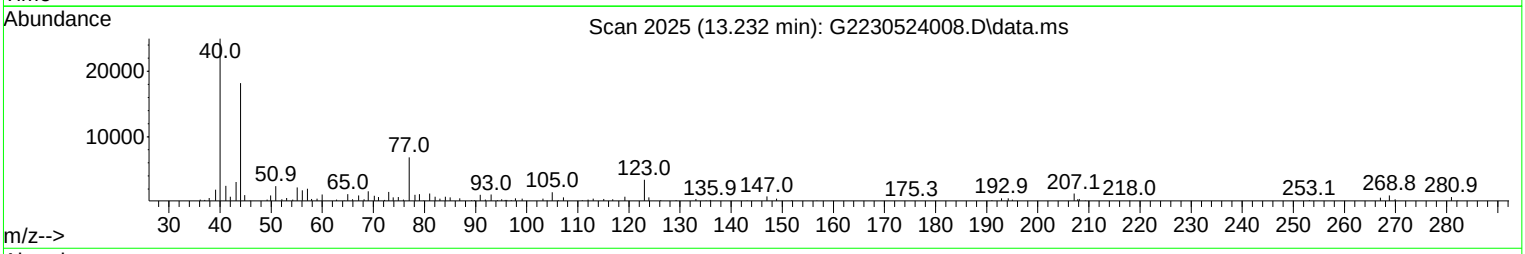
Ion	Exp%	Act%
88.00	100.00	100.00
58.00	56.10	60.38
0.00	0.00	0.00
0.00	0.00	0.00

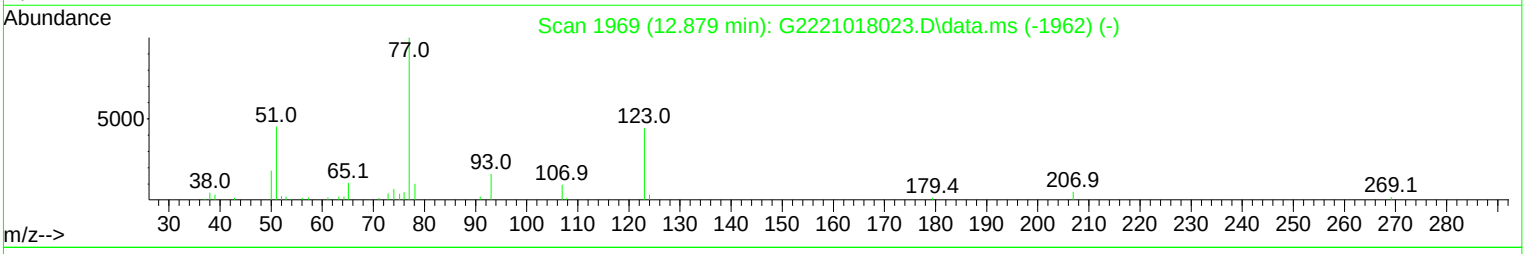
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524008.D
Acq On : 24 May 2023 18:22
Operator : PO1
Sample : SEQ-CAL4@@2
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 25 08:45:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:44:54 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524008.D\data.ms

(102) Nitrobenzene (T)

13.230min (+ 0.003) 2.57 ug/L

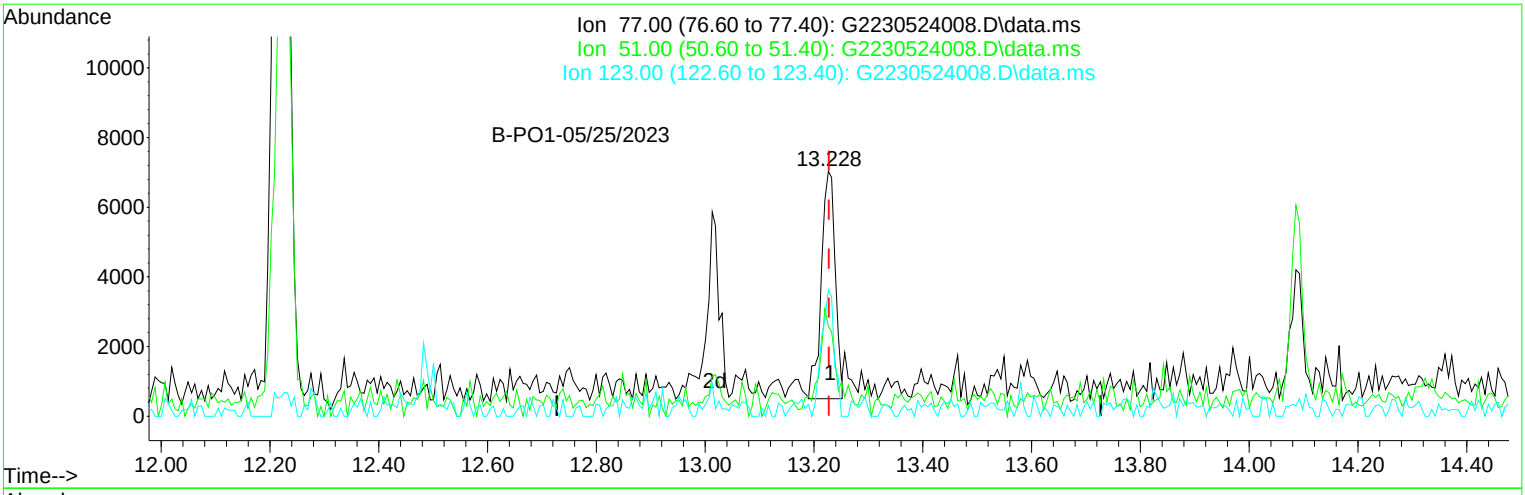
response 100334

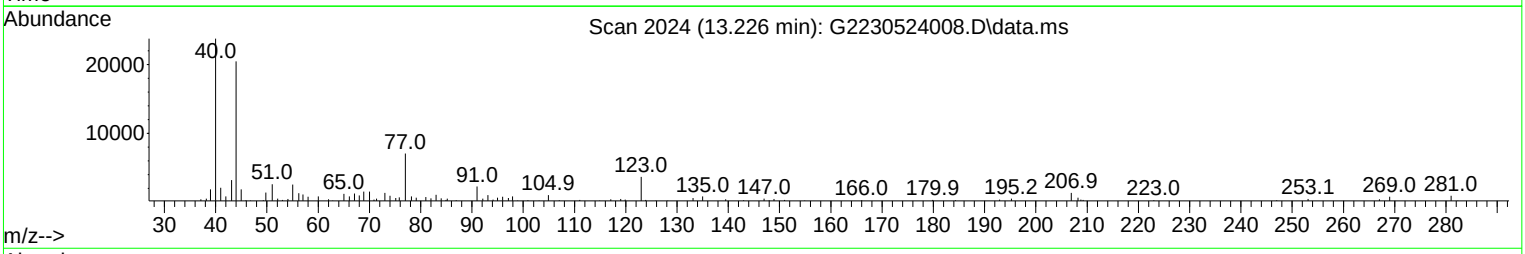
Ion	Exp%	Act%
77.00	100.00	100.00
51.00	43.20	54.98
123.00	45.20	64.52
0.00	0.00	0.00

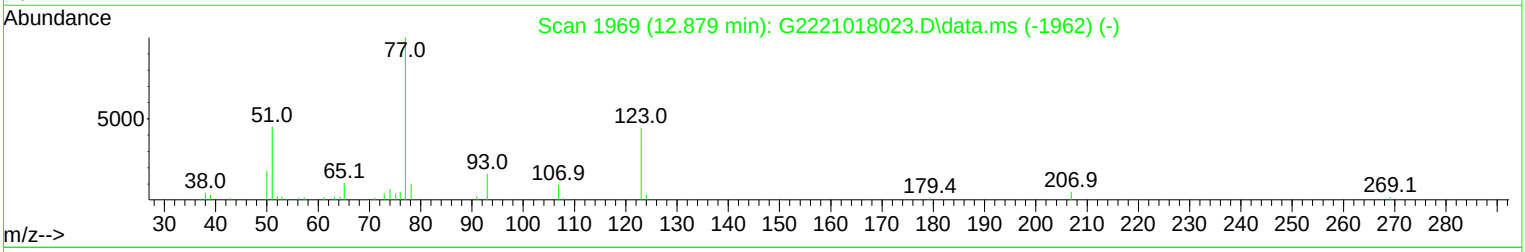
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524008.D
Acq On : 24 May 2023 18:22
Operator : PO1
Sample : SEQ-CAL4@@2
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 25 08:45:07 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:44:54 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524008.D\data.ms

(102) Nitrobenzene (T)

13.226min (-0.001) 3.04 ug/L m

response 118551

Ion	Exp%	Act%
77.00	100.00	100.00
51.00	43.20	46.53
123.00	45.20	54.61
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524009.D
Acq On : 24 May 2023 18:46
Operator : PO1
Sample : SEQ-CAL5@@5
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 25 08:42:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:42:12 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.573	168	25510344	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.423	114	36378763	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.496	117	32009337	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.842	152	14620657	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.477	111	11260654	19.83	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.15%			
43) 1,2-Dichloroethane-d4	5.879	65	11194823	19.95	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.75%			
49) Fluorobenzene	6.279	96	41454672	19.95	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.75%			
64) Toluene-d8	8.018	98	40110547	19.91	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.55%			
81) 4-Bromofluorobenzene	10.686	174	6819875	9.75	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 97.50%			
97) d4-1,2-Dichlorobenzene	12.219	152	12639366	20.04	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.20%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.211	85	2284161	4.64	ug/L	100
3) Chloromethane	1.352	50	1952915	4.59	ug/L	99
4) Vinyl chloride	1.444	62	2171985	4.49	ug/L	100
5) Bromomethane	1.716	94	1551528	5.01	ug/L	98
6) Chloroethane	1.805	64	1300489	4.43	ug/L	99
7) Trichlorofluoromethane	2.030	101	3250436	4.38	ug/L	98
8) Ethyl ether	2.317	59	1684495	4.81	ug/L	90
9) Acrolein	2.440	56	840038	12.08	ug/L	95
10) 1,1-Dichloroethene	2.523	61	2710736	4.85	ug/L	91
11) 1,1,2-Trichloro-1,2,2-...	2.533	101	1931862	4.77	ug/L	96
12) Acetone	2.607	43	2162864	17.40	ug/L	92
13) Iodomethane	2.675	142	2685998	4.25	ug/L	94
14) Carbon disulfide	2.738	76	5485338	4.73	ug/L	100
15) Isopropanol	2.790	45	917097	45.04	ug/L	93
16) acetonitrile	2.917	41	2970311	12.09	ug/L	89
17) 3-Chloro-1-propene	2.919	76	1215489	4.66	ug/L	99
18) Methylene chloride	3.062	49	2837191	5.91	ug/L	87
19) Acrylonitrile	3.388	53	944592	4.91	ug/L	97
20) trans-1,2-Dichloroethene	3.401	61	2497757	4.66	ug/L	90
21) Methyl tert-butyl ether	3.446	73	8257458	5.33	ug/L	95
22) Hexane	3.790	57	2034368	4.69	ug/L	96
23) 1,1-Dichloroethane	3.998	63	3522320	4.79	ug/L	97
24) Vinyl acetate	4.130	43	3863672	4.54	ug/L	94
25) 2-Chloro-1,3-butadiene	4.133	53	2694171	4.75	ug/L	90
26) 1-propanol	4.301	59	149369m	56.27	ug/L	
27) 2,2-Dichloropropane	4.826	77	3248345	4.87	ug/L	94
28) cis-1,2-Dichloroethene	4.835	61	3158981	4.79	ug/L	92
29) 2-Butanone	4.921	72	1120682	16.97	ug/L	94

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524009.D
Acq On : 24 May 2023 18:46
Operator : PO1
Sample : SEQ-CAL5@@5
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 25 08:42:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:42:12 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
30) Propionitrile	4.985	54	311816	4.91	ug/L		94
31) Ethyl acetate	5.028	61	390864	4.94	ug/L		89
32) Methylacrylate	5.046	55	2217742	4.59	ug/L		93
33) 1-Bromopropane	5.077	41	1275334	4.74	ug/L		74
34) Bromochloromethane	5.149	130	1743753	4.73	ug/L		98
35) Methacrylonitrile	5.178	67	1141244	4.72	ug/L		97
36) Tetrahydrofuran	5.265	42	668322	4.77	ug/L		86
37) Chloroform	5.276	83	3906516	4.72	ug/L		100
39) 1,1,1-Trichloroethane	5.478	97	3562687	4.74	ug/L		97
40) Cyclohexane	5.533	84	3639516	5.31	ug/L		81
41) 1-Chlorobutane	5.630	56	3720641	4.71	ug/L		98
42) 1,1-Dichloropropene	5.690	75	2763052	4.62	ug/L		95
44) 1,2-Dichloroethane	5.971	62	3008525	4.92	ug/L		98
45) Isobutanol	5.965	43	860786m	53.33	ug/L		
47) Carbon tetrachloride	5.680	117	3062063	4.65	ug/L		99
48) Benzene	5.935	78	8388081	4.72	ug/L		99
50) Trichloroethene	6.696	95	2359539	4.78	ug/L		95
51) 1-Butanol	6.748	56	517271	44.84	ug/L		80
52) 1,2-Dichloropropane	6.945	63	2010599	4.73	ug/L		91
53) Dibromomethane	7.071	174	2044760	4.80	ug/L	#	93
54) Methyl methacrylate	7.133	69	1954875	4.76	ug/L		92
55) 1,4-dioxane	7.148	88	212232	50.95	ug/L		85
56) Bromodichloromethane	7.259	83	3100133	4.73	ug/L		99
57) 2-Nitropropane	7.527	43	920840	4.90	ug/L		91
58) 2-Chloroethyl vinyl ether	7.614	63	1462639	4.34	ug/L		99
59) cis-1,3-Dichloropropene	7.746	75	3723716	4.72	ug/L		97
60) 4-Methyl-2-pentanone	7.945	43	8390285	16.43	ug/L	#	92
61) trans-1,3-Dichloropropene	8.335	75	3498185	4.69	ug/L		95
62) 1,1,2-Trichloroethane	8.519	97	2194985	4.70	ug/L		94
65) Toluene	8.086	91	9550465	4.78	ug/L		98
66) Ethylmethacrylate	8.461	69	3382834	4.70	ug/L		92
67) Tetrachloroethene	8.648	166	3646944	5.00	ug/L		95
68) 1,3-Dichloropropane	8.688	76	3636618	4.76	ug/L		90
69) 2-Hexanone	8.810	43	5500632	16.72	ug/L		93
70) Dibromochloromethane	8.912	129	2838518	4.71	ug/L		99
71) 1,2-Dibromoethane	9.019	107	2447019	4.71	ug/L		99
72) Chlorobenzene	9.524	112	6394883	4.70	ug/L		98
73) 1,1,1,2-Tetrachloroethane	9.615	131	2556761	4.77	ug/L		98
74) Ethylbenzene	9.643	91	10333428	4.74	ug/L		97
75) m,p-Xylene	9.764	91	15782783	9.53	ug/L		96
76) Styrene	10.177	104	6919121	4.75	ug/L		94
77) Bromoform	10.356	173	2240127	4.58	ug/L		96
79) o-Xylene	10.161	91	8354350	4.72	ug/L		97
80) Isopropylbenzene	10.536	105	9735602	4.73	ug/L		98
82) Bromobenzene	10.828	77	3635481	4.69	ug/L		89
83) 1,1,2,2-Tetrachloroethane	10.843	83	2908951	4.69	ug/L		99
84) 1,2,3-Trichloropropane	10.881	110	1055095	4.79	ug/L		94
85) trans-1,4-Dichloro-2-b...	10.902	53	743760	4.53	ug/L		74
86) n-Propylbenzene	10.949	91	10733532	4.69	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524009.D
Acq On : 24 May 2023 18:46
Operator : PO1
Sample : SEQ-CAL5@@5
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 25 08:42:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:42:12 2023
Response via : Initial Calibration
InstName : G

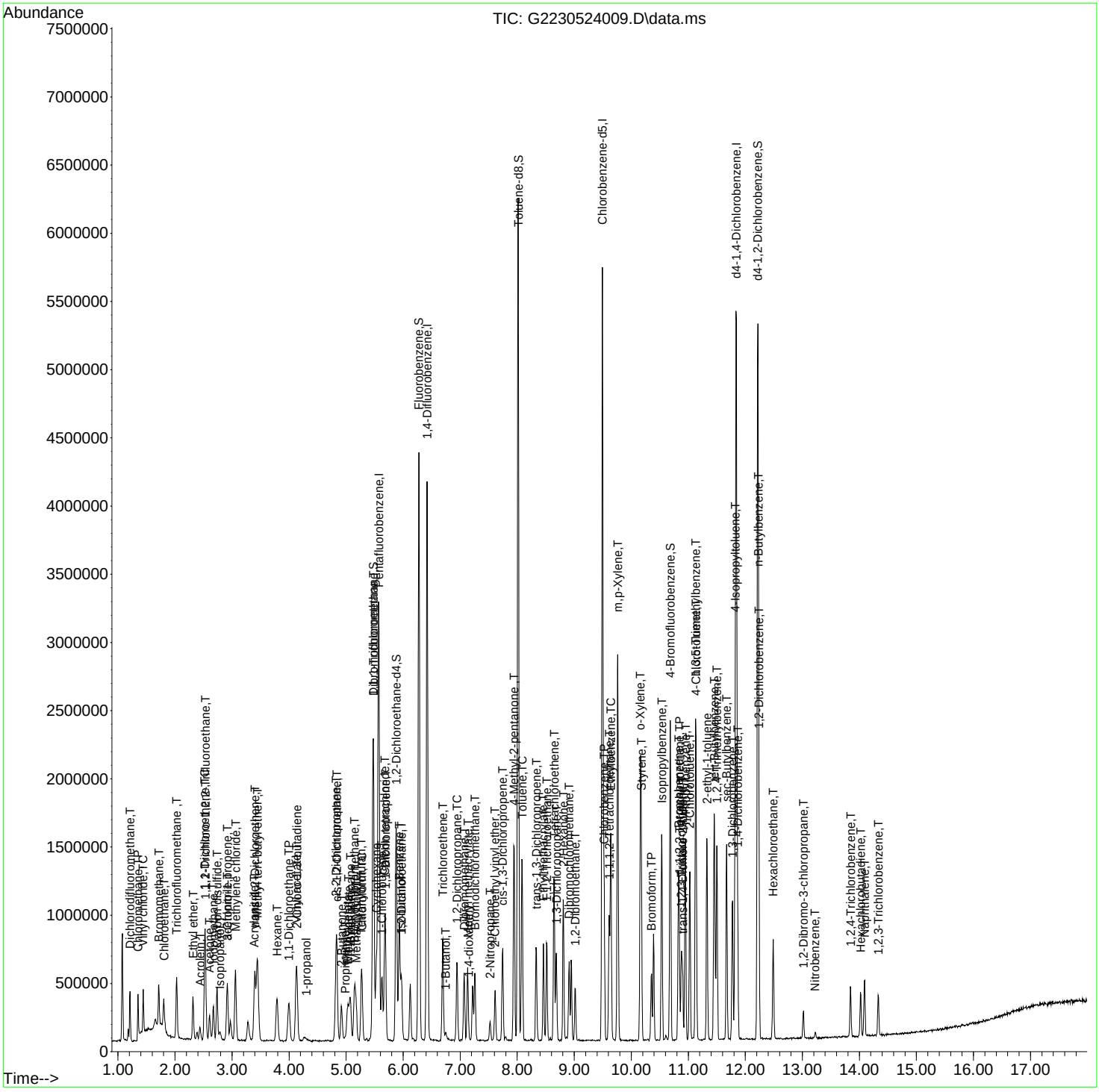
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
87) 2-Chlorotoluene	11.027	91	6494461	4.71 ug/L	97
88) 4-Chlorotoluene	11.138	91	7350221	4.66 ug/L	95
89) 1,3,5-Trimethylbenzene	11.130	105	7444468	4.67 ug/L	96
90) 2-ethyl-1-toluene	11.329	105	9219157	4.78 ug/L	98
91) tert-Butylbenzene	11.455	119	7700577	4.63 ug/L	94
92) 1,2,4-Trimethylbenzene	11.503	105	7573749	4.81 ug/L	93
93) sec-Butylbenzene	11.674	105	9299333	4.77 ug/L	98
94) 1,3-Dichlorobenzene	11.776	146	4456222	4.70 ug/L	99
95) 4-Isopropyltoluene	11.823	119	7759404	4.78 ug/L	98
96) 1,4-Dichlorobenzene	11.866	146	4354684	4.73 ug/L	99
98) 1,2-Dichlorobenzene	12.238	146	4077944	4.78 ug/L	99
99) n-Butylbenzene	12.232	91	5803932	4.80 ug/L	94
100) Hexachloroethane	12.491	201	1394747	4.61 ug/L	99
101) 1,2-Dibromo-3-chloropr...	13.021	157	637597	4.84 ug/L	99
102) Nitrobenzene	13.220	77	189006m	4.66 ug/L	
103) 1,2,4-Trichlorobenzene	13.848	180	1181297	4.61 ug/L	95
104) Hexachlorobutadiene	14.025	225	607417	4.55 ug/L	94
105) Naphthalene	14.091	128	3379626	4.81 ug/L	99
106) 1,2,3-Trichlorobenzene	14.334	180	947776	4.67 ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524009.D
Acq On : 24 May 2023 18:46
Operator : PO1
Sample : SEQ-CAL5@@5
Misc :
ALS Vial : 9 Sample Multiplier: 1

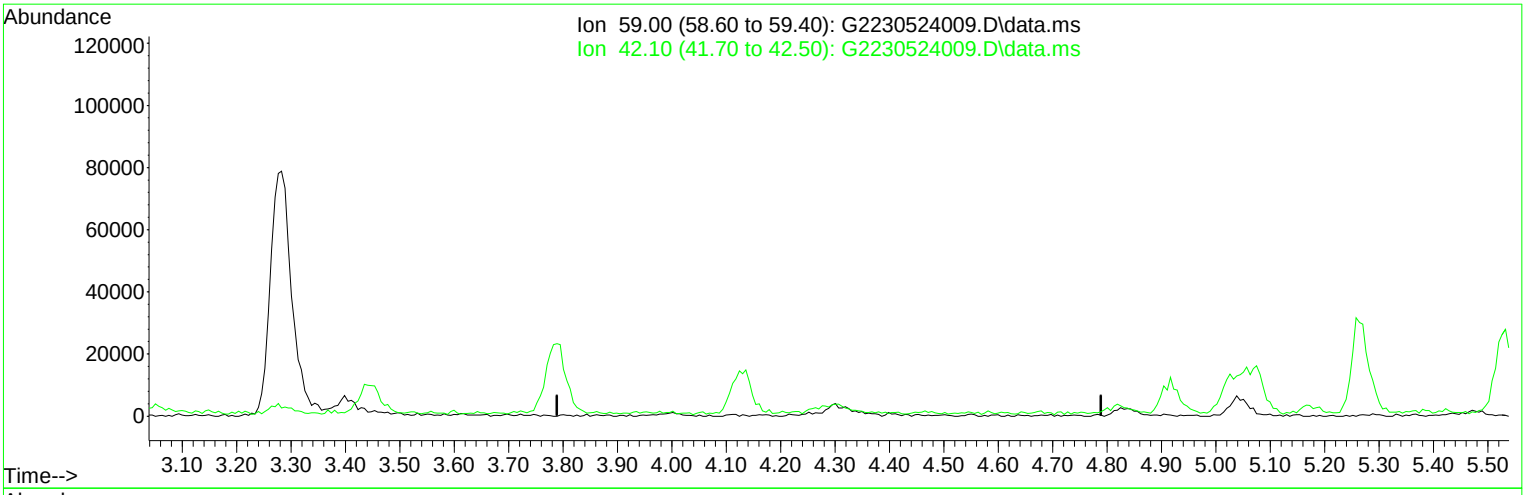
Quant Time: May 25 08:42:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:42:12 2023
Response via : Initial Calibration
InstName : G

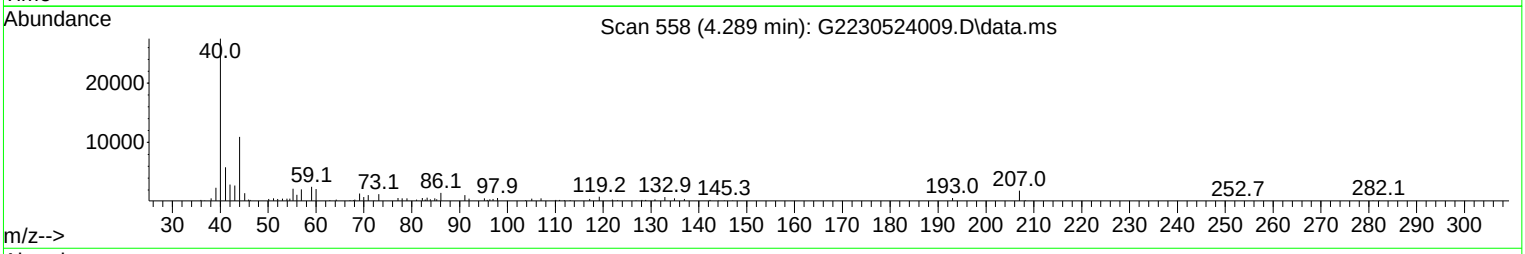


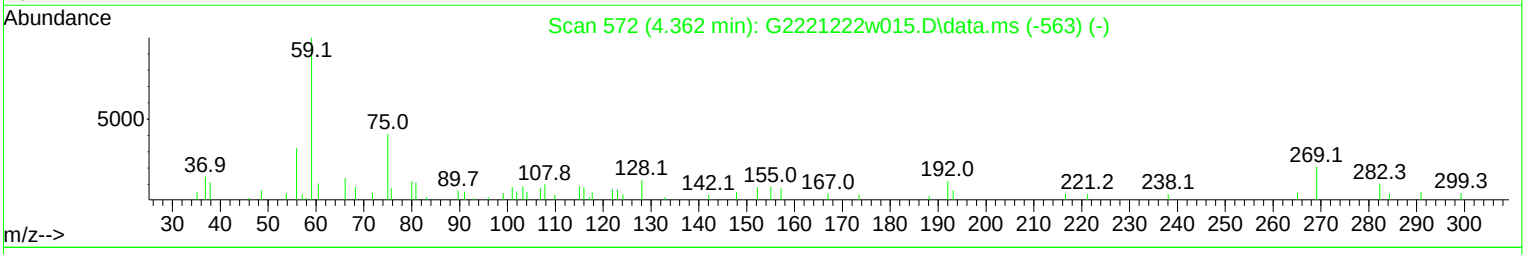
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524009.D
Acq On : 24 May 2023 18:46
Operator : PO1
Sample : SEQ-CAL5@@5
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 25 08:42:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:42:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524009.D\data.ms

(26) 1-propanol

4.289min (-4.289) 0.00 ug/L

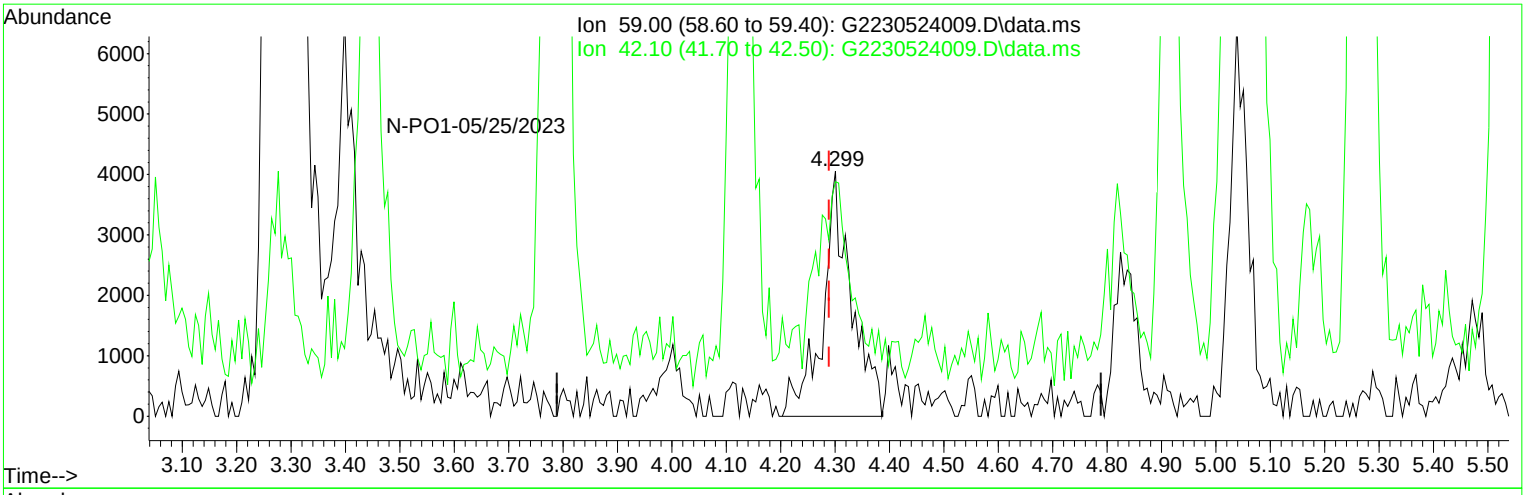
response 0

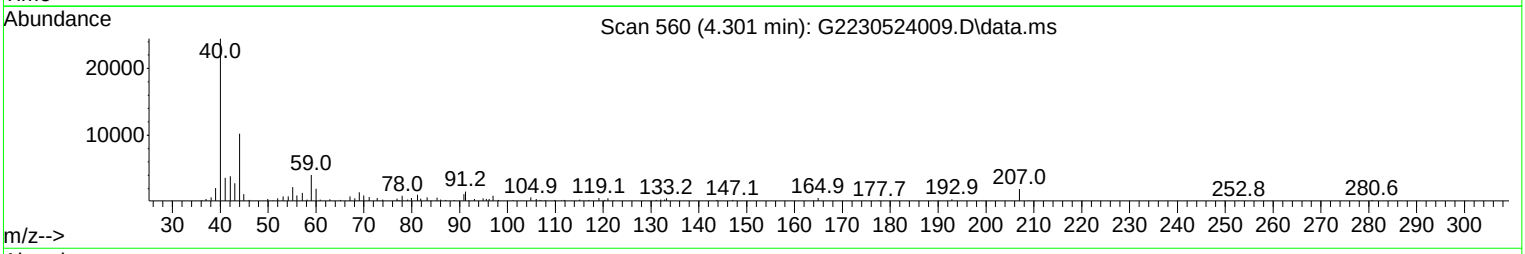
Ion	Exp%	Act%
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42.10	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

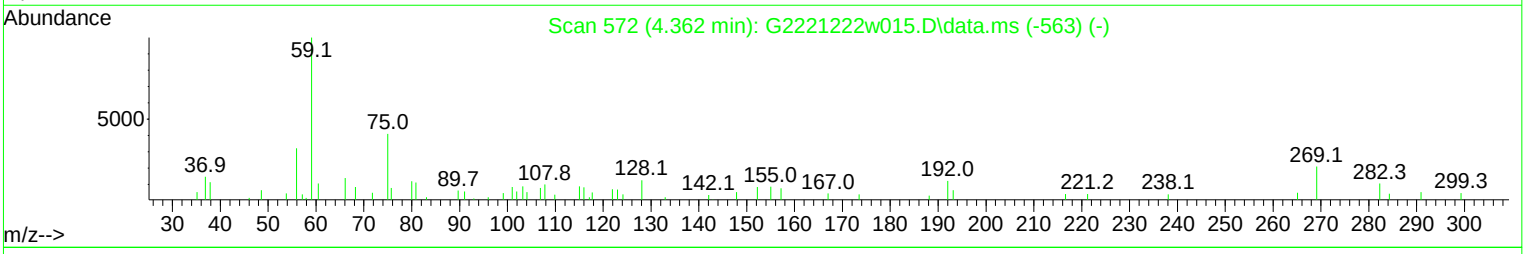
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524009.D
Acq On : 24 May 2023 18:46
Operator : PO1
Sample : SEQ-CAL5@@5
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 25 08:42:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:42:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524009.D\data.ms

(26) 1-propanol

4.301min (+ 0.012) 56.27 ug/L m

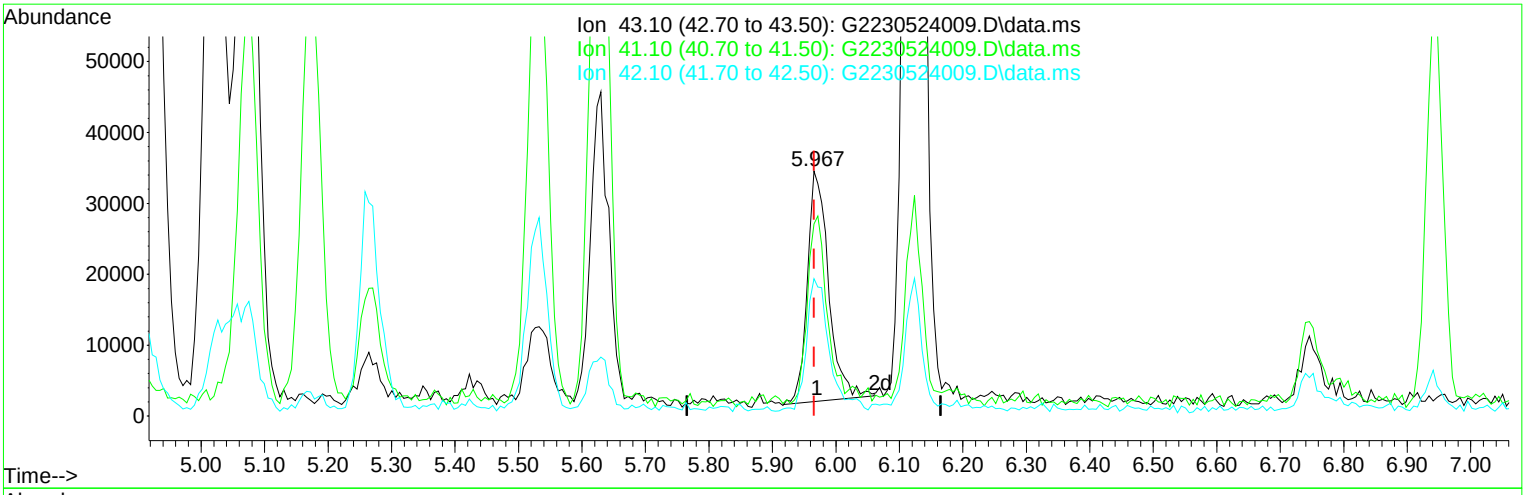
response 149369

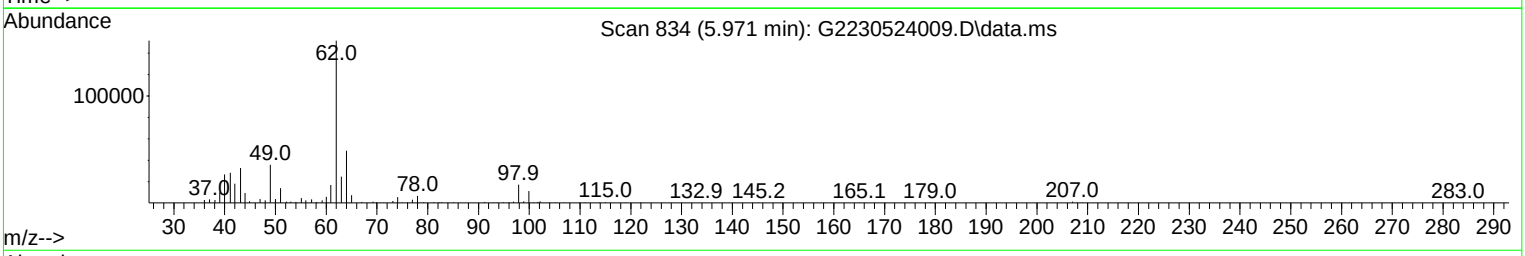
Ion	Exp%	Act%
59.00	100.00	100.00
42.10	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

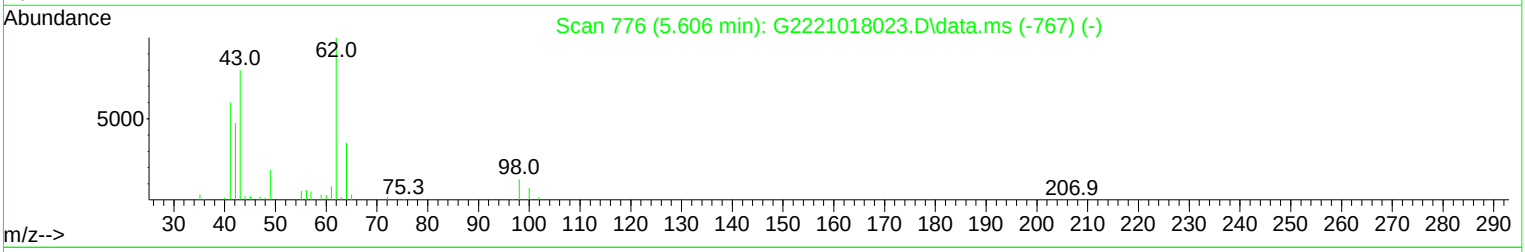
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524009.D
Acq On : 24 May 2023 18:46
Operator : PO1
Sample : SEQ-CAL5@@5
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 25 08:42:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:42:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524009.D\data.ms

(45) Isobutanol

5.970min (+ 0.005) 46.37 ug/L

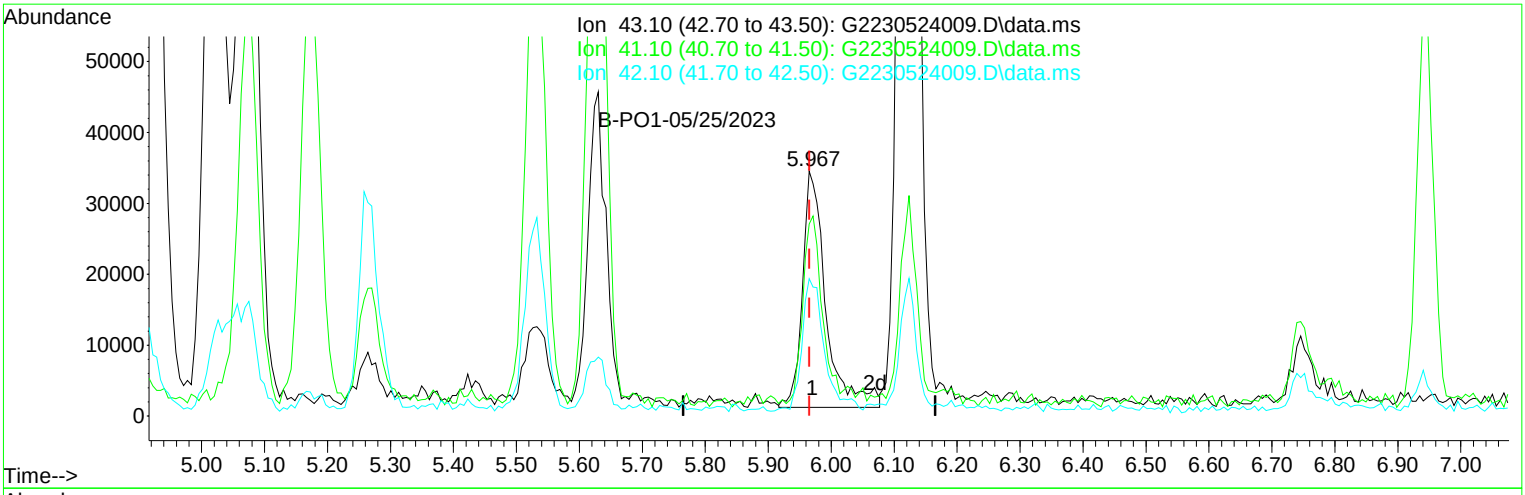
response 748551

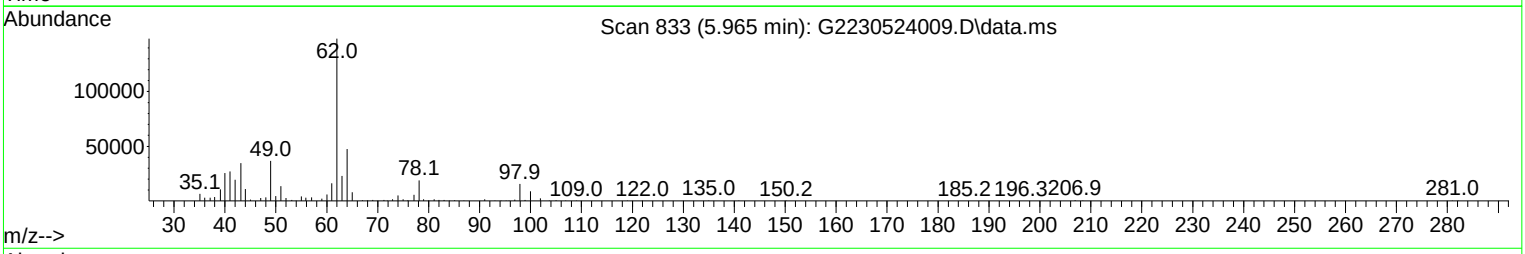
Ion	Exp%	Act%
43.10	100.00	100.00
41.10	70.10	71.20
42.10	58.40	60.14
0.00	0.00	0.00

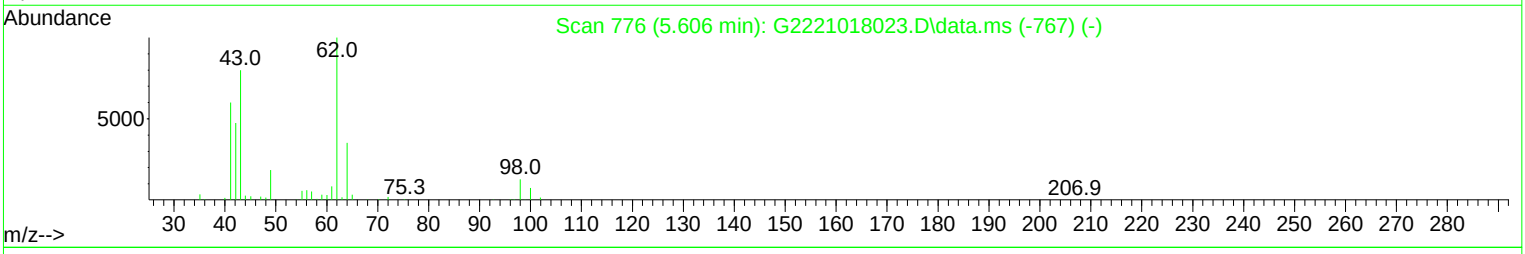
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524009.D
Acq On : 24 May 2023 18:46
Operator : PO1
Sample : SEQ-CAL5@@5
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 25 08:42:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:42:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524009.D\data.ms

(45) Isobutanol

5.965min (-0.000) 53.33 ug/L m

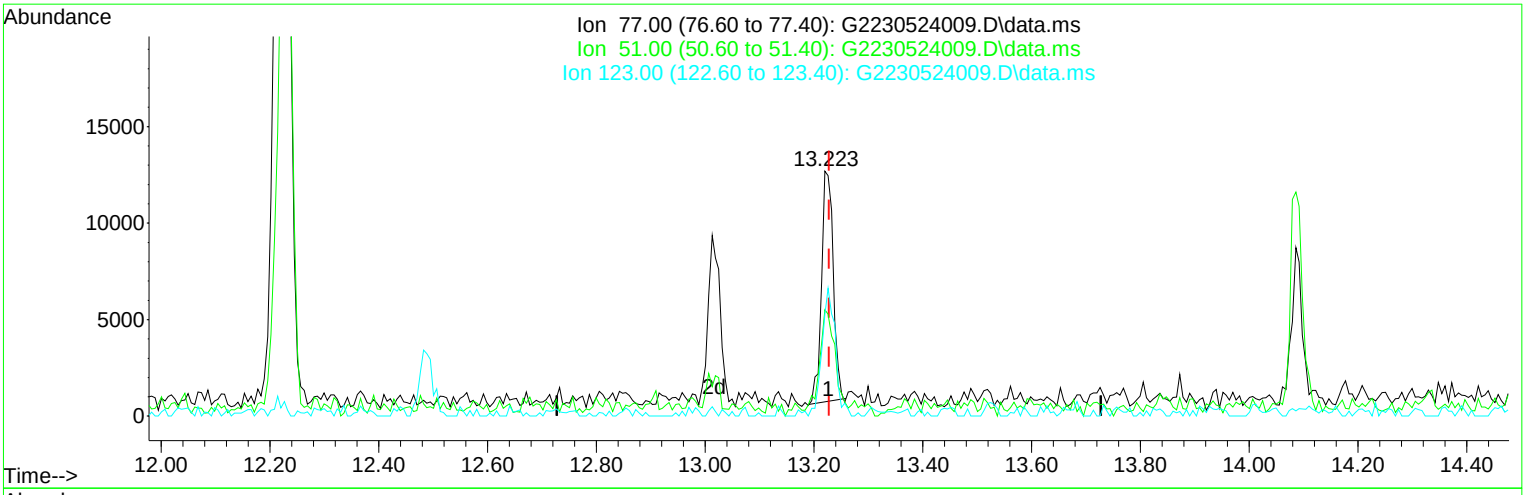
response 860786

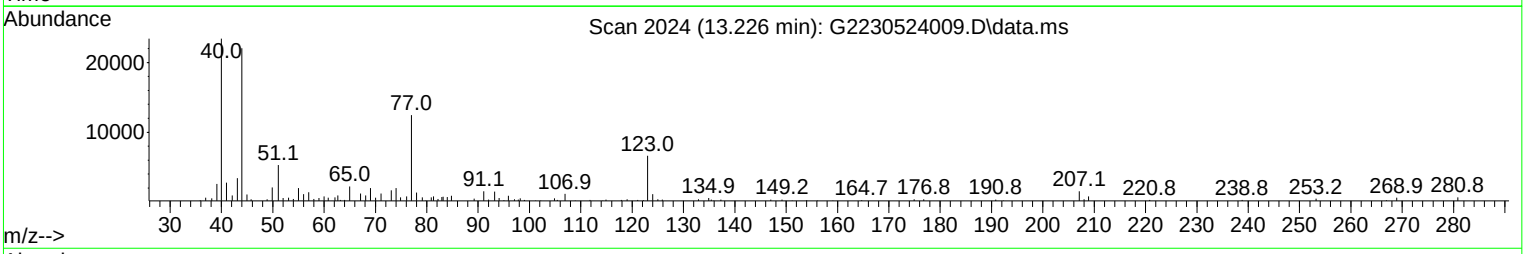
Ion	Exp%	Act%
43.10	100.00	100.00
41.10	70.10	61.92
42.10	58.40	52.30
0.00	0.00	0.00

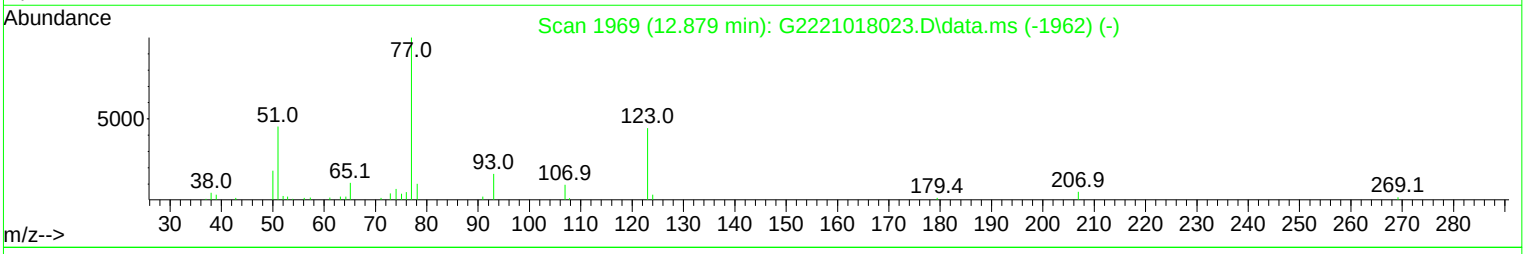
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524009.D
Acq On : 24 May 2023 18:46
Operator : PO1
Sample : SEQ-CAL5@@5
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 25 08:42:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:42:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524009.D\data.ms

(102) Nitrobenzene (T)

13.227min (-0.001) 4.39 ug/L

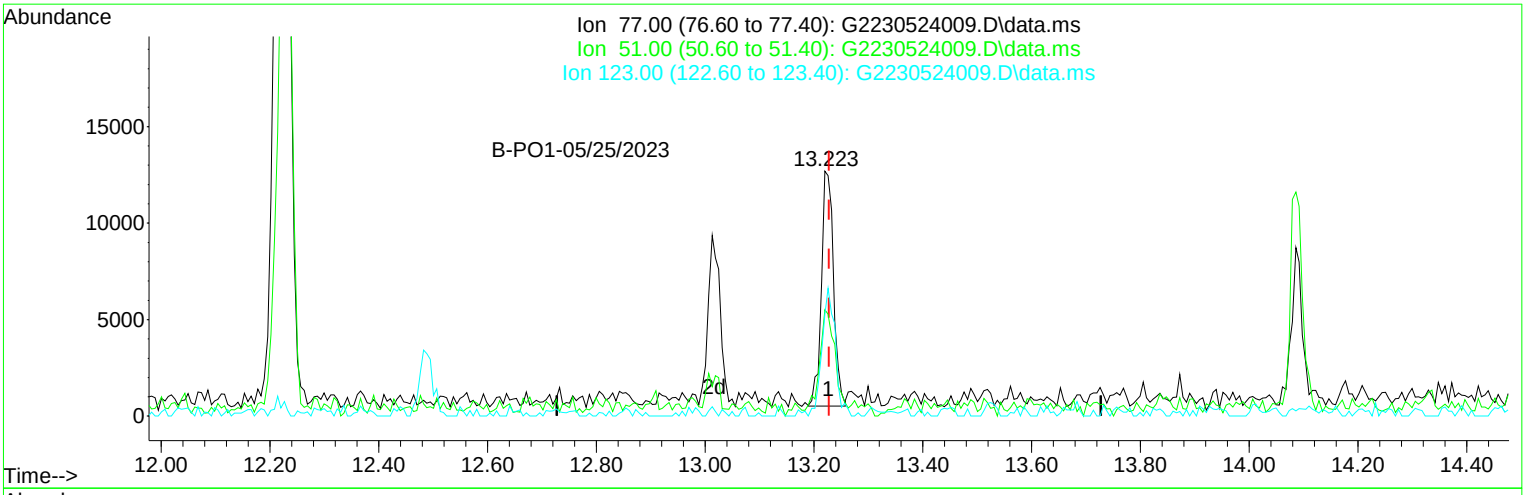
response 177890

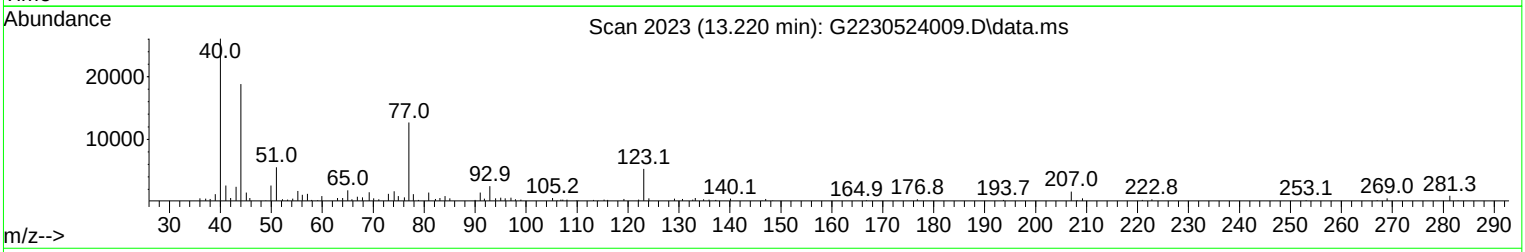
Ion	Exp%	Act%
77.00	100.00	100.00
51.00	43.20	53.12
123.00	45.20	65.28
0.00	0.00	0.00

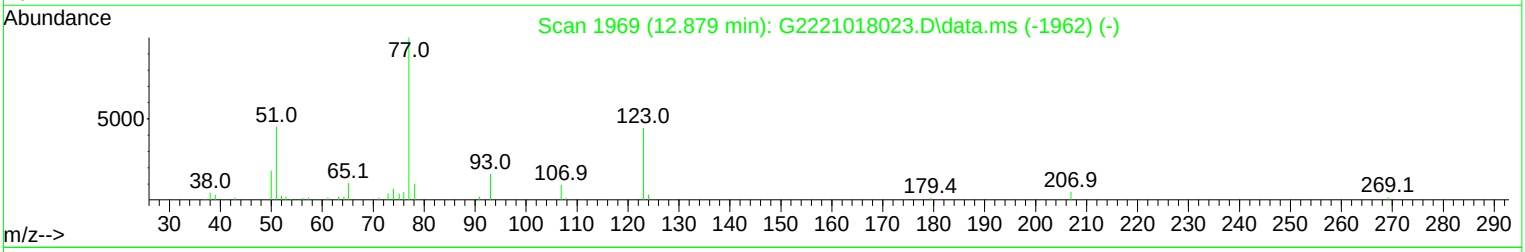
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524009.D
Acq On : 24 May 2023 18:46
Operator : PO1
Sample : SEQ-CAL5@@5
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 25 08:42:23 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:42:12 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524009.D\data.ms

(102) Nitrobenzene (T)

13.220min (-0.008) 4.66 ug/L m

response 189006

Ion	Exp%	Act%
77.00	100.00	100.00
51.00	43.20	49.99
123.00	45.20	61.44
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524010.D
Acq On : 24 May 2023 19:10
Operator : PO1
Sample : SEQ-CAL6@@10
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 25 08:39:33 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:39:23 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.574	168	25615003	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.422	114	36521938	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.496	117	32178409	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.843	152	15250588	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.477	111	11489772	20.19	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.95%			
43) 1,2-Dichloroethane-d4	5.880	65	11358109	20.20	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 101.00%			
49) Fluorobenzene	6.279	96	41760080	20.02	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.10%			
64) Toluene-d8	8.018	98	40421678	19.95	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.75%			
81) 4-Bromofluorobenzene	10.687	174	7127577	9.72	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 97.20%			
97) d4-1,2-Dichlorobenzene	12.219	152	13239775	20.16	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.80%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.213	85	4563129	9.05	ug/L	99
3) Chloromethane	1.354	50	3984760	9.18	ug/L	100
4) Vinyl chloride	1.445	62	4566255	9.27	ug/L	100
5) Bromomethane	1.716	94	2756036	8.63	ug/L	99
6) Chloroethane	1.804	64	2804297	9.39	ug/L	96
7) Trichlorofluoromethane	2.029	101	6897174	9.09	ug/L	97
8) Ethyl ether	2.317	59	3403105	9.60	ug/L	88
9) Acrolein	2.438	56	1778755	25.61	ug/L	95
10) 1,1-Dichloroethene	2.523	61	5365879	9.46	ug/L	90
11) 1,1,2-Trichloro-1,2,2-...	2.533	101	3811975	9.23	ug/L	97
12) Acetone	2.609	43	4346348	34.77	ug/L	93
13) Iodomethane	2.675	142	5931522	9.19	ug/L	94
14) Carbon disulfide	2.738	76	11130886	9.45	ug/L	99
15) Isopropanol	2.793	45	2105323	103.74	ug/L	99
16) acetonitrile	2.918	41	5944352	23.88	ug/L	88
17) 3-Chloro-1-propene	2.920	76	2560192	9.73	ug/L	98
18) Methylene chloride	3.062	49	5267565	11.18	ug/L	84
19) Acrylonitrile	3.391	53	1922386	9.93	ug/L	95
20) trans-1,2-Dichloroethene	3.402	61	5188455	9.54	ug/L	91
21) Methyl tert-butyl ether	3.447	73	15828696	10.22	ug/L	93
22) Hexane	3.790	57	4048928	9.14	ug/L	95
23) 1,1-Dichloroethane	3.996	63	7171441	9.65	ug/L	99
24) Vinyl acetate	4.130	43	8672636	10.18	ug/L	94
25) 2-Chloro-1,3-butadiene	4.133	53	5300464	9.15	ug/L	86
26) 1-propanol	4.295	59	260036m	96.97	ug/L	
27) 2,2-Dichloropropane	4.827	77	6508314	9.64	ug/L	93
28) cis-1,2-Dichloroethene	4.835	61	6400394	9.58	ug/L	89
29) 2-Butanone	4.920	72	2306470	34.74	ug/L	92

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524010.D
Acq On : 24 May 2023 19:10
Operator : PO1
Sample : SEQ-CAL6@@10
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 25 08:39:33 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:39:23 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
30) Propionitrile	4.988	54	629911	9.85	ug/L		97
31) Ethyl acetate	5.023	61	790765	9.95	ug/L		87
32) Methylacrylate	5.045	55	4756136	9.76	ug/L		92
33) 1-Bromopropane	5.076	41	2601940	9.54	ug/L		78
34) Bromochloromethane	5.149	130	3567501	9.56	ug/L		99
35) Methacrylonitrile	5.176	67	2389985	9.81	ug/L		92
36) Tetrahydrofuran	5.264	42	1424493	10.16	ug/L		87
37) Chloroform	5.276	83	8012602	9.56	ug/L		100
39) 1,1,1-Trichloroethane	5.479	97	7163346	9.38	ug/L		96
40) Cyclohexane	5.534	84	6730519	9.73	ug/L		85
41) 1-Chlorobutane	5.630	56	7585757	9.46	ug/L		97
42) 1,1-Dichloropropene	5.688	75	5742533	9.45	ug/L		95
44) 1,2-Dichloroethane	5.971	62	6059128	9.83	ug/L		99
45) Isobutanol	5.972	43	1584725	97.24	ug/L		97
47) Carbon tetrachloride	5.680	117	6295274	9.41	ug/L		99
48) Benzene	5.935	78	17338807	9.66	ug/L		100
50) Trichloroethene	6.696	95	4698780	9.37	ug/L		93
51) 1-Butanol	6.746	56	1252954m	110.46	ug/L		
52) 1,2-Dichloropropane	6.945	63	4180130	9.75	ug/L		92
53) Dibromomethane	7.072	174	4185707	9.74	ug/L	#	93
54) Methyl methacrylate	7.132	69	4029243	9.71	ug/L		91
55) 1,4-dioxane	7.142	88	442237m	107.29	ug/L		
56) Bromodichloromethane	7.259	83	6338301	9.54	ug/L		99
57) 2-Nitropropane	7.525	43	1938837	10.34	ug/L		92
58) 2-Chloroethyl vinyl ether	7.614	63	3255529	9.53	ug/L		98
59) cis-1,3-Dichloropropene	7.745	75	7720210	9.69	ug/L		96
60) 4-Methyl-2-pentanone	7.945	43	18041266	35.24	ug/L	#	91
61) trans-1,3-Dichloropropene	8.335	75	7256112	9.61	ug/L		92
62) 1,1,2-Trichloroethane	8.519	97	4571516	9.69	ug/L		96
65) Toluene	8.086	91	19593138	9.70	ug/L		98
66) Ethylmethacrylate	8.462	69	7082788	9.74	ug/L		91
67) Tetrachloroethene	8.648	166	5954754	7.77	ug/L		95
68) 1,3-Dichloropropane	8.688	76	7554396	9.79	ug/L		89
69) 2-Hexanone	8.810	43	11593459	35.07	ug/L		90
70) Dibromochloromethane	8.912	129	5900697	9.68	ug/L		98
71) 1,2-Dibromoethane	9.019	107	5084589	9.66	ug/L		98
72) Chlorobenzene	9.524	112	13361069	9.72	ug/L		95
73) 1,1,1,2-Tetrachloroethane	9.614	131	5289550	9.76	ug/L		98
74) Ethylbenzene	9.644	91	21324964	9.65	ug/L		96
75) m,p-Xylene	9.764	91	32767672	19.61	ug/L		96
76) Styrene	10.177	104	14326988	9.73	ug/L		95
77) Bromoform	10.355	173	4873725	9.90	ug/L		98
79) o-Xylene	10.162	91	17288012	9.22	ug/L		97
80) Isopropylbenzene	10.537	105	20106332	9.21	ug/L		97
82) Bromobenzene	10.828	77	7614767	9.29	ug/L		89
83) 1,1,2,2-Tetrachloroethane	10.843	83	6243693	9.58	ug/L		100
84) 1,2,3-Trichloropropane	10.882	110	2217201	9.56	ug/L		97
85) trans-1,4-Dichloro-2-b...	10.903	53	1640348	9.49	ug/L		72
86) n-Propylbenzene	10.949	91	22606369	9.35	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524010.D
Acq On : 24 May 2023 19:10
Operator : PO1
Sample : SEQ-CAL6@@10
Misc :
ALS Vial : 10 Sample Multiplier: 1

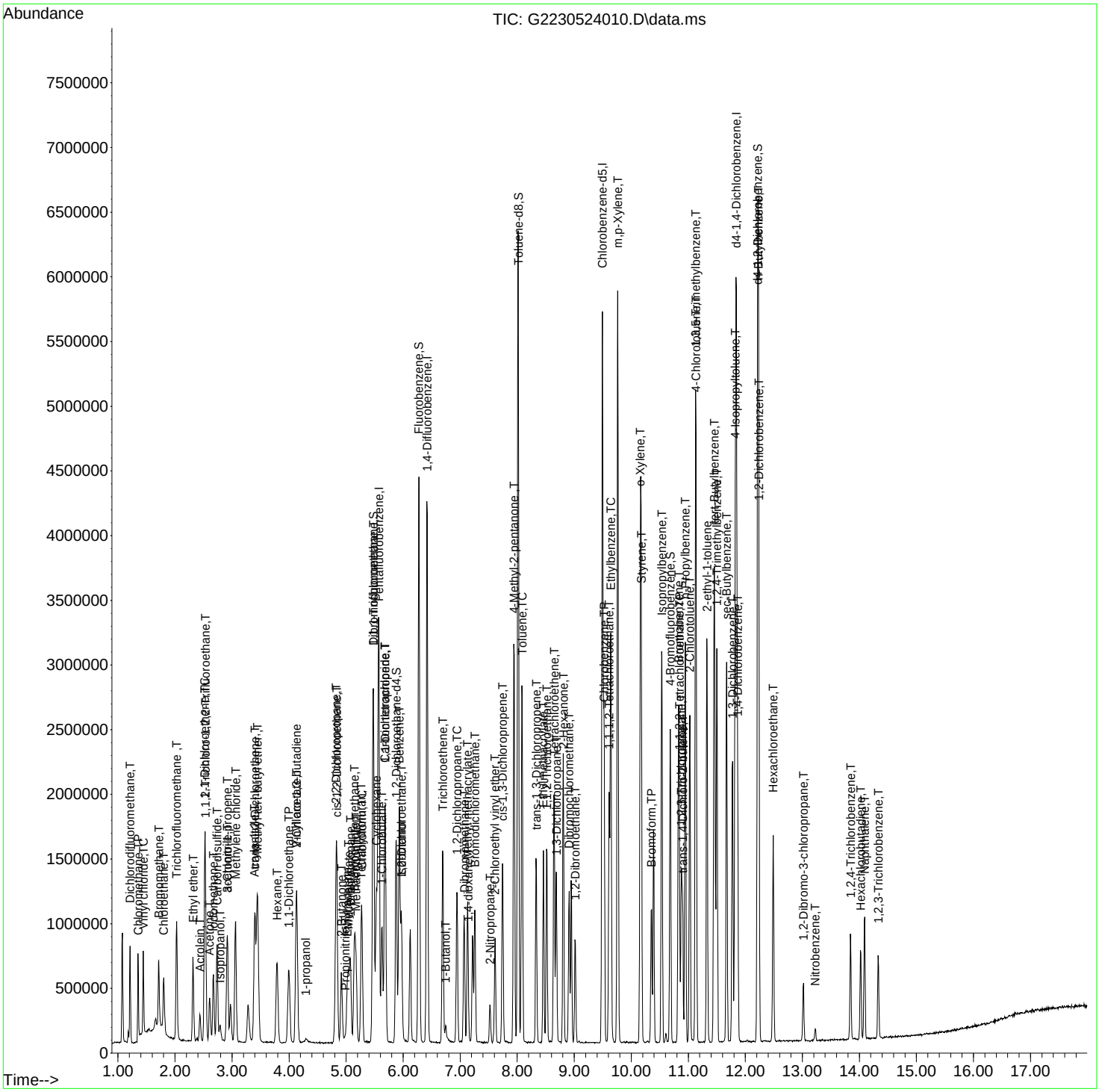
Quant Time: May 25 08:39:33 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:39:23 2023
Response via : Initial Calibration
InstName : G

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
87)	2-Chlorotoluene	11.028	91	13663214	9.37	ug/L	97
88)	4-Chlorotoluene	11.138	91	15670732	9.41	ug/L	96
89)	1,3,5-Trimethylbenzene	11.130	105	15991656	9.53	ug/L	96
90)	2-ethyl-1-toluene	11.329	105	19335893	9.51	ug/L	98
91)	tert-Butylbenzene	11.456	119	17141991	9.85	ug/L	91
92)	1,2,4-Trimethylbenzene	11.503	105	15917670	9.62	ug/L	93
93)	sec-Butylbenzene	11.674	105	19400432	9.43	ug/L	97
94)	1,3-Dichlorobenzene	11.776	146	9601016	9.63	ug/L	98
95)	4-Isopropyltoluene	11.823	119	16533905	9.70	ug/L	99
96)	1,4-Dichlorobenzene	11.866	146	9314630	9.64	ug/L	99
98)	1,2-Dichlorobenzene	12.238	146	8692223	9.70	ug/L	99
99)	n-Butylbenzene	12.232	91	12464677	9.85	ug/L	95
100)	Hexachloroethane	12.492	201	3030468	9.52	ug/L	98
101)	1,2-Dibromo-3-chloropr...	13.020	157	1473586	10.91	ug/L	98
102)	Nitrobenzene	13.228	77	452909	10.90	ug/L	90
103)	1,2,4-Trichlorobenzene	13.847	180	2731087	10.28	ug/L	97
104)	Hexachlorobutadiene	14.025	225	1396298	10.03	ug/L	95
105)	Naphthalene	14.092	128	7447476	10.21	ug/L	99
106)	1,2,3-Trichlorobenzene	14.334	180	2065442	9.71	ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524010.D
Acq On : 24 May 2023 19:10
Operator : PO1
Sample : SEQ-CAL6@@10
Misc :
ALS Vial : 10 Sample Multiplier: 1

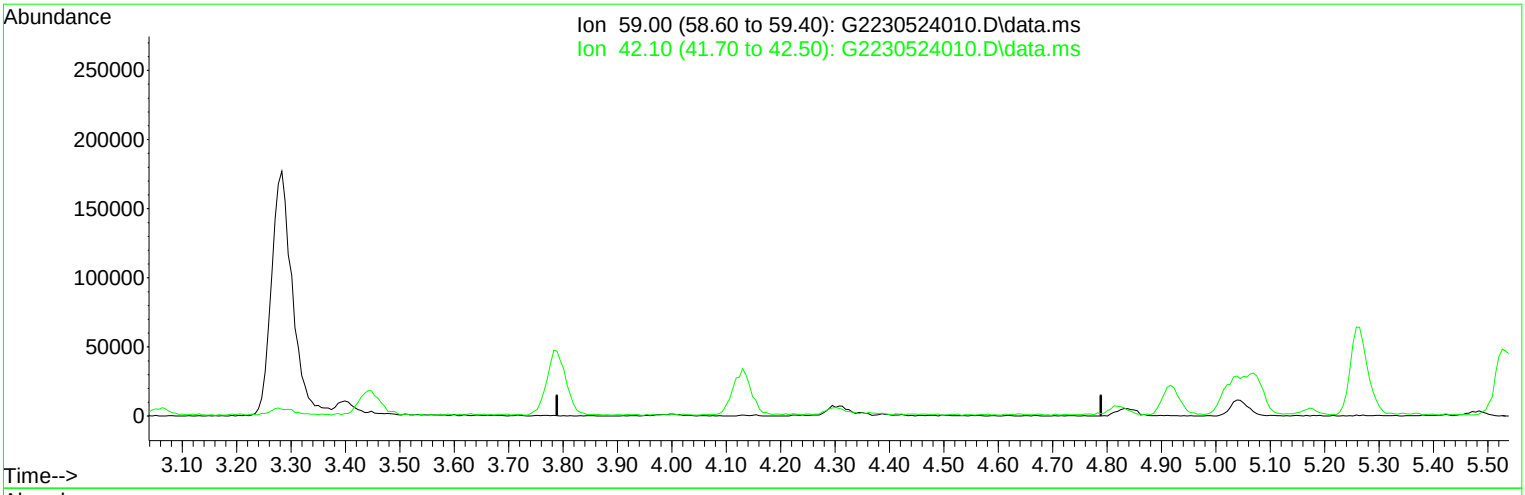
Quant Time: May 25 08:39:33 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:39:23 2023
Response via : Initial Calibration
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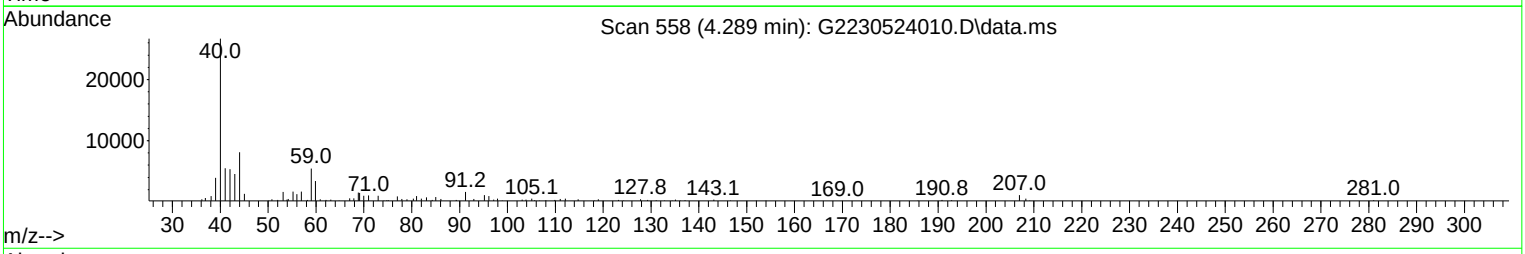


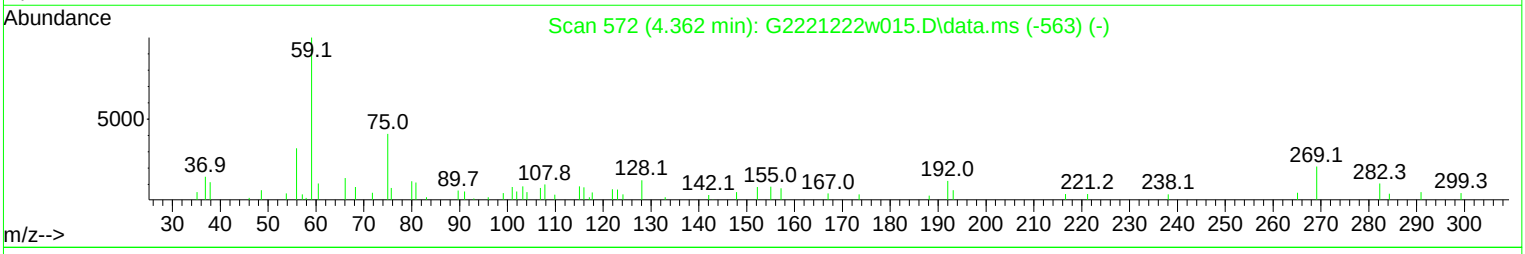
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Data File : G2230524010.D
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Quant Title : 8260B Calibration
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InstName : G







TIC: G2230524010.D\data.ms

(26) 1-propanol

4.289min (-4.289) 0.00 ug/L

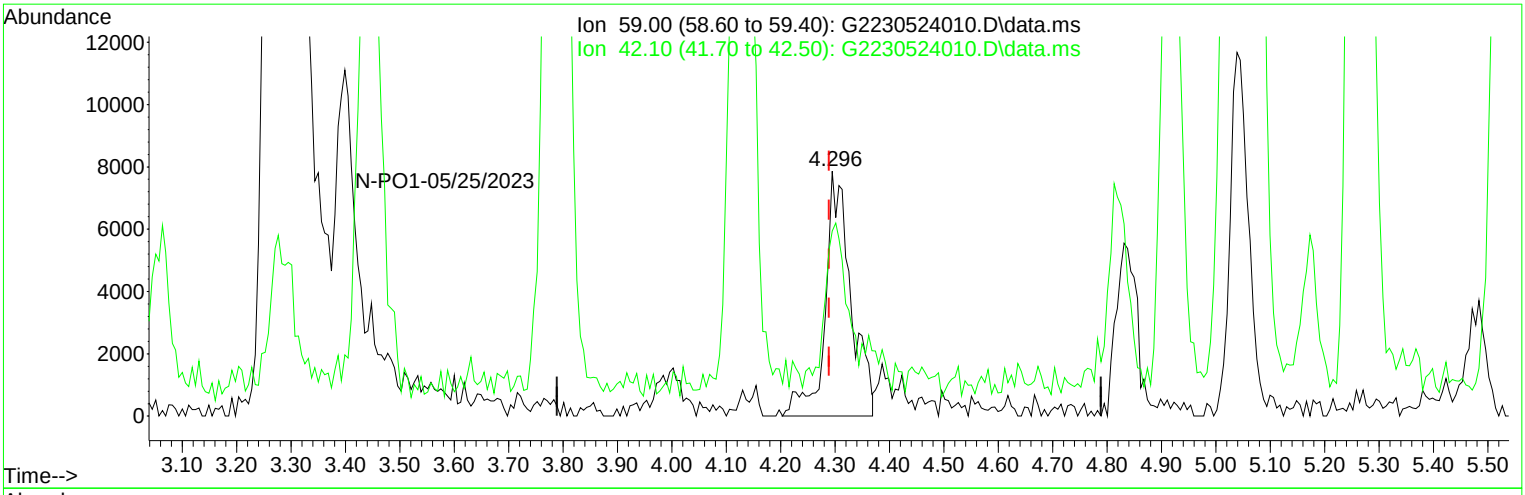
response 0

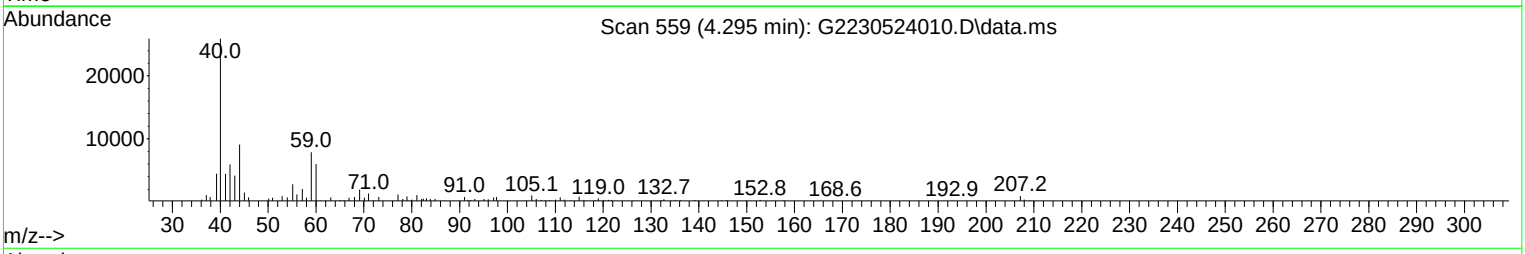
Ion	Exp%	Act%
59.00	100.00	0.00
42.10	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

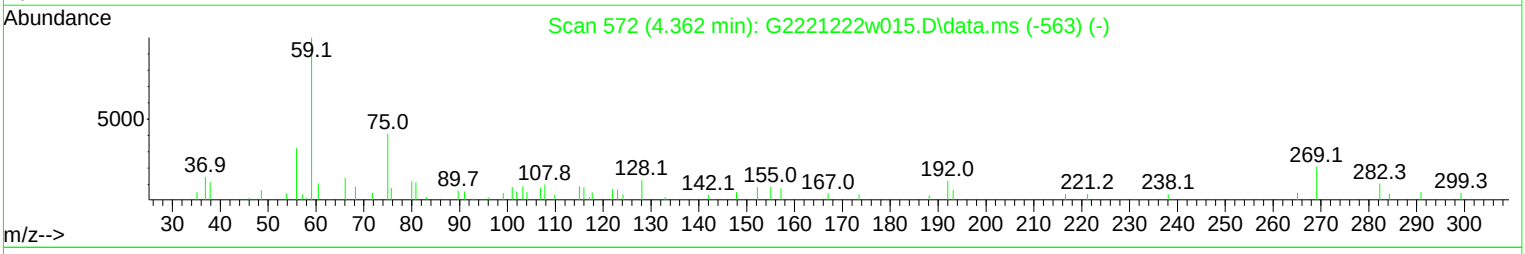
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524010.D
Acq On : 24 May 2023 19:10
Operator : PO1
Sample : SEQ-CAL6@@10
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 25 08:39:33 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:39:23 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524010.D\data.ms

(26) 1-propanol

4.295min (+ 0.006) 96.97 ug/L m

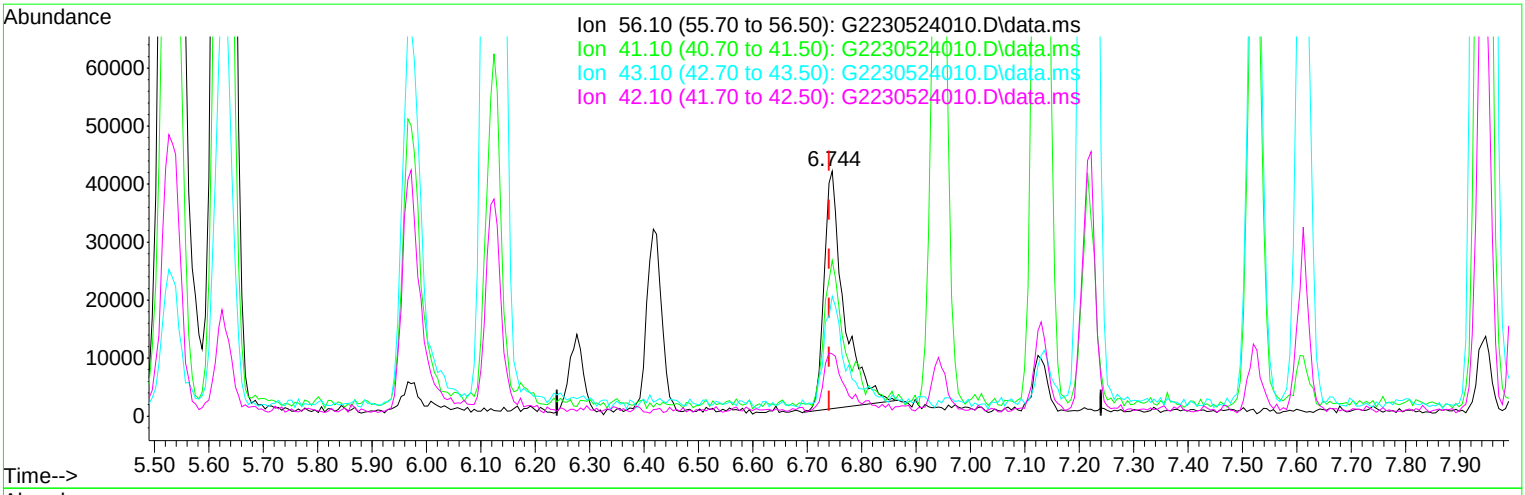
response 260036

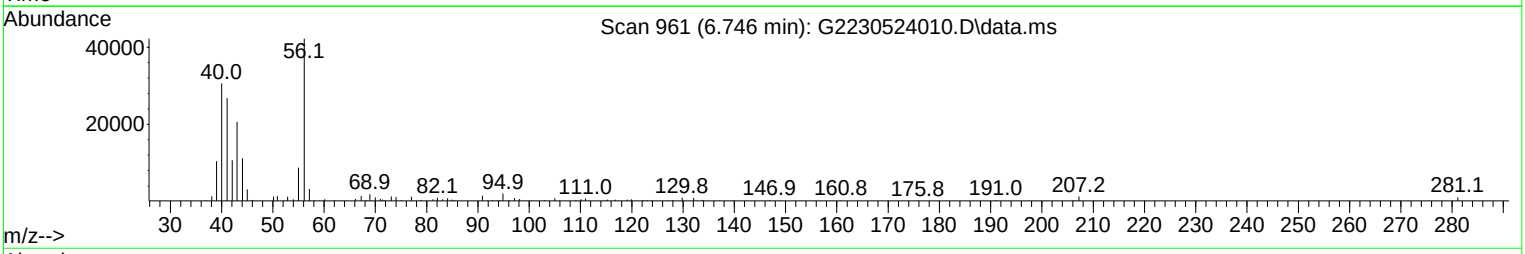
Ion	Exp%	Act%
59.00	100.00	100.00
42.10	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

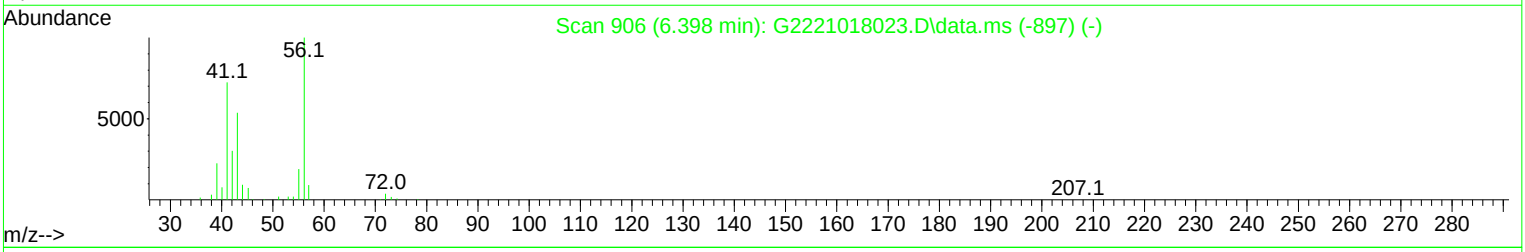
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524010.D
Acq On : 24 May 2023 19:10
Operator : PO1
Sample : SEQ-CAL6@@10
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 25 08:39:33 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:39:23 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524010.D\data.ms

(51) 1-Butanol (T)

6.747min (+ 0.007) 91.42 ug/L

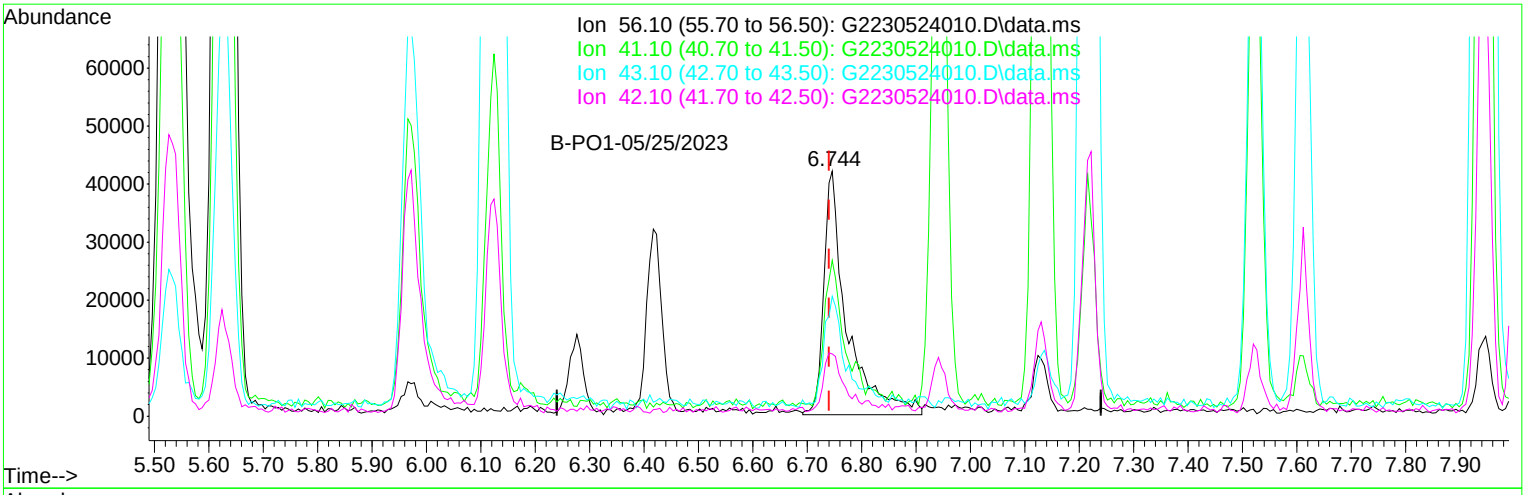
response 1036990

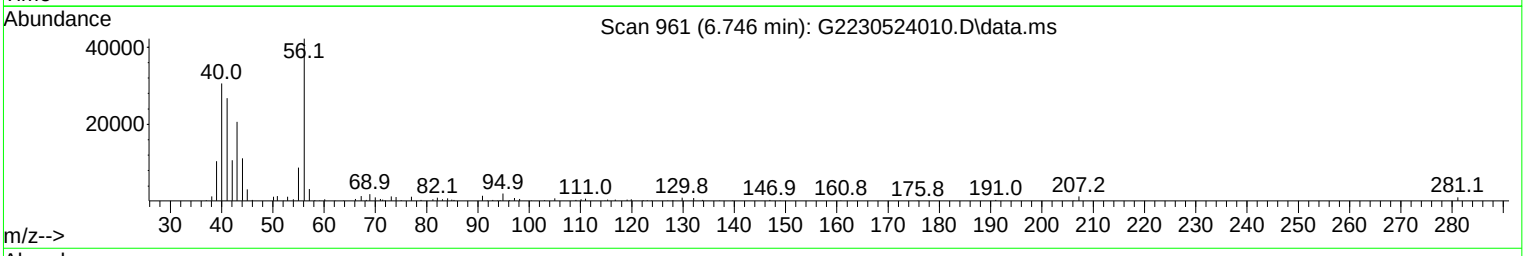
Ion	Exp%	Act%
56.10	100.00	100.00
41.10	69.10	65.49
43.10	53.20	46.29
42.10	27.70	28.08

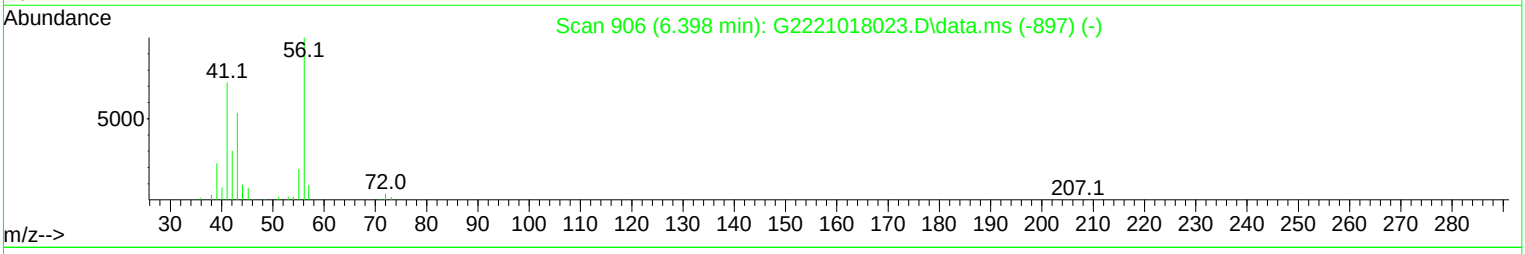
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524010.D
Acq On : 24 May 2023 19:10
Operator : PO1
Sample : SEQ-CAL6@@10
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 25 08:39:33 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:39:23 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524010.D\data.ms

(51) 1-Butanol (T)

6.746min (+ 0.006) 110.46 ug/L m

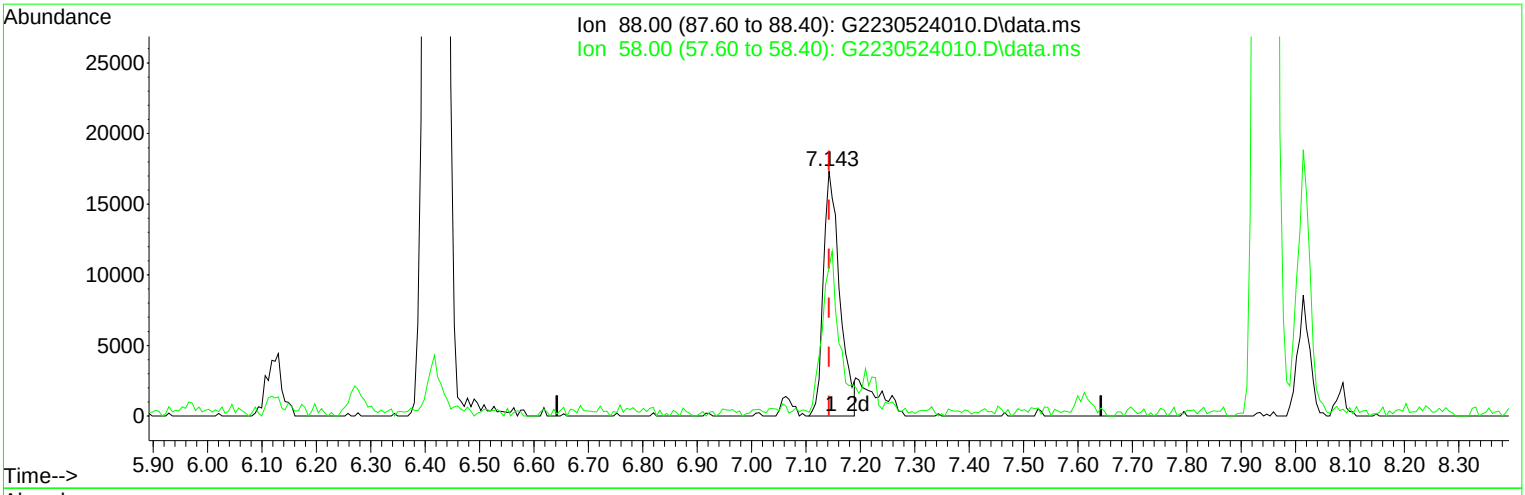
response 1252954

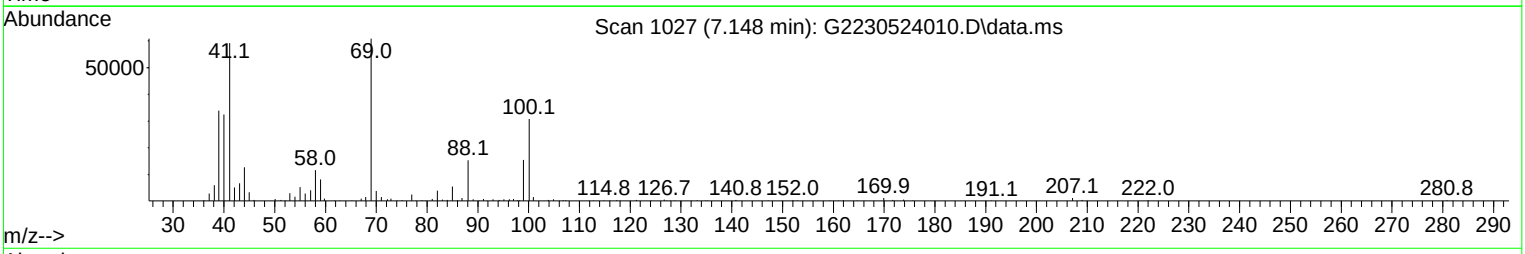
Ion	Exp%	Act%
56.10	100.00	100.00
41.10	69.10	54.20
43.10	53.20	38.31
42.10	27.70	23.24

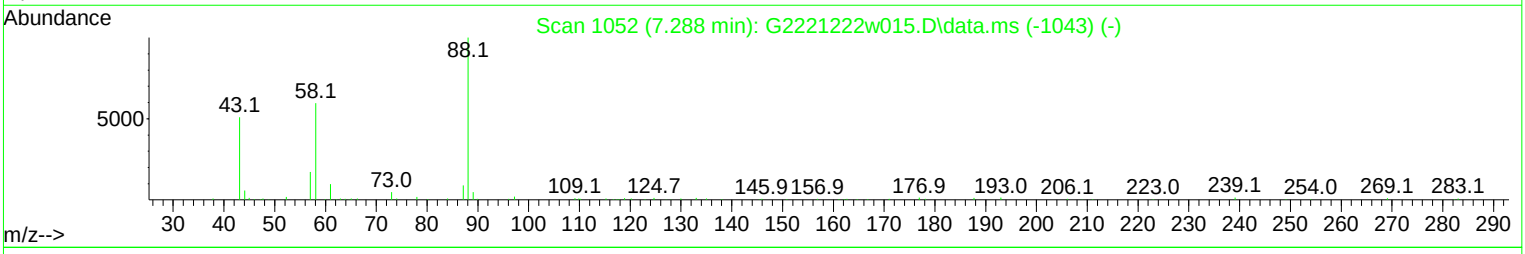
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524010.D
Acq On : 24 May 2023 19:10
Operator : PO1
Sample : SEQ-CAL6@@10
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 25 08:39:33 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:39:23 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524010.D\data.ms

(55) 1,4-dioxane (T)

7.146min (+ 0.004) 86.70 ug/L

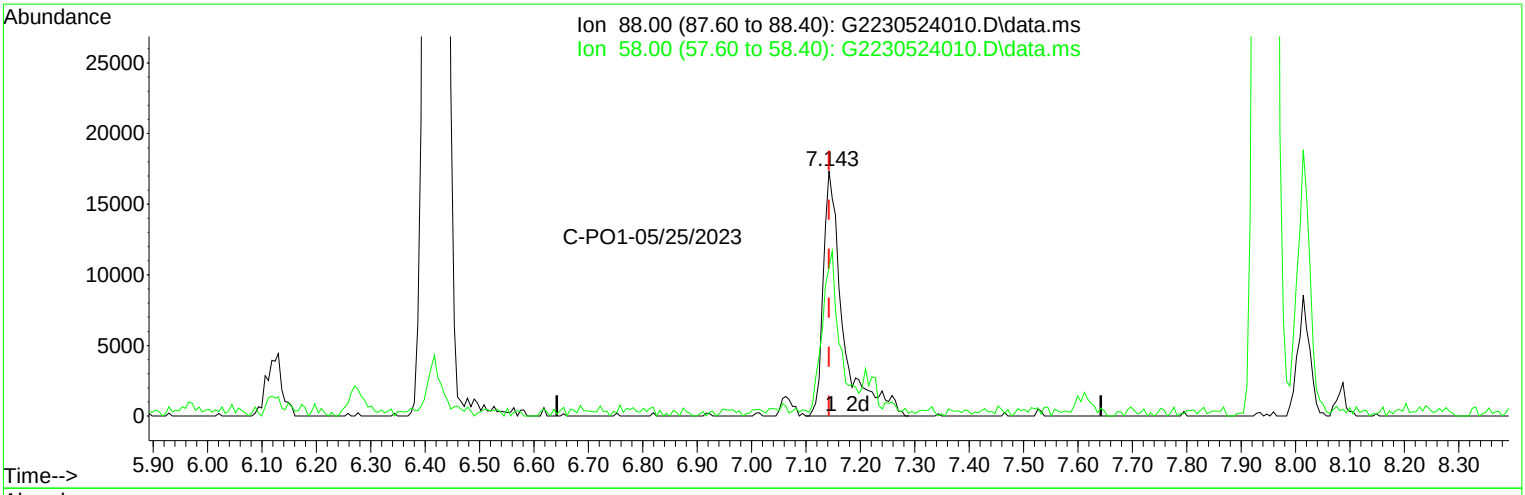
response 357357

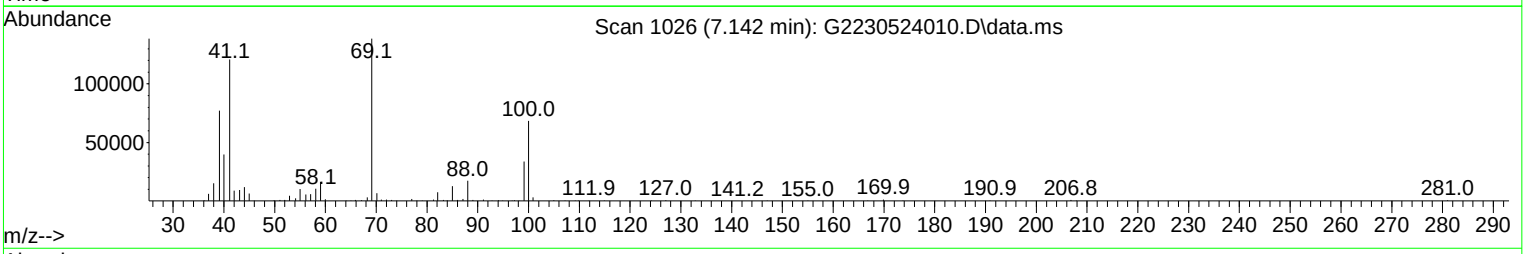
Ion	Exp%	Act%
88.00	100.00	100.00
58.00	56.10	69.59
0.00	0.00	0.00
0.00	0.00	0.00

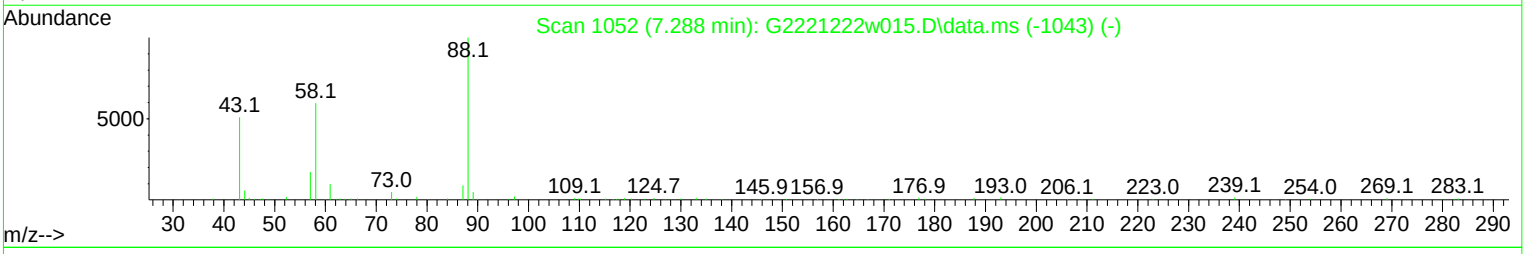
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524010.D
Acq On : 24 May 2023 19:10
Operator : PO1
Sample : SEQ-CAL6@@10
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 25 08:39:33 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:39:23 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524010.D\data.ms

(55) 1,4-dioxane (T)

7.142min (-0.000) 107.29 ug/L m

response 442237

Ion	Exp%	Act%
88.00	100.00	100.00
58.00	56.10	56.23
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524011.D
Acq On : 24 May 2023 19:34
Operator : PO1
Sample : SEQ-CAL7@@15
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 25 08:37:30 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:37:18 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.574	168	24016620	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.422	114	34367799	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.495	117	30113354	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.843	152	14114439	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.478	111	10668318	20.00	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.00%			
43) 1,2-Dichloroethane-d4	5.880	65	10619346	20.19	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.95%			
49) Fluorobenzene	6.279	96	39342143	20.06	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.30%			
64) Toluene-d8	8.017	98	38257432	20.23	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 101.15%			
81) 4-Bromofluorobenzene	10.686	174	6564410	9.57	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 95.70%			
97) d4-1,2-Dichlorobenzene	12.219	152	12159757	20.01	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.05%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.215	85	7108362	15.05	ug/L	100
3) Chloromethane	1.356	50	6216017	15.36	ug/L	99
4) Vinyl chloride	1.447	62	6981755	15.16	ug/L	100
5) Bromomethane	1.717	94	4428951	14.72	ug/L	99
6) Chloroethane	1.806	64	4265906	15.31	ug/L	97
7) Trichlorofluoromethane	2.031	101	10600941	14.86	ug/L	99
8) Ethyl ether	2.320	59	4904890	14.68	ug/L	89
9) Acrolein	2.442	56	2480257	38.28	ug/L	98
10) 1,1-Dichloroethene	2.525	61	7889961	14.78	ug/L	91
11) 1,1,2-Trichloro-1,2,2-...	2.535	101	5755113	14.81	ug/L	97
12) Acetone	2.611	43	5976713	50.51	ug/L	93
13) Iodomethane	2.678	142	8870179	14.55	ug/L	94
14) Carbon disulfide	2.741	76	16241401	14.61	ug/L	100
15) Isopropanol	2.795	45	2920748	154.71	ug/L	98
16) acetonitrile	2.920	41	8661751	36.99	ug/L	86
17) 3-Chloro-1-propene	2.922	76	3632333	14.62	ug/L	98
18) Methylene chloride	3.064	49	7067263	16.36	ug/L	85
19) Acrylonitrile	3.393	53	2697926	14.83	ug/L	95
20) trans-1,2-Dichloroethene	3.404	61	7573828	14.81	ug/L	91
21) Methyl tert-butyl ether	3.449	73	22086408	15.29	ug/L	93
22) Hexane	3.793	57	6132175	14.68	ug/L	95
23) 1,1-Dichloroethane	4.000	63	10376045	14.85	ug/L	97
24) Vinyl acetate	4.132	43	12670552	16.18	ug/L	94
25) 2-Chloro-1,3-butadiene	4.135	53	8016137	14.67	ug/L	89
26) 1-propanol	4.301	59	403125m	164.10	ug/L	
27) 2,2-Dichloropropane	4.827	77	9458731	14.93	ug/L	94
28) cis-1,2-Dichloroethene	4.837	61	9433093	15.07	ug/L	91
29) 2-Butanone	4.920	72	3288641	52.94	ug/L	91

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524011.D
Acq On : 24 May 2023 19:34
Operator : PO1
Sample : SEQ-CAL7@@15
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 25 08:37:30 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:37:18 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
30) Propionitrile	4.988	54	936456	15.84	ug/L		95
31) Ethyl acetate	5.025	61	1114668	14.94	ug/L		91
32) Methylacrylate	5.048	55	6888369	15.11	ug/L		94
33) 1-Bromopropane	5.077	41	3816229	14.90	ug/L		77
34) Bromochloromethane	5.150	130	5237751	14.96	ug/L		99
35) Methacrylonitrile	5.178	67	3435032	15.04	ug/L		93
36) Tetrahydrofuran	5.265	42	2069986	16.01	ug/L		92
37) Chloroform	5.277	83	11610802	14.71	ug/L		100
39) 1,1,1-Trichloroethane	5.481	97	10624806	14.79	ug/L		97
40) Cyclohexane	5.534	84	9866512	15.29	ug/L		85
41) 1-Chlorobutane	5.631	56	11063734	14.63	ug/L		98
42) 1,1-Dichloropropene	5.689	75	8388503	14.63	ug/L		95
44) 1,2-Dichloroethane	5.972	62	8600815	14.83	ug/L		99
45) Isobutanol	5.974	43	2256146	146.88	ug/L		99
47) Carbon tetrachloride	5.680	117	9203121	14.49	ug/L		98
48) Benzene	5.936	78	24872252	14.64	ug/L		99
50) Trichloroethene	6.696	95	6895974	14.49	ug/L		93
51) 1-Butanol	6.746	56	1678247m	159.79	ug/L		
52) 1,2-Dichloropropane	6.946	63	6037951	14.96	ug/L		91
53) Dibromomethane	7.072	174	6074575	15.04	ug/L	#	93
54) Methyl methacrylate	7.133	69	5822696	14.87	ug/L		92
55) 1,4-dioxane	7.148	88	602877	157.32	ug/L		91
56) Bromodichloromethane	7.260	83	9195280	14.62	ug/L		98
57) 2-Nitropropane	7.526	43	2663661	15.12	ug/L		92
58) 2-Chloroethyl vinyl ether	7.614	63	4896407	15.31	ug/L		100
59) cis-1,3-Dichloropropene	7.746	75	11185637	14.89	ug/L		96
60) 4-Methyl-2-pentanone	7.945	43	25433666	52.90	ug/L	#	91
61) trans-1,3-Dichloropropene	8.334	75	10671807	15.03	ug/L		92
62) 1,1,2-Trichloroethane	8.519	97	6611738	14.86	ug/L		96
65) Toluene	8.086	91	28127118	14.84	ug/L		98
66) Ethylmethacrylate	8.461	69	10171987	14.93	ug/L		91
67) Tetrachloroethene	8.648	166	8620449	11.26	ug/L		96
68) 1,3-Dichloropropane	8.687	76	10794326	14.94	ug/L		91
69) 2-Hexanone	8.810	43	16289070	52.71	ug/L		90
70) Dibromochloromethane	8.912	129	8452010	14.75	ug/L		99
71) 1,2-Dibromoethane	9.019	107	7334382	14.85	ug/L		98
72) Chlorobenzene	9.524	112	19072032	14.77	ug/L		95
73) 1,1,1,2-Tetrachloroethane	9.614	131	7509865	14.75	ug/L		97
74) Ethylbenzene	9.643	91	30851142	14.90	ug/L		96
75) m,p-Xylene	9.763	91	47018092	30.10	ug/L		96
76) Styrene	10.176	104	20721598	15.06	ug/L		95
77) Bromoform	10.354	173	6892906	14.95	ug/L		98
79) o-Xylene	10.161	91	24749554	14.04	ug/L		97
80) Isopropylbenzene	10.536	105	28985839	14.14	ug/L		97
82) Bromobenzene	10.828	77	10977493	14.29	ug/L		89
83) 1,1,2,2-Tetrachloroethane	10.843	83	8778397	14.41	ug/L		99
84) 1,2,3-Trichloropropane	10.881	110	3112992	14.35	ug/L		97
85) trans-1,4-Dichloro-2-b...	10.901	53	2327301	14.40	ug/L		74
86) n-Propylbenzene	10.949	91	32165192	14.18	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524011.D
Acq On : 24 May 2023 19:34
Operator : PO1
Sample : SEQ-CAL7@@15
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 25 08:37:30 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:37:18 2023
Response via : Initial Calibration
InstName : G

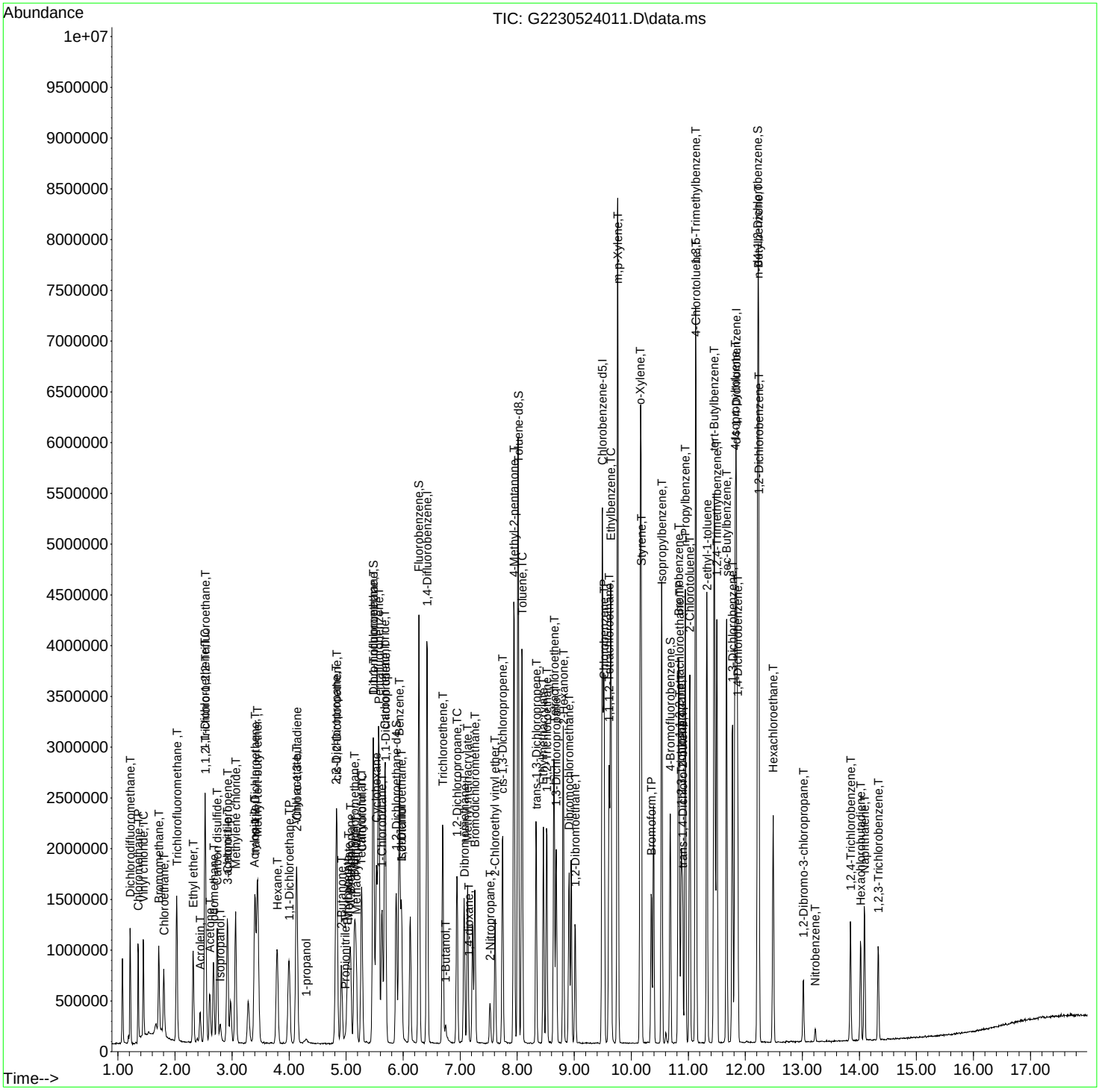
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
87) 2-Chlorotoluene	11.028	91	19524934	14.31	ug/L	96
88) 4-Chlorotoluene	11.137	91	22373688	14.37	ug/L	96
89) 1,3,5-Trimethylbenzene	11.129	105	22526781	14.35	ug/L	95
90) 2-ethyl-1-toluene	11.328	105	27342706	14.38	ug/L	98
91) tert-Butylbenzene	11.455	119	24555581	15.32	ug/L	91
92) 1,2,4-Trimethylbenzene	11.502	105	22503969	14.60	ug/L	94
93) sec-Butylbenzene	11.674	105	27896481	14.54	ug/L	97
94) 1,3-Dichlorobenzene	11.776	146	13490322	14.51	ug/L	99
95) 4-Isopropyltoluene	11.823	119	23326306	14.72	ug/L	98
96) 1,4-Dichlorobenzene	11.866	146	13244101	14.74	ug/L	98
98) 1,2-Dichlorobenzene	12.238	146	12339994	14.84	ug/L	99
99) n-Butylbenzene	12.232	91	17518673	14.95	ug/L	94
100) Hexachloroethane	12.491	201	4323789	14.57	ug/L	99
101) 1,2-Dibromo-3-chloropr...	13.020	157	1981752	16.16	ug/L	97
102) Nitrobenzene	13.228	77	602544	15.91	ug/L	87
103) 1,2,4-Trichlorobenzene	13.847	180	3887931	16.09	ug/L	97
104) Hexachlorobutadiene	14.024	225	1995544	15.65	ug/L	97
105) Naphthalene	14.091	128	10601150	15.95	ug/L	99
106) 1,2,3-Trichlorobenzene	14.335	180	3065695	15.77	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524011.D
Acq On : 24 May 2023 19:34
Operator : PO1
Sample : SEQ-CAL7@@15
Misc :
ALS Vial : 11 Sample Multiplier: 1

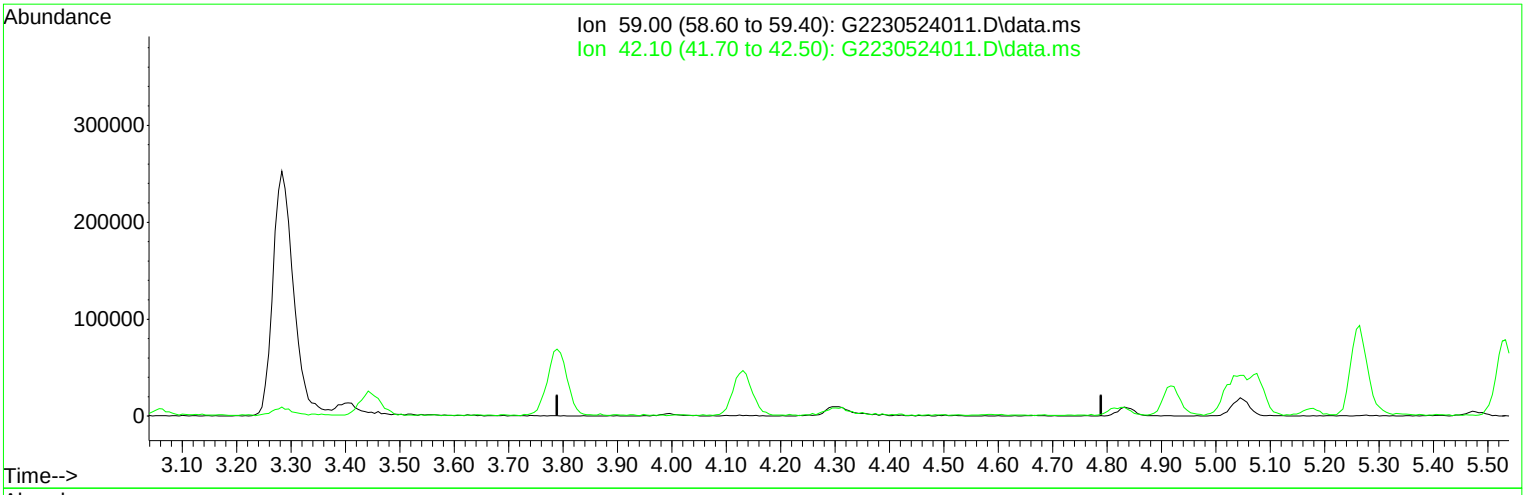
Quant Time: May 25 08:37:30 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:37:18 2023
Response via : Initial Calibration
InstName : G

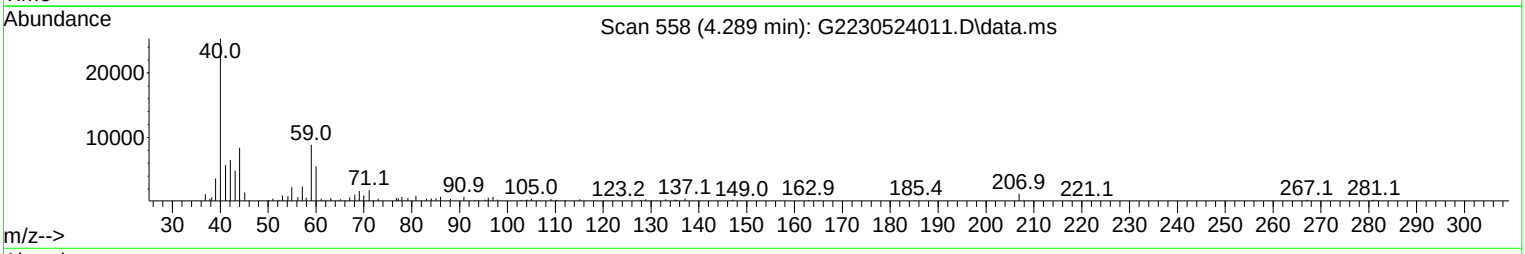


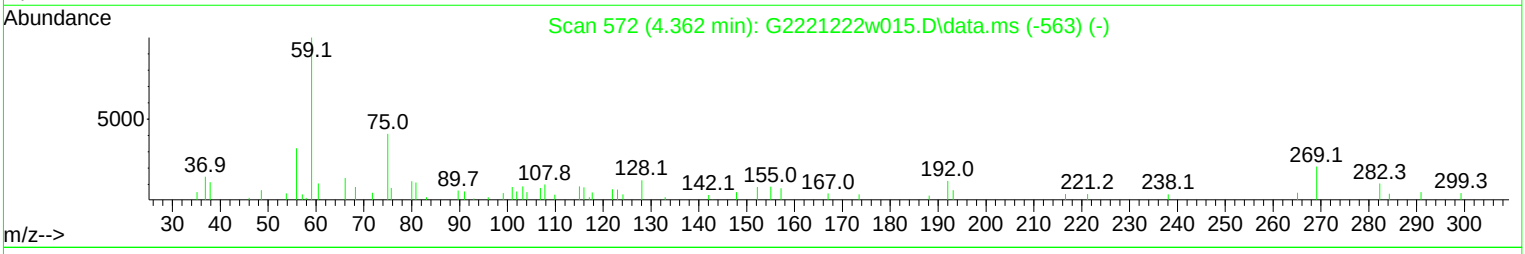
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524011.D
Acq On : 24 May 2023 19:34
Operator : PO1
Sample : SEQ-CAL7@@15
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 25 08:37:30 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:37:18 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524011.D\data.ms

(26) 1-propanol

4.289min (-4.289) 0.00 ug/L

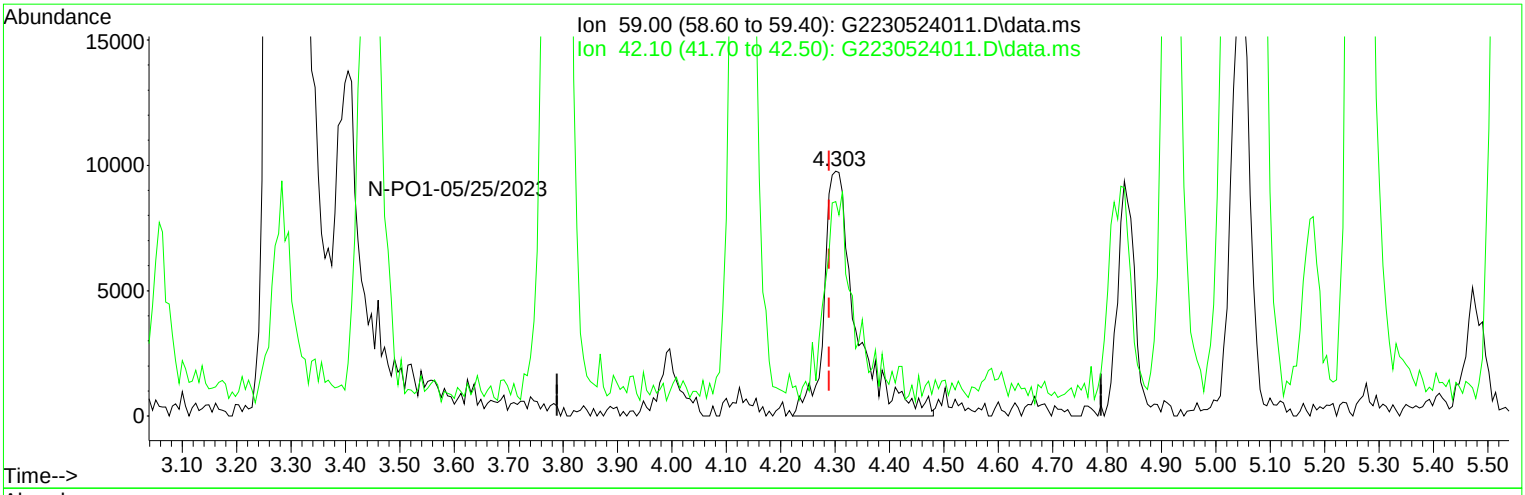
response 0

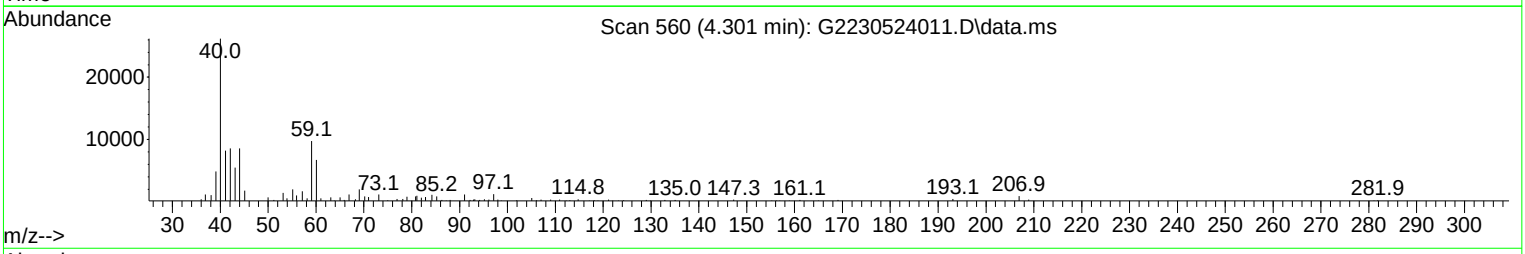
Ion	Exp%	Act%
59.00	100.00	0.00
42.10	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

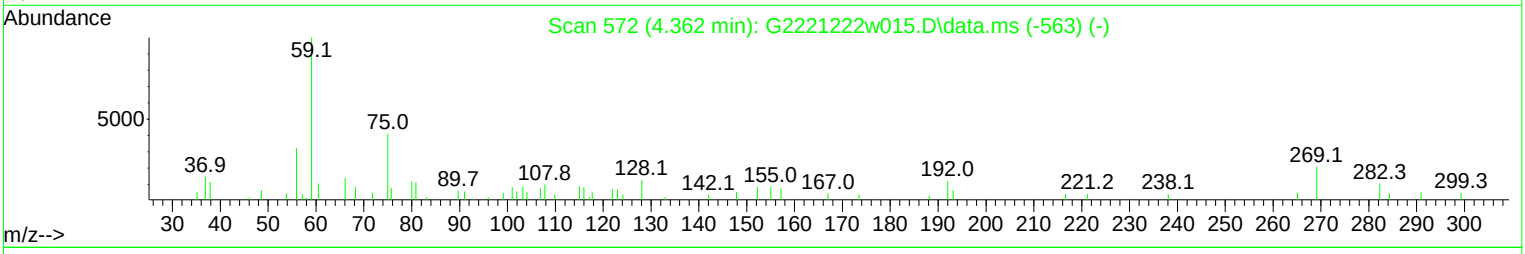
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524011.D
Acq On : 24 May 2023 19:34
Operator : PO1
Sample : SEQ-CAL7@@15
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 25 08:37:30 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:37:18 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524011.D\data.ms

(26) 1-propanol

4.301min (+ 0.012) 164.10 ug/L m

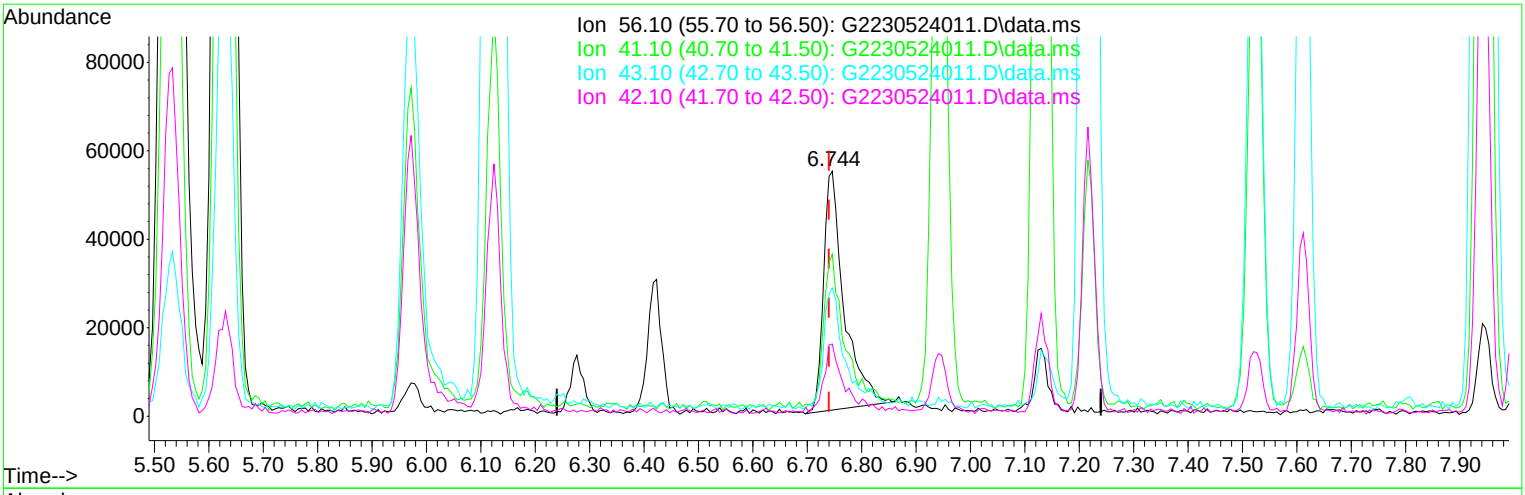
response 403125

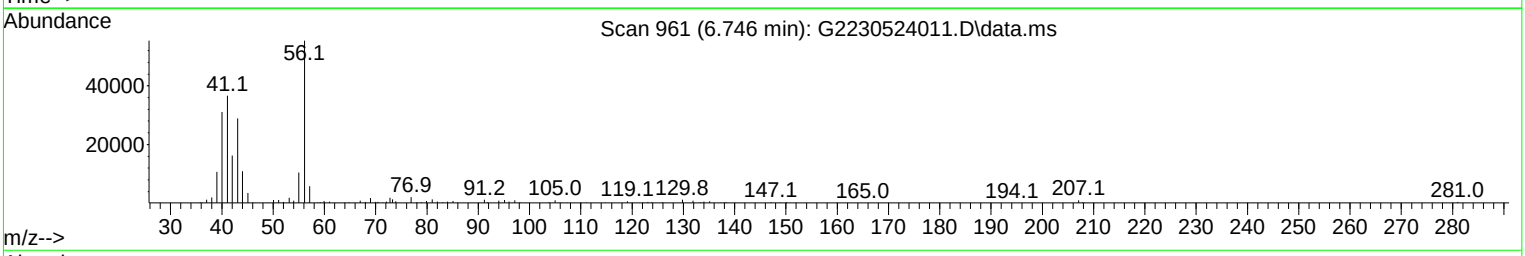
Ion	Exp%	Act%
59.00	100.00	100.00
42.10	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

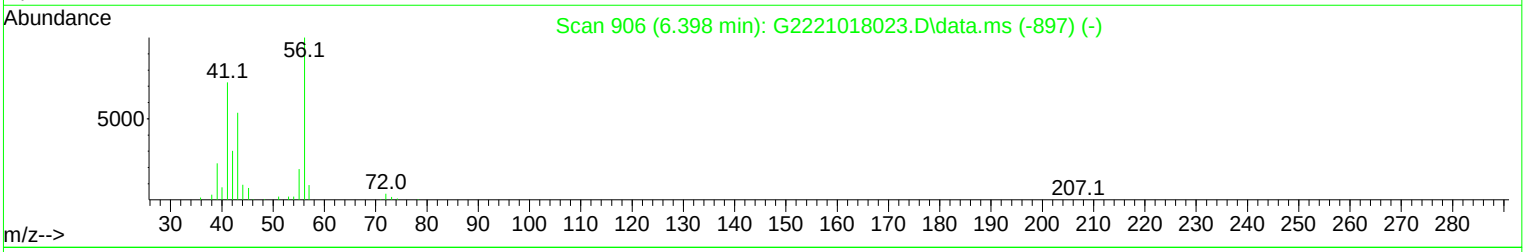
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524011.D
Acq On : 24 May 2023 19:34
Operator : PO1
Sample : SEQ-CAL7@@15
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 25 08:37:30 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:37:18 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524011.D\data.ms

(51) 1-Butanol (T)

6.746min (+ 0.006) 134.44 ug/L

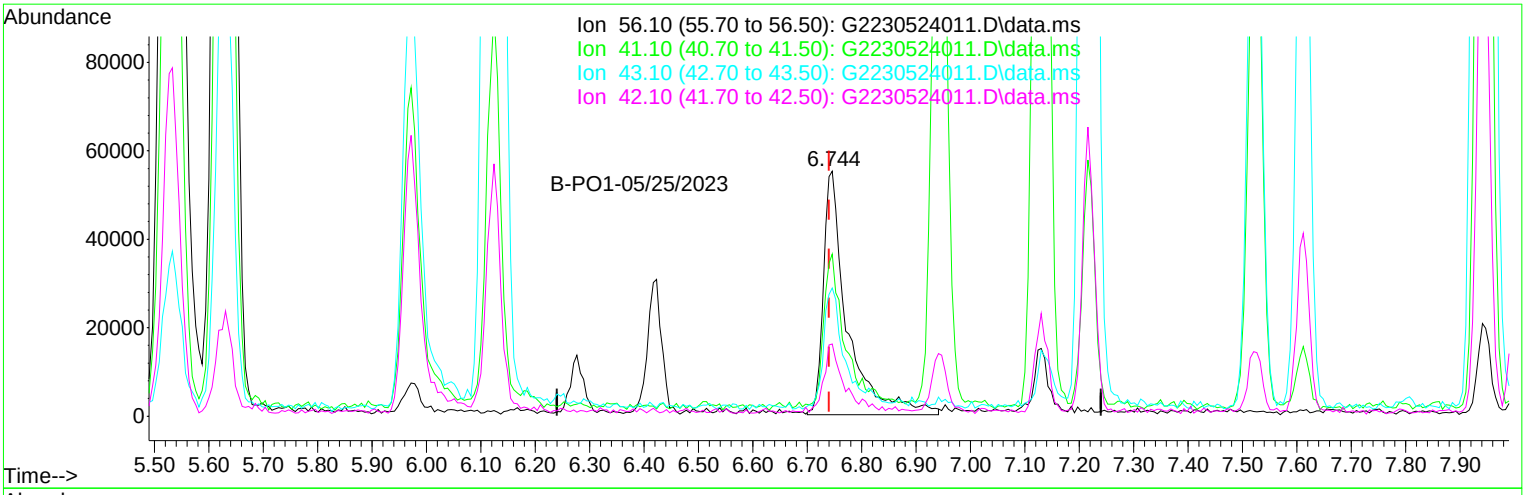
response 1412023

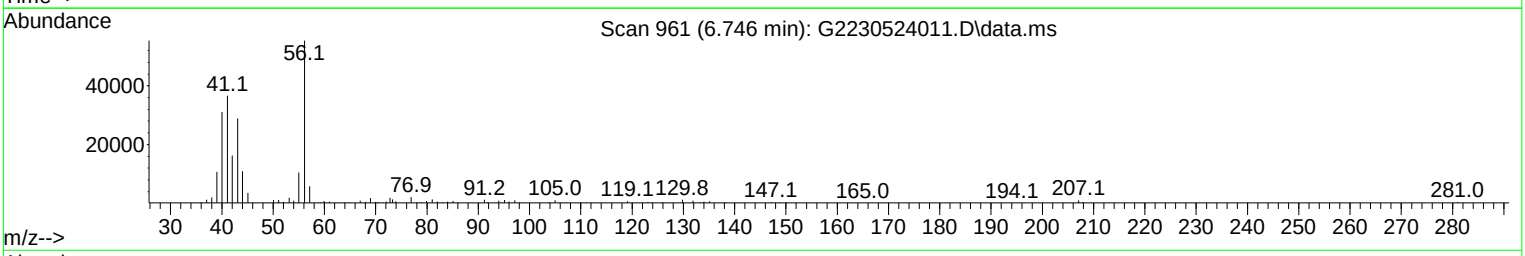
Ion	Exp%	Act%
56.10	100.00	100.00
41.10	69.10	69.67
43.10	53.20	54.30
42.10	27.70	26.24

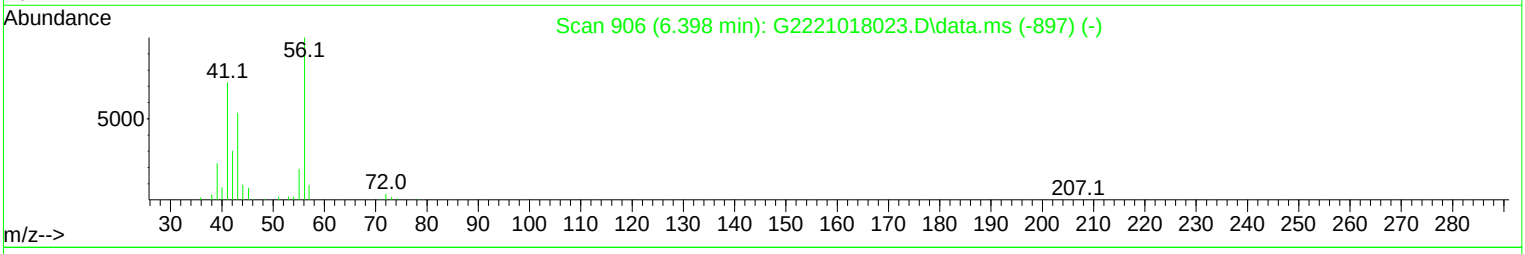
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524011.D
Acq On : 24 May 2023 19:34
Operator : PO1
Sample : SEQ-CAL7@@15
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 25 08:37:30 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:37:18 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524011.D\data.ms

(51) 1-Butanol (T)

6.746min (+ 0.006) 159.79 ug/L m

response 1678247

Ion	Exp%	Act%
56.10	100.00	100.00
41.10	69.10	58.62
43.10	53.20	45.69
42.10	27.70	22.08

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524012.D
Acq On : 24 May 2023 19:58
Operator : PO1
Sample : SEQ-CAL8@@20
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 25 08:32:48 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:32:26 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.576	168	24845971	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.424	114	35578817	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.497	117	31330658	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.843	152	13591330	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.479	111	11135323	20.27	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 101.35%			
43) 1,2-Dichloroethane-d4	5.881	65	10930721	20.14	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.70%			
49) Fluorobenzene	6.280	96	40515467	19.94	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.70%			
64) Toluene-d8	8.019	98	39146251	19.85	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.25%			
81) 4-Bromofluorobenzene	10.687	174	6568234	9.91	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 99.10%			
97) d4-1,2-Dichlorobenzene	12.219	152	11473319	19.41	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.05%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.216	85	9506235	19.20	ug/L	99
3) Chloromethane	1.357	50	8263284	19.61	ug/L	100
4) Vinyl chloride	1.449	62	9300761	19.29	ug/L	100
5) Bromomethane	1.720	94	6169564	19.72	ug/L	99
6) Chloroethane	1.808	64	5614021	19.23	ug/L	96
7) Trichlorofluoromethane	2.034	101	14193906	18.87	ug/L	99
8) Ethyl ether	2.321	59	6568199	18.54	ug/L	90
9) Acrolein	2.442	56	3253384	47.83	ug/L	95
10) 1,1-Dichloroethene	2.527	61	10574694	18.74	ug/L	90
11) 1,1,2-Trichloro-1,2,2-...	2.537	101	7543876	18.20	ug/L	97
12) Acetone	2.612	43	7773395	60.68	ug/L	91
13) Iodomethane	2.679	142	12036140	18.66	ug/L	95
14) Carbon disulfide	2.742	76	21978676	18.70	ug/L	99
15) Isopropanol	2.792	45	3576024	175.67	ug/L	99
16) acetonitrile	2.921	41	11585824	46.81	ug/L	86
17) 3-Chloro-1-propene	2.923	76	4956713	18.95	ug/L	98
18) Methylene chloride	3.065	49	8519314	18.63	ug/L	85
19) Acrylonitrile	3.393	53	3544498m	18.30	ug/L	
20) trans-1,2-Dichloroethene	3.405	61	10125334	18.73	ug/L	91
21) Methyl tert-butyl ether	3.448	73	28881800	19.00	ug/L	93
22) Hexane	3.795	57	8164612	18.39	ug/L	96
23) 1,1-Dichloroethane	4.002	63	13826655	18.72	ug/L	97
24) Vinyl acetate	4.133	43	16460132	20.48	ug/L	95
25) 2-Chloro-1,3-butadiene	4.138	53	10751980	18.57	ug/L	89
26) 1-propanol	4.301	59	441329m	162.92	ug/L	
27) 2,2-Dichloropropane	4.829	77	12722712	19.12	ug/L	93
28) cis-1,2-Dichloroethene	4.838	61	12361653	18.67	ug/L	89
29) 2-Butanone	4.921	72	4214206	63.56	ug/L	92

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524012.D
Acq On : 24 May 2023 19:58
Operator : PO1
Sample : SEQ-CAL8@@20
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 25 08:32:48 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:32:26 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
30) Propionitrile	4.987	54	1146480	18.17	ug/L		94
31) Ethyl acetate	5.025	61	1471111	18.62	ug/L		85
32) Methylacrylate	5.048	55	8929649	18.44	ug/L		95
33) 1-Bromopropane	5.078	41	5094969	18.86	ug/L		77
34) Bromochloromethane	5.151	130	6949367	18.80	ug/L		99
35) Methacrylonitrile	5.177	67	4464384	18.39	ug/L		93
36) Tetrahydrofuran	5.263	42	2504290	18.14	ug/L		83
37) Chloroform	5.279	83	15594792	18.67	ug/L		100
39) 1,1,1-Trichloroethane	5.481	97	14096176	18.49	ug/L		97
40) Cyclohexane	5.536	84	12762332	18.70	ug/L		86
41) 1-Chlorobutane	5.632	56	14946614	18.69	ug/L		98
42) 1,1-Dichloropropene	5.691	75	11231385	18.44	ug/L		94
44) 1,2-Dichloroethane	5.973	62	11408848	18.57	ug/L		99
45) Isobutanol	5.972	43	2963100m	180.36	ug/L		
47) Carbon tetrachloride	5.682	117	12358978	18.25	ug/L		100
48) Benzene	5.937	78	33305679	18.45	ug/L		100
50) Trichloroethene	6.697	95	9217037	18.12	ug/L		94
51) 1-Butanol	6.740	56	2100862m	190.00	ug/L		
52) 1,2-Dichloropropane	6.947	63	7944412	18.55	ug/L		91
53) Dibromomethane	7.073	174	7900287	18.38	ug/L	#	94
54) Methyl methacrylate	7.134	69	7710129	18.57	ug/L		93
55) 1,4-dioxane	7.150	88	735204	178.77	ug/L		94
56) Bromodichloromethane	7.261	83	12345343	18.48	ug/L		100
57) 2-Nitropropane	7.526	43	3420429	18.19	ug/L		95
58) 2-Chloroethyl vinyl ether	7.615	63	6386027	18.95	ug/L		99
59) cis-1,3-Dichloropropene	7.746	75	14760348	18.50	ug/L		96
60) 4-Methyl-2-pentanone	7.946	43	32685926	63.69	ug/L	#	91
61) trans-1,3-Dichloropropene	8.336	75	13840237	18.29	ug/L		94
62) 1,1,2-Trichloroethane	8.520	97	8749797	18.54	ug/L		95
65) Toluene	8.088	91	37282322	18.40	ug/L		97
66) Ethylmethacrylate	8.462	69	13228450	18.05	ug/L		91
67) Tetrachloroethene	8.648	166	11795446	13.11	ug/L		96
68) 1,3-Dichloropropane	8.689	76	14168683	18.32	ug/L		90
69) 2-Hexanone	8.810	43	20581475	61.38	ug/L		89
70) Dibromochloromethane	8.913	129	11243317	18.33	ug/L		98
71) 1,2-Dibromoethane	9.020	107	9607138	18.11	ug/L		99
72) Chlorobenzene	9.525	112	25220900	18.21	ug/L		95
73) 1,1,1,2-Tetrachloroethane	9.614	131	9919659	18.14	ug/L		97
74) Ethylbenzene	9.644	91	40412599	18.20	ug/L		96
75) m,p-Xylene	9.765	91	61283226	36.66	ug/L		95
76) Styrene	10.178	104	26805256	18.14	ug/L		95
77) Bromoform	10.355	173	8917436	17.96	ug/L		97
79) o-Xylene	10.162	91	32323956	18.59	ug/L		97
80) Isopropylbenzene	10.537	105	37513763	18.54	ug/L		97
82) Bromobenzene	10.828	77	14177205	18.78	ug/L		89
83) 1,1,2,2-Tetrachloroethane	10.843	83	11247175	18.78	ug/L		98
84) 1,2,3-Trichloropropane	10.882	110	3917020	18.19	ug/L		98
85) trans-1,4-Dichloro-2-b...	10.903	53	2972642	18.67	ug/L		74
86) n-Propylbenzene	10.950	91	41595917	18.59	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524012.D
Acq On : 24 May 2023 19:58
Operator : PO1
Sample : SEQ-CAL8@@20
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 25 08:32:48 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:32:26 2023
Response via : Initial Calibration
InstName : G

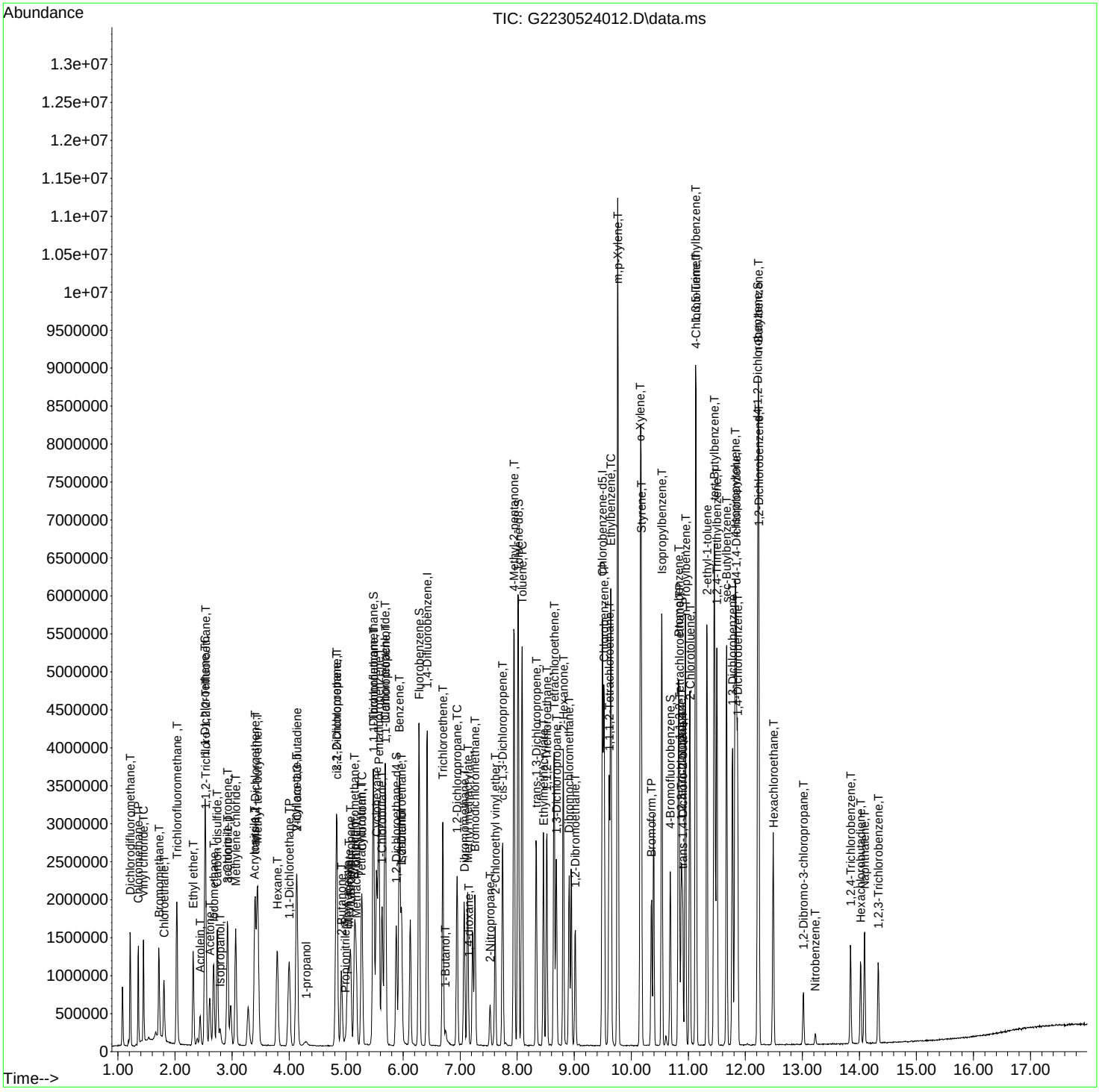
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
87)	2-Chlorotoluene	11.029	91	24931745	18.50	ug/L	96
88)	4-Chlorotoluene	11.138	91	28380692	18.44	ug/L	95
89)	1,3,5-Trimethylbenzene	11.130	105	28550044	18.38	ug/L	96
90)	2-ethyl-1-toluene	11.329	105	34852804	18.59	ug/L	98
91)	tert-Butylbenzene	11.456	119	30987381	20.12	ug/L	90
92)	1,2,4-Trimethylbenzene	11.502	105	28119467	18.46	ug/L	93
93)	sec-Butylbenzene	11.674	105	34871849	18.36	ug/L	98
94)	1,3-Dichlorobenzene	11.777	146	16839497	18.26	ug/L	99
95)	4-Isopropyltoluene	11.823	119	28698885	18.26	ug/L	98
96)	1,4-Dichlorobenzene	11.866	146	16204637	18.15	ug/L	98
98)	1,2-Dichlorobenzene	12.238	146	14915723	18.01	ug/L	99
99)	n-Butylbenzene	12.232	91	21148528	18.18	ug/L	94
100)	Hexachloroethane	12.492	201	5284503	17.82	ug/L	98
101)	1,2-Dibromo-3-chloropr...	13.021	157	2141772	17.33	ug/L	96
102)	Nitrobenzene	13.228	77	673557	17.79	ug/L	91
103)	1,2,4-Trichlorobenzene	13.847	180	4251379	17.52	ug/L	98
104)	Hexachlorobutadiene	14.024	225	2196256	17.00	ug/L	98
105)	Naphthalene	14.092	128	11796023	17.73	ug/L	99
106)	1,2,3-Trichlorobenzene	14.334	180	3522089	18.27	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524012.D
Acq On : 24 May 2023 19:58
Operator : PO1
Sample : SEQ-CAL8@@20
Misc :
ALS Vial : 12 Sample Multiplier: 1

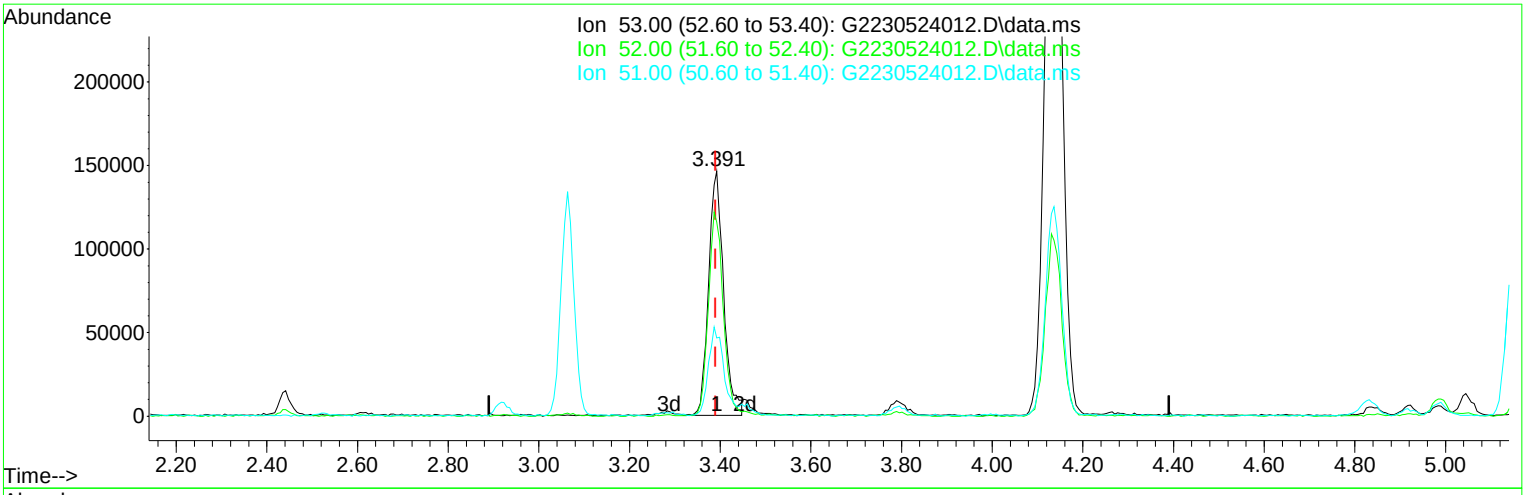
Quant Time: May 25 08:32:48 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:32:26 2023
Response via : Initial Calibration
InstName : G

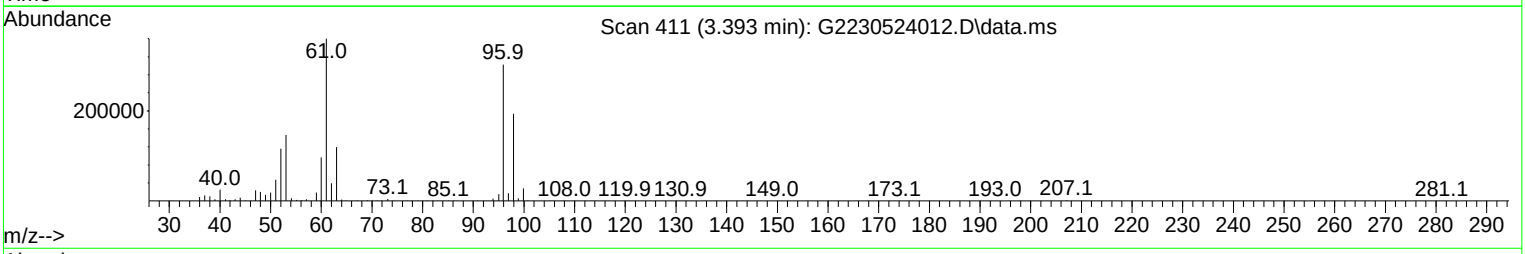


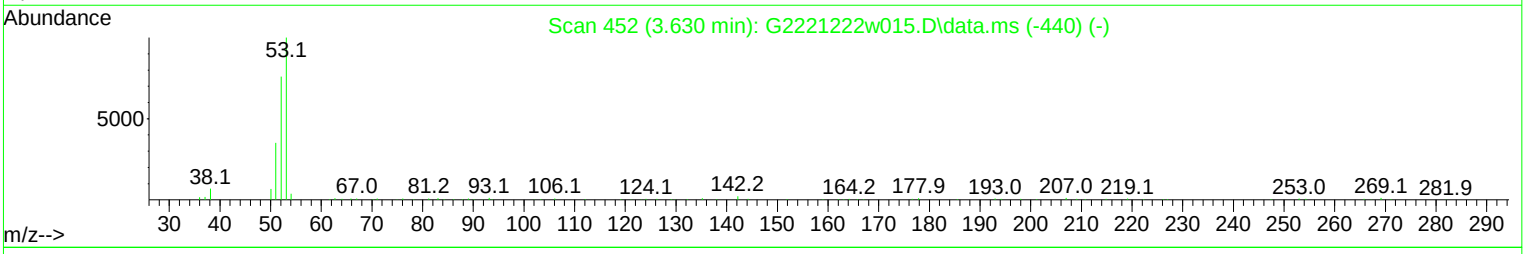
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524012.D
Acq On : 24 May 2023 19:58
Operator : PO1
Sample : SEQ-CAL8@@20
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 25 08:32:48 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:32:26 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524012.D\data.ms

(19) Acrylonitrile (T)

3.393min (+ 0.003) 17.32 ug/L

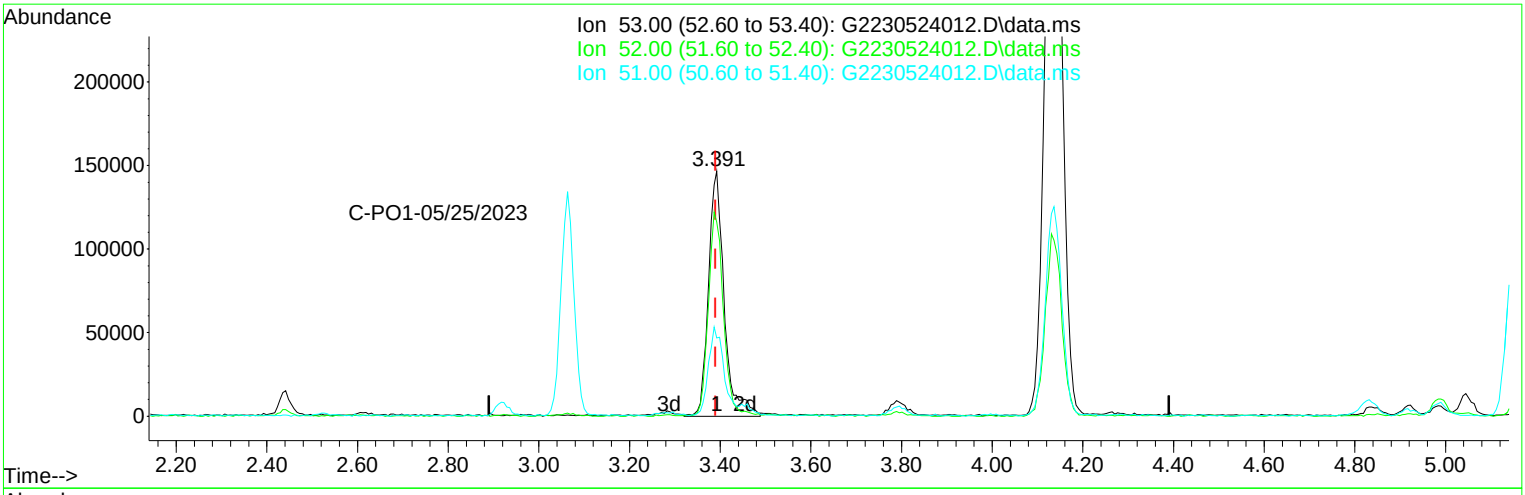
response 3355522

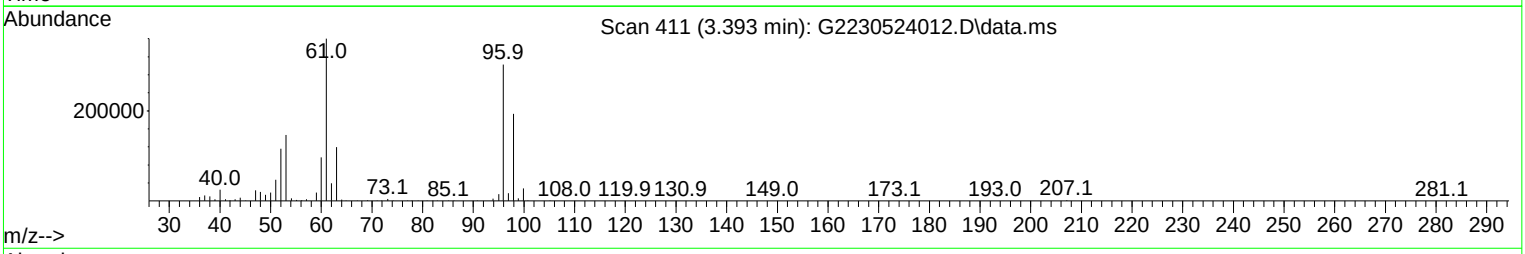
Ion	Exp%	Act%
53.00	100.00	100.00
52.00	82.20	84.70
51.00	38.40	37.35
0.00	0.00	0.00

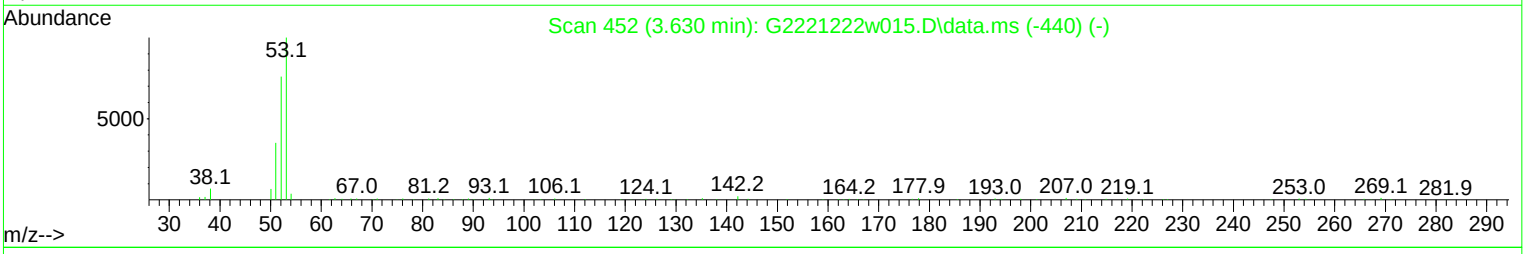
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524012.D
Acq On : 24 May 2023 19:58
Operator : PO1
Sample : SEQ-CAL8@@20
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 25 08:32:48 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:32:26 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524012.D\data.ms

(19) Acrylonitrile (T)

3.393min (+ 0.003) 18.30 ug/L m

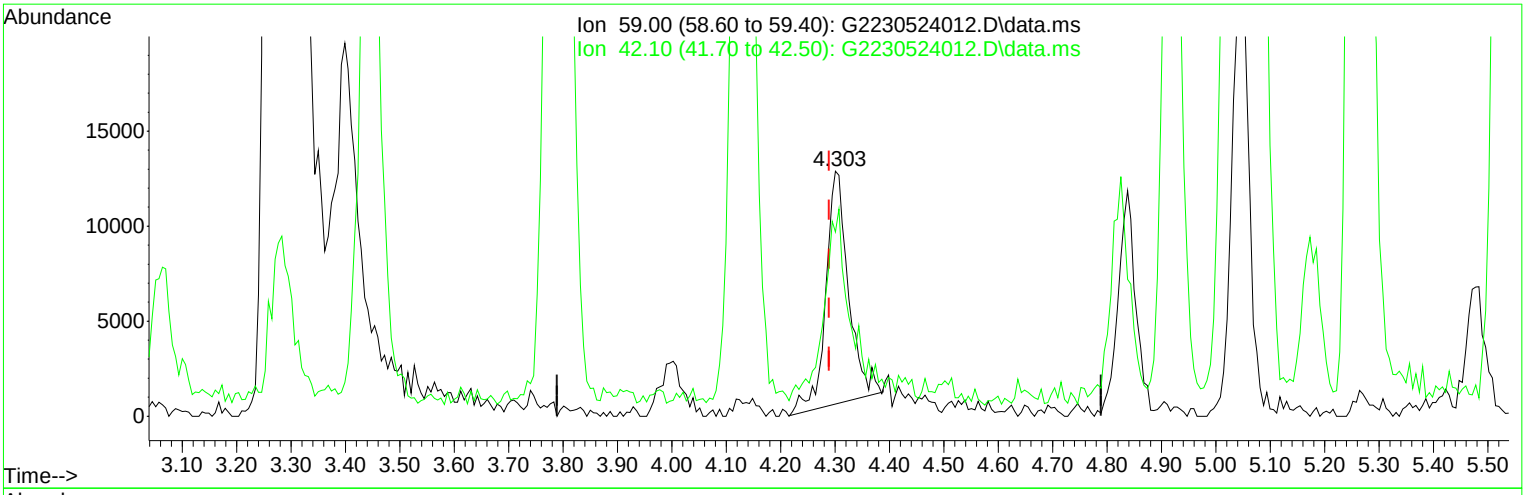
response 3544498

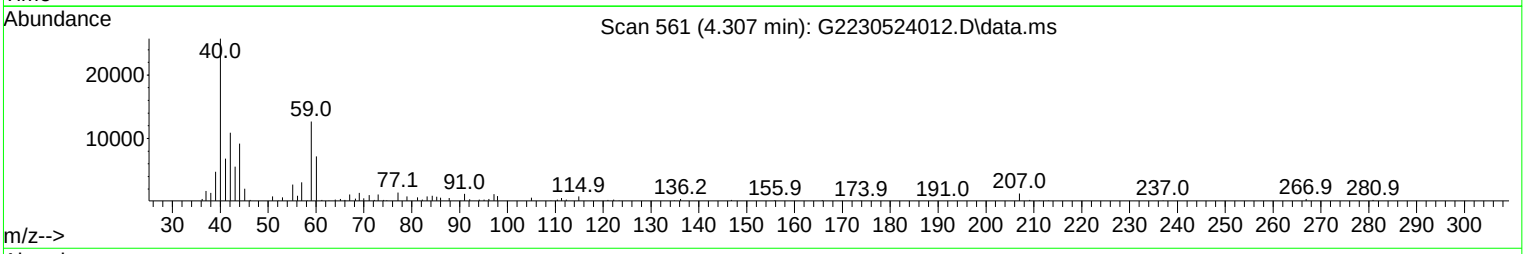
Ion	Exp%	Act%
53.00	100.00	100.00
52.00	82.20	80.19
51.00	38.40	35.35
0.00	0.00	0.00

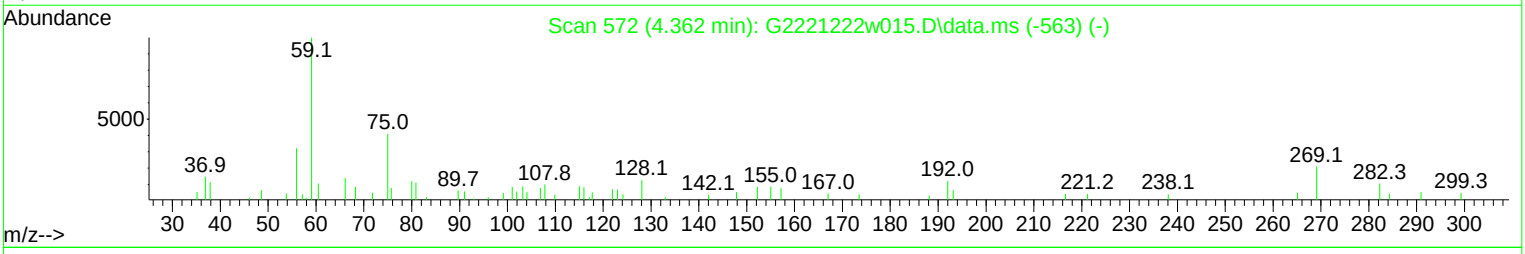
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524012.D
Acq On : 24 May 2023 19:58
Operator : PO1
Sample : SEQ-CAL8@@20
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 25 08:32:48 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:32:26 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524012.D\data.ms

(26) 1-propanol

4.306min (+ 0.017) 130.27 ug/L

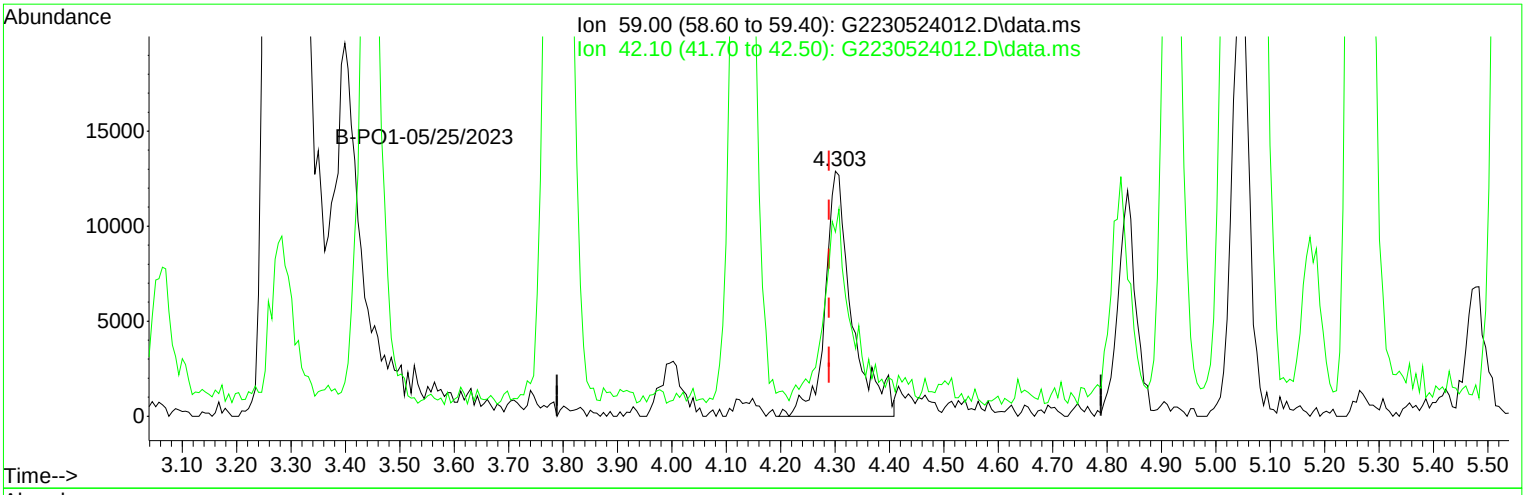
response 352867

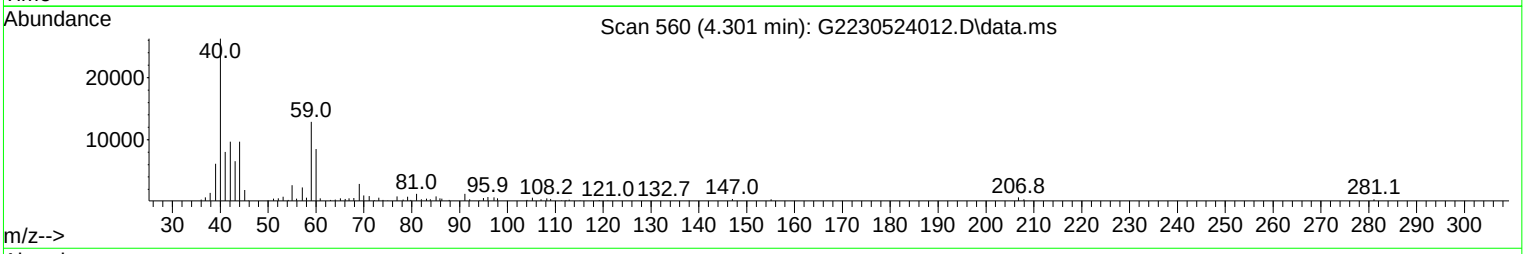
Ion	Exp%	Act%
59.00	100.00	100.00
42.10	0.00	84.54#
0.00	0.00	0.00
0.00	0.00	0.00

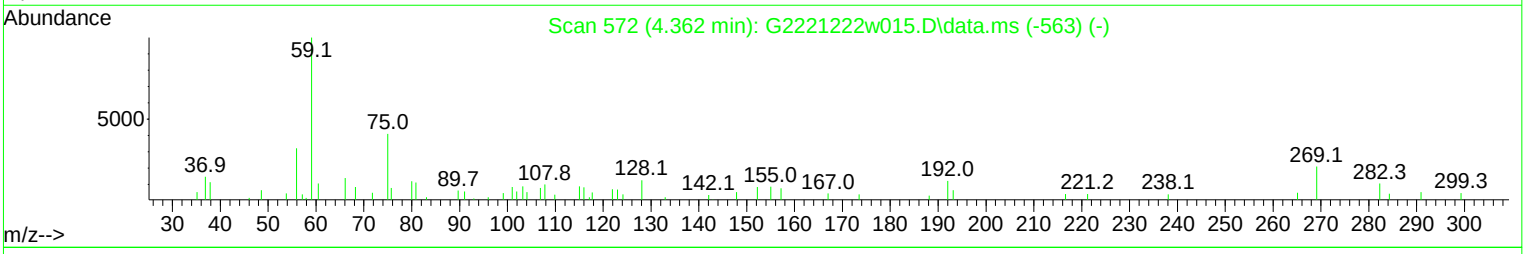
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524012.D
Acq On : 24 May 2023 19:58
Operator : PO1
Sample : SEQ-CAL8@@20
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 25 08:32:48 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:32:26 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524012.D\data.ms

(26) 1-propanol

4.301min (+ 0.012) 162.92 ug/L m

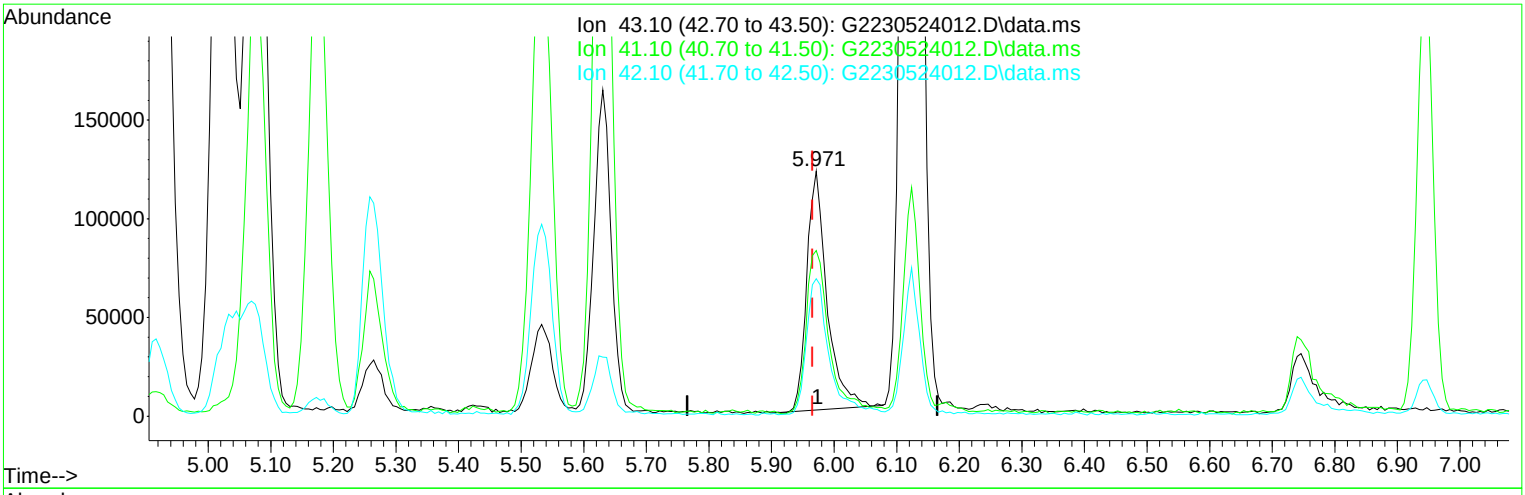
response 441329

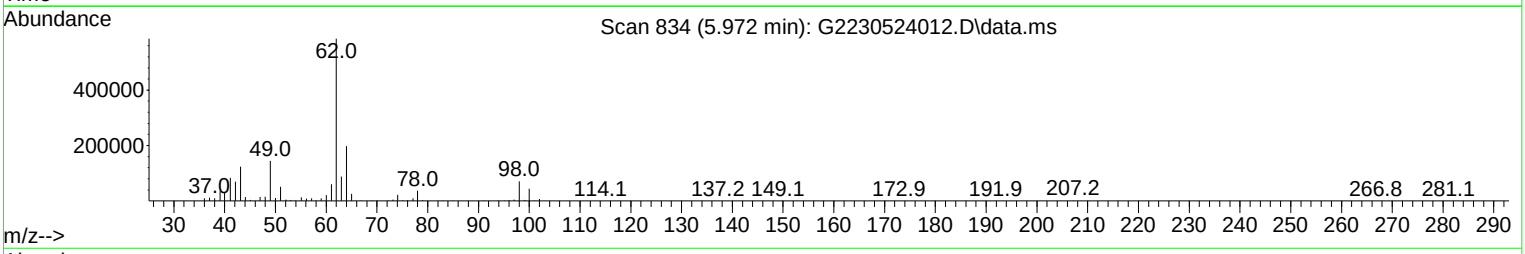
Ion	Exp%	Act%
59.00	100.00	100.00
42.10	0.00	67.60#
0.00	0.00	0.00
0.00	0.00	0.00

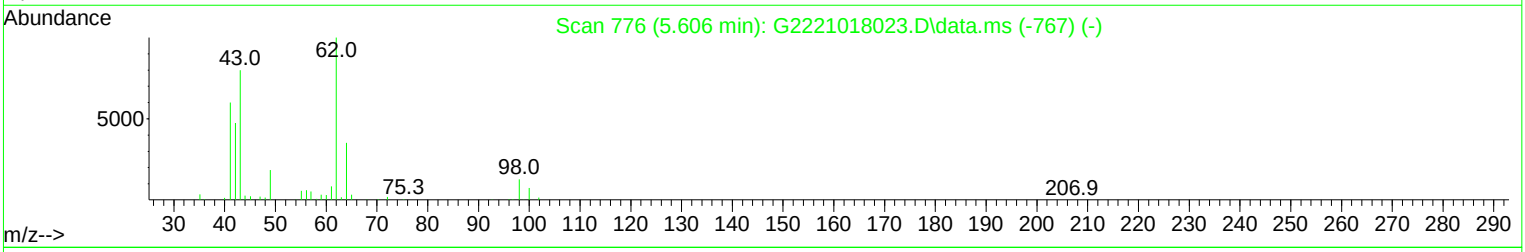
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524012.D
Acq On : 24 May 2023 19:58
Operator : PO1
Sample : SEQ-CAL8@@20
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 25 08:32:48 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:32:26 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524012.D\data.ms

(45) Isobutanol

5.974min (+ 0.008) 164.97 ug/L

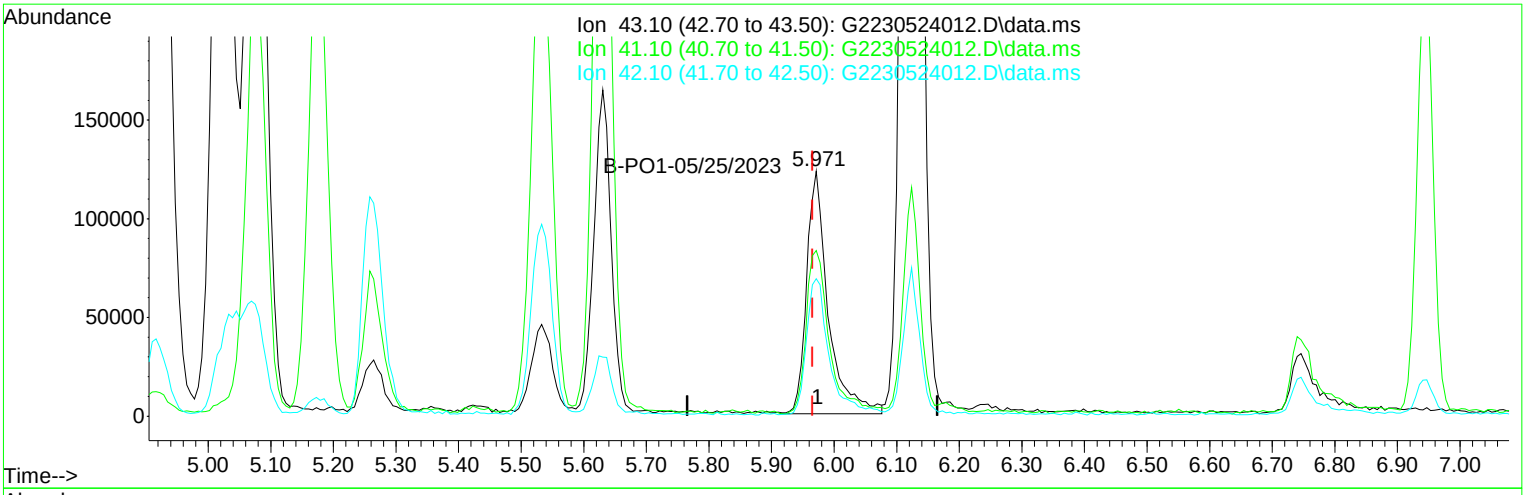
response 2710181

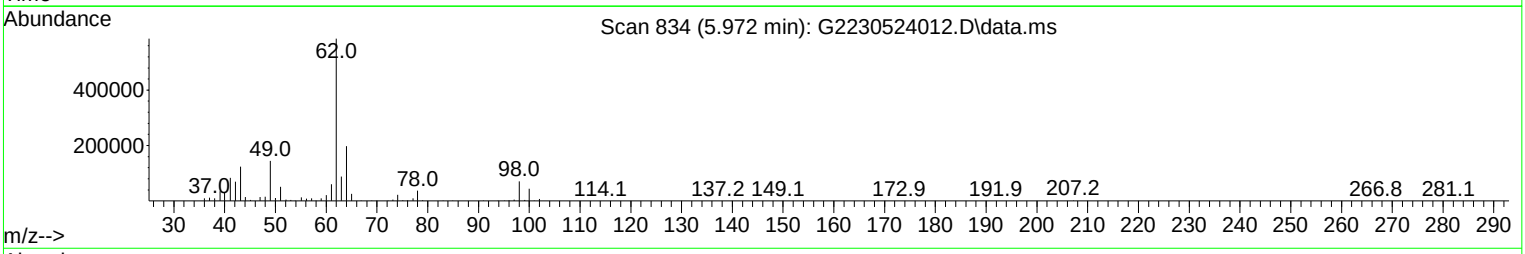
Ion	Exp%	Act%
43.10	100.00	100.00
41.10	70.10	74.91
42.10	58.40	61.89
0.00	0.00	0.00

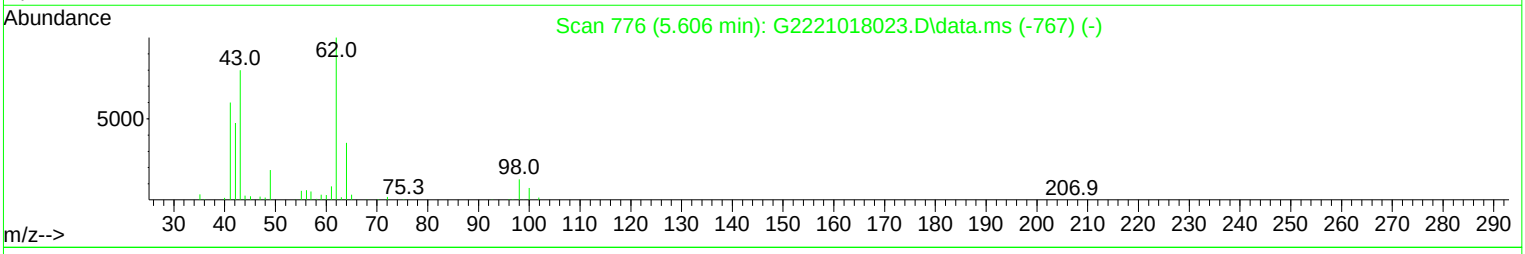
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524012.D
Acq On : 24 May 2023 19:58
Operator : PO1
Sample : SEQ-CAL8@@20
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 25 08:32:48 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:32:26 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524012.D\data.ms

(45) Isobutanol

5.972min (+ 0.006) 180.36 ug/L m

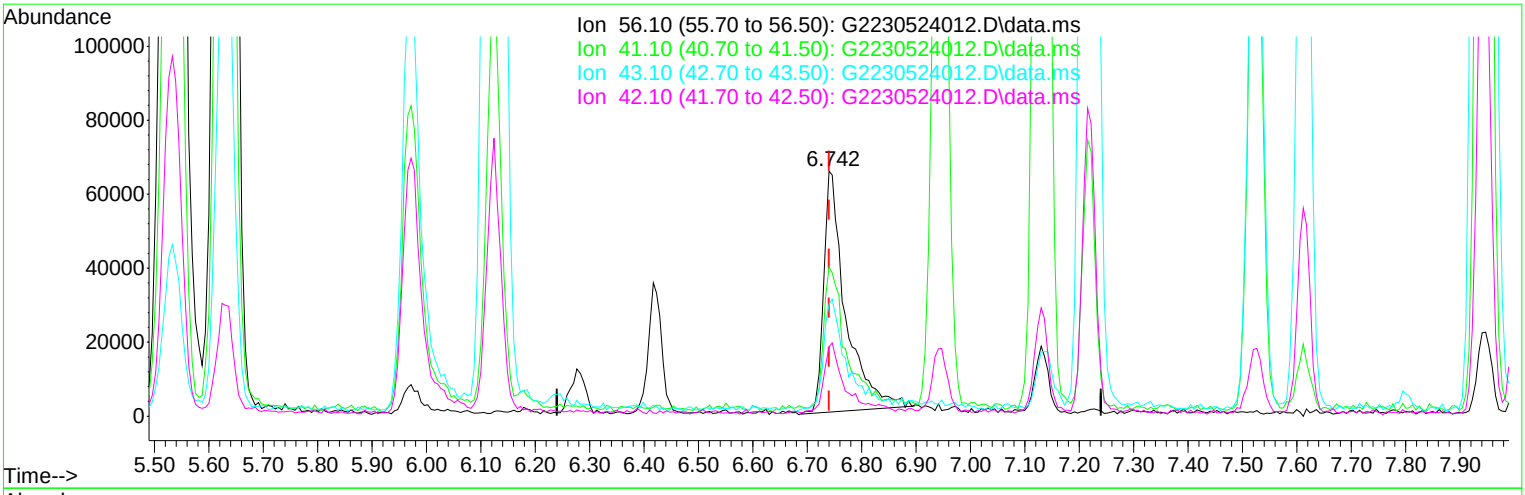
response 2963100

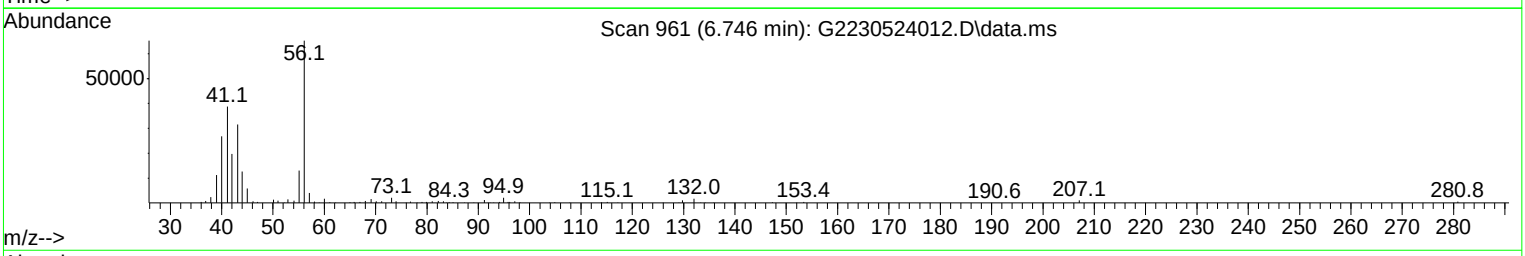
Ion	Exp%	Act%
43.10	100.00	100.00
41.10	70.10	68.51
42.10	58.40	56.60
0.00	0.00	0.00

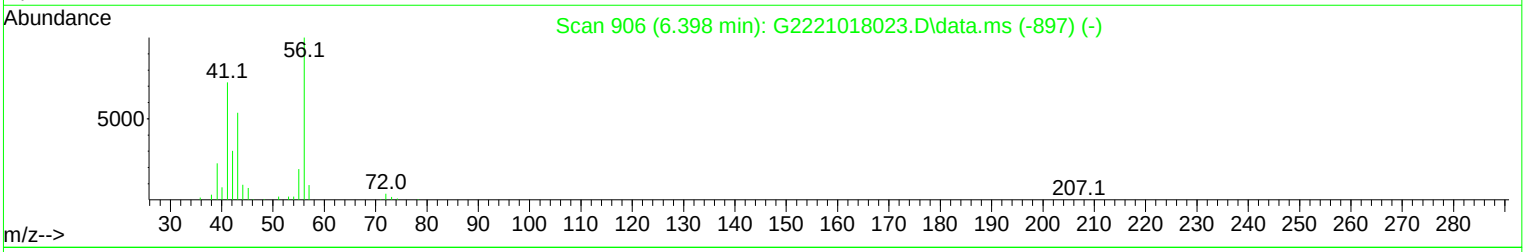
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524012.D
Acq On : 24 May 2023 19:58
Operator : PO1
Sample : SEQ-CAL8@@20
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 25 08:32:48 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:32:26 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524012.D\data.ms

(51) 1-Butanol (T)

6.746min (+ 0.006) 165.19 ug/L

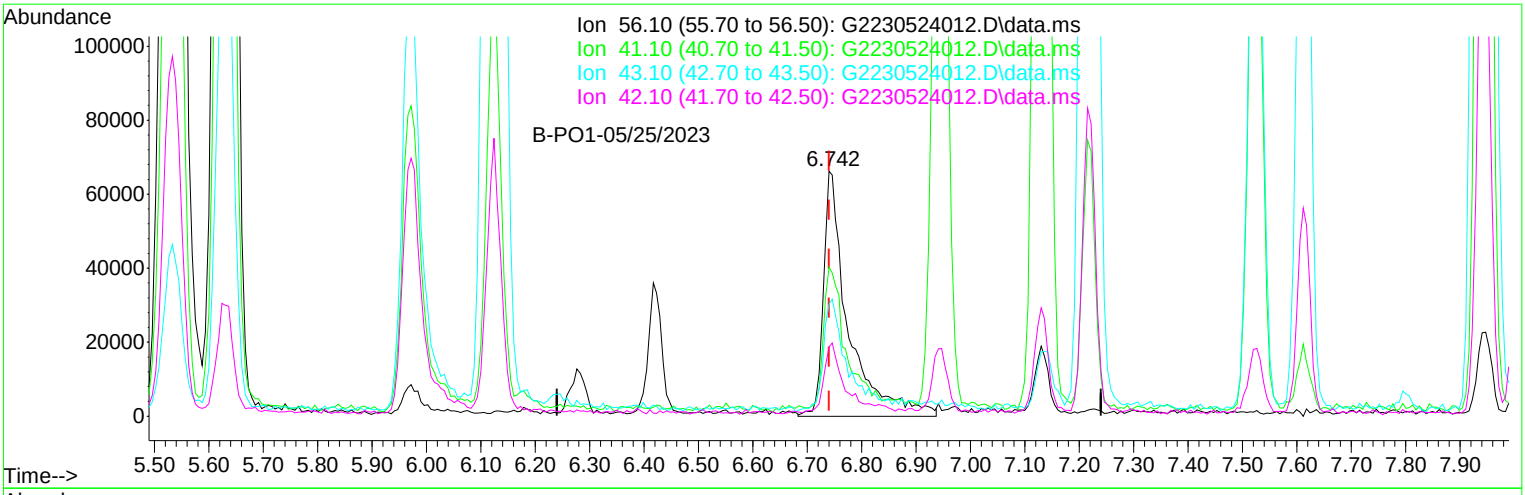
response 1826516

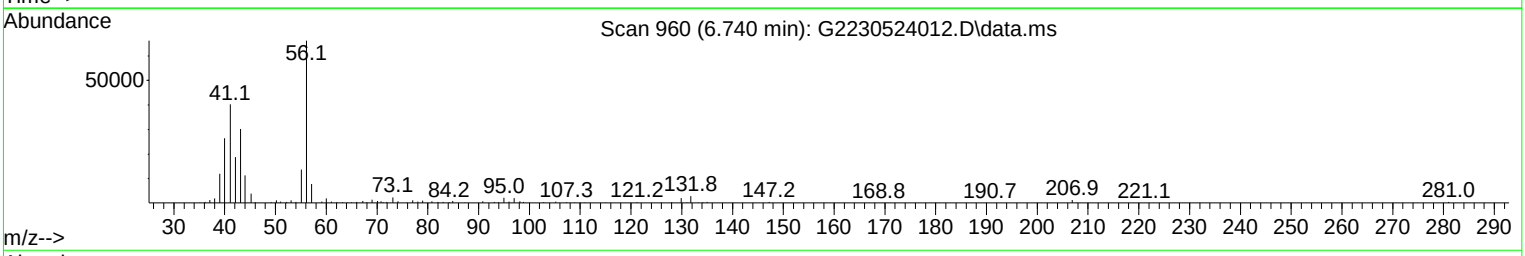
Ion	Exp%	Act%
56.10	100.00	100.00
41.10	69.10	59.47
43.10	53.20	51.73
42.10	27.70	25.96

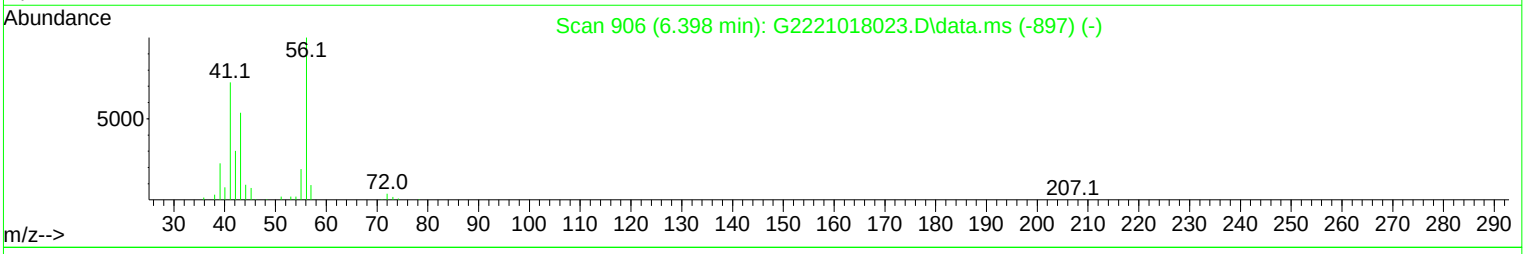
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230524v2\
Data File : G2230524012.D
Acq On : 24 May 2023 19:58
Operator : PO1
Sample : SEQ-CAL8@@20
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 25 08:32:48 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 08:32:26 2023
Response via : Initial Calibration
InstName : G







TIC: G2230524012.D\data.ms

(51) 1-Butanol (T)

6.740min (-0.000) 190.00 ug/L m

response 2100862

Ion	Exp%	Act%
56.10	100.00	100.00
41.10	69.10	51.70
43.10	53.20	44.97
42.10	27.70	22.57

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525005.D
Acq On : 25 May 2023 13:48
Operator : PO1
Sample : SEQ-CAL9
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 15:42:28 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:33:52 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.574	168	24869728	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.422	114	34751970	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.495	117	29861691	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.841	152	12460381	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.478	111	10685419	19.41	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.05%			
43) 1,2-Dichloroethane-d4	5.879	65	10469918	19.21	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.05%			
49) Fluorobenzene	6.279	96	39686997	20.03	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.15%			
64) Toluene-d8	8.017	98	37847967	20.11	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.55%			
81) 4-Bromofluorobenzene	10.686	174	6315916	10.78	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 107.80%			
97) d4-1,2-Dichlorobenzene	12.218	152	10509981	19.51	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.55%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.218	85	12112803	23.78	ug/L	100
3) Chloromethane	1.359	50	10054645	22.41	ug/L	99
4) Vinyl chloride	1.450	62	11697035	23.85	ug/L	99
5) Bromomethane	1.720	94	8112008	26.45	ug/L	100
6) Chloroethane	1.809	64	7179540	24.05	ug/L	97
7) Trichlorofluoromethane	2.034	101	18975054	25.36	ug/L	98
8) Ethyl ether	2.321	59	7984647	22.28	ug/L	88
9) Acrolein	2.442	56	4009081	59.53	ug/L	95
10) 1,1-Dichloroethene	2.527	61	12920340	22.46	ug/L	89
11) 1,1,2-Trichloro-1,2,2-...	2.537	101	9722003	23.62	ug/L	97
12) Acetone	2.611	43	9457256	77.54	ug/L	93
13) Iodomethane	2.680	142	13462722	22.57	ug/L	94
14) Carbon disulfide	2.743	76	26273929	21.92	ug/L	100
15) Isopropanol	2.792	45	4379047	213.93	ug/L	97
16) acetonitrile	2.922	41	14006984	58.18	ug/L	86
17) 3-Chloro-1-propene	2.922	76	6095382	22.62	ug/L	99
18) Methylene chloride	3.065	49	10055130	21.87	ug/L	83
19) Acrylonitrile	3.391	53	4167571	21.53	ug/L	97
20) trans-1,2-Dichloroethene	3.405	61	12333833	22.55	ug/L	90
21) Methyl tert-butyl ether	3.448	73	34505463	23.04	ug/L	93
22) Hexane	3.794	57	10657407	24.96	ug/L	95
23) 1,1-Dichloroethane	4.001	63	16607790	22.08	ug/L	96
24) Vinyl acetate	4.132	43	20269929	24.13	ug/L	94
25) 2-Chloro-1,3-butadiene	4.136	53	13073937	22.79	ug/L	88
26) 1-propanol	4.289	59	613559m	232.24	ug/L	
27) 2,2-Dichloropropane	4.828	77	16660877	24.20	ug/L	93
28) cis-1,2-Dichloroethene	4.838	61	15260910	22.50	ug/L	90
29) 2-Butanone	4.918	72	5125803	79.43	ug/L	92

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525005.D
Acq On : 25 May 2023 13:48
Operator : PO1
Sample : SEQ-CAL9
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 15:42:28 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:33:52 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
30) Propionitrile	4.984	54	1471974m	22.29	ug/L		
31) Ethyl acetate	5.022	61	1795359	23.26	ug/L		83
32) Methylacrylate	5.046	55	10835387	22.65	ug/L		94
33) 1-Bromopropane	5.077	41	6077508	23.02	ug/L		74
34) Bromochloromethane	5.150	130	8429201	22.49	ug/L		99
35) Methacrylonitrile	5.176	67	5443199	23.03	ug/L		93
36) Tetrahydrofuran	5.260	42	2985140	22.01	ug/L		81
37) Chloroform	5.276	83	18921305	22.80	ug/L		99
39) 1,1,1-Trichloroethane	5.480	97	17229413	22.61	ug/L		96
40) Cyclohexane	5.534	84	15722578	23.26	ug/L		86
41) 1-Chlorobutane	5.631	56	18046216	22.87	ug/L		96
42) 1,1-Dichloropropene	5.689	75	13856552	22.61	ug/L		94
44) 1,2-Dichloroethane	5.971	62	13851201	21.79	ug/L		99
45) Isobutanol	5.972	43	3280264m	194.27	ug/L		
47) Carbon tetrachloride	5.681	117	15310338	24.14	ug/L		99
48) Benzene	5.935	78	40665100	23.05	ug/L		100
50) Trichloroethene	6.696	95	11250963	22.64	ug/L		93
51) 1-Butanol	6.746	56	2255289m	208.80	ug/L		
52) 1,2-Dichloropropane	6.945	63	9529873	22.44	ug/L		92
53) Dibromomethane	7.071	174	9677306	23.15	ug/L	#	93
54) Methyl methacrylate	7.131	69	9246056	22.45	ug/L		91
55) 1,4-dioxane	7.142	88	938636m	226.19	ug/L		
56) Bromodichloromethane	7.259	83	14985346	22.95	ug/L		100
57) 2-Nitropropane	7.523	43	4203206	23.39	ug/L		93
58) 2-Chloroethyl vinyl ether	7.613	63	8183821	24.29	ug/L		99
59) cis-1,3-Dichloropropene	7.745	75	18289030	23.54	ug/L		96
60) 4-Methyl-2-pentanone	7.943	43	39864893	77.53	ug/L	#	91
61) trans-1,3-Dichloropropene	8.333	75	17152326	23.06	ug/L		93
62) 1,1,2-Trichloroethane	8.519	97	10619503	22.86	ug/L		95
65) Toluene	8.086	91	45387057	23.04	ug/L		98
66) Ethylmethacrylate	8.460	69	16221604	22.60	ug/L		89
67) Tetrachloroethene	8.647	166	14228124	25.07	ug/L		95
68) 1,3-Dichloropropane	8.686	76	17116213	23.06	ug/L		89
69) 2-Hexanone	8.808	43	25393398	78.41	ug/L		90
70) Dibromochloromethane	8.912	129	13745317	23.30	ug/L		99
71) 1,2-Dibromoethane	9.019	107	11929713	23.35	ug/L		100
72) Chlorobenzene	9.523	112	30973514	23.44	ug/L		94
73) 1,1,1,2-Tetrachloroethane	9.613	131	12273302	23.74	ug/L		98
74) Ethylbenzene	9.643	91	48959091	23.04	ug/L		95
75) m,p-Xylene	9.764	91	74099947	45.86	ug/L		95
76) Styrene	10.176	104	32490477	22.83	ug/L		94
77) Bromoform	10.354	173	11029565	23.49	ug/L		98
79) o-Xylene	10.160	91	38828523	25.14	ug/L		96
80) Isopropylbenzene	10.536	105	45654079	25.36	ug/L		97
82) Bromobenzene	10.827	77	16707349	24.57	ug/L		87
83) 1,1,2,2-Tetrachloroethane	10.842	83	13675430	25.18	ug/L		97
84) 1,2,3-Trichloropropane	10.880	110	4843307	25.52	ug/L		97
85) trans-1,4-Dichloro-2-b...	10.900	53	3658465	25.13	ug/L		73
86) n-Propylbenzene	10.948	91	50017691	24.95	ug/L		96

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525005.D
Acq On : 25 May 2023 13:48
Operator : PO1
Sample : SEQ-CAL9
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 15:42:28 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:33:52 2023
Response via : Initial Calibration
InstName : G

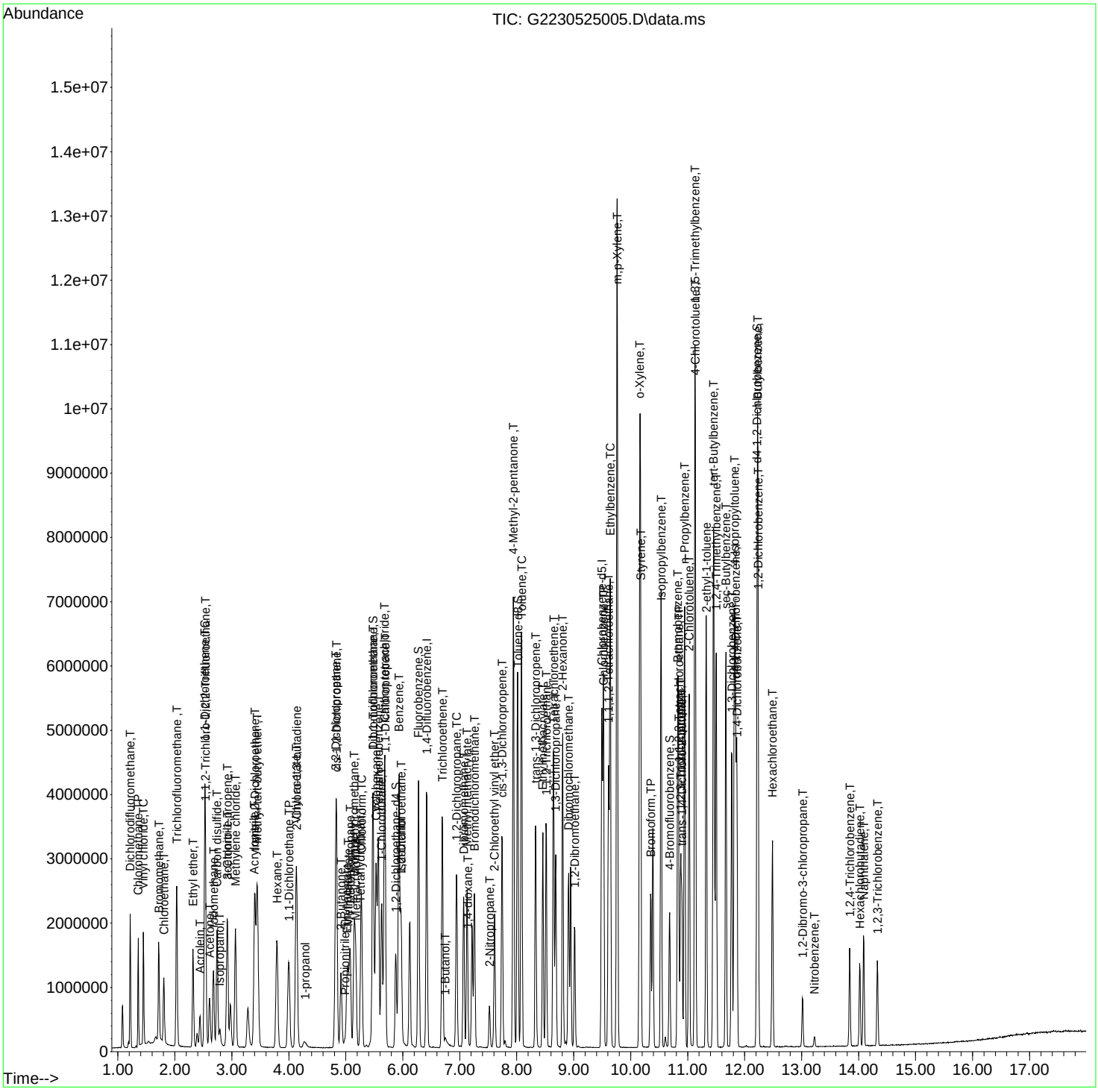
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
87) 2-Chlorotoluene	11.027	91	30059079	24.90	ug/L	96
88) 4-Chlorotoluene	11.137	91	34132705	24.95	ug/L	95
89) 1,3,5-Trimethylbenzene	11.129	105	33756924	24.10	ug/L	96
90) 2-ethyl-1-toluene	11.328	105	41179557	24.15	ug/L	98
91) tert-Butylbenzene	11.454	119	37181539	25.21	ug/L	90
92) 1,2,4-Trimethylbenzene	11.502	105	33058899	23.59	ug/L	94
93) sec-Butylbenzene	11.673	105	41479991	24.22	ug/L	97
94) 1,3-Dichlorobenzene	11.775	146	19935622	23.92	ug/L	98
95) 4-Isopropyltoluene	11.822	119	33867661	23.88	ug/L	98
96) 1,4-Dichlorobenzene	11.865	146	19368707	23.91	ug/L	98
98) 1,2-Dichlorobenzene	12.237	146	17483225	23.08	ug/L	99
99) n-Butylbenzene	12.231	91	24716667	22.57	ug/L	93
100) Hexachloroethane	12.491	201	6334707	24.27	ug/L	97
101) 1,2-Dibromo-3-chloropr...	13.019	157	2483343	22.29	ug/L	99
102) Nitrobenzene	13.227	77	786187	22.97	ug/L	94
103) 1,2,4-Trichlorobenzene	13.846	180	4995743	22.07	ug/L	98
104) Hexachlorobutadiene	14.024	225	2629023	21.47	ug/L	98
105) Naphthalene	14.091	128	13799913	23.08	ug/L	99
106) 1,2,3-Trichlorobenzene	14.333	180	4207973	23.27	ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525005.D
Acq On : 25 May 2023 13:48
Operator : PO1
Sample : SEQ-CAL9
Misc :
ALS Vial : 5 Sample Multiplier: 1

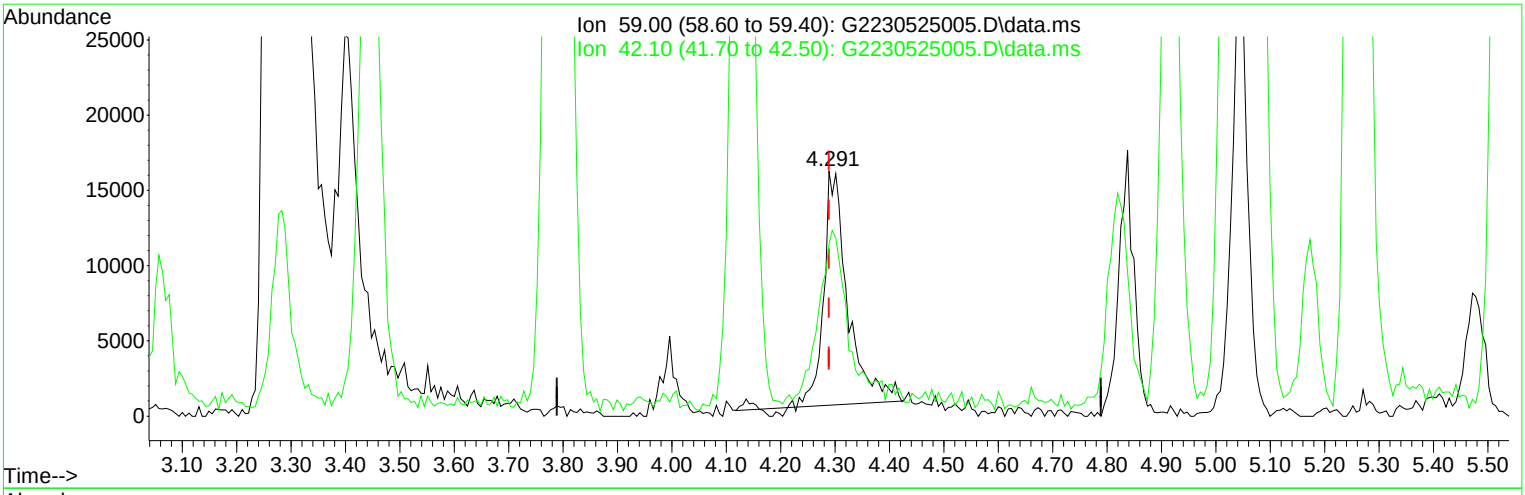
Quant Time: May 25 15:42:28 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:33:52 2023
Response via : Initial Calibration
InstName : G

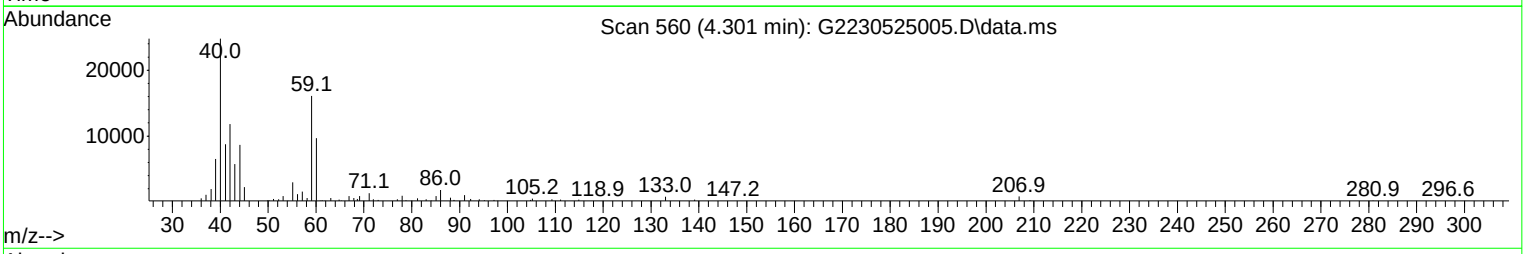


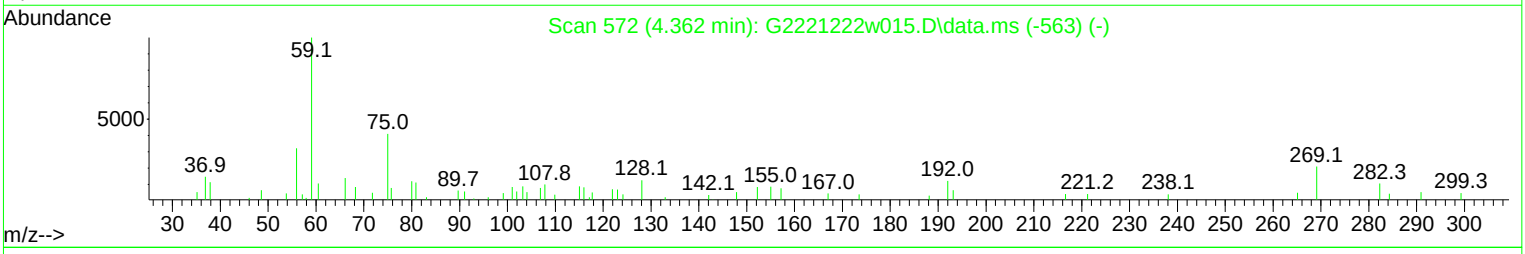
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525005.D
Acq On : 25 May 2023 13:48
Operator : PO1
Sample : SEQ-CAL9
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 15:42:28 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:33:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525005.D\data.ms

(26) 1-propanol

4.303min (+ 0.014) 181.92 ug/L

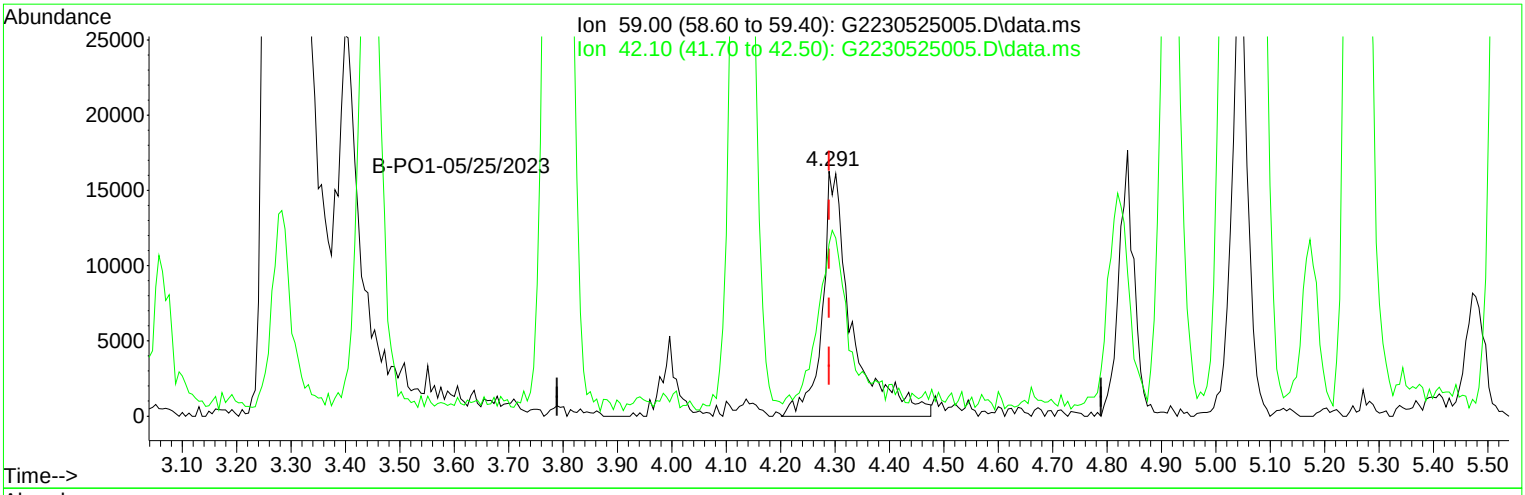
response 480609

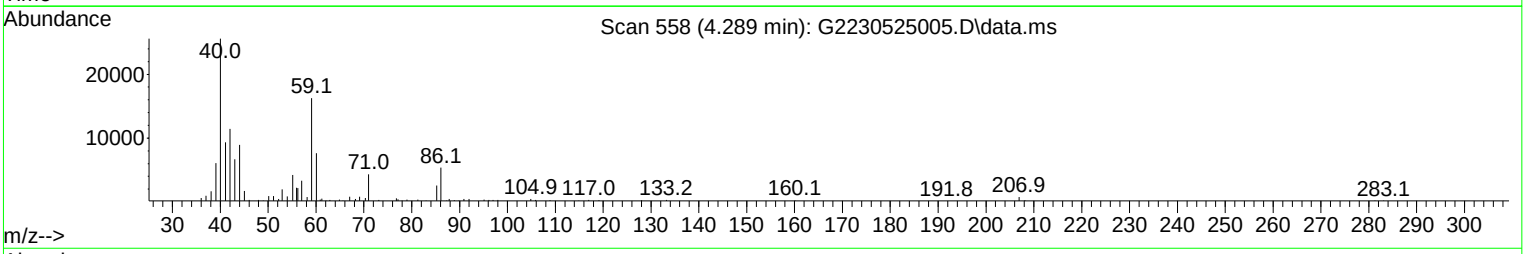
Ion	Exp%	Act%
59.00	100.00	100.00
42.10	0.00	78.42#
0.00	0.00	0.00
0.00	0.00	0.00

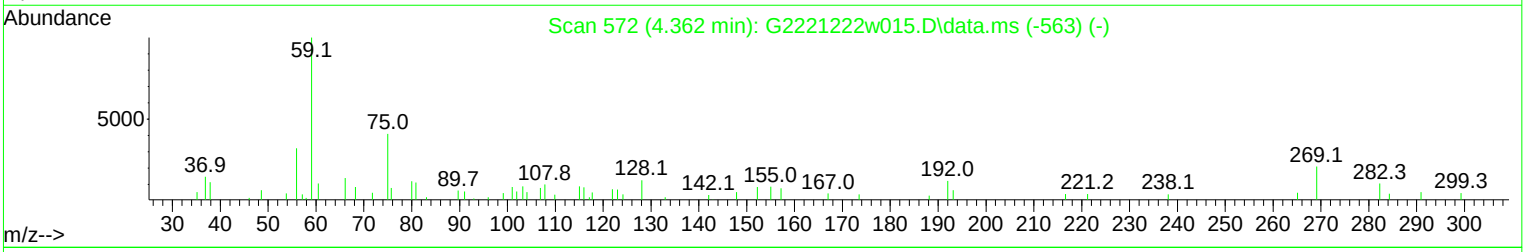
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525005.D
Acq On : 25 May 2023 13:48
Operator : PO1
Sample : SEQ-CAL9
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 15:42:28 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:33:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525005.D\data.ms

(26) 1-propanol

4.289min (0.000) 232.24 ug/L m

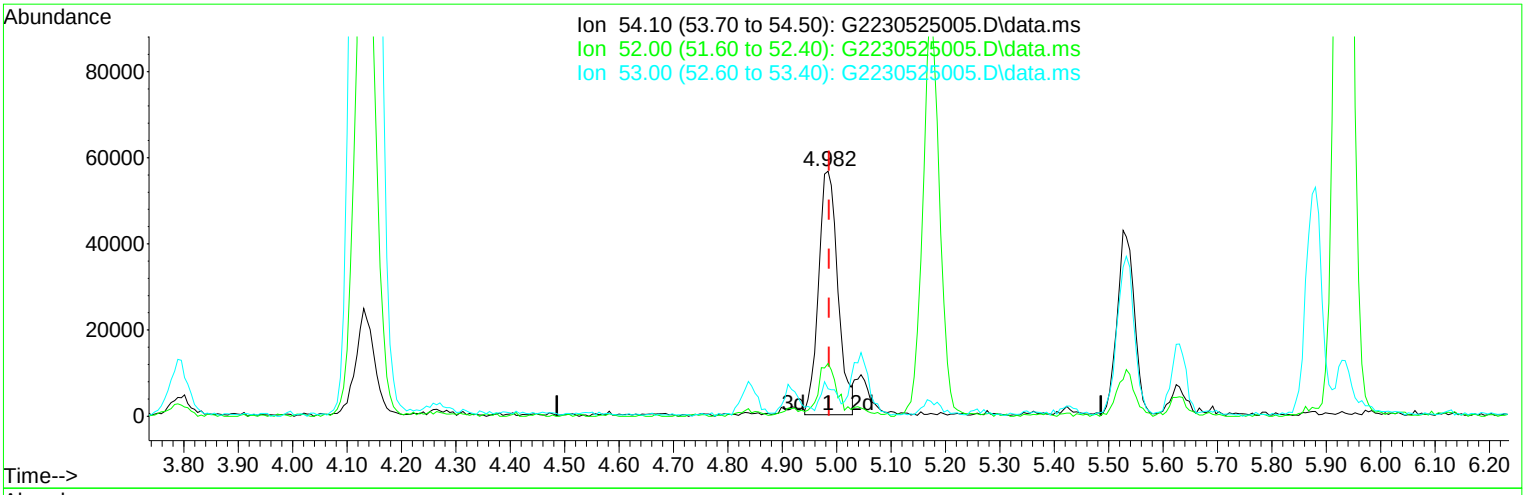
response 613559

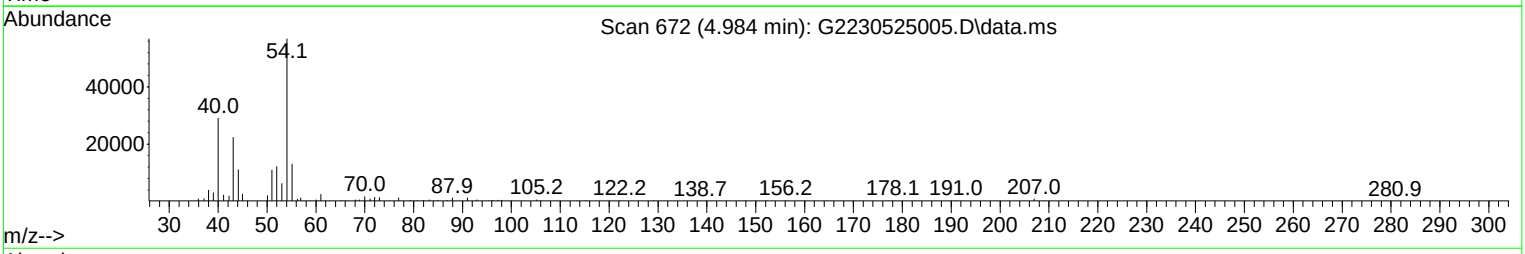
Ion	Exp%	Act%
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42.10	0.00	61.43#
0.00	0.00	0.00
0.00	0.00	0.00

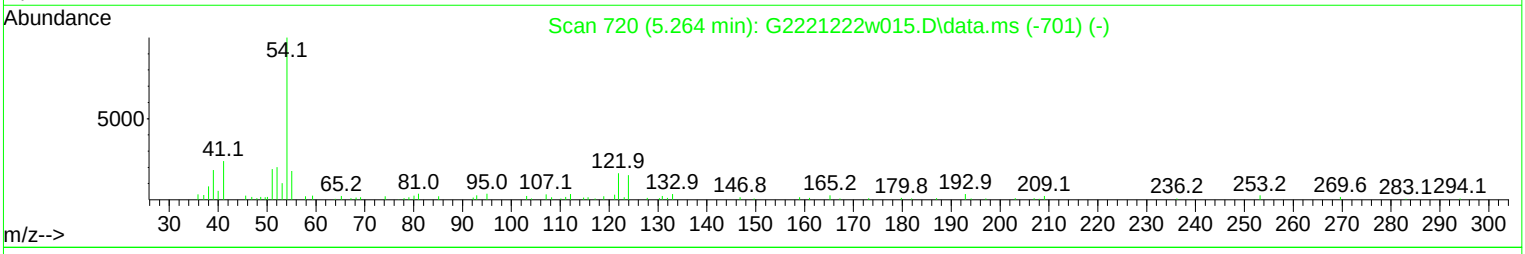
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525005.D
Acq On : 25 May 2023 13:48
Operator : PO1
Sample : SEQ-CAL9
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 15:42:28 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:33:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525005.D\data.ms

(30) Propionitrile (T)

4.985min (-0.001) 20.83 ug/L

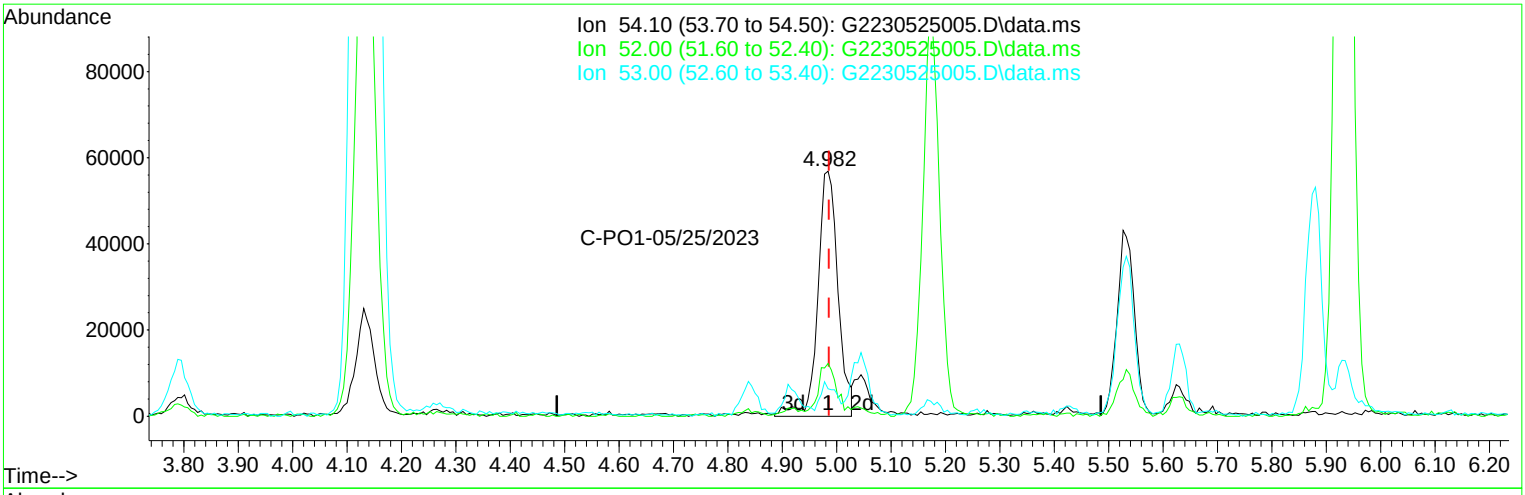
response 1375592

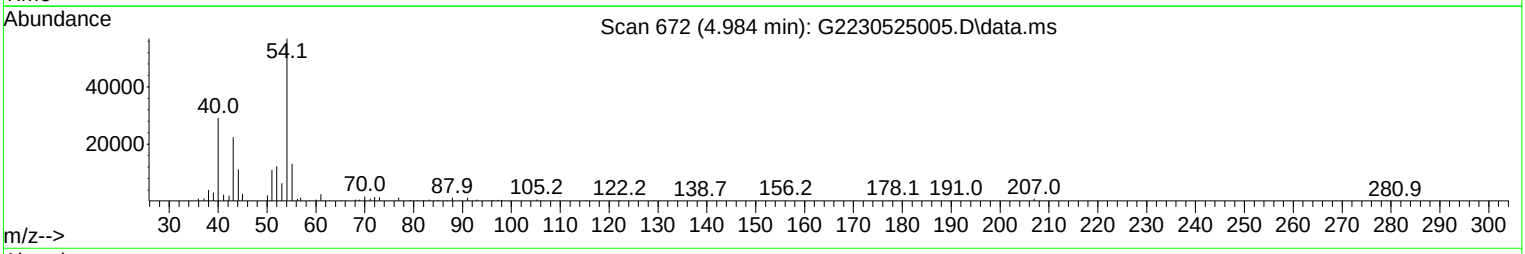
Ion	Exp%	Act%
54.10	100.00	100.00
52.00	18.10	24.45
53.00	12.00	10.89
0.00	0.00	0.00

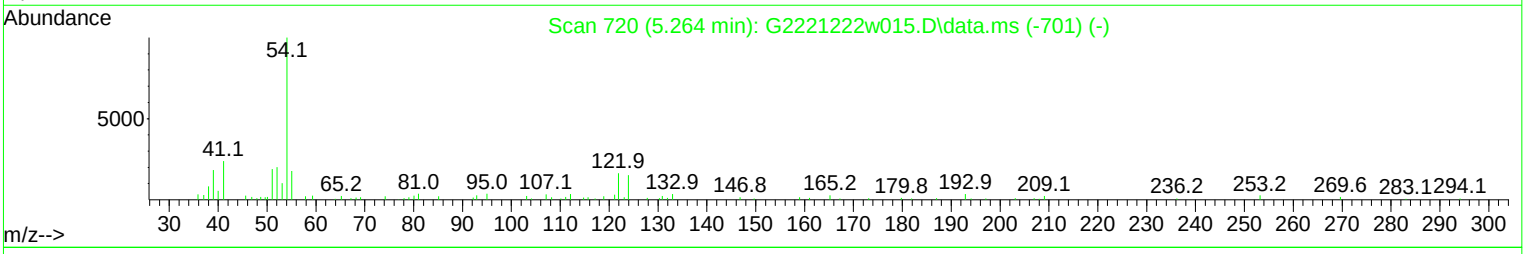
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525005.D
Acq On : 25 May 2023 13:48
Operator : PO1
Sample : SEQ-CAL9
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 15:42:28 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:33:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525005.D\data.ms

(30) Propionitrile (T)

4.984min (-0.002) 22.29 ug/L m

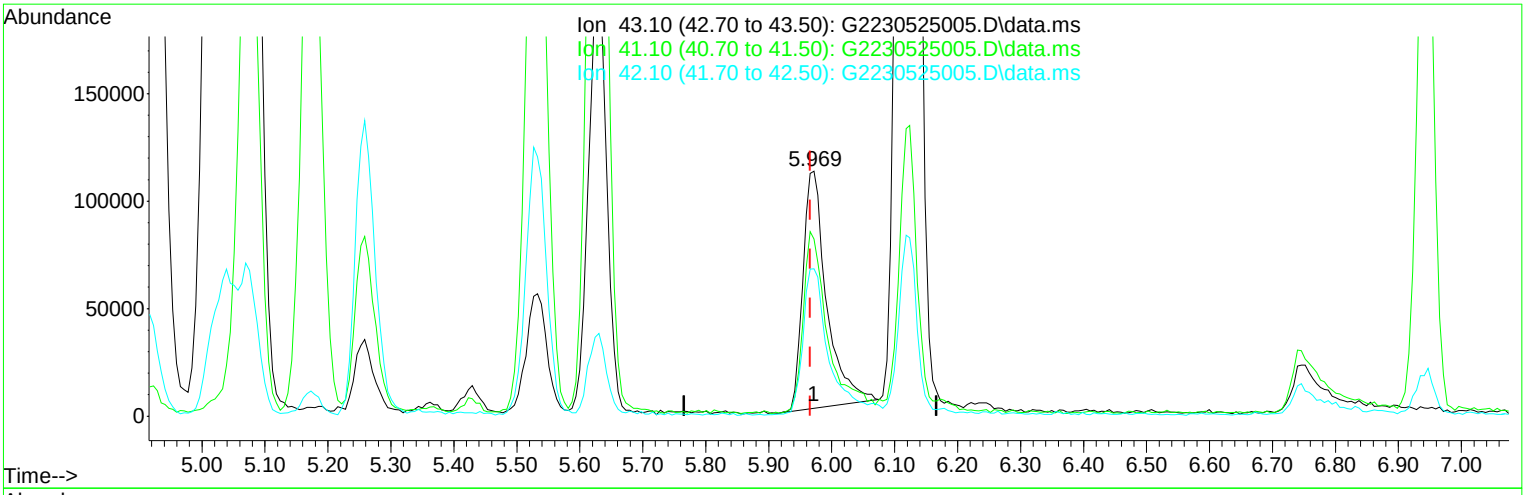
response 1471974

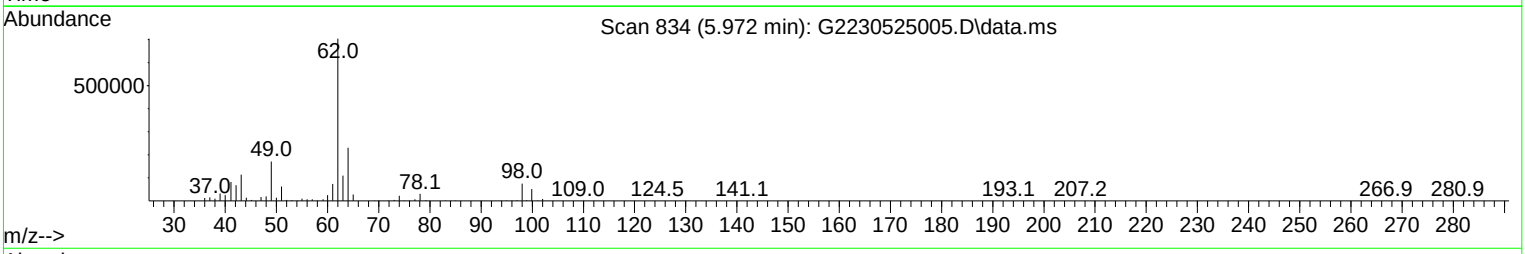
Ion	Exp%	Act%
54.10	100.00	100.00
52.00	18.10	22.85
53.00	12.00	10.17
0.00	0.00	0.00

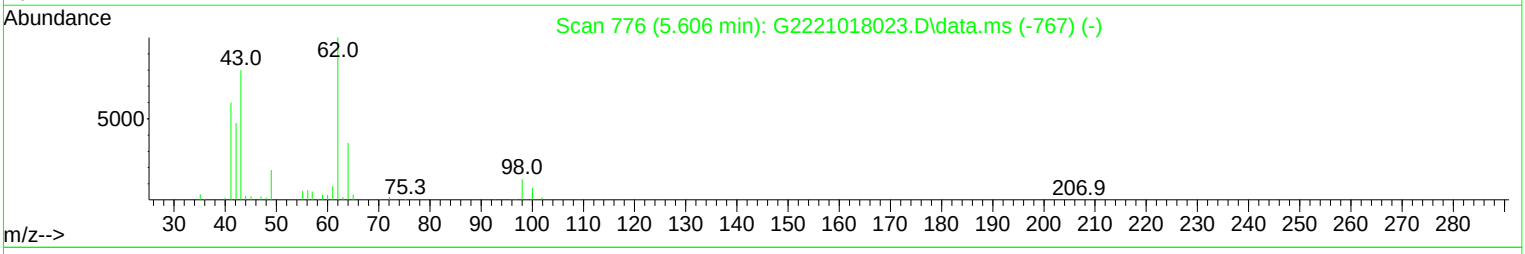
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525005.D
Acq On : 25 May 2023 13:48
Operator : PO1
Sample : SEQ-CAL9
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 15:42:28 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:33:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525005.D\data.ms

(45) Isobutanol

5.972min (+ 0.006) 170.64 ug/L

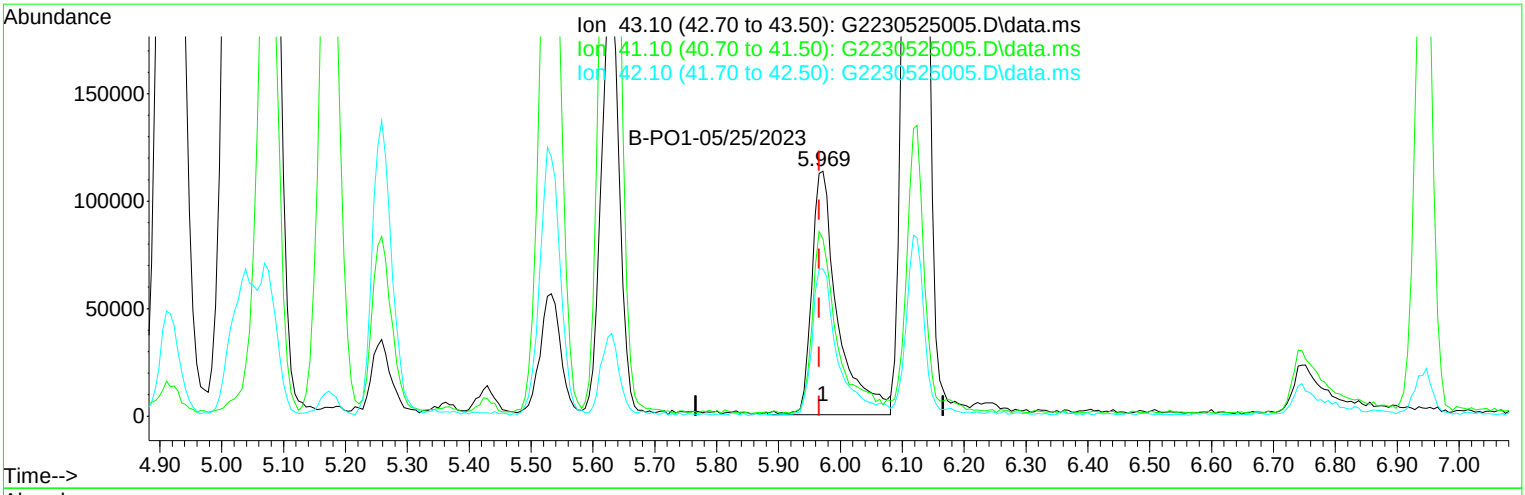
response 2881234

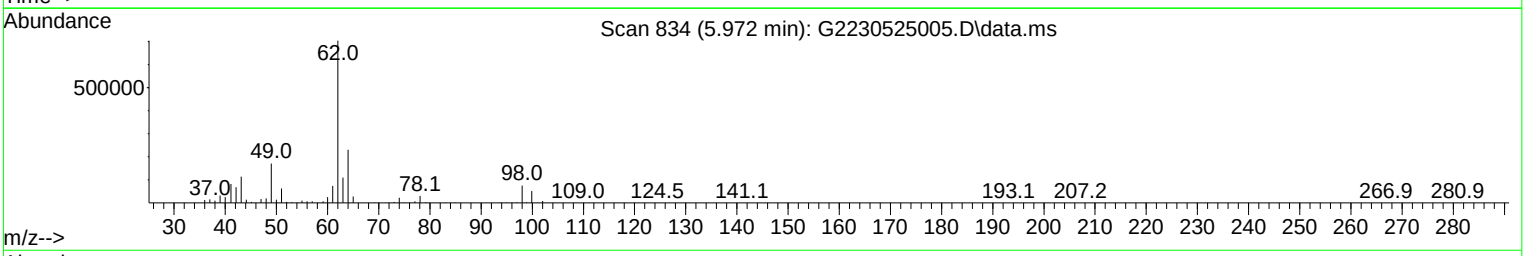
Ion	Exp%	Act%
43.10	100.00	100.00
41.10	70.10	73.40
42.10	58.40	60.73
0.00	0.00	0.00

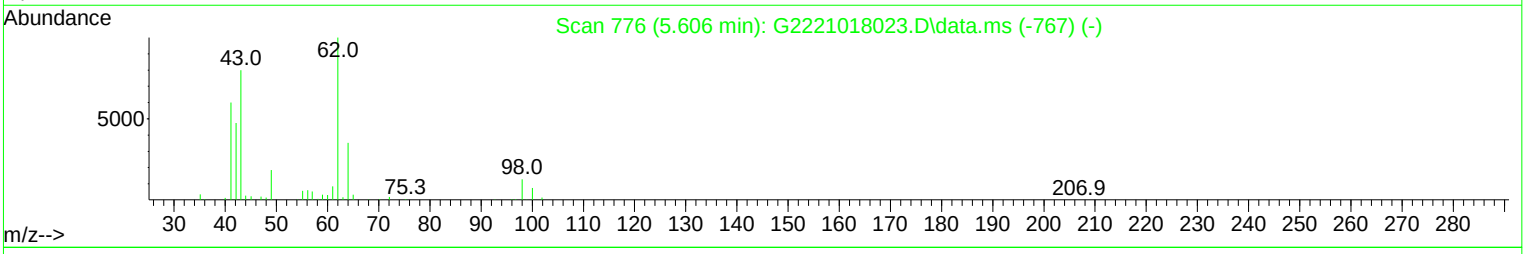
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525005.D
Acq On : 25 May 2023 13:48
Operator : PO1
Sample : SEQ-CAL9
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 15:42:28 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:33:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525005.D\data.ms

(45) Isobutanol

5.972min (+ 0.006) 194.27 ug/L m

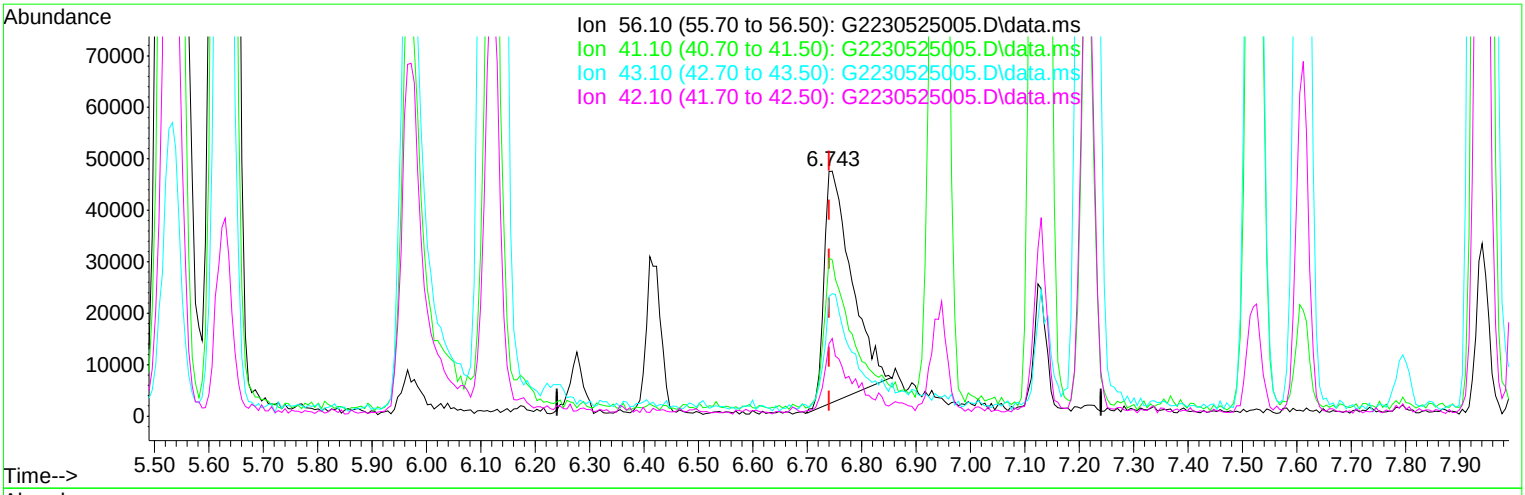
response 3280264

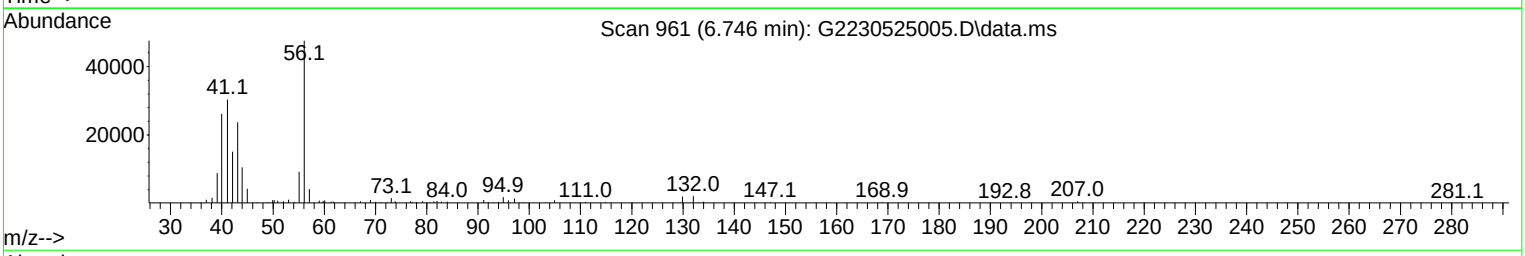
Ion	Exp%	Act%
43.10	100.00	100.00
41.10	70.10	64.47
42.10	58.40	53.34
0.00	0.00	0.00

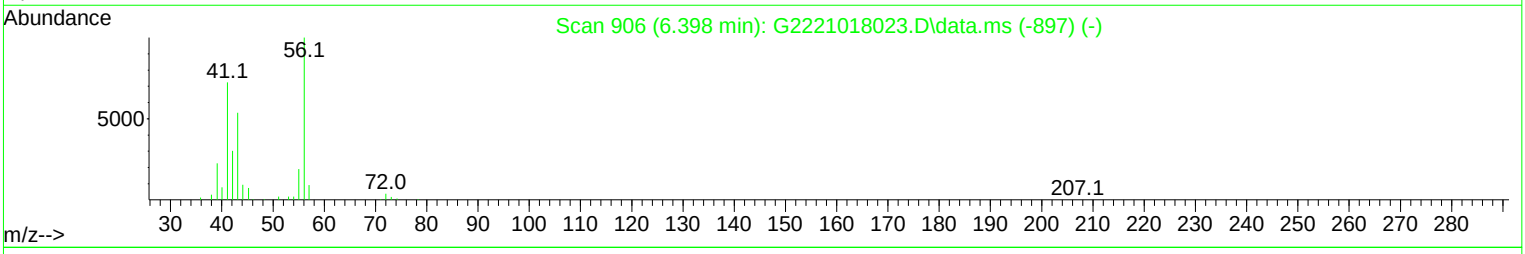
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525005.D
Acq On : 25 May 2023 13:48
Operator : PO1
Sample : SEQ-CAL9
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 15:42:28 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:33:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525005.D\data.ms

(51) 1-Butanol (T)

6.747min (+ 0.007) 143.21 ug/L

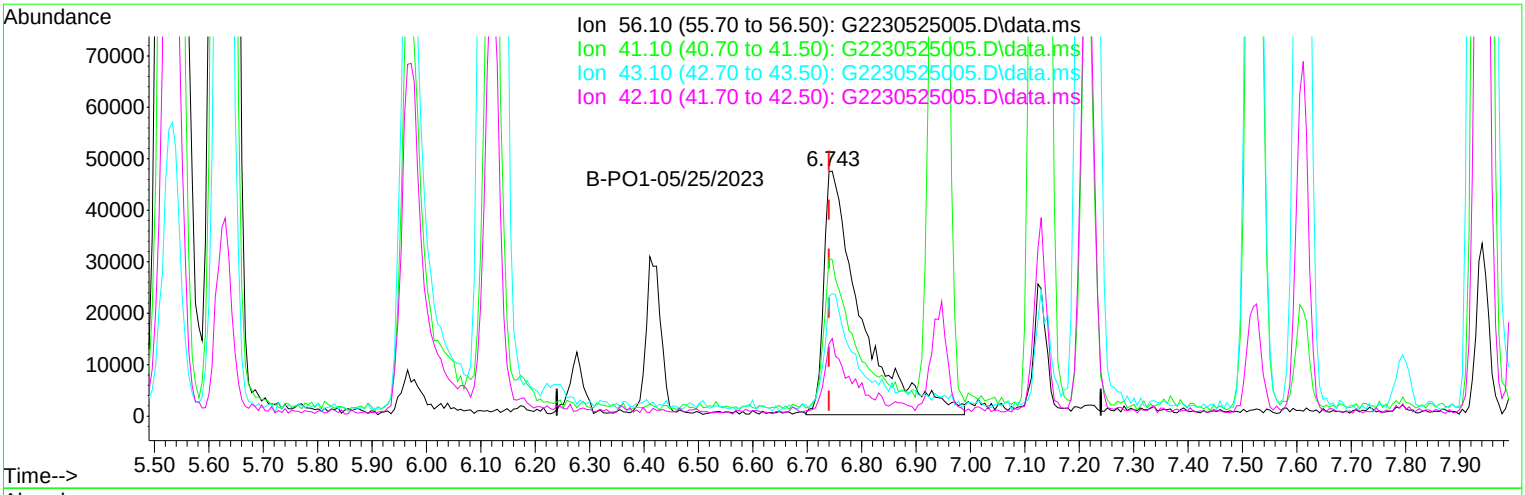
response 1559751

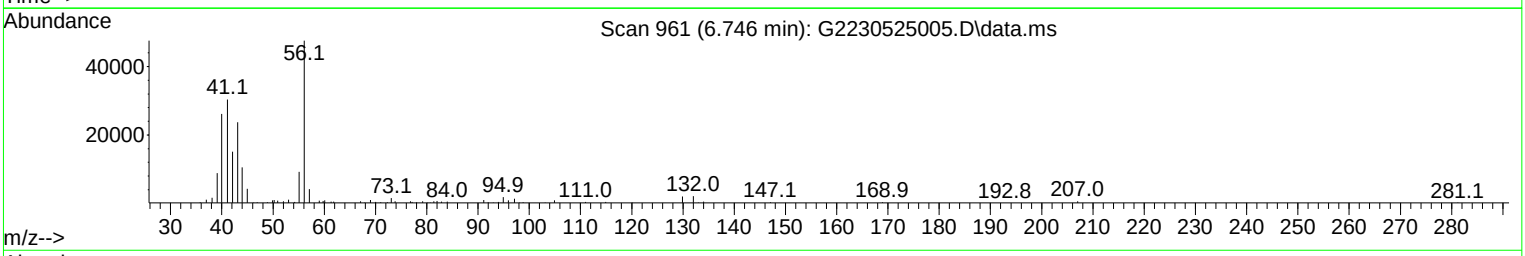
Ion	Exp%	Act%
56.10	100.00	100.00
41.10	69.10	70.54
43.10	53.20	54.58
42.10	27.70	28.16

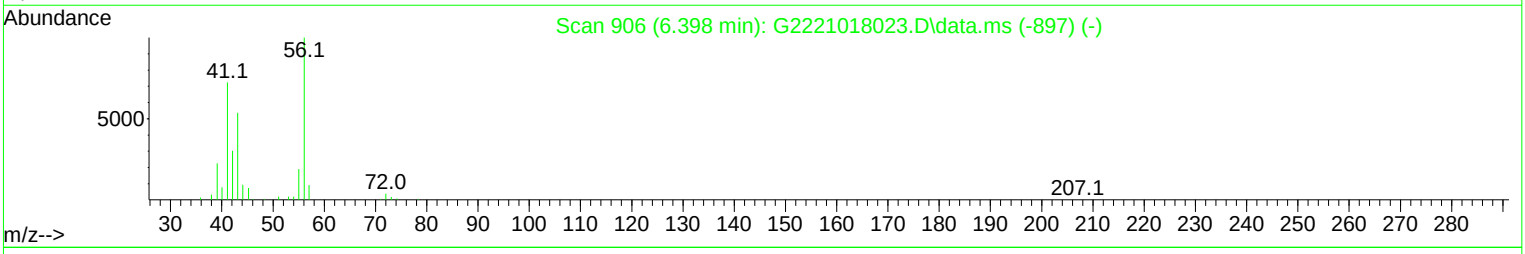
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525005.D
Acq On : 25 May 2023 13:48
Operator : PO1
Sample : SEQ-CAL9
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 15:42:28 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:33:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525005.D\data.ms

(51) 1-Butanol (T)

6.746min (+ 0.006) 208.80 ug/L m

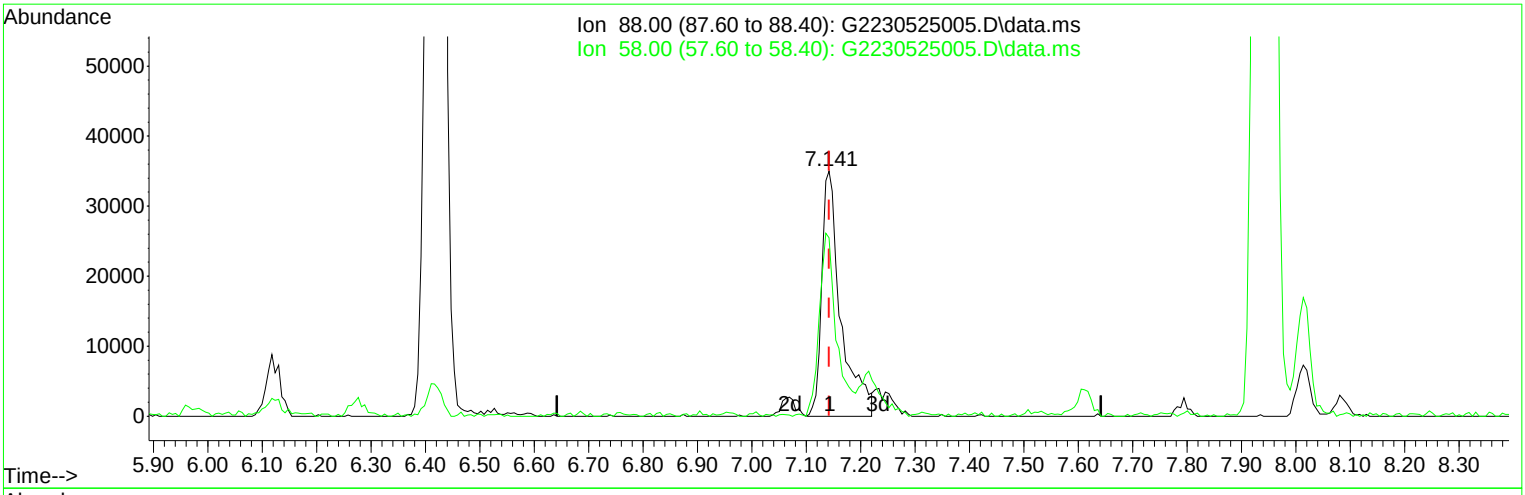
response 2255289

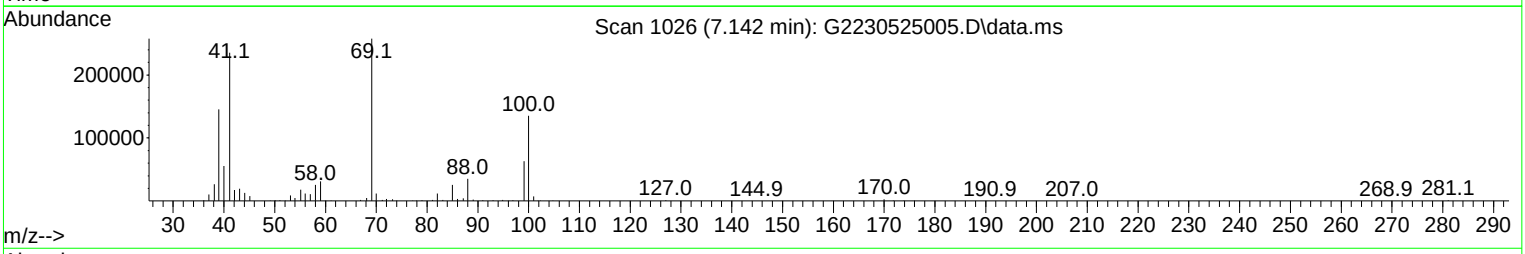
Ion	Exp%	Act%
56.10	100.00	100.00
41.10	69.10	48.78
43.10	53.20	37.75
42.10	27.70	19.47

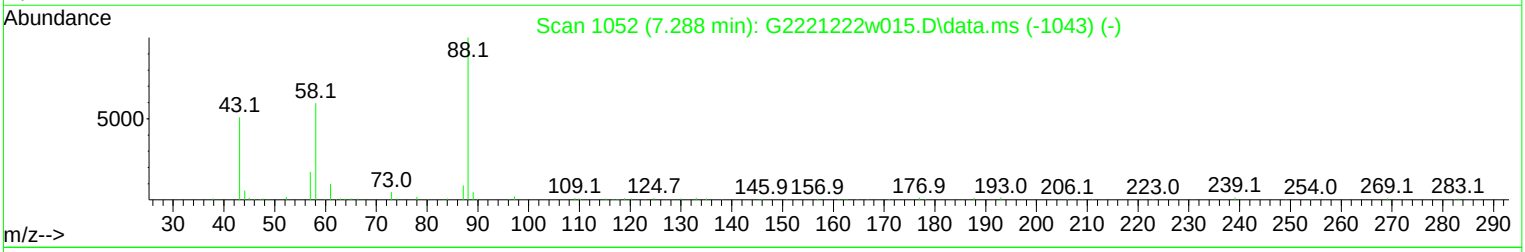
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525005.D
Acq On : 25 May 2023 13:48
Operator : PO1
Sample : SEQ-CAL9
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 15:42:28 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:33:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525005.D\data.ms

(55) 1,4-dioxane (T)

7.144min (+ 0.002) 202.38 ug/L

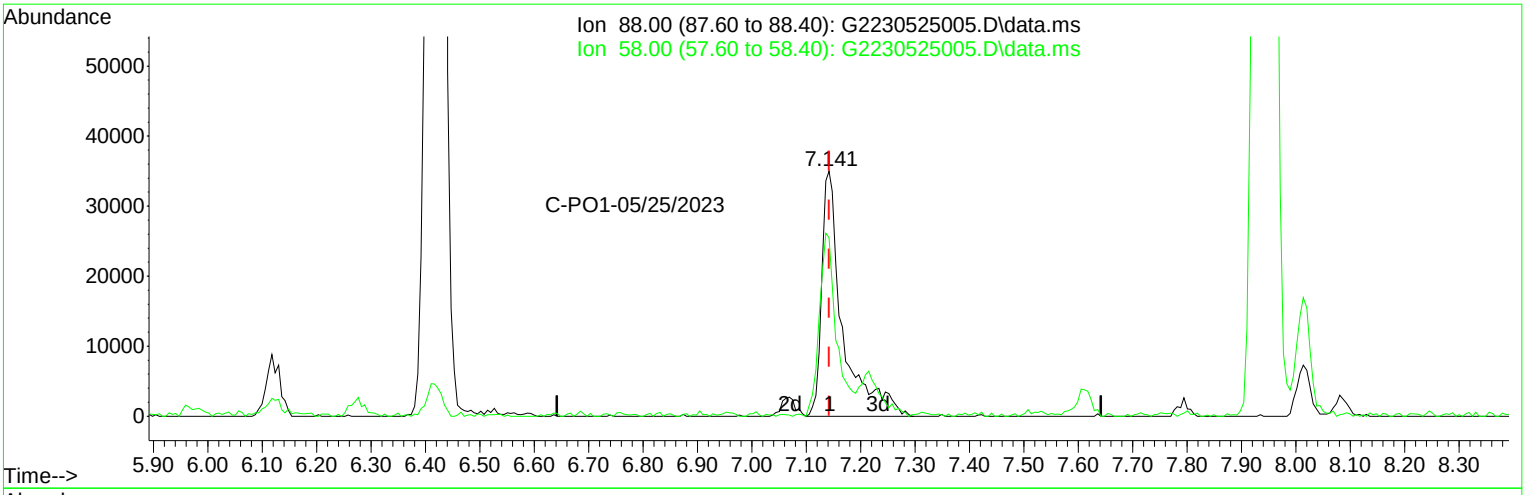
response 839846

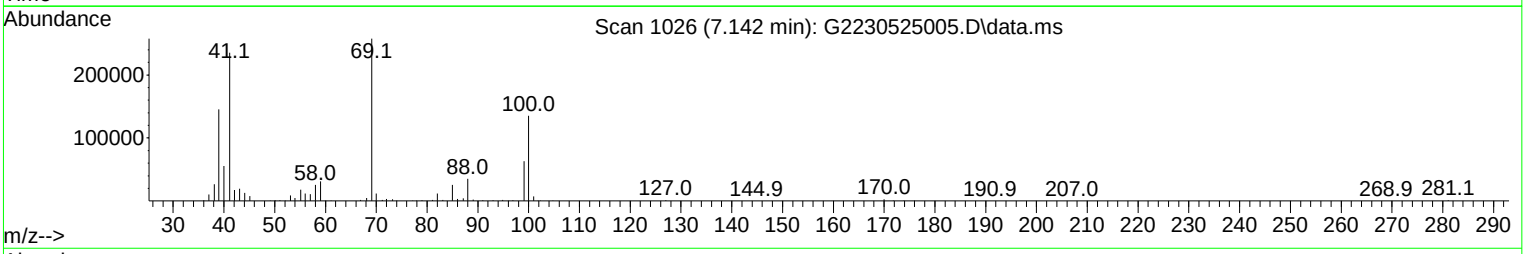
Ion	Exp%	Act%
88.00	100.00	100.00
58.00	56.10	67.74
0.00	0.00	0.00
0.00	0.00	0.00

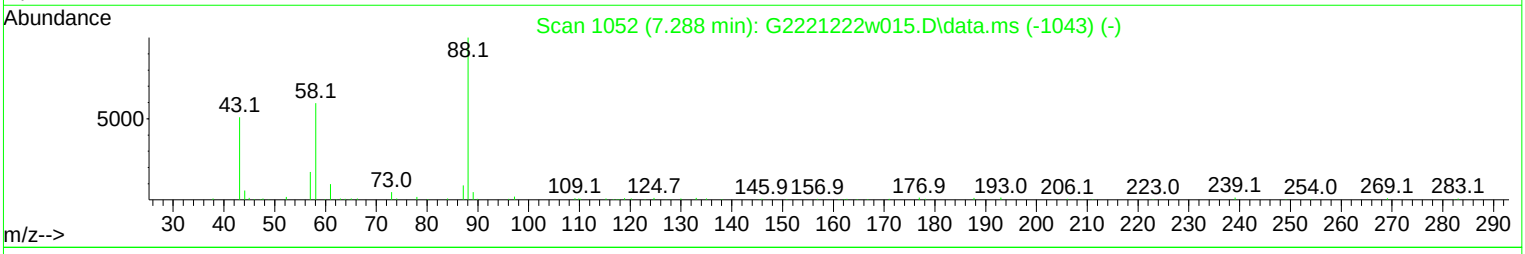
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525005.D
Acq On : 25 May 2023 13:48
Operator : PO1
Sample : SEQ-CAL9
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 25 15:42:28 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:33:52 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525005.D\data.ms

(55) 1,4-dioxane (T)

7.142min (+ 0.000) 226.19 ug/L m

response 938636

Ion	Exp%	Act%
88.00	100.00	100.00
58.00	56.10	60.61
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525006.D
Acq On : 25 May 2023 14:12
Operator : PO1
Sample : SEQ-CALA
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 15:46:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:46:19 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.571	168	24269858	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.420	114	34198169	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.495	117	29487203	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.842	152	13194142	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.474	111	10430704	19.47	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.35%			
43) 1,2-Dichloroethane-d4	5.877	65	10193562	19.23	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.15%			
49) Fluorobenzene	6.277	96	38807946	19.90	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.50%			
64) Toluene-d8	8.016	98	36906861	19.85	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.25%			
81) 4-Bromofluorobenzene	10.686	174	6433900	10.31	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 103.10%			
97) d4-1,2-Dichlorobenzene	12.219	152	11215451	19.72	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 98.60%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.211	85	14072216	28.38	ug/L	99
3) Chloromethane	1.352	50	12034841	27.54	ug/L	99
4) Vinyl chloride	1.443	62	14057329	29.46	ug/L	99
5) Bromomethane	1.710	94	9608513	31.38	ug/L	99
6) Chloroethane	1.800	64	8449329	29.04	ug/L	97
7) Trichlorofluoromethane	2.026	101	22141104	30.31	ug/L	98
8) Ethyl ether	2.315	59	9669310	27.94	ug/L	88
9) Acrolein	2.436	56	4939806	76.68	ug/L	98
10) 1,1-Dichloroethene	2.519	61	15823740	28.45	ug/L	89
11) 1,1,2-Trichloro-1,2,2-...	2.530	101	11618697	29.14	ug/L	96
12) Acetone	2.605	43	11607474	102.39	ug/L	92
13) Iodomethane	2.672	142	16956239	29.61	ug/L	94
14) Carbon disulfide	2.736	76	32138889	27.81	ug/L	100
15) Isopropanol	2.788	45	5607473	286.22	ug/L	96
16) acetonitrile	2.915	41	17060176	74.60	ug/L	87
17) 3-Chloro-1-propene	2.915	76	7566291	28.99	ug/L	97
18) Methylene chloride	3.058	49	12421242	29.06	ug/L	85
19) Acrylonitrile	3.386	53	5157766	27.75	ug/L	96
20) trans-1,2-Dichloroethene	3.398	61	14911115	28.19	ug/L	90
21) Methyl tert-butyl ether	3.441	73	42046542	29.72	ug/L	93
22) Hexane	3.786	57	12931728	31.44	ug/L	96
23) 1,1-Dichloroethane	3.993	63	20421655	28.13	ug/L	97
24) Vinyl acetate	4.126	43	24959739	30.37	ug/L	94
25) 2-Chloro-1,3-butadiene	4.130	53	15761766	28.45	ug/L	87
26) 1-propanol	4.289	59	773813m	306.59	ug/L	
27) 2,2-Dichloropropane	4.823	77	20278405	30.20	ug/L	93
28) cis-1,2-Dichloroethene	4.833	61	18397428	28.01	ug/L	89
29) 2-Butanone	4.915	72	6504423	106.86	ug/L	91

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525006.D
Acq On : 25 May 2023 14:12
Operator : PO1
Sample : SEQ-CALA
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 15:46:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:46:19 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
30) Propionitrile	4.978	54	1687219m	26.42	ug/L		
31) Ethyl acetate	5.018	61	2182956	29.90	ug/L		82
32) Methylacrylate	5.042	55	13507696	29.26	ug/L		94
33) 1-Bromopropane	5.074	41	7483795	29.78	ug/L		75
34) Bromochloromethane	5.147	130	10168840	28.03	ug/L		99
35) Methacrylonitrile	5.173	67	6734066	30.18	ug/L		92
36) Tetrahydrofuran	5.257	42	3786384	29.85	ug/L		82
37) Chloroform	5.273	83	23001939	28.71	ug/L		99
39) 1,1,1-Trichloroethane	5.476	97	21203182	28.81	ug/L		96
40) Cyclohexane	5.531	84	19289764	29.52	ug/L		85
41) 1-Chlorobutane	5.628	56	21820410	28.63	ug/L		98
42) 1,1-Dichloropropene	5.687	75	16766277	28.30	ug/L		94
44) 1,2-Dichloroethane	5.969	62	16829661	27.41	ug/L		98
45) Isobutanol	5.971	43	4147453m	257.92	ug/L		
47) Carbon tetrachloride	5.677	117	18845105	30.43	ug/L		98
48) Benzene	5.932	78	49263617	28.61	ug/L		99
50) Trichloroethene	6.693	95	13866854	28.65	ug/L		93
51) 1-Butanol	6.739	56	2871806m	285.44	ug/L		
52) 1,2-Dichloropropane	6.944	63	11733183	28.35	ug/L		91
53) Dibromomethane	7.070	174	12096849	29.62	ug/L	#	93
54) Methyl methacrylate	7.130	69	11445540	28.51	ug/L		92
55) 1,4-dioxane	7.144	88	1135488	280.75	ug/L		93
56) Bromodichloromethane	7.258	83	18261352	28.67	ug/L		100
57) 2-Nitropropane	7.524	43	5272613	30.52	ug/L		92
58) 2-Chloroethyl vinyl ether	7.613	63	9797987	29.55	ug/L		99
59) cis-1,3-Dichloropropene	7.744	75	22217771	29.25	ug/L		96
60) 4-Methyl-2-pentanone	7.943	43	49343994	98.56	ug/L	#	90
61) trans-1,3-Dichloropropene	8.333	75	21055344	28.99	ug/L		92
62) 1,1,2-Trichloroethane	8.517	97	13076530	28.83	ug/L		95
65) Toluene	8.085	91	55450914	28.69	ug/L		97
66) Ethylmethacrylate	8.460	69	20054559	28.51	ug/L		90
67) Tetrachloroethene	8.646	166	17494320	31.03	ug/L		96
68) 1,3-Dichloropropane	8.686	76	21161696	29.08	ug/L		89
69) 2-Hexanone	8.808	43	31307311	98.98	ug/L		89
70) Dibromochloromethane	8.911	129	16876246	29.15	ug/L		99
71) 1,2-Dibromoethane	9.018	107	14623938	29.17	ug/L		99
72) Chlorobenzene	9.523	112	38145711	29.44	ug/L		94
73) 1,1,1,2-Tetrachloroethane	9.613	131	15053323	29.68	ug/L		98
74) Ethylbenzene	9.642	91	60346048	28.99	ug/L		96
75) m,p-Xylene	9.763	91	90833179	57.40	ug/L		94
76) Styrene	10.176	104	40462032	29.03	ug/L		95
77) Bromoform	10.354	173	13749287	29.87	ug/L		97
79) o-Xylene	10.160	91	48168358	29.47	ug/L		96
80) Isopropylbenzene	10.536	105	56582489	29.68	ug/L		97
82) Bromobenzene	10.827	77	21181955	29.48	ug/L		87
83) 1,1,2,2-Tetrachloroethane	10.843	83	17033423	29.58	ug/L		99
84) 1,2,3-Trichloropropane	10.881	110	6076721	30.31	ug/L		96
85) trans-1,4-Dichloro-2-b...	10.901	53	4498647	29.17	ug/L		72
86) n-Propylbenzene	10.949	91	63093520	29.76	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525006.D
Acq On : 25 May 2023 14:12
Operator : PO1
Sample : SEQ-CALA
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 15:46:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:46:19 2023
Response via : Initial Calibration
InstName : G

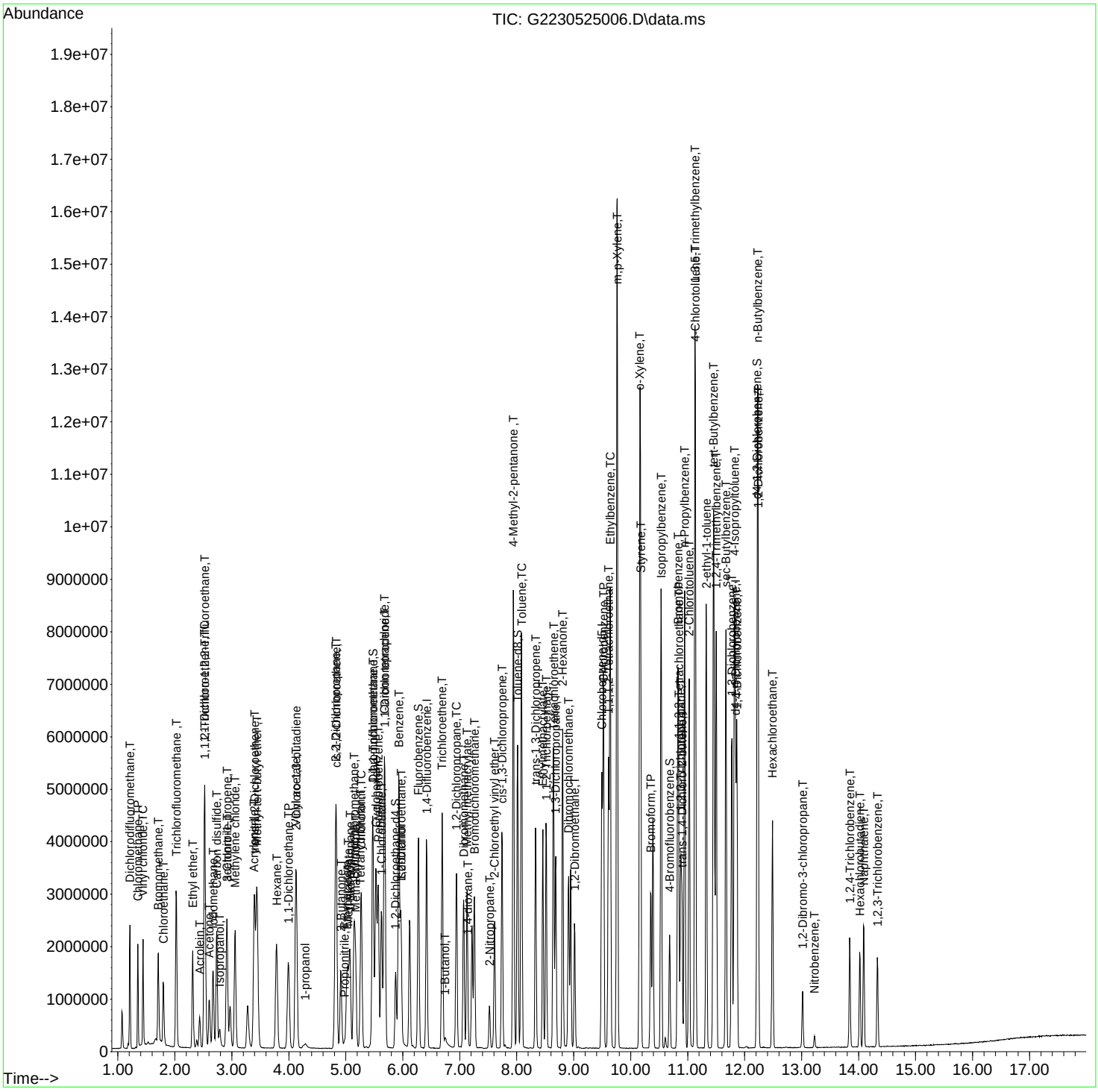
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
87) 2-Chlorotoluene	11.028	91	37442380	29.34	ug/L	96
88) 4-Chlorotoluene	11.138	91	43023765	29.78	ug/L	95
89) 1,3,5-Trimethylbenzene	11.129	105	43553759	29.51	ug/L	96
90) 2-ethyl-1-toluene	11.329	105	52435027	29.16	ug/L	97
91) tert-Butylbenzene	11.455	119	47142974	29.98	ug/L	91
92) 1,2,4-Trimethylbenzene	11.502	105	42694674	28.92	ug/L	94
93) sec-Butylbenzene	11.674	105	53284519	29.53	ug/L	97
94) 1,3-Dichlorobenzene	11.776	146	26067107	29.71	ug/L	98
95) 4-Isopropyltoluene	11.823	119	44349508	29.75	ug/L	98
96) 1,4-Dichlorobenzene	11.866	146	25282991	29.65	ug/L	98
98) 1,2-Dichlorobenzene	12.238	146	23164290	29.14	ug/L	98
99) n-Butylbenzene	12.232	91	33064985	28.78	ug/L	93
100) Hexachloroethane	12.491	201	8344565	30.39	ug/L	97
101) 1,2-Dibromo-3-chloropr...	13.020	157	3490226	30.84	ug/L	97
102) Nitrobenzene	13.227	77	1055767	30.08	ug/L	90
103) 1,2,4-Trichlorobenzene	13.847	180	6917940	29.23	ug/L	96
104) Hexachlorobutadiene	14.024	225	3658858	28.62	ug/L	97
105) Naphthalene	14.091	128	18790245	30.59	ug/L	99
106) 1,2,3-Trichlorobenzene	14.334	180	5513424	28.92	ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525006.D
Acq On : 25 May 2023 14:12
Operator : PO1
Sample : SEQ-CALA
Misc :
ALS Vial : 6 Sample Multiplier: 1

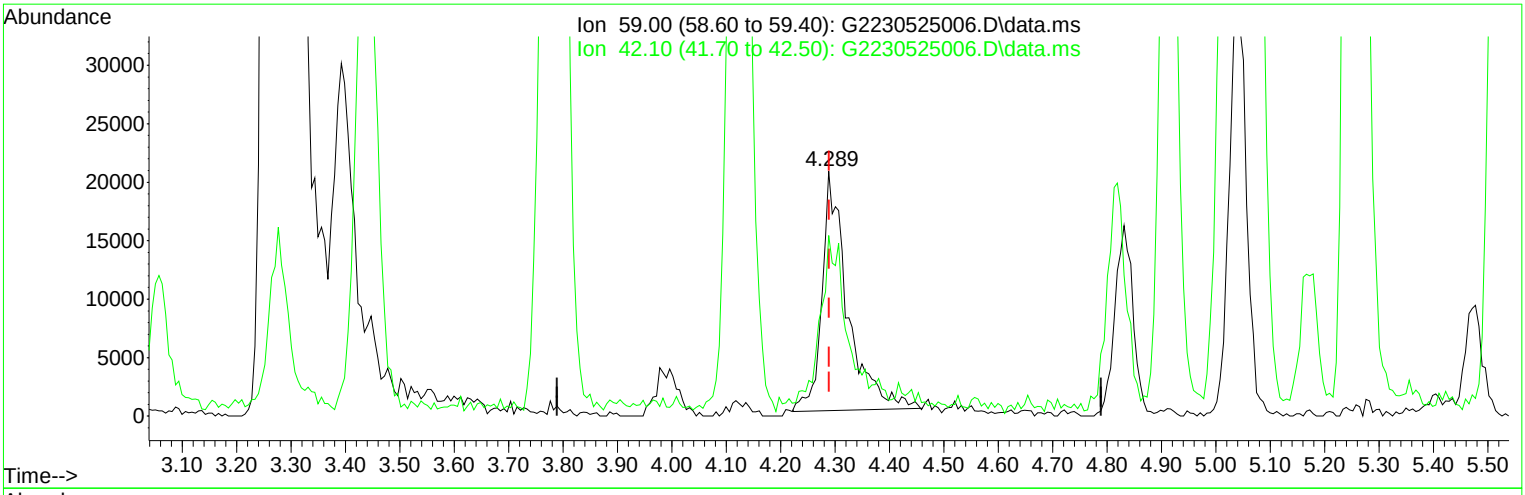
Quant Time: May 25 15:46:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:46:19 2023
Response via : Initial Calibration
InstName : G

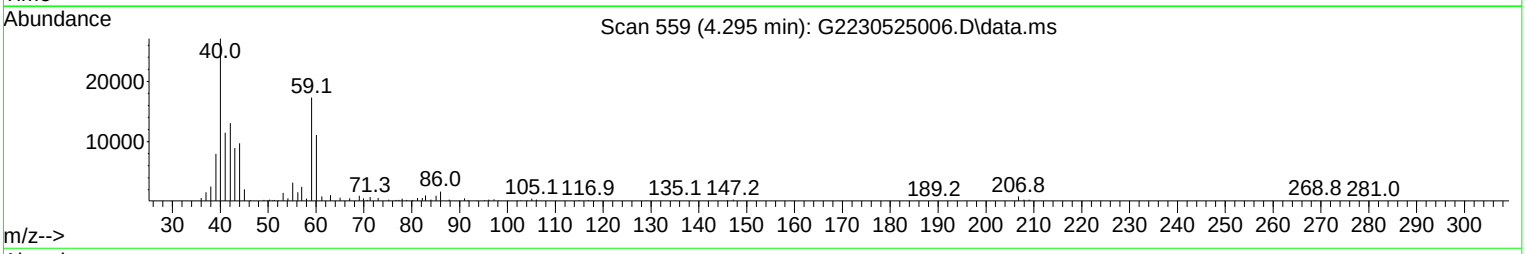


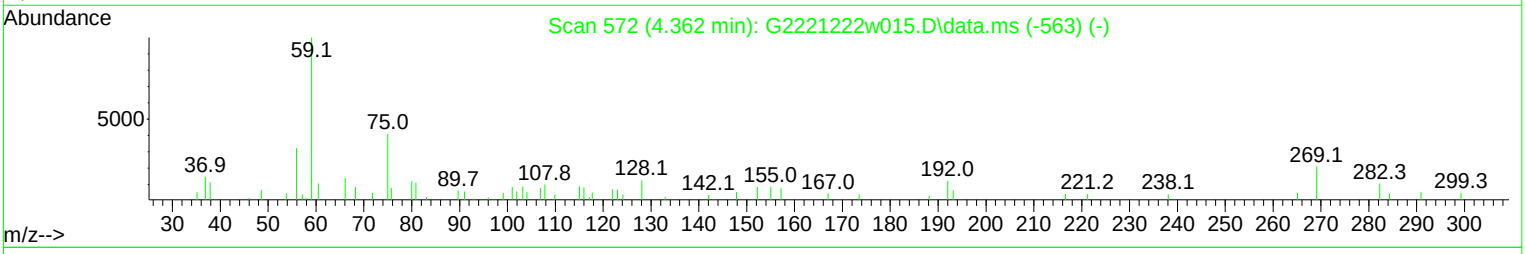
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525006.D
Acq On : 25 May 2023 14:12
Operator : PO1
Sample : SEQ-CALA
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 15:46:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:46:19 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525006.D\data.ms

(26) 1-propanol

4.293min (+ 0.004) 266.86 ug/L

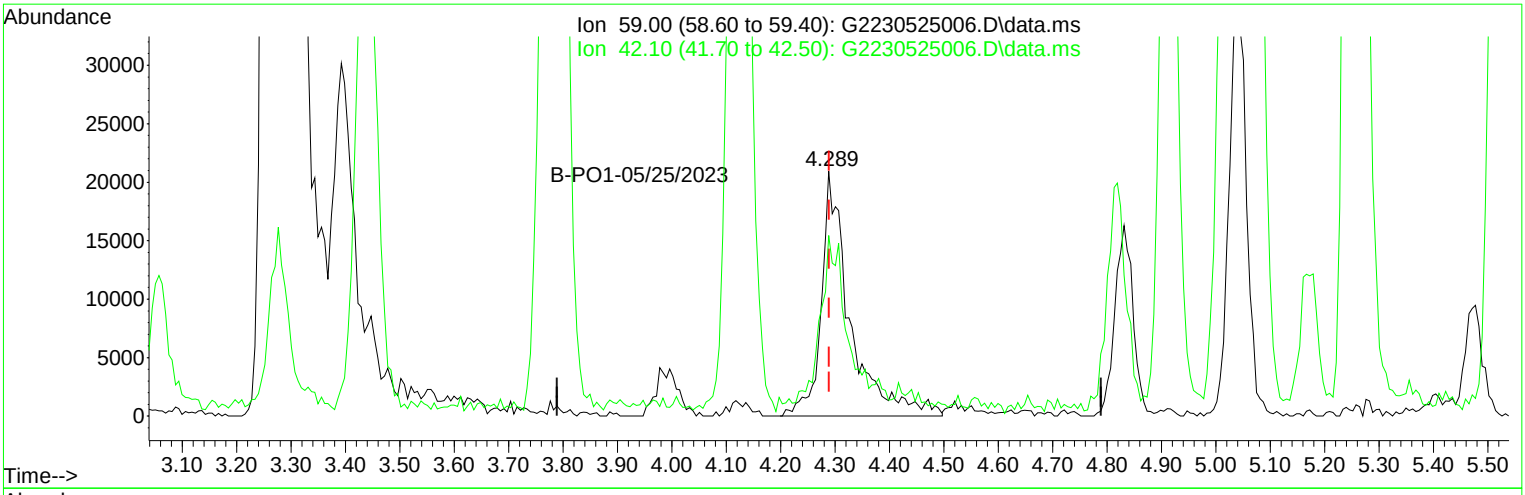
response 673532

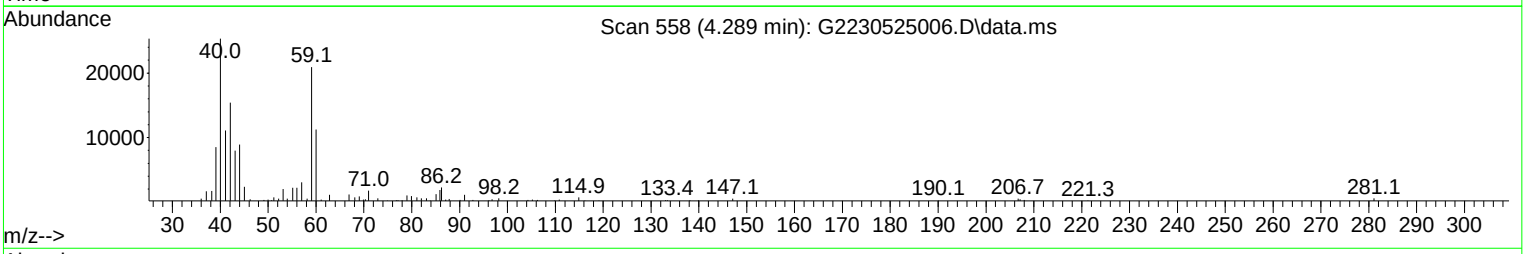
Ion	Exp%	Act%
59.00	100.00	100.00
42.10	0.00	68.74#
0.00	0.00	0.00
0.00	0.00	0.00

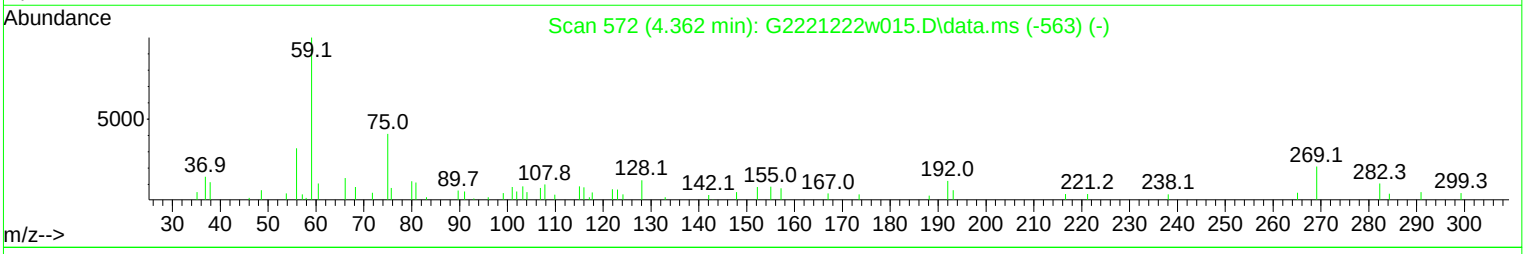
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525006.D
Acq On : 25 May 2023 14:12
Operator : PO1
Sample : SEQ-CALA
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 15:46:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:46:19 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525006.D\data.ms

(26) 1-propanol

4.289min (-0.000) 306.59 ug/L m

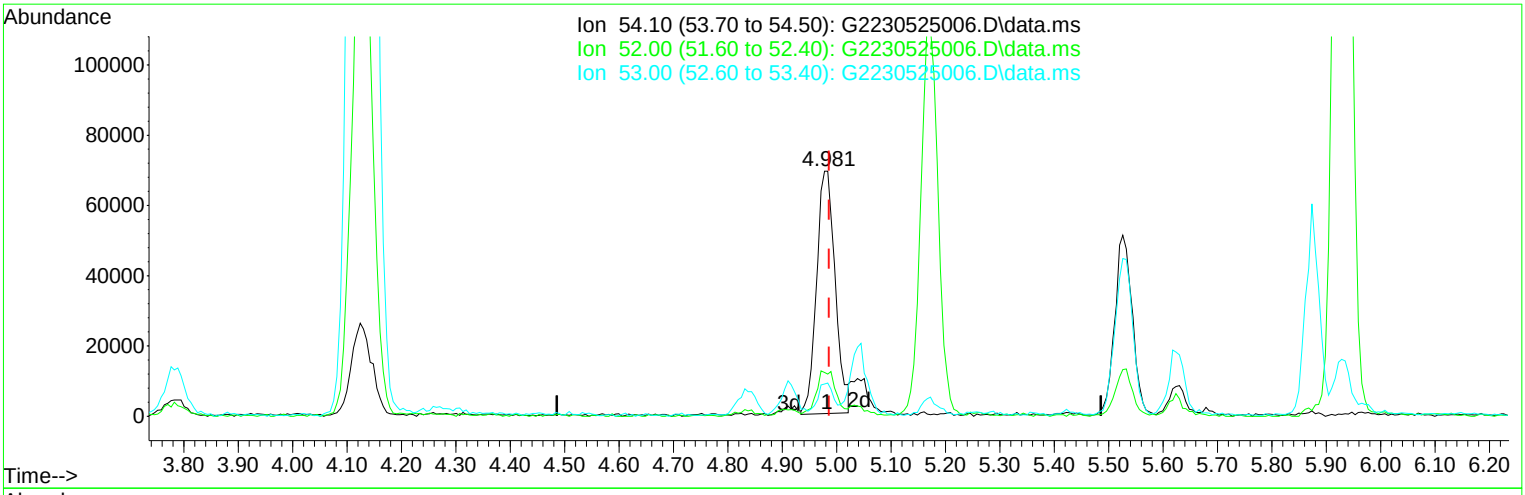
response 773813

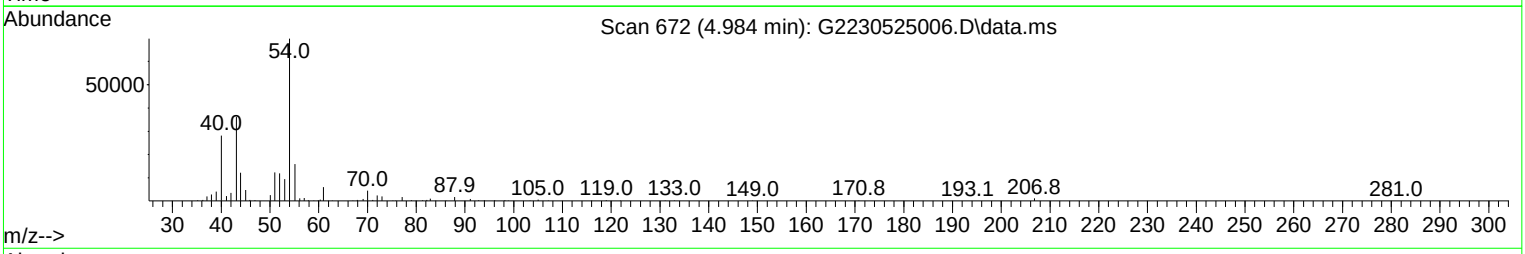
Ion	Exp%	Act%
59.00	100.00	100.00
42.10	0.00	59.83#
0.00	0.00	0.00
0.00	0.00	0.00

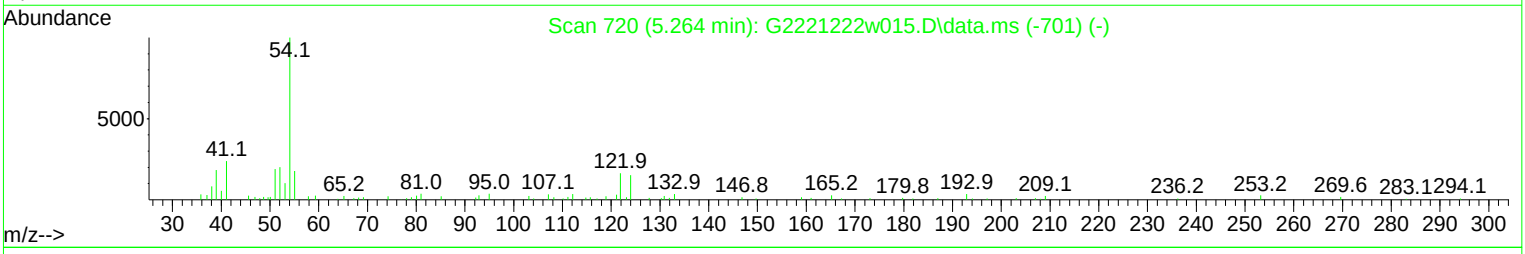
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525006.D
Acq On : 25 May 2023 14:12
Operator : PO1
Sample : SEQ-CALA
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 15:46:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:46:19 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525006.D\data.ms

(30) Propionitrile (T)

4.982min (-0.004) 25.30 ug/L

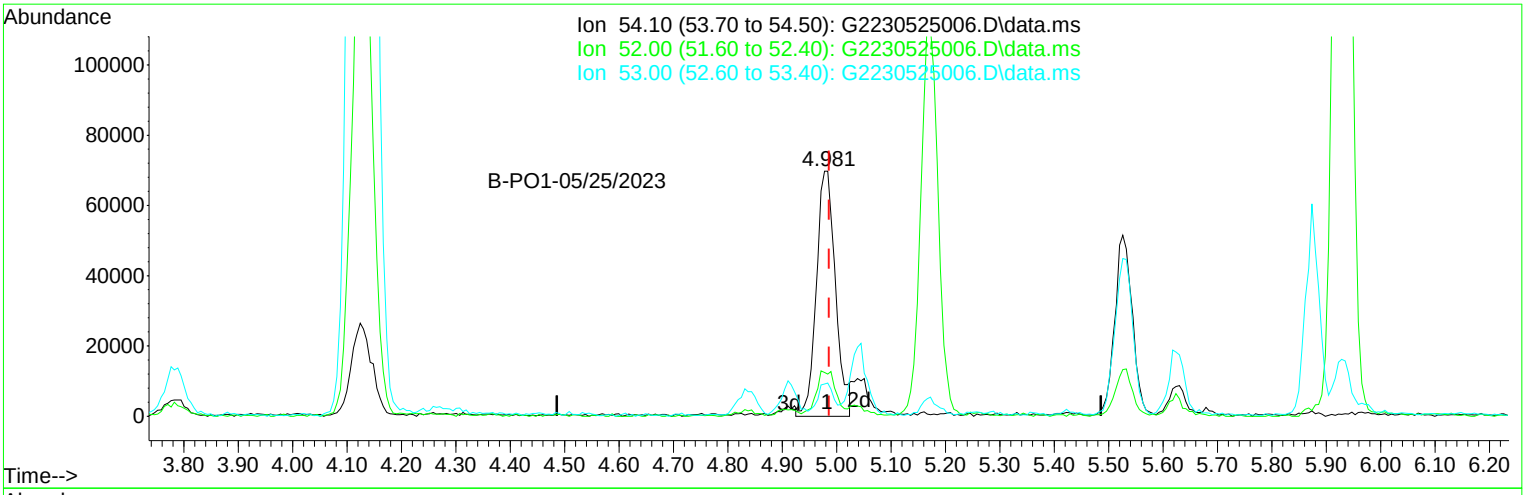
response 1615843

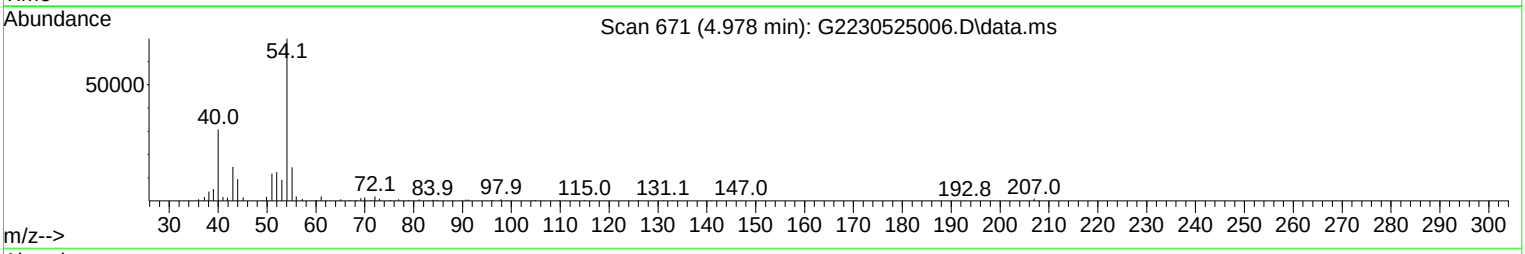
Ion	Exp%	Act%
54.10	100.00	100.00
52.00	18.10	19.48
53.00	12.00	11.39
0.00	0.00	0.00

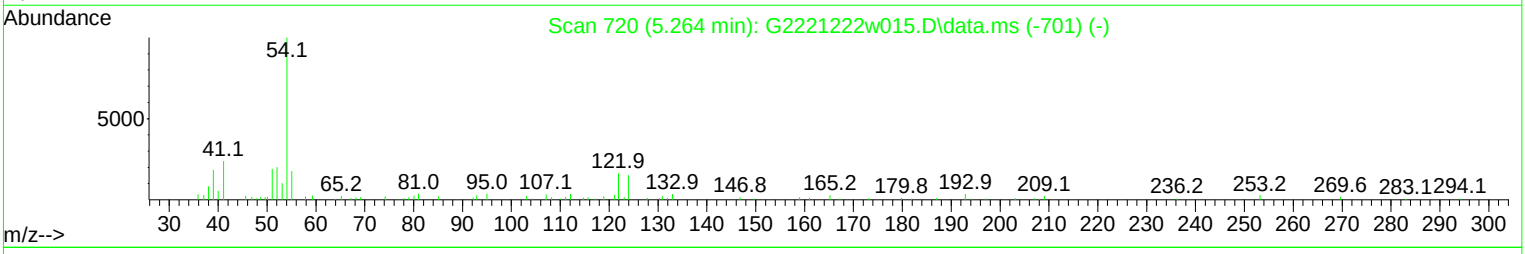
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525006.D
Acq On : 25 May 2023 14:12
Operator : PO1
Sample : SEQ-CALA
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 15:46:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:46:19 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525006.D\data.ms

(30) Propionitrile (T)

4.978min (-0.008) 26.42 ug/L m

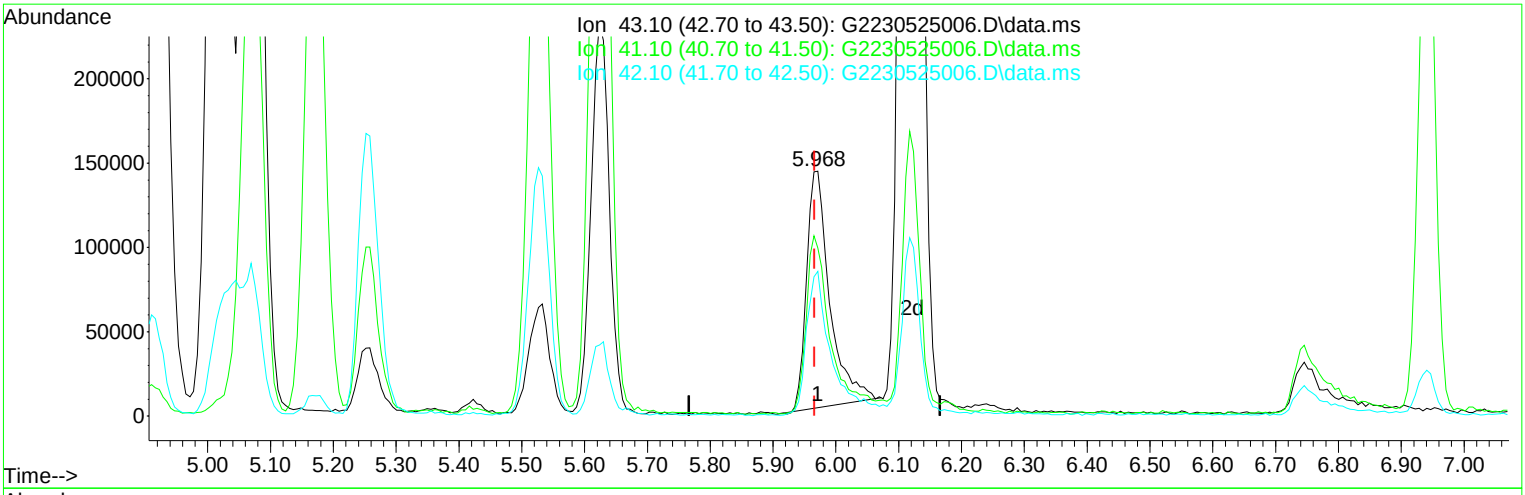
response 1687219

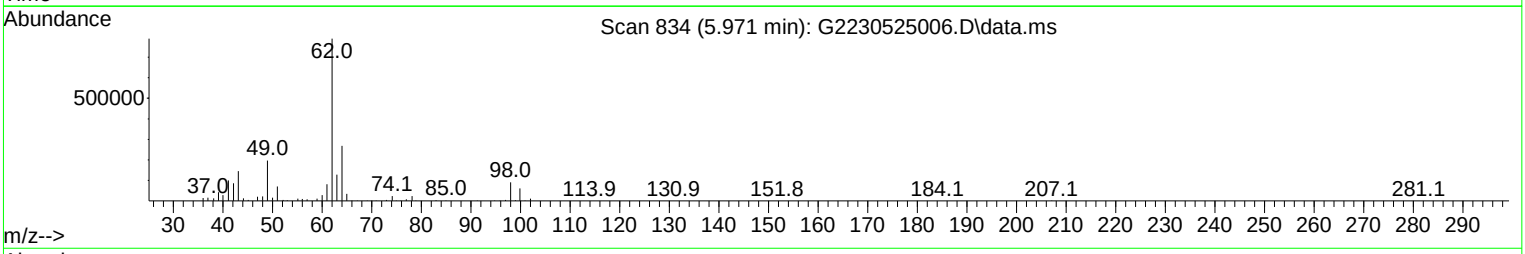
Ion	Exp%	Act%
54.10	100.00	100.00
52.00	18.10	18.66
53.00	12.00	10.91
0.00	0.00	0.00

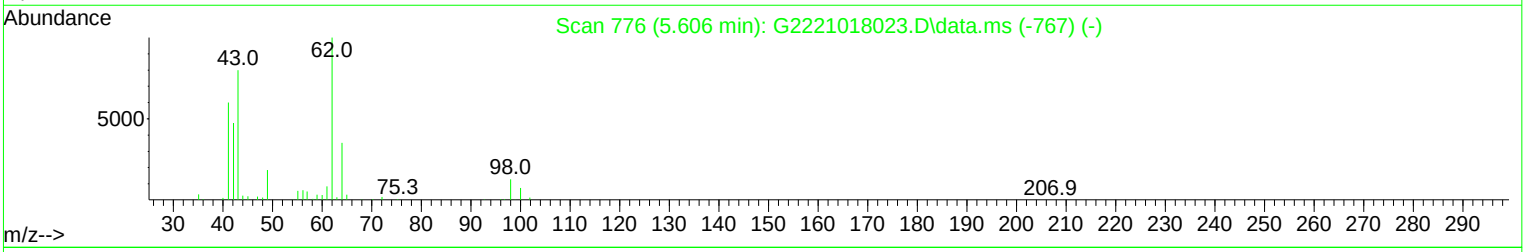
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525006.D
Acq On : 25 May 2023 14:12
Operator : PO1
Sample : SEQ-CALA
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 15:46:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:46:19 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525006.D\data.ms

(45) Isobutanol

5.971min (+ 0.005) 221.84 ug/L

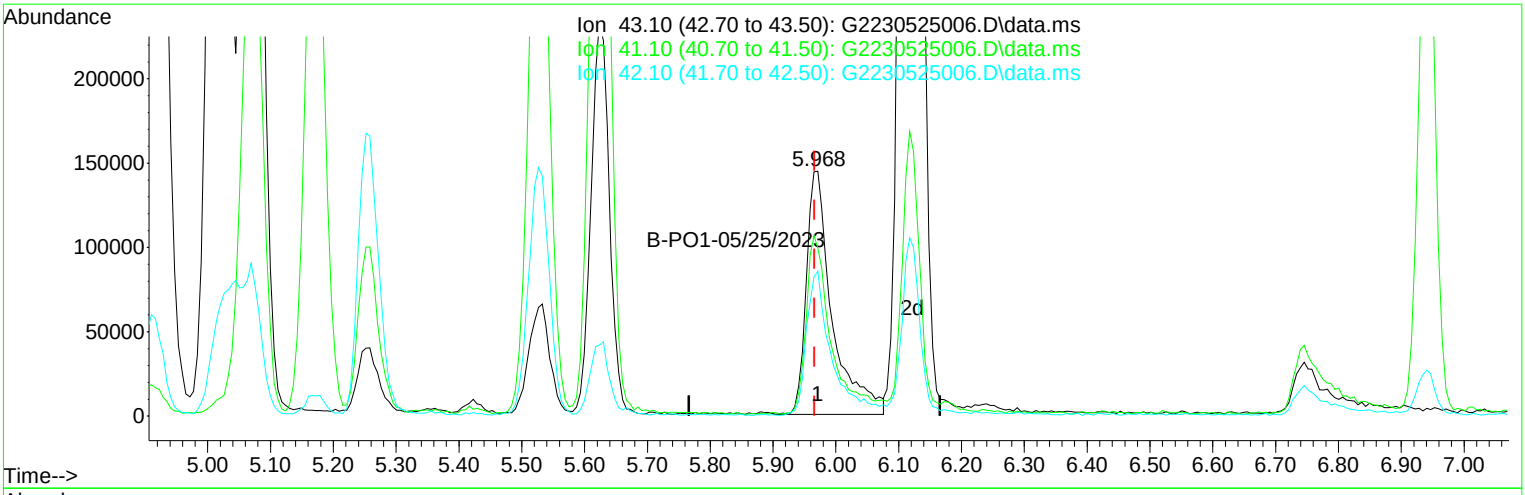
response 3567306

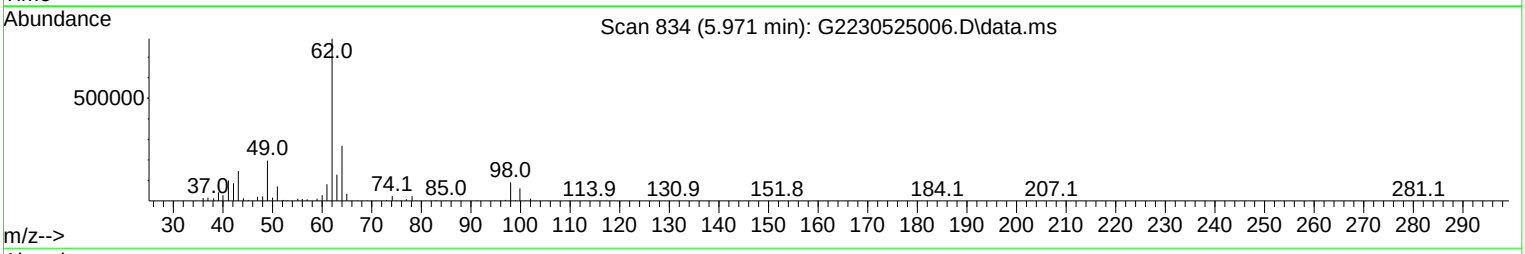
Ion	Exp%	Act%
43.10	100.00	100.00
41.10	70.10	71.98
42.10	58.40	59.20
0.00	0.00	0.00

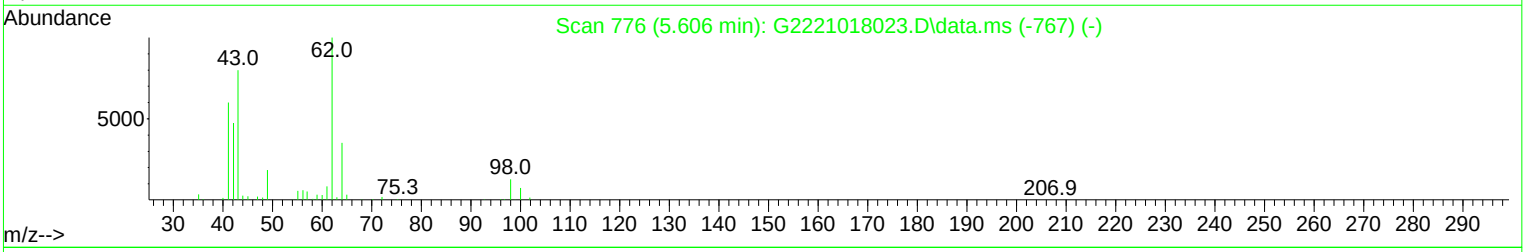
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525006.D
Acq On : 25 May 2023 14:12
Operator : PO1
Sample : SEQ-CALA
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 15:46:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:46:19 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525006.D\data.ms

(45) Isobutanol

5.971min (+ 0.005) 257.92 ug/L m

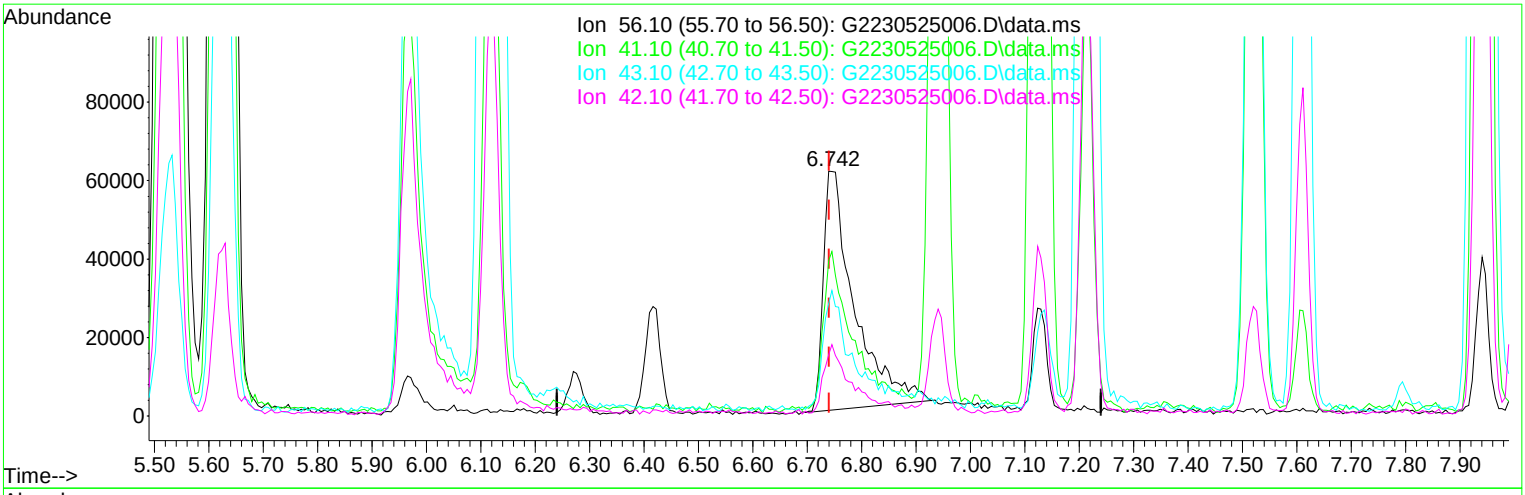
response 4147453

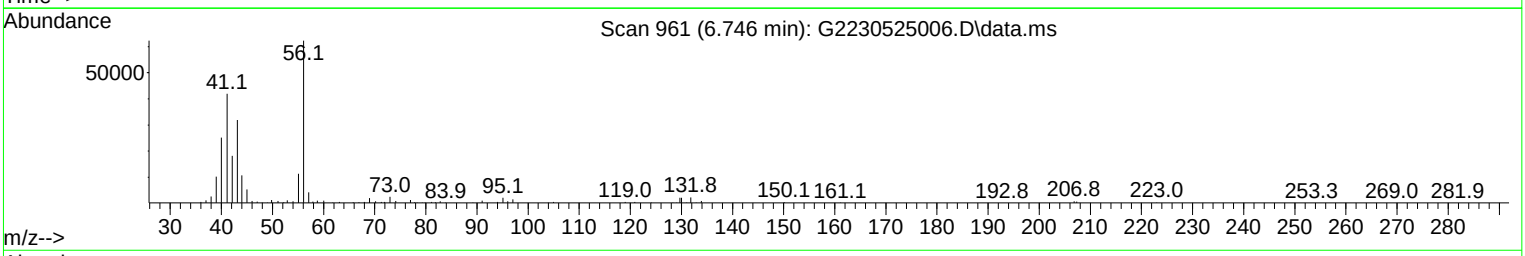
Ion	Exp%	Act%
43.10	100.00	100.00
41.10	70.10	61.91
42.10	58.40	50.92
0.00	0.00	0.00

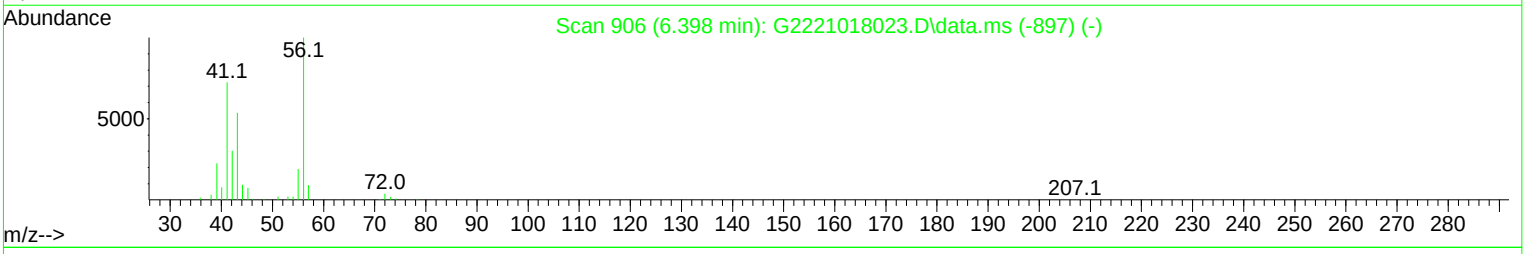
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525006.D
Acq On : 25 May 2023 14:12
Operator : PO1
Sample : SEQ-CALA
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 15:46:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:46:19 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525006.D\data.ms

(51) 1-Butanol (T)

6.747min (+ 0.007) 238.48 ug/L

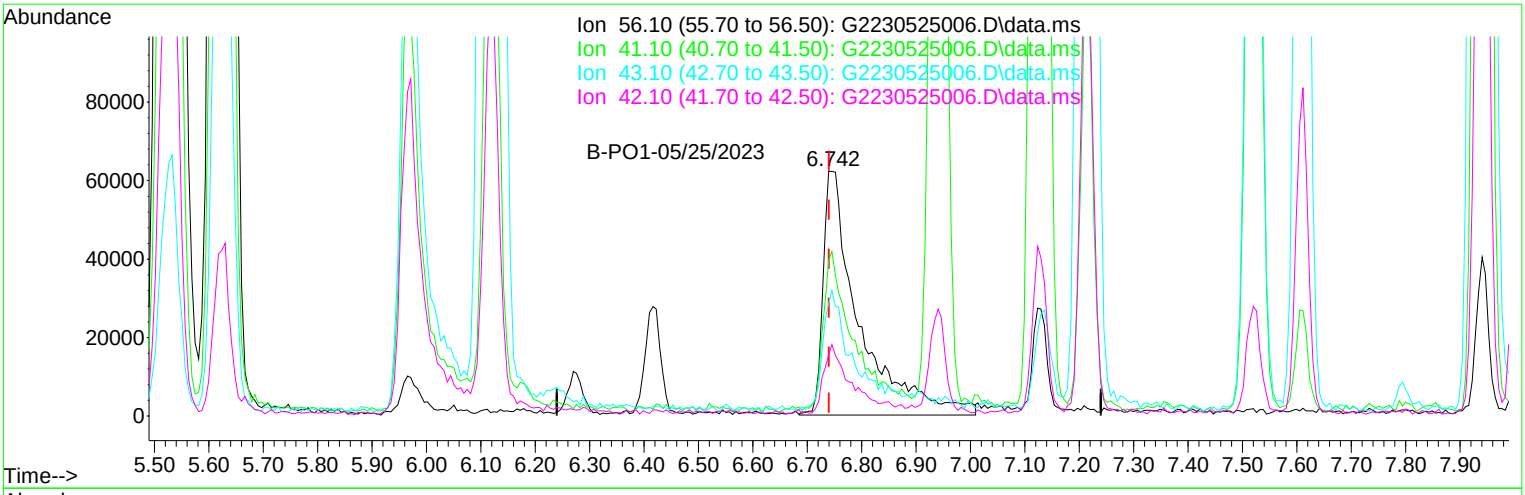
response 2408023

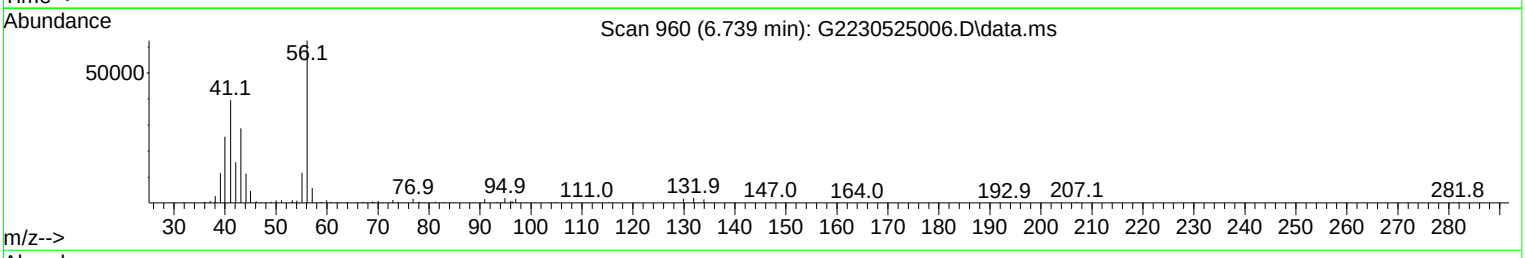
Ion	Exp%	Act%
56.10	100.00	100.00
41.10	69.10	64.20
43.10	53.20	30.00
42.10	27.70	23.66

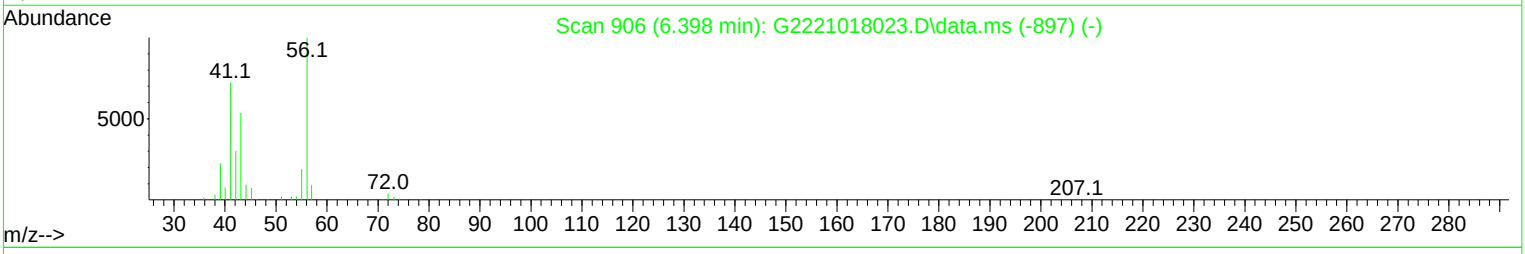
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525006.D
Acq On : 25 May 2023 14:12
Operator : PO1
Sample : SEQ-CALA
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 25 15:46:25 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 15:46:19 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525006.D\data.ms

(51) 1-Butanol (T)

6.739min (-0.001) 285.44 ug/L m

response 2871806

Ion	Exp%	Act%
56.10	100.00	100.00
41.10	69.10	53.83
43.10	53.20	25.15
42.10	27.70	19.84

INITIAL CALIBRATION VERIFICATION

SW8260B/D

Laboratory	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	G2	Calibration:	EE30097
Lab File ID:	G2230525008.D	Calibration Date:	05/24/23 13:00
Sequence:	S3E0429	Injection Date:	05/25/23
Lab Sample ID:	S3E0429-ICV1	Injection Time:	15:01

		CONC. (ug/L)		RESPONSE FACTOR			ICV	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	% Rec	Lower Limit	Upper Limit
1,1,1,2-Tetrachloroethane	A	15.00	14.8	0.3434339	0.3383993	**99**	80	120
1,1,1-Trichloroethane	A	15.00	14.5	0.603823	0.5843569	**97**	80	120
1,1,2,2-Tetrachloroethane	A	15.00	14.9	0.86935	0.8650603	**100**	80	120
1,1,2-Trichloroethane	A	15.00	14.8	0.2642556	0.2597709	**98**	80	120
1,1-Dichloroethane	L 1/X	15.00	14.8	0.5953788	0.5472882	**98**	80	120
1,1-Dichloroethene	L 1/X	15.00	14.1	0.4569016	0.4027744	**94**	80	120
1,1-Dichloropropene	L 1/X	15.00	14.8	0.4853227	0.4487621	**99**	80	120
1,2,3-Trichlorobenzene	A	15.00	14.7	0.2883305	0.2821218	**98**	80	120
1,2,3-Trichloropropane	L 1/X	15.00	15.1	0.331412	0.3022913	**100**	80	120
1,2,4-Trichlorobenzene	A	15.00	14.6	0.3588914	0.3480192	**97**	80	120
1,2,4-Trimethylbenzene	A	15.00	14.7	2.229227	2.18996	**98**	80	120
1,2-Dibromo-3-chloropropane	L 1/X	15.00	15.6	0.1882045	0.1792446	**104**	80	120
1,2-Dibromoethane	A	15.00	14.5	0.3394667	0.3288407	**97**	80	120
1,2-Dichlorobenzene	L 1/X	15.00	15.4	1.201484	1.173275	**103**	80	120
1,2-Dichloroethane	L 1/X	15.00	14.9	0.5029475	0.4608303	**100**	80	120
1,2-Dichloropropane	L 1/X	15.00	15.4	0.2411055	0.2317499	**102**	80	120
1,3,5-Trimethylbenzene	A	15.00	14.9	2.228381	2.214464	**99**	80	120
1,3-Dichlorobenzene	A	15.00	14.8	1.326244	1.307014	**99**	80	120
1,3-Dichloropropane	L 1/X	15.00	15.2	0.4921719	0.4735974	**101**	80	120
1,4-Dichlorobenzene	A	15.00	15.0	1.289371	1.292615	**100**	80	120
2,2-Dichloropropane	A	15.00	14.3	0.5559494	0.5290053	**95**	80	120
2-Butanone	L 1/X	52.50	51.2	5.658319E-02	4.871441E-02	**97**	80	120
2-Chlorotoluene	A	15.00	14.8	1.923105	1.894649	**99**	80	120
2-Hexanone	L 1/X	52.50	51.6	0.2137484	0.1957368	**98**	80	120
4-Chlorotoluene	A	15.00	15.1	2.179486	2.189062	**100**	80	120
4-Isopropyltoluene	A	15.00	14.9	2.254881	2.234371	**99**	80	120
4-Methyl-2-pentanone	L 1/X	52.50	52.5	0.2919112	0.2714922	**100**	80	120
Acetone	L 1/X	52.50	51.4	0.1293521	8.991602E-02	**98**	80	120
Benzene	A	15.00	14.6	1.002161	0.9785052	**98**	80	120
Bromobenzene	A	15.00	14.6	1.083652	1.056573	**98**	80	120
Bromochloromethane	A	15.00	14.3	0.2969883	0.2833722	**95**	80	120

INITIAL CALIBRATION VERIFICATION

SW8260B/D

Laboratory	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	G2	Calibration:	EE30097
Lab File ID:	G2230525008.D	Calibration Date:	05/24/23 13:00
Sequence:	S3E0429	Injection Date:	05/25/23
Lab Sample ID:	S3E0429-ICV1	Injection Time:	15:01

		CONC. (ug/L)		RESPONSE FACTOR			ICV	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	% Rec	Lower Limit	Upper Limit
Bromodichloromethane	L 1/X	15.00	15.4	0.370729	0.3620139	**103**	80	120
Bromoform	A	15.00	14.6	0.3117301	0.3037491	**97**	80	120
Bromomethane	L 1/X	15.00	17.4	0.3100031	0.293142	**116**	80	120
Carbon disulfide	L 1/X	15.00	14.0	0.9476676	0.8188454	**93**	80	120
Carbon tetrachloride	A	15.00	15.6	0.3608923	0.3754445	**104**	80	120
Chlorobenzene	A	15.00	14.7	0.8774024	0.8593802	**98**	80	120
Chloroethane	A	15.00	14.3	0.239357	0.2285825	**95**	80	120
Chloroform	A	15.00	14.2	0.656932	0.6229854	**95**	80	120
Chloromethane	L 1/X	15.00	15.0	0.3583454	0.3298825	**100**	80	120
cis-1,2-Dichloroethene	L 1/X	15.00	14.7	0.5385255	0.4920999	**98**	80	120
cis-1,3-Dichloropropene	A	15.00	14.7	0.4428763	0.4330082	**98**	80	120
Dibromochloromethane	L 1/X	15.00	15.5	0.3917939	0.3830796	**103**	80	120
Dibromomethane	A	15.00	15.2	0.2381661	0.2409377	**101**	80	120
Dichlorodifluoromethane	A	15.00	13.2	0.4075845	0.3590576	**88**	80	120
Ethylbenzene	L 1/X	15.00	15.6	1.407424	1.390213	**104**	80	120
Hexachlorobutadiene	L 1/X	15.00	15.5	0.1938745	0.1828475	**103**	80	120
Isopropylbenzene	A	15.00	14.8	2.873385	2.836893	**99**	80	120
m,p-Xylene	A	30.00	29.7	1.070642	1.061281	**99**	80	120
Methyl tert-butyl ether	L 1/X	15.00	14.6	2.078829	1.153053	**97**	80	120
Methylene chloride	L 1/X	15.00	15.3	0.4752062	0.3684413	**102**	80	120
n-Butylbenzene	L 1/X	15.00	15.2	1.741335	1.64368	**101**	80	120
n-Propylbenzene	A	15.00	14.9	3.199933	3.180756	**99**	80	120
Naphthalene	L 1/X	15.00	15.4	1.038822	0.9578899	**103**	80	120
o-Xylene	A	15.00	14.9	2.460467	2.441196	**99**	80	120
sec-Butylbenzene	A	15.00	14.8	2.725412	2.692846	**99**	80	120
Styrene	A	15.00	14.5	0.9431739	0.9090641	**96**	80	120
tert-Butylbenzene	A	15.00	15.0	2.390757	2.384128	**100**	80	120
Tetrachloroethene	L 1/X	15.00	15.4	0.4253866	0.3966704	**102**	80	120
Toluene	L 1/X	15.00	15.6	1.307847	1.278948	**104**	80	120
trans-1,2-Dichloroethene	A	15.00	13.8	0.4334531	0.39801	**92**	80	120
trans-1,3-Dichloropropene	A	15.00	14.8	0.423463	0.4169331	**98**	80	120

INITIAL CALIBRATION VERIFICATION

SW8260B/D

Laboratory	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	G2	Calibration:	EE30097
Lab File ID:	G2230525008.D	Calibration Date:	05/24/23 13:00
Sequence:	S3E0429	Injection Date:	05/25/23
Lab Sample ID:	S3E0429-ICV1	Injection Time:	15:01

		CONC. (ug/L)		RESPONSE FACTOR			ICV	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	% Rec	Lower Limit	Upper Limit
Trichloroethene	L 1/X	15.00	15.4	0.2817735	0.2718875	**103**	80	120
Trichlorofluoromethane	A	15.00	14.0	0.6025154	0.5641364	**94**	80	120
Vinyl chloride	A	15.00	13.7	0.3930682	0.3592666	**91**	80	120
Dibromofluoromethane	A	20.00	19.4	0.4401431	0.4274204	**97**	80	120
1,2-Dichloroethane-d4	A	20.00	19.2	0.4349663	0.4169146	**96**	80	120
Fluorobenzene	A	20.00	20.0	1.139643	1.140605	**100**	80	120
Toluene-d8	A	20.00	20.0	1.260611	1.260345	**100**	80	120
4-Bromofluorobenzene	A	10.00	10.1	0.9444054	0.9552632	**101**	80	120
1,2-Dichlorobenzene-d4	A	20.00	19.8	0.8601294	0.8495139	**99**	80	120

A = Average Response Factor

Q = Quadratic Regression

L = Linear Regression

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525008.D
Acq On : 25 May 2023 15:01
Operator : PO1
Sample : SEQ-ICV1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 26 09:16:55 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Fri May 26 09:16:33 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.574	168	24892871	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.423	114	34255756	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.496	117	29947458	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.842	152	13430214	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.478	111	10639715	19.42	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.10%			
43) 1,2-Dichloroethane-d4	5.880	65	10378199	19.17	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 95.85%			
49) Fluorobenzene	6.280	96	39072292	20.02	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.10%			
64) Toluene-d8	8.018	98	37744122	20.00	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 100.00%			
81) 4-Bromofluorobenzene	10.686	174	6414693	10.11	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 101.10%			
97) d4-1,2-Dichlorobenzene	12.219	152	11409145	19.75	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 98.75%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.215	85	6703481	13.21	ug/L	98
3) Chloromethane	1.355	50	6158791	15.02	ug/L	99
4) Vinyl chloride	1.448	62	6707383	13.71	ug/L	98
5) Bromomethane	1.719	94	5472859	17.39	ug/L	97
6) Chloroethane	1.807	64	4267555	14.32	ug/L	97
7) Trichlorofluoromethane	2.033	101	10532233	14.04	ug/L	99
8) Ethyl ether	2.320	59	4722925	14.31	ug/L	89
9) Acrolein	2.441	56	2920634	43.90	ug/L	95
10) 1,1-Dichloroethene	2.526	61	7519659	14.12	ug/L	90
11) 1,1,2-Trichloro-1,2,2-...	2.537	101	5742312	14.09	ug/L	96
12) Acetone	2.610	43	5875453	51.37	ug/L	93
13) Iodomethane	2.679	142	7745558	13.36	ug/L	95
14) Carbon disulfide	2.741	76	15287564	14.00	ug/L	100
15) Isopropanol	2.790	45	2580824	129.19	ug/L	99
16) acetonitrile	2.920	41	8537205	36.77	ug/L	88
17) 3-Chloro-1-propene	2.922	76	3640390	14.51	ug/L	98
18) Methylene chloride	3.064	49	6878671	15.28	ug/L	86
19) Acrylonitrile	3.391	53	2561929	13.53	ug/L	95
20) trans-1,2-Dichloroethene	3.404	61	7430708	13.77	ug/L	89
21) Methyl tert-butyl ether	3.447	73	21527099	14.59	ug/L	93
22) Hexane	3.793	57	6373066	15.05	ug/L	95
23) 1,1-Dichloroethane	4.000	63	10217678	14.75	ug/L	96
24) Vinyl acetate	4.133	43	12582801	14.87	ug/L	93
25) 2-Chloro-1,3-butadiene	4.137	53	8018795	14.21	ug/L	88
26) 1-propanol	4.301	59	398580m	153.89	ug/L	
27) 2,2-Dichloropropane	4.829	77	9876346	14.27	ug/L	93
28) cis-1,2-Dichloroethene	4.838	61	9187335	14.67	ug/L	89
29) 2-Butanone	4.919	72	3183184	51.18	ug/L	92

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525008.D
Acq On : 25 May 2023 15:01
Operator : PO1
Sample : SEQ-ICV1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 26 09:16:55 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Fri May 26 09:16:33 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
30) Propionitrile	4.987	54	920385	15.44	ug/L		96
31) Ethyl acetate	5.022	61	1082067	14.47	ug/L		83
32) Methylacrylate	5.046	55	6676304	14.16	ug/L		94
33) 1-Bromopropane	5.078	41	3624691	14.25	ug/L		74
34) Bromochloromethane	5.150	130	5290461	14.31	ug/L		99
35) Methacrylonitrile	5.177	67	3364051	14.76	ug/L		93
36) Tetrahydrofuran	5.263	42	1807355	13.89	ug/L		83
37) Chloroform	5.277	83	11630917	14.22	ug/L		99
39) 1,1,1-Trichloroethane	5.481	97	10909741	14.52	ug/L		96
40) Cyclohexane	5.536	84	9646102	14.43	ug/L		85
41) 1-Chlorobutane	5.631	56	10920583	14.06	ug/L		97
42) 1,1-Dichloropropene	5.690	75	8378232	14.80	ug/L		94
44) 1,2-Dichloroethane	5.972	62	8603541	14.94	ug/L		99
45) Isobutanol	5.972	43	2081168m	142.94	ug/L		
47) Carbon tetrachloride	5.681	117	9645852	15.60	ug/L		99
48) Benzene	5.936	78	25139581	14.65	ug/L		100
50) Trichloroethene	6.696	95	6985285	15.45	ug/L		93
51) 1-Butanol	6.746	56	1415312m	132.02	ug/L		
52) 1,2-Dichloropropane	6.946	63	5954077	15.35	ug/L		92
53) Dibromomethane	7.072	174	6190128	15.17	ug/L	#	92
54) Methyl methacrylate	7.132	69	5782655	14.43	ug/L		92
55) 1,4-dioxane	7.142	88	578604m	143.32	ug/L		
56) Bromodichloromethane	7.260	83	9300796	15.45	ug/L		99
57) 2-Nitropropane	7.525	43	2540979	14.70	ug/L		94
58) 2-Chloroethyl vinyl ether	7.614	63	4556111	13.72	ug/L		99
59) cis-1,3-Dichloropropene	7.745	75	11124765	14.67	ug/L		96
60) 4-Methyl-2-pentanone	7.944	43	24412946	52.48	ug/L	#	90
61) trans-1,3-Dichloropropene	8.335	75	10711770	14.77	ug/L		92
62) 1,1,2-Trichloroethane	8.520	97	6673987	14.75	ug/L		94
65) Toluene	8.087	91	28725941	15.62	ug/L		98
66) Ethylmethacrylate	8.461	69	10069383	15.23	ug/L		89
67) Tetrachloroethene	8.648	166	8909454	15.35	ug/L		94
68) 1,3-Dichloropropane	8.687	76	10637280	15.18	ug/L		89
69) 2-Hexanone	8.808	43	15387282	51.62	ug/L		89
70) Dibromochloromethane	8.912	129	8604196	15.48	ug/L		98
71) 1,2-Dibromoethane	9.019	107	7385958	14.53	ug/L		99
72) Chlorobenzene	9.524	112	19302191	14.69	ug/L		95
73) 1,1,1,2-Tetrachloroethane	9.615	131	7600650	14.78	ug/L		98
74) Ethylbenzene	9.644	91	31225025	15.63	ug/L		96
75) m,p-Xylene	9.764	91	47673991	29.74	ug/L		95
76) Styrene	10.176	104	20418116	14.46	ug/L		95
77) Bromoform	10.355	173	6822386	14.62	ug/L		98
79) o-Xylene	10.161	91	24589328	14.88	ug/L		96
80) Isopropylbenzene	10.536	105	28575053	14.81	ug/L		97
82) Bromobenzene	10.828	77	10642499	14.63	ug/L		87
83) 1,1,2,2-Tetrachloroethane	10.842	83	8713456	14.93	ug/L		98
84) 1,2,3-Trichloropropane	10.881	110	3044877	15.06	ug/L		95
85) trans-1,4-Dichloro-2-b...	10.902	53	2189748	13.99	ug/L		67
86) n-Propylbenzene	10.949	91	32038667	14.91	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525008.D
Acq On : 25 May 2023 15:01
Operator : PO1
Sample : SEQ-ICV1
Misc :
ALS Vial : 8 Sample Multiplier: 1

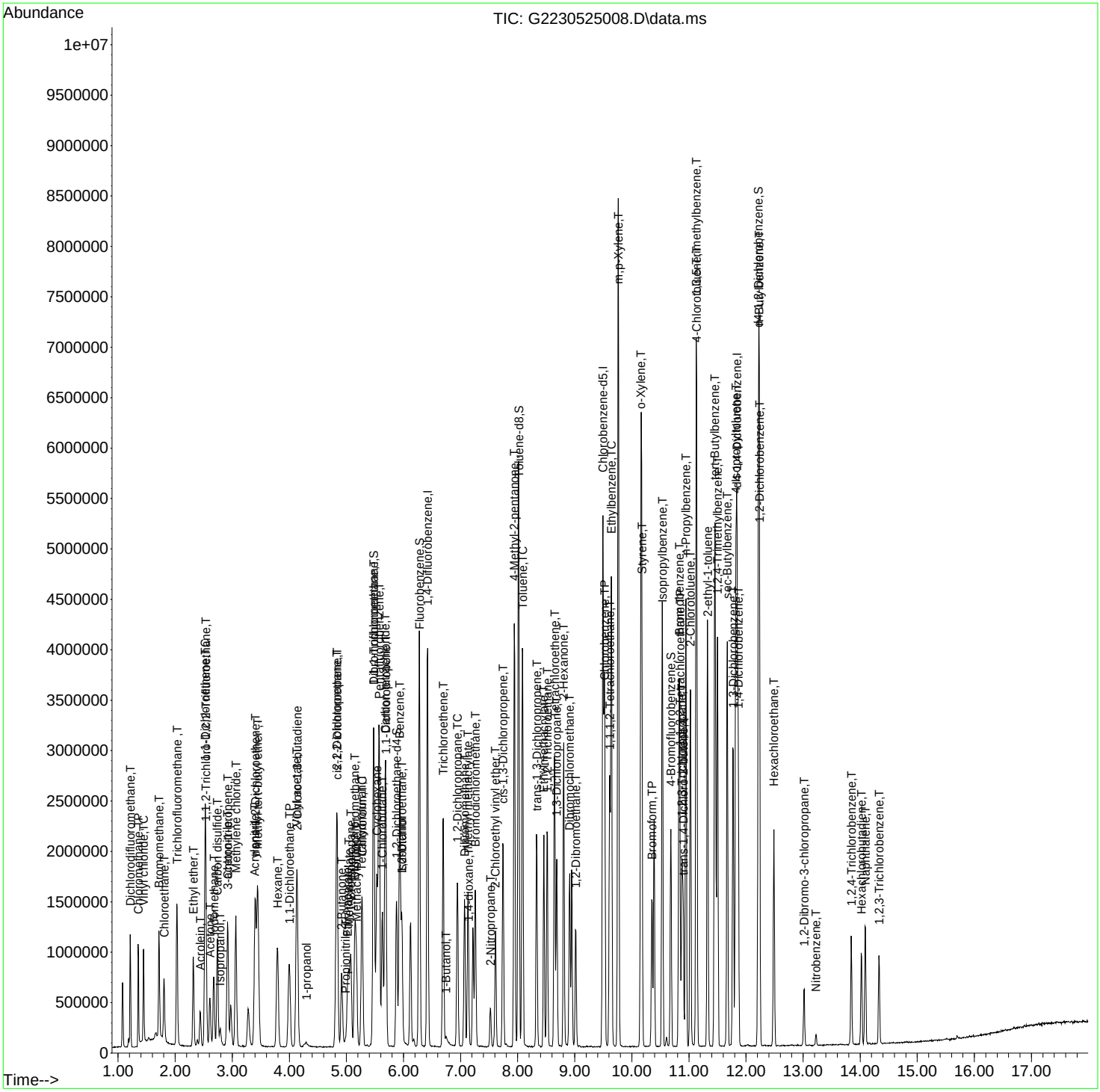
Quant Time: May 26 09:16:55 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Fri May 26 09:16:33 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
87) 2-Chlorotoluene	11.028	91	19084152	14.78	ug/L	96
88) 4-Chlorotoluene	11.138	91	22049673	15.07	ug/L	95
89) 1,3,5-Trimethylbenzene	11.130	105	22305535	14.91	ug/L	96
90) 2-ethyl-1-toluene	11.329	105	25621524	14.06	ug/L	97
91) tert-Butylbenzene	11.455	119	24014503	14.96	ug/L	91
92) 1,2,4-Trimethylbenzene	11.502	105	22058720	14.74	ug/L	95
93) sec-Butylbenzene	11.674	105	27124121	14.82	ug/L	97
94) 1,3-Dichlorobenzene	11.776	146	13165101	14.78	ug/L	98
95) 4-Isopropyltoluene	11.822	119	22506048	14.86	ug/L	98
96) 1,4-Dichlorobenzene	11.866	146	13020065	15.04	ug/L	98
98) 1,2-Dichlorobenzene	12.238	146	11817997	15.41	ug/L	98
99) n-Butylbenzene	12.232	91	16556227	15.18	ug/L	93
100) Hexachloroethane	12.492	201	4141336	14.88	ug/L	97
101) 1,2-Dibromo-3-chloropr...	13.020	157	1805469	15.57	ug/L	99
102) Nitrobenzene	13.228	77	503508	13.51	ug/L	86
103) 1,2,4-Trichlorobenzene	13.847	180	3505478	14.55	ug/L	97
104) Hexachlorobutadiene	14.024	225	1841760	15.52	ug/L	98
105) Naphthalene	14.092	128	9648497	15.40	ug/L	99
106) 1,2,3-Trichlorobenzene	14.334	180	2841716	14.68	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525008.D
Acq On : 25 May 2023 15:01
Operator : PO1
Sample : SEQ-ICV1
Misc :
ALS Vial : 8 Sample Multiplier: 1

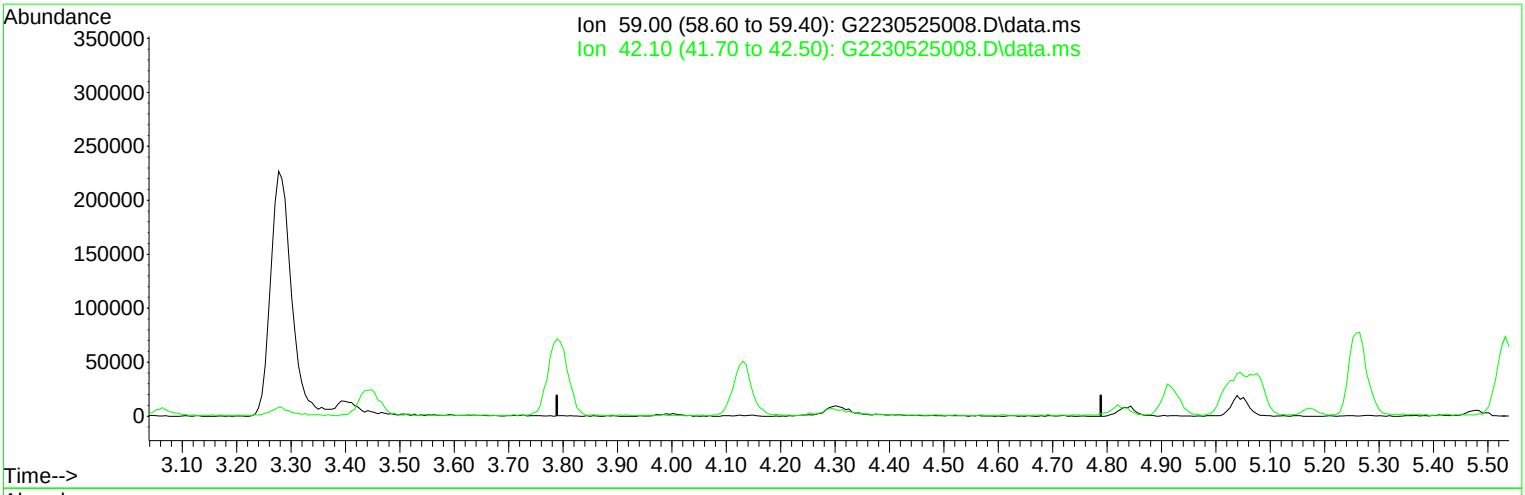
Quant Time: May 26 09:16:55 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Fri May 26 09:16:33 2023
Response via : Initial Calibration
InstName : G

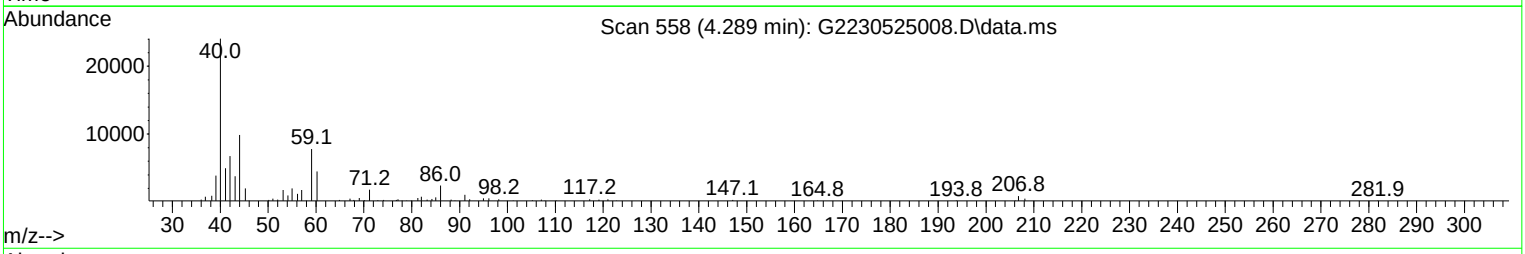


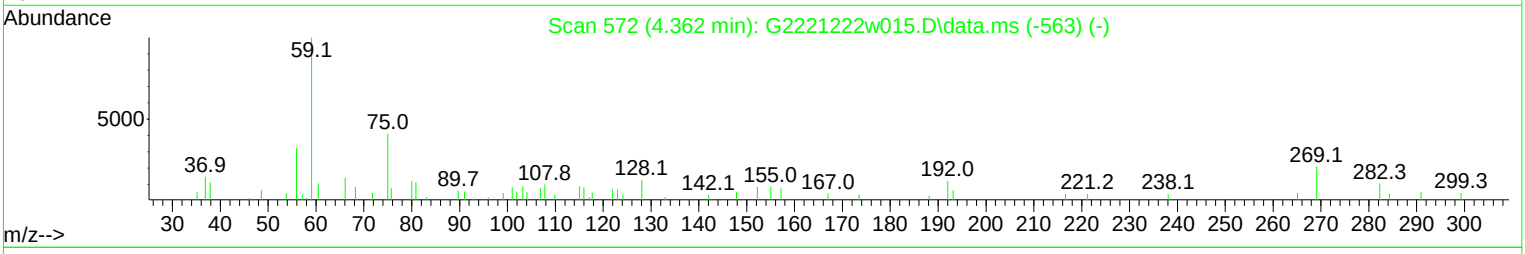
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525008.D
Acq On : 25 May 2023 15:01
Operator : PO1
Sample : SEQ-ICV1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 26 09:16:55 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Fri May 26 09:16:33 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525008.D\data.ms

(26) 1-propanol

4.289min (-4.289) 0.00 ug/L

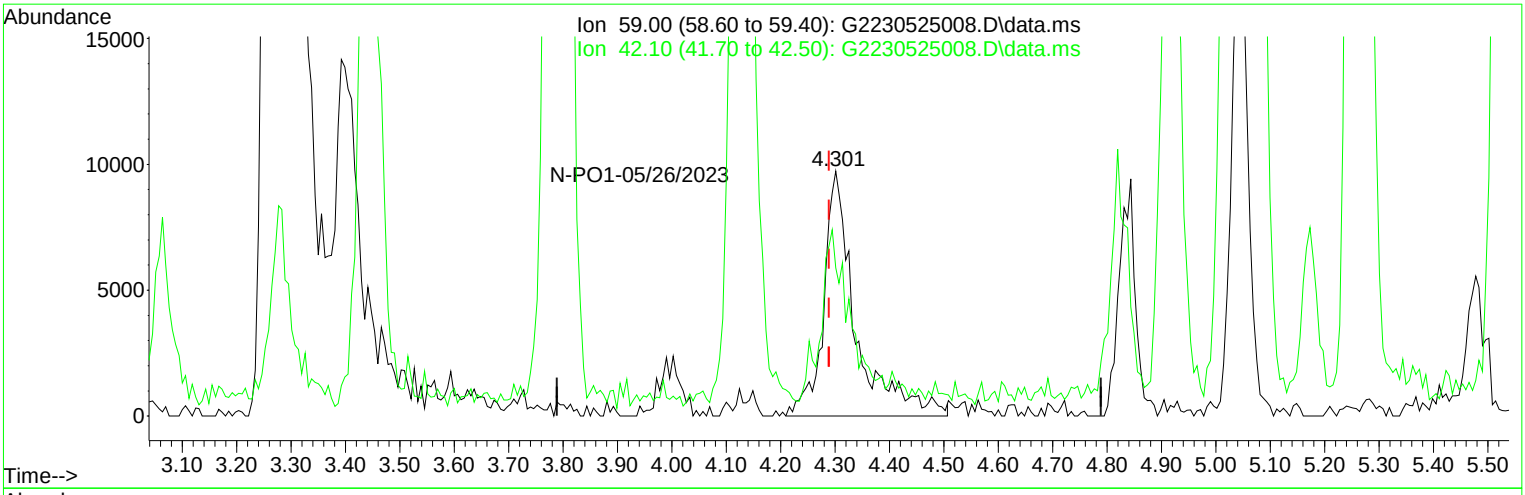
response 0

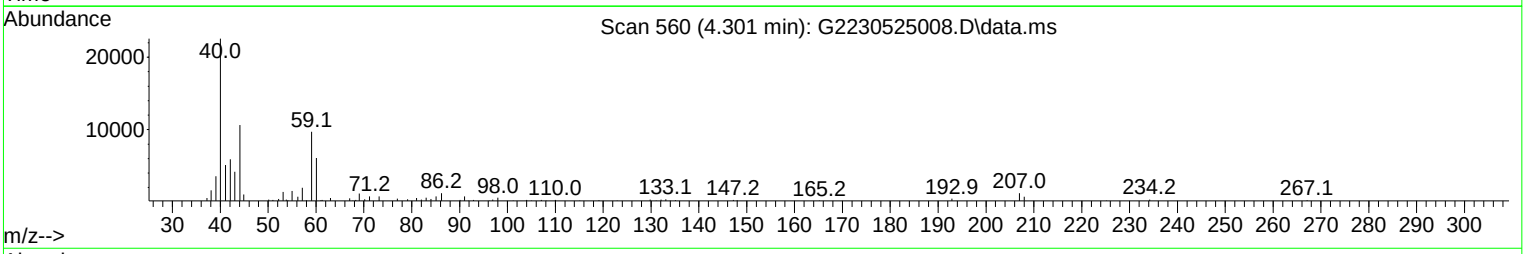
Ion	Exp%	Act%
59.00	100.00	0.00
42.10	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

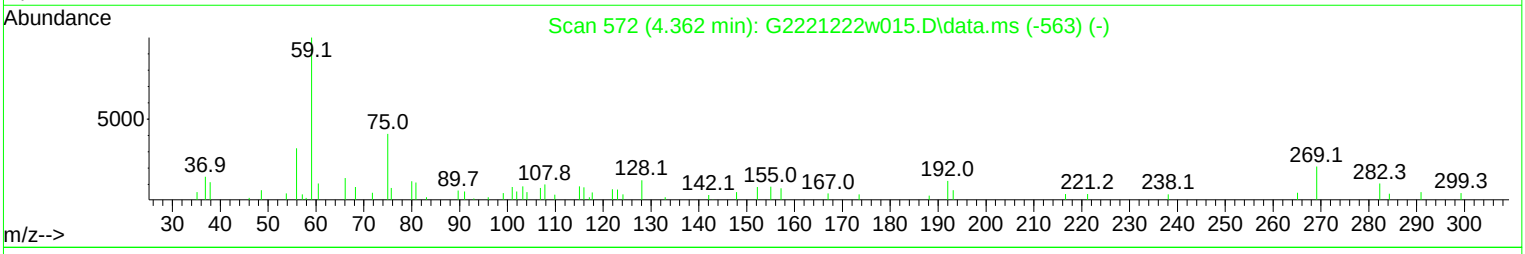
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525008.D
Acq On : 25 May 2023 15:01
Operator : PO1
Sample : SEQ-ICV1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 26 09:16:55 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Fri May 26 09:16:33 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525008.D\data.ms

(26) 1-propanol

4.301min (+ 0.012) 153.89 ug/L m

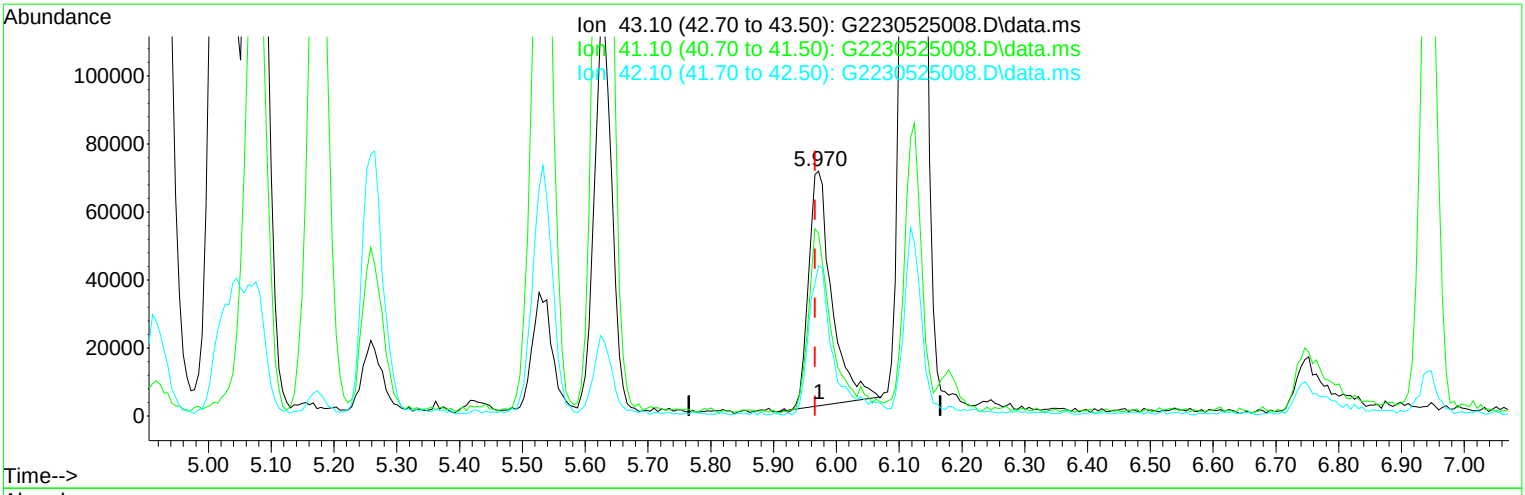
response 398580

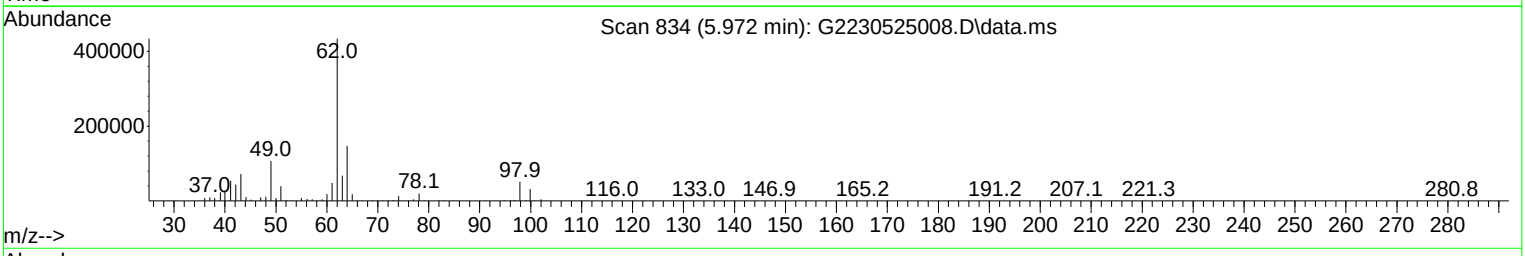
Ion	Exp%	Act%
59.00	100.00	100.00
42.10	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

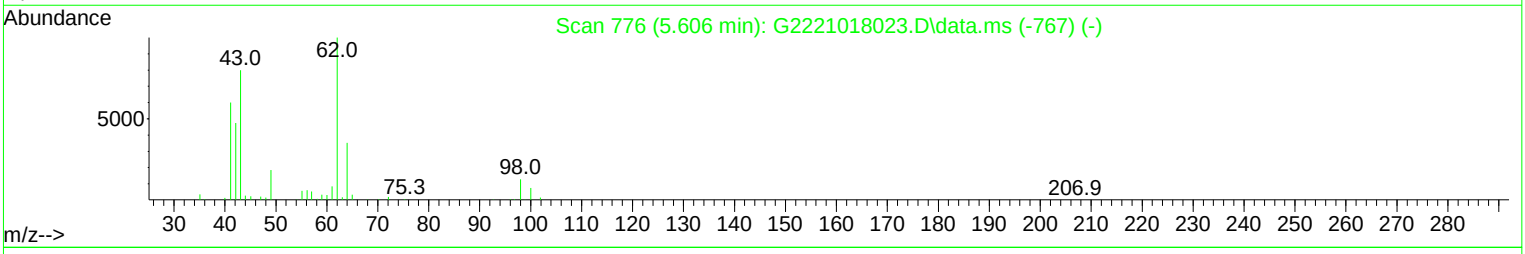
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525008.D
Acq On : 25 May 2023 15:01
Operator : PO1
Sample : SEQ-ICV1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 26 09:16:55 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Fri May 26 09:16:33 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525008.D\data.ms

(45) Isobutanol

5.973min (+ 0.007) 120.78 ug/L

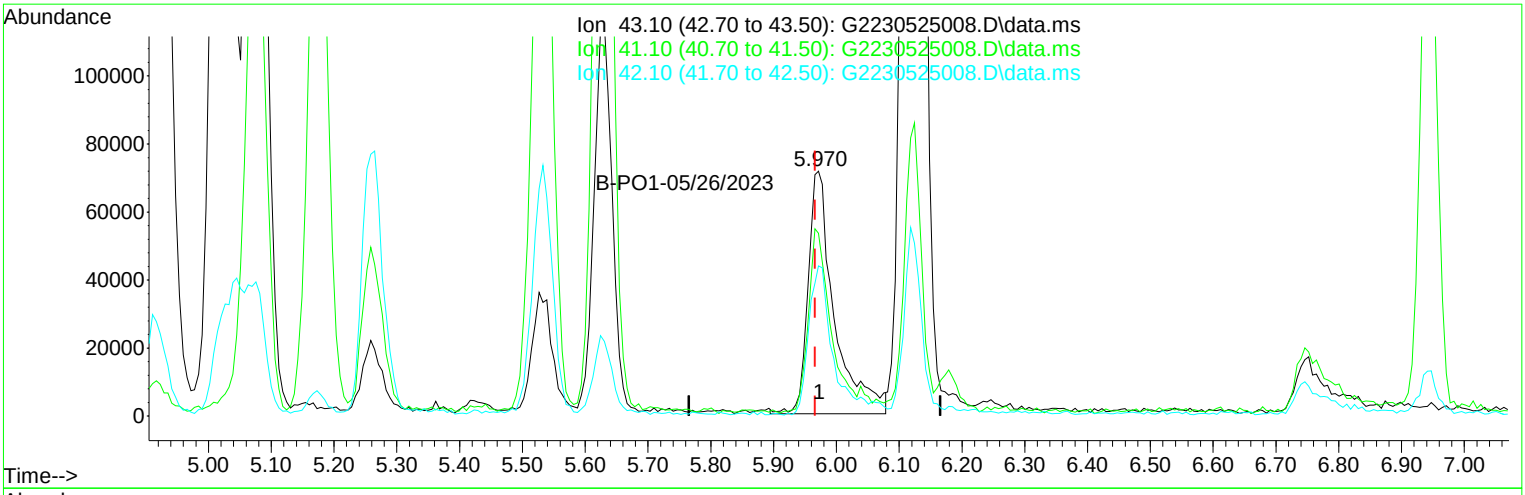
response 1765679

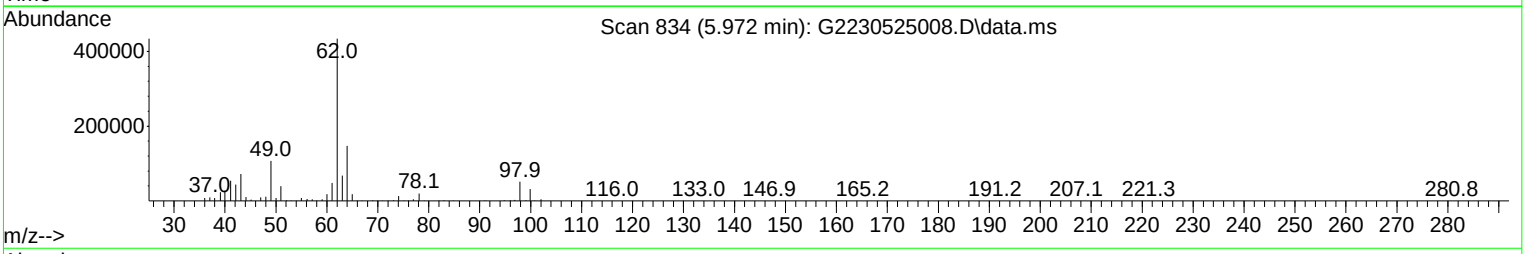
Ion	Exp%	Act%
43.10	100.00	100.00
41.10	70.10	73.81
42.10	58.40	64.02
0.00	0.00	0.00

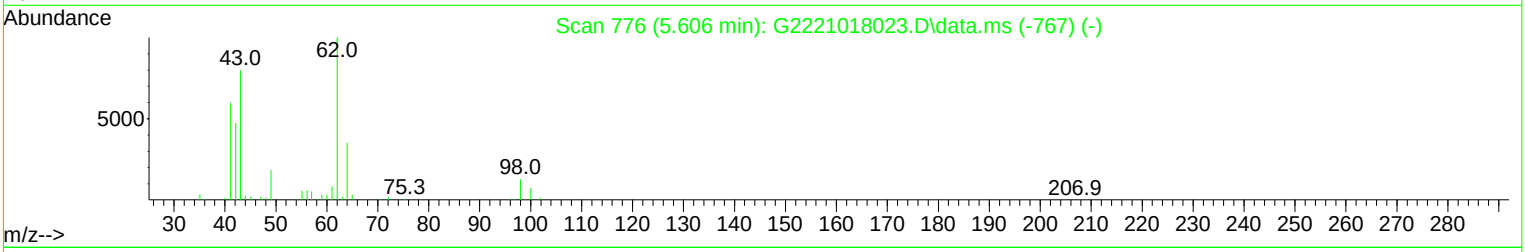
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525008.D
Acq On : 25 May 2023 15:01
Operator : PO1
Sample : SEQ-ICV1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 26 09:16:55 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Fri May 26 09:16:33 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525008.D\data.ms

(45) Isobutanol

5.972min (+ 0.006) 142.94 ug/L m

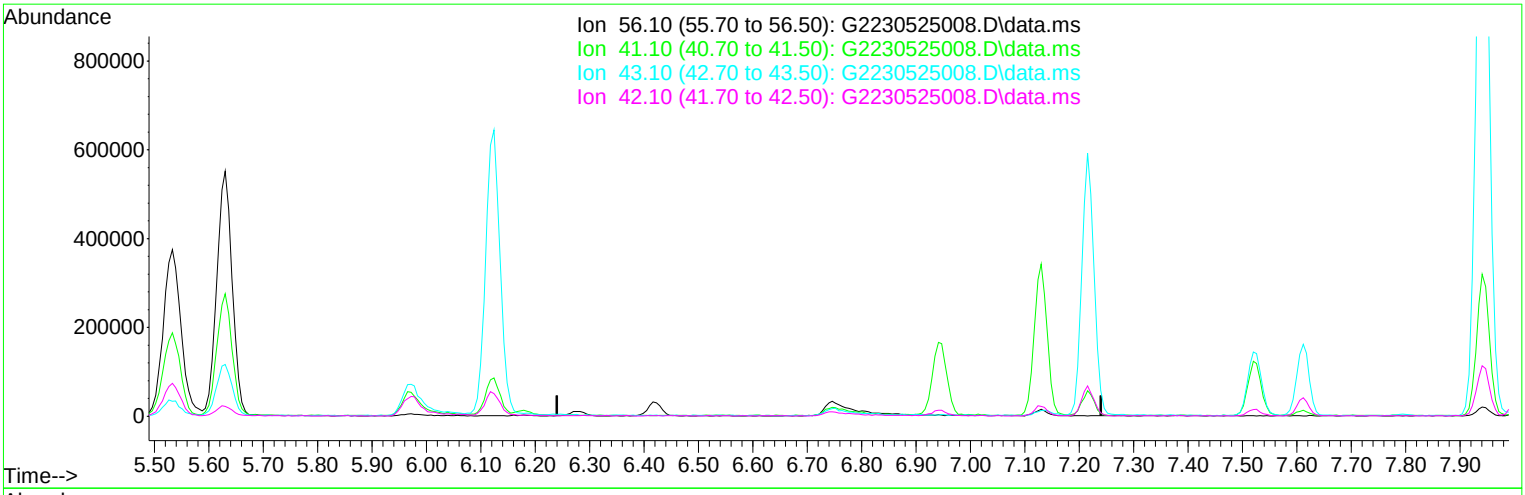
response 2081168

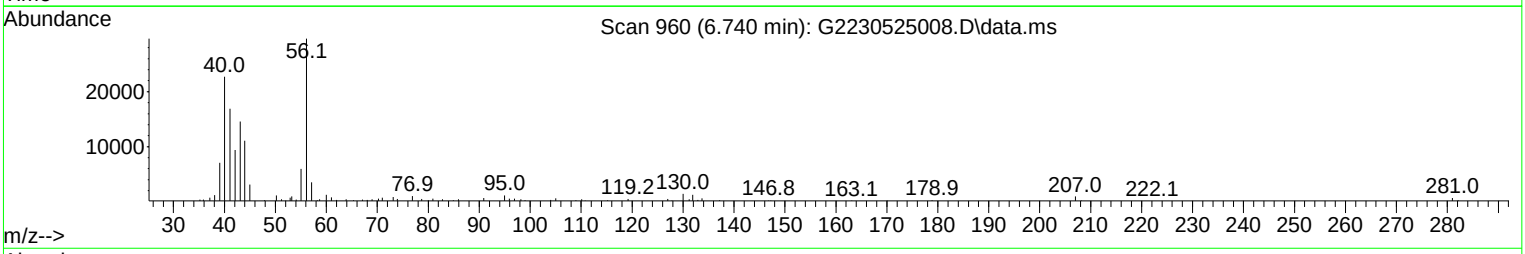
Ion	Exp%	Act%
43.10	100.00	100.00
41.10	70.10	62.62
42.10	58.40	54.31
0.00	0.00	0.00

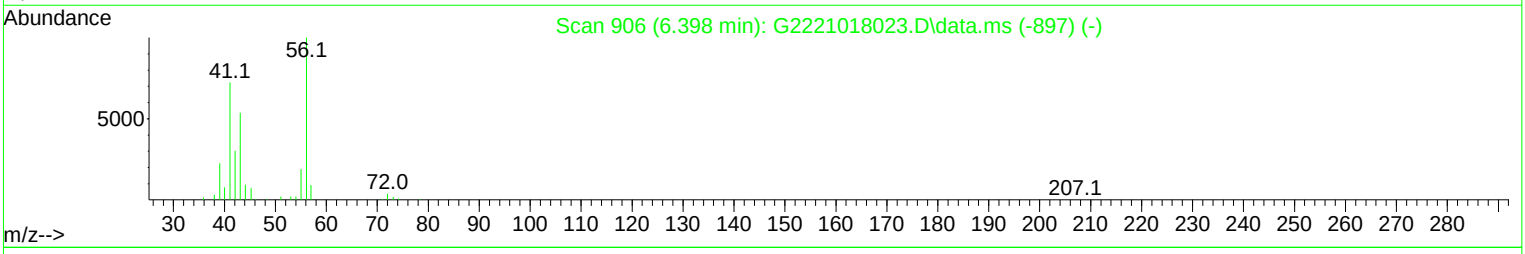
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525008.D
Acq On : 25 May 2023 15:01
Operator : PO1
Sample : SEQ-ICV1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 26 09:16:55 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Fri May 26 09:16:33 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525008.D\data.ms

(51) 1-Butanol (T)

6.740min (-6.740) 0.00 ug/L

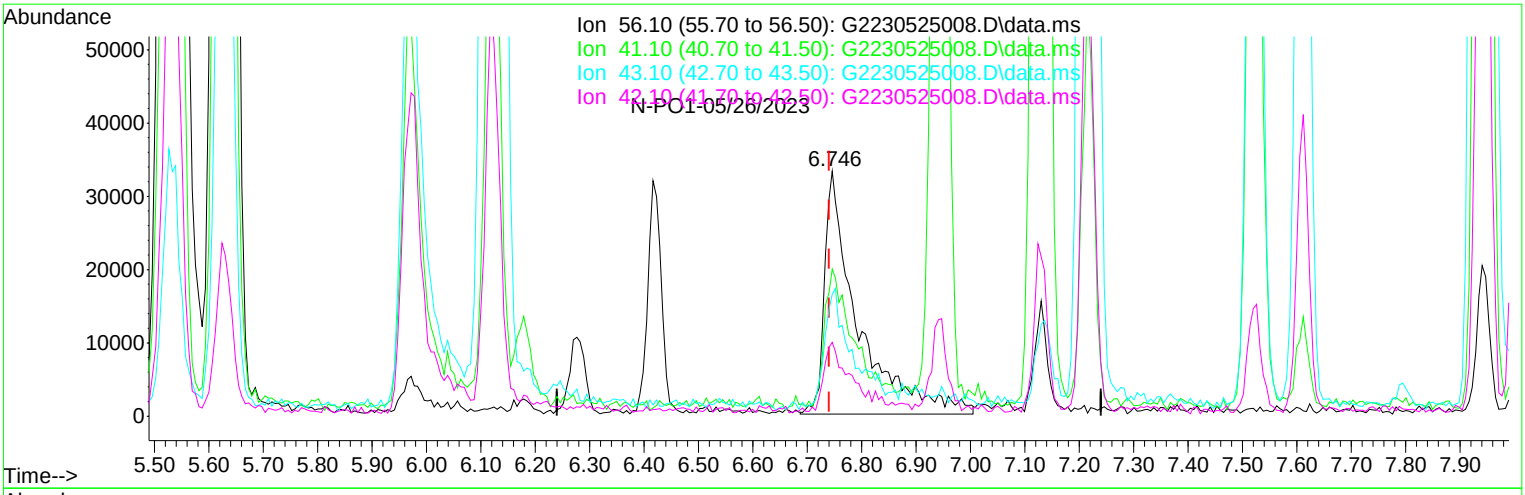
response 0

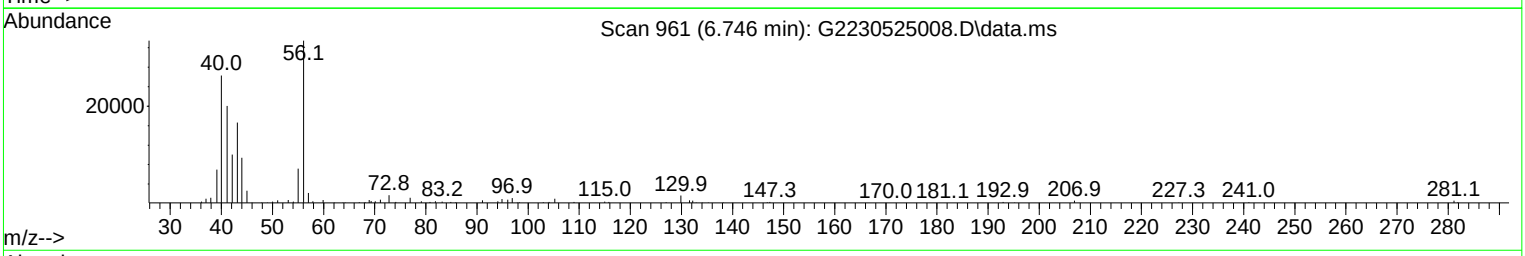
Ion	Exp%	Act%
56.10	100.00	0.00
41.10	69.10	0.00#
43.10	53.20	0.00#
42.10	27.70	0.00

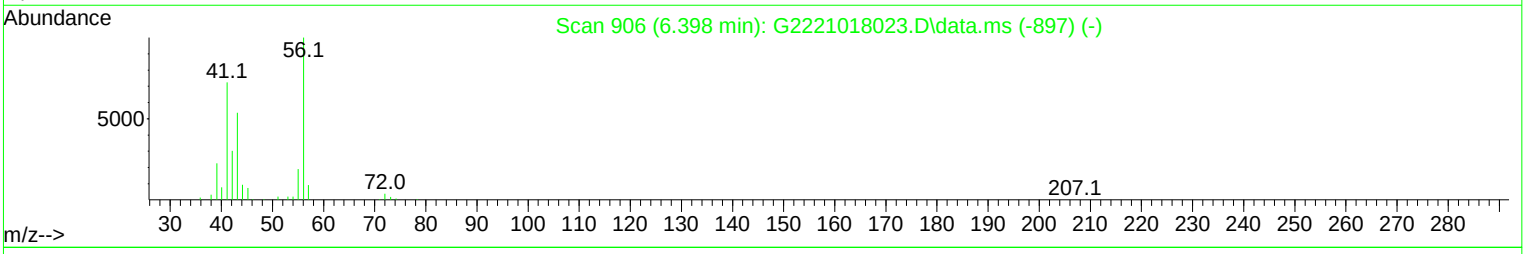
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525008.D
Acq On : 25 May 2023 15:01
Operator : PO1
Sample : SEQ-ICV1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 26 09:16:55 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Fri May 26 09:16:33 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525008.D\data.ms

(51) 1-Butanol (T)

6.746min (+ 0.006) 132.02 ug/L m

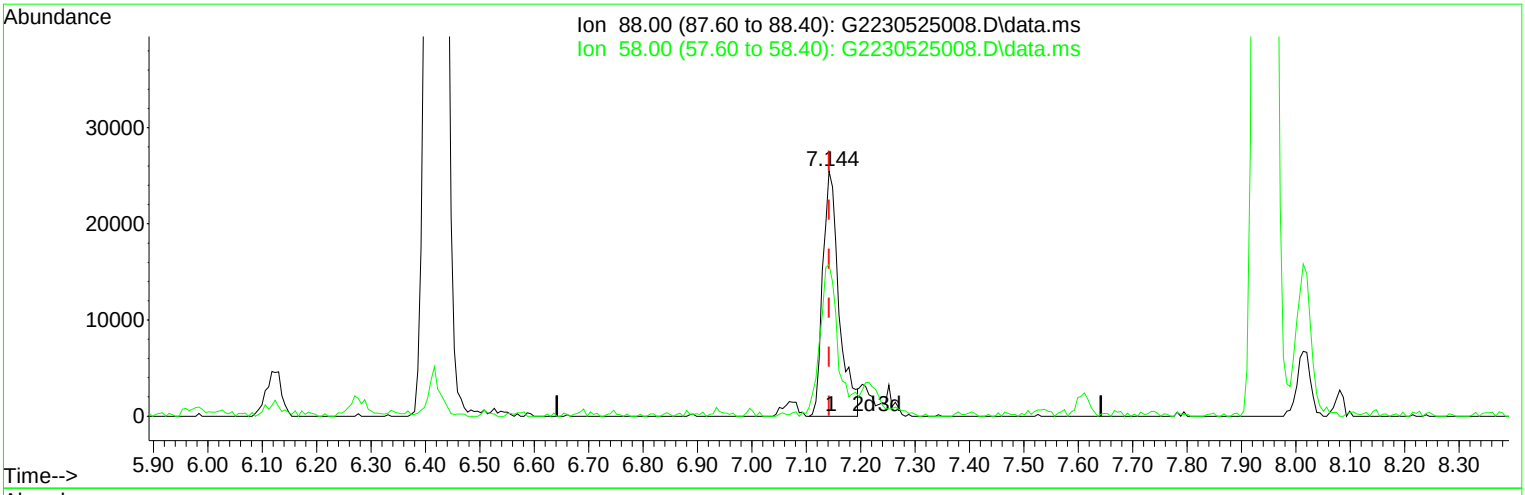
response 1415312

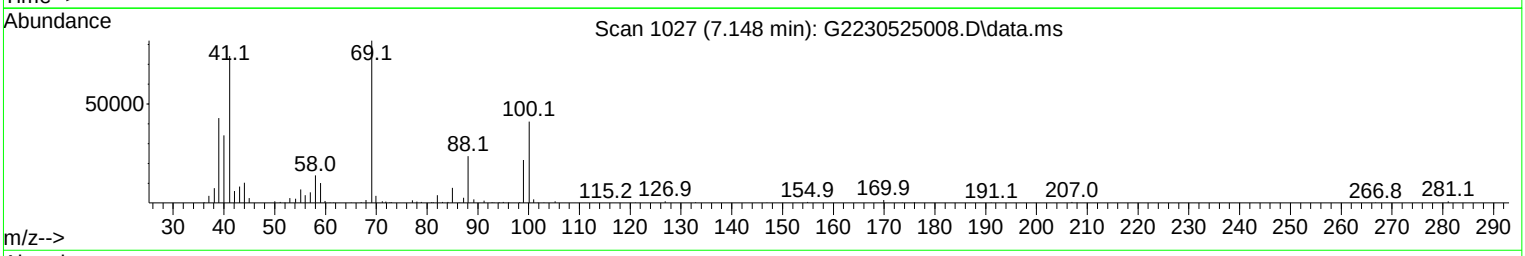
Ion	Exp%	Act%
56.10	100.00	100.00
41.10	69.10	0.00#
43.10	53.20	0.00#
42.10	27.70	0.00

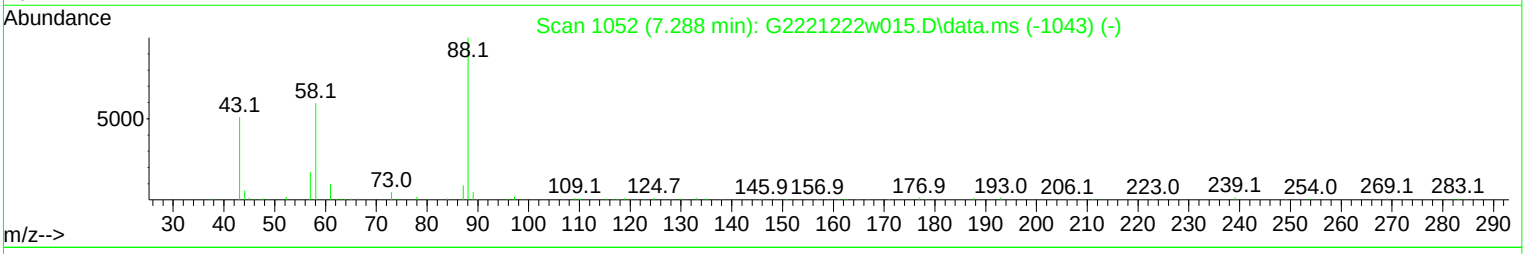
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525008.D
Acq On : 25 May 2023 15:01
Operator : PO1
Sample : SEQ-ICV1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 26 09:16:55 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Fri May 26 09:16:33 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525008.D\data.ms

(55) 1,4-dioxane (T)

7.147min (+ 0.005) 128.79 ug/L

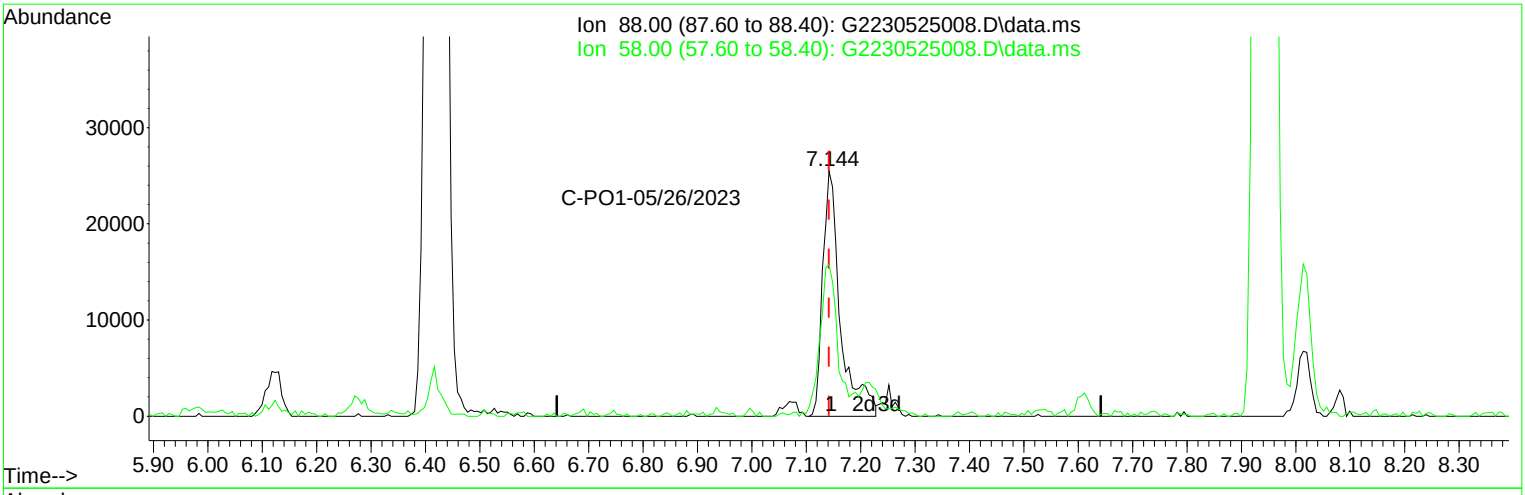
response 519952

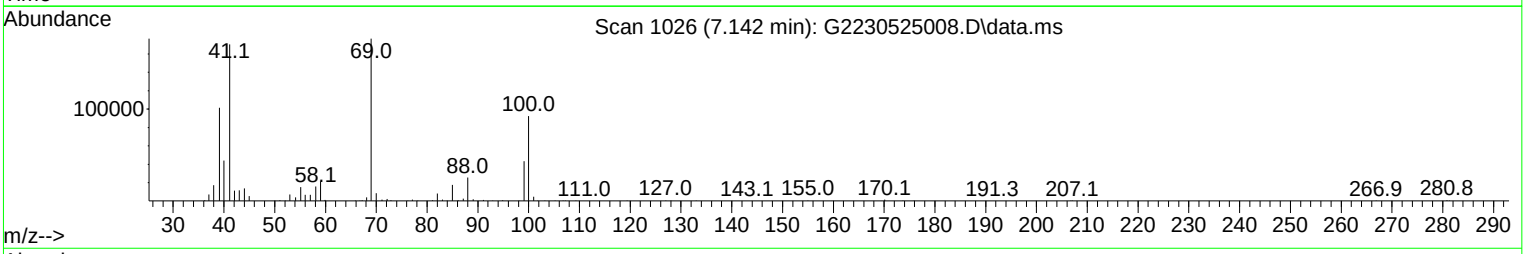
Ion	Exp%	Act%
88.00	100.00	100.00
58.00	56.10	67.24
0.00	0.00	0.00
0.00	0.00	0.00

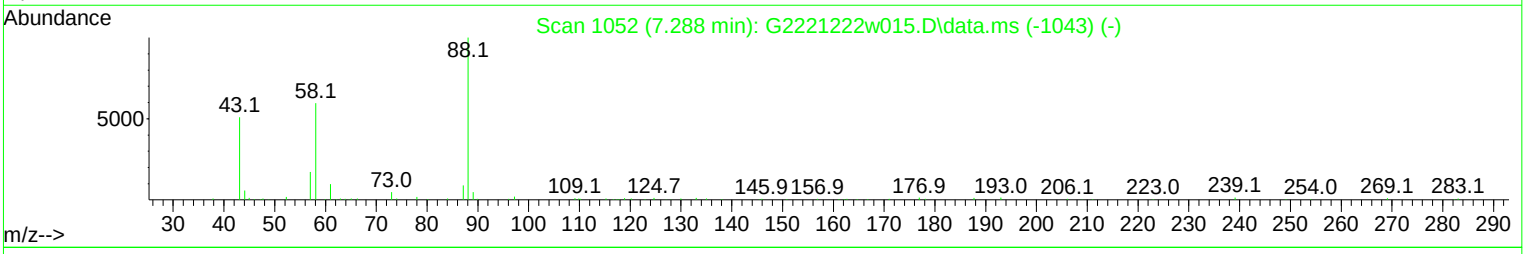
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(E) May\G2230525\
Data File : G2230525008.D
Acq On : 25 May 2023 15:01
Operator : PO1
Sample : SEQ-ICV1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 26 09:16:55 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Fri May 26 09:16:33 2023
Response via : Initial Calibration
InstName : G







TIC: G2230525008.D\data.ms

(55) 1,4-dioxane (T)

7.142min (+ 0.000) 143.32 ug/L m

response 578604

Ion	Exp%	Act%
88.00	100.00	100.00
58.00	56.10	60.42
0.00	0.00	0.00
0.00	0.00	0.00

7 - FORM VII

CONTINUING CALIBRATION CHECK

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	G2	Calibration:	EE30097
Lab File ID:	G2230614005.D	Calibration Date:	05/24/23 13:00
Sequence:	S3F0256	Injection Date:	06/14/23
Lab Sample ID:	S3F0256-CCV1 (Calibration Check)	Injection Time:	10:13

	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	**STD**	**CCV**	**ICAL**	**CCV**	**MIN (#)**	**CCV**	**LIMIT (#)**
1,1,1,2-Tetrachloroethane	15.00	14.8	0.3434339	0.3396768		-1.00	20
1,1,1-Trichloroethane	15.00	14.1	0.603823	0.5664577		-6.00	20
1,1,2,2-Tetrachloroethane	15.00	13.6	0.86935	0.7882095	0.3	-9.00	20
1,1,2-Trichloroethane	15.00	14.3	0.2642556	0.2514089		-5.00	20
1,1-Dichloroethane	15.00	13.2	0.5953788	0.4892494	0.1	-12.00	20
1,1-Dichloroethene	15.00	12.8	0.4569016	0.3648674		-15.00	20
1,1-Dichloropropene	15.00	13.9	0.4853227	0.4229561		-7.00	20
1,2,3-Trichlorobenzene	15.00	14.2	0.2883305	0.2739895		-5.00	20
1,2,3-Trichloropropane	15.00	13.9	0.331412	0.278373		-8.00	20
1,2,4-Trichlorobenzene	15.00	14.8	0.3588914	0.3532588		-2.00	20
1,2,4-Trimethylbenzene	15.00	13.3	2.229227	1.979397		-11.00	20
1,2-Dibromo-3-chloropropane	15.00	15.5	0.1882045	0.1782845		3.00	20
1,2-Dibromoethane	15.00	14.3	0.3394667	0.3231441		-5.00	20
1,2-Dichlorobenzene	15.00	15.3	1.201484	1.16591		2.00	20
1,2-Dichloroethane	15.00	13.9	0.5029475	0.4284994		-8.00	20
1,2-Dichloropropane	15.00	14.3	0.2411055	0.2154193		-5.00	20
1,3,5-Trimethylbenzene	15.00	13.4	2.228381	1.995623		-10.00	20
1,3-Dichlorobenzene	15.00	14.5	1.326244	1.28479		-3.00	20
1,3-Dichloropropane	15.00	14.2	0.4921719	0.4441183		-5.00	20
1,4-Dichlorobenzene	15.00	15.1	1.289371	1.298944		1.00	20
2,2-Dichloropropane	15.00	13.1	0.5559494	0.4867484		-12.00	20
2-Butanone	52.50	48.8	5.658319E-02	4.648043E-02		-7.00	20
2-Chlorotoluene	15.00	13.2	1.923105	1.687911		-12.00	20
2-Hexanone	52.50	44.7	0.2137484	0.1695573		-15.00	20
4-Chlorotoluene	15.00	13.6	2.179486	1.974386		-9.00	20
4-Isopropyltoluene	15.00	13.8	2.254881	2.079191		-8.00	20
4-Methyl-2-pentanone	52.50	45.0	0.2919112	0.2328445		-14.00	20
Acetone	52.50	47.0	0.1293521	8.244735E-02		-11.00	20
Benzene	15.00	13.9	1.002161	0.9308819		-7.00	20
Bromobenzene	15.00	12.7	1.083652	0.9189391		-15.00	20

7 - FORM VII

CONTINUING CALIBRATION CHECK

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	G2	Calibration:	EE30097
Lab File ID:	G2230614005.D	Calibration Date:	05/24/23 13:00
Sequence:	S3F0256	Injection Date:	06/14/23
Lab Sample ID:	S3F0256-CCV1 (Calibration Check)	Injection Time:	10:13

	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	**STD**	**CCV**	**ICAL**	**CCV**	**MIN (#)**	**CCV**	**LIMIT (#)**
Bromochloromethane	15.00	14.0	0.2969883	0.2773595		-7.00	20
Bromodichloromethane	15.00	15.3	0.370729	0.3582102		2.00	20
Bromoform	15.00	15.0	0.3117301	0.3120612	0.1	0.00	20
Bromomethane	15.00	15.8	0.3100031	0.2661325		5.00	20
Carbon disulfide	15.00	13.4	0.9476676	0.7825638		-11.00	20
Carbon tetrachloride	15.00	15.8	0.3608923	0.3792315		5.00	20
Chlorobenzene	15.00	14.6	0.8774024	0.851306	0.3	-3.00	20
Chloroethane	15.00	13.5	0.239357	0.2156767		-10.00	20
Chloroform	15.00	13.6	0.656932	0.5964652		-9.00	20
Chloromethane	15.00	13.0	0.3583454	0.2867606	0.1	-13.00	20
cis-1,2-Dichloroethene	15.00	13.0	0.5385255	0.4348053		-14.00	20
cis-1,3-Dichloropropene	15.00	13.6	0.4428763	0.4006671		-10.00	20
Dibromochloromethane	15.00	15.5	0.3917939	0.3835216		3.00	20
Dibromomethane	15.00	15.5	0.2381661	0.2454438		3.00	20
Dichlorodifluoromethane	15.00	13.5	0.4075845	0.3661023		-10.00	20
Ethylbenzene	15.00	14.8	1.407424	1.313212		-2.00	20
Hexachlorobutadiene	15.00	17.0	0.1938745	0.2000281		13.00	20
Isopropylbenzene	15.00	13.2	2.873385	2.530085		-12.00	20
m,p-Xylene	30.00	28.5	1.070642	1.018285		-5.00	20
Methyl tert-butyl ether	15.00	12.8	2.078829	1.019543		-15.00	20
Methylene chloride	15.00	13.2	0.4752062	0.3240275		-12.00	20
n-Butylbenzene	15.00	14.2	1.741335	1.536964		-5.00	20
n-Propylbenzene	15.00	13.5	3.199933	2.876135		-10.00	20
Naphthalene	15.00	13.5	1.038822	0.8424804		-10.00	20
o-Xylene	15.00	12.9	2.460467	2.11645		-14.00	20
sec-Butylbenzene	15.00	13.8	2.725412	2.501525		-8.00	20
Styrene	15.00	14.0	0.9431739	0.8796603		-7.00	20
tert-Butylbenzene	15.00	14.1	2.390757	2.243146		-6.00	20
Tetrachloroethene	15.00	16.2	0.4253866	0.417418		8.00	20
Toluene	15.00	15.1	1.307847	1.235405		1.00	20

7 - FORM VII

CONTINUING CALIBRATION CHECK

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	G2	Calibration:	EE30097
Lab File ID:	G2230614005.D	Calibration Date:	05/24/23 13:00
Sequence:	S3F0256	Injection Date:	06/14/23
Lab Sample ID:	S3F0256-CCV1 (Calibration Check)	Injection Time:	10:13

	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	**STD**	**CCV**	**ICAL**	**CCV**	**MIN (#)**	**CCV**	**LIMIT (#)**
trans-1,2-Dichloroethene	15.00	12.5	0.4334531	0.3610639		-17.00	20
trans-1,3-Dichloropropene	15.00	13.3	0.423463	0.3761211		-11.00	20
Trichloroethene	15.00	15.5	0.2817735	0.2723455		3.00	20
Trichlorofluoromethane	15.00	15.3	0.6025154	0.6139942		2.00	20
Vinyl chloride	15.00	12.8	0.3930682	0.3357267		-15.00	20
Dibromofluoromethane	20.00	19.2	0.4401431	0.4226676		-4.00	20
1,2-Dichloroethane-d4	20.00	17.7	0.4349663	0.3852223		-11.00	20
Fluorobenzene	20.00	19.5	1.139643	1.1121		-2.00	20
Toluene-d8	20.00	19.6	1.260611	1.2352		-2.00	20
4-Bromofluorobenzene	10.00	9.69	0.9444054	0.9149709		-3.00	20
1,2-Dichlorobenzene-d4	20.00	19.7	0.8601294	0.8464705		-2.00	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614005.D
Acq On : 14 Jun 2023 10:13
Operator : PO1/MP3
Sample : SEQ-CCV1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 15 08:32:20 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.573	168	17566841	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.421	114	23417685	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.494	117	20642152	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.839	152	9973084	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.476	111	7424934	19.21	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.05%			
43) 1,2-Dichloroethane-d4	5.878	65	6767138	17.71	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 88.55%			
49) Fluorobenzene	6.277	96	26042807	19.52	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.60%			
64) Toluene-d8	8.016	98	25497188	19.60	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 98.00%			
81) 4-Bromofluorobenzene	10.684	174	4562541	9.69	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 96.90%			
97) d4-1,2-Dichlorobenzene	12.217	152	8441921	19.68	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 98.40%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.216	85	4823446	13.47	ug/L	98
3) Chloromethane	1.356	50	3778108	13.05	ug/L	98
4) Vinyl chloride	1.448	62	4423243	12.81	ug/L	99
5) Bromomethane	1.719	94	3506330	15.76	ug/L	100
6) Chloroethane	1.807	64	2841569	13.52	ug/L	99
7) Trichlorofluoromethane	2.032	101	8089453	15.29	ug/L	99
8) Ethyl ether	2.314	59	2900121	12.44	ug/L	86
9) Acrolein	2.436	56	1739991	36.98	ug/L	97
10) 1,1-Dichloroethene	2.525	61	4807175	12.78	ug/L	85
11) 1,1,2-Trichloro-1,2,2-...	2.535	101	4073188	14.16	ug/L	94
12) Acetone	2.600	43	3801891	46.95	ug/L	90
13) Iodomethane	2.677	142	5181212	12.67	ug/L	95
14) Carbon disulfide	2.740	76	10310380	13.37	ug/L	100
15) Isopropanol	2.787	45	848347	60.17	ug/L	92
16) acetonitrile	2.918	41	4937972	30.03	ug/L	85
17) 3-Chloro-1-propene	2.922	76	2323765	13.12	ug/L	97
18) Methylene chloride	3.063	49	4269105	13.25	ug/L	77
19) Acrylonitrile	3.384	53	1678359	12.56	ug/L	96
20) trans-1,2-Dichloroethene	3.403	61	4757064	12.49	ug/L	85
21) Methyl tert-butyl ether	3.433	73	13432613	12.79	ug/L	93
22) Hexane	3.793	57	3953719	13.22	ug/L	94
23) 1,1-Dichloroethane	3.998	63	6445924	13.18	ug/L	97
24) Vinyl acetate	4.123	43	7037823	11.79	ug/L	90
25) 2-Chloro-1,3-butadiene	4.135	53	4854414	12.19	ug/L	82
27) 2,2-Dichloropropane	4.826	77	6412974	13.13	ug/L	91
28) cis-1,2-Dichloroethene	4.836	61	5728617	12.95	ug/L	85
29) 2-Butanone	4.902	72	2143350	48.81	ug/L	92
30) Propionitrile	4.974	54	561794	13.32	ug/L	95

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614005.D
Acq On : 14 Jun 2023 10:13
Operator : PO1/MP3
Sample : SEQ-CCV1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 15 08:32:20 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
31) Ethyl acetate	5.009	61	671558	12.70	ug/L		83
32) Methylacrylate	5.035	55	3924702	11.80	ug/L		90
33) 1-Bromopropane	5.075	41	2240931	12.47	ug/L		64
34) Bromochloromethane	5.149	130	3654248	14.01	ug/L		99
35) Methacrylonitrile	5.169	67	2092291	13.00	ug/L		90
36) Tetrahydrofuran	5.241	42	1081621	11.69	ug/L		77
37) Chloroform	5.275	83	7858506	13.62	ug/L		100
39) 1,1,1-Trichloroethane	5.478	97	7463154	14.07	ug/L		95
40) Cyclohexane	5.534	84	6601118	13.99	ug/L		80
41) 1-Chlorobutane	5.629	56	6912702	12.62	ug/L		98
42) 1,1-Dichloropropene	5.688	75	5572502	13.94	ug/L		90
44) 1,2-Dichloroethane	5.969	62	5645535	13.88	ug/L		97
47) Carbon tetrachloride	5.679	117	6660541	15.76	ug/L		98
48) Benzene	5.934	78	16349323	13.93	ug/L		100
50) Trichloroethene	6.695	95	4783274	15.48	ug/L		91
52) 1,2-Dichloropropane	6.943	63	3783465	14.26	ug/L		91
53) Dibromomethane	7.070	174	4310793	15.46	ug/L	#	91
54) Methyl methacrylate	7.124	69	3485368	12.73	ug/L		90
55) 1,4-dioxane	7.124	88	369026m	133.71	ug/L		
56) Bromodichloromethane	7.257	83	6291338	15.29	ug/L		99
57) 2-Nitropropane	7.520	43	1506825	12.73	ug/L		95
58) 2-Chloroethyl vinyl ether	7.611	63	2684713	11.82	ug/L		99
59) cis-1,3-Dichloropropene	7.743	75	7037020	13.57	ug/L		95
60) 4-Methyl-2-pentanone	7.933	43	14313283	44.96	ug/L	#	88
61) trans-1,3-Dichloropropene	8.332	75	6605912	13.32	ug/L		88
62) 1,1,2-Trichloroethane	8.517	97	4415559	14.27	ug/L		94
65) Toluene	8.084	91	19126059	15.09	ug/L		98
66) Ethylmethacrylate	8.453	69	6047048	13.25	ug/L		86
67) Tetrachloroethene	8.646	166	6462303	16.16	ug/L		95
68) 1,3-Dichloropropane	8.685	76	6875667	14.23	ug/L		86
69) 2-Hexanone	8.798	43	9187571	44.67	ug/L		87
70) Dibromochloromethane	8.910	129	5937533	15.50	ug/L		99
71) 1,2-Dibromoethane	9.016	107	5002792	14.28	ug/L		100
72) Chlorobenzene	9.522	112	13179593	14.55	ug/L		93
73) 1,1,1,2-Tetrachloroethane	9.612	131	5258745	14.84	ug/L		97
74) Ethylbenzene	9.641	91	20330642	14.76	ug/L		95
75) m,p-Xylene	9.762	91	31529385	28.53	ug/L		95
76) Styrene	10.175	104	13618557	13.99	ug/L		93
77) Bromoform	10.352	173	4831211	15.02	ug/L		97
79) o-Xylene	10.159	91	15830647	12.90	ug/L		94
80) Isopropylbenzene	10.534	105	18924562	13.21	ug/L		96
82) Bromobenzene	10.826	77	6873493	12.72	ug/L	#	79
83) 1,1,2,2-Tetrachloroethane	10.840	83	5895660	13.60	ug/L		99
84) 1,2,3-Trichloropropane	10.878	110	2082178	13.86	ug/L		97
85) trans-1,4-Dichloro-2-b...	10.899	53	1360783	11.71	ug/L		74
86) n-Propylbenzene	10.947	91	21512953	13.48	ug/L		95
87) 2-Chlorotoluene	11.026	91	12625262	13.17	ug/L		93
88) 4-Chlorotoluene	11.135	91	14768038	13.59	ug/L		93
89) 1,3,5-Trimethylbenzene	11.127	105	14926892	13.43	ug/L		95

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614005.D
Acq On : 14 Jun 2023 10:13
Operator : PO1/MP3
Sample : SEQ-CCV1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 15 08:32:20 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

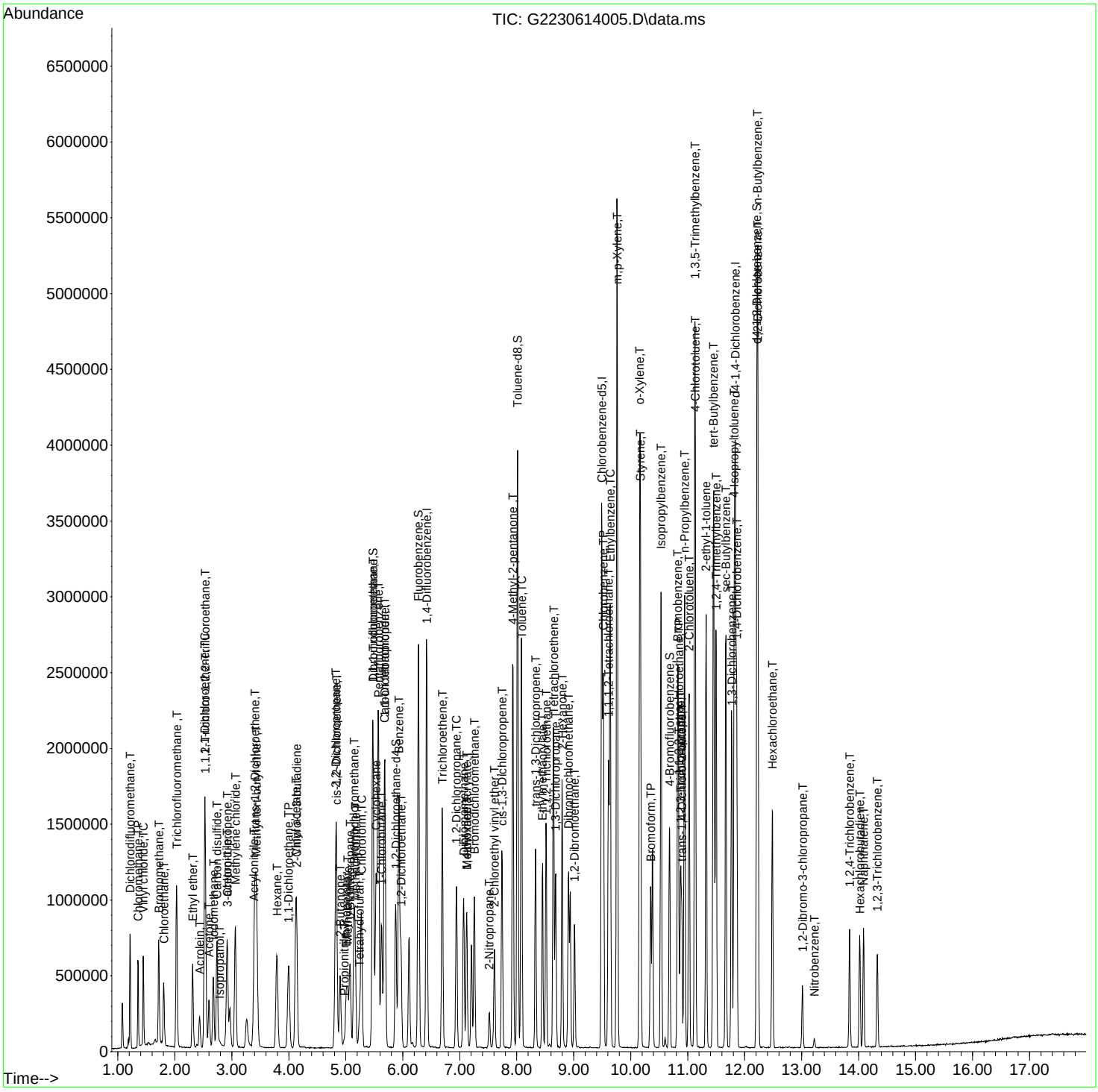
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
90) 2-ethyl-1-toluene	11.326	105	17219233	12.72	ug/L	97
91) tert-Butylbenzene	11.453	119	16778311	14.07	ug/L	88
92) 1,2,4-Trimethylbenzene	11.500	105	14805517	13.32	ug/L	93
93) sec-Butylbenzene	11.671	105	18710942	13.77	ug/L	96
94) 1,3-Dichlorobenzene	11.773	146	9609992	14.53	ug/L	98
95) 4-Isopropyltoluene	11.820	119	15551963	13.83	ug/L	97
96) 1,4-Dichlorobenzene	11.863	146	9715861	15.11	ug/L	97
98) 1,2-Dichlorobenzene	12.235	146	8720791	15.31	ug/L	97
99) n-Butylbenzene	12.229	91	11496201	14.19	ug/L	92
100) Hexachloroethane	12.489	201	3071291	14.86	ug/L	98
101) 1,2-Dibromo-3-chloropr...	13.017	157	1333535	15.49	ug/L	99
102) Nitrobenzene	13.224	77	288224	10.20	ug/L	88
103) 1,2,4-Trichlorobenzene	13.844	180	2642310	14.76	ug/L	96
104) Hexachlorobutadiene	14.022	225	1496173	16.99	ug/L	97
105) Naphthalene	14.089	128	6301596	13.53	ug/L	99
106) 1,2,3-Trichlorobenzene	14.331	180	2049390	14.25	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614005.D
Acq On : 14 Jun 2023 10:13
Operator : PO1/MP3
Sample : SEQ-CCV1
Misc :
ALS Vial : 5 Sample Multiplier: 1

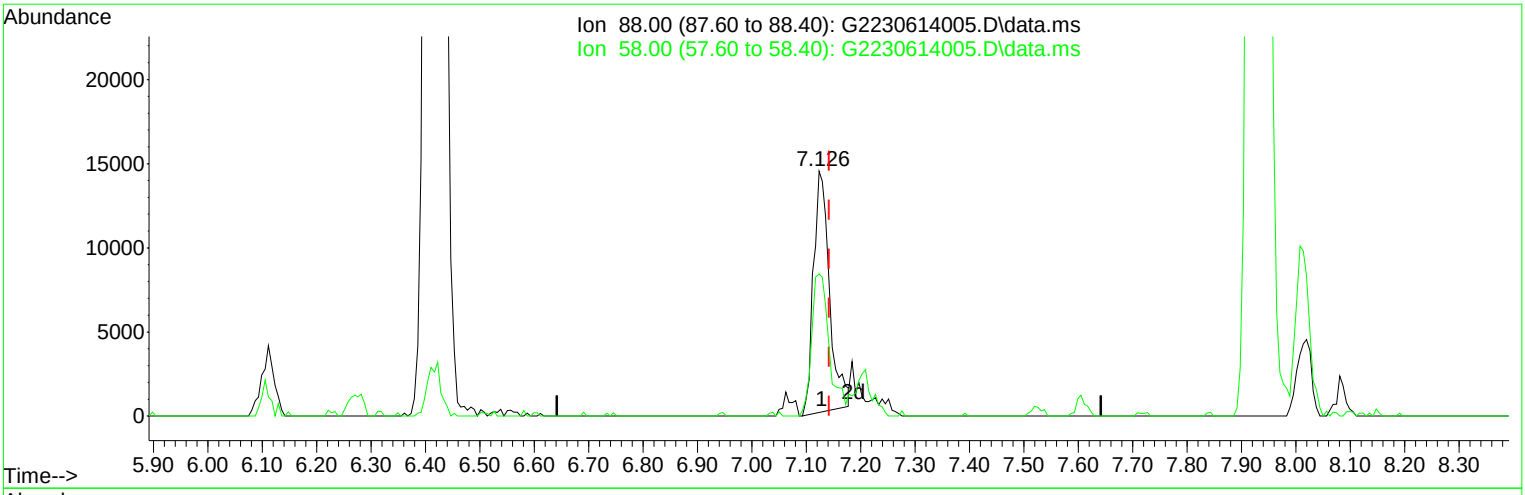
Quant Time: Jun 15 08:32:20 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

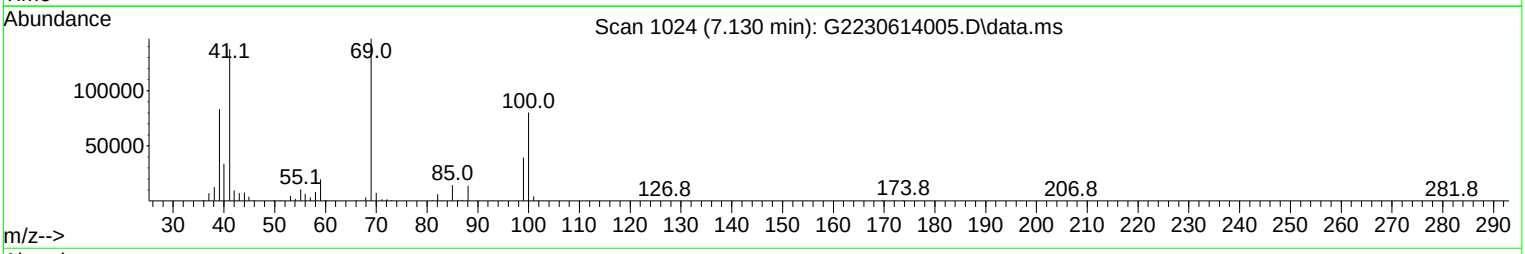


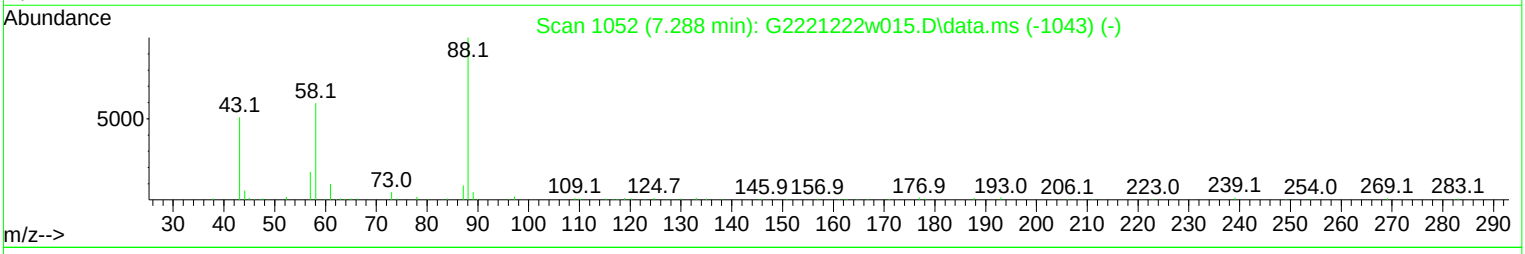
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614005.D
Acq On : 14 Jun 2023 10:13
Operator : PO1/MP3
Sample : SEQ-CCV1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 15 08:32:20 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614005.D\data.ms

(55) 1,4-dioxane (T)

7.129min (-0.013) 104.94 ug/L

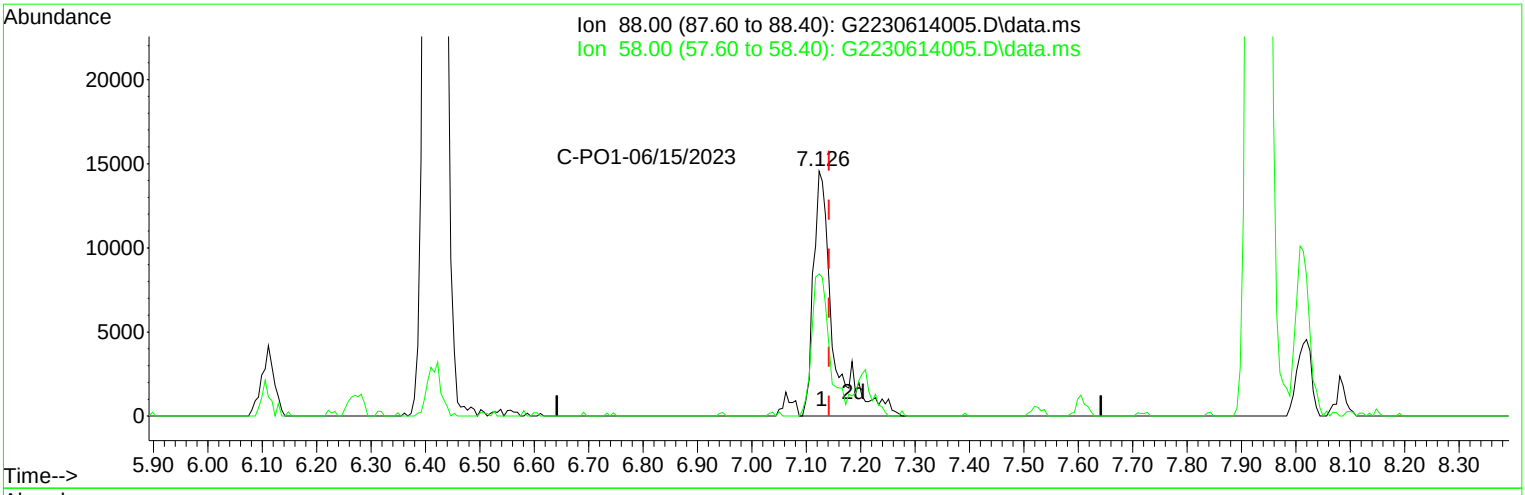
response 289603

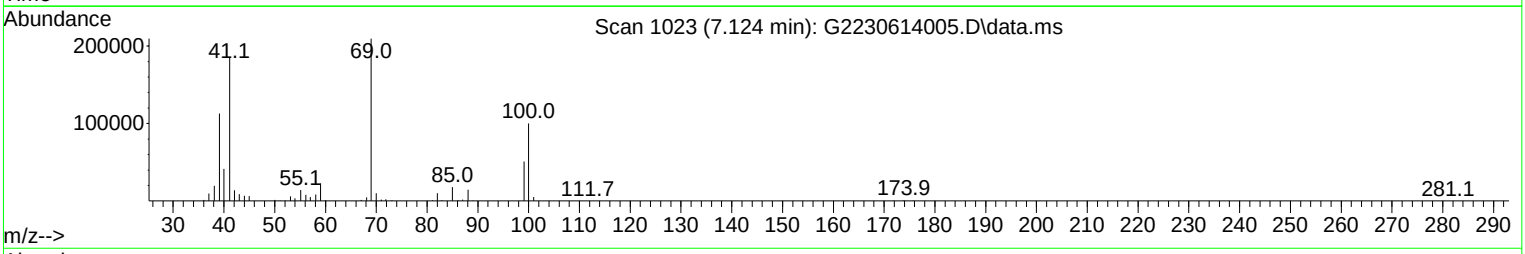
Ion	Exp%	Act%
88.00	100.00	100.00
58.00	56.10	68.30
0.00	0.00	0.00
0.00	0.00	0.00

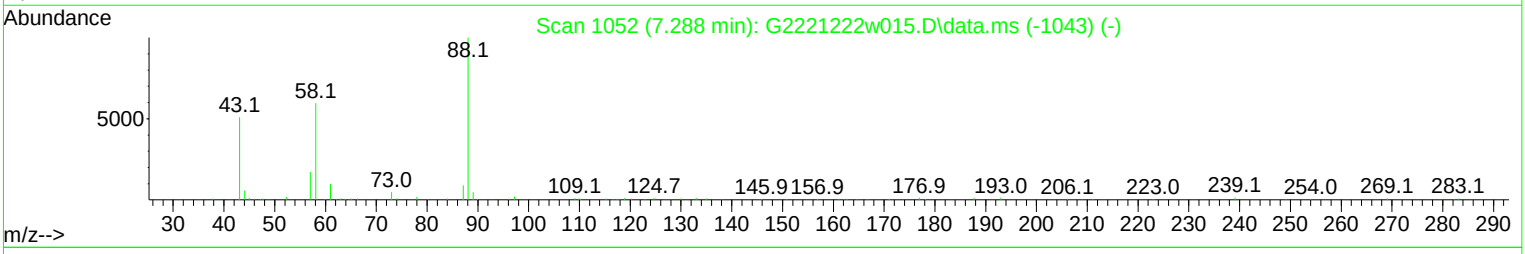
Quantitation Report (Qedit)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614005.D
Acq On : 14 Jun 2023 10:13
Operator : PO1/MP3
Sample : SEQ-CCV1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 15 08:32:20 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G







TIC: G2230614005.D\data.ms

(55) 1,4-dioxane (T)

7.124min (-0.018) 133.71 ug/L m

response 369026

Ion	Exp%	Act%
88.00	100.00	100.00
58.00	56.10	53.60
0.00	0.00	0.00
0.00	0.00	0.00

7 - FORM VII

CONTINUING CALIBRATION CHECK

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	G2	Calibration:	EE30097
Lab File ID:	G2230614025.D	Calibration Date:	05/24/23 13:00
Sequence:	S3F0256	Injection Date:	06/14/23
Lab Sample ID:	S3F0256-HCV1 (Closing Cal Check)	Injection Time:	18:28

	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	**STD**	**CCV**	**ICAL**	**CCV**	**MIN (#)**	**CCV**	**LIMIT (#)**
1,1,1,2-Tetrachloroethane	15.00	15.2	0.3434339	0.3488135		2.00	50
1,1,1-Trichloroethane	15.00	14.5	0.603823	0.5825799		-4.00	50
1,1,2,2-Tetrachloroethane	15.00	13.6	0.86935	0.7904018	0.3	-9.00	50
1,1,2-Trichloroethane	15.00	15.0	0.2642556	0.2634212		0.00	50
1,1-Dichloroethane	15.00	13.6	0.5953788	0.5056739	0.1	-9.00	50
1,1-Dichloroethene	15.00	12.8	0.4569016	0.3661707		-14.00	50
1,1-Dichloropropene	15.00	13.8	0.4853227	0.4195446		-8.00	50
1,2,3-Trichlorobenzene	15.00	14.6	0.2883305	0.2799158		-3.00	50
1,2,3-Trichloropropane	15.00	15.1	0.331412	0.3031889		1.00	50
1,2,4-Trichlorobenzene	15.00	15.1	0.3588914	0.3607125		0.00	50
1,2,4-Trimethylbenzene	15.00	13.7	2.229227	2.037804		-9.00	50
1,2-Dibromo-3-chloropropane	15.00	14.8	0.1882045	0.1701022		-2.00	50
1,2-Dibromoethane	15.00	14.5	0.3394667	0.3280628		-3.00	50
1,2-Dichlorobenzene	15.00	15.8	1.201484	1.206168		6.00	50
1,2-Dichloroethane	15.00	14.1	0.5029475	0.4350511		-6.00	50
1,2-Dichloropropane	15.00	14.5	0.2411055	0.2192007		-3.00	50
1,3,5-Trimethylbenzene	15.00	13.7	2.228381	2.030388		-9.00	50
1,3-Dichlorobenzene	15.00	14.8	1.326244	1.308844		-1.00	50
1,3-Dichloropropane	15.00	14.5	0.4921719	0.4521768		-3.00	50
1,4-Dichlorobenzene	15.00	15.4	1.289371	1.32669		3.00	50
2,2-Dichloropropane	15.00	11.4	0.5559494	0.420691		-24.00	50
2-Butanone	52.50	46.9	5.658319E-02	4.468193E-02		-11.00	50
2-Chlorotoluene	15.00	13.6	1.923105	1.738625		-10.00	50
2-Hexanone	52.50	45.0	0.2137484	0.170957		-14.00	50
4-Chlorotoluene	15.00	13.8	2.179486	2.001459		-8.00	50
4-Isopropyltoluene	15.00	13.9	2.254881	2.093088		-7.00	50
4-Methyl-2-pentanone	52.50	46.2	0.2919112	0.2392429		-12.00	50
Acetone	52.50	46.3	0.1293521	8.127809E-02		-12.00	50
Benzene	15.00	14.3	1.002161	0.9569487		-4.00	50
Bromobenzene	15.00	13.1	1.083652	0.947823		-12.00	50

7 - FORM VII

CONTINUING CALIBRATION CHECK

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	G2	Calibration:	EE30097
Lab File ID:	G2230614025.D	Calibration Date:	05/24/23 13:00
Sequence:	S3F0256	Injection Date:	06/14/23
Lab Sample ID:	S3F0256-HCV1 (Closing Cal Check)	Injection Time:	18:28

	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	**STD**	**CCV**	**ICAL**	**CCV**	**MIN (#)**	**CCV**	**LIMIT (#)**	
Bromochloromethane	15.00	14.1	0.2969883	0.2785825		-6.00	50	
Bromodichloromethane	15.00	15.5	0.370729	0.3620897		3.00	50	
Bromoform	15.00	13.4	0.3117301	0.2778939	0.1	-11.00	50	
Bromomethane	15.00	16.4	0.3100031	0.2760544		9.00	50	
Carbon disulfide	15.00	13.2	0.9476676	0.7733995		-12.00	50	
Carbon tetrachloride	15.00	15.7	0.3608923	0.3786668		5.00	50	
Chlorobenzene	15.00	15.0	0.8774024	0.8762514	0.3	0.00	50	
Chloroethane	15.00	13.8	0.239357	0.2203786		-8.00	50	
Chloroform	15.00	14.1	0.656932	0.6160935		-6.00	50	
Chloromethane	15.00	13.1	0.3583454	0.2882577	0.1	-13.00	50	
cis-1,2-Dichloroethene	15.00	12.9	0.5385255	0.4328947		-14.00	50	
cis-1,3-Dichloropropene	15.00	13.6	0.4428763	0.4030859		-9.00	50	
Dibromochloromethane	15.00	15.2	0.3917939	0.3774697		2.00	50	
Dibromomethane	15.00	16.2	0.2381661	0.2575744		8.00	50	
Dichlorodifluoromethane	15.00	12.9	0.4075845	0.3513756		-14.00	50	
Ethylbenzene	15.00	15.0	1.407424	1.332072		0.00	50	
Hexachlorobutadiene	15.00	16.7	0.1938745	0.1971188		12.00	50	
Isopropylbenzene	15.00	13.5	2.873385	2.580582		-10.00	50	
m,p-Xylene	30.00	28.8	1.070642	1.028857		-4.00	50	
Methyl tert-butyl ether	15.00	13.1	2.078829	1.042021		-13.00	50	
Methylene chloride	15.00	13.6	0.4752062	0.3323353		-9.00	50	
n-Butylbenzene	15.00	13.9	1.741335	1.509131		-7.00	50	
n-Propylbenzene	15.00	13.6	3.199933	2.911413		-9.00	50	
Naphthalene	15.00	14.2	1.038822	0.8863447		-5.00	50	
o-Xylene	15.00	13.3	2.460467	2.176335		-12.00	50	
sec-Butylbenzene	15.00	13.8	2.725412	2.508832		-8.00	50	
Styrene	15.00	14.2	0.9431739	0.8934914		-5.00	50	
tert-Butylbenzene	15.00	13.0	2.390757	2.078709		-13.00	50	
Tetrachloroethene	15.00	23.2	0.4253866	0.5981584		55.00	50	*
Toluene	15.00	15.4	1.307847	1.258024		2.00	50	

7 - FORM VII

CONTINUING CALIBRATION CHECK

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	G2	Calibration:	EE30097
Lab File ID:	G2230614025.D	Calibration Date:	05/24/23 13:00
Sequence:	S3F0256	Injection Date:	06/14/23
Lab Sample ID:	S3F0256-HCV1 (Closing Cal Check)	Injection Time:	18:28

	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	**STD**	**CCV**	**ICAL**	**CCV**	**MIN (#)**	**CCV**	**LIMIT (#)**
trans-1,2-Dichloroethene	15.00	12.6	0.4334531	0.3641516		-16.00	50
trans-1,3-Dichloropropene	15.00	13.3	0.423463	0.376357		-11.00	50
Trichloroethene	15.00	15.7	0.2817735	0.2767478		5.00	50
Trichlorofluoromethane	15.00	15.3	0.6025154	0.6153119		2.00	50
Vinyl chloride	15.00	13.0	0.3930682	0.3399116		-14.00	50
Dibromofluoromethane	20.00	19.3	0.4401431	0.4249106		-4.00	50
1,2-Dichloroethane-d4	20.00	17.6	0.4349663	0.3828108		-12.00	50
Fluorobenzene	20.00	19.5	1.139643	1.111615		-2.00	50
Toluene-d8	20.00	19.7	1.260611	1.240076		-2.00	50
4-Bromofluorobenzene	10.00	9.78	0.9444054	0.9232304		-2.00	50
1,2-Dichlorobenzene-d4	20.00	19.9	0.8601294	0.8573242		0.00	50

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614025.D
Acq On : 14 Jun 2023 18:28
Operator : PO1/MP3
Sample : SEQ-HCV1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 15 08:29:51 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.571	168	16717059	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.419	114	22100049	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	19593253	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.839	152	9424467	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.474	111	7103256	19.31	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.55%			
43) 1,2-Dichloroethane-d4	5.877	65	6399471	17.60	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 88.00%			
49) Fluorobenzene	6.276	96	24566743	19.51	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.55%			
64) Toluene-d8	8.015	98	24297110	19.67	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 98.35%			
81) 4-Bromofluorobenzene	10.683	174	4350477	9.78	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 97.80%			
97) d4-1,2-Dichlorobenzene	12.216	152	8079824	19.93	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.65%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.213	85	4405475	12.93	ug/L	100
3) Chloromethane	1.354	50	3614116	13.11	ug/L	97
4) Vinyl chloride	1.445	62	4261742	12.97	ug/L	100
5) Bromomethane	1.716	94	3461114	16.36	ug/L	99
6) Chloroethane	1.804	64	2763062	13.81	ug/L	97
7) Trichlorofluoromethane	2.030	101	7714654	15.32	ug/L	96
8) Ethyl ether	2.311	59	2815462	12.69	ug/L	84
9) Acrolein	2.433	56	1539079	34.34	ug/L	95
10) 1,1-Dichloroethene	2.522	61	4590973	12.83	ug/L	85
11) 1,1,2-Trichloro-1,2,2-...	2.533	101	3753637	13.71	ug/L	95
12) Acetone	2.598	43	3566668	46.26	ug/L	91
13) Iodomethane	2.674	142	4635593	11.91	ug/L	95
14) Carbon disulfide	2.738	76	9696725	13.22	ug/L	100
15) Isopropanol	2.782	45	693217	51.67	ug/L	94
16) acetonitrile	2.916	41	4674814	29.88	ug/L	88
17) 3-Chloro-1-propene	2.917	76	2148945	12.74	ug/L	97
18) Methylene chloride	3.060	49	4166752	13.63	ug/L	77
19) Acrylonitrile	3.382	53	1604410	12.62	ug/L	97
20) trans-1,2-Dichloroethene	3.400	61	4565658	12.60	ug/L	84
21) Methyl tert-butyl ether	3.431	73	13064645	13.10	ug/L	93
22) Hexane	3.789	57	3300557	11.59	ug/L	95
23) 1,1-Dichloroethane	3.995	63	6340036	13.62	ug/L	96
24) Vinyl acetate	4.121	43	6043820	10.64	ug/L	90
25) 2-Chloro-1,3-butadiene	4.131	53	4746439	12.52	ug/L	84
27) 2,2-Dichloropropane	4.823	77	5274537	11.35	ug/L	92
28) cis-1,2-Dichloroethene	4.833	61	5427545	12.89	ug/L	84
29) 2-Butanone	4.902	72	1960745	46.90	ug/L	92
30) Propionitrile	4.973	54	537335	13.39	ug/L	98

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614025.D
Acq On : 14 Jun 2023 18:28
Operator : PO1/MP3
Sample : SEQ-HCV1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 15 08:29:51 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
31) Ethyl acetate	5.007	61	656180	13.05	ug/L		81
32) Methylacrylate	5.034	55	3847283	12.15	ug/L		93
33) 1-Bromopropane	5.074	41	2121826	12.41	ug/L		62
34) Bromochloromethane	5.147	130	3492810	14.07	ug/L		99
35) Methacrylonitrile	5.168	67	2084971	13.61	ug/L		90
36) Tetrahydrofuran	5.238	42	1032850	11.73	ug/L		72
37) Chloroform	5.273	83	7724454	14.07	ug/L		99
39) 1,1,1-Trichloroethane	5.477	97	7304267	14.47	ug/L		96
40) Cyclohexane	5.533	84	6185460	13.77	ug/L		81
41) 1-Chlorobutane	5.628	56	6692177	12.83	ug/L		99
42) 1,1-Dichloropropene	5.686	75	5260164	13.83	ug/L		90
44) 1,2-Dichloroethane	5.968	62	5454581	14.10	ug/L		98
47) Carbon tetrachloride	5.678	117	6276417	15.74	ug/L		99
48) Benzene	5.932	78	15861458	14.32	ug/L		100
50) Trichloroethene	6.693	95	4587105	15.73	ug/L		89
52) 1,2-Dichloropropane	6.942	63	3633260	14.51	ug/L		89
53) Dibromomethane	7.069	174	4269306	16.22	ug/L	#	91
54) Methyl methacrylate	7.123	69	3312744	12.82	ug/L		89
55) 1,4-dioxane	7.128	88	347810	133.54	ug/L		98
56) Bromodichloromethane	7.256	83	6001651	15.46	ug/L		99
57) 2-Nitropropane	7.520	43	1414132	12.66	ug/L		96
58) 2-Chloroethyl vinyl ether	7.610	63	2550790	11.90	ug/L		100
59) cis-1,3-Dichloropropene	7.743	75	6681164	13.65	ug/L		96
60) 4-Methyl-2-pentanone	7.933	43	13879108	46.21	ug/L	#	87
61) trans-1,3-Dichloropropene	8.331	75	6238131	13.33	ug/L		89
62) 1,1,2-Trichloroethane	8.516	97	4366217	14.95	ug/L		93
65) Toluene	8.084	91	18486585	15.36	ug/L		98
66) Ethylmethacrylate	8.453	69	5749852	13.28	ug/L		87
67) Tetrachloroethene	8.646	166	8789901	23.21	ug/L		94
68) 1,3-Dichloropropane	8.684	76	6644710	14.49	ug/L		87
69) 2-Hexanone	8.798	43	8792709	45.04	ug/L		86
70) Dibromochloromethane	8.910	129	5546894	15.25	ug/L		98
71) 1,2-Dibromoethane	9.016	107	4820862	14.50	ug/L		98
72) Chlorobenzene	9.521	112	12876455	14.98	ug/L		92
73) 1,1,1,2-Tetrachloroethane	9.611	131	5125793	15.23	ug/L		97
74) Ethylbenzene	9.641	91	19574714	14.98	ug/L		95
75) m,p-Xylene	9.761	91	30237984	28.83	ug/L		94
76) Styrene	10.174	104	13129803	14.21	ug/L		93
77) Bromoform	10.352	173	4083633	13.37	ug/L		97
79) o-Xylene	10.158	91	15383104	13.27	ug/L		96
80) Isopropylbenzene	10.534	105	18240462	13.47	ug/L		96
82) Bromobenzene	10.825	77	6699545	13.12	ug/L		79
83) 1,1,2,2-Tetrachloroethane	10.839	83	5586837	13.64	ug/L		99
84) 1,2,3-Trichloropropane	10.878	110	2143045	15.10	ug/L		99
85) trans-1,4-Dichloro-2-b...	10.898	53	961663	8.76	ug/L		70
86) n-Propylbenzene	10.947	91	20578890	13.65	ug/L		96
87) 2-Chlorotoluene	11.025	91	12289214	13.56	ug/L		93
88) 4-Chlorotoluene	11.135	91	14147014	13.77	ug/L		92
89) 1,3,5-Trimethylbenzene	11.127	105	14351493	13.67	ug/L		94

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614025.D
Acq On : 14 Jun 2023 18:28
Operator : PO1/MP3
Sample : SEQ-HCV1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 15 08:29:51 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

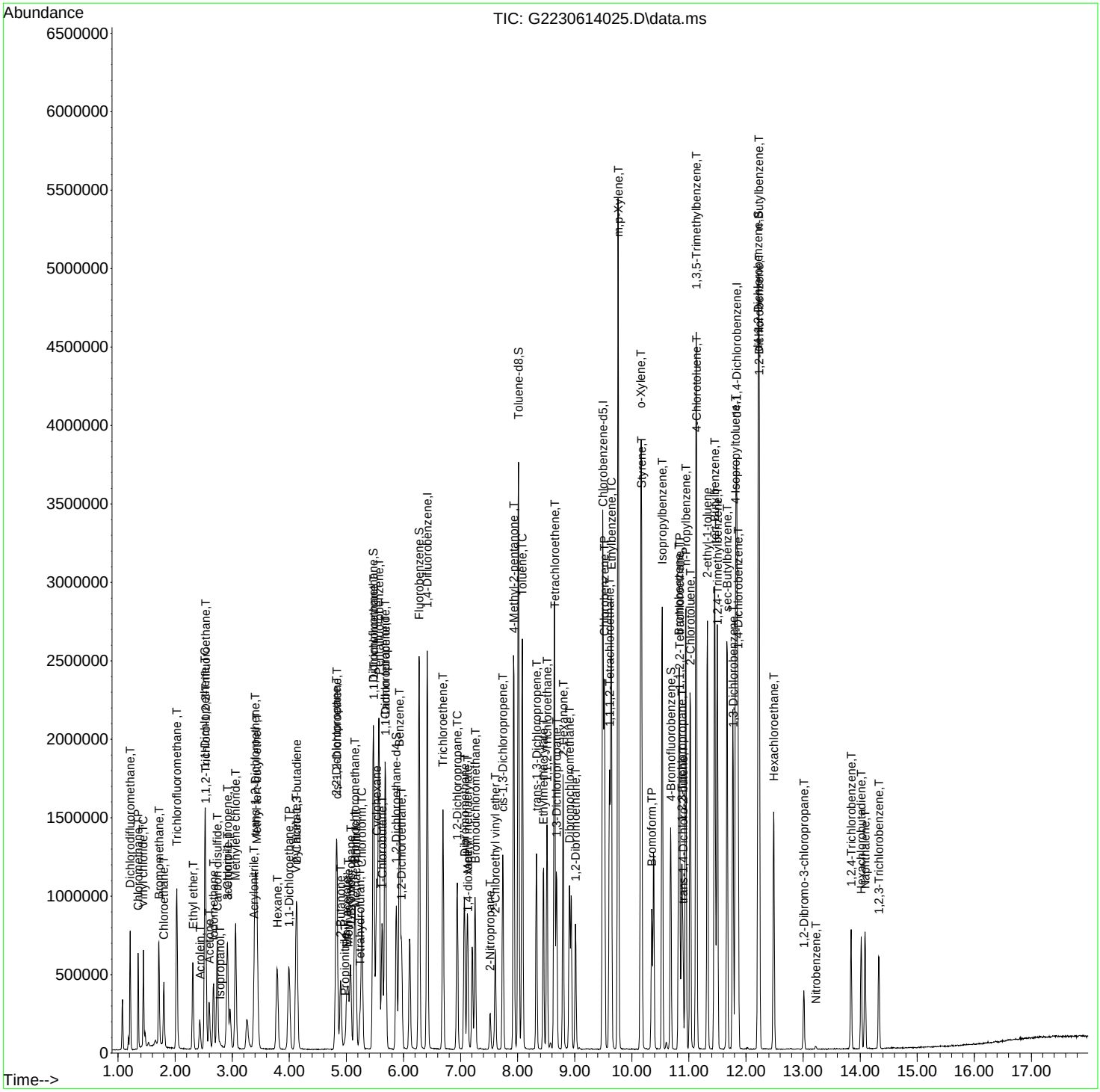
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
90) 2-ethyl-1-toluene	11.326	105	16573603	12.96	ug/L	97
91) tert-Butylbenzene	11.451	119	14693035	13.04	ug/L	93
92) 1,2,4-Trimethylbenzene	11.499	105	14403908	13.71	ug/L	93
93) sec-Butylbenzene	11.671	105	17733304	13.81	ug/L	96
94) 1,3-Dichlorobenzene	11.773	146	9251371	14.80	ug/L	97
95) 4-Isopropyltoluene	11.820	119	14794676	13.92	ug/L	97
96) 1,4-Dichlorobenzene	11.863	146	9377512	15.43	ug/L	97
98) 1,2-Dichlorobenzene	12.234	146	8525620	15.85	ug/L	97
99) n-Butylbenzene	12.229	91	10667066	13.93	ug/L	91
100) Hexachloroethane	12.489	201	2933379	15.02	ug/L	100
101) 1,2-Dibromo-3-chloropr...	13.016	157	1202342	14.77	ug/L	97
102) Nitrobenzene	13.228	77	88803	3.03	ug/L	91
103) 1,2,4-Trichlorobenzene	13.844	180	2549642	15.08	ug/L	97
104) Hexachlorobutadiene	14.021	225	1393305	16.74	ug/L	98
105) Naphthalene	14.088	128	6264995	14.24	ug/L	99
106) 1,2,3-Trichlorobenzene	14.330	180	1978543	14.56	ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614025.D
Acq On : 14 Jun 2023 18:28
Operator : PO1/MP3
Sample : SEQ-HCV1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 15 08:29:51 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G



7 - FORM VII

CONTINUING CALIBRATION CHECK

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	G2	Calibration:	EE30097
Lab File ID:	G2230614026.D	Calibration Date:	05/24/23 13:00
Sequence:	S3F0256	Injection Date:	06/14/23
Lab Sample ID:	S3F0256-HCV2 (Closing Cal Check)	Injection Time:	18:53

	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	**STD**	**CCV**	**ICAL**	**CCV**	**MIN (#)**	**CCV**	**LIMIT (#)**
1,1,1,2-Tetrachloroethane	15.00	14.9	0.3434339	0.3415395		-1.00	50
1,1,1-Trichloroethane	15.00	13.7	0.603823	0.5529546		-8.00	50
1,1,2,2-Tetrachloroethane	15.00	12.4	0.86935	0.7163251	0.3	-18.00	50
1,1,2-Trichloroethane	15.00	14.4	0.2642556	0.2534692		-4.00	50
1,1-Dichloroethane	15.00	13.7	0.5953788	0.5083662	0.1	-9.00	50
1,1-Dichloroethene	15.00	13.8	0.4569016	0.3929426		-8.00	50
1,1-Dichloropropene	15.00	13.9	0.4853227	0.4214581		-7.00	50
1,2,3-Trichlorobenzene	15.00	13.7	0.2883305	0.2638772		-8.00	50
1,2,3-Trichloropropane	15.00	13.6	0.331412	0.2738519		-9.00	50
1,2,4-Trichlorobenzene	15.00	14.7	0.3588914	0.351243		-2.00	50
1,2,4-Trimethylbenzene	15.00	13.0	2.229227	1.925541		-14.00	50
1,2-Dibromo-3-chloropropane	15.00	15.1	0.1882045	0.1739189		1.00	50
1,2-Dibromoethane	15.00	14.1	0.3394667	0.3198679		-6.00	50
1,2-Dichlorobenzene	15.00	15.2	1.201484	1.157836		1.00	50
1,2-Dichloroethane	15.00	13.9	0.5029475	0.4301758		-7.00	50
1,2-Dichloropropane	15.00	14.1	0.2411055	0.2132805		-6.00	50
1,3,5-Trimethylbenzene	15.00	13.3	2.228381	1.972524		-12.00	50
1,3-Dichlorobenzene	15.00	14.3	1.326244	1.263595		-5.00	50
1,3-Dichloropropane	15.00	14.3	0.4921719	0.4465711		-5.00	50
1,4-Dichlorobenzene	15.00	14.4	1.289371	1.239856		-4.00	50
2,2-Dichloropropane	15.00	10.6	0.5559494	0.3940504		-29.00	50
2-Butanone	52.50	50.8	5.658319E-02	4.835958E-02		-3.00	50
2-Chlorotoluene	15.00	13.1	1.923105	1.674934		-13.00	50
2-Hexanone	52.50	46.8	0.2137484	0.1773918		-11.00	50
4-Chlorotoluene	15.00	13.2	2.179486	1.924126		-12.00	50
4-Isopropyltoluene	15.00	13.4	2.254881	2.014949		-11.00	50
4-Methyl-2-pentanone	52.50	44.2	0.2919112	0.2286852		-16.00	50
Acetone	52.50	58.2	0.1293521	0.101542		11.00	50
Benzene	15.00	14.0	1.002161	0.9365179		-7.00	50
Bromobenzene	15.00	12.6	1.083652	0.9094264		-16.00	50

7 - FORM VII

CONTINUING CALIBRATION CHECK

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	G2	Calibration:	EE30097
Lab File ID:	G2230614026.D	Calibration Date:	05/24/23 13:00
Sequence:	S3F0256	Injection Date:	06/14/23
Lab Sample ID:	S3F0256-HCV2 (Closing Cal Check)	Injection Time:	18:53

	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	**STD**	**CCV**	**ICAL**	**CCV**	**MIN (#)**	**CCV**	**LIMIT (#)**	
Bromochloromethane	15.00	14.2	0.2969883	0.2814972		-5.00	50	
Bromodichloromethane	15.00	15.2	0.370729	0.3557559		1.00	50	
Bromoform	15.00	14.4	0.3117301	0.2986009	0.1	-4.00	50	
Bromomethane	15.00	15.4	0.3100031	0.2609846		3.00	50	
Carbon disulfide	15.00	13.3	0.9476676	0.7782946		-11.00	50	
Carbon tetrachloride	15.00	15.8	0.3608923	0.3794467		5.00	50	
Chlorobenzene	15.00	14.5	0.8774024	0.8505756	0.3	-3.00	50	
Chloroethane	15.00	13.1	0.239357	0.2093025		-13.00	50	
Chloroform	15.00	14.2	0.656932	0.6195289		-6.00	50	
Chloromethane	15.00	13.0	0.3583454	0.2867129	0.1	-13.00	50	
cis-1,2-Dichloroethene	15.00	13.0	0.5385255	0.4349844		-14.00	50	
cis-1,3-Dichloropropene	15.00	12.9	0.4428763	0.381762		-14.00	50	
Dibromochloromethane	15.00	15.4	0.3917939	0.3799626		2.00	50	
Dibromomethane	15.00	15.7	0.2381661	0.2493794		5.00	50	
Dichlorodifluoromethane	15.00	13.2	0.4075845	0.3587573		-12.00	50	
Ethylbenzene	15.00	14.5	1.407424	1.289358		-3.00	50	
Hexachlorobutadiene	15.00	15.4	0.1938745	0.1820091		3.00	50	
Isopropylbenzene	15.00	13.3	2.873385	2.543669		-12.00	50	
m,p-Xylene	30.00	27.7	1.070642	0.9882412		-8.00	50	
Methyl tert-butyl ether	15.00	12.7	2.078829	1.013809		-15.00	50	
Methylene chloride	15.00	12.7	0.4752062	0.3121253		-15.00	50	
n-Butylbenzene	15.00	13.3	1.741335	1.444619		-11.00	50	
n-Propylbenzene	15.00	13.1	3.199933	2.791855		-13.00	50	
Naphthalene	15.00	13.6	1.038822	0.8485738		-9.00	50	
o-Xylene	15.00	12.8	2.460467	2.095859		-15.00	50	
sec-Butylbenzene	15.00	13.2	2.725412	2.407484		-12.00	50	
Styrene	15.00	13.8	0.9431739	0.8648153		-8.00	50	
tert-Butylbenzene	15.00	11.5	2.390757	1.83619		-23.00	50	
Tetrachloroethene	15.00	28.2	0.4253866	0.7273218		88.00	50	*
Toluene	15.00	14.8	1.307847	1.213175		-1.00	50	

7 - FORM VII

CONTINUING CALIBRATION CHECK

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	G2	Calibration:	EE30097
Lab File ID:	G2230614026.D	Calibration Date:	05/24/23 13:00
Sequence:	S3F0256	Injection Date:	06/14/23
Lab Sample ID:	S3F0256-HCV2 (Closing Cal Check)	Injection Time:	18:53

	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	**STD**	**CCV**	**ICAL**	**CCV**	**MIN (#)**	**CCV**	**LIMIT (#)**
trans-1,2-Dichloroethene	15.00	12.6	0.4334531	0.3634333		-16.00	50
trans-1,3-Dichloropropene	15.00	12.6	0.423463	0.3556155		-16.00	50
Trichloroethene	15.00	16.1	0.2817735	0.2839629		8.00	50
Trichlorofluoromethane	15.00	14.3	0.6025154	0.573177		-5.00	50
Vinyl chloride	15.00	12.6	0.3930682	0.3313553		-16.00	50
Dibromofluoromethane	20.00	19.4	0.4401431	0.4260867		-3.00	50
1,2-Dichloroethane-d4	20.00	17.8	0.4349663	0.3871365		-11.00	50
Fluorobenzene	20.00	19.4	1.139643	1.102657		-3.00	50
Toluene-d8	20.00	19.8	1.260611	1.248185		-1.00	50
4-Bromofluorobenzene	10.00	9.82	0.9444054	0.9269527		-2.00	50
1,2-Dichlorobenzene-d4	20.00	20.0	0.8601294	0.8589336		0.00	50

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614026.D
Acq On : 14 Jun 2023 18:53
Operator : PO1/MP3
Sample : SEQ-HCV2
Misc :
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jun 15 08:30:13 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.574	168	17673722	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.421	114	23650492	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.494	117	20923651	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.840	152	10138215	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.476	111	7530537	19.36	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.80%			
43) 1,2-Dichloroethane-d4	5.878	65	6842142	17.80	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 89.00%			
49) Fluorobenzene	6.278	96	26078393	19.35	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 96.75%			
64) Toluene-d8	8.016	98	26116593	19.80	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.00%			
81) 4-Bromofluorobenzene	10.684	174	4698825	9.82	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 98.20%			
97) d4-1,2-Dichlorobenzene	12.216	152	8708058	19.97	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.85%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.218	85	4755432	13.20	ug/L	99
3) Chloromethane	1.358	50	3800462	13.04	ug/L	99
4) Vinyl chloride	1.450	62	4392211	12.64	ug/L	98
5) Bromomethane	1.721	94	3459426	15.45	ug/L	98
6) Chloroethane	1.808	64	2774365	13.12	ug/L	98
7) Trichlorofluoromethane	2.034	101	7597627	14.27	ug/L	97
8) Ethyl ether	2.315	59	2984464	12.73	ug/L	87
9) Acrolein	2.437	56	1212673	25.46	ug/L	97
10) 1,1-Dichloroethene	2.526	61	5208568	13.77	ug/L	85
11) 1,1,2-Trichloro-1,2,2-...	2.537	101	4040705	13.96	ug/L	95
12) Acetone	2.601	43	4710888	58.24	ug/L	94
13) Iodomethane	2.679	142	5464013	13.28	ug/L	93
14) Carbon disulfide	2.742	76	10316516	13.30	ug/L	100
15) Isopropanol	2.783	45	1025864	72.33	ug/L	78
16) acetonitrile	2.920	41	4744765	28.66	ug/L	87
17) 3-Chloro-1-propene	2.921	76	2267794	12.72	ug/L	96
18) Methylene chloride	3.064	49	4137311	12.71	ug/L	77
19) Acrylonitrile	3.384	53	1602544	11.92	ug/L	96
20) trans-1,2-Dichloroethene	3.404	61	4817414	12.58	ug/L	84
21) Methyl tert-butyl ether	3.435	73	13438325	12.72	ug/L	92
22) Hexane	3.794	57	3380470	11.23	ug/L	93
23) 1,1-Dichloroethane	3.998	63	6738541	13.69	ug/L	97
24) Vinyl acetate	4.126	43	4326385	7.20	ug/L	91
25) 2-Chloro-1,3-butadiene	4.137	53	4975706	12.42	ug/L	82
27) 2,2-Dichloropropane	4.827	77	5223252	10.63	ug/L	92
28) cis-1,2-Dichloroethene	4.836	61	5765844	12.95	ug/L	83
29) 2-Butanone	4.904	72	2243571	50.80	ug/L	91
30) Propionitrile	4.975	54	578937	13.65	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614026.D
Acq On : 14 Jun 2023 18:53
Operator : PO1/MP3
Sample : SEQ-HCV2
Misc :
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jun 15 08:30:13 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
31) Ethyl acetate	5.010	61	617498	11.59	ug/L		75
32) Methylacrylate	5.036	55	3943238	11.78	ug/L		93
33) 1-Bromopropane	5.077	41	2344216	12.97	ug/L		63
34) Bromochloromethane	5.149	130	3731327	14.22	ug/L		99
35) Methacrylonitrile	5.170	67	2084396	12.87	ug/L		89
36) Tetrahydrofuran	5.239	42	1138476	12.25	ug/L		81
37) Chloroform	5.275	83	8212035	14.15	ug/L		99
39) 1,1,1-Trichloroethane	5.479	97	7329573	13.74	ug/L		95
40) Cyclohexane	5.535	84	6291824	13.25	ug/L		81
41) 1-Chlorobutane	5.630	56	6929432	12.57	ug/L		97
42) 1,1-Dichloropropene	5.689	75	5586550	13.89	ug/L		90
44) 1,2-Dichloroethane	5.970	62	5702105	13.94	ug/L		97
47) Carbon tetrachloride	5.680	117	6730576	15.77	ug/L		99
48) Benzene	5.934	78	16611832	14.02	ug/L		99
50) Trichloroethene	6.695	95	5036897	16.14	ug/L		91
52) 1,2-Dichloropropane	6.944	63	3783141	14.12	ug/L		90
53) Dibromomethane	7.070	174	4423458	15.71	ug/L	#	91
54) Methyl methacrylate	7.124	69	3358168	12.14	ug/L		90
55) 1,4-dioxane	7.128	88	342171	122.76	ug/L		92
56) Bromodichloromethane	7.257	83	6310351	15.18	ug/L		99
57) 2-Nitropropane	7.521	43	1445513	12.08	ug/L		94
58) 2-Chloroethyl vinyl ether	7.611	63	2778100	12.11	ug/L		99
59) cis-1,3-Dichloropropene	7.743	75	6771644	12.93	ug/L		95
60) 4-Methyl-2-pentanone	7.934	43	14197360	44.15	ug/L	#	86
61) trans-1,3-Dichloropropene	8.333	75	6307860	12.60	ug/L		89
62) 1,1,2-Trichloroethane	8.517	97	4496003	14.39	ug/L		93
65) Toluene	8.084	91	19038044	14.81	ug/L		97
66) Ethylmethacrylate	8.453	69	5939170	12.84	ug/L		87
67) Tetrachloroethene	8.647	166	11413669	28.24	ug/L		95
68) 1,3-Dichloropropane	8.685	76	7007923	14.31	ug/L		86
69) 2-Hexanone	8.799	43	9743172	46.75	ug/L		88
70) Dibromochloromethane	8.910	129	5962654	15.36	ug/L		97
71) 1,2-Dibromoethane	9.016	107	5019603	14.13	ug/L		98
72) Chlorobenzene	9.522	112	13347861	14.54	ug/L		92
73) 1,1,1,2-Tetrachloroethane	9.611	131	5359690	14.92	ug/L		97
74) Ethylbenzene	9.641	91	20233557	14.50	ug/L		95
75) m,p-Xylene	9.762	91	31016422	27.69	ug/L		94
76) Styrene	10.175	104	13571322	13.75	ug/L		93
77) Bromoform	10.352	173	4685866	14.37	ug/L		97
79) o-Xylene	10.159	91	15936211	12.78	ug/L		95
80) Isopropylbenzene	10.534	105	19341213	13.28	ug/L		96
82) Bromobenzene	10.826	77	6914974	12.59	ug/L	#	79
83) 1,1,2,2-Tetrachloroethane	10.839	83	5446696	12.36	ug/L		99
84) 1,2,3-Trichloropropane	10.879	110	2082278	13.63	ug/L		94
85) trans-1,4-Dichloro-2-b...	10.899	53	1196550	10.13	ug/L		70
86) n-Propylbenzene	10.947	91	21228328	13.09	ug/L		96
87) 2-Chlorotoluene	11.026	91	12735641	13.06	ug/L		94
88) 4-Chlorotoluene	11.135	91	14630408	13.24	ug/L		93
89) 1,3,5-Trimethylbenzene	11.127	105	14998405	13.28	ug/L		94

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614026.D
Acq On : 14 Jun 2023 18:53
Operator : PO1/MP3
Sample : SEQ-HCV2
Misc :
ALS Vial : 26 Sample Multiplier: 1

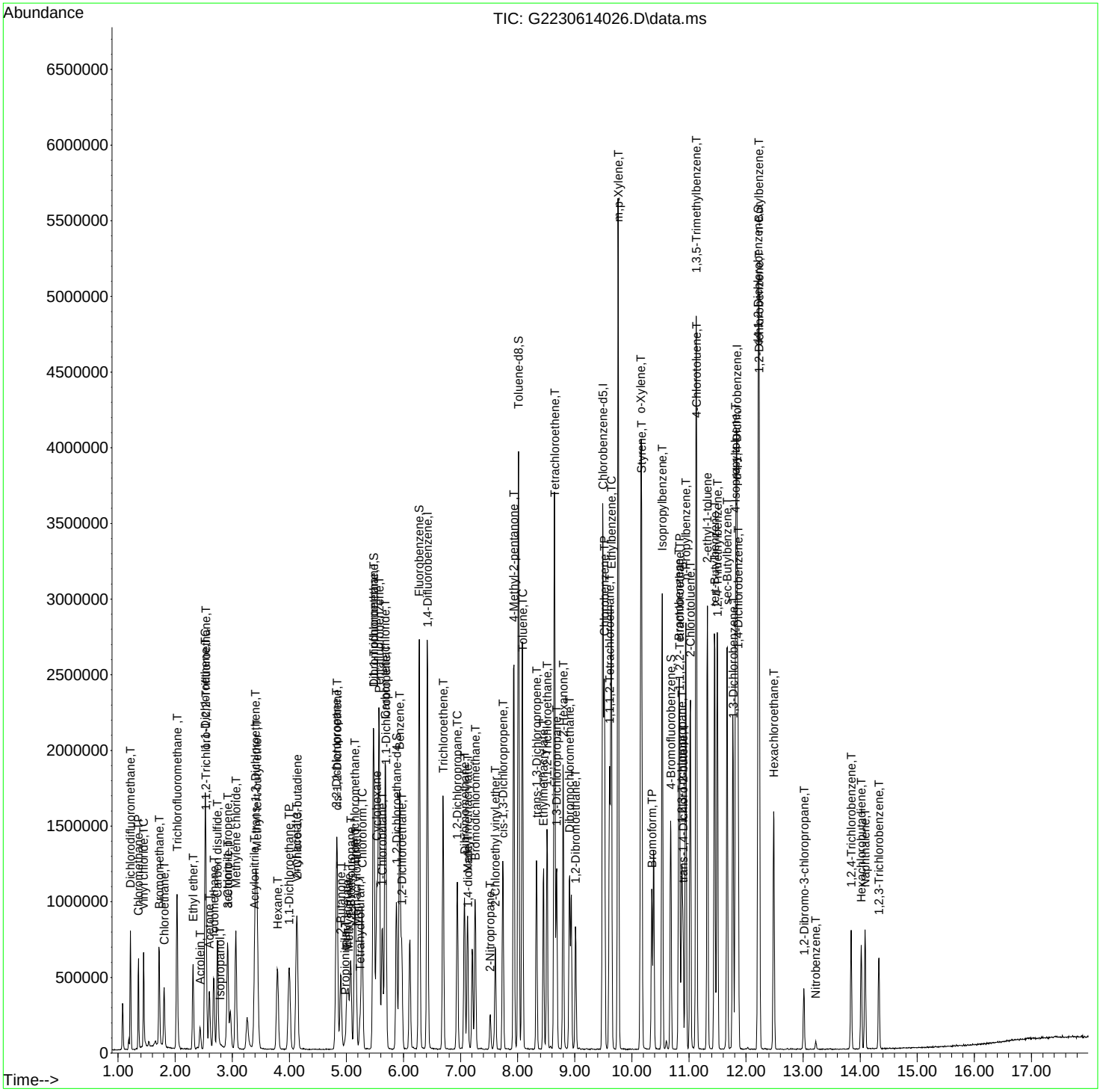
Quant Time: Jun 15 08:30:13 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
90) 2-ethyl-1-toluene	11.327	105	18257661	13.27	ug/L	97
91) tert-Butylbenzene	11.451	119	13961770	11.52	ug/L	96
92) 1,2,4-Trimethylbenzene	11.500	105	14641174	12.96	ug/L	91
93) sec-Butylbenzene	11.671	105	18305702	13.25	ug/L	97
94) 1,3-Dichlorobenzene	11.773	146	9607956	14.29	ug/L	98
95) 4-Isopropyltoluene	11.820	119	15321004	13.40	ug/L	97
96) 1,4-Dichlorobenzene	11.864	146	9427451	14.42	ug/L	97
98) 1,2-Dichlorobenzene	12.235	146	8803800	15.21	ug/L	97
99) n-Butylbenzene	12.229	91	10984401	13.33	ug/L	92
100) Hexachloroethane	12.489	201	3096813	14.74	ug/L	98
101) 1,2-Dibromo-3-chloropr...	13.017	157	1322421	15.11	ug/L	98
102) Nitrobenzene	13.222	77	222119	7.57	ug/L	91
103) 1,2,4-Trichlorobenzene	13.844	180	2670734	14.68	ug/L	95
104) Hexachlorobutadiene	14.021	225	1383936	15.45	ug/L	97
105) Naphthalene	14.088	128	6452271	13.63	ug/L	99
106) 1,2,3-Trichlorobenzene	14.330	180	2006434	13.73	ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614026.D
Acq On : 14 Jun 2023 18:53
Operator : PO1/MP3
Sample : SEQ-HCV2
Misc :
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jun 15 08:30:13 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G



7 - FORM VII

CONTINUING CALIBRATION CHECK

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	G2	Calibration:	EE30097
Lab File ID:	G2230614027.D	Calibration Date:	05/24/23 13:00
Sequence:	S3F0256	Injection Date:	06/14/23
Lab Sample ID:	S3F0256-HCV3 (Closing Cal Check)	Injection Time:	19:17

	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	**STD**	**CCV**	**ICAL**	**CCV**	**MIN (#)**	**CCV**	**LIMIT (#)**
1,1,1,2-Tetrachloroethane	15.00	14.7	0.3434339	0.3363798		-2.00	50
1,1,1-Trichloroethane	15.00	14.0	0.603823	0.5629148		-7.00	50
1,1,2,2-Tetrachloroethane	15.00	13.3	0.86935	0.773399	0.3	-11.00	50
1,1,2-Trichloroethane	15.00	14.6	0.2642556	0.2563403		-3.00	50
1,1-Dichloroethane	15.00	13.8	0.5953788	0.5103852	0.1	-8.00	50
1,1-Dichloroethene	15.00	13.7	0.4569016	0.3913612		-9.00	50
1,1-Dichloropropene	15.00	14.0	0.4853227	0.4244634		-7.00	50
1,2,3-Trichlorobenzene	15.00	13.8	0.2883305	0.2644938		-8.00	50
1,2,3-Trichloropropane	15.00	14.4	0.331412	0.2883645		-4.00	50
1,2,4-Trichlorobenzene	15.00	14.0	0.3588914	0.3357822		-6.00	50
1,2,4-Trimethylbenzene	15.00	13.3	2.229227	1.983142		-11.00	50
1,2-Dibromo-3-chloropropane	15.00	14.9	0.1882045	0.1716236		-1.00	50
1,2-Dibromoethane	15.00	14.1	0.3394667	0.3200762		-6.00	50
1,2-Dichlorobenzene	15.00	15.2	1.201484	1.158589		2.00	50
1,2-Dichloroethane	15.00	14.0	0.5029475	0.4307939		-7.00	50
1,2-Dichloropropane	15.00	14.1	0.2411055	0.2126834		-6.00	50
1,3,5-Trimethylbenzene	15.00	13.4	2.228381	1.991945		-11.00	50
1,3-Dichlorobenzene	15.00	14.7	1.326244	1.297661		-2.00	50
1,3-Dichloropropane	15.00	14.2	0.4921719	0.4424594		-6.00	50
1,4-Dichlorobenzene	15.00	14.6	1.289371	1.258062		-2.00	50
2,2-Dichloropropane	15.00	12.6	0.5559494	0.4674869		-16.00	50
2-Butanone	52.50	50.9	5.658319E-02	4.842587E-02		-3.00	50
2-Chlorotoluene	15.00	13.5	1.923105	1.729255		-10.00	50
2-Hexanone	52.50	45.1	0.2137484	0.1713236		-14.00	50
4-Chlorotoluene	15.00	13.6	2.179486	1.974894		-9.00	50
4-Isopropyltoluene	15.00	13.7	2.254881	2.057604		-9.00	50
4-Methyl-2-pentanone	52.50	45.8	0.2919112	0.2371249		-13.00	50
Acetone	52.50	53.9	0.1293521	9.419875E-02		3.00	50
Benzene	15.00	14.1	1.002161	0.9437949		-6.00	50
Bromobenzene	15.00	12.7	1.083652	0.9198502		-15.00	50

7 - FORM VII

CONTINUING CALIBRATION CHECK

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	G2	Calibration:	EE30097
Lab File ID:	G2230614027.D	Calibration Date:	05/24/23 13:00
Sequence:	S3F0256	Injection Date:	06/14/23
Lab Sample ID:	S3F0256-HCV3 (Closing Cal Check)	Injection Time:	19:17

	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	**STD**	**CCV**	**ICAL**	**CCV**	**MIN (#)**	**CCV**	**LIMIT (#)**
Bromochloromethane	15.00	14.3	0.2969883	0.2833796		-5.00	50
Bromodichloromethane	15.00	15.4	0.370729	0.3610052		3.00	50
Bromoform	15.00	14.5	0.3117301	0.3017562	0.1	-3.00	50
Bromomethane	15.00	15.6	0.3100031	0.2631668		4.00	50
Carbon disulfide	15.00	13.6	0.9476676	0.793177		-10.00	50
Carbon tetrachloride	15.00	15.6	0.3608923	0.3755776		4.00	50
Chlorobenzene	15.00	14.5	0.8774024	0.8480285	0.3	-3.00	50
Chloroethane	15.00	12.6	0.239357	0.2018123		-16.00	50
Chloroform	15.00	14.1	0.656932	0.6172298		-6.00	50
Chloromethane	15.00	12.6	0.3583454	0.277215	0.1	-16.00	50
cis-1,2-Dichloroethene	15.00	13.4	0.5385255	0.4491249		-11.00	50
cis-1,3-Dichloropropene	15.00	13.6	0.4428763	0.4011129		-9.00	50
Dibromochloromethane	15.00	15.4	0.3917939	0.3803162		2.00	50
Dibromomethane	15.00	15.5	0.2381661	0.246656		4.00	50
Dichlorodifluoromethane	15.00	12.8	0.4075845	0.3463878		-15.00	50
Ethylbenzene	15.00	14.6	1.407424	1.2953		-3.00	50
Hexachlorobutadiene	15.00	15.9	0.1938745	0.1878043		6.00	50
Isopropylbenzene	15.00	13.5	2.873385	2.586943		-10.00	50
m,p-Xylene	30.00	27.8	1.070642	0.9922903		-7.00	50
Methyl tert-butyl ether	15.00	12.9	2.078829	1.027996		-14.00	50
Methylene chloride	15.00	12.8	0.4752062	0.3144818		-15.00	50
n-Butylbenzene	15.00	13.8	1.741335	1.495566		-8.00	50
n-Propylbenzene	15.00	13.5	3.199933	2.884882		-10.00	50
Naphthalene	15.00	13.0	1.038822	0.8116288		-13.00	50
o-Xylene	15.00	13.1	2.460467	2.143028		-13.00	50
sec-Butylbenzene	15.00	13.5	2.725412	2.456468		-10.00	50
Styrene	15.00	13.8	0.9431739	0.8680767		-8.00	50
tert-Butylbenzene	15.00	13.4	2.390757	2.133475		-11.00	50
Tetrachloroethene	15.00	18.4	0.4253866	0.4752193		23.00	50
Toluene	15.00	14.9	1.307847	1.219206		-1.00	50

7 - FORM VII

CONTINUING CALIBRATION CHECK

SW8260B/D

Laboratory:	Environmental Monitoring and Technologies, Inc	SDG:	23F0196
Client:	HDR	Project:	Longhorn AAP
Instrument ID:	G2	Calibration:	EE30097
Lab File ID:	G2230614027.D	Calibration Date:	05/24/23 13:00
Sequence:	S3F0256	Injection Date:	06/14/23
Lab Sample ID:	S3F0256-HCV3 (Closing Cal Check)	Injection Time:	19:17

	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	**STD**	**CCV**	**ICAL**	**CCV**	**MIN (#)**	**CCV**	**LIMIT (#)**
trans-1,2-Dichloroethene	15.00	13.0	0.4334531	0.3741103		-14.00	50
trans-1,3-Dichloropropene	15.00	13.1	0.423463	0.3690432		-13.00	50
Trichloroethene	15.00	15.5	0.2817735	0.2724399		3.00	50
Trichlorofluoromethane	15.00	13.8	0.6025154	0.5546384		-8.00	50
Vinyl chloride	15.00	12.0	0.3930682	0.3132506		-20.00	50
Dibromofluoromethane	20.00	19.1	0.4401431	0.4201647		-4.00	50
1,2-Dichloroethane-d4	20.00	17.7	0.4349663	0.3848849		-12.00	50
Fluorobenzene	20.00	19.6	1.139643	1.114565		-2.00	50
Toluene-d8	20.00	19.5	1.260611	1.230464		-2.00	50
4-Bromofluorobenzene	10.00	9.64	0.9444054	0.910288		-4.00	50
1,2-Dichlorobenzene-d4	20.00	19.8	0.8601294	0.8521572		-1.00	50

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614027.D
Acq On : 14 Jun 2023 19:17
Operator : PO1/MP3
Sample : SEQ-HCV3
Misc :
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jun 15 08:30:29 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.570	168	17220254	20.00	ug/L	0.00
46) 1,4-Difluorobenzene	6.419	114	23004422	20.00	ug/L	0.00
63) Chlorobenzene-d5	9.493	117	20613741	20.00	ug/L	0.00
78) d4-1,4-Dichlorobenzene	11.840	152	9771477	20.00	ug/L	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	5.473	111	7235341	19.09	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 95.45%			
43) 1,2-Dichloroethane-d4	5.876	65	6627815	17.70	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 88.50%			
49) Fluorobenzene	6.276	96	25639909	19.56	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.80%			
64) Toluene-d8	8.015	98	25364467	19.52	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 97.60%			
81) 4-Bromofluorobenzene	10.683	174	4447429	9.64	ug/L	0.00
Spiked Amount 10.000	Range 80 - 120		Recovery = 96.40%			
97) d4-1,2-Dichlorobenzene	12.216	152	8326834	19.81	ug/L	0.00
Spiked Amount 20.000	Range 80 - 120		Recovery = 99.05%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.212	85	4473664	12.75	ug/L	99
3) Chloromethane	1.352	50	3580284	12.61	ug/L	100
4) Vinyl chloride	1.444	62	4045690	11.95	ug/L	99
5) Bromomethane	1.715	94	3398848	15.59	ug/L	98
6) Chloroethane	1.802	64	2606444	12.65	ug/L	97
7) Trichlorofluoromethane	2.028	101	7163259	13.81	ug/L	97
8) Ethyl ether	2.310	59	2956995	12.94	ug/L	85
9) Acrolein	2.433	56	1378936	29.80	ug/L	95
10) 1,1-Dichloroethene	2.521	61	5054503	13.71	ug/L	86
11) 1,1,2-Trichloro-1,2,2-...	2.530	101	4008210	14.22	ug/L	95
12) Acetone	2.596	43	4258081	53.90	ug/L	94
13) Iodomethane	2.674	142	5108992	12.74	ug/L	94
14) Carbon disulfide	2.736	76	10244034	13.56	ug/L	100
15) Isopropanol	2.776	45	934289	67.60	ug/L	93
16) acetonitrile	2.915	41	4821297	29.91	ug/L	86
17) 3-Chloro-1-propene	2.918	76	2268913	13.06	ug/L	99
18) Methylene chloride	3.059	49	4061592	12.81	ug/L	75
19) Acrylonitrile	3.379	53	1653406	12.63	ug/L	95
20) trans-1,2-Dichloroethene	3.399	61	4831705	12.95	ug/L	85
21) Methyl tert-butyl ether	3.429	73	13276760	12.91	ug/L	92
22) Hexane	3.788	57	3578740	12.21	ug/L	92
23) 1,1-Dichloroethane	3.993	63	6591721	13.75	ug/L	96
24) Vinyl acetate	4.121	43	6595067	11.27	ug/L	90
25) 2-Chloro-1,3-butadiene	4.130	53	4885087	12.51	ug/L	83
27) 2,2-Dichloropropane	4.822	77	6037681	12.61	ug/L	93
28) cis-1,2-Dichloroethene	4.832	61	5800532	13.38	ug/L	84
29) 2-Butanone	4.900	72	2189002	50.88	ug/L	91
30) Propionitrile	4.971	54	535435	12.95	ug/L	96

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614027.D
Acq On : 14 Jun 2023 19:17
Operator : PO1/MP3
Sample : SEQ-HCV3
Misc :
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jun 15 08:30:29 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
31) Ethyl acetate	5.007	61	679657	13.12	ug/L		79
32) Methylacrylate	5.032	55	3866053	11.86	ug/L		92
33) 1-Bromopropane	5.074	41	2347404	13.33	ug/L		68
34) Bromochloromethane	5.145	130	3659901	14.31	ug/L		98
35) Methacrylonitrile	5.165	67	2038922	12.92	ug/L		91
36) Tetrahydrofuran	5.236	42	1116388	12.34	ug/L		79
37) Chloroform	5.272	83	7971639	14.09	ug/L		100
39) 1,1,1-Trichloroethane	5.476	97	7270150	13.98	ug/L		95
40) Cyclohexane	5.532	84	6173425	13.35	ug/L		83
41) 1-Chlorobutane	5.627	56	6839745	12.73	ug/L		98
42) 1,1-Dichloropropene	5.685	75	5482024	13.99	ug/L		92
44) 1,2-Dichloroethane	5.968	62	5563784	13.96	ug/L		98
47) Carbon tetrachloride	5.677	117	6479958	15.61	ug/L		98
48) Benzene	5.932	78	16283586	14.13	ug/L		100
50) Trichloroethene	6.693	95	4700492	15.48	ug/L		91
52) 1,2-Dichloropropane	6.942	63	3669494	14.08	ug/L		87
53) Dibromomethane	7.069	174	4255634	15.53	ug/L	#	91
54) Methyl methacrylate	7.122	69	3363390	12.50	ug/L		89
55) 1,4-dioxane	7.126	88	399825	147.48	ug/L		100
56) Bromodichloromethane	7.257	83	6228536	15.41	ug/L		99
57) 2-Nitropropane	7.519	43	1480959	12.74	ug/L		94
58) 2-Chloroethyl vinyl ether	7.609	63	2536028	11.37	ug/L		100
59) cis-1,3-Dichloropropene	7.742	75	6920528	13.59	ug/L		95
60) 4-Methyl-2-pentanone	7.932	43	14319173	45.79	ug/L	#	88
61) trans-1,3-Dichloropropene	8.331	75	6367218	13.07	ug/L		88
62) 1,1,2-Trichloroethane	8.516	97	4422720	14.55	ug/L		93
65) Toluene	8.084	91	18849292	14.89	ug/L		97
66) Ethylmethacrylate	8.453	69	5815123	12.76	ug/L		88
67) Tetrachloroethene	8.646	166	7347035	18.41	ug/L		95
68) 1,3-Dichloropropane	8.684	76	6840558	14.18	ug/L		86
69) 2-Hexanone	8.798	43	9270502	45.14	ug/L		87
70) Dibromochloromethane	8.909	129	5879804	15.37	ug/L		97
71) 1,2-Dibromoethane	9.016	107	4948476	14.14	ug/L		100
72) Chlorobenzene	9.521	112	13110784	14.50	ug/L		92
73) 1,1,1,2-Tetrachloroethane	9.611	131	5200534	14.69	ug/L		97
74) Ethylbenzene	9.641	91	20025738	14.56	ug/L		95
75) m,p-Xylene	9.762	91	30682223	27.80	ug/L		94
76) Styrene	10.174	104	13420734	13.81	ug/L		93
77) Bromoform	10.352	173	4665243	14.52	ug/L		98
79) o-Xylene	10.158	91	15705411	13.06	ug/L		95
80) Isopropylbenzene	10.534	105	18958688	13.50	ug/L		96
82) Bromobenzene	10.825	77	6741221	12.73	ug/L	#	78
83) 1,1,2,2-Tetrachloroethane	10.839	83	5667938	13.34	ug/L		98
84) 1,2,3-Trichloropropane	10.878	110	2113310	14.36	ug/L		99
85) trans-1,4-Dichloro-2-b...	10.898	53	1269203	11.15	ug/L		74
86) n-Propylbenzene	10.946	91	21142170	13.52	ug/L		96
87) 2-Chlorotoluene	11.025	91	12673030	13.49	ug/L		94
88) 4-Chlorotoluene	11.135	91	14473217	13.59	ug/L		93
89) 1,3,5-Trimethylbenzene	11.127	105	14598181	13.41	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614027.D
Acq On : 14 Jun 2023 19:17
Operator : PO1/MP3
Sample : SEQ-HCV3
Misc :
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jun 15 08:30:29 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G

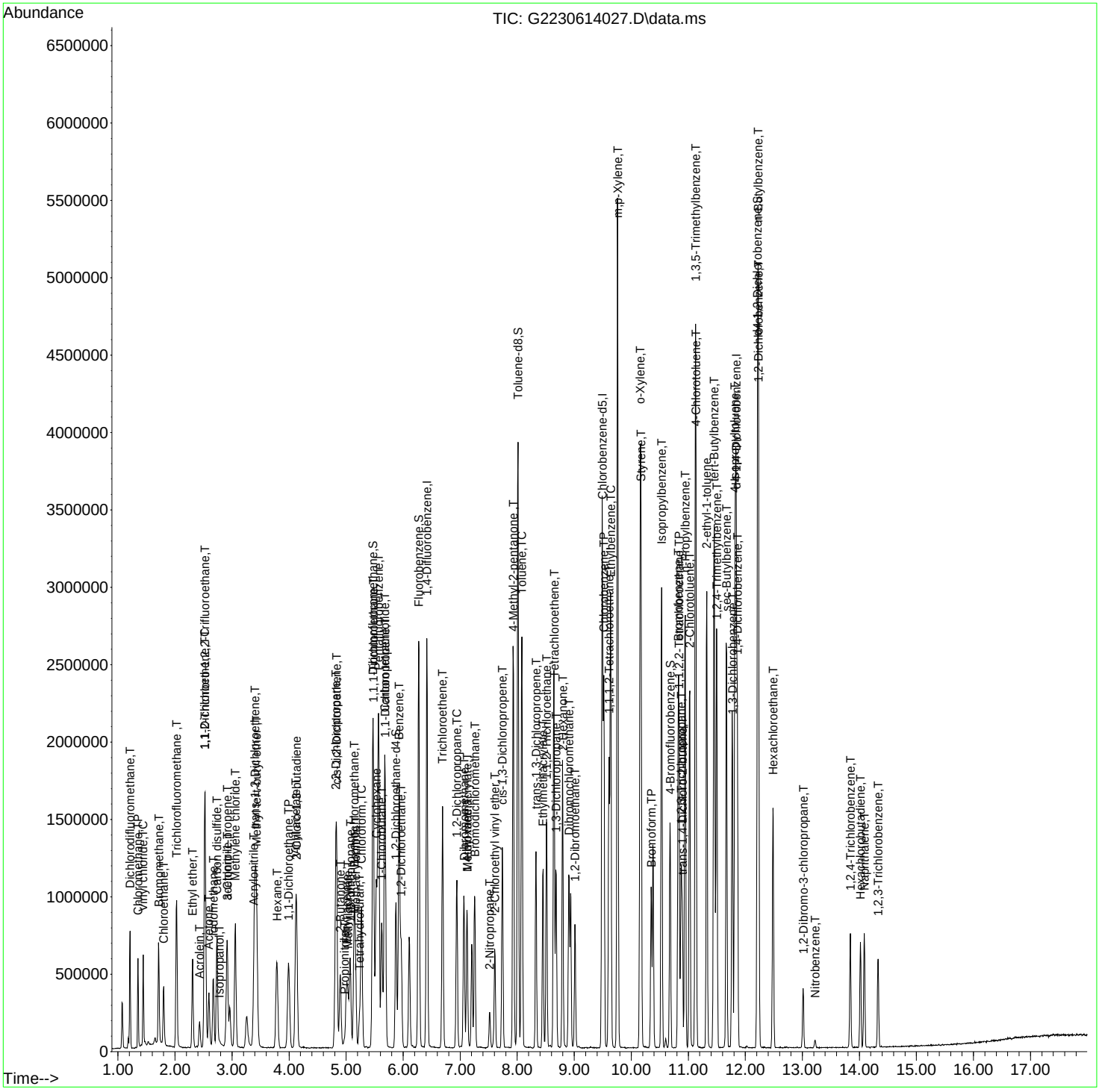
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
90) 2-ethyl-1-toluene	11.326	105	18104706	13.65	ug/L	97
91) tert-Butylbenzene	11.452	119	15635404	13.39	ug/L	90
92) 1,2,4-Trimethylbenzene	11.499	105	14533671	13.34	ug/L	93
93) sec-Butylbenzene	11.671	105	18002488	13.52	ug/L	97
94) 1,3-Dichlorobenzene	11.773	146	9510051	14.68	ug/L	97
95) 4-Isopropyltoluene	11.820	119	15079367	13.69	ug/L	97
96) 1,4-Dichlorobenzene	11.863	146	9219844	14.64	ug/L	97
98) 1,2-Dichlorobenzene	12.234	146	8490843	15.22	ug/L	97
99) n-Butylbenzene	12.229	91	10960419	13.81	ug/L	92
100) Hexachloroethane	12.488	201	3073043	15.17	ug/L	96
101) 1,2-Dibromo-3-chloropr...	13.017	157	1257762	14.91	ug/L	95
102) Nitrobenzene	13.225	77	217690	7.71	ug/L	87
103) 1,2,4-Trichlorobenzene	13.844	180	2460816	14.03	ug/L	96
104) Hexachlorobutadiene	14.022	225	1376344	15.94	ug/L	97
105) Naphthalene	14.088	128	5948109	13.03	ug/L	99
106) 1,2,3-Trichlorobenzene	14.331	180	1938371	13.76	ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\2023\(F) June\G2230614\
Data File : G2230614027.D
Acq On : 14 Jun 2023 19:17
Operator : PO1/MP3
Sample : SEQ-HCV3
Misc :
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jun 15 08:30:29 2023
Quant Method : D:\MassHunter\GCMS\1\methods\Quantitation\2023\G2W5230524.M
Quant Title : 8260B Calibration
QLast Update : Thu May 25 16:51:34 2023
Response via : Initial Calibration
InstName : G



INTERNAL STANDARD AREA AND RT SUMMARY

SW8260B/D

Client: HDR
SDG: 23F0196
Project: Longhorn AAP

Sequence: S3E0429 Instrument: G2
Calibration: EE30097

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (S3E0429-ICV1)			*Lab File ID: G2230525008.D*			*Analyzed: 05/25/23 15:01*			
Pentafluorobenzene	24892870	5.574	2.401662E+07	5.574	104	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	34255760	6.423	3.43678E+07	6.422	100	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	29947460	9.496	3.011335E+07	9.495	99	50 - 200	0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	13430210	11.842	1.411444E+07	11.843	95	50 - 200	-0.0010	+/-0.50	

* Values outside of QC limits

INTERNAL STANDARD AREA AND RT SUMMARY

SW8260B/D

Client: HDR
SDG: 23F0196
Project: Longhorn AAP

Sequence: S3F0256 Instrument: G2
Calibration: EE30097

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S3F0256-CCV1)			*Lab File ID: G2230614005.D*			*Analyzed: 06/14/23 10:13*			
Pentafluorobenzene	17566840	5.573	2.401662E+07	5.574	73	50 - 200	-0.0010	+/-0.50	
1,4-Difluorobenzene	23417680	6.421	3.43678E+07	6.422	68	50 - 200	-0.0010	+/-0.50	
Chlorobenzene-d5	20642150	9.494	3.011335E+07	9.495	69	50 - 200	-0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	9973084	11.839	1.411444E+07	11.843	71	50 - 200	-0.0040	+/-0.50	
LCS (B3F0436-BS1)			*Lab File ID: G2230614006.D*			*Analyzed: 06/14/23 10:38*			
Pentafluorobenzene	17998690	5.571	17566840	5.573	102	50 - 200	-0.0020	+/-0.50	
1,4-Difluorobenzene	23807140	6.419	23417680	6.421	102	50 - 200	-0.0020	+/-0.50	
Chlorobenzene-d5	21266050	9.494	20642150	9.494	103	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	9940586	11.839	9973084	11.839	100	50 - 200	0.0000	+/-0.50	
Blank (B3F0436-BLK1)			*Lab File ID: G2230614009.D*			*Analyzed: 06/14/23 11:52*			
Pentafluorobenzene	17628790	5.572	17566840	5.573	100	50 - 200	-0.0010	+/-0.50	
1,4-Difluorobenzene	23832240	6.421	23417680	6.421	102	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	21202810	9.493	20642150	9.494	103	50 - 200	-0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	10257490	11.84	9973084	11.839	103	50 - 200	0.0010	+/-0.50	
Matrix Spike (B3F0436-MS1)			*Lab File ID: G2230614010.D*			*Analyzed: 06/14/23 12:16*			
Pentafluorobenzene	17143200	5.57	17566840	5.573	98	50 - 200	-0.0030	+/-0.50	
1,4-Difluorobenzene	22745290	6.418	23417680	6.421	97	50 - 200	-0.0030	+/-0.50	
Chlorobenzene-d5	20378830	9.493	20642150	9.494	99	50 - 200	-0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	9929884	11.839	9973084	11.839	100	50 - 200	0.0000	+/-0.50	
Matrix Spike Dup (B3F0436-MSD1)			*Lab File ID: G2230614011.D*			*Analyzed: 06/14/23 12:41*			
Pentafluorobenzene	17412430	5.572	17566840	5.573	99	50 - 200	-0.0010	+/-0.50	
1,4-Difluorobenzene	22989740	6.42	23417680	6.421	98	50 - 200	-0.0010	+/-0.50	
Chlorobenzene-d5	20405190	9.494	20642150	9.494	99	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	9525058	11.84	9973084	11.839	96	50 - 200	0.0010	+/-0.50	
6247WW36 (23F0196-01)			*Lab File ID: G2230614013.D*			*Analyzed: 06/14/23 13:30*			
Pentafluorobenzene	16761120	5.571	17566840	5.573	95	50 - 200	-0.0020	+/-0.50	
1,4-Difluorobenzene	22451120	6.419	23417680	6.421	96	50 - 200	-0.0020	+/-0.50	
Chlorobenzene-d5	19689460	9.493	20642150	9.494	95	50 - 200	-0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	9244957	11.84	9973084	11.839	93	50 - 200	0.0010	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SW8260B/D

Client: HDR
SDG: 23F0196
Project: Longhorn AAP

Sequence: S3F0256 Instrument: G2
Calibration: EE30097

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
6247WW35 (23F0196-02)			*Lab File ID: G2230614014.D*			*Analyzed: 06/14/23 13:55*			
Pentafluorobenzene	16726510	5.571	17566840	5.573	95	50 - 200	-0.0020	+/-0.50	
1,4-Difluorobenzene	22417230	6.419	23417680	6.421	96	50 - 200	-0.0020	+/-0.50	
Chlorobenzene-d5	19758500	9.493	20642150	9.494	96	50 - 200	-0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	8993920	11.84	9973084	11.839	90	50 - 200	0.0010	+/-0.50	
6247WW32 (23F0196-04)			*Lab File ID: G2230614015.D*			*Analyzed: 06/14/23 14:20*			
Pentafluorobenzene	16817460	5.572	17566840	5.573	96	50 - 200	-0.0010	+/-0.50	
1,4-Difluorobenzene	22745630	6.42	23417680	6.421	97	50 - 200	-0.0010	+/-0.50	
Chlorobenzene-d5	20042480	9.493	20642150	9.494	97	50 - 200	-0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	9600523	11.84	9973084	11.839	96	50 - 200	0.0010	+/-0.50	
6247WW47 (23F0196-05)			*Lab File ID: G2230614016.D*			*Analyzed: 06/14/23 14:45*			
Pentafluorobenzene	16495160	5.571	17566840	5.573	94	50 - 200	-0.0020	+/-0.50	
1,4-Difluorobenzene	21844640	6.419	23417680	6.421	93	50 - 200	-0.0020	+/-0.50	
Chlorobenzene-d5	19350200	9.493	20642150	9.494	94	50 - 200	-0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	9122057	11.839	9973084	11.839	91	50 - 200	0.0000	+/-0.50	
6347WW44 (23F0196-06)			*Lab File ID: G2230614017.D*			*Analyzed: 06/14/23 15:10*			
Pentafluorobenzene	16619410	5.573	17566840	5.573	95	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	22507780	6.42	23417680	6.421	96	50 - 200	-0.0010	+/-0.50	
Chlorobenzene-d5	19539560	9.494	20642150	9.494	95	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	9086964	11.84	9973084	11.839	91	50 - 200	0.0010	+/-0.50	
6347WW21 (23F0196-07)			*Lab File ID: G2230614018.D*			*Analyzed: 06/14/23 15:35*			
Pentafluorobenzene	16711330	5.572	17566840	5.573	95	50 - 200	-0.0010	+/-0.50	
1,4-Difluorobenzene	22334040	6.42	23417680	6.421	95	50 - 200	-0.0010	+/-0.50	
Chlorobenzene-d5	19861920	9.493	20642150	9.494	96	50 - 200	-0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	9432442	11.839	9973084	11.839	95	50 - 200	0.0000	+/-0.50	
6447WW60 (23F0196-09)			*Lab File ID: G2230614019.D*			*Analyzed: 06/14/23 15:59*			
Pentafluorobenzene	15994050	5.572	17566840	5.573	91	50 - 200	-0.0010	+/-0.50	
1,4-Difluorobenzene	21427050	6.42	23417680	6.421	91	50 - 200	-0.0010	+/-0.50	
Chlorobenzene-d5	18550940	9.494	20642150	9.494	90	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	8524820	11.839	9973084	11.839	85	50 - 200	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SW8260B/D

Client: HDR
SDG: 23F0196
Project: Longhorn AAP

Sequence: S3F0256 Instrument: G2
Calibration: EE30097

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
6447WW28 (23F0196-10)			*Lab File ID: G2230614020.D*			*Analyzed: 06/14/23 16:25*			
Pentafluorobenzene	16493100	5.573	17566840	5.573	94	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	22653640	6.421	23417680	6.421	97	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	19890610	9.494	20642150	9.494	96	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	9126312	11.839	9973084	11.839	92	50 - 200	0.0000	+/-0.50	
6547WW03 (23F0196-12)			*Lab File ID: G2230614021.D*			*Analyzed: 06/14/23 16:49*			
Pentafluorobenzene	16576930	5.573	17566840	5.573	94	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	22409840	6.421	23417680	6.421	96	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	19722810	9.493	20642150	9.494	96	50 - 200	-0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	9469380	11.839	9973084	11.839	95	50 - 200	0.0000	+/-0.50	
63LHSMWW45 (23F0196-08)			*Lab File ID: G2230614022.D*			*Analyzed: 06/14/23 17:14*			
Pentafluorobenzene	15852460	5.571	17566840	5.573	90	50 - 200	-0.0020	+/-0.50	
1,4-Difluorobenzene	21327770	6.42	23417680	6.421	91	50 - 200	-0.0010	+/-0.50	
Chlorobenzene-d5	18790200	9.493	20642150	9.494	91	50 - 200	-0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	8684354	11.839	9973084	11.839	87	50 - 200	0.0000	+/-0.50	
65Trip3 (23F0196-11)			*Lab File ID: G2230614023.D*			*Analyzed: 06/14/23 17:39*			
Pentafluorobenzene	16667450	5.573	17566840	5.573	95	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	22702630	6.421	23417680	6.421	97	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	20205920	9.493	20642150	9.494	98	50 - 200	-0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	9244135	11.839	9973084	11.839	93	50 - 200	0.0000	+/-0.50	
High Cal Check (S3F0256-HCV1)			*Lab File ID: G2230614025.D*			*Analyzed: 06/14/23 18:28*			
Pentafluorobenzene	16717060	5.571	2.401662E+07	5.574	70	50 - 200	-0.0030	+/-0.50	
1,4-Difluorobenzene	22100050	6.419	3.43678E+07	6.422	64	50 - 200	-0.0030	+/-0.50	
Chlorobenzene-d5	19593250	9.493	3.011335E+07	9.495	65	50 - 200	-0.0020	+/-0.50	
1,4-Dichlorobenzene-d4	9424467	11.839	1.411444E+07	11.843	67	50 - 200	-0.0040	+/-0.50	
High Cal Check (S3F0256-HCV2)			*Lab File ID: G2230614026.D*			*Analyzed: 06/14/23 18:53*			
Pentafluorobenzene	17673720	5.574	2.401662E+07	5.574	74	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	23650490	6.421	3.43678E+07	6.422	69	50 - 200	-0.0010	+/-0.50	
Chlorobenzene-d5	20923650	9.494	3.011335E+07	9.495	69	50 - 200	-0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	10138220	11.84	1.411444E+07	11.843	72	50 - 200	-0.0030	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

SW8260B/D

Client: HDR
SDG: 23F0196
Project: Longhorn AAP

Sequence: S3F0256 Instrument: G2
Calibration: EE30097

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
High Cal Check (S3F0256-HCV3)			*Lab File ID: G2230614027.D*			*Analyzed: 06/14/23 19:17*			
Pentafluorobenzene	17220250	5.57	2.401662E+07	5.574	72	50 - 200	-0.0040	+/-0.50	
1,4-Difluorobenzene	23004420	6.419	3.43678E+07	6.422	67	50 - 200	-0.0030	+/-0.50	
Chlorobenzene-d5	20613740	9.493	3.011335E+07	9.495	68	50 - 200	-0.0020	+/-0.50	
1,4-Dichlorobenzene-d4	9771477	11.84	1.411444E+07	11.843	69	50 - 200	-0.0030	+/-0.50	

* Values outside of QC limits

PREPARATION BENCH SHEET
MSVOA

Print Date/Time: 06/15/2023

B3F0436

Matrix: Water

Prepared using: MSVOA - 5030_W

Analyses
8260_DoD
8260B_VOC_LIBRARY_SEARCH

Surrogate Solution(s)
2090775 Working Surrogate (purged)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
B3F0436-BLK1	06/14/23 08:15	5	5				5	
!pH <2: : : : :								**Prepared By**: PO1
B3F0436-BS1	06/14/23 08:15	5	5	3060539 & 3060555		1.5 & 1.5	5	
!pH <2: : : : :								**Prepared By**: PO1
B3F0436-MS1	06/14/23 11:50	5	5	3060539 & 3060555	23F0309-01	1.5 & 1.5	5	
!pH <2: Yes : : : :								**Prepared By**: PO1
B3F0436-MSD1	06/14/23 11:50	5	5	3060539 & 3060555	23F0309-01	1.5 & 1.5	5	
!pH <2: Yes : : : :								**Prepared By**: PO1
23F0196-01 A	06/14/23 12:08	5	5				5	
!pH <2: No : : : :								**Prepared By**: PO1

Special Analytes: 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichlorobenzene-d4, 1,2-Dichloroethane, 1,2-Dichloroethane-d4, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, 1,4-Dichlorobenzene-d4, 1,4-Difluorobenzene, 2,2-Dichloropropane, 2-Butanone, 2-Chlorotoluene, 2-Hexanone, 4-Bromofluorobenzene, 4-Chlorotoluene, 4-Isopropyltoluene, 4-Methyl-2-pentanone, Acetone, Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chlorobenzene-d5, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Dibromochloromethane, Dibromofluoromethane, Dibromomethane, Dichlorodifluoromethane, Ethylbenzene, Fluorobenzene, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, Methyl tert-butyl ether, Methylene chloride, Naphthalene, n-Butylbenzene, n-Propylbenzene, o-Xylene, Pentafluorobenzene, sec-Butylbenzene, Styrene, tert-Butylbenzene, Tetrachloroethene, Toluene, Toluene-d8, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride

PREPARATION BENCH SHEET
MSVOA

Print Date/Time: 06/15/2023

B3F0436

(Continued)

Matrix: Water

Prepared using: MSVOA - 5030_W

Analyses

8260_DoD
8260B_VOC_LIBRARY_SEARCH

Surrogate Solution(s)

2090775 Working Surrogate (purged)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0196-02 B	06/14/23 12:08	5	5				5	

!pH <2: Yes : : : :

Prepared By: PO1

Special Analytes: 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichlorobenzene-d4, 1,2-Dichloroethane, 1,2-Dichloroethane-d4, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, 1,4-Dichlorobenzene-d4, 1,4-Difluorobenzene, 2,2-Dichloropropane, 2-Butanone, 2-Chlorotoluene, 2-Hexanone, 4-Bromofluorobenzene, 4-Chlorotoluene, 4-Isopropyltoluene, 4-Methyl-2-pentanone, Acetone, Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chlorobenzene-d5, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Dibromochloromethane, Dibromofluoromethane, Dibromomethane, Dichlorodifluoromethane, Ethylbenzene, Fluorobenzene, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, Methyl tert-butyl ether, Methylene chloride, Naphthalene, n-Butylbenzene, n-Propylbenzene, o-Xylene, Pentafluorobenzene, sec-Butylbenzene, Styrene, tert-Butylbenzene, Tetrachloroethene, Toluene, Toluene-d8, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride

PREPARATION BENCH SHEET
MSVOA

Print Date/Time: 06/15/2023

B3F0436

(Continued)

Matrix: Water

Prepared using: MSVOA - 5030_W

Analyses

8260_DoD
8260B_VOC_LIBRARY_SEARCH

Surrogate Solution(s)

2090775 Working Surrogate (purged)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0196-04 B	06/14/23 12:08	5	5				5	

!pH <2: Yes : : : :

Prepared By: PO1

Special Analytes: 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichlorobenzene-d4, 1,2-Dichloroethane, 1,2-Dichloroethane-d4, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, 1,4-Dichlorobenzene-d4, 1,4-Difluorobenzene, 2,2-Dichloropropane, 2-Butanone, 2-Chlorotoluene, 2-Hexanone, 4-Bromofluorobenzene, 4-Chlorotoluene, 4-Isopropyltoluene, 4-Methyl-2-pentanone, Acetone, Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chlorobenzene-d5, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Dibromochloromethane, Dibromofluoromethane, Dibromomethane, Dichlorodifluoromethane, Ethylbenzene, Fluorobenzene, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, Methyl tert-butyl ether, Methylene chloride, Naphthalene, n-Butylbenzene, n-Propylbenzene, o-Xylene, Pentafluorobenzene, sec-Butylbenzene, Styrene, tert-Butylbenzene, Tetrachloroethene, Toluene, Toluene-d8, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride

PREPARATION BENCH SHEET
MSVOA

Print Date/Time: 06/15/2023

B3F0436

(Continued)

Matrix: Water

Prepared using: MSVOA - 5030_W

Analyses

8260_DoD
8260B_VOC_LIBRARY_SEARCH

Surrogate Solution(s)

2090775 Working Surrogate (purged)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0196-05 B	06/14/23 12:08	5	5				5	

!pH <2: Yes : : : :

Prepared By: PO1

Special Analytes: 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichlorobenzene-d4, 1,2-Dichloroethane, 1,2-Dichloroethane-d4, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, 1,4-Dichlorobenzene-d4, 1,4-Difluorobenzene, 2,2-Dichloropropane, 2-Butanone, 2-Chlorotoluene, 2-Hexanone, 4-Bromofluorobenzene, 4-Chlorotoluene, 4-Isopropyltoluene, 4-Methyl-2-pentanone, Acetone, Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chlorobenzene-d5, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Dibromochloromethane, Dibromofluoromethane, Dibromomethane, Dichlorodifluoromethane, Ethylbenzene, Fluorobenzene, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, Methyl tert-butyl ether, Methylene chloride, Naphthalene, n-Butylbenzene, n-Propylbenzene, o-Xylene, Pentafluorobenzene, sec-Butylbenzene, Styrene, tert-Butylbenzene, Tetrachloroethene, Toluene, Toluene-d8, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride

PREPARATION BENCH SHEET
MSVOA

Print Date/Time: 06/15/2023

B3F0436

(Continued)

Matrix: Water

Prepared using: MSVOA - 5030_W

Analyses

8260_DoD
8260B_VOC_LIBRARY_SEARCH

Surrogate Solution(s)

2090775 Working Surrogate (purged)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0196-06 C	06/14/23 12:08	5	5				5	

!pH <2: Yes : : : :

Prepared By: PO1

Special Analytes: 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichlorobenzene-d4, 1,2-Dichloroethane, 1,2-Dichloroethane-d4, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, 1,4-Dichlorobenzene-d4, 1,4-Difluorobenzene, 2,2-Dichloropropane, 2-Butanone, 2-Chlorotoluene, 2-Hexanone, 4-Bromofluorobenzene, 4-Chlorotoluene, 4-Isopropyltoluene, 4-Methyl-2-pentanone, Acetone, Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chlorobenzene-d5, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Dibromochloromethane, Dibromofluoromethane, Dibromomethane, Dichlorodifluoromethane, Ethylbenzene, Fluorobenzene, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, Methyl tert-butyl ether, Methylene chloride, Naphthalene, n-Butylbenzene, n-Propylbenzene, o-Xylene, Pentafluorobenzene, sec-Butylbenzene, Styrene, tert-Butylbenzene, Tetrachloroethene, Toluene, Toluene-d8, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride

PREPARATION BENCH SHEET
MSVOA

Print Date/Time: 06/15/2023

B3F0436

(Continued)

Matrix: Water

Prepared using: MSVOA - 5030_W

Analyses

8260_DoD
8260B_VOC_LIBRARY_SEARCH

Surrogate Solution(s)

2090775 Working Surrogate (purged)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0196-07 A	06/14/23 12:08	5	5				5	

!pH <2: Yes : : : :

Prepared By: PO1

Special Analytes: 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichlorobenzene-d4, 1,2-Dichloroethane, 1,2-Dichloroethane-d4, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, 1,4-Dichlorobenzene-d4, 1,4-Difluorobenzene, 2,2-Dichloropropane, 2-Butanone, 2-Chlorotoluene, 2-Hexanone, 4-Bromofluorobenzene, 4-Chlorotoluene, 4-Isopropyltoluene, 4-Methyl-2-pentanone, Acetone, Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chlorobenzene-d5, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Dibromochloromethane, Dibromofluoromethane, Dibromomethane, Dichlorodifluoromethane, Ethylbenzene, Fluorobenzene, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, Methyl tert-butyl ether, Methylene chloride, Naphthalene, n-Butylbenzene, n-Propylbenzene, o-Xylene, Pentafluorobenzene, sec-Butylbenzene, Styrene, tert-Butylbenzene, Tetrachloroethene, Toluene, Toluene-d8, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride

PREPARATION BENCH SHEET
MSVOA

Print Date/Time: 06/15/2023

B3F0436

(Continued)

Matrix: Water

Prepared using: MSVOA - 5030_W

Analyses

8260_DoD
8260B_VOC_LIBRARY_SEARCH

Surrogate Solution(s)

2090775 Working Surrogate (purged)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0196-08 C	06/14/23 12:08	5	5				5	

!pH <2: Yes : : : :

Prepared By: PO1

Special Analytes: 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichlorobenzene-d4, 1,2-Dichloroethane, 1,2-Dichloroethane-d4, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, 1,4-Dichlorobenzene-d4, 1,4-Difluorobenzene, 2,2-Dichloropropane, 2-Butanone, 2-Chlorotoluene, 2-Hexanone, 4-Bromofluorobenzene, 4-Chlorotoluene, 4-Isopropyltoluene, 4-Methyl-2-pentanone, Acetone, Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chlorobenzene-d5, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Dibromochloromethane, Dibromofluoromethane, Dibromomethane, Dichlorodifluoromethane, Ethylbenzene, Fluorobenzene, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, Methyl tert-butyl ether, Methylene chloride, Naphthalene, n-Butylbenzene, n-Propylbenzene, o-Xylene, Pentafluorobenzene, sec-Butylbenzene, Styrene, tert-Butylbenzene, Tetrachloroethene, Toluene, Toluene-d8, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride

PREPARATION BENCH SHEET
MSVOA

Print Date/Time: 06/15/2023

B3F0436

(Continued)

Matrix: Water

Prepared using: MSVOA - 5030_W

Analyses

8260_DoD
8260B_VOC_LIBRARY_SEARCH

Surrogate Solution(s)

2090775 Working Surrogate (purged)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0196-09 C	06/14/23 12:08	5	5				5	

!pH <2: Yes : : : :

Prepared By: PO1

Special Analytes: 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichlorobenzene-d4, 1,2-Dichloroethane, 1,2-Dichloroethane-d4, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, 1,4-Dichlorobenzene-d4, 1,4-Difluorobenzene, 2,2-Dichloropropane, 2-Butanone, 2-Chlorotoluene, 2-Hexanone, 4-Bromofluorobenzene, 4-Chlorotoluene, 4-Isopropyltoluene, 4-Methyl-2-pentanone, Acetone, Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chlorobenzene-d5, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Dibromochloromethane, Dibromofluoromethane, Dibromomethane, Dichlorodifluoromethane, Ethylbenzene, Fluorobenzene, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, Methyl tert-butyl ether, Methylene chloride, Naphthalene, n-Butylbenzene, n-Propylbenzene, o-Xylene, Pentafluorobenzene, sec-Butylbenzene, Styrene, tert-Butylbenzene, Tetrachloroethene, Toluene, Toluene-d8, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride

PREPARATION BENCH SHEET
MSVOA

Print Date/Time: 06/15/2023

B3F0436

(Continued)

Matrix: Water

Prepared using: MSVOA - 5030_W

Analyses

8260_DoD
8260B_VOC_LIBRARY_SEARCH

Surrogate Solution(s)

2090775 Working Surrogate (purged)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0196-10 C	06/14/23 12:08	5	5				5	

!pH <2: Yes : : : :

Prepared By: PO1

Special Analytes: 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichlorobenzene-d4, 1,2-Dichloroethane, 1,2-Dichloroethane-d4, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, 1,4-Dichlorobenzene-d4, 1,4-Difluorobenzene, 2,2-Dichloropropane, 2-Butanone, 2-Chlorotoluene, 2-Hexanone, 4-Bromofluorobenzene, 4-Chlorotoluene, 4-Isopropyltoluene, 4-Methyl-2-pentanone, Acetone, Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chlorobenzene-d5, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Dibromochloromethane, Dibromofluoromethane, Dibromomethane, Dichlorodifluoromethane, Ethylbenzene, Fluorobenzene, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, Methyl tert-butyl ether, Methylene chloride, Naphthalene, n-Butylbenzene, n-Propylbenzene, o-Xylene, Pentafluorobenzene, sec-Butylbenzene, Styrene, tert-Butylbenzene, Tetrachloroethene, Toluene, Toluene-d8, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride

PREPARATION BENCH SHEET
MSVOA

Print Date/Time: 06/15/2023

B3F0436

(Continued)

Matrix: Water

Prepared using: MSVOA - 5030_W

Analyses

8260_DoD
8260B_VOC_LIBRARY_SEARCH

Surrogate Solution(s)

2090775 Working Surrogate (purged)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0196-11 C	06/14/23 12:08	5	5				5	

!pH <2: Yes : : : :

Prepared By: PO1

Special Analytes: 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichlorobenzene-d4, 1,2-Dichloroethane, 1,2-Dichloroethane-d4, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, 1,4-Dichlorobenzene-d4, 1,4-Difluorobenzene, 2,2-Dichloropropane, 2-Butanone, 2-Chlorotoluene, 2-Hexanone, 4-Bromofluorobenzene, 4-Chlorotoluene, 4-Isopropyltoluene, 4-Methyl-2-pentanone, Acetone, Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chlorobenzene-d5, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Dibromochloromethane, Dibromofluoromethane, Dibromomethane, Dichlorodifluoromethane, Ethylbenzene, Fluorobenzene, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, Methyl tert-butyl ether, Methylene chloride, Naphthalene, n-Butylbenzene, n-Propylbenzene, o-Xylene, Pentafluorobenzene, sec-Butylbenzene, Styrene, tert-Butylbenzene, Tetrachloroethene, Toluene, Toluene-d8, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride

PREPARATION BENCH SHEET
MSVOA

Print Date/Time: 06/15/2023

B3F0436

(Continued)

Matrix: Water

Prepared using: MSVOA - 5030_W

Analyses

8260_DoD
8260B_VOC_LIBRARY_SEARCH

Surrogate Solution(s)

2090775 Working Surrogate (purged)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0196-12 C	06/14/23 12:08	5	5				5	

!pH <2: Yes : : : :

Prepared By: PO1

Special Analytes: 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichlorobenzene-d4, 1,2-Dichloroethane, 1,2-Dichloroethane-d4, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, 1,4-Dichlorobenzene-d4, 1,4-Difluorobenzene, 2,2-Dichloropropane, 2-Butanone, 2-Chlorotoluene, 2-Hexanone, 4-Bromofluorobenzene, 4-Chlorotoluene, 4-Isopropyltoluene, 4-Methyl-2-pentanone, Acetone, Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chlorobenzene-d5, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Dibromochloromethane, Dibromofluoromethane, Dibromomethane, Dichlorodifluoromethane, Ethylbenzene, Fluorobenzene, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, Methyl tert-butyl ether, Methylene chloride, Naphthalene, n-Butylbenzene, n-Propylbenzene, o-Xylene, Pentafluorobenzene, sec-Butylbenzene, Styrene, tert-Butylbenzene, Tetrachloroethene, Toluene, Toluene-d8, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride

PREPARATION BENCH SHEET
MSVOA

Print Date/Time: 06/15/2023

B3F0436

(Continued)

Matrix: Water

Prepared using: MSVOA - 5030_W

Analyses

8260_DoD
8260B_VOC_LIBRARY_SEARCH

Surrogate Solution(s)

2090775 Working Surrogate (purged)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0309-01 A	06/14/23 12:08	5	5				5	

!pH <2: Yes : : : :

Prepared By: PO1

Special Analytes: 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichlorobenzene-d4, 1,2-Dichloroethane, 1,2-Dichloroethane-d4, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, 1,4-Dichlorobenzene-d4, 1,4-Difluorobenzene, 2,2-Dichloropropane, 2-Butanone, 2-Chlorotoluene, 2-Hexanone, 4-Bromofluorobenzene, 4-Chlorotoluene, 4-Isopropyltoluene, 4-Methyl-2-pentanone, Acetone, Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chlorobenzene-d5, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Dibromochloromethane, Dibromofluoromethane, Dibromomethane, Dichlorodifluoromethane, Ethylbenzene, Fluorobenzene, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, Methyl tert-butyl ether, Methylene chloride, Naphthalene, n-Butylbenzene, No TICs found, n-Propylbenzene, o-Xylene, Pentafluorobenzene, sec-Butylbenzene, Styrene, tert-Butylbenzene, Tetrachloroethene, Toluene, Toluene-d8, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride

PREPARATION BENCH SHEET
MSVOA

Print Date/Time: 06/15/2023

B3F0436

(Continued)

Matrix: Water

Prepared using: MSVOA - 5030_W

Analyses

8260_DoD
8260B_VOC_LIBRARY_SEARCH

Surrogate Solution(s)

2090775 Working Surrogate (purged)

Lab Number	Prepared	Initial (ml)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surr	Comments
23F0309-02 A	06/14/23 12:08	5	5				5	

!pH <2: Yes : : : :

Prepared By: PO1

Special Analytes: 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichlorobenzene-d4, 1,2-Dichloroethane, 1,2-Dichloroethane-d4, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, 1,4-Dichlorobenzene-d4, 1,4-Difluorobenzene, 2,2-Dichloropropane, 2-Butanone, 2-Chlorotoluene, 2-Hexanone, 4-Bromofluorobenzene, 4-Chlorotoluene, 4-Isopropyltoluene, 4-Methyl-2-pentanone, Acetone, Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chlorobenzene-d5, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Dibromochloromethane, Dibromofluoromethane, Dibromomethane, Dichlorodifluoromethane, Ethylbenzene, Fluorobenzene, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, Methyl tert-butyl ether, Methylene chloride, Naphthalene, n-Butylbenzene, No TICs found, n-Propylbenzene, o-Xylene, Pentafluorobenzene, sec-Butylbenzene, Styrene, tert-Butylbenzene, Tetrachloroethene, Toluene, Toluene-d8, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride

Spiking Solution(s)

3060539 ICV/LCS 50 PPM
3060555 ICV/LCS Gases & 2-CVE 50 PPM

Reagents / Equipment

Standard	Description	LotNum

Protected by MLB 7/6/21

VSS

Sample#	mL of sample used	Initial weight	Final weight	Result
Blank	500	6.8233	6.8214	-3.80
LCS	100	6.8997	7.0110	1113.00
1	100	7.1353	6.9312	-2041.00
2	100	7.1053	6.9175	-1878.00
3	100	7.1214	6.8866	-2348.00
4				#DIV/0!
5				#DIV/0!
6				#DIV/0!
7				#DIV/0!
8				#DIV/0!
9				#DIV/0!
10				#DIV/0!
11				#DIV/0!
12				#DIV/0!
13				#DIV/0!
14				#DIV/0!
15				#DIV/0!
16				#DIV/0!
17				#DIV/0!
18				#DIV/0!
19				#DIV/0!
20				#DIV/0!
21				#DIV/0!
22				#DIV/0!

Verified 7-12-21, MG

ANALYSIS SEQUENCE SUMMARY

Volatile Organic Compounds by GC/MS

Client: HDR
Project: Longhorn AAP

Sequence: S3E0428 Instrument: G2
Calibration: EE30097

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune (STD # 3020394)	S3E0428-TUN1	G2230524004.D	05/24/23 16:45
Cal Standard (STD # 3050774)	S3E0428-CAL1	G2230524005.D	05/24/23 17:09
Cal Standard (STD # 3050773)	S3E0428-CAL2	G2230524006.D	05/24/23 17:33
Cal Standard (STD # 3050772)	S3E0428-CAL3	G2230524007.D	05/24/23 17:57
Cal Standard (STD # 3050771)	S3E0428-CAL4	G2230524008.D	05/24/23 18:22
Cal Standard (STD # 3050770)	S3E0428-CAL5	G2230524009.D	05/24/23 18:46
Cal Standard (STD # 3050769)	S3E0428-CAL6	G2230524010.D	05/24/23 19:10
Cal Standard (STD # 3050768)	S3E0428-CAL7	G2230524011.D	05/24/23 19:34
Cal Standard (STD # 3050767)	S3E0428-CAL8	G2230524012.D	05/24/23 19:58

ANALYSIS SEQUENCE SUMMARY

Volatile Organic Compounds by GC/MS

Client: HDR
Project: Longhorn AAP

Sequence: S3E0429 Instrument: G2
Calibration: EE30097

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune (STD # 3020394)	S3E0429-TUN1	G2230525004.D	05/25/23 13:24
Cal Standard (STD # 3050766)	S3E0429-CAL1	G2230525005.D	05/25/23 13:48
Cal Standard (STD # 3050765)	S3E0429-CAL2	G2230525006.D	05/25/23 14:12
Initial Cal Check (STD # 3050775)	S3E0429-ICV1	G2230525008.D	05/25/23 15:01

ANALYSIS SEQUENCE SUMMARY

Volatile Organic Compounds by GC/MS

Client: HDR
Project: Longhorn AAP

Sequence: S3F0256 Instrument: G2
Calibration: EE30097

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune (STD # 3020394)	S3F0256-TUN1	G2230614004.D	06/14/23 09:48
Calibration Check (STD # 3060637)	S3F0256-CCV1	G2230614005.D	06/14/23 10:13
LCS	B3F0436-BS1	G2230614006.D	06/14/23 10:38
Blank	B3F0436-BLK1	G2230614009.D	06/14/23 11:52
Matrix Spike	B3F0436-MS1	G2230614010.D	06/14/23 12:16
Matrix Spike Dup	B3F0436-MSD1	G2230614011.D	06/14/23 12:41
6247WW36	23F0196-01	G2230614013.D	06/14/23 13:30
6247WW35	23F0196-02	G2230614014.D	06/14/23 13:55
6247WW32	23F0196-04	G2230614015.D	06/14/23 14:20
6247WW47	23F0196-05	G2230614016.D	06/14/23 14:45
6347WW44	23F0196-06	G2230614017.D	06/14/23 15:10
6347WW21	23F0196-07	G2230614018.D	06/14/23 15:35
6447WW60	23F0196-09	G2230614019.D	06/14/23 15:59
6447WW28	23F0196-10	G2230614020.D	06/14/23 16:25
6547WW03	23F0196-12	G2230614021.D	06/14/23 16:49
63LHSMWW45	23F0196-08	G2230614022.D	06/14/23 17:14
65Trip3	23F0196-11	G2230614023.D	06/14/23 17:39
Closing Cal Check (STD # 3060637)	S3F0256-HCV1	G2230614025.D	06/14/23 18:28
Closing Cal Check (STD # 3060637)	S3F0256-HCV2	G2230614026.D	06/14/23 18:53
Closing Cal Check (STD # 3060637)	S3F0256-HCV3	G2230614027.D	06/14/23 19:17

Manual Integration and Raw Data Qualifiers and Definitions

H	Only half of the peak was integrated. A manual integration was performed to include the whole peak.
I	The peak was mis-identified. A manual integration was performed to pick the correct peak.
N	The peak was not integrated. A manual integration was performed to integrate the correct peak.
T	The peak was integrated with excessive tailing. A manual integration was performed to eliminate the excessive tailing.
C	The peak was cut off too soon. A manual integration was performed to include the rest of the peak.
B	The baseline was drawn incorrectly. A manual integration was performed to correct the baseline.
M	Two or more peaks were merged. A manual integration was performed to separate the peaks
d	The peak was deleted because it was mis-identified.

June 13, 2023 Service Request No:E2300531

Tim Witrzek
Environmental Monitoring and Technologies, Inc.
509 N 3rd avenue
Morton Grove, IL 60016

Laboratory Results for: LHAAP-47

Dear Tim,

Enclosed are the results of the sample(s) submitted to our laboratory June 06, 2023
For your reference, these analyses have been assigned our service request number **E2300531.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2188. You may also contact me via email at James.Guin@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

James Guin

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston Specialties Laboratory
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

ALS Environmental

Client:	Environmental Monitoring and Technologies,	**Service Request No.:**	E2300531
Project:	LHAAP-47	**Date Received:**	06/06/23
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Twelve samples were received for analysis at ALS Environmental in Houston on 03/07/23.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2300284: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: Environmental Monitoring and Technologies, Inc. **Service Request:**E2300531
Project: LHAAP-47/10355063 Task 3.1

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2300531-001	53147WW29	5/31/2023	1345
E2300531-002	6247WW36	6/2/2023	1210
E2300531-003	6247WW35	6/2/2023	1455
E2300531-004	6347WW49	6/2/2023	0945
E2300531-005	6247WW32	6/2/2023	1145
E2300531-006	6247WW47	6/2/2023	1425
E2300531-007	6347WW44	6/3/2023	1055
E2300531-008	6347WW21	6/3/2023	1220
E2300531-009	63LHSMW45	6/3/2023	1430
E2300531-010	6447WW60	6/4/2023	1000
E2300531-011	6447WW28	6/4/2023	1205
E2300531-012	6547WW03	6/5/2023	1130

Service Request Summary

Folder #: **E2300531**
Client Name: Environmental Monitoring and Technologies, Inc.
Project Name: LHAAP-47
Project Number: 10355063 Task 3.1

Report To: Tim Witrzek
Environmental Monitoring and Technologies, Inc.
509 N 3rd avenue
Morton Grove, IL 60016
USA
Phone Number: 847-774-2873
Cell Number:
Fax Number:
E-mail: twitrzek@emt.com

Project Chemist: James Guin
Originating Lab: HOUSTON

Logged By: JGUIN
Date Received: 06/06/23
Internal Due Date: 6/20/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y

Report to MDL?: Y
P.O. Number:
EDD: No EDD Specified

12 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	Semivoa GCMS: ClO4 DOD/6850
E2300531-001	53147WW29	Water	05/31/23 1345	II
E2300531-002	6247WW36	Water	06/02/23 1210	II
E2300531-003	6247WW35	Water	06/02/23 1455	II
E2300531-004	6347WW49	Water	06/02/23 0945	II
E2300531-005	6247WW32	Water	06/02/23 1145	II
E2300531-006	6247WW47	Water	06/02/23 1425	II
E2300531-007	6347WW44	Water	06/03/23 1055	II
E2300531-008	6347WW21	Water	06/03/23 1220	II
E2300531-009	63LHSMW45	Water	06/03/23 1430	II
E2300531-010	6447WW60	Water	06/04/23 1000	II
E2300531-011	6447WW28	Water	06/04/23 1205	II
E2300531-012	6547WW03	Water	06/05/23 1130	II

Service Request Summary

Folder #:	**E2300531**
Client Name:	Environmental Monitoring and Technologies, Inc.
Project Name:	LHAAP-47
Project Number:	10355063 Task 3.1
Report To:	Tim Witrzek Environmental Monitoring and Technologies, Inc. 509 N 3rd avenue Morton Grove, IL 60016 USA
Phone Number:	847-774-2873
Cell Number:	
Fax Number:	
E-mail:	twitrzek@emt.com

Project Chemist:	James Guin
Originating Lab:	HOUSTON
Logged By:	JGUIN
Date Received:	06/06/23
Internal Due Date:	6/20/2023
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	
EDD:	No EDD Specified

12 120 mL-Plastic Bottle Natural WM Unpreserved

Location: EHRMS-AirArch 1

Pressure Gas:

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.

Data Qualifiers

Lab Standard

M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793_2024	5/27/2024
Arkansas Department of Environmental Quality	88-00356	3/27/2024
Department of Defense	L22-90	3/31/2024
Department of Defense	L23-358	5/31/2025
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028-2023	12/31/2023
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Minnesota Department of Health	2368363	12/31/2023
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2024
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209423	4/24/2024
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2024
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	TN04016-2023	4/30/2024
Texas Commision on Environmental Quality	T104704231-23-30	4/30/2024
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Ecology	C819-22	11/14/2023

Chain of Custody

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Chain of Custody Form

Page 1 of 2

COC ID: 289166

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	LHAAP-47	A	SW6850 Perchlorate
Work Order		Project Number	10355063 TASK 31	B	
Company Name	Environmental Monitoring and Tech	Bill To Company	Environmental Monitoring and Tech	C	
Send Report To	Tim Witrzek	Invoice Attn	Tim Witrzek	D	
Address	509 N 3rd Ave	Address	509 N 3rd Ave	E	
				F	
City/State/Zip	Des Plaines, IL 60016	City/State/Zip	Des Plaines IL 60016	G	
Phone	(847) 324-3320	Phone	(847) 967-6666	H	
Fax	(847) 967-6735	Fax	(847) 967-6735	I	
e-Mail Address	twitrzek@emt.com	e-Mail Address	twitrzek@emt.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	5314 7WW 29	5/31/23	1345	GW	8	1											
2	6247 WW 36	6/2/23	1216														
3	6247 WW 35	6/2/23	1455														
4	6247 WW 49	6/2/23	0945														
5	6247 WW 32	6/2/23	1145														
6	6247 WW 47	6/2/23	1425														
7	6347 WW 44	6/3/23	1055														
8	6347 WW 21	6/3/23	1220														
9	63 CHSMW 45	6/3/23	1430														
10	6447 WW 60	6/4/23	0800														

Sampler(s) Please Print & Sign: TRAVIS RITTER

Shipment Method: FED EX

Required Turnaround Time: (Check Box) [X] STD 10 Wk Days [ ] 5 Wk Days [ ] 2 Wk Days [ ] 24 Hour [ ] Other

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
TRAVIS RITTER	6/5/23	1700	FED EX
Relinquished by:	Date:	Time:	Received by (Laboratory):
			6/6/23 09:30
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.
Fed	1.6C
	2.0
	4.31
	[illegible]

QC Package: (Check One Box Below)

- [X] Level II Std QC
- [ ] Level III Std QC/Raw Data
- [ ] Level IV SW846/CLP
- [ ] Other
- [ ] TRRP Checklist
- [ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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Chain of Custody Form

Page 2 of 2

COC ID: 289167

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	LHAAP-47	A	SW6850 Perchlorate
Work Order		Project Number	103550 63 TASK 3.1	B	
Company Name	Environmental Monitoring and Tech	Bill To Company	Environmental Monitoring and Tech	C	
Send Report To	Tim Witrzek	Invoice Attn	Tim Witrzek	D	
Address	509 N 3rd Ave	Address	509 N 3rd Ave	E	
				F	
City/State/Zip	Des Plaines , IL 60016	City/State/Zip	Des Plaines IL 60016	G	
Phone	(847) 324-3320	Phone	(847) 967-6666	H	
Fax	(847) 967-6735	Fax	(847) 967-6735	I	
e-Mail Address	twitrzek@emt.com	e-Mail Address	twitrzek@emt.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	6447WW28	6/4/23	1205	GW	8	1											
2	6547WW03	6/5/23	1130	GW	8	1											
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: TRAVIS RITTER

Shipment Method: FED EX

Required Turnaround Time: (Check Box) [ ] Other _____ [X] STD 10 Wk Days [ ] 5 Wk Days [ ] 2 Wk Days [ ] 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
TRAVIS RITTER	6/5/23	1700	FED EX
Relinquished by:	Date:	Time:	Received by (Laboratory):
			6/6/23 08:30
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)

- [X] Level II Std QC
- [ ] Level III Std QC/Raw Data
- [ ] Level IV SW846/CLP
- [ ] Other
- [ ] TRRP Checklist
- [ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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Cooler Receipt Form

Project Chemist JG

Client/Project EMT

Thermometer ID IR31

Date/Time Received: 06/06/23 0930 Initials: JC

Date/Time Logged in: 06/07/23 0740 Initials JG

1. Method of delivery: ○ US Mail ✓ Fed Ex ○ UPS ○ DHL ○ Courier ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No
   Were they intact? ○ Yes ○ No ✓ N/A
   Were they signed and dated? ○ Yes ○ No ✓ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
3992 3508 2563		06/06/23	0930	PG	2.6	☑
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

HS-HRMSCoolerReceipt R1.0

ALS Environmental - Houston HRMS

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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston Specialties Laboratory
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 421118 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 6/9/23 11:25

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2300531-001	53147WW29	.01	6850/ClO4 DOD			Water	10mL	
2	E2300531-002	6247WW36	.01	6850/ClO4 DOD			Water	10mL	
3	E2300531-003	6247WW35	.01	6850/ClO4 DOD			Water	10mL	
4	E2300531-004	6347WW49	.01	6850/ClO4 DOD			Water	10mL	
5	E2300531-005	6247WW32	.01	6850/ClO4 DOD			Water	10mL	
6	E2300531-006	6247WW47	.01	6850/ClO4 DOD			Water	10mL	
7	E2300531-007	6347WW44	.01	6850/ClO4 DOD			Water	10mL	
8	E2300531-008	6347WW21	.01	6850/ClO4 DOD			Water	10mL	
9	E2300531-009	63LHSMW45	.01	6850/ClO4 DOD			Water	10mL	
10	E2300531-010	6447WW60	.01	6850/ClO4 DOD			Water	10mL	
11	E2300531-011	6447WW28	.01	6850/ClO4 DOD			Water	10mL	
12	E2300531-012	6547WW03	.01	6850/ClO4 DOD			Water	10mL	
13	EQ2300284-01	MB		6850/ClO4 DOD			Liquid	10mL	
14	EQ2300284-02	LCS		6850/ClO4 DOD			Liquid	10mL	
15	EQ2300284-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
16	K2306261-001	LGAC-INF-060523	.01	6850/ClO4			Water	10mL	
17	K2306261-002	LGAC-INT1-060523	.01	6850/ClO4			Water	10mL	
18	K2306261-003	LGAC-INT2-060523	.01	6850/ClO4			Water	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 227236 Logbook Ref: Perchlorate (1st Source) Expires On: 07/31/2023

EQ2300284-02 1.00µL EQ2300284-03 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 227244 Logbook Ref: Perchlorate Internal Standard Expires On: 07/31/2023

E2300531-001	100.00µL	E2300531-002	100.00µL	E2300531-003	100.00µL	E2300531-004	100.00µL	E2300531-005	100.00µL	E2300531-006	100.00µL
E2300531-007	100.00µL	E2300531-008	100.00µL	E2300531-009	100.00µL	E2300531-010	100.00µL	E2300531-011	100.00µL	E2300531-012	100.00µL
EQ2300284-01	100.00µL	EQ2300284-02	100.00µL	EQ2300284-03	100.00µL	K2306261-001	100.00µL	K2306261-002	100.00µL	K2306261-003	100.00µL

Preparation Steps

Step: Preparation
Started: 6/9/23 11:25
Finished: 6/9/23 13:31
By: XMI
Comments

Preparation Information Benchsheet

Prep Run#: 421118
Team: Semivoa GCMS/XMI

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 6/9/23 11:25

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

Analytical Results

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www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Collected:**	5/31/23 1345
Sample Matrix:	Water	**Date Received:**	6/ 6/23
Sample Name:	53147WW29	**Units:**	µg/L
Lab Code:	E2300531-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/23	6/12/23 10:02	421118	807150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Collected:**	6/ 2/23 1210
Sample Matrix:	Water	**Date Received:**	6/ 6/23
Sample Name:	6247WW36	**Units:**	µg/L
Lab Code:	E2300531-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.126**		0.100	0.0500	0.0250	1	6/ 9/23	6/12/23 12:06	421118	807150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Collected:**	6/ 2/23 1455
Sample Matrix:	Water	**Date Received:**	6/ 6/23
Sample Name:	6247WW35	**Units:**	µg/L
Lab Code:	E2300531-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/23	6/12/23 12:11	421118	807150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Collected:**	6/ 2/23 0945
Sample Matrix:	Water	**Date Received:**	6/ 6/23
Sample Name:	6347WW49	**Units:**	µg/L
Lab Code:	E2300531-004	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/23	6/12/23 12:17	421118	807150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Collected:**	6/ 2/23 1145
Sample Matrix:	Water	**Date Received:**	6/ 6/23
Sample Name:	6247WW32	**Units:**	µg/L
Lab Code:	E2300531-005	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/23	6/12/23 12:23	421118	807150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Collected:**	6/ 2/23 1425
Sample Matrix:	Water	**Date Received:**	6/ 6/23
Sample Name:	6247WW47	**Units:**	µg/L
Lab Code:	E2300531-006	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.112**		0.100	0.0500	0.0250	1	6/ 9/23	6/12/23 12:29	421118	807150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Collected:**	6/ 3/23 1055
Sample Matrix:	Water	**Date Received:**	6/ 6/23
Sample Name:	6347WW44	**Units:**	µg/L
Lab Code:	E2300531-007	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/23	6/12/23 12:35	421118	807150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Collected:**	6/ 3/23 1220
Sample Matrix:	Water	**Date Received:**	6/ 6/23
Sample Name:	6347WW21	**Units:**	µg/L
Lab Code:	E2300531-008	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.155**		0.100	0.0500	0.0250	1	6/ 9/23	6/12/23 12:47	421118	807150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Collected:**	6/ 3/23 1430
Sample Matrix:	Water	**Date Received:**	6/ 6/23
Sample Name:	63LHSMW45	**Units:**	µg/L
Lab Code:	E2300531-009	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/23	6/12/23 12:53	421118	807150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Collected:**	6/ 4/23 1000
Sample Matrix:	Water	**Date Received:**	6/ 6/23
Sample Name:	6447WW60	**Units:**	µg/L
Lab Code:	E2300531-010	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0797**	J	0.100	0.0500	0.0250	1	6/ 9/23	6/12/23 12:58	421118	807150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Collected:**	6/ 4/23 1205
Sample Matrix:	Water	**Date Received:**	6/ 6/23
Sample Name:	6447WW28	**Units:**	µg/L
Lab Code:	E2300531-011	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/23	6/12/23 13:04	421118	807150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Collected:**	6/ 5/23 1130
Sample Matrix:	Water	**Date Received:**	6/ 6/23
Sample Name:	6547WW03	**Units:**	µg/L
Lab Code:	E2300531-012	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/23	6/12/23 13:10	421118	807150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2300284-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/23	6/12/23 09:45	421118	807150	

Accuracy & Precision

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QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Analyzed:**	6/12/23
Sample Matrix:	Water		

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	421118

	Lab Control Sample EQ2300284-02			Duplicate Lab Control Sample EQ2300284-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.106	0.100	106	0.0925	0.100	93	84 - 119	13	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300284-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.106**		0.100	0.0500	0.0250	1	6/ 9/23	6/12/23 09:51	421118	807150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300284-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0925**	J	0.100	0.0500	0.0250	1	6/ 9/23	6/12/23 09:57	421118	807150	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
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20230606-806642

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XM
2nd Review: GC

ICAL Date: 6/6/2023
Cal. Std. xp: 07/31/2023
ICAL ID: EC2300009

Mobile Phases : A:20mM ammonium acetate in water 32103045 **B:**Acetonitrile 226552

	Sample Name		File Name	Acquisition Method	Dilution	Comments	Date/Time
1	PERCHLORATE1		20230606-001	Perchlorate6850c.lcm	1x	227245	6/6/2023 10:49
2	PERCHLORATE2		20230606-002	Perchlorate6850c.lcm	1x	227246	6/6/2023 10:55
3	PERCHLORATE3		20230606-003	Perchlorate6850c.lcm	1x	227247	6/6/2023 11:01
4	PERCHLORATE4		20230606-004	Perchlorate6850c.lcm	1x	227248	6/6/2023 11:06
5	PERCHLORATE5		20230606-005	Perchlorate6850c.lcm	1x	227249	6/6/2023 11:12
6	PERCHLORATE6		20230606-006	Perchlorate6850c.lcm	1x	227250	6/6/2023 11:18
7	PERCHLORATE7		20230606-007	Perchlorate6850c.lcm	1x	227251	6/6/2023 11:24
8	PERCHLORATE8		20230606-008	Perchlorate6850c.lcm	1x	227252	6/6/2023 11:29
9	PERCHLORATE9		20230606-009	Perchlorate6850c.lcm	1x	227253	6/6/2023 11:35
10	PERCHLORATE10		20230606-010	Perchlorate6850c.lcm	1x	227254	6/6/2023 11:41
11	PERCHLORATEICV		20230606-011	Perchlorate6850c.lcm	1x	227256	6/6/2023 11:47
12	IB		20230606-012	Perchlorate6850c.lcm	1x		6/6/2023 11:52
13	LODV		20230606-013	Perchlorate6850c.lcm	1x	227501	6/6/2023 11:58
14	ICS		20230606-014	Perchlorate6850c.lcm	1x	32103024	6/6/2023 12:04
15	CCV		20230606-015	Perchlorate6850c.lcm	1x	227251	6/6/2023 12:16
16	EQ2300272-01		20230606-016	Perchlorate6850c.lcm	1x		6/6/2023 12:22
17	EQ2300272-02		20230606-017	Perchlorate6850c.lcm	1x		6/6/2023 12:27
18	EQ2300272-03		20230606-018	Perchlorate6850c.lcm	1x		6/6/2023 12:33
19	EQ2300273-01		20230606-019	Perchlorate6850c.lcm	1x		6/6/2023 12:39
20	EQ2300273-02		20230606-020	Perchlorate6850c.lcm	1x		6/6/2023 12:45
21	EQ2300273-03		20230606-021	Perchlorate6850c.lcm	1x		6/6/2023 12:50
22	E2300516-001		20230606-022	Perchlorate6850c.lcm	1x		6/6/2023 12:56
23	E2300516-002		20230606-023	Perchlorate6850c.lcm	1x		6/6/2023 13:02
24	E2300516-003		20230606-024	Perchlorate6850c.lcm	1x		6/6/2023 13:08
25	E2300516-004		20230606-025	Perchlorate6850c.lcm	1x		6/6/2023 13:13
26	CCV		20230606-026	Perchlorate6850c.lcm	1x	227251	6/6/2023 13:19
27	E2300516-005		20230606-027	Perchlorate6850c.lcm	1x		6/6/2023 13:25
28	E2300516-006		20230606-028	Perchlorate6850c.lcm	1x	DNU-CONFIRM PEAK	6/6/2023 13:31
29	E2300519-001		20230606-029	Perchlorate6850c.lcm	1x		6/6/2023 13:36
30	E2300519-002		20230606-030	Perchlorate6850c.lcm	5000x		6/6/2023 13:42
31	E2300519-003		20230606-031	Perchlorate6850c.lcm	5000x		6/6/2023 13:48
32	E2300519-004		20230606-032	Perchlorate6850c.lcm	1x		6/6/2023 13:54
33	EQ2300272-04		20230606-033	Perchlorate6850c.lcm	1x		6/6/2023 13:59
34	EQ2300272-05		20230606-034	Perchlorate6850c.lcm	1x		6/6/2023 14:05
35	E2300519-005		20230606-035	Perchlorate6850c.lcm	1x		6/6/2023 14:11
36	E2300519-006		20230606-036	Perchlorate6850c.lcm	1x		6/6/2023 14:17
37	CCV		20230606-037	Perchlorate6850c.lcm	1x		6/6/2023 14:23

Initial Calibration - Detailed Report

Calibration ID: EC2300009 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2300009-01	PERCHLORATE1	20230606-001	06/06/2023 10:49
02	EC2300009-02	PERCHLORATE2	20230606-002	06/06/2023 10:55
03	EC2300009-03	PERCHLORATE3	20230606-003	06/06/2023 11:01
04	EC2300009-04	PERCHLORATE4	20230606-004	06/06/2023 11:06
05	EC2300009-05	PERCHLORATE5	20230606-005	06/06/2023 11:12
06	EC2300009-06	PERCHLORATE6	20230606-006	06/06/2023 11:18
07	EC2300009-07	PERCHLORATE7	20230606-007	06/06/2023 11:24
08	EC2300009-08	PERCHLORATE8	20230606-008	06/06/2023 11:29
09	EC2300009-09	PERCHLORATE9	20230606-009	06/06/2023 11:35
10	EC2300009-10	PERCHLORATE10	20230606-010	06/06/2023 11:41

Analyte **Curve Fit** **Weighting**

Perchlorate **Average RF** **RSD = 3.738** **Average RF = 0.1827**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.201	02	0.5000	0.1818	03	0.7000	0.1758	04	1.0000	0.1836
05	2.0000	0.1782	06	5.0000	0.1799	07	10.0000	0.1808	08	20.0000	0.1834
09	30.0000	0.1812	10	50.0000	0.1815						

Analyte

Perchlorate RSE = 3.74

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.110	10.0	02	0.5000	0.498	-0.5	03	0.7000	0.673	-3.8
04	1.0000	1.00	0.5	05	2.0000	1.95	-2.5	06	5.0000	4.92	-1.5
07	10.0000	9.90	-1.0	08	20.0000	20.1	0.4	09	30.0000	29.7	-0.9
10	50.0000	49.7	-0.7								

Initial Calibration Verification Summary Report

Calibration ID:	EC2300009	**Instrument ID:**	E-LCMS-01
Datafile ID:	20230606-011	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2300009-11	T	Average RF	10	10.016	ng/mL	0.2	<= 15

Insight Report

Printed at 6/7/2023 10:10:58 AM

Method File: I:\LCMS01\DATA\20230606\20230606.lcm
Project File: I:\LCMS01\DATA\20230606\20230606.damlp

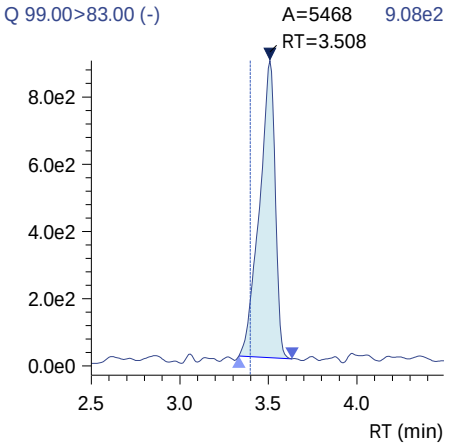
PERCHLORATE1

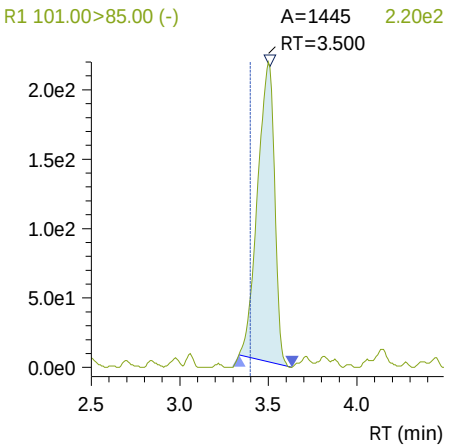
Sample ID: PERCHLORATE1
Date Acquired: 6/6/2023 10:49:38 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-001.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.508	5468	272033	0.1100	ng/mL	101.00 >85.00	26.42	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.499	272033	272033	1.0000	ng/mL	----	----	

Perchlorate

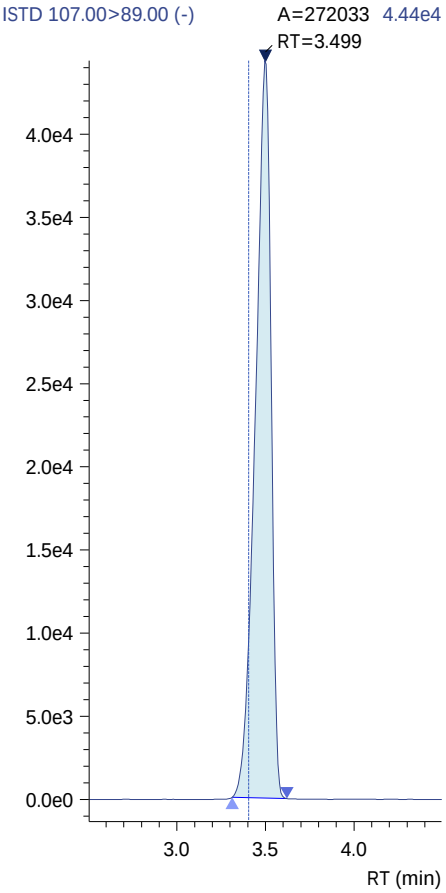
Conc 0.1100
R#1 26.42 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

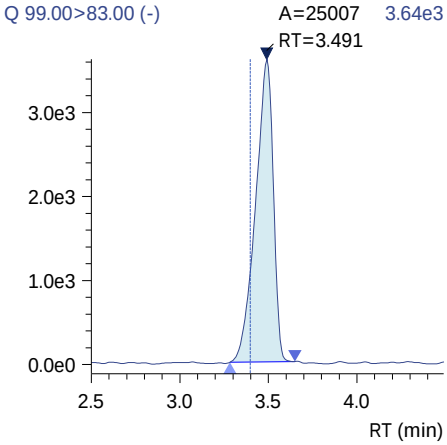
PERCHLORATE2

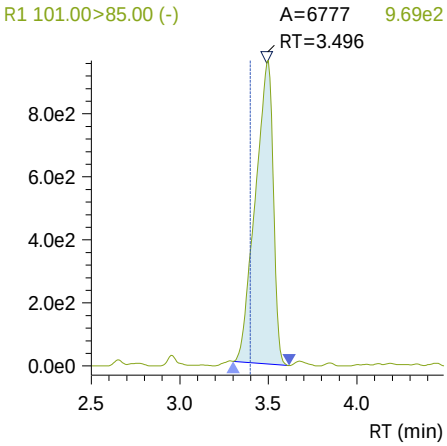
Sample ID: PERCHLORATE2
Date Acquired: 6/6/2023 10:55:23 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-002.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.491	25007	275033	0.4976	ng/mL	101.00 >85.00	27.10	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.486	275033	275033	1.0000	ng/mL	----	----	

Perchlorate

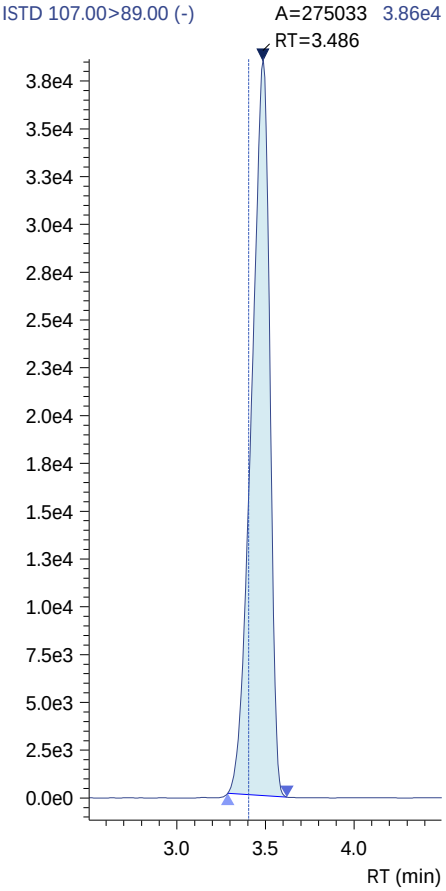
Conc 0.4976
R#1 27.10 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

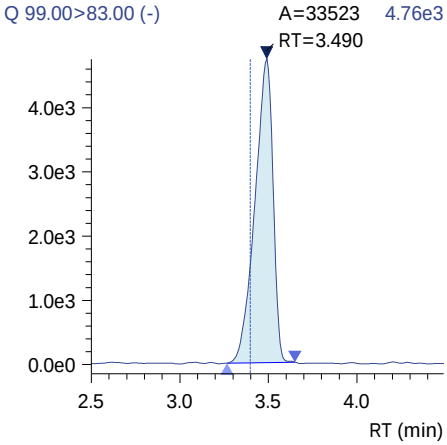
PERCHLORATE3

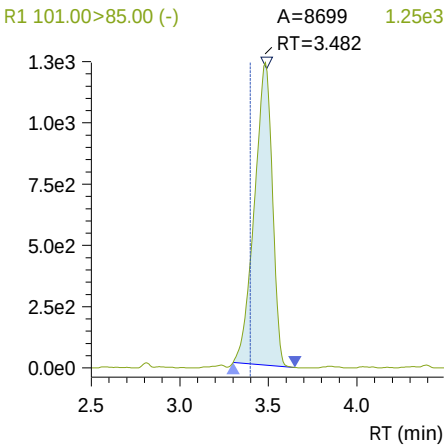
Sample ID: PERCHLORATE3
Date Acquired: 6/6/2023 11:01:08 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-003.lcd
Vial: 3 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.490	33523	272465	0.6733	ng/mL	101.00 >85.00	25.95	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.486	272465	272465	1.0000	ng/mL	----	----	

Perchlorate

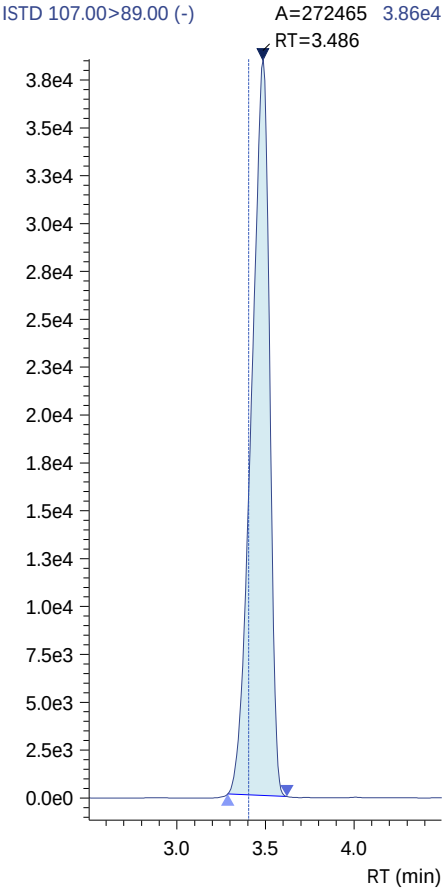
Conc 0.6733
R#1 25.95 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

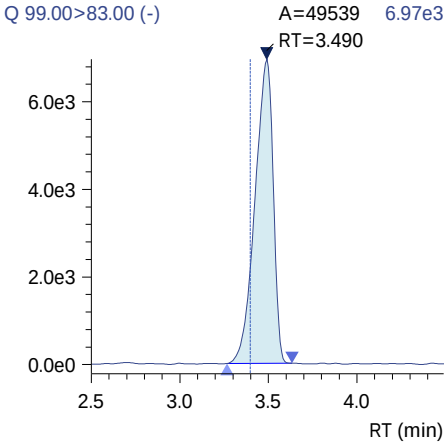
PERCHLORATE4

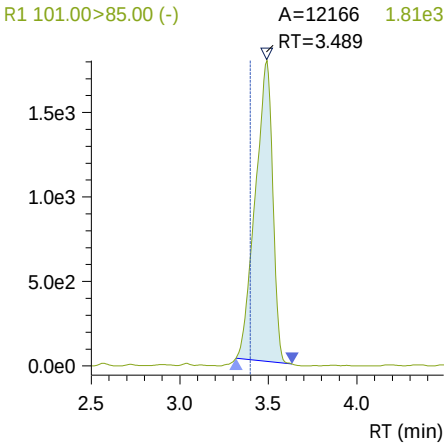
Sample ID: PERCHLORATE4
Date Acquired: 6/6/2023 11:06:52 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-004.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.490	49539	269886	1.0045	ng/mL	101.00 >85.00	24.56	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.486	269886	269886	1.0000	ng/mL	----	----	

Perchlorate

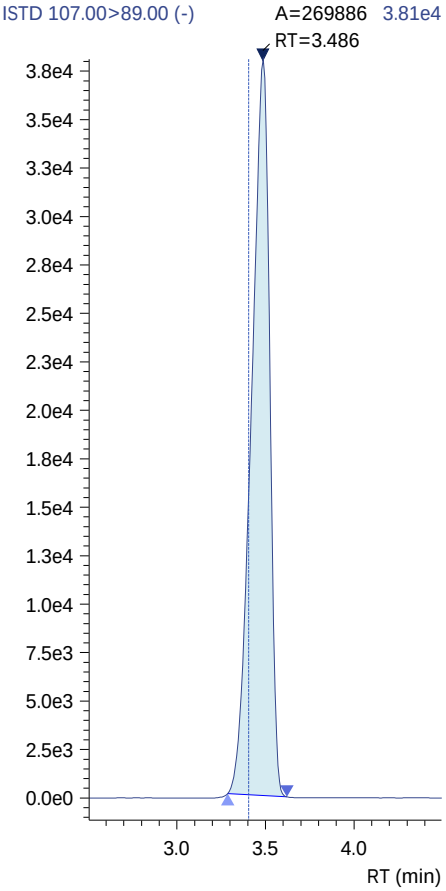
Conc 1.0045
R#1 24.56 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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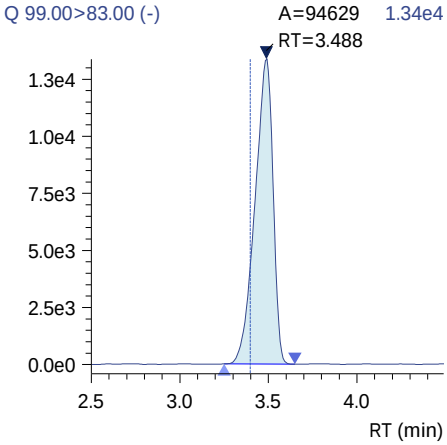
PERCHLORATE5

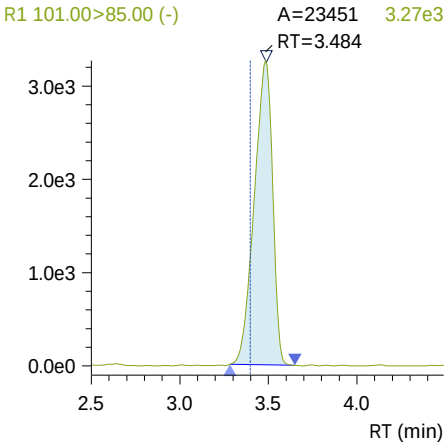
Sample ID: PERCHLORATE5
Date Acquired: 6/6/2023 11:12:36 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-005.lcd
Vial: 5 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.488	94629	265444	1.9510	ng/mL	101.00 >85.00	24.78	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.486	265444	265444	1.0000	ng/mL	----	----	

Perchlorate

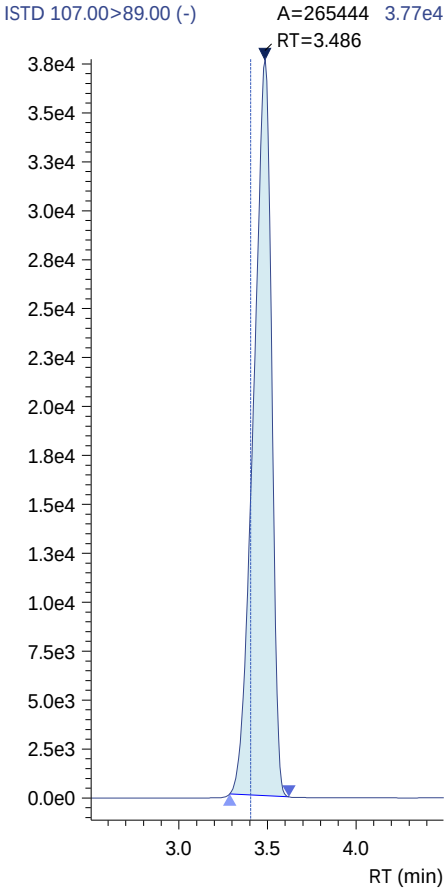
Conc 1.9510
R#1 24.78 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

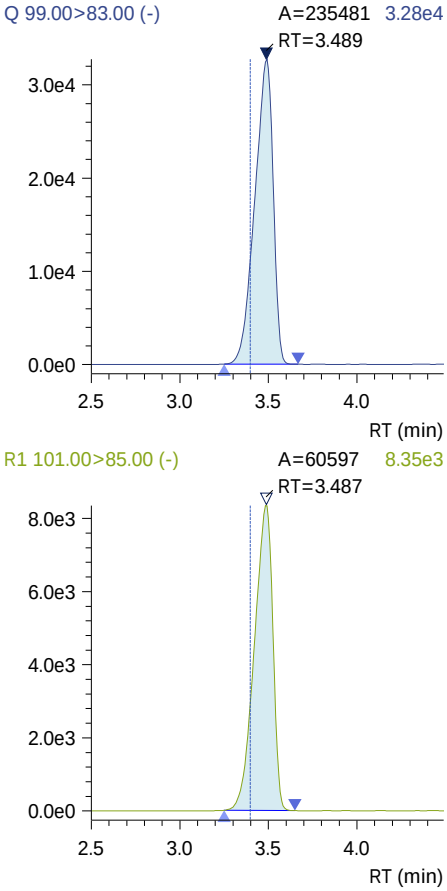
PERCHLORATE6

Sample ID: PERCHLORATE6
Date Acquired: 6/6/2023 11:18:22 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-006.lcd
Vial: 6 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.489	235481	261731	4.9238	ng/mL	101.00 >85.00	25.73	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.486	261731	261731	1.0000	ng/mL	----	----	

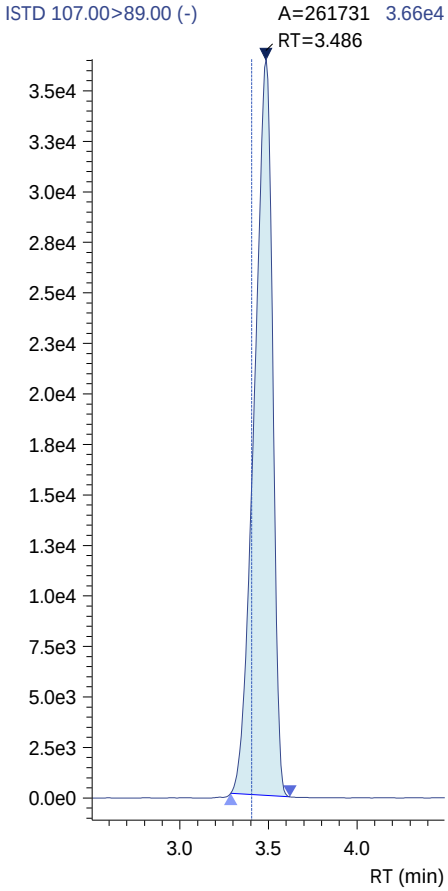
Perchlorate

Conc 4.9238
R#1 25.73 (24.52)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

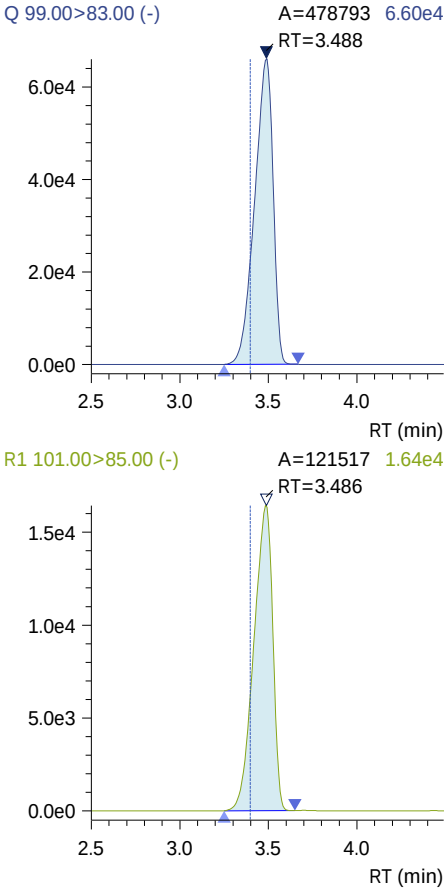
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 6/6/2023 11:24:09 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-007.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.488	478793	264810	9.8950	ng/mL	101.00 >85.00	25.38	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.485	264810	264810	1.0000	ng/mL	----	----	

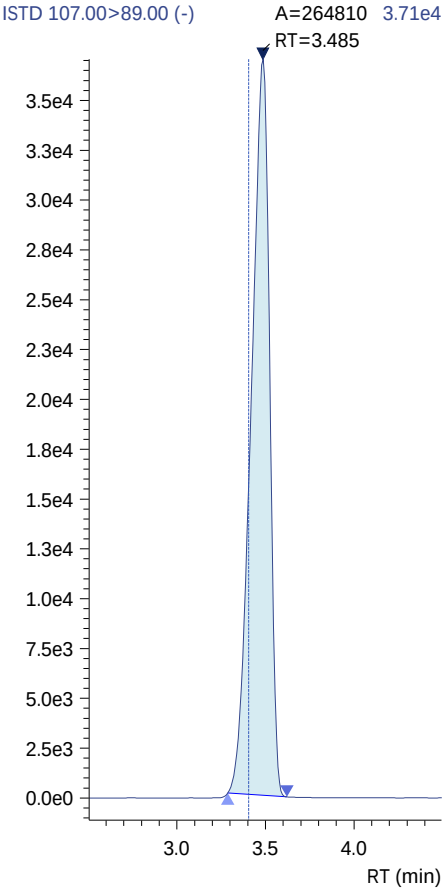
Perchlorate

Conc 9.8950
R#1 25.38 (24.52)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

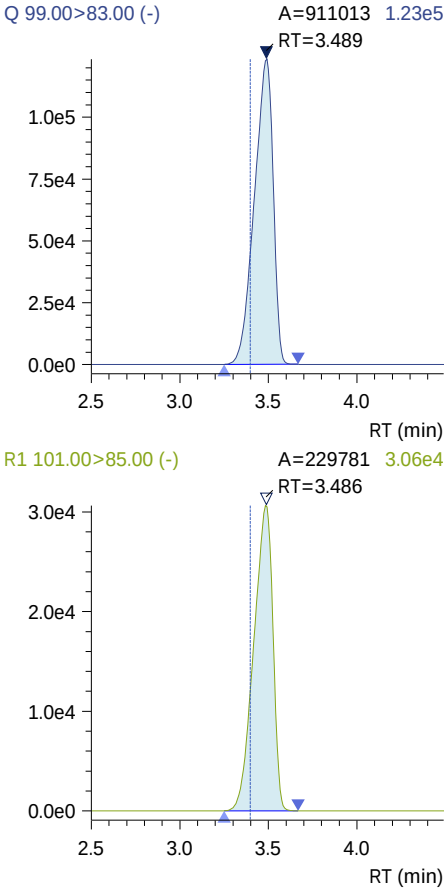
PERCHLORATE8

Sample ID: PERCHLORATE8
Date Acquired: 6/6/2023 11:29:53 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-008.lcd
Vial: 8 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.489	911013	248350	20.0754	ng/mL	101.00 >85.00	25.22	17.79-33.04
Sodium Perchlorate-18O4_IS	Auto	3.485	248350	248350	1.0000	ng/mL	----	----	

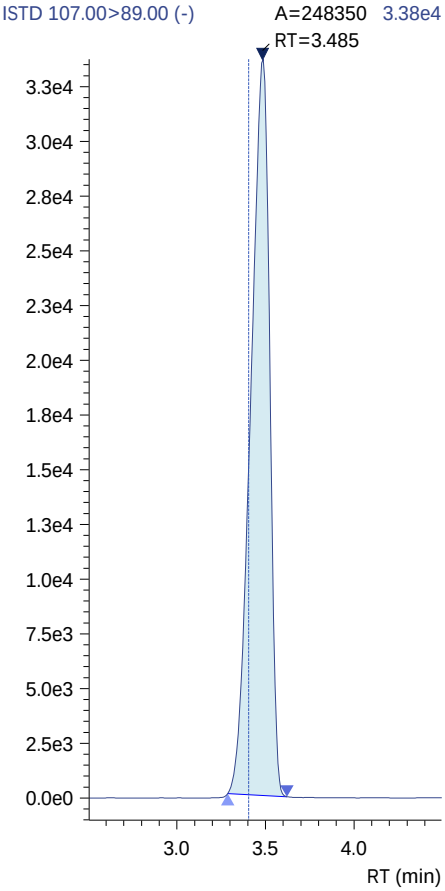
Perchlorate

Conc 20.0754
R#1 25.22 (24.52)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

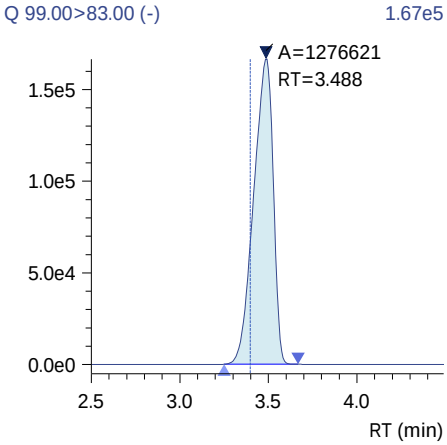
PERCHLORATE9

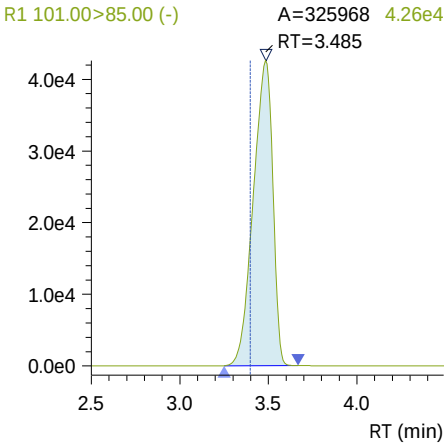
Sample ID: PERCHLORATE9
Date Acquired: 6/6/2023 11:35:36 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-009.lcd
Vial: 9 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.488	1276621	234897	29.74 32	ng/mL	101.00 >85.00	25.53	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.483	234897	234897	1.0000	ng/mL	----	----	

Perchlorate

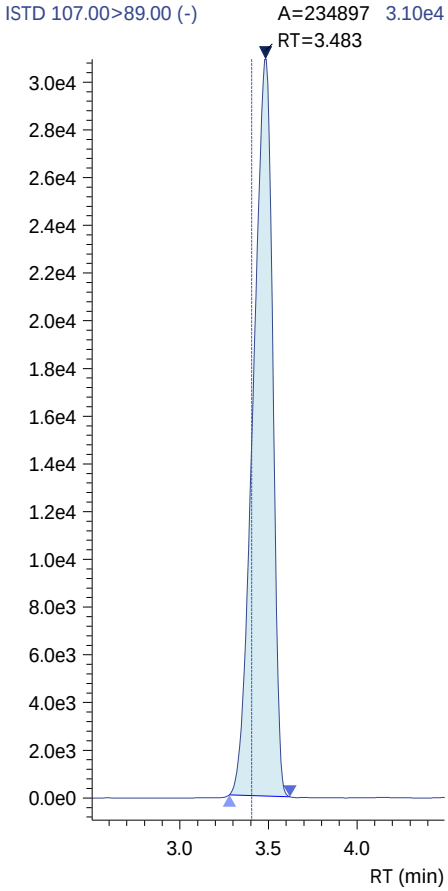
Conc 29.7432
R#1 25.53 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

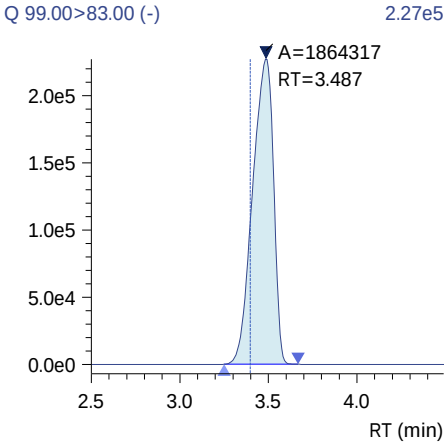
PERCHLORATE10

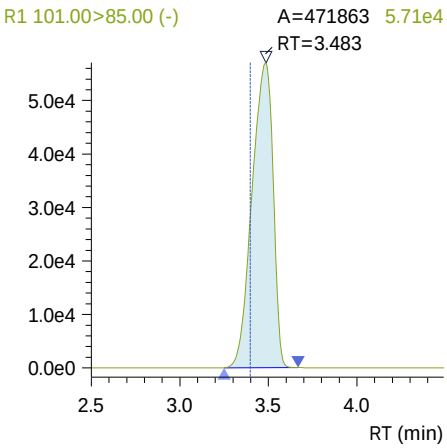
Sample ID: PERCHLORATE10
Date Acquired: 6/6/2023 11:41:20 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-010.lcd
Vial: 10 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.487	1864317	205439	49.6639	ng/mL	101.00 >85.00	25.31	17.79-33.04
Sodium Perchlorate-18O4_IS	Auto	3.483	205439	205439	1.0000	ng/mL	----	----	

Perchlorate

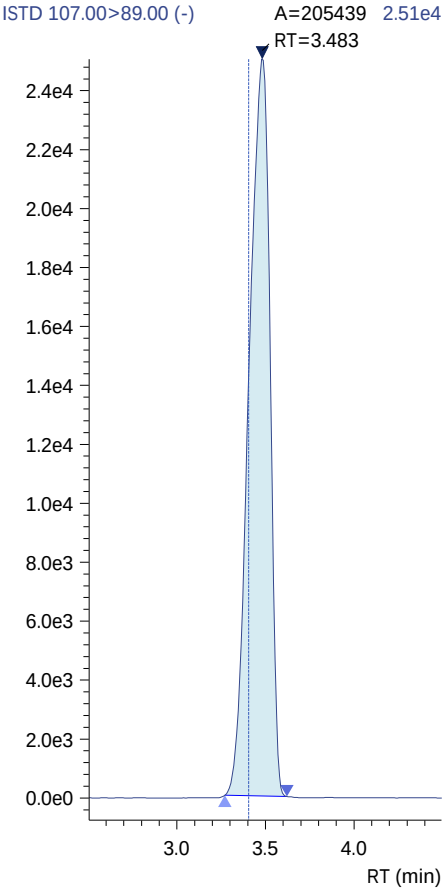
Conc 49.6639
R#1 25.31 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

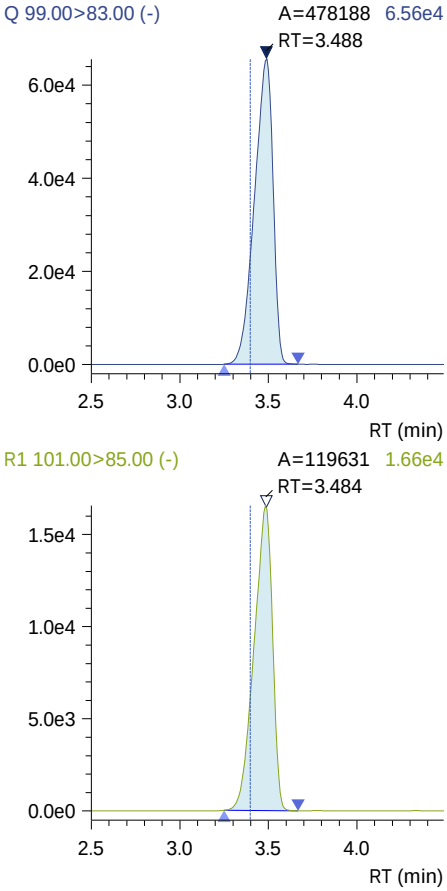
PERCHLORATEICV

Sample ID: PERCHLORATEICV
Date Acquired: 6/6/2023 11:47:07 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-011.lcd
Vial: 11 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.488	478188	261294	10.0155	ng/mL	101.00 >85.00	25.02	17.79-33.04
Sodium Perchlorate-18O4_IS	Auto	3.484	261294	261294	1.0000	ng/mL	----	----	

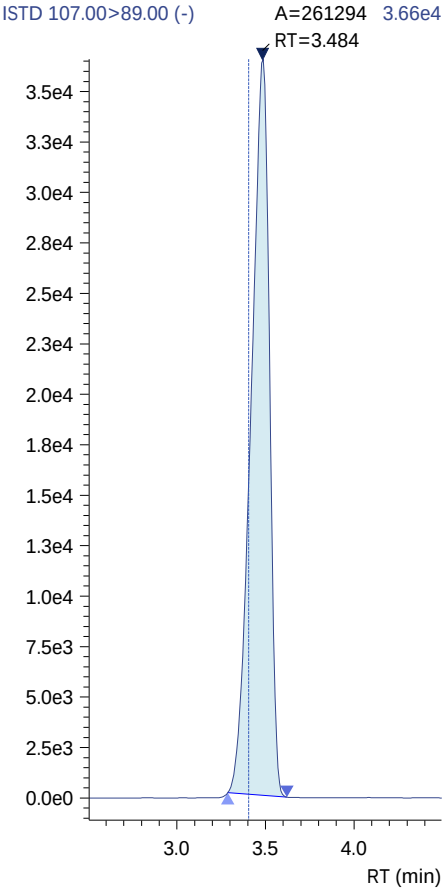
Perchlorate

Conc 10.0155
R#1 25.02 (24.52)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20230612-807150

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XM
2nd Review: KN

ICAL Date: 6/6/2023
Cal. Std. xp: 07/31/2023
ICAL ID: EC2300009

Mobile Phases : A:20mM ammonium acetate in water 32103045 **B:**Acetonitrile 226552

	Sample Name		File Name	Acquisition Method	Dilution	Comments	Date/Time
1	IB		20230612-001	Perchlorate6850c.lcm	1x		6/12/2023 9:13
2	LODV		20230612-002	Perchlorate6850c.lcm	1x	DNU-RR	6/12/2023 9:19
3	ICS		20230612-003	Perchlorate6850c.lcm	1x	32103024	6/12/2023 9:25
4	LODV		20230612-004	Perchlorate6850c.lcm	1x	227501	6/12/2023 9:30
5	CCV		20230612-005	Perchlorate6850c.lcm	1x	227251	6/12/2023 9:38
6	EQ2300284-01		20230612-006	Perchlorate6850c.lcm	1x		6/12/2023 9:45
7	EQ2300284-02		20230612-007	Perchlorate6850c.lcm	1x		6/12/2023 9:51
8	EQ2300284-03		20230612-008	Perchlorate6850c.lcm	1x		6/12/2023 9:57
9	E2300531-001		20230612-009	Perchlorate6850c.lcm	1x		6/12/2023 10:02
10	E2300531-002		20230612-010	Perchlorate6850c.lcm	1x		6/12/2023 12:06
11	E2300531-003		20230612-011	Perchlorate6850c.lcm	1x		6/12/2023 12:11
12	E2300531-004		20230612-012	Perchlorate6850c.lcm	1x		6/12/2023 12:17
13	E2300531-005		20230612-013	Perchlorate6850c.lcm	1x		6/12/2023 12:23
14	E2300531-006		20230612-014	Perchlorate6850c.lcm	1x		6/12/2023 12:29
15	E2300531-007		20230612-015	Perchlorate6850c.lcm	1x		6/12/2023 12:35
16	CCV		20230612-016	Perchlorate6850c.lcm	1x	227251	6/12/2023 12:41
17	E2300531-008		20230612-017	Perchlorate6850c.lcm	1x		6/12/2023 12:47
18	E2300531-009		20230612-018	Perchlorate6850c.lcm	1x		6/12/2023 12:53
19	E2300531-010		20230612-019	Perchlorate6850c.lcm	1x		6/12/2023 12:58
20	E2300531-011		20230612-020	Perchlorate6850c.lcm	1x		6/12/2023 13:04
21	E2300531-012		20230612-021	Perchlorate6850c.lcm	1x		6/12/2023 13:10
22	E2300533-022		20230612-022	Perchlorate6850c.lcm	1x		6/12/2023 13:15
23	E2300533-027		20230612-023	Perchlorate6850c.lcm	1x		6/12/2023 13:21
24	E2300533-034		20230612-024	Perchlorate6850c.lcm	1x		6/12/2023 13:27
25	K2306261-001		20230612-025	Perchlorate6850c.lcm	1x		6/12/2023 13:33
26	K2306261-002		20230612-026	Perchlorate6850c.lcm	1x		6/12/2023 13:38
27	CCV		20230612-027	Perchlorate6850c.lcm	1x	227251	6/12/2023 13:44
28	K2306261-003		20230612-028	Perchlorate6850c.lcm	1x		6/12/2023 13:50
29	EQ2300290-04		20230612-029	Perchlorate6850c.lcm	1x		6/12/2023 13:56
30	EQ2300290-05		20230612-030	Perchlorate6850c.lcm	1x		6/12/2023 14:01
31	CCV		20230612-031	Perchlorate6850c.lcm	1x	227251	6/12/2023 14:07

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Analyzed:**	6/12/23 09:38

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230612\20230612-005	**Lab Code:**	EQ2300293-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	807150
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300293-01	322,565	3.45
Method Blank	EQ2300284-01	322,368	3.45
Lab Control Sample	EQ2300284-02	315,877	3.45
Duplicate Lab Control Sample	EQ2300284-03	310,429	3.45
53147WW29	E2300531-001	332,892	3.45
6247WW36	E2300531-002	264,408	3.44
6247WW35	E2300531-003	340,682	3.44
6347WW49	E2300531-004	338,356	3.44
6247WW32	E2300531-005	348,623	3.44
6247WW47	E2300531-006	312,976	3.43
6347WW44	E2300531-007	332,441	3.44

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Analyzed:**	6/12/23 12:41

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230612\20230612-016	**Lab Code:**	EQ2300293-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	807150
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300293-02	323,592	3.44
6347WW21	E2300531-008	311,998	3.44
63LHSMW45	E2300531-009	342,445	3.44
6447WW60	E2300531-010	346,193	3.44
6447WW28	E2300531-011	319,450	3.44
6547WW03	E2300531-012	354,909	3.45

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Analyzed:**	6/12/23 13:44

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230612\20230612-027	**Lab Code:**	EQ2300293-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	807150
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300293-03	314,056	3.44

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Analyzed:**	6/12/23 14:07

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230612\20230612-031	**Lab Code:**	EQ2300293-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	807150
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300293-04	313,397	3.44

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Analyzed:**	6/12/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230612\20230612-005	**Calibration ID:**	EC2300009
		Analysis Lot:	807150
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.83	0.1827	0.1796	-1.7	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Analyzed:**	6/12/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230612\20230612-016	**Calibration ID:**	EC2300009
		Analysis Lot:	807150
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.83	0.1827	0.1797	-1.7	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Analyzed:**	6/12/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230612\20230612-027	**Calibration ID:**	EC2300009
		Analysis Lot:	807150
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.88	0.1827	0.1805	-1.2	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300531
Project:	LHAAP-47/10355063 Task 3.1	**Date Analyzed:**	6/12/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230612\20230612-031	**Calibration ID:**	EC2300009
		Analysis Lot:	807150
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.95	0.1827	0.1818	-0.5	NA	± 15 %	Average RF

Insight Report

Printed at 6/23/2023 8:45:23 AM

Method File: I:\LCMS01\DATA\20230612\20230612\20230612.lcm
Project File: I:\LCMS01\DATA\20230612\20230612\20230612.damlp

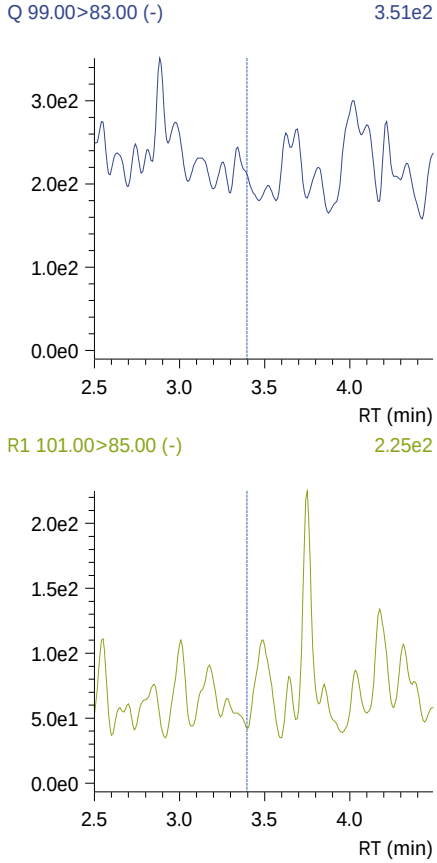
IB

Sample ID: IB
Date Acquired: 6/12/2023 9:13:34 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-001.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	157596	----	ng/mL	101.00 >85.00	0.00	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.460	157596	157596	1.0000	ng/mL	----	----	

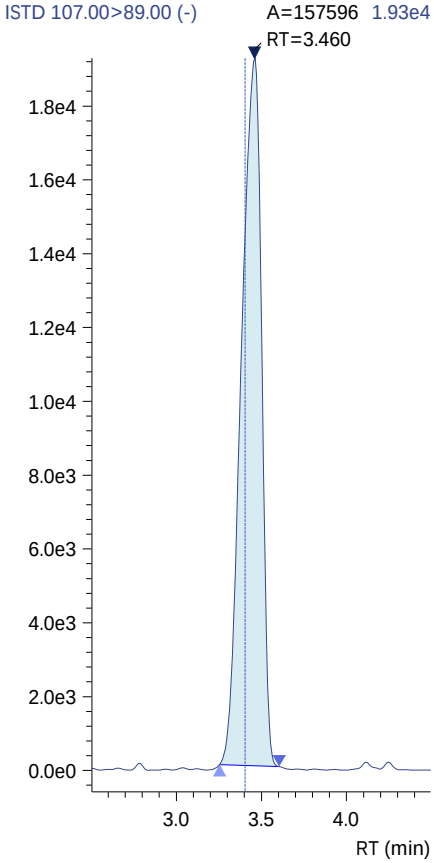
Perchlorate

Conc ----
R#1 0.00 (25.93)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

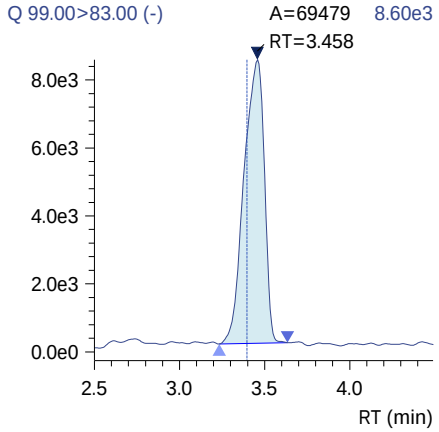
ICS

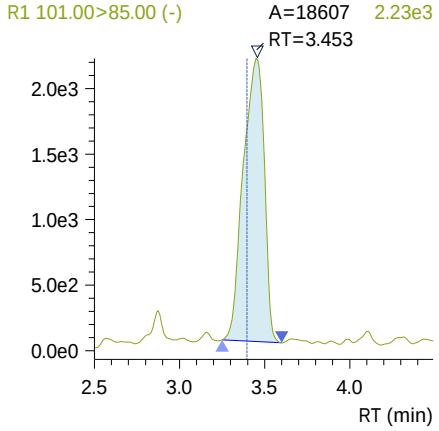
Sample ID: ICS
Date Acquired: 6/12/2023 9:25:01 AM
Acquired by: System Administrator
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Vial: 2 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.458	69479	371731	1.0229	ng/mL	101.00 >85.00	26.78	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.454	3717 31	371731	1.0000	ng/mL	----	----	

Perchlorate

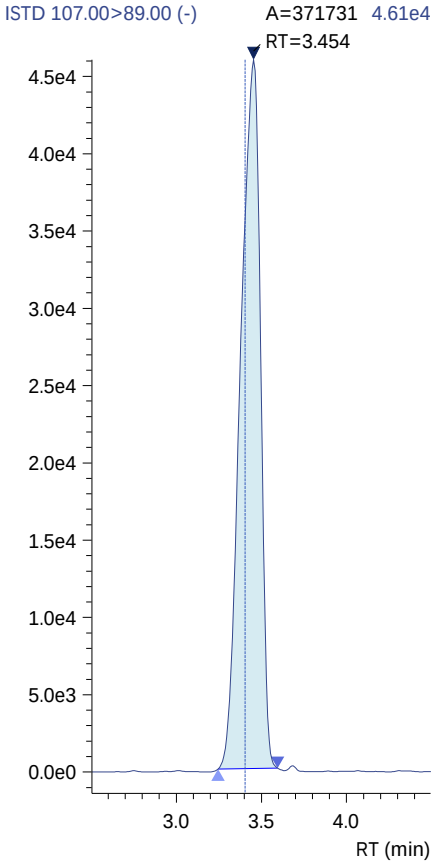
Conc 1.0229
R#1 26.78 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

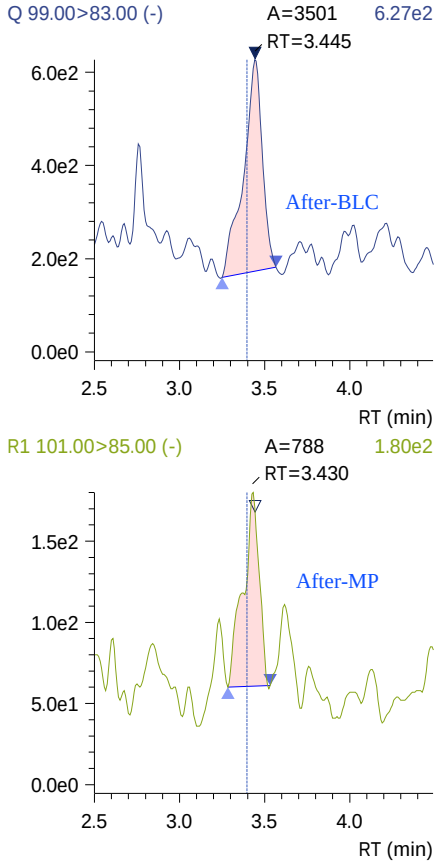
LODV

Sample ID: LODV
Date Acquired: 6/12/2023 9:30:43 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-004.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	M	3.445	3501	309622	0.0619	ng/mL	101.00 >85.00	22.50	18.15 -33.71
Sodium Perchlorate-18O4_IS	M	3.451	3096 22	309622	1.0000	ng/mL	----	----	

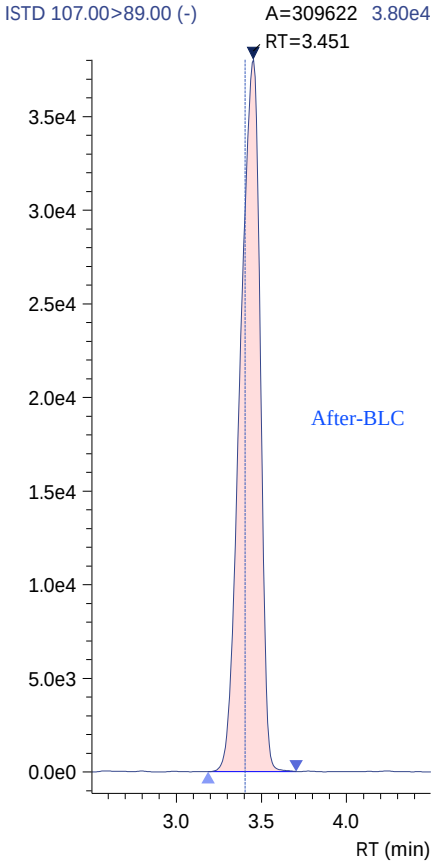
Perchlorate

Conc 0.0619
R#1 22.50 (25.93)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:46:53 AM

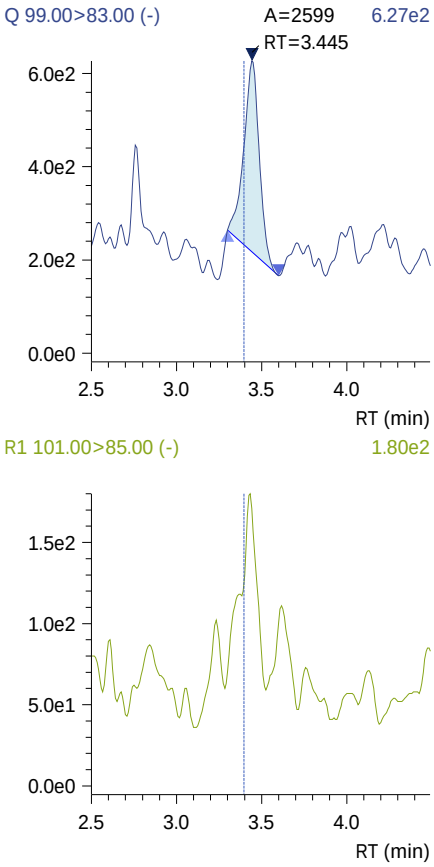
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Project File: I:\LCMS01\DATA\20230612\20230612\20230612.damlp

LODV

Sample ID: LODV
Date Acquired: 6/12/2023 9:30:43 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-004.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 0

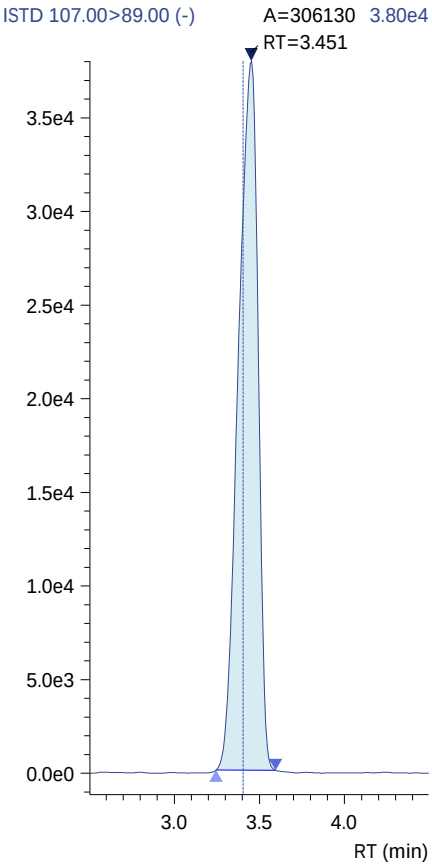
Perchlorate

Conc 0.0465
R#1 0.00 (25.93)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

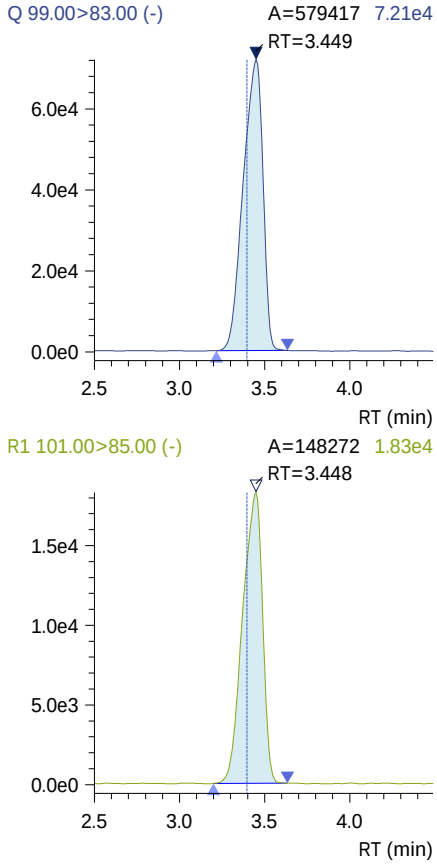
CCV

Sample ID: CCV
Date Acquired: 6/12/2023 9:38:14 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-005.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.449	5794 17	322565	9.8305	ng/mL	101.00 >85.00	25.59	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.446	3225 65	322565	1.0000	ng/mL	----	----	

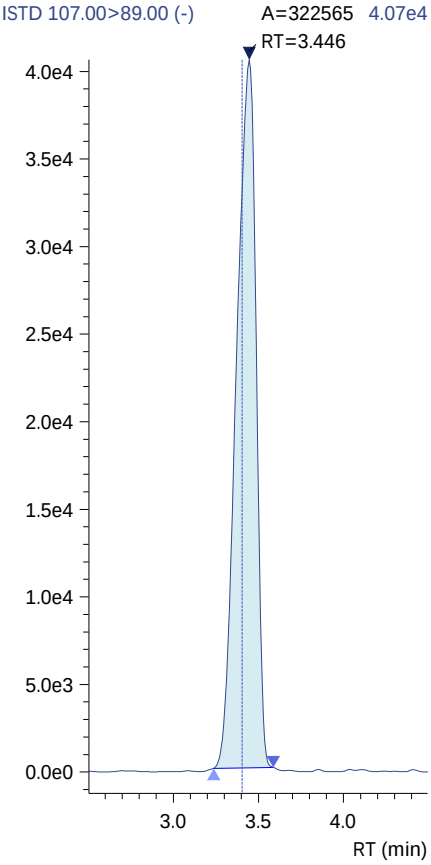
Perchlorate

Conc 9.8305
R#1 25.59 (25.93)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

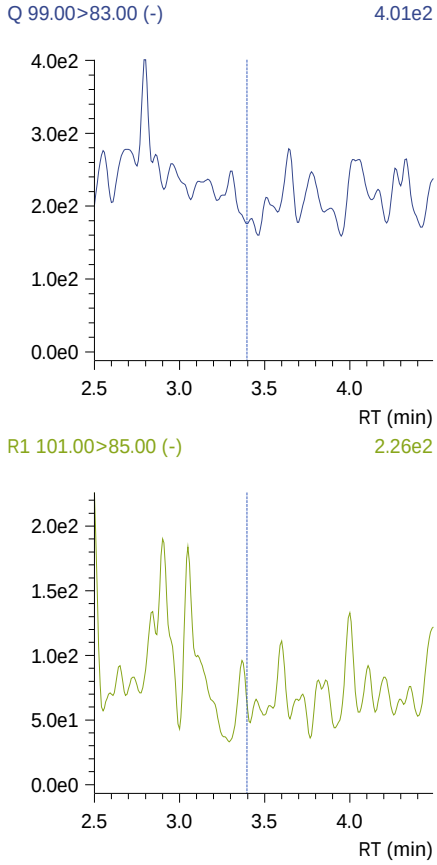
EQ2300284-01

Sample ID: EQ2300284-01
Date Acquired: 6/12/2023 9:45:35 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-006.lcd
Vial: 49 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	322368	----	ng/mL	101.00 >85.00	0.00	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.445	322368	322368	1.0000	ng/mL	----	----	

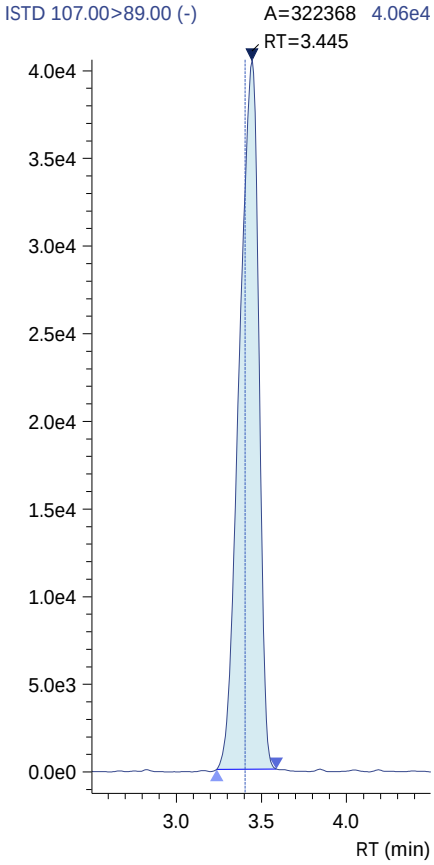
Perchlorate

Conc ----
R#1 0.00 (25.93)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

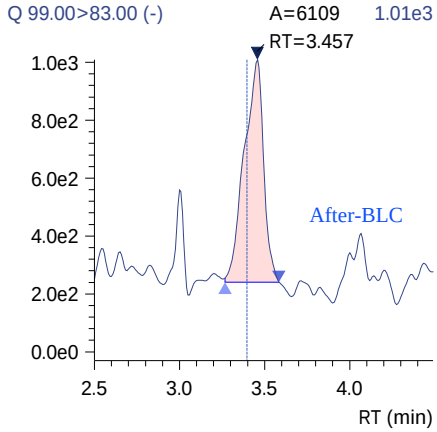
EQ2300284-02

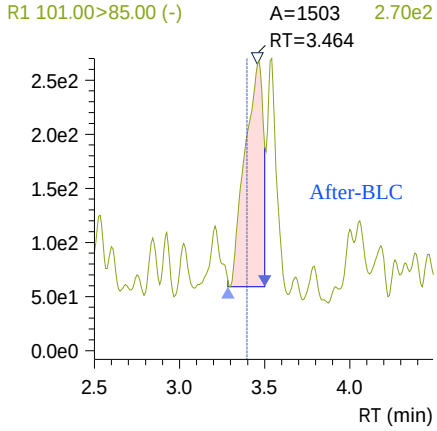
Sample ID: EQ2300284-02
Date Acquired: 6/12/2023 9:51:19 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-007.lcd
Vial: 50 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	M	3.457	6109	315877	0.1058	ng/mL	101.00 >85.00	24.60	18.15 -33.71
Sodium Perchlorate-18O4 _IS	Auto	3.448	3158 77	315877	1.0000	ng/mL	----	----	

Perchlorate

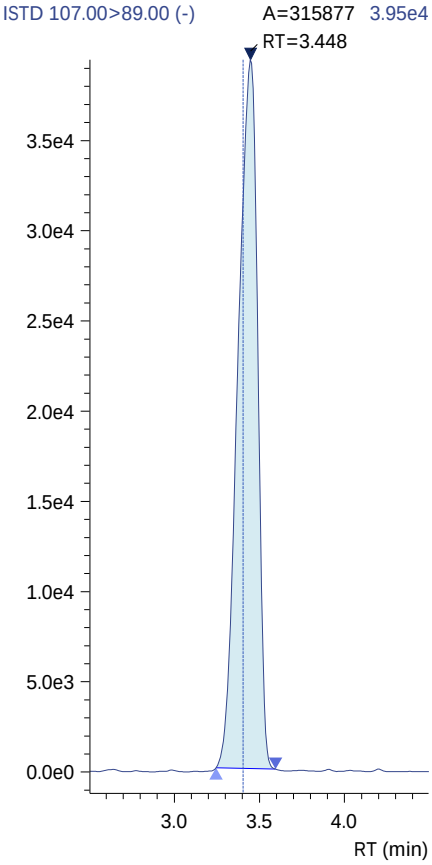
Conc 0.1058
R#1 24.60 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

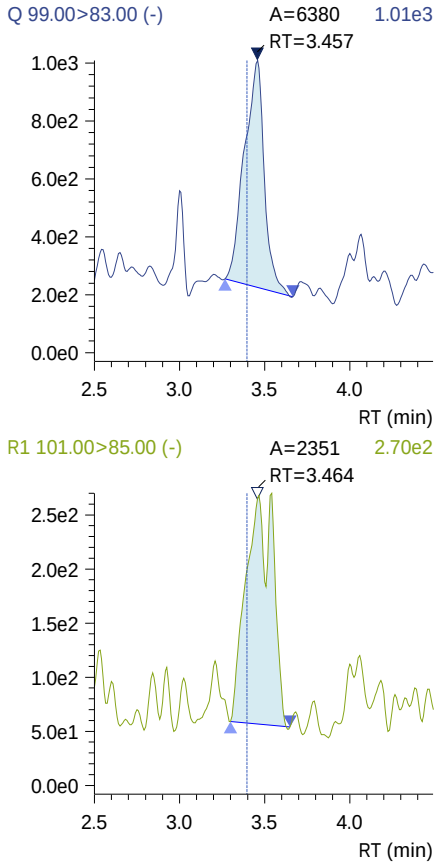
Printed at 6/23/2023 8:46:53 AM

EQ2300284-02

Sample ID: EQ2300284-02
Date Acquired: 6/12/2023 9:51:19 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-007.lcd
Vial: 50 | Inj. Volume: 10.0000uL | Tray: 4

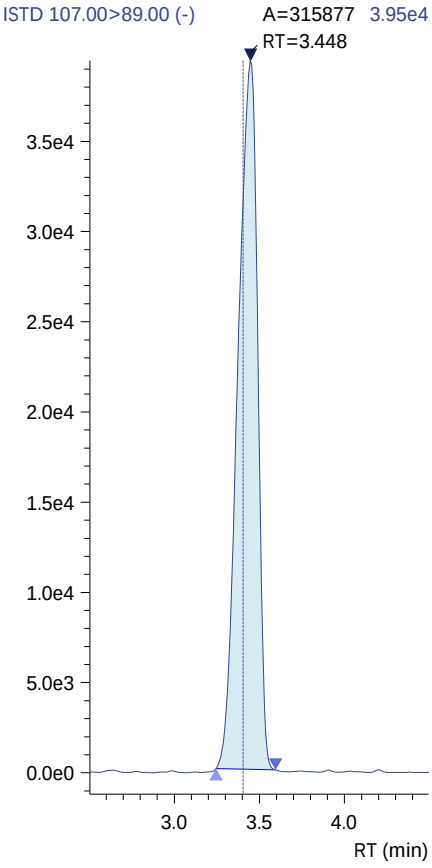
Perchlorate

Conc 0.1105
R#1 36.85 (25.93)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

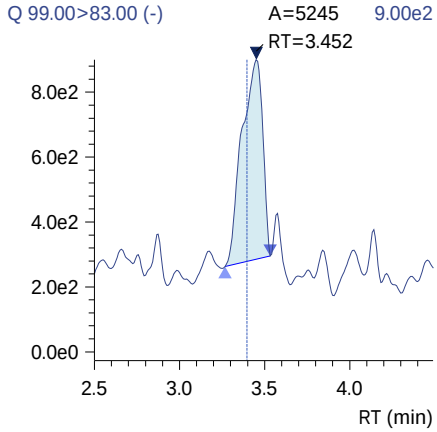
EQ2300284-03

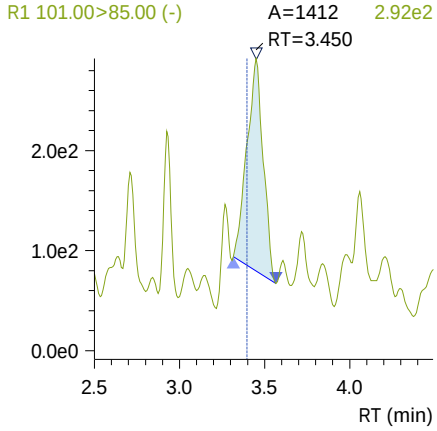
Sample ID: EQ2300284-03
Date Acquired: 6/12/2023 9:57:04 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-008.lcd
Vial: 51 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.452	5245	310429	0.0925	ng/mL	101.00 >85.00	26.92	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.448	3104 29	310429	1.0000	ng/mL	----	----	

Perchlorate

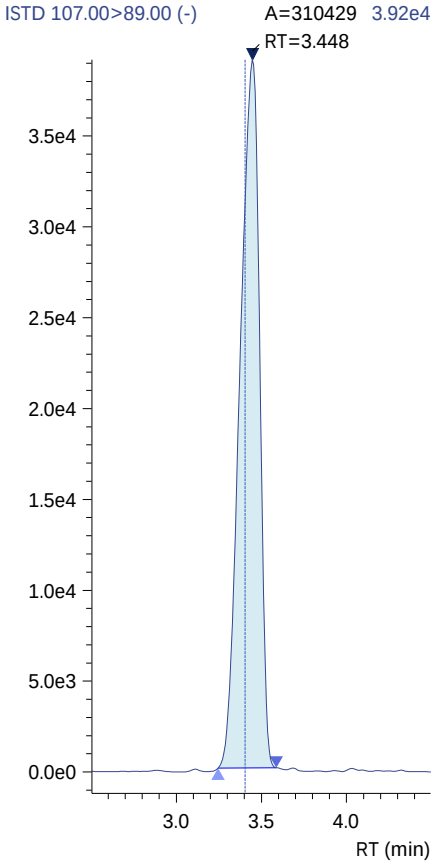
Conc 0.0925
R#1 26.92 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

E2300531-001

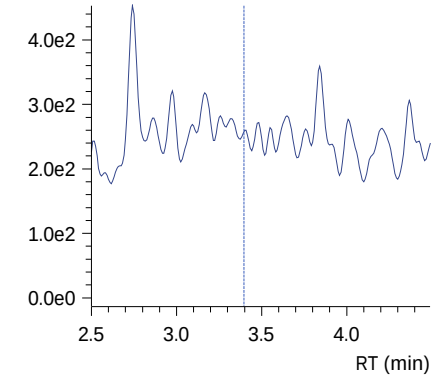
Sample ID: E2300531-001
Date Acquired: 6/12/2023 10:02:49 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-009.lcd
Vial: 15 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	332892	----	ng/mL	101.00 >85.00	0.00	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.450	332892	332892	1.0000	ng/mL	----	----	

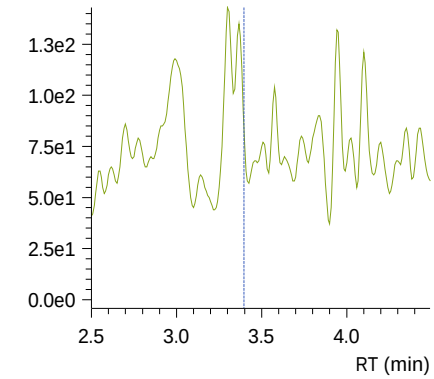
Perchlorate

Conc ----
R#1 0.00 (25.93)

Q 99.00>83.00 (-) 4.53e2



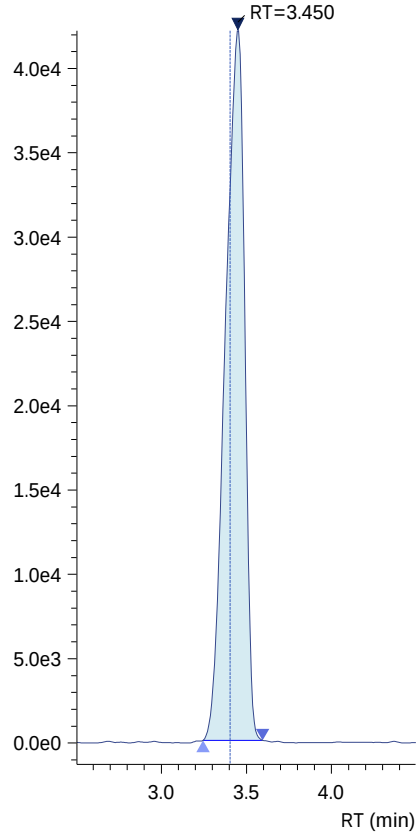
R1 101.00>85.00 (-) 1.43e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) A=332892 4.22e4
RT=3.450



Insight Report

Printed at 6/23/2023 8:45:23 AM

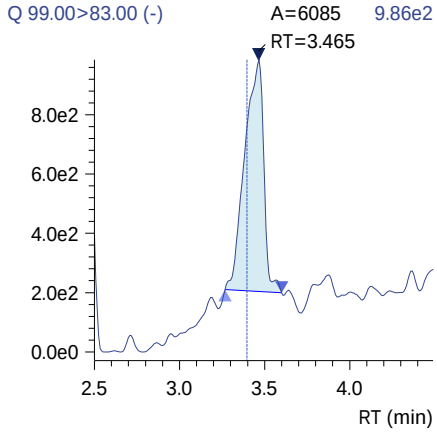
E2300531-002

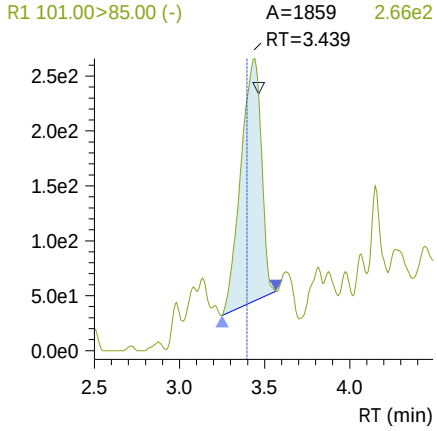
Sample ID: E2300531-002
Date Acquired: 6/12/2023 12:06:04 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-010.lcd
Vial: 16 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.465	6085	264408	0.1259	ng/mL	101.00 >85.00	30.55	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.435	264408	264408	1.0000	ng/mL	----	----	

Perchlorate

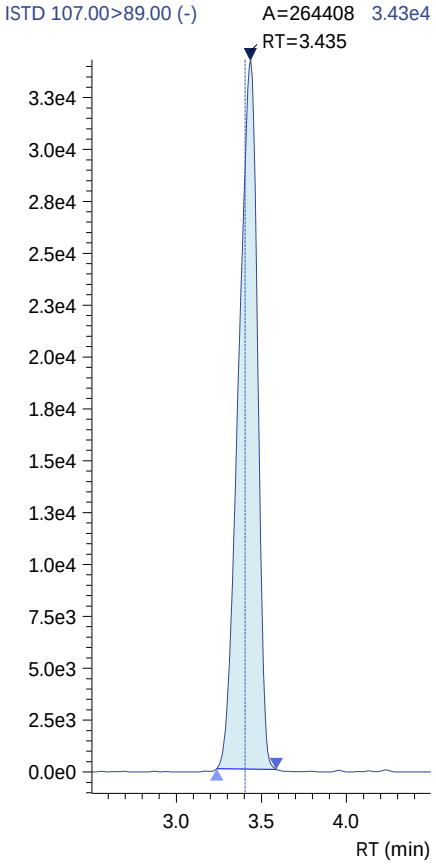
Conc 0.1259
R#1 30.55 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

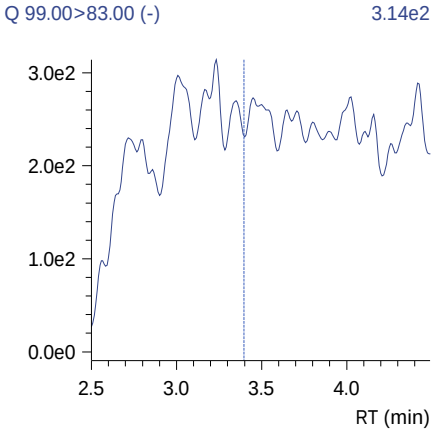
E2300531-003

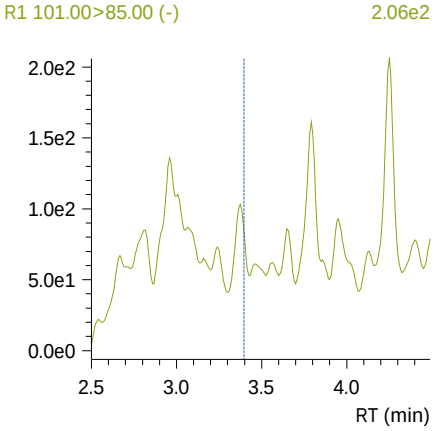
Sample ID: E2300531-003
Date Acquired: 6/12/2023 12:11:47 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-011.lcd
Vial: 17 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	340682	----	ng/mL	101.00 >85.00	0.00	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.442	340682	340682	1.0000	ng/mL	----	----	

Perchlorate

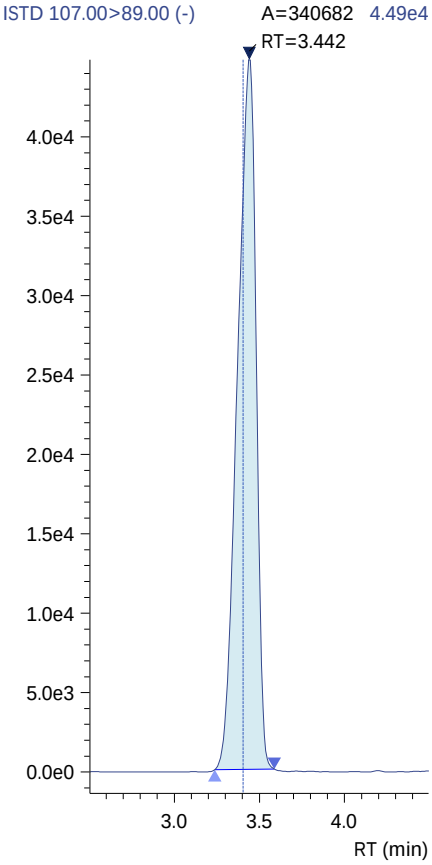
Conc ----
R#1 0.00 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

E2300531-004

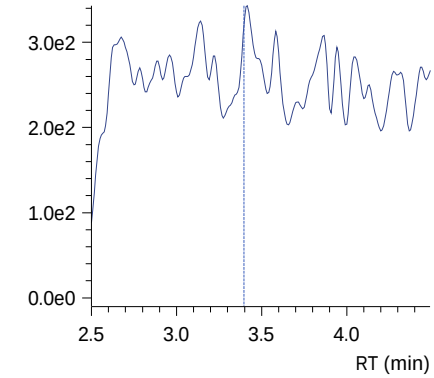
Sample ID: E2300531-004
Date Acquired: 6/12/2023 12:17:32 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-012.lcd
Vial: 18 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	338356	----	ng/mL	101.00 >85.00	0.00	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.440	338356	338356	1.0000	ng/mL	----	----	

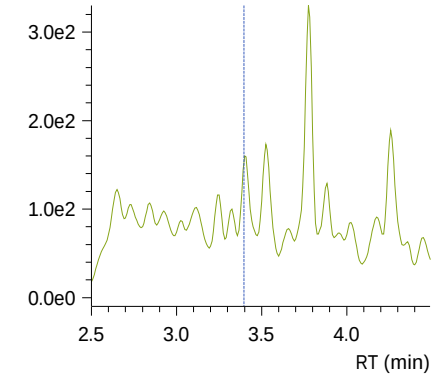
Perchlorate

Conc ----
R#1 0.00 (25.93)

Q 99.00>83.00 (-) 3.43e2



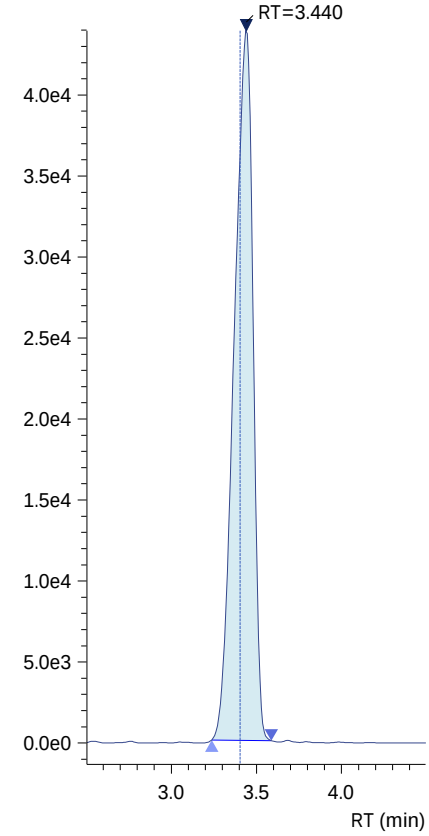
R1 101.00>85.00 (-) 3.30e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) A=338356 4.40e4



Insight Report

Printed at 6/23/2023 8:45:23 AM

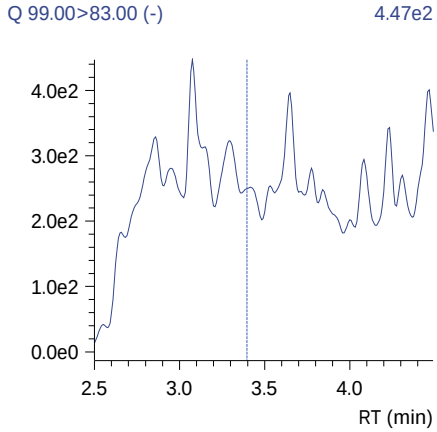
E2300531-005

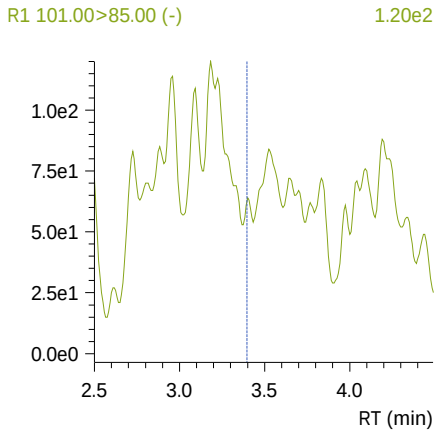
Sample ID: E2300531-005
Date Acquired: 6/12/2023 12:23:14 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-013.lcd
Vial: 19 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	348623	----	ng/mL	101.00 >85.00	0.00	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.442	348623	348623	1.0000	ng/mL	----	----	

Perchlorate

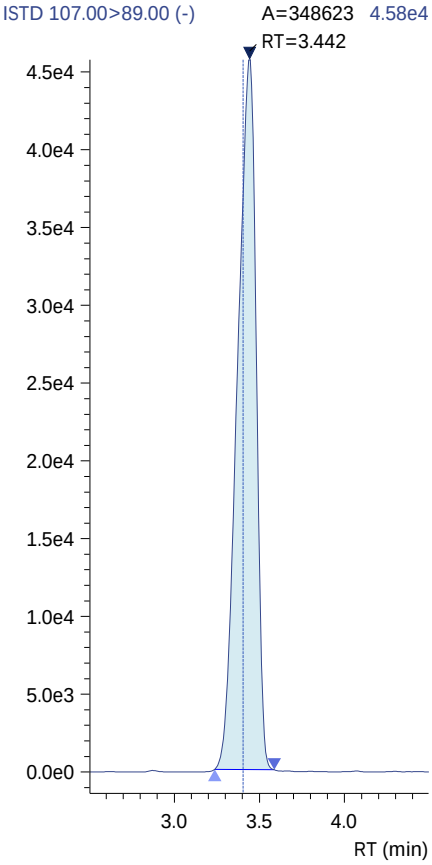
Conc ----
R#1 0.00 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

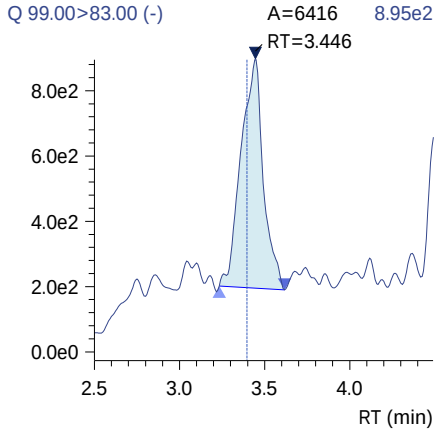
E2300531-006

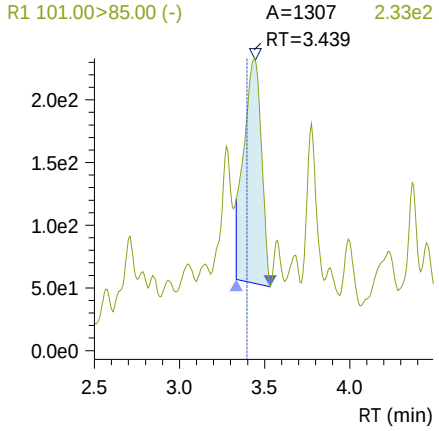
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Date Acquired: 6/12/2023 12:29:58 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-014.lcd
Vial: 20 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.446	6416	312976	0.1122	ng/mL	101.00 >85.00	20.38	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.430	3129 76	312976	1.0000	ng/mL	----	----	

Perchlorate

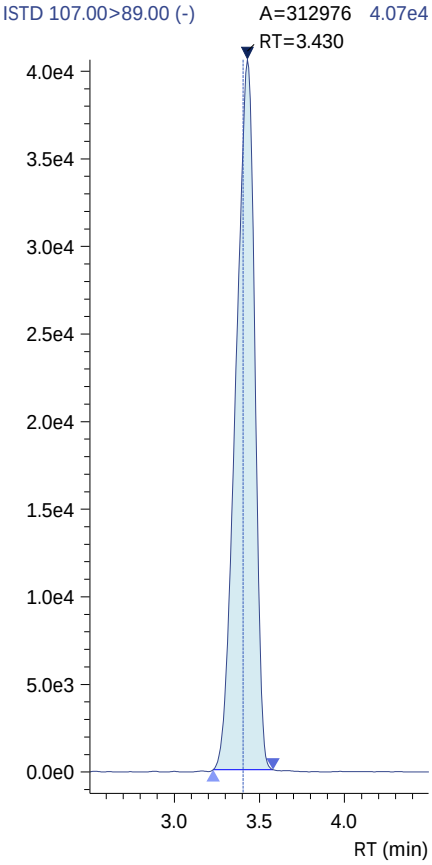
Conc 0.1122
R#1 20.38 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

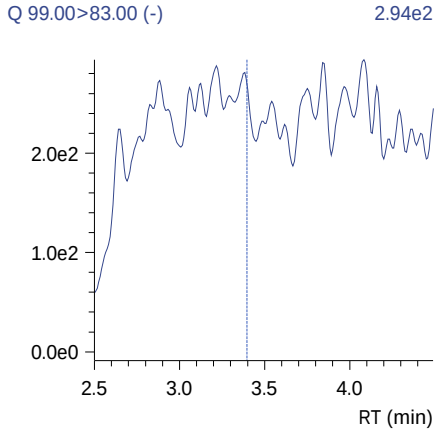
E2300531-007

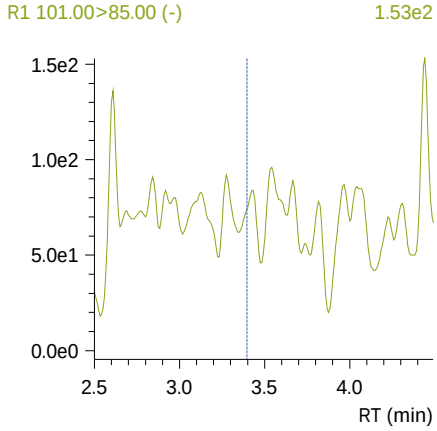
Sample ID: E2300531-007
Date Acquired: 6/12/2023 12:35:42 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-015.lcd
Vial: 21 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	332441	----	ng/mL	101.00 >85.00	0.00	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.440	332441	332441	1.0000	ng/mL	----	----	

Perchlorate

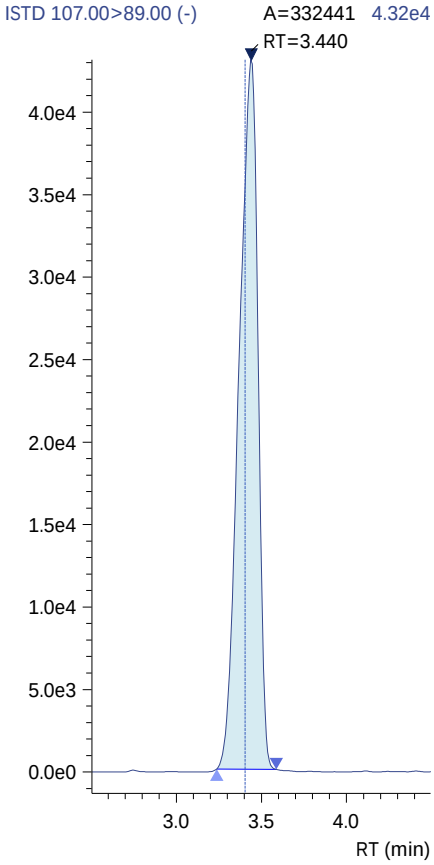
Conc ----
R#1 0.00 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

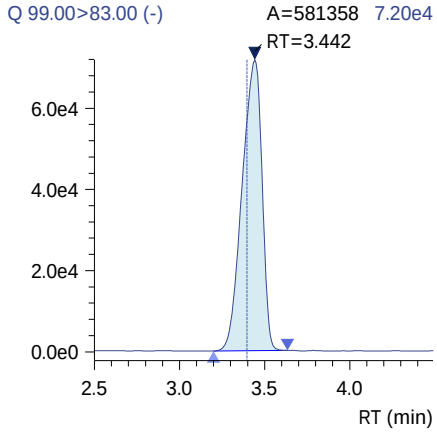
CCV

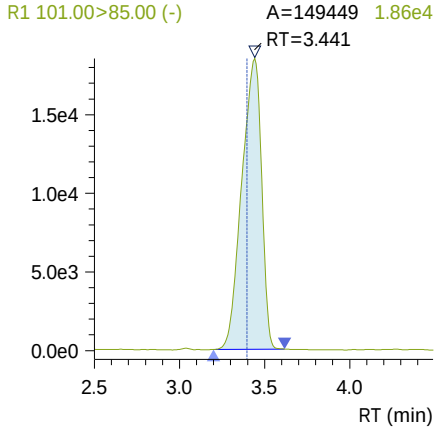
Sample ID: CCV
Date Acquired: 6/12/2023 12:41:29 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-016.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.442	581358	323592	9.8322	ng/mL	101.00	25.71	18.15
							>85.00		-33.71
Sodium Perchlorate-18O4_IS	Auto	3.439	323592	323592	1.0000	ng/mL	----	----	

Perchlorate

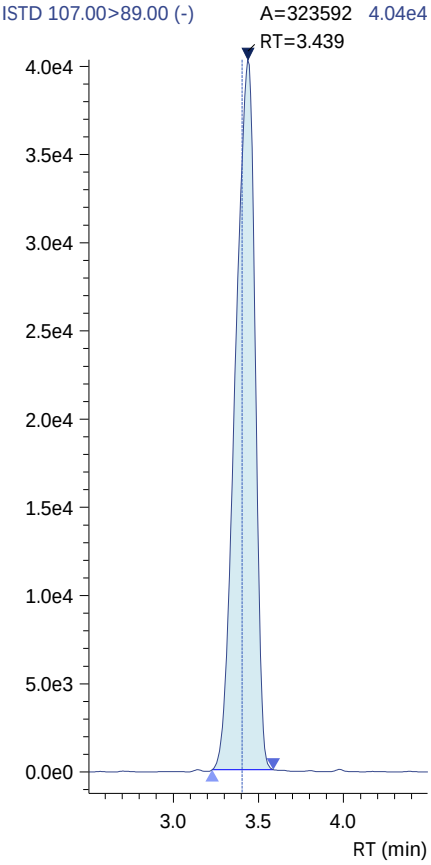
Conc 9.8322
R#1 25.71 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

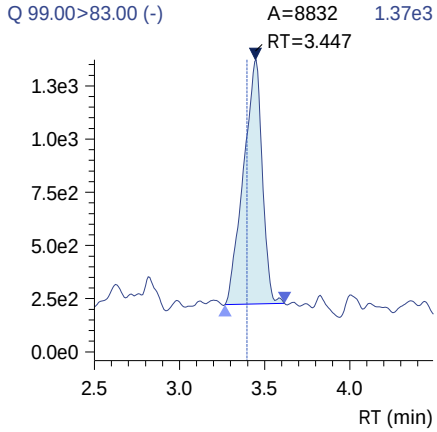
E2300531-008

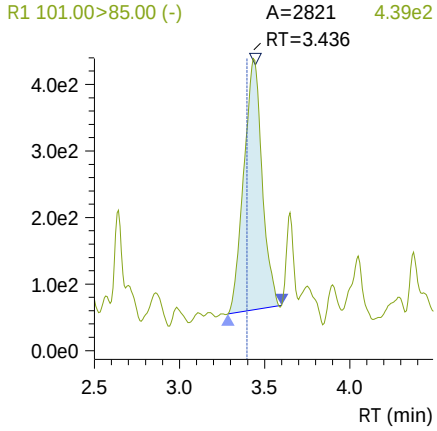
Sample ID: E2300531-008
Date Acquired: 6/12/2023 12:47:14 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-017.lcd
Vial: 22 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.447	8832	311998	0.1549	ng/mL	101.00 >85.00	31.94	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.441	311998	311998	1.0000	ng/mL	----	----	

Perchlorate

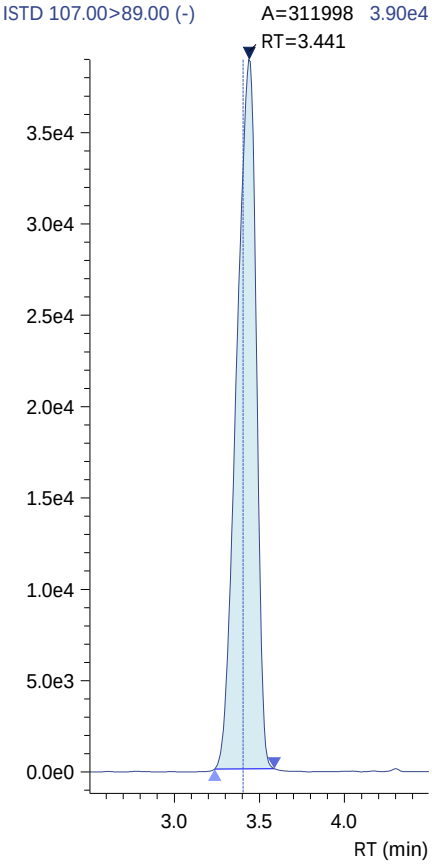
Conc 0.1549
R#1 31.94 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

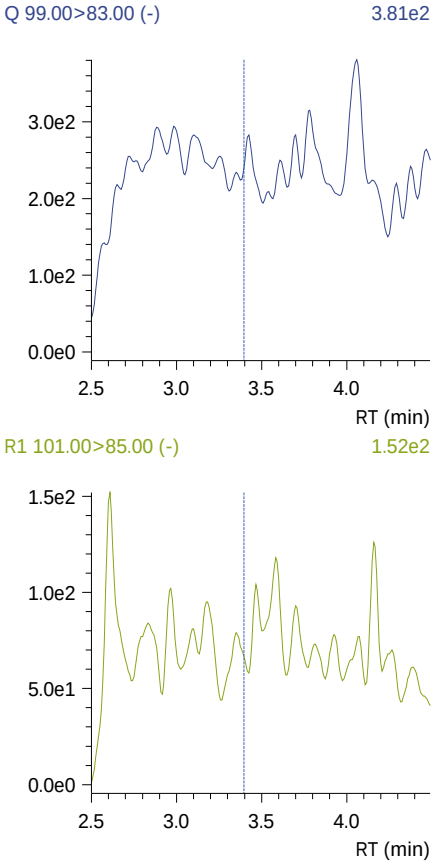
E2300531-009

Sample ID: E2300531-009
Date Acquired: 6/12/2023 12:53:00 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-018.lcd
Vial: 23 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	342445	----	ng/mL	101.00 >85.00	0.00	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.443	342445	342445	1.0000	ng/mL	----	----	

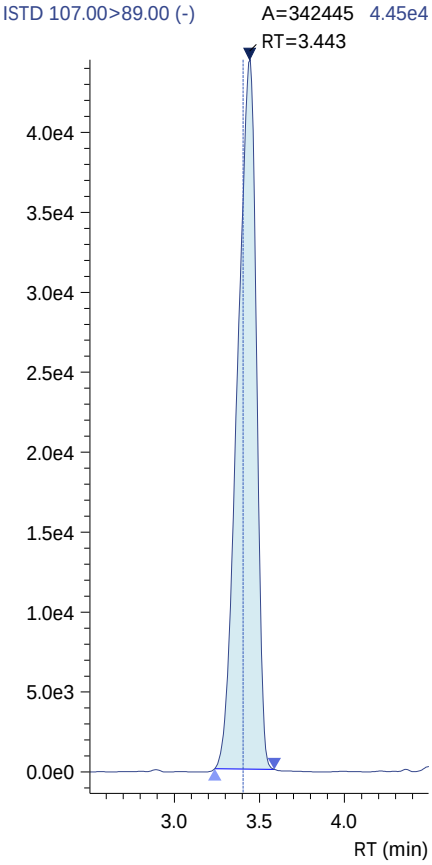
Perchlorate

Conc ----
R#1 0.00 (25.93)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

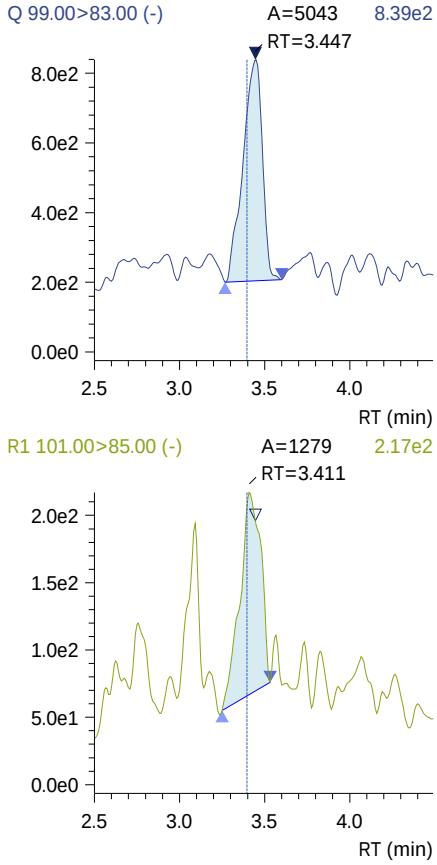
E2300531-010

Sample ID: E2300531-010
Date Acquired: 6/12/2023 12:58:42 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-019.lcd
Vial: 24 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.447	5043	346193	0.0797	ng/mL	101.00 >85.00	25.36	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.443	346193	346193	1.0000	ng/mL	----	----	

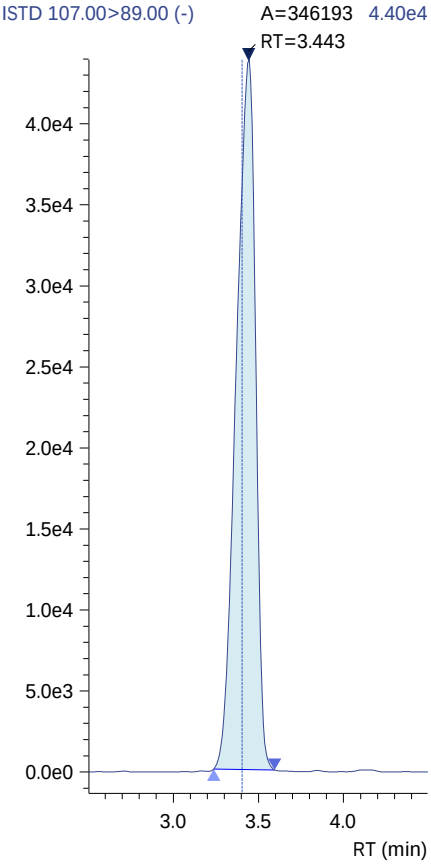
Perchlorate

Conc 0.0797
R#1 25.36 (25.93)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

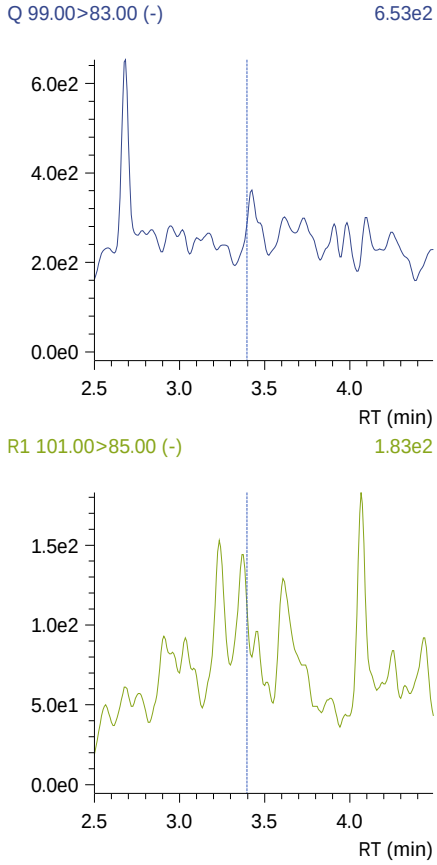
E2300531-011

Sample ID: E2300531-011
Date Acquired: 6/12/2023 1:04:26 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-020.lcd
Vial: 25 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	319450	----	ng/mL	101.00 >85.00	0.00	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.442	319450	319450	1.0000	ng/mL	----	----	

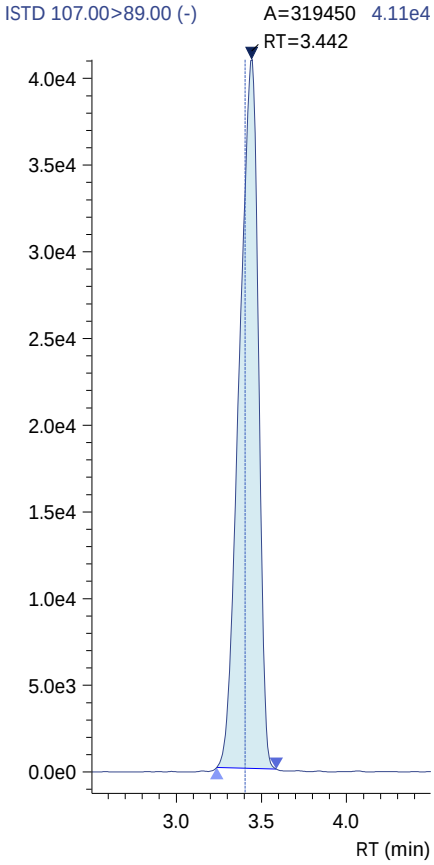
Perchlorate

Conc ----
R#1 0.00 (25.93)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

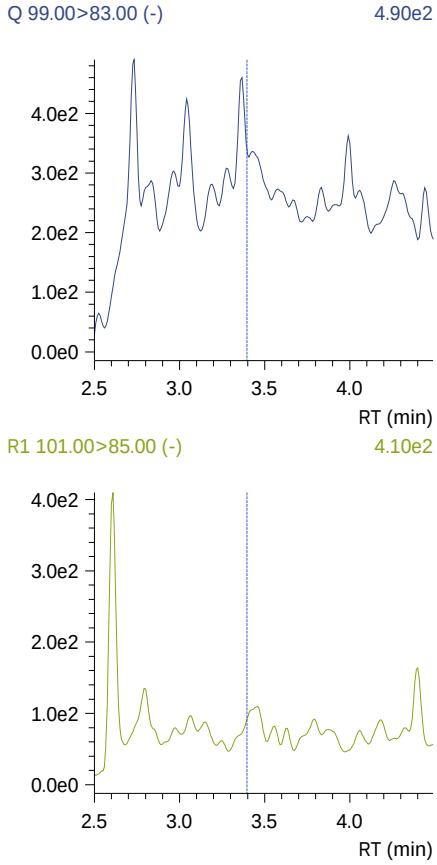
E2300531-012

Sample ID: E2300531-012
Date Acquired: 6/12/2023 1:10:12 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-021.lcd
Vial: 26 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	354909	----	ng/mL	101.00 >85.00	0.00	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.445	354909	354909	1.0000	ng/mL	----	----	

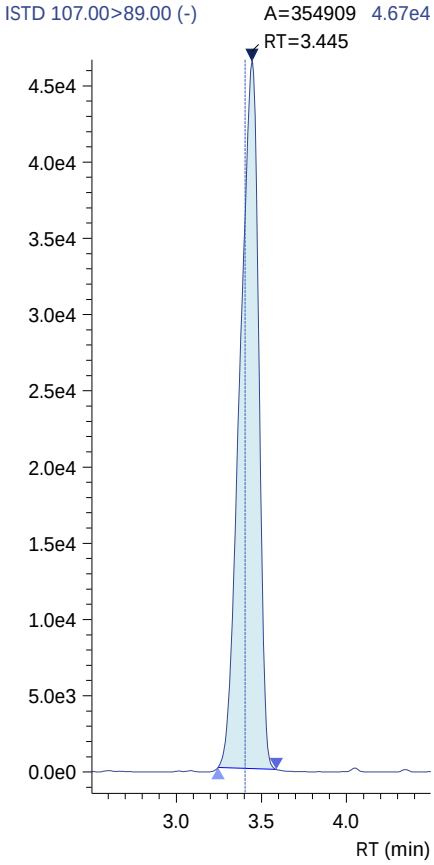
Perchlorate

Conc ----
R#1 0.00 (25.93)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

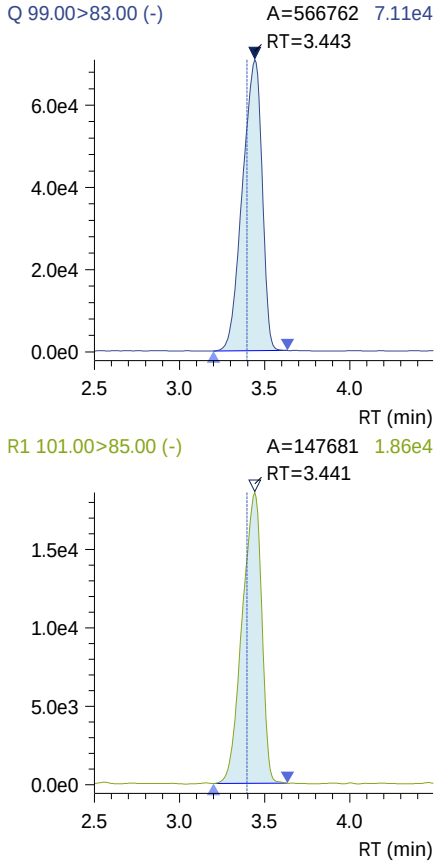
CCV

Sample ID: CCV
Date Acquired: 6/12/2023 1:44:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-027.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.443	566762	314056	9.8764	ng/mL	101.00	26.06	18.15
							>85.00		-33.71
Sodium Perchlorate-18O4_IS	Auto	3.440	314056	314056	1.0000	ng/mL	----	----	

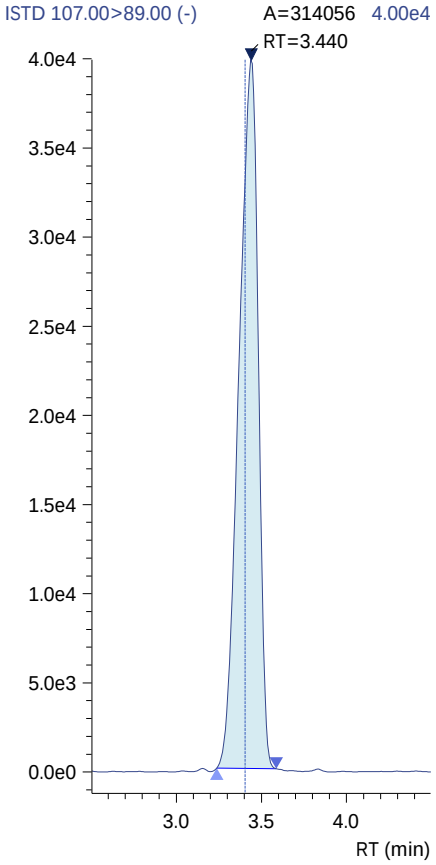
Perchlorate

Conc 9.8764
R#1 26.06 (25.93)



Sodium Perchlorate-18O4_IS

Conc 1.0000



June 14, 2023 Service Request No:E2300533

Tim Witrzek
Environmental Monitoring and Technologies, Inc.
509 N 3rd avenue
Morton Grove, IL 60016

Laboratory Results for: LHAAP-47

Dear Tim,

Enclosed are the results of the sample(s) submitted to our laboratory June 02, 2023
For your reference, these analyses have been assigned our service request number **E2300533.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2188. You may also contact me via email at James.Guin@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

James Guin

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston Specialties Laboratory
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

ALS Environmental

Client:	Environmental Monitoring and Technologies, Inc	**Service Request No.:**	E2300533
Project:	LHAAP-47	**Date Received:**	06/02/23
Sample Matrix:	Ground Water		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Sixty samples were received for analysis at ALS Environmental in Houston on 06/02/23.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2300291: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported addition to a MS/MSD for this extraction batch.

The batch precision (MS/DMS) measurements were determined on an unrelated sample in the extraction batch. The MS/DMS results are not included in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: Environmental Monitoring and Technologies, Inc. **Service Request:**E2300533
Project: LHAAP-47/W355063, Task 3.1

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2300533-001	53147WW38	5/31/2023	1011
E2300533-002	5347WW29	5/31/2023	1345
E2300533-003	6147WW04	6/1/2023	1230
E2300533-004	531DUP5	5/31/2023	1110
E2300533-005	6147WW45	6/1/2023	1226
E2300533-006	53147WW61	5/31/2023	1035
E2300533-007	53147WW13	5/31/2023	1215
E2300533-008	527LHS04W60	5/27/2023	1101
E2300533-009	527EB1	5/27/2023	1800
E2300533-010	531DUP4	5/31/2023	0845
E2300533-011	529EB5	5/29/2023	1630
E2300533-012	530DUP3	5/30/2023	1600
E2300533-013	529DUP2	5/29/2023	1230
E2300533-014	6147WW31	6/1/2023	1045
E2300533-015	52847WW	5/28/2023	1020
E2300533-016	528EB3	5/28/2023	1620
E2300533-017	528EB4	5/28/2023	1620
E2300533-018	528LHSMW57	5/28/2023	1130
E2300533-019	527EB2	5/27/2023	1800
E2300533-020	52647WW37	5/26/2023	1230
E2300533-021	529LHSM41	5/29/2023	1525
E2300533-022	52847WW19	5/28/2023	1520
E2300533-023	52647WW53	5/26/2023	1355
E2300533-024	52647WW51	5/26/2023	1105
E2300533-025	53047WW14	5/30/2023	1000
E2300533-026	527LHSMW54	5/27/2023	1500
E2300533-027	528LHSMW56R	5/28/2023	1207
E2300533-028	529LHSMW46R	5/29/2023	0930
E2300533-029	52547WW50	5/25/2023	1620
E2300533-030	528LHSMW55R	5/28/2023	1012
E2300533-031	529LHSMW44	5/29/2023	1400
E2300533-032	53047WW09	5/30/2023	1200
E2300533-033	52747WW59	5/27/2023	1125
E2300533-034	53047WW58	5/30/2023	1557
E2300533-035	52747WW40	5/27/2023	1305
E2300533-036	52847WW23	5/28/2023	1530
E2300533-037	529DUP2	5/29/2023	1310
E2300533-038	52747WW41	5/27/2023	1505
E2300533-039	5247WW54	5/29/2023	1431
E2300533-040	6147WW33	6/1/2023	1525
E2300533-041	531LH5WW50	5/31/2023	1507
E2300533-043	61DUP6	6/1/2023	1100

Client: Environmental Monitoring and Technologies, Inc. **Service Request:**E2300533
Project: LHAAP-47/W355063, Task 3.1

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2300533-044	52847WW43	5/28/2023	1400
E2300533-045	53047WW08R	5/30/2023	1500
E2300533-046	52947WW55	5/29/2023	1110
E2300533-047	53047WW06	5/30/2023	1330
E2300533-048	53047WW39	5/30/2023	0855
E2300533-049	52947WW52	5/29/2023	0930
E2300533-050	52547WW48	5/25/2023	1310
E2300533-051	52947WW57	5/29/2023	1150
E2300533-052	52947WW56	5/29/2023	1626
E2300533-053	52747WW26R	5/27/2023	1635
E2300533-054	6147WW46	6/1/2023	1456
E2300533-055	5284WW19	5/28/2023	1520
E2300533-056	529EB6	5/29/2023	1630
E2300533-057	6147WW34	6/1/2023	1041
E2300533-058	52747WW42	5/27/2023	1728
E2300533-059	530LH504W43R	5/30/2023	1340
E2300533-060	53047WW58	5/30/2023	1557

Service Request Summary

Folder #: **E2300533**
Client Name: Environmental Monitoring and Technologies, Inc.
Project Name: LHAAP-47
Project Number: W355063, Task 3.1

Report To: Tim Witrzek
Environmental Monitoring and Technologies, Inc.
509 N 3rd avenue
Morton Grove, IL 60016
USA
Phone Number: 847-774-2873
Cell Number:
Fax Number:
E-mail: twitrzek@emt.com

Project Chemist: James Guin
Originating Lab: HOUSTON

Logged By: JGUIN
Date Received: 06/02/23
Internal Due Date: 6/30/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y

Report to MDL?: Y
P.O. Number:
EDD: No EDD Specified

60 120 mL-Plastic Bottle Natural WM Unpreserved
Location: SMO
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2300533-001	53147WW38	Ground Water	05/31/23 1011	II
E2300533-002	5347WW29	Ground Water	05/31/23 1345	II
E2300533-003	6147WW04	Ground Water	06/01/23 1230	II
E2300533-004	531DUP5	Ground Water	05/31/23 1110	II
E2300533-005	6147WW45	Ground Water	06/01/23 1226	II
E2300533-006	53147WW61	Ground Water	05/31/23 1035	II
E2300533-007	53147WW13	Ground Water	05/31/23 1215	II
E2300533-008	527LHS04W60	Ground Water	05/27/23 1101	II
E2300533-009	527EB1	Ground Water	05/27/23 1800	II
E2300533-010	531DUP4	Ground Water	05/31/23 0845	II
E2300533-011	529EB5	Ground Water	05/29/23 1630	II
E2300533-012	530DUP3	Ground Water	05/30/23 1600	II
E2300533-013	529DUP2	Ground Water	05/29/23 1230	II
E2300533-014	6147WW31	Ground Water	06/01/23 1045	II
E2300533-015	52847WW	Ground Water	05/28/23 1020	II

Service Request Summary

Folder #: **E2300533**
Client Name: Environmental Monitoring and Technologies, Inc.
Project Name: LHAAP-47
Project Number: W355063, Task 3.1

Report To: Tim Witrzek
Environmental Monitoring and Technologies, Inc.
509 N 3rd avenue
Morton Grove, IL 60016
USA
Phone Number: 847-774-2873
Cell Number:
Fax Number:
E-mail: twitrzek@emt.com

Project Chemist: James Guin
Originating Lab: HOUSTON

Logged By: JGUIN
Date Received: 06/02/23
Internal Due Date: 6/30/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y

Report to MDL?: Y
P.O. Number:
EDD: No EDD Specified

60 120 mL-Plastic Bottle Natural WM Unpreserved
Location: SMO
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2300533-016	528EB3	Ground Water	05/28/23 1620	II
E2300533-017	528EB4	Ground Water	05/28/23 1620	II
E2300533-018	528LHSMW57	Ground Water	05/28/23 1130	II
E2300533-019	527EB2	Ground Water	05/27/23 1800	II
E2300533-020	52647WW37	Ground Water	05/26/23 1230	II
E2300533-021	529LHSM41	Ground Water	05/29/23 1525	II
E2300533-022	52847WW19	Ground Water	05/28/23 1520	II
E2300533-023	52647WW53	Ground Water	05/26/23 1355	II
E2300533-024	52647WW51	Ground Water	05/26/23 1105	II
E2300533-025	53047WW14	Ground Water	05/30/23 1000	II
E2300533-026	527LHSMW54	Ground Water	05/27/23 1500	II
E2300533-027	528LHSMW56R	Ground Water	05/28/23 1207	II
E2300533-028	529LHSMW46R	Ground Water	05/29/23 0930	II
E2300533-029	52547WW50	Ground Water	05/25/23 1620	II
E2300533-030	528LHSMW55R	Ground Water	05/28/23 1012	II

Service Request Summary

Folder #: **E2300533**
Client Name: Environmental Monitoring and Technologies, Inc.
Project Name: LHAAP-47
Project Number: W355063, Task 3.1

Report To: Tim Witrzek
Environmental Monitoring and Technologies, Inc.
509 N 3rd avenue
Morton Grove, IL 60016
USA
Phone Number: 847-774-2873
Cell Number:
Fax Number:
E-mail: twitrzek@emt.com

Project Chemist: James Guin
Originating Lab: HOUSTON

Logged By: JGUIN
Date Received: 06/02/23
Internal Due Date: 6/30/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y

Report to MDL?: Y
P.O. Number:
EDD: No EDD Specified

60 120 mL-Plastic Bottle Natural WM Unpreserved
Location: SMO
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2300533-031	529LHSMW44	Ground Water	05/29/23 1400	II
E2300533-032	53047WW09	Ground Water	05/30/23 1200	II
E2300533-033	52747WW59	Ground Water	05/27/23 1125	II
E2300533-034	53047WW58	Ground Water	05/30/23 1557	II
E2300533-035	52747WW40	Ground Water	05/27/23 1305	II
E2300533-036	52847WW23	Ground Water	05/28/23 1530	II
E2300533-037	529DUP2	Ground Water	05/29/23 1310	II
E2300533-038	52747WW41	Ground Water	05/27/23 1505	II
E2300533-039	5247WW54	Ground Water	05/29/23 1431	II
E2300533-040	6147WW33	Ground Water	06/01/23 1525	II
E2300533-041	531LH5WW50	Ground Water	05/31/23 1507	II
E2300533-042	528LH5MW56R	Ground Water	05/28/23 1207	II
E2300533-043	61DUP6	Ground Water	06/01/23 1100	II
E2300533-044	52847WW43	Ground Water	05/28/23 1400	II
E2300533-045	53047WW08R	Ground Water	05/30/23 1500	II

Service Request Summary

Folder #: **E2300533**
Client Name: Environmental Monitoring and Technologies, Inc.
Project Name: LHAAP-47
Project Number: W355063, Task 3.1

Report To: Tim Witrzek
Environmental Monitoring and Technologies, Inc.
509 N 3rd avenue
Morton Grove, IL 60016
USA
Phone Number: 847-774-2873
Cell Number:
Fax Number:
E-mail: twitrzek@emt.com

Project Chemist: James Guin
Originating Lab: HOUSTON

Logged By: JGUIN
Date Received: 06/02/23
Internal Due Date: 6/30/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y

Report to MDL?: Y
P.O. Number:
EDD: No EDD Specified

60 120 mL-Plastic Bottle Natural WM Unpreserved
Location: SMO
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2300533-046	52947WW55	Ground Water	05/29/23 1110	II
E2300533-047	53047WW06	Ground Water	05/30/23 1330	II
E2300533-048	53047WW39	Ground Water	05/30/23 0855	II
E2300533-049	52947WW52	Ground Water	05/29/23 0930	II
E2300533-050	52547WW48	Ground Water	05/25/23 1310	II
E2300533-051	52947WW57	Ground Water	05/29/23 1150	II
E2300533-052	52947WW56	Ground Water	05/29/23 1626	II
E2300533-053	52747WW26R	Ground Water	05/27/23 1635	II
E2300533-054	6147WW46	Ground Water	06/01/23 1456	II
E2300533-055	5284WW19	Ground Water	05/28/23 1520	II
E2300533-056	529EB6	Ground Water	05/29/23 1630	II
E2300533-057	6147WW34	Ground Water	06/01/23 1041	II
E2300533-058	52747WW42	Ground Water	05/27/23 1728	II
E2300533-059	530LH504W43R	Ground Water	05/30/23 1340	II
E2300533-060	53047WW58	Ground Water	05/30/23 1557	II

Service Request Summary

Folder #:	**E2300533**
Client Name:	Environmental Monitoring and Technologies, Inc.
Project Name:	LHAAP-47
Project Number:	W355063, Task 3.1
Report To:	Tim Witrzek Environmental Monitoring and Technologies, Inc. 509 N 3rd avenue Morton Grove, IL 60016 USA
Phone Number:	847-774-2873
Cell Number:	
Fax Number:	
E-mail:	twitrzek@emt.com

Project Chemist:	James Guin
Originating Lab:	HOUSTON
Logged By:	JGUIN
Date Received:	06/02/23
Internal Due Date:	6/30/2023
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	
EDD:	No EDD Specified

60 120 mL-Plastic Bottle Natural WM Unpreserved

Location: SMO

Pressure Gas:

Service Request Summary

Folder #: **E2300533**
Client Name: Environmental Monitoring and Technologies, Inc.
Project Name: LHAAP-47
Project Number: W355063, Task 3.1

Report To: Tim Witrzek
Environmental Monitoring and Technologies, Inc.
509 N 3rd avenue
Morton Grove, IL 60016
USA
Phone Number: 847-774-2873
Cell Number:
Fax Number:
E-mail: twitrzek@emt.com

Project Chemist: James Guin
Originating Lab: HOUSTON

Logged By: JGUIN
Date Received: 06/02/23
Internal Due Date: 6/30/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y

Report to MDL?: Y
P.O. Number:
EDD: No EDD Specified

60 120 mL-Plastic Bottle Natural WM Unpreserved
Location: SMO
Pressure Gas:

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.

Data Qualifiers

Lab Standard

M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793_2024	5/27/2024
Arkansas Department of Environmental Quality	88-00356	3/27/2024
Department of Defense	L22-90	3/31/2024
Department of Defense	L23-358	5/31/2025
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028-2023	12/31/2023
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Minnesota Department of Health	2368363	12/31/2023
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2024
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209423	4/24/2024
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2024
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	TN04016-2023	4/30/2024
Texas Commision on Environmental Quality	T104704231-23-30	4/30/2024
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Ecology	C819-22	11/14/2023

Chain of Custody

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Chain of Custody Form

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COC ID: 289160

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	LHAAP-47	A	SW6850 Perchlorate
Work Order		Project Number	103550G3, Task 3.1	B	
Company Name	Environmental Monitoring and Tech	Bill To Company	Environmental Monitoring and Tech	C	
Send Report To	Tim Witrzek	Invoice Attn	Tim Witrzek	D	
Address	509 N 3rd Ave	Address	509 N 3rd Ave	E	
				F	
City/State/Zip	Des Plaines, IL 60016	City/State/Zip	Des Plaines IL 60016	G	
Phone	(847) 324-3320	Phone	(847) 967-6666	H	
Fax	(847) 967-6735	Fax	(847) 967-6735	I	
e-Mail Address	twitrzek@emt.com	e-Mail Address	twitrzek@emt.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	5314GWW38	5/31	1011	GW	8	1	✓										
2	534GWW29	5/31	1345				✓										
3	6147WW04	6/1	1230				✓										
4	531DUP5	5/31	1110				✓										
5	6147WW45	6/1	1226				✓										
6	5314712WW61	5/31	1035				✓										
7	53142WW13	5/31	1215				✓										
8	527LHSB2WW60	5/27	1101				✓										
9	527EB1	5/27	1800				✓										
10	531DUP4	5/31	0845				✓										

Sampler(s) Please Print & Sign: Phil Werner

Shipment Method: Fed Ex

Required Turnaround Time: (Check Box) ☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by: Travis Ritter	Date: 6/1	Time: 1900	Received by: Fed Ex	
Relinquished by:	Date:	Time:	Received by (Laboratory): 6/2/23 09:15	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

Notes:

Cooler ID	Cooler Temp.
51799	2.6°
51177	4.3°

QC Package: (Check One Box Below)
☒ Level II Std QC
☐ Level III Std QC/Raw Data
☐ Level IV SW846/CLP
☐ Other
☐ TRRP Checklist
☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

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COC ID: 289164

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	LHAAP-47	A	SW6850 Perchlorate
Work Order		Project Number	103550G3, Task 3.1	B	
Company Name	Environmental Monitoring and Tech	Bill To Company	Environmental Monitoring and Tech	C	
Send Report To	Tim Witrzek	Invoice Attn	Tim Witrzek	D	
Address	509 N 3rd Ave	Address	509 N 3rd Ave	E	
				F	
City/State/Zip	Des Plaines, IL 60016	City/State/Zip	Des Plaines IL 60016	G	
Phone	(847) 324-3320	Phone	(847) 967-6666	H	
Fax	(847) 967-6735	Fax	(847) 967-6735	I	
e-Mail Address	twitrzek@emt.com	e-Mail Address	twitrzek@emt.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	529 EB5	5/29	1630	DI	8	1	✓										
2	530 DUP3	5/30	1600	GW			✓										
3	529 DUP2	5/29	~~1230~~ 1220	GW			✓										
4	61472WW31	6/1	1045				✓										
5	52847WW	5/28	1020				✓										
6	528 EB3	5/28	1620	DI			✓										
7	528 EB4	5/28	1620	DI			✓										
8	528 LHS MW57	5/28	1130	GW			✓										
9	527 EB2	5/27	1800				✓										
10	52647WW37	5/26	1230				✓										

Sampler(s) Please Print & Sign: Phil Werner

Shipment Method: Fed Ex

Required Turnaround Time: (Check Box) [X] STD 10 Wk Days [ ] 5 Wk Days [ ] 2 Wk Days [ ] 24 Hour [ ] Other

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Travis Ritter	6/1	1900	Fed Ex
Relinquished by:	Date:	Time:	Received by (Laboratory):
			6/2/23 09:15
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)

[X] Level II Std QC
[ ] Level III Std QC/Raw Data
[ ] Level IV SW846/CLP
[ ] Other
[ ] **RRP Checklist
[ ] **RRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

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COC ID: 289163

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	LHAAP-47	A	SW6850 Perchlorate
Work Order		Project Number	103550G3, Task 3.1	B	
Company Name	Environmental Monitoring and Tech	Bill To Company	Environmental Monitoring and Tech	C	
Send Report To	Tim Witrzek	Invoice Attn	Tim Witrzek	D	
Address	509 N 3rd Ave	Address	509 N 3rd Ave	E	
				F	
City/State/Zip	Des Plaines, IL 60016	City/State/Zip	Des Plaines IL 60016	G	
Phone	(847) 324-3320	Phone	(847) 967-6666	H	
Fax	(847) 967-6735	Fax	(847) 967-6735	I	
e-Mail Address	twitrzek@emt.com	e-Mail Address	twitrzek@emt.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	529 LHSMW41	5/29	1525	GW	8	1	✓										
2	52847GW19	5/28	1520				✓										
3	52647GW53	5/26	1355				✓										
4	52647GW51	5/26	1105				✓										
5	53047GW14	5/30	1000				✓										
6	527LHSMW54	5/27	1500				✓										
7	528LHSMW56R	5/28	1207				✓										
8	529 LHSMW46R MS/MSD	5/29	0930				✓										
9	~~5/25 47GW55~~ RW 52547GW50	5/25	1620				✓										
10	528LHSMW55R	5/28	1012				✓										

Sampler(s) Please Print & Sign: Phil Werner

Shipment Method: Fed Ex

Required Turnaround Time: (Check Box) [X] STD 10 Wk Days [ ] 5 Wk Days [ ] 2 Wk Days [ ] 24 Hour [ ] Other

Results Due Date:

Relinquished by: Travis Ritter	Date: 6/1	Time: 1900	Received by: Fed Ex	
Relinquished by:	Date:	Time:	Received by (Laboratory): 6/2/23	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

Notes:

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)

- [X] Level II Std QC
- [ ] Level III Std QC/Raw Data
- [ ] Level IV SW846/CLP
- [ ] Other
- [ ] TRRP Checklist
- [ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

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Chain of Custody Form

COC ID: 289162

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	LHAAP-47	A	SW6850 Perchlorate
Work Order		Project Number	103550G3, Task 3.1	B	
Company Name	Environmental Monitoring and Tech	Bill To Company	Environmental Monitoring and Tech	C	
Send Report To	Tim Witrzek	Invoice Attn	Tim Witrzek	D	
Address	509 N 3rd Ave	Address	509 N 3rd Ave	E	
				F	
City/State/Zip	Des Plaines, IL 60016	City/State/Zip	Des Plaines IL 60016	G	
Phone	(847) 324-3320	Phone	(847) 967-6666	H	
Fax	(847) 967-6735	Fax	(847) 967-6735	I	
e-Mail Address	twitrzek@emt.com	e-Mail Address	twitrzek@emt.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	529 LHSMW44	5/29	1400	GW	8	1	✓										
2	530 47 WW09	5/30	1200				✓										
3	527 47 WW59	5/27	1125				✓										
4	530 47 WW58	5/30	1557				✓										
5	527 47 WW40	5/27	1305				✓										
6	528 47 WW23	5/28	1530				✓										
7	529 DUP2	5/29	1310				✓										
8	527 47 WW41	5/27	1505				✓										
9	529 47 WW54	5/29	1431				✓										
10	61 47 WW33	6/1	1525				✓										

Sampler(s) Please Print & Sign: Phil Werner

Shipment Method: Fed Ex

Required Turnaround Time: (Check Box) [X] STD 10 Wk Days [ ] 5 Wk Days [ ] 2 Wk Days [ ] 24 Hour [ ] Other

Results Due Date:

Relinquished by: Travis Ritter	Date: 6/1	Time: 1900	Received by: Fed Ex
Relinquished by:	Date:	Time:	Received by (Laboratory): 6/2/23 09:15
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)

- [X] Level II Std QC
- [ ] Level III Std QC/Raw Data
- [ ] Level IV SW846/CLP
- [ ] Other
- [ ] TRRP Checklist
- [ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

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Chain of Custody Form

COC ID: 289161

ALS Project Manager:		ALS Work Order #:	

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	LHAAP-47	A	SW6850 Perchlorate
Work Order		Project Number	103555063, TASK 3.1	B	
Company Name	Environmental Monitoring and Tech	Bill To Company	Environmental Monitoring and Tech	C	
Send Report To	Tim Witrzek	Invoice Attn	Tim Witrzek	D	
Address	509 N 3rd Ave	Address	509 N 3rd Ave	E	
				F	
City/State/Zip	Des Plaines , IL 60016	City/State/Zip	Des Plaines IL 60016	G	
Phone	(847) 324-3320	Phone	(847) 967-6666	H	
Fax	(847) 967-6735	Fax	(847) 967-6735	I	
e-Mail Address	twitrzek@emt.com	e-Mail Address	twitrzek@emt.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	531LHSMW50	5/31	1507	GW	8	1	✓										
2	528LHSMW56R MS/MSD	5/28	1207				✓										
3	61DUP6	6/1	1100				✓										
4	52847WW43	5/28	1600				✓										
5	53047WW08R	5/30	1500				✓										
6	52947WW55	5/29	1110				✓										
7	53047WW06	5/30	1330				✓										
8	53047WW39	5/30	0855				✓										
9	52947WW52	5/29	0930				✓										
10	52547WW48	5/25	1310				✓										

Sampler(s) Please Print & Sign	Shipment Method	Required Turnaround Time: (Check Box)	Results Due Date:
Phil Wecher Phil Wecher	Fed Ex	[X] STD 10 Wk Days [ ] 5 Wk Days [ ] 2 Wk Days [ ] 24 Hour [ ] Other	

Relinquished by:	Date:	Time:	Received by:	Notes:
Travis Ritter	6/1	1900	Fed Ex	
Relinquished by:	Date:	Time:	Received by (Laboratory): 6/2/23 09:15	Cooler ID / Cooler Temp.
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

QC Package: (Check One Box Below)
- [X] Level II Std QC
- [ ] Level III Std QC/Raw Data
- [ ] Level IV SW846/CLP
- [ ] Other
- [ ] TRRP Checklist
- [ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

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COC ID: 289165

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	LHAAP-47	A	SW6850 Perchlorate
Work Order		Project Number	103550G3, Task 3.1	B	
Company Name	Environmental Monitoring and Tech	Bill To Company	Environmental Monitoring and Tech	C	
Send Report To	Tim Witrzek	Invoice Attn	Tim Witrzek	D	
Address	509 N 3rd Ave	Address	509 N 3rd Ave	E	
				F	
City/State/Zip	Des Plaines, IL 60016	City/State/Zip	Des Plaines IL 60016	G	
Phone	(847) 324-3320	Phone	(847) 967-6666	H	
Fax	(847) 967-6735	Fax	(847) 967-6735	I	
e-Mail Address	twitrzek@emt.com	e-Mail Address	twitrzek@emt.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	529 47WW57	5/29	1150	GW	B	1	✓										
2	529 47WW56	5/29	1626				✓										
3	527 47WW26R	5/27	1635				✓										
4	61 47WW46	6/1	1456				✓										
5	528 4WW19 MS/MSD	5/28	1500				✓										
6	529 EB6	5/29	1630	DI			✓										
7	61 47WW34	6/1	1041	GW			✓										
8	527 47WW42	5/27	1728				✓										
9	530 LHSAW43R	5/30	1340				✓										
10	530 47WW58 MS/MSD	5/30	1557		✓	✓	✓										

Sampler(s) Please Print & Sign: Phil Werner / Travis Ritter

Shipment Method: Fed Ex

Required Turnaround Time: (Check Box) ☐ Other ____ ☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Travis Ritter	6/1	1900	Fed Ex
Relinquished by:	Date:	Time:	Received by (Laboratory):
			6/2/23 09:15
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)

- ☒ Level II Std QC
- ☐ Level III Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other
- ☐ TRRP Checklist
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

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Client: Environmental Monitoring and Tech Date: JUN 0 6 2023 WO#: _____

Time Received: 09:15 Received by: PG BO#: 92936

Matrices: Solid/Sludge (Water) Oil Wipes Hydrocarbon Liquid Other

Kit ID/Cooler ID	Trip Blank ID	Cooler Temp (C) Observed/Corrected	IR #	Temp BLK Present?
51177	—	2.6 / 2.5	#31	(Y) N
		/		Y N
		/		Y N
		/		Y N
		/		Y N

Delivery Method: FedEx UPS Greyhound ALS Client Other_____

Date/Time of Unpacking: JUN 0 3 2023 09:00 Am Unpacked by: SM

Shipping container/cooler in good condition?	(Yes)	No	Not Present
Custody seals intact on shipping container/cooler?	(Yes)	No	Not Present
Custody seals intact on sample bottles?	Yes	No	(Not Present)
Chain of Custody present?	(Yes)	No	
Chain of Custody signed when relinquished and received?	(Yes)	No	
Chain of Custody – Sampler's name present?	(Yes)	No	
Chain of Custody agrees with sample labels?	(Yes)	No	
Samples in proper container/bottle?	(Yes)	No	
VOA/TX1005/1006 Solids in hermetically Sealed Vials:	Yes	No	(No VOA/TX1005/1006 Solid)
Sample containers intact?	(Yes)	No	
Sufficient sample volume for indicated test?	(Yes)	No	
All samples received within holding time?	(Yes)	No	
Container/Temp Blank temperature in compliance?	(Yes)	No	
Water - VOA vials have zero headspace?	Yes	No	N/A (No VOA submitted)
Non-VOA waters preserved with HCl, H2SO4, HNO3 are pH <2?			Yes No (N/A)
Waters preserved with NaOH/Ascorbic acid are pH>12?	Yes	No	(N/A)
pH adjusted? Yes*	No	(N/A)	*See Preservation Logbook

pH adjusted by: _____ **pH Paper Lot:** _____

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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston Specialties Laboratory
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 421288 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 6/5/23 14:36

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2300533-001	53147WW38	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2300533-002	5347WW29	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2300533-003	6147WW04	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2300533-004	531DUP5	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2300533-005	6147WW45	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2300533-006	53147WW61	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2300533-007	53147WW13	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2300533-008	527LHS04W60	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2300533-009	527EB1	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2300533-010	531DUP4	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2300533-011	529EB5	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2300533-012	530DUP3	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2300533-013	529DUP2	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2300533-014	6147WW31	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2300533-015	52847WW	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2300533-016	528EB3	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2300533-017	528EB4	.01	6850/ClO4 DOD			Ground Water	10mL	
18	E2300533-018	528LHSMW57	.01	6850/ClO4 DOD			Ground Water	10mL	
19	E2300533-019	527EB2	.01	6850/ClO4 DOD			Ground Water	10mL	
20	E2300533-020	52647WW37	.01	6850/ClO4 DOD			Ground Water	10mL	
21	EQ2300289-01	MB		6850/ClO4 DOD			Liquid	10mL	
22	EQ2300289-02	LCS		6850/ClO4 DOD			Liquid	10mL	
23	EQ2300289-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 227236 Logbook Ref: Perchlorate (1st Source) Expires On: 07/31/2023

EQ2300289-02 1.00µL EQ2300289-03 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 227244 Logbook Ref: Perchlorate Internal Standard Expires On: 07/31/2023

E2300533-001	100.00µL	E2300533-002	100.00µL	E2300533-003	100.00µL	E2300533-004	100.00µL	E2300533-005	100.00µL	E2300533-006	100.00µL
E2300533-007	100.00µL	E2300533-008	100.00µL	E2300533-009	100.00µL	E2300533-010	100.00µL	E2300533-011	100.00µL	E2300533-012	100.00µL
E2300533-013	100.00µL	E2300533-014	100.00µL	E2300533-015	100.00µL	E2300533-016	100.00µL	E2300533-017	100.00µL	E2300533-018	100.00µL
E2300533-019	100.00µL	E2300533-020	100.00µL	EQ2300289-01	100.00µL	EQ2300289-02	100.00µL	EQ2300289-03	100.00µL		

Preparation Information Benchsheet

Prep Run#: 421288 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 6/5/23 14:36

Preparation Materials

Water HPLC Grade	HPLC water 5/18/23CG (229314)	6850 Amber Glass screw vial	2mL Screw Top Vial (221894)	6850 0.45um syringe filters	6850 0.45um syringe (229005)
6850 Luer-Lok Syringes	luer-lock syringes (228116)				

Preparation Steps

Step: Preparation
Started: 6/5/23 14:36
Finished: 6/8/23 15:10
By: XMI
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Preparation Information Benchsheet

Prep Run#: 421289 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 6/5/23 14:38

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2300533-021	529LHSM41	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2300533-022	52847WW19	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2300533-023	52647WW53	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2300533-024	52647WW51	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2300533-025	53047WW14	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2300533-026	527LHSMW54	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2300533-027	528LHSMW56R	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2300533-028	529LHSMW46R	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2300533-029	52547WW50	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2300533-030	528LHSMW55R	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2300533-031	529LHSMW44	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2300533-032	53047WW09	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2300533-033	52747WW59	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2300533-034	53047WW58	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2300533-035	52747WW40	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2300533-036	52847WW23	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2300533-037	529DUP2	.01	6850/ClO4 DOD			Ground Water	10mL	
18	E2300533-038	52747WW41	.01	6850/ClO4 DOD			Ground Water	10mL	
19	E2300533-039	5247WW54	.01	6850/ClO4 DOD			Ground Water	10mL	
20	E2300533-040	6147WW33	.01	6850/ClO4 DOD			Ground Water	10mL	
21	EQ2300290-01	MB		6850/ClO4 DOD			Liquid	10mL	
22	EQ2300290-02	LCS		6850/ClO4 DOD			Liquid	10mL	
23	EQ2300290-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
24	EQ2300290-04	529LHSMW46R MS	.01	6850/ClO4 DOD			Liquid	10mL	
25	EQ2300290-05	529LHSMW46R DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 227236 Logbook Ref: Perchlorate (1st Source) Expires On: 07/31/2023

EQ2300290-02 1.00µL EQ2300290-03 1.00µL EQ2300290-04 1.00µL EQ2300290-05 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 227244 Logbook Ref: Perchlorate Internal Standard Expires On: 07/31/2023

E2300533-021 100.00µL E2300533-022 100.00µL E2300533-023 100.00µL E2300533-024 100.00µL E2300533-025 100.00µL E2300533-026 100.00µL
E2300533-027 100.00µL E2300533-028 100.00µL E2300533-029 100.00µL E2300533-030 100.00µL E2300533-031 100.00µL E2300533-032 100.00µL
E2300533-033 100.00µL E2300533-034 100.00µL E2300533-035 100.00µL E2300533-036 100.00µL E2300533-037 100.00µL E2300533-038 100.00µL

Preparation Information Benchsheet

Prep Run#: 421289 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 6/5/23 14:38

E2300533-039	100.00µL	E2300533-040	100.00µL	EQ2300290-01	100.00µL	EQ2300290-02	100.00µL	EQ2300290-03	100.00µL	EQ2300290-04	100.00µL
EQ2300290-05	100.00µL										

Preparation Materials

Water HPLC Grade	HPLC water 5/18/23CG (229314)	6850 Amber Glass screw vial	2mL Screw Top Vial (221894)	6850 0.45um syringe filters	6850 0.45um syringe (229005)
6850 Luer-Lok Syringes	Luer-Lok Syringes (228117)				

Preparation Steps

Step: Preparation
Started: 6/5/23 14:38
Finished: 6/6/23 15:10
By: XMI
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Preparation Information Benchsheet

Prep Run#: 421290 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 6/5/23 14:40

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2300533-041	531LH5WW50	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2300533-042	528LH5MW56R	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2300533-043	61DUP6	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2300533-044	52847WW43	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2300533-045	53047WW08R	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2300533-046	52947WW55	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2300533-047	53047WW06	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2300533-048	53047WW39	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2300533-049	52947WW52	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2300533-050	52547WW48	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2300533-051	52947WW57	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2300533-052	52947WW56	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2300533-053	52747WW26R	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2300533-054	6147WW46	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2300533-055	5284WW19	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2300533-056	529EB6	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2300533-057	6147WW34	.01	6850/ClO4 DOD			Ground Water	10mL	
18	E2300533-058	52747WW42	.01	6850/ClO4 DOD			Ground Water	10mL	
19	E2300533-059	530LH504W43R	.01	6850/ClO4 DOD			Ground Water	10mL	
20	E2300533-060	53047WW58	.01	6850/ClO4 DOD			Ground Water	10mL	
21	EQ2300291-01	MB		6850/ClO4 DOD			Liquid	10mL	
22	EQ2300291-02	LCS		6850/ClO4 DOD			Liquid	10mL	
23	EQ2300291-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
24	EQ2300291-04	528LH5MW56R MS	.01	6850/ClO4 DOD			Liquid	10mL	
25	EQ2300291-05	528LH5MW56R DMS	.01	6850/ClO4 DOD			Liquid	10mL	
26	EQ2300291-06	5284WW19 MS	.01	6850/ClO4 DOD			Liquid	10mL	
27	EQ2300291-07	5284WW19 DMS	.01	6850/ClO4 DOD			Liquid	10mL	
28	EQ2300291-08	53047WW58 MS	.01	6850/ClO4 DOD			Liquid	10mL	
29	EQ2300291-09	53047WW58 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 227236 Logbook Ref: Perchlorate (1st Source) Expires On: 07/31/2023

EQ2300291-02 1.00µL EQ2300291-03 1.00µL EQ2300291-04 1.00µL EQ2300291-05 1.00µL EQ2300291-06 1.00µL EQ2300291-07 1.00µL
EQ2300291-08 1.00µL EQ2300291-09 1.00µL

Preparation Information Benchsheet

Prep Run#: 421290 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 6/5/23 14:40

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 227244 Logbook Ref: Perchlorate Internal Standard Expires On: 07/31/2023

E2300533-041	100.00µL	E2300533-042	100.00µL	E2300533-043	100.00µL	E2300533-044	100.00µL	E2300533-045	100.00µL	E2300533-046	100.00µL
E2300533-047	100.00µL	E2300533-048	100.00µL	E2300533-049	100.00µL	E2300533-050	100.00µL	E2300533-051	100.00µL	E2300533-052	100.00µL
E2300533-053	100.00µL	E2300533-054	100.00µL	E2300533-055	100.00µL	E2300533-056	100.00µL	E2300533-057	100.00µL	E2300533-058	100.00µL
E2300533-059	100.00µL	E2300533-060	100.00µL	EQ2300291-01	100.00µL	EQ2300291-02	100.00µL	EQ2300291-03	100.00µL	EQ2300291-04	100.00µL
EQ2300291-05	100.00µL	EQ2300291-06	100.00µL	EQ2300291-07	100.00µL	EQ2300291-08	100.00µL	EQ2300291-09	100.00µL		

Preparation Materials

Water HPLC Grade	HPLC water 5/18/23CG (229314)	6850 Amber Glass screw vial	2mL Screw Top Vial (221894)	6850 0.45um syringe filters	6850 0.45um syringe (229005)
6850 Luer-Lok Syringes	luer-lock syringes (228116)				

Preparation Steps

Step: Preparation
Started: 6/5/23 14:40
Finished: 6/6/23 15:10
By: XMI
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

ALS Environmental - Houston Specialties Laboratory
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/31/23 1011
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	53147WW38	**Units:**	µg/L
Lab Code:	E2300533-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**22.3**		0.100	0.0500	0.0250	1	6/ 5/23	6/7/23 12:25	421288	806739	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/31/23 1345
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	5347WW29	**Units:**	µg/L
Lab Code:	E2300533-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/7/23 13:47	421288	806739	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	6/ 1/23 1230
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	6147WW04	**Units:**	µg/L
Lab Code:	E2300533-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/7/23 13:53	421288	806739	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/31/23 1110
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	531DUP5	**Units:**	µg/L
Lab Code:	E2300533-004	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/7/23 13:59	421288	806739	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	6/ 1/23 1226
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	6147WW45	**Units:**	µg/L
Lab Code:	E2300533-005	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/7/23 14:05	421288	806739	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/31/23 1035
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	53147WW61	**Units:**	µg/L
Lab Code:	E2300533-006	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/7/23 14:10	421288	806739	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/31/23 1215
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	53147WW13	**Units:**	µg/L
Lab Code:	E2300533-007	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/7/23 14:16	421288	806739	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/27/23 1101
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	527LHS04W60	**Units:**	µg/L
Lab Code:	E2300533-008	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**23600**		100	50.0	25.0	1000	6/ 5/23	6/7/23 14:22	421288	806739	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/27/23 1800
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	527EB1	**Units:**	µg/L
Lab Code:	E2300533-009	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/7/23 15:31	421288	806739	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/31/23 0845
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	531DUP4	**Units:**	µg/L
Lab Code:	E2300533-010	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/7/23 15:36	421288	806739	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/29/23 1630
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	529EB5	**Units:**	µg/L
Lab Code:	E2300533-011	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/7/23 15:44	421288	806739	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/30/23 1600
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	530DUP3	**Units:**	µg/L
Lab Code:	E2300533-012	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/7/23 15:50	421288	806739	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/29/23 1230
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	529DUP2	**Units:**	µg/L
Lab Code:	E2300533-013	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 09:23	421288	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	6/ 1/23 1045
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	6147WW31	**Units:**	µg/L
Lab Code:	E2300533-014	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 09:29	421288	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/28/23 1020
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52847WW	**Units:**	µg/L
Lab Code:	E2300533-015	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**178**		2.00	1.00	0.500	20	6/ 5/23	6/8/23 09:35	421288	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/28/23 1620
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	528EB3	**Units:**	µg/L
Lab Code:	E2300533-016	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 09:41	421288	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/28/23 1620
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	528EB4	**Units:**	µg/L
Lab Code:	E2300533-017	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 09:46	421288	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/28/23 1130
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	528LHSMW57	**Units:**	µg/L
Lab Code:	E2300533-018	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 09:52	421288	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/27/23 1800
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	527EB2	**Units:**	µg/L
Lab Code:	E2300533-019	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 09:58	421288	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/26/23 1230
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52647WW37	**Units:**	µg/L
Lab Code:	E2300533-020	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.299**		0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 10:04	421288	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/29/23 1525
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	529LHSM41	**Units:**	µg/L
Lab Code:	E2300533-021	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 10:32	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/28/23 1520
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52847WW19	**Units:**	µg/L
Lab Code:	E2300533-022	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/12/23 13:15	421289	807150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/26/23 1355
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52647WW53	**Units:**	µg/L
Lab Code:	E2300533-023	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 10:38	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/26/23 1105
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52647WW51	**Units:**	µg/L
Lab Code:	E2300533-024	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 10:44	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/30/23 1000
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	53047WW14	**Units:**	µg/L
Lab Code:	E2300533-025	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 10:50	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/27/23 1500
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	527LHSMW54	**Units:**	µg/L
Lab Code:	E2300533-026	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.415**		0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 10:55	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/28/23 1207
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	528LHSMW56R	**Units:**	µg/L
Lab Code:	E2300533-027	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/12/23 13:21	421289	807150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/29/23 0930
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	529LHSMW46R	**Units:**	µg/L
Lab Code:	E2300533-028	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 11:01	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/25/23 1620
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52547WW50	**Units:**	µg/L
Lab Code:	E2300533-029	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 11:07	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/28/23 1012
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	528LHSMW55R	**Units:**	µg/L
Lab Code:	E2300533-030	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0356**	J	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 11:18	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/29/23 1400
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	529LHSMW44	**Units:**	µg/L
Lab Code:	E2300533-031	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 11:24	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/30/23 1200
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	53047WW09	**Units:**	µg/L
Lab Code:	E2300533-032	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 11:30	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/27/23 1125
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52747WW59	**Units:**	µg/L
Lab Code:	E2300533-033	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**1.22**		0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 11:36	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/30/23 1557
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	53047WW58	**Units:**	µg/L
Lab Code:	E2300533-034	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/12/23 13:27	421289	807150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/27/23 1305
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52747WW40	**Units:**	µg/L
Lab Code:	E2300533-035	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**58.7**		0.500	0.250	0.125	5	6/ 5/23	6/8/23 11:41	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/28/23 1530
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52847WW23	**Units:**	µg/L
Lab Code:	E2300533-036	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 11:47	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/29/23 1310
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	529DUP2	**Units:**	µg/L
Lab Code:	E2300533-037	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0450**	J	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 11:53	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/27/23 1505
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52747WW41	**Units:**	µg/L
Lab Code:	E2300533-038	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 11:58	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/29/23 1431
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	5247WW54	**Units:**	µg/L
Lab Code:	E2300533-039	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 12:04	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	6/ 1/23 1525
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	6147WW33	**Units:**	µg/L
Lab Code:	E2300533-040	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 12:10	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/31/23 1507
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	531LH5WW50	**Units:**	µg/L
Lab Code:	E2300533-041	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.203**		0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 12:21	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/28/23 1207
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	528LH5MW56R	**Units:**	µg/L
Lab Code:	E2300533-042	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 12:27	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	6/ 1/23 1100
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	61DUP6	**Units:**	µg/L
Lab Code:	E2300533-043	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 12:44	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/28/23 1400
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52847WW43	**Units:**	µg/L
Lab Code:	E2300533-044	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 12:50	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/30/23 1500
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	53047WW08R	**Units:**	µg/L
Lab Code:	E2300533-045	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 13:13	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/29/23 1110
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52947WW55	**Units:**	µg/L
Lab Code:	E2300533-046	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 13:25	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/30/23 1330
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	53047WW06	**Units:**	µg/L
Lab Code:	E2300533-047	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 13:31	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/30/23 0855
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	53047WW39	**Units:**	µg/L
Lab Code:	E2300533-048	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 13:36	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/29/23 0930
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52947WW52	**Units:**	µg/L
Lab Code:	E2300533-049	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 13:42	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/25/23 1310
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52547WW48	**Units:**	µg/L
Lab Code:	E2300533-050	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0741**	J	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 13:48	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/29/23 1150
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52947WW57	**Units:**	µg/L
Lab Code:	E2300533-051	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 13:54	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/29/23 1626
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52947WW56	**Units:**	µg/L
Lab Code:	E2300533-052	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0465**	J	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 13:59	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/27/23 1635
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52747WW26R	**Units:**	µg/L
Lab Code:	E2300533-053	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0985**	J	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 14:05	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	6/ 1/23 1456
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	6147WW46	**Units:**	µg/L
Lab Code:	E2300533-054	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 14:11	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/28/23 1520
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	5284WW19	**Units:**	µg/L
Lab Code:	E2300533-055	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 14:17	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/29/23 1630
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	529EB6	**Units:**	µg/L
Lab Code:	E2300533-056	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 14:40	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	6/ 1/23 1041
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	6147WW34	**Units:**	µg/L
Lab Code:	E2300533-057	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 14:45	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/27/23 1728
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	52747WW42	**Units:**	µg/L
Lab Code:	E2300533-058	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.343**		0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 14:51	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/30/23 1340
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	530LH504W43R	**Units:**	µg/L
Lab Code:	E2300533-059	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**90.6**		0.500	0.250	0.125	5	6/ 5/23	6/8/23 14:57	421290	806808	

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Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/30/23 1557
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	53047WW58	**Units:**	µg/L
Lab Code:	E2300533-060	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 15:03	421290	806808	

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Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2300289-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/7/23 12:17	421288	806739	

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Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2300290-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 10:15	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2300291-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 12:56	421290	806808	

Accuracy & Precision

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QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/ 7/23
Sample Matrix:	Ground Water		

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	421288

	Lab Control Sample EQ2300289-02			Duplicate Lab Control Sample EQ2300289-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.110	0.100	110	0.0965	0.100	97	84 - 119	13	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300289-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.110**		0.100	0.0500	0.0250	1	6/ 5/23	6/7/23 13:29	421288	806739	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300289-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0965**	J	0.100	0.0500	0.0250	1	6/ 5/23	6/7/23 13:36	421288	806739	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/ 8/23
Sample Matrix:	Ground Water		

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	421289

	Lab Control Sample EQ2300290-02			Duplicate Lab Control Sample EQ2300290-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0876	0.100	88	0.0898	0.100	90	84 - 119	2	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300290-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0876**	J	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 10:21	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300290-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0898**	J	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 10:27	421289	806808	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/ 8/23
Sample Matrix:	Ground Water		

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	421290

	Lab Control Sample EQ2300291-02			Duplicate Lab Control Sample EQ2300291-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.104	0.100	104	0.0995	0.100	100	84 - 119	4	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300291-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.104**		0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 13:02	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300291-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0995**	J	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 13:08	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/29/23
Sample Matrix:	Ground Water	**Date Received:**	6/2/23
		Date Analyzed:	6/12/23

Matrix Spike Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	529LHSMW46R	**Units:**	µg/L
Lab Code:	E2300533-028	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		529LHSMW46RMS			529LHSMW46RDMS					
		Matrix Spike			**Duplicate Matrix Spike**					
		EQ2300290-04			EQ2300290-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND	0.110	0.100	110	0.106	0.100	106	84 - 119	3	15

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/29/23 0930
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	529LHSMW46R	**Units:**	µg/L
Lab Code:	EQ2300290-04	**Basis:**	NA
Run Type:	Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.110**		0.100	0.0500	0.0250	1	6/ 5/23	6/12/23 13:56	421289	807150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/29/23 0930
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	529LHSMW46R	**Units:**	µg/L
Lab Code:	EQ2300290-05	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.106**		0.100	0.0500	0.0250	1	6/ 5/23	6/12/23 14:01	421289	807150	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/28/23
Sample Matrix:	Ground Water	**Date Received:**	6/2/23
		Date Analyzed:	6/ 8/23

Matrix Spike Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	528LH5MW56R	**Units:**	µg/L
Lab Code:	E2300533-042	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		528LH5MW56RMS			528LH5MW56RDMS					
		Matrix Spike			**Duplicate Matrix Spike**					
		EQ2300291-04			EQ2300291-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND	0.112	0.100	112	0.0988	0.100	99	84 - 119	12	15

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/28/23 1207
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	528LH5MW56R	**Units:**	µg/L
Lab Code:	EQ2300291-04	**Basis:**	NA
Run Type:	Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.112**		0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 12:33	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/28/23 1207
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	528LH5MW56R	**Units:**	µg/L
Lab Code:	EQ2300291-05	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0988**	J	0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 12:39	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/28/23
Sample Matrix:	Ground Water	**Date Received:**	6/2/23
		Date Analyzed:	6/ 8/23

Matrix Spike Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	5284WW19	**Units:**	µg/L
Lab Code:	E2300533-055	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		5284WW19MS				5284WW19DMS					
		Matrix Spike				**Duplicate Matrix Spike**					
		EQ2300291-06				EQ2300291-07					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND	0.118	0.100	118	0.112	0.100	112	84 - 119	5	15

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/28/23 1520
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	5284WW19	**Units:**	µg/L
Lab Code:	EQ2300291-06	**Basis:**	NA
Run Type:	Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.118**		0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 14:28	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/28/23 1520
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	5284WW19	**Units:**	µg/L
Lab Code:	EQ2300291-07	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.112**		0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 14:34	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/30/23
Sample Matrix:	Ground Water	**Date Received:**	6/2/23
		Date Analyzed:	6/ 8/23

Matrix Spike Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	53047WW58	**Units:**	µg/L
Lab Code:	E2300533-060	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		53047WW58MS			53047WW58DMS					
		Matrix Spike			**Duplicate Matrix Spike**					
		EQ2300291-08			EQ2300291-09					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND	0.119	0.100	119	0.114	0.100	114	84 - 119	4	15

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/30/23 1557
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	53047WW58	**Units:**	µg/L
Lab Code:	EQ2300291-08	**Basis:**	NA
Run Type:	Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.119**		0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 15:08	421290	806808	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Collected:**	5/30/23 1557
Sample Matrix:	Ground Water	**Date Received:**	6/ 2/23
Sample Name:	53047WW58	**Units:**	µg/L
Lab Code:	EQ2300291-09	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.114**		0.100	0.0500	0.0250	1	6/ 5/23	6/8/23 15:27	421290	806808	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20230606-806642

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XM
2nd Review: GC

ICAL Date: 6/6/2023
Cal. Std. xp: 07/31/2023
ICAL ID: EC2300009

Mobile Phases : A:20mM ammonium acetate in water 32103045 **B:**Acetonitrile 226552

	Sample Name		File Name	Acquisition Method	Dilution	Comments	Date/Time
1	PERCHLORATE1		20230606-001	Perchlorate6850c.lcm	1x	227245	6/6/2023 10:49
2	PERCHLORATE2		20230606-002	Perchlorate6850c.lcm	1x	227246	6/6/2023 10:55
3	PERCHLORATE3		20230606-003	Perchlorate6850c.lcm	1x	227247	6/6/2023 11:01
4	PERCHLORATE4		20230606-004	Perchlorate6850c.lcm	1x	227248	6/6/2023 11:06
5	PERCHLORATE5		20230606-005	Perchlorate6850c.lcm	1x	227249	6/6/2023 11:12
6	PERCHLORATE6		20230606-006	Perchlorate6850c.lcm	1x	227250	6/6/2023 11:18
7	PERCHLORATE7		20230606-007	Perchlorate6850c.lcm	1x	227251	6/6/2023 11:24
8	PERCHLORATE8		20230606-008	Perchlorate6850c.lcm	1x	227252	6/6/2023 11:29
9	PERCHLORATE9		20230606-009	Perchlorate6850c.lcm	1x	227253	6/6/2023 11:35
10	PERCHLORATE10		20230606-010	Perchlorate6850c.lcm	1x	227254	6/6/2023 11:41
11	PERCHLORATEICV		20230606-011	Perchlorate6850c.lcm	1x	227256	6/6/2023 11:47
12	IB		20230606-012	Perchlorate6850c.lcm	1x		6/6/2023 11:52
13	LODV		20230606-013	Perchlorate6850c.lcm	1x	227501	6/6/2023 11:58
14	ICS		20230606-014	Perchlorate6850c.lcm	1x	32103024	6/6/2023 12:04
15	CCV		20230606-015	Perchlorate6850c.lcm	1x	227251	6/6/2023 12:16
16	EQ2300272-01		20230606-016	Perchlorate6850c.lcm	1x		6/6/2023 12:22
17	EQ2300272-02		20230606-017	Perchlorate6850c.lcm	1x		6/6/2023 12:27
18	EQ2300272-03		20230606-018	Perchlorate6850c.lcm	1x		6/6/2023 12:33
19	EQ2300273-01		20230606-019	Perchlorate6850c.lcm	1x		6/6/2023 12:39
20	EQ2300273-02		20230606-020	Perchlorate6850c.lcm	1x		6/6/2023 12:45
21	EQ2300273-03		20230606-021	Perchlorate6850c.lcm	1x		6/6/2023 12:50
22	E2300516-001		20230606-022	Perchlorate6850c.lcm	1x		6/6/2023 12:56
23	E2300516-002		20230606-023	Perchlorate6850c.lcm	1x		6/6/2023 13:02
24	E2300516-003		20230606-024	Perchlorate6850c.lcm	1x		6/6/2023 13:08
25	E2300516-004		20230606-025	Perchlorate6850c.lcm	1x		6/6/2023 13:13
26	CCV		20230606-026	Perchlorate6850c.lcm	1x	227251	6/6/2023 13:19
27	E2300516-005		20230606-027	Perchlorate6850c.lcm	1x		6/6/2023 13:25
28	E2300516-006		20230606-028	Perchlorate6850c.lcm	1x	DNU-CONFIRM PEAK	6/6/2023 13:31
29	E2300519-001		20230606-029	Perchlorate6850c.lcm	1x		6/6/2023 13:36
30	E2300519-002		20230606-030	Perchlorate6850c.lcm	5000x		6/6/2023 13:42
31	E2300519-003		20230606-031	Perchlorate6850c.lcm	5000x		6/6/2023 13:48
32	E2300519-004		20230606-032	Perchlorate6850c.lcm	1x		6/6/2023 13:54
33	EQ2300272-04		20230606-033	Perchlorate6850c.lcm	1x		6/6/2023 13:59
34	EQ2300272-05		20230606-034	Perchlorate6850c.lcm	1x		6/6/2023 14:05
35	E2300519-005		20230606-035	Perchlorate6850c.lcm	1x		6/6/2023 14:11
36	E2300519-006		20230606-036	Perchlorate6850c.lcm	1x		6/6/2023 14:17
37	CCV		20230606-037	Perchlorate6850c.lcm	1x		6/6/2023 14:23

Initial Calibration - Detailed Report

Calibration ID: EC2300009 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2300009-01	PERCHLORATE1	20230606-001	06/06/2023 10:49
02	EC2300009-02	PERCHLORATE2	20230606-002	06/06/2023 10:55
03	EC2300009-03	PERCHLORATE3	20230606-003	06/06/2023 11:01
04	EC2300009-04	PERCHLORATE4	20230606-004	06/06/2023 11:06
05	EC2300009-05	PERCHLORATE5	20230606-005	06/06/2023 11:12
06	EC2300009-06	PERCHLORATE6	20230606-006	06/06/2023 11:18
07	EC2300009-07	PERCHLORATE7	20230606-007	06/06/2023 11:24
08	EC2300009-08	PERCHLORATE8	20230606-008	06/06/2023 11:29
09	EC2300009-09	PERCHLORATE9	20230606-009	06/06/2023 11:35
10	EC2300009-10	PERCHLORATE10	20230606-010	06/06/2023 11:41

Analyte **Curve Fit** **Weighting**

Perchlorate **Average RF** **RSD = 3.738** **Average RF = 0.1827**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.201	02	0.5000	0.1818	03	0.7000	0.1758	04	1.0000	0.1836
05	2.0000	0.1782	06	5.0000	0.1799	07	10.0000	0.1808	08	20.0000	0.1834
09	30.0000	0.1812	10	50.0000	0.1815						

Analyte

Perchlorate RSE = 3.74

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.110	10.0	02	0.5000	0.498	-0.5	03	0.7000	0.673	-3.8
04	1.0000	1.00	0.5	05	2.0000	1.95	-2.5	06	5.0000	4.92	-1.5
07	10.0000	9.90	-1.0	08	20.0000	20.1	0.4	09	30.0000	29.7	-0.9
10	50.0000	49.7	-0.7								

Initial Calibration Verification Summary Report

Calibration ID:	EC2300009	**Instrument ID:**	E-LCMS-01
Datafile ID:	20230606-011	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2300009-11	T	Average RF	10	10.016	ng/mL	0.2	<= 15

Insight Report

Printed at 6/7/2023 10:10:58 AM

Method File: I:\LCMS01\DATA\20230606\20230606.lcm
Project File: I:\LCMS01\DATA\20230606\20230606.damlp

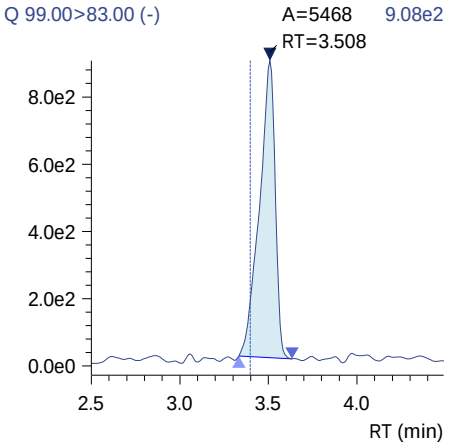
PERCHLORATE1

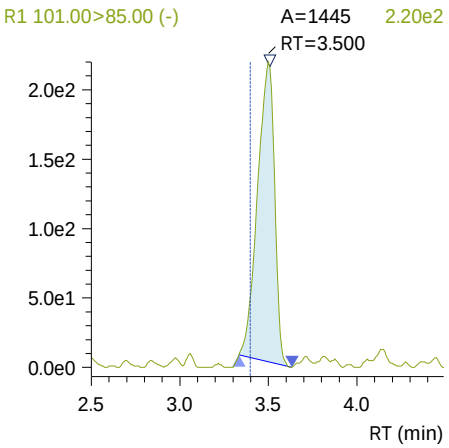
Sample ID: PERCHLORATE1
Date Acquired: 6/6/2023 10:49:38 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-001.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.508	5468	272033	0.1100	ng/mL	101.00 >85.00	26.42	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.499	272033	272033	1.0000	ng/mL	----	----	

Perchlorate

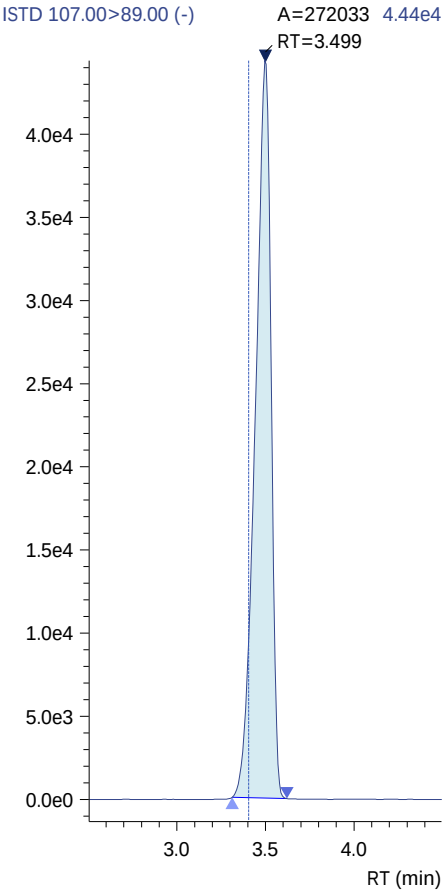
Conc 0.1100
R#1 26.42 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

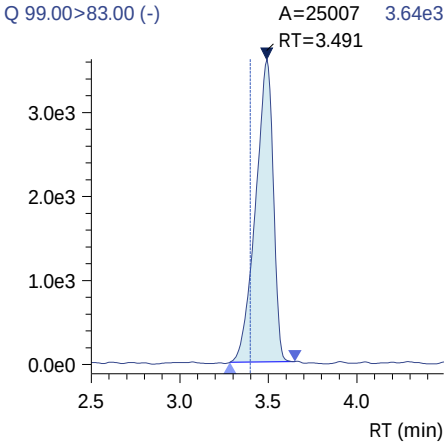
PERCHLORATE2

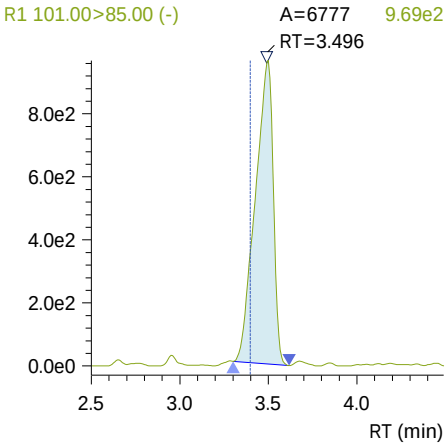
Sample ID: PERCHLORATE2
Date Acquired: 6/6/2023 10:55:23 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-002.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.491	25007	275033	0.4976	ng/mL	101.00 >85.00	27.10	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.486	275033	275033	1.0000	ng/mL	----	----	

Perchlorate

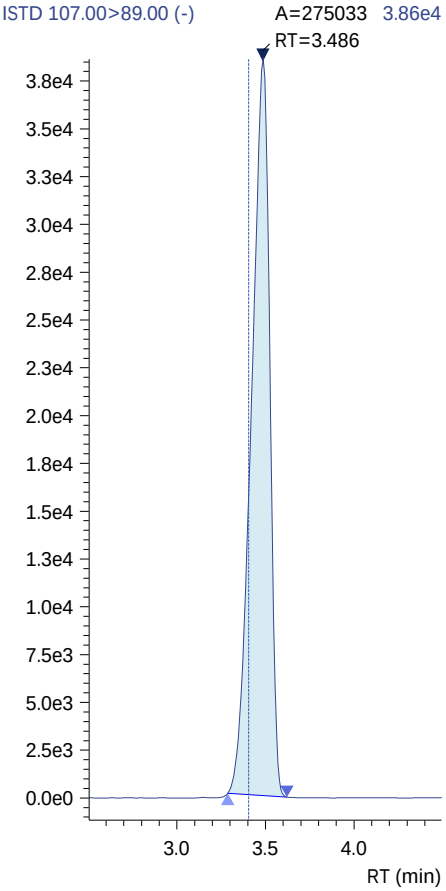
Conc 0.4976
R#1 27.10 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

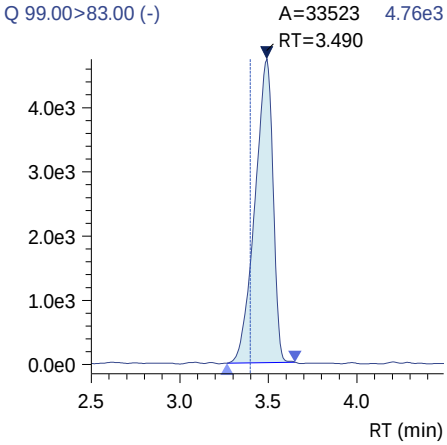
PERCHLORATE3

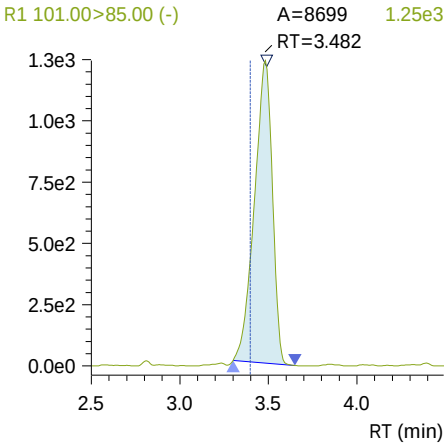
Sample ID: PERCHLORATE3
Date Acquired: 6/6/2023 11:01:08 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-003.lcd
Vial: 3 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.490	33523	272465	0.6733	ng/mL	101.00 >85.00	25.95	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.486	272465	272465	1.0000	ng/mL	----	----	

Perchlorate

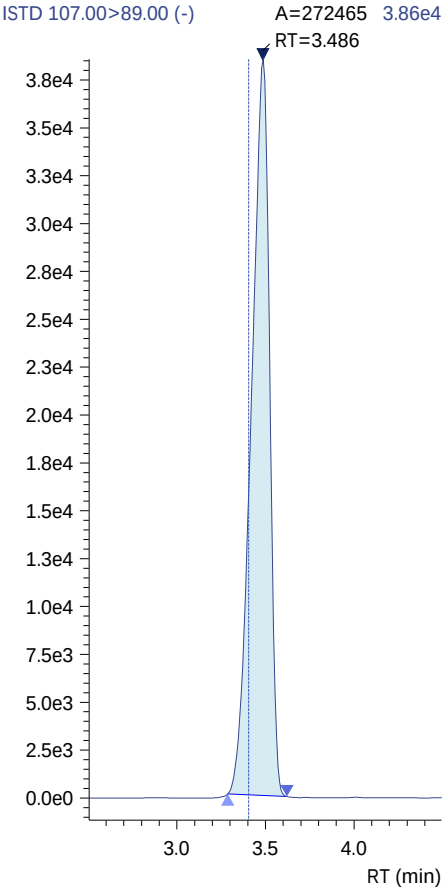
Conc 0.6733
R#1 25.95 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

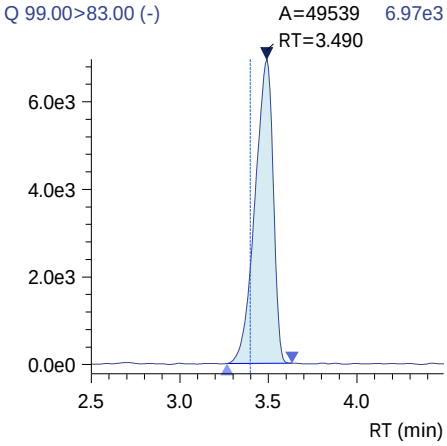
PERCHLORATE4

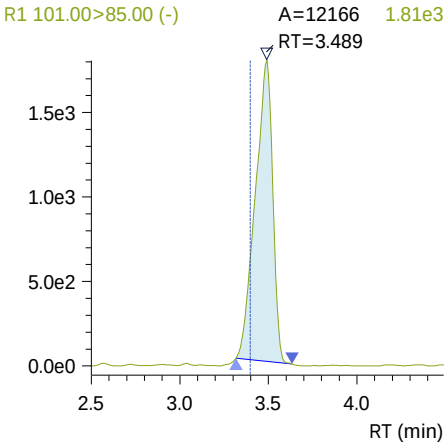
Sample ID: PERCHLORATE4
Date Acquired: 6/6/2023 11:06:52 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-004.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.490	49539	269886	1.0045	ng/mL	101.00 >85.00	24.56	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.486	269886	269886	1.0000	ng/mL	----	----	

Perchlorate

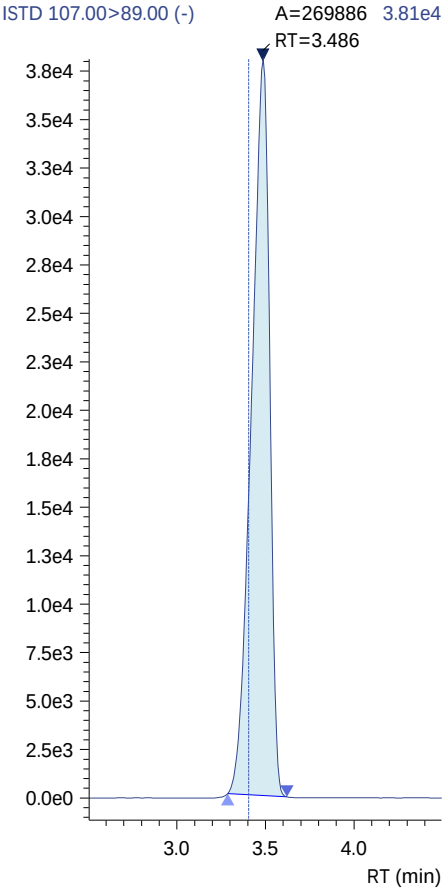
Conc 1.0045
R#1 24.56 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

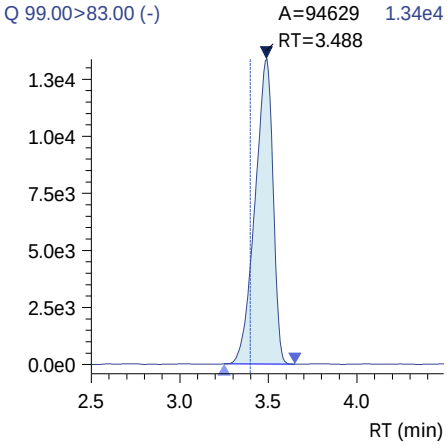
PERCHLORATE5

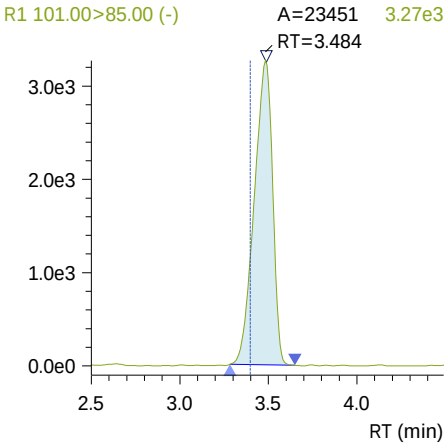
Sample ID: PERCHLORATE5
Date Acquired: 6/6/2023 11:12:36 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-005.lcd
Vial: 5 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.488	94629	265444	1.9510	ng/mL	101.00 >85.00	24.78	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.486	265444	265444	1.0000	ng/mL	----	----	

Perchlorate

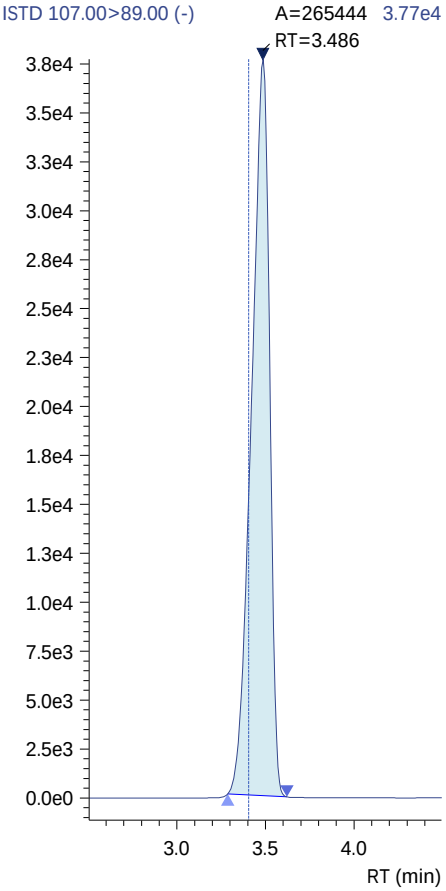
Conc 1.9510
R#1 24.78 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

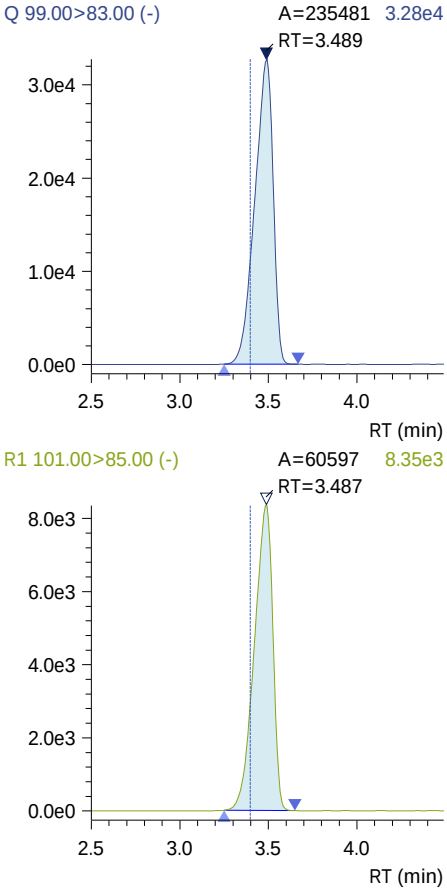
PERCHLORATE6

Sample ID: PERCHLORATE6
Date Acquired: 6/6/2023 11:18:22 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-006.lcd
Vial: 6 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.489	235481	261731	4.9238	ng/mL	101.00 >85.00	25.73	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.486	261731	261731	1.0000	ng/mL	----	----	

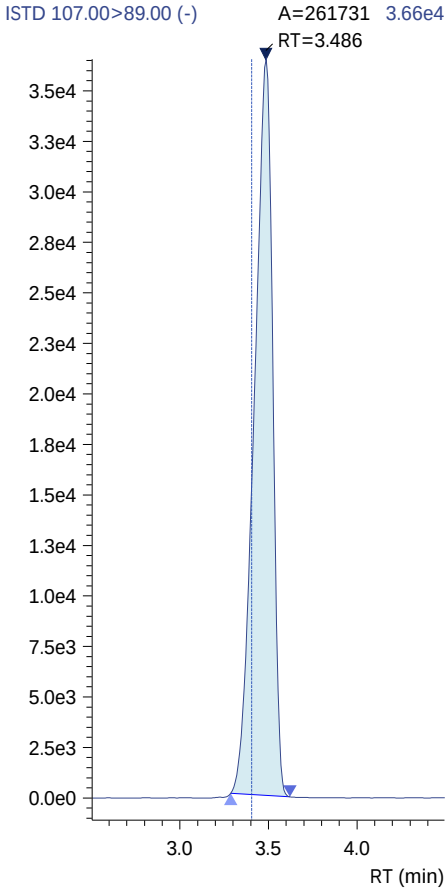
Perchlorate

Conc 4.9238
R#1 25.73 (24.52)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

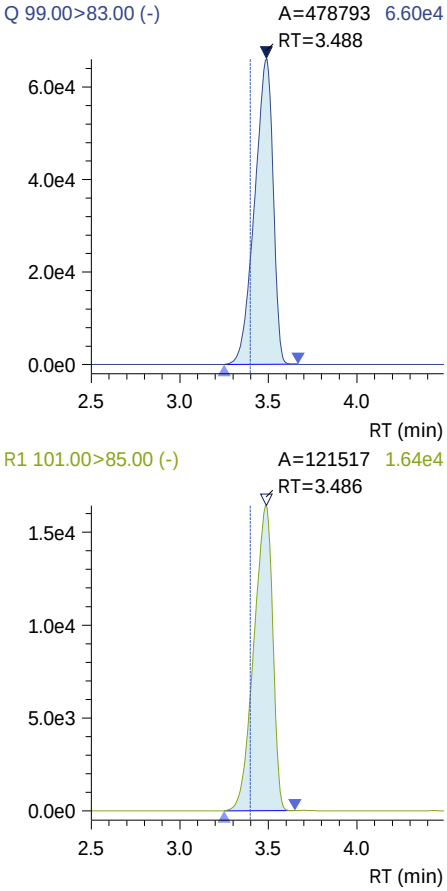
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 6/6/2023 11:24:09 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-007.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.488	478793	264810	9.8950	ng/mL	101.00 >85.00	25.38	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.485	264810	264810	1.0000	ng/mL	----	----	

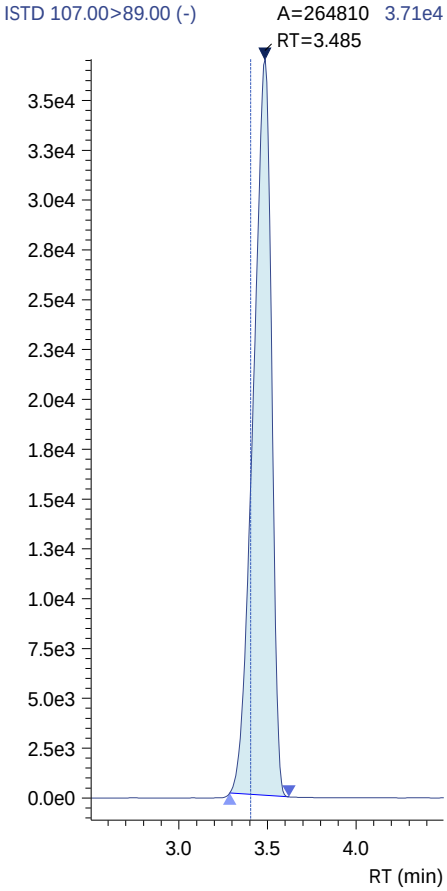
Perchlorate

Conc 9.8950
R#1 25.38 (24.52)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

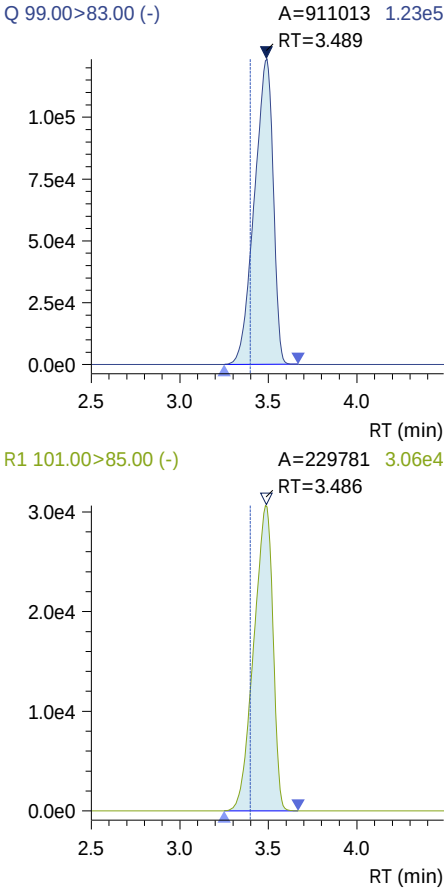
PERCHLORATE8

Sample ID: PERCHLORATE8
Date Acquired: 6/6/2023 11:29:53 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-008.lcd
Vial: 8 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.489	911013	248350	20.0754	ng/mL	101.00 >85.00	25.22	17.79-33.04
Sodium Perchlorate-18O4_IS	Auto	3.485	248350	248350	1.0000	ng/mL	----	----	

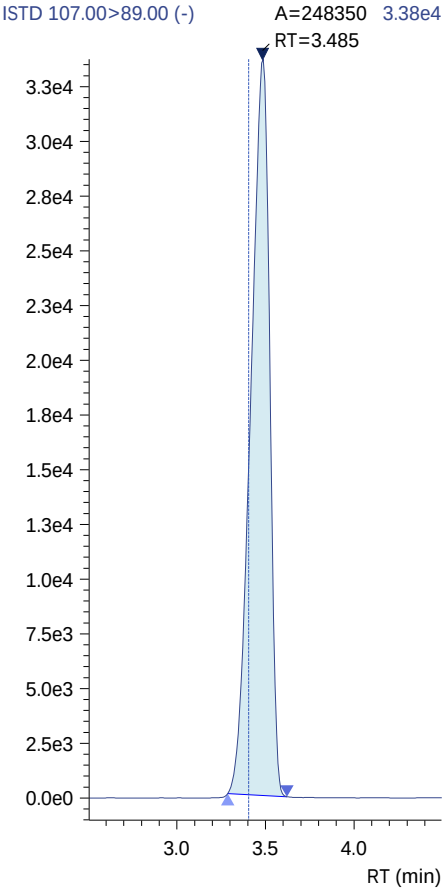
Perchlorate

Conc 20.0754
R#1 25.22 (24.52)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

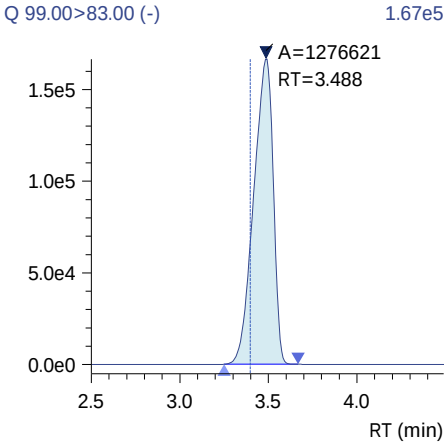
PERCHLORATE9

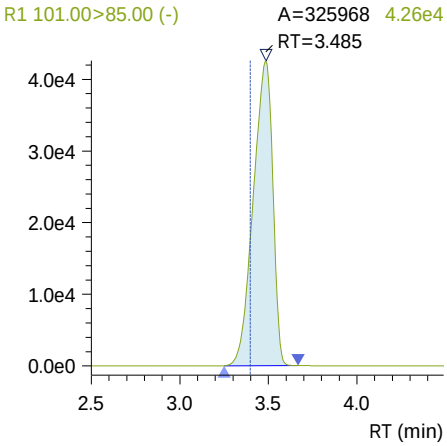
Sample ID: PERCHLORATE9
Date Acquired: 6/6/2023 11:35:36 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-009.lcd
Vial: 9 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.488	1276621	234897	29.74 32	ng/mL	101.00 >85.00	25.53	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.483	234897	234897	1.0000	ng/mL	----	----	

Perchlorate

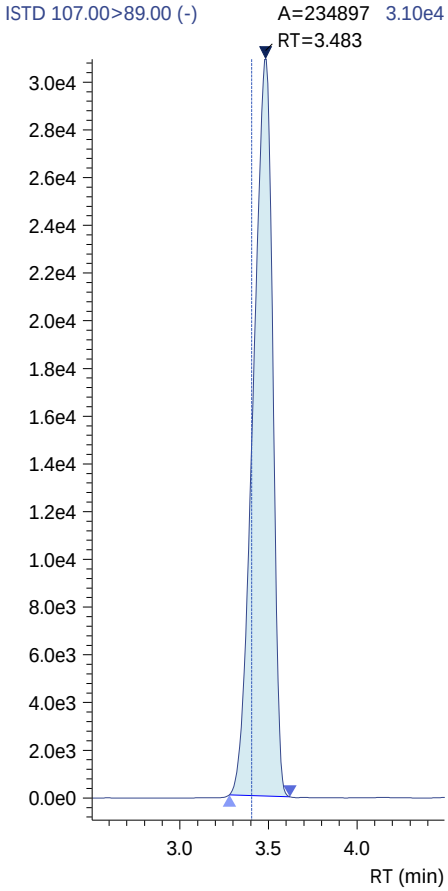
Conc 29.7432
R#1 25.53 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

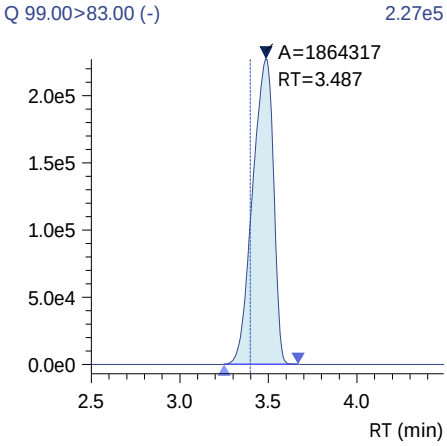
PERCHLORATE10

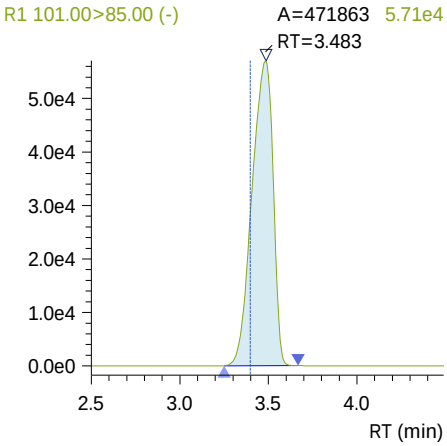
Sample ID: PERCHLORATE10
Date Acquired: 6/6/2023 11:41:20 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-010.lcd
Vial: 10 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.487	1864317	205439	49.6639	ng/mL	101.00 >85.00	25.31	17.79-33.04
Sodium Perchlorate-18O4_IS	Auto	3.483	205439	205439	1.0000	ng/mL	----	----	

Perchlorate

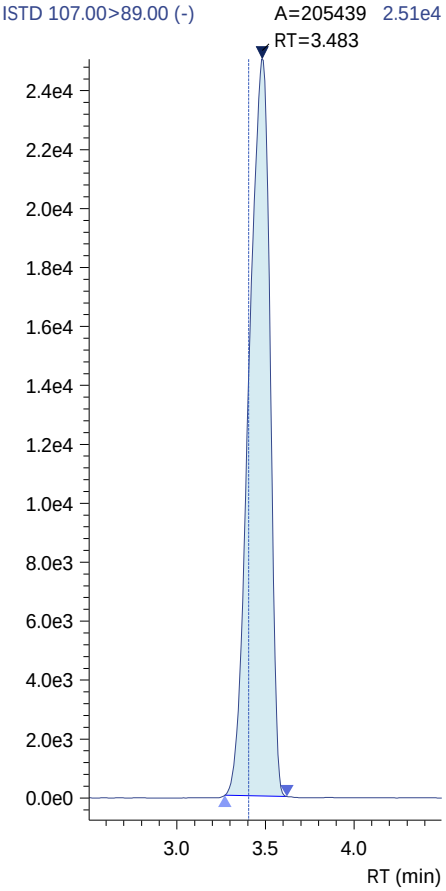
Conc 49.6639
R#1 25.31 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

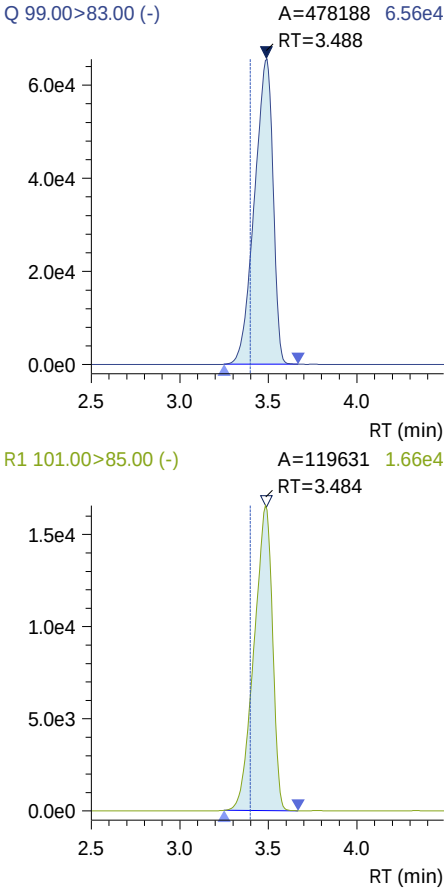
PERCHLORATEICV

Sample ID: PERCHLORATEICV
Date Acquired: 6/6/2023 11:47:07 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-011.lcd
Vial: 11 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.488	478188	261294	10.0155	ng/mL	101.00 >85.00	25.02	17.79-33.04
Sodium Perchlorate-18O4_IS	Auto	3.484	261294	261294	1.0000	ng/mL	----	----	

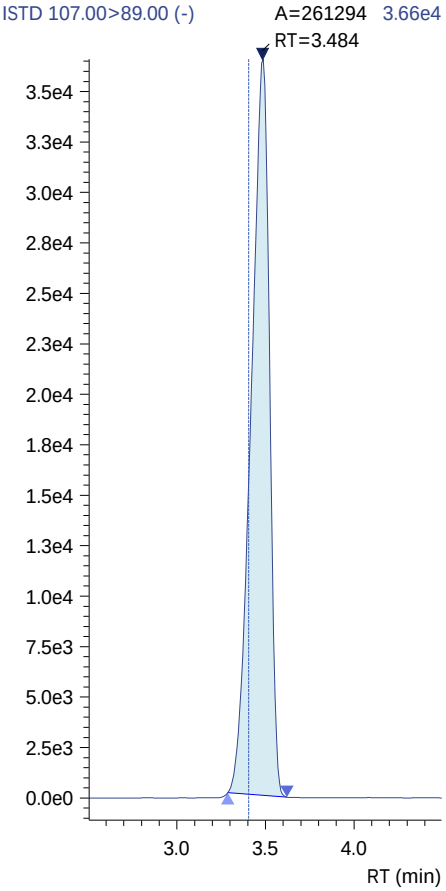
Perchlorate

Conc 10.0155
R#1 25.02 (24.52)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20230607-806739

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XM
2nd Review: GC

ICAL Date: 6/6/2023
Cal. Std. xp: 07/31/2023
ICAL ID: EC2300009

Mobile Phases : A:20mM ammonium acetate in water 32103045 **B:**Acetonitrile 226552

	Sample Name		File Name	Acquisition Method	Dilution	Comments	Date/Time
1	IB		20230607-001	Perchlorate6850c.lcm	1x		6/7/2023 8:41
2	LODV		20230607-002	Perchlorate6850c.lcm	1x	227501	6/7/2023 8:51
3	ICS		20230607-003	Perchlorate6850c.lcm	1x	32103024	6/7/2023 8:57
4	CCV		20230607-004	Perchlorate6850c.lcm	1x	227251	6/7/2023 9:03
5	E2300519-007		20230607-005	Perchlorate6850c.lcm	1x	DNU-CONFIRM PEAK	6/7/2023 9:14
6	E2300519-008		20230607-006	Perchlorate6850c.lcm	1x		6/7/2023 9:19
7	E2300519-009		20230607-007	Perchlorate6850c.lcm	1x		6/7/2023 9:25
8	E2300520-001		20230607-008	Perchlorate6850c.lcm	1x		6/7/2023 9:31
9	E2300520-002		20230607-009	Perchlorate6850c.lcm	1x		6/7/2023 9:37
10	E2300520-003		20230607-010	Perchlorate6850c.lcm	1x		6/7/2023 9:42
11	E2300520-004		20230607-011	Perchlorate6850c.lcm	1x		6/7/2023 9:48
12	E2300520-005		20230607-012	Perchlorate6850c.lcm	1x		6/7/2023 9:54
13	E2300520-006		20230607-013	Perchlorate6850c.lcm	1x		6/7/2023 9:59
14	E2300520-007		20230607-014	Perchlorate6850c.lcm	1x		6/7/2023 10:05
15	CCV		20230607-015	Perchlorate6850c.lcm	1x	227251	6/7/2023 10:11
16	E2300520-008		20230607-016	Perchlorate6850c.lcm	1x		6/7/2023 10:17
17	E2300520-009		20230607-017	Perchlorate6850c.lcm	1x		6/7/2023 10:22
18	E2300520-010		20230607-018	Perchlorate6850c.lcm	1x		6/7/2023 10:28
19	E2300520-011		20230607-019	Perchlorate6850c.lcm	1x		6/7/2023 10:34
20	E2300525-001		20230607-020	Perchlorate6850c.lcm	1x		6/7/2023 10:40
21	EQ2300273-04		20230607-021	Perchlorate6850c.lcm	1x		6/7/2023 10:45
22	EQ2300273-05		20230607-022	Perchlorate6850c.lcm	1x		6/7/2023 10:51
23	E2300516-006		20230607-023	Perchlorate6850c.lcm	1x		6/7/2023 11:03
24	E2300528-001		20230607-024	Perchlorate6850c.lcm	1x		6/7/2023 11:20
25	E2300528-002		20230607-025	Perchlorate6850c.lcm	1x		6/7/2023 11:31
26	CCV		20230607-026	Perchlorate6850c.lcm	1x	227251	6/7/2023 11:37
27	EQ2300273-06		20230607-027	Perchlorate6850c.lcm	1x	DNU-RR	6/7/2023 11:43
28	EQ2300273-07		20230607-028	Perchlorate6850c.lcm	1x		6/7/2023 11:48
29	E2300528-003		20230607-029	Perchlorate6850c.lcm	1x		6/7/2023 11:54
30	E2300528-004		20230607-030	Perchlorate6850c.lcm	1x		6/7/2023 12:00
31	E2300528-005		20230607-031	Perchlorate6850c.lcm	500x		6/7/2023 12:06
32	E2300528-006		20230607-032	Perchlorate6850c.lcm	5000x		6/7/2023 12:11
33	EQ2300289-01		20230607-033	Perchlorate6850c.lcm	1x		6/7/2023 12:17
34	E2300533-001		20230607-034	Perchlorate6850c.lcm	1x		6/7/2023 12:25
35	EQ2300274-02		20230607-035	Perchlorate6850c.lcm	1x	DNU-IR	6/7/2023 12:31
36	EQ2300274-03		20230607-036	Perchlorate6850c.lcm	1x	DNU-IR	6/7/2023 12:36
37	CCV		20230607-037	Perchlorate6850c.lcm	1x	227251	6/7/2023 12:42

20230607-806739

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XM
2nd Review: GC

ICAL Date: 6/6/2023
Cal. Std. xp: 07/31/2023
ICAL ID: EC2300009

Mobile Phases : **A:**20mM ammonium acetate in water 32103045 **B:**Acetonitrile 226552

	Sample Name		File Name	Acquisition Method	Dilution	Comments	Date/Time
38	EQ2300289-02		20230607-038	Perchlorate6850c.lcm	1x		6/7/2023 13:29
39	EQ2300289-03		20230607-039	Perchlorate6850c.lcm	1x		6/7/2023 13:36
40	E2300519-007		20230607-040	Perchlorate6850c.lcm	1x		6/7/2023 13:41
41	E2300533-002		20230607-041	Perchlorate6850c.lcm	1x		6/7/2023 13:47
42	E2300533-003		20230607-042	Perchlorate6850c.lcm	1x		6/7/2023 13:53
43	E2300533-004		20230607-043	Perchlorate6850c.lcm	1x		6/7/2023 13:59
44	E2300533-005		20230607-044	Perchlorate6850c.lcm	1x		6/7/2023 14:05
45	E2300533-006		20230607-045	Perchlorate6850c.lcm	1x		6/7/2023 14:10
46	E2300533-007		20230607-046	Perchlorate6850c.lcm	1x		6/7/2023 14:16
47	E2300533-008		20230607-047	Perchlorate6850c.lcm	1000x		6/7/2023 14:22
48	CCV		20230607-048	Perchlorate6850c.lcm	1x	227251	6/7/2023 14:27
49	E2300530-001		20230607-049	Perchlorate6850c.lcm	1x		6/7/2023 15:02
50	E2300530-002		20230607-050	Perchlorate6850c.lcm	1x		6/7/2023 15:08
51	E2300530-003		20230607-051	Perchlorate6850c.lcm	1x		6/7/2023 15:13
52	E2300530-004		20230607-052	Perchlorate6850c.lcm	1x		6/7/2023 15:19
53	E2300530-005		20230607-053	Perchlorate6850c.lcm	1x		6/7/2023 15:25
54	E2300533-009		20230607-054	Perchlorate6850c.lcm	1x		6/7/2023 15:31
55	E2300533-010		20230607-055	Perchlorate6850c.lcm	1x		6/7/2023 15:36
56	E2300533-011		20230607-056	Perchlorate6850c.lcm	1x		6/7/2023 15:44
57	E2300533-012		20230607-057	Perchlorate6850c.lcm	1x		6/7/2023 15:50
58	EQ2300273-06		20230607-058	Perchlorate6850c.lcm	1x		6/7/2023 15:56
59	CCV		20230607-059	Perchlorate6850c.lcm	1x	227251	6/7/2023 16:01

20230608-806808

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XM
2nd Review: GC

ICAL Date: 6/6/2023
Cal. Std. xp: 07/31/2023
ICAL ID: EC2300009

Mobile Phases : A:20mM ammonium acetate in water 32103045 **B:**Acetonitrile 226552

	Sample Name		File Name	Acquisition Method	Dilution	Comments	Date/Time
1	IB		20230608-001	Perchlorate6850c.lcm	1x		6/8/2023 8:56
2	LODV		20230608-002	Perchlorate6850c.lcm	1x	227501	6/8/2023 9:02
3	ICS		20230608-003	Perchlorate6850c.lcm	1x	32103024	6/8/2023 9:07
4	CCV		20230608-004	Perchlorate6850c.lcm	1x	227251	6/8/2023 9:13
5	E2300533-013		20230608-005	Perchlorate6850c.lcm	1x		6/8/2023 9:23
6	E2300533-014		20230608-006	Perchlorate6850c.lcm	1x		6/8/2023 9:29
7	E2300533-015		20230608-007	Perchlorate6850c.lcm	20x		6/8/2023 9:35
8	E2300533-016		20230608-008	Perchlorate6850c.lcm	1x		6/8/2023 9:41
9	E2300533-017		20230608-009	Perchlorate6850c.lcm	1x		6/8/2023 9:46
10	E2300533-018		20230608-010	Perchlorate6850c.lcm	1x		6/8/2023 9:52
11	E2300533-019		20230608-011	Perchlorate6850c.lcm	1x		6/8/2023 9:58
12	E2300533-020		20230608-012	Perchlorate6850c.lcm	1x		6/8/2023 10:04
13	CCV		20230608-013	Perchlorate6850c.lcm	1x	227251	6/8/2023 10:09
14	EQ2300290-01		20230608-014	Perchlorate6850c.lcm	1x		6/8/2023 10:15
15	EQ2300290-02		20230608-015	Perchlorate6850c.lcm	1x		6/8/2023 10:21
16	EQ2300290-03		20230608-016	Perchlorate6850c.lcm	1x		6/8/2023 10:27
17	E2300533-021		20230608-017	Perchlorate6850c.lcm	1x		6/8/2023 10:32
18	E2300533-023		20230608-018	Perchlorate6850c.lcm	1x		6/8/2023 10:38
19	E2300533-024		20230608-019	Perchlorate6850c.lcm	1x		6/8/2023 10:44
20	E2300533-025		20230608-020	Perchlorate6850c.lcm	1x		6/8/2023 10:50
21	E2300533-026		20230608-021	Perchlorate6850c.lcm	1x		6/8/2023 10:55
22	E2300533-028		20230608-022	Perchlorate6850c.lcm	1x		6/8/2023 11:01
23	E2300533-029		20230608-023	Perchlorate6850c.lcm	1x		6/8/2023 11:07
24	CCV		20230608-024	Perchlorate6850c.lcm	1x	227251	6/8/2023 11:13
25	E2300533-030		20230608-025	Perchlorate6850c.lcm	1x		6/8/2023 11:18
26	E2300533-031		20230608-026	Perchlorate6850c.lcm	1x		6/8/2023 11:24
27	E2300533-032		20230608-027	Perchlorate6850c.lcm	1x		6/8/2023 11:30
28	E2300533-033		20230608-028	Perchlorate6850c.lcm	1x		6/8/2023 11:36
29	E2300533-035		20230608-029	Perchlorate6850c.lcm	5x		6/8/2023 11:41
30	E2300533-036		20230608-030	Perchlorate6850c.lcm	1x		6/8/2023 11:47
31	E2300533-037		20230608-031	Perchlorate6850c.lcm	1x		6/8/2023 11:53
32	E2300533-038		20230608-032	Perchlorate6850c.lcm	1x		6/8/2023 11:58
33	E2300533-039		20230608-033	Perchlorate6850c.lcm	1x		6/8/2023 12:04
34	E2300533-040		20230608-034	Perchlorate6850c.lcm	1x		6/8/2023 12:10
35	CCV		20230608-035	Perchlorate6850c.lcm	1x	227251	6/8/2023 12:16
36	E2300533-041		20230608-036	Perchlorate6850c.lcm	1x		6/8/2023 12:21
37	E2300533-042		20230608-037	Perchlorate6850c.lcm	1x		6/8/2023 12:27

20230608-806808

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XM
2nd Review: GC

ICAL Date: 6/6/2023
Cal. Std. xp: 07/31/2023
ICAL ID: EC2300009

Mobile Phases : **A:**20mM ammonium acetate in water 32103045 **B:**Acetonitrile 226552

	Sample Name		File Name	Acquisition Method	Dilution	Comments	Date/Time
38	EQ2300291-04		20230608-038	Perchlorate6850c.lcm	1x		6/8/2023 12:33
39	EQ2300291-05		20230608-039	Perchlorate6850c.lcm	1x		6/8/2023 12:39
40	E2300533-043		20230608-040	Perchlorate6850c.lcm	1x		6/8/2023 12:44
41	E2300533-044		20230608-041	Perchlorate6850c.lcm	1x		6/8/2023 12:50
42	EQ2300291-01		20230608-042	Perchlorate6850c.lcm	1x		6/8/2023 12:56
43	EQ2300291-02		20230608-043	Perchlorate6850c.lcm	1x		6/8/2023 13:02
44	EQ2300291-03		20230608-044	Perchlorate6850c.lcm	1x		6/8/2023 13:08
45	E2300533-045		20230608-045	Perchlorate6850c.lcm	1x		6/8/2023 13:13
46	CCV		20230608-046	Perchlorate6850c.lcm	1x	227251	6/8/2023 13:19
47	E2300533-046		20230608-047	Perchlorate6850c.lcm	1x		6/8/2023 13:25
48	E2300533-047		20230608-048	Perchlorate6850c.lcm	1x		6/8/2023 13:31
49	E2300533-048		20230608-049	Perchlorate6850c.lcm	1x		6/8/2023 13:36
50	E2300533-049		20230608-050	Perchlorate6850c.lcm	1x		6/8/2023 13:42
51	E2300533-050		20230608-051	Perchlorate6850c.lcm	1x		6/8/2023 13:48
52	E2300533-051		20230608-052	Perchlorate6850c.lcm	1x		6/8/2023 13:54
53	E2300533-052		20230608-053	Perchlorate6850c.lcm	1x		6/8/2023 13:59
54	E2300533-053		20230608-054	Perchlorate6850c.lcm	1x		6/8/2023 14:05
55	E2300533-054		20230608-055	Perchlorate6850c.lcm	1x		6/8/2023 14:11
56	E2300533-055		20230608-056	Perchlorate6850c.lcm	1x		6/8/2023 14:17
57	CCV		20230608-057	Perchlorate6850c.lcm	1x	227251	6/8/2023 14:22
58	EQ2300291-06		20230608-058	Perchlorate6850c.lcm	1x		6/8/2023 14:28
59	EQ2300291-07		20230608-059	Perchlorate6850c.lcm	1x		6/8/2023 14:34

20230612-807150

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XM
2nd Review: KN

ICAL Date: 6/6/2023
Cal. Std. xp: 07/31/2023
ICAL ID: EC2300009

Mobile Phases : A:20mM ammonium acetate in water 32103045 **B:**Acetonitrile 226552

	Sample Name		File Name	Acquisition Method	Dilution	Comments	Date/Time
1	IB		20230612-001	Perchlorate6850c.lcm	1x		6/12/2023 9:13
2	LODV		20230612-002	Perchlorate6850c.lcm	1x	DNU-RR	6/12/2023 9:19
3	ICS		20230612-003	Perchlorate6850c.lcm	1x	32103024	6/12/2023 9:25
4	LODV		20230612-004	Perchlorate6850c.lcm	1x	227501	6/12/2023 9:30
5	CCV		20230612-005	Perchlorate6850c.lcm	1x	227251	6/12/2023 9:38
6	EQ2300284-01		20230612-006	Perchlorate6850c.lcm	1x		6/12/2023 9:45
7	EQ2300284-02		20230612-007	Perchlorate6850c.lcm	1x		6/12/2023 9:51
8	EQ2300284-03		20230612-008	Perchlorate6850c.lcm	1x		6/12/2023 9:57
9	E2300531-001		20230612-009	Perchlorate6850c.lcm	1x		6/12/2023 10:02
10	E2300531-002		20230612-010	Perchlorate6850c.lcm	1x		6/12/2023 12:06
11	E2300531-003		20230612-011	Perchlorate6850c.lcm	1x		6/12/2023 12:11
12	E2300531-004		20230612-012	Perchlorate6850c.lcm	1x		6/12/2023 12:17
13	E2300531-005		20230612-013	Perchlorate6850c.lcm	1x		6/12/2023 12:23
14	E2300531-006		20230612-014	Perchlorate6850c.lcm	1x		6/12/2023 12:29
15	E2300531-007		20230612-015	Perchlorate6850c.lcm	1x		6/12/2023 12:35
16	CCV		20230612-016	Perchlorate6850c.lcm	1x	227251	6/12/2023 12:41
17	E2300531-008		20230612-017	Perchlorate6850c.lcm	1x		6/12/2023 12:47
18	E2300531-009		20230612-018	Perchlorate6850c.lcm	1x		6/12/2023 12:53
19	E2300531-010		20230612-019	Perchlorate6850c.lcm	1x		6/12/2023 12:58
20	E2300531-011		20230612-020	Perchlorate6850c.lcm	1x		6/12/2023 13:04
21	E2300531-012		20230612-021	Perchlorate6850c.lcm	1x		6/12/2023 13:10
22	E2300533-022		20230612-022	Perchlorate6850c.lcm	1x		6/12/2023 13:15
23	E2300533-027		20230612-023	Perchlorate6850c.lcm	1x		6/12/2023 13:21
24	E2300533-034		20230612-024	Perchlorate6850c.lcm	1x		6/12/2023 13:27
25	K2306261-001		20230612-025	Perchlorate6850c.lcm	1x		6/12/2023 13:33
26	K2306261-002		20230612-026	Perchlorate6850c.lcm	1x		6/12/2023 13:38
27	CCV		20230612-027	Perchlorate6850c.lcm	1x	227251	6/12/2023 13:44
28	K2306261-003		20230612-028	Perchlorate6850c.lcm	1x		6/12/2023 13:50
29	EQ2300290-04		20230612-029	Perchlorate6850c.lcm	1x		6/12/2023 13:56
30	EQ2300290-05		20230612-030	Perchlorate6850c.lcm	1x		6/12/2023 14:01
31	CCV		20230612-031	Perchlorate6850c.lcm	1x	227251	6/12/2023 14:07

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/7/23 09:03

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230607\20230607-004	**Lab Code:**	EQ2300285-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806739
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300285-01	291,896	3.49

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/7/23 10:11

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230607\20230607-015	**Lab Code:**	EQ2300285-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806739
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300285-02	324,598	3.49

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/7/23 11:37

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230607\20230607-026	**Lab Code:**	EQ2300285-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806739
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300285-03	315,149	3.49
Method Blank	EQ2300289-01	251,587	3.49
53147WW38	E2300533-001	185,432	3.13

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/7/23 12:42

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230607\20230607-037	**Lab Code:**	EQ2300285-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806739
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300285-04	227,499	3.49
Lab Control Sample	EQ2300289-02	276,719	3.45
Duplicate Lab Control Sample	EQ2300289-03	297,551	3.48
5347WW29	E2300533-002	316,958	3.49
6147WW04	E2300533-003	320,563	3.49
531DUP5	E2300533-004	284,367	3.49
6147WW45	E2300533-005	289,362	3.49
53147WW61	E2300533-006	306,369	3.49
53147WW13	E2300533-007	281,205	3.49
527LHS04W60	E2300533-008	241,806	3.49

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/7/23 14:27

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230607\20230607-048	**Lab Code:**	EQ2300285-05
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806739
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300285-05	279,459	3.49
527EB1	E2300533-009	260,692	3.49
531DUP4	E2300533-010	266,718	3.49
529EB5	E2300533-011	274,327	3.48
530DUP3	E2300533-012	298,523	3.49

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/7/23 16:01

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230607\20230607-059	**Lab Code:**	EQ2300285-06
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806739
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300285-06	268,982	3.49

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/8/23 09:13

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230608\20230608-004	**Lab Code:**	EQ2300287-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806808
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300287-01	272,206	3.48
529DUP2	E2300533-013	299,496	3.47
6147WW31	E2300533-014	244,752	3.48
52847WW	E2300533-015	272,996	3.47
528EB3	E2300533-016	259,261	3.47
528EB4	E2300533-017	261,388	3.47
528LHSMW57	E2300533-018	259,664	3.47
527EB2	E2300533-019	260,408	3.48
52647WW37	E2300533-020	296,652	3.48

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/8/23 10:09

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230608\20230608-013	**Lab Code:**	EQ2300287-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806808
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300287-02	264,474	3.47
Method Blank	EQ2300290-01	259,494	3.47
Lab Control Sample	EQ2300290-02	257,411	3.47
Duplicate Lab Control Sample	EQ2300290-03	257,420	3.47
529LHSM41	E2300533-021	287,032	3.48
52647WW53	E2300533-023	274,556	3.48
52647WW51	E2300533-024	278,598	3.47
53047WW14	E2300533-025	267,322	3.47
527LHSMW54	E2300533-026	263,860	3.47
529LHSMW46R	E2300533-028	265,256	3.47
52547WW50	E2300533-029	266,819	3.47

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/8/23 11:13

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230608\20230608-024	**Lab Code:**	EQ2300287-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806808
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300287-03	254,284	3.47
528LHSMW55R	E2300533-030	261,428	3.47
529LHSMW44	E2300533-031	278,446	3.47
53047WW09	E2300533-032	267,834	3.47
52747WW59	E2300533-033	272,769	3.47
52747WW40	E2300533-035	245,957	3.47
52847WW23	E2300533-036	256,336	3.47
529DUP2	E2300533-037	264,495	3.47
52747WW41	E2300533-038	262,089	3.47
5247WW54	E2300533-039	260,114	3.47
6147WW33	E2300533-040	244,502	3.47

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/8/23 12:16

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230608\20230608-035	**Lab Code:**	EQ2300287-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806808
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300287-04	244,845	3.47
531LH5WW50	E2300533-041	208,736	3.47
61DUP6	E2300533-043	264,125	3.47
52847WW43	E2300533-044	256,743	3.47
Method Blank	EQ2300291-01	232,131	3.47
Lab Control Sample	EQ2300291-02	229,083	3.47
Duplicate Lab Control Sample	EQ2300291-03	227,982	3.47
53047WW08R	E2300533-045	254,878	3.47

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/8/23 13:19

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230608\20230608-046	**Lab Code:**	EQ2300287-05
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806808
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300287-05	233,971	3.47
52947WW55	E2300533-046	245,335	3.47
53047WW06	E2300533-047	244,642	3.47
53047WW39	E2300533-048	236,306	3.47
52947WW52	E2300533-049	249,392	3.47
52547WW48	E2300533-050	235,456	3.47
52947WW57	E2300533-051	238,336	3.47
52947WW56	E2300533-052	236,842	3.47
52747WW26R	E2300533-053	229,473	3.47
6147WW46	E2300533-054	235,086	3.47
5284WW19	E2300533-055	220,051	3.47

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/8/23 14:22

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230608\20230608-057	**Lab Code:**	EQ2300287-06
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806808
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300287-06	221,285	3.47
5284WW19MS	EQ2300291-06	221,280	3.47
5284WW19DMS	EQ2300291-07	219,571	3.47
529EB6	E2300533-056	213,719	3.47
6147WW34	E2300533-057	226,081	3.47
52747WW42	E2300533-058	223,092	3.47
530LH504W43R	E2300533-059	210,264	3.47
53047WW58	E2300533-060	227,108	3.47
53047WW58MS	EQ2300291-08	224,039	3.47
53047WW58DMS	EQ2300291-09	214,594	3.46

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/8/23 15:33

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230608\20230608-067	**Lab Code:**	EQ2300287-07
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806808
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300287-07	209,681	3.47

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/12/23 09:38

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230612\20230612-005	**Lab Code:**	EQ2300293-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	807150
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300293-01	322,565	3.45

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/12/23 12:41

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230612\20230612-016	**Lab Code:**	EQ2300293-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	807150
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300293-02	323,592	3.44
52847WW19	E2300533-022	332,120	3.44
528LHSMW56R	E2300533-027	319,486	3.44
53047WW58	E2300533-034	330,933	3.44

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/12/23 13:44

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230612\20230612-027	**Lab Code:**	EQ2300293-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	807150
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300293-03	314,056	3.44
529LHSMW46RMS	EQ2300290-04	329,214	3.44
529LHSMW46RDMS	EQ2300290-05	312,547	3.44

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/12/23 14:07

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230612\20230612-031	**Lab Code:**	EQ2300293-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	807150
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300293-04	313,397	3.44

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/ 7/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230607\20230607-004	**Calibration ID:**	EC2300009
		Analysis Lot:	806739
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.78	0.1827	0.1787	-2.2	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/ 7/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230607\20230607-015	**Calibration ID:**	EC2300009
		Analysis Lot:	806739
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.91	0.1827	0.1810	-0.9	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/ 7/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230607\20230607-026	**Calibration ID:**	EC2300009
		Analysis Lot:	806739
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.91	0.1827	0.1811	-0.9	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/ 7/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230607\20230607-037	**Calibration ID:**	EC2300009
		Analysis Lot:	806739
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.63	0.1827	0.1759	-3.7	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/ 7/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230607\20230607-048	**Calibration ID:**	EC2300009
		Analysis Lot:	806739
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.92	0.1827	0.1813	-0.8	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/ 7/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230607\20230607-059	**Calibration ID:**	EC2300009
		Analysis Lot:	806739
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.85	0.1827	0.1800	-1.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/ 8/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230608\20230608-004	**Calibration ID:**	EC2300009
		Analysis Lot:	806808
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.90	0.1827	0.1809	-1.0	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/ 8/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230608\20230608-013	**Calibration ID:**	EC2300009
		Analysis Lot:	806808
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.92	0.1827	0.1813	-0.8	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/ 8/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230608\20230608-024	**Calibration ID:**	EC2300009
		Analysis Lot:	806808
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1827	0.1848	1.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/ 8/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230608\20230608-035	**Calibration ID:**	EC2300009
		Analysis Lot:	806808
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1827	0.1838	0.6	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/ 8/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230608\20230608-046	**Calibration ID:**	EC2300009
		Analysis Lot:	806808
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.0	0.1827	0.1831	0.2	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/ 8/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230608\20230608-057	**Calibration ID:**	EC2300009
		Analysis Lot:	806808
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.95	0.1827	0.1818	-0.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/ 8/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230608\20230608-067	**Calibration ID:**	EC2300009
		Analysis Lot:	806808
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1827	0.1854	1.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/12/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230612\20230612-005	**Calibration ID:**	EC2300009
		Analysis Lot:	807150
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.83	0.1827	0.1796	-1.7	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/12/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230612\20230612-016	**Calibration ID:**	EC2300009
		Analysis Lot:	807150
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.83	0.1827	0.1797	-1.7	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/12/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230612\20230612-027	**Calibration ID:**	EC2300009
		Analysis Lot:	807150
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.88	0.1827	0.1805	-1.2	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Environmental Monitoring and Technologies, Inc.	**Service Request:**	E2300533
Project:	LHAAP-47/W355063, Task 3.1	**Date Analyzed:**	6/12/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230612\20230612-031	**Calibration ID:**	EC2300009
		Analysis Lot:	807150
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.95	0.1827	0.1818	-0.5	NA	± 15 %	Average RF

Insight Report

Printed at 6/8/2023 10:17:10 AM

Method File: I:\LCMS01\DATA\20230607\20230607.lcm
Project File: I:\LCMS01\DATA\20230607\20230607.damlp

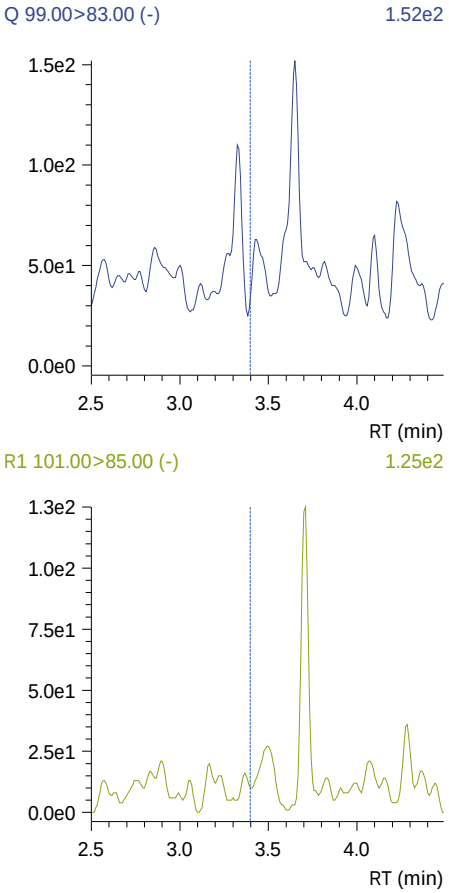
IB

Sample ID: IB
Date Acquired: 6/7/2023 8:41:34 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-001.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	363589	----	ng/mL	101.00 >85.00	0.00	18.06-33.55
Sodium Perchlorate-18O4_IS	Auto	3.472	363589	363589	1.0000	ng/mL	----	----	

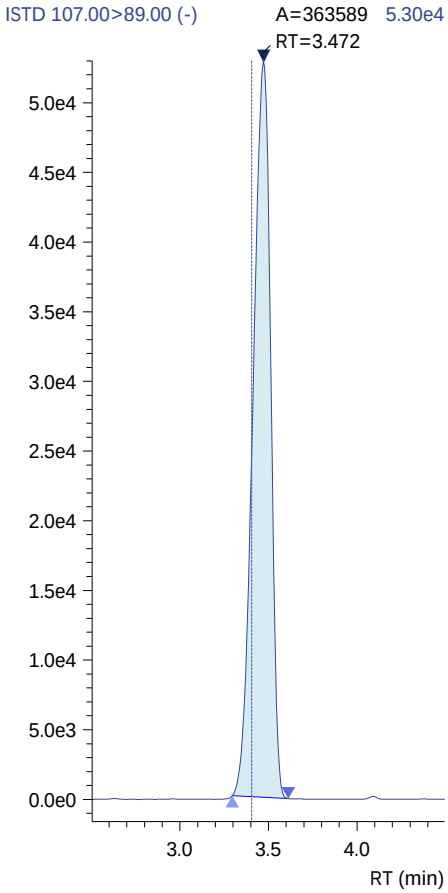
Perchlorate

Conc ----
R#1 0.00 (25.81)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/8/2023 10:19:47 AM

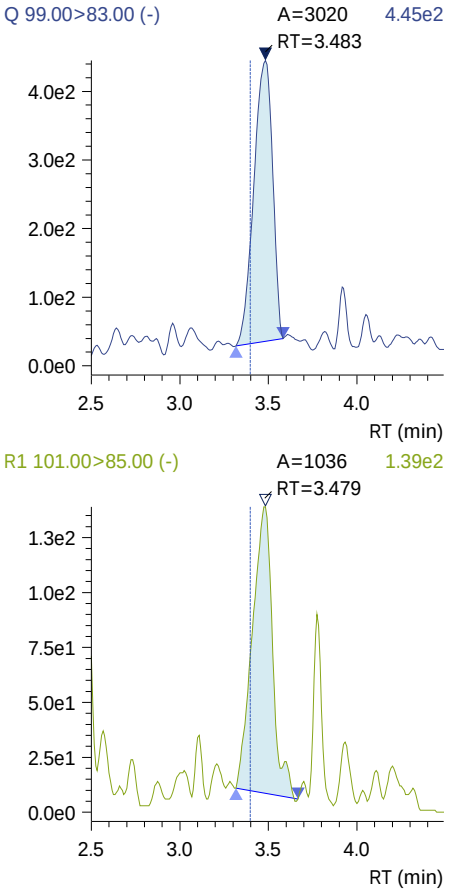
Method File: I:\LCMS01\DATA\20230607\20230607.lcm
Project File: I:\LCMS01\DATA\20230607\20230607.damlp

LODV

Sample ID: LODV
Date Acquired: 6/7/2023 8:51:37 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-002.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 0

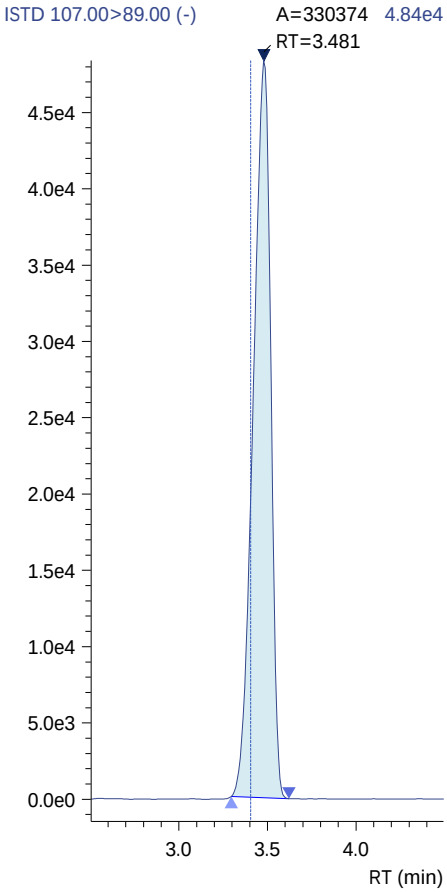
Perchlorate

Conc 0.0500
R#1 34.31 (25.81)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/8/2023 10:17:10 AM

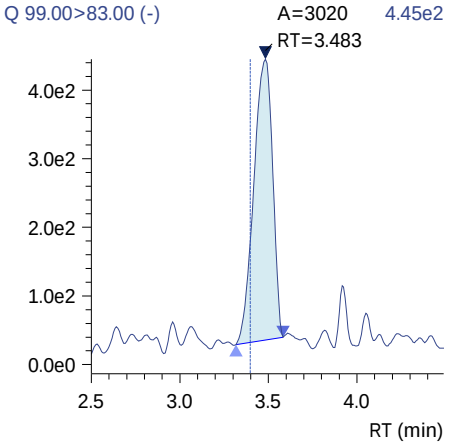
LODV

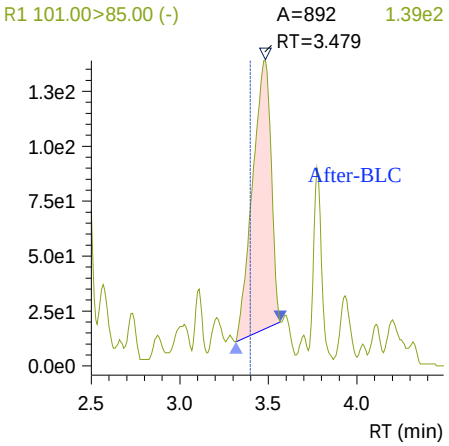
Sample ID: LODV
Date Acquired: 6/7/2023 8:51:37 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-002.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	MI R1	3.483	3020	330374	0.0500	ng/mL	101.00 >85.00	29.54	18.06-33.55
Sodium Perchlorate-18O4 _IS	Auto	3.481	330374	330374	1.0000	ng/mL	----	----	

Perchlorate

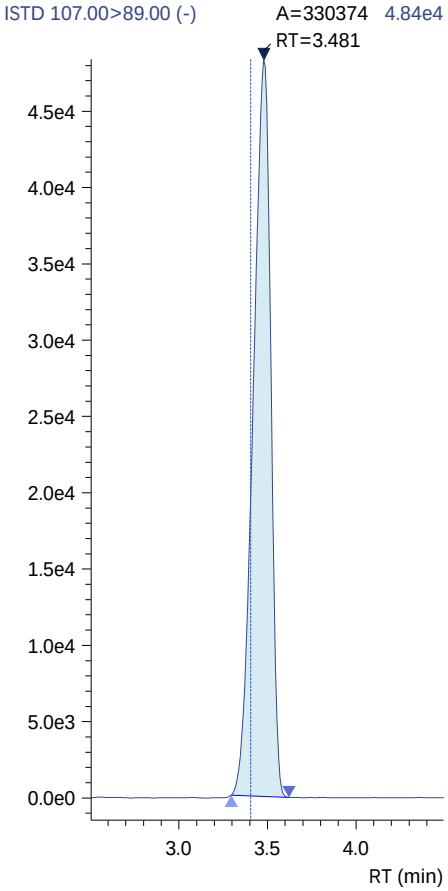
Conc 0.0500
R#1 29.54 (25.81)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/8/2023 10:17:10 AM

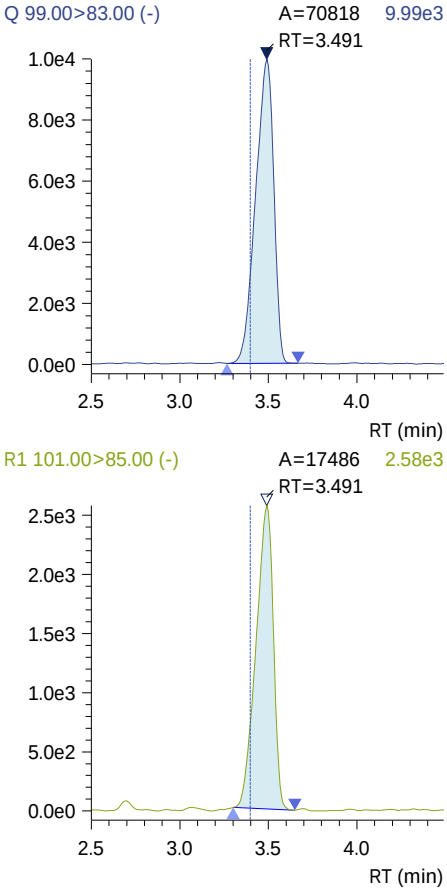
ICS

Sample ID: ICS
Date Acquired: 6/7/2023 8:57:21 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-003.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.491	70818	360222	1.0759	ng/mL	101.00 >85.00	24.69	18.06-33.55
Sodium Perchlorate-18O4 _IS	Auto	3.488	360222	360222	1.0000	ng/mL	----	----	

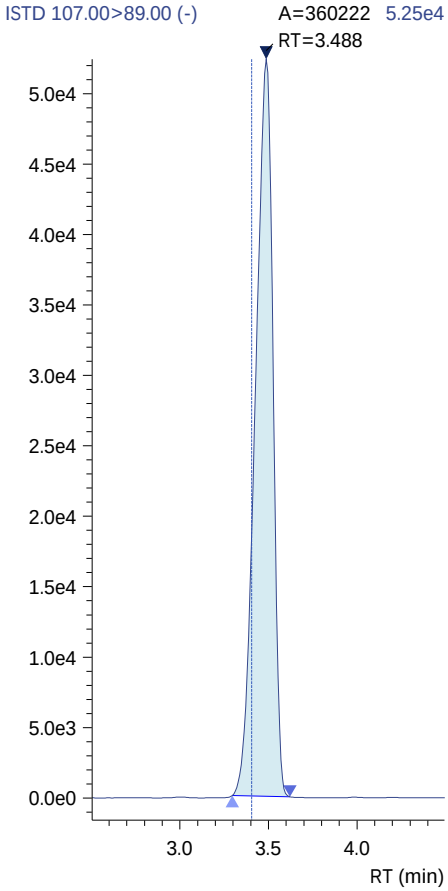
Perchlorate

Conc 1.0759
R#1 24.69 (25.81)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/8/2023 10:17:10 AM

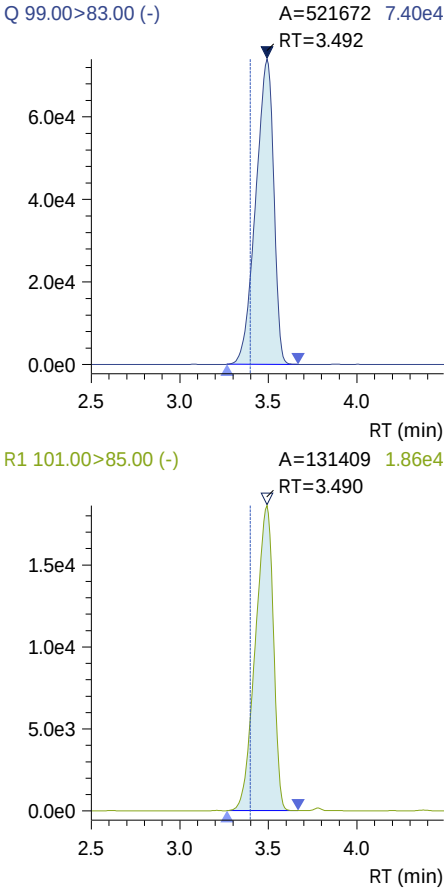
CCV

Sample ID: CCV
Date Acquired: 6/7/2023 9:03:06 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-004.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.492	521672	291896	9.7808	ng/mL	101.00 >85.00	25.19	18.06-33.55
Sodium Perchlorate-18O4 _IS	Auto	3.487	291896	291896	1.0000	ng/mL	----	----	

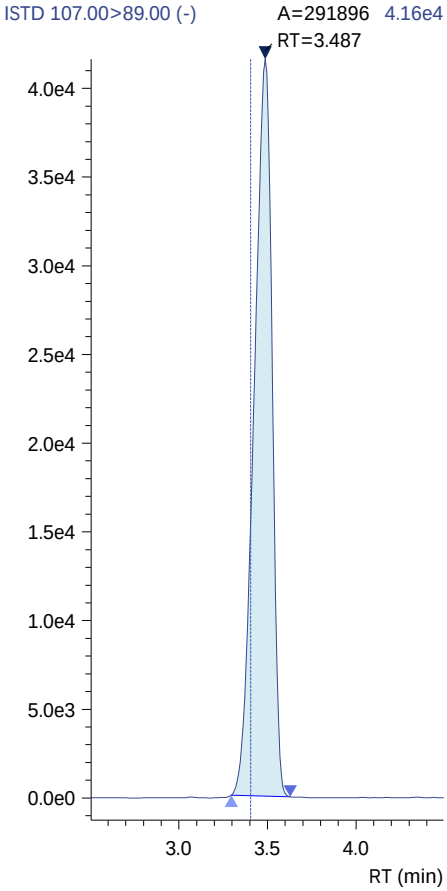
Perchlorate

Conc 9.7808
R#1 25.19 (25.81)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/8/2023 10:17:10 AM

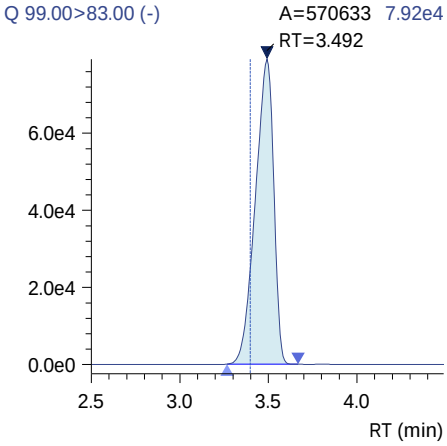
CCV

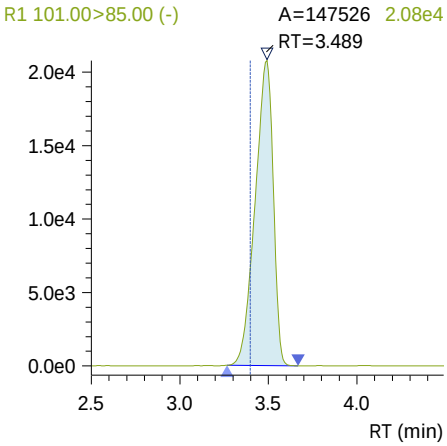
Sample ID: CCV
Date Acquired: 6/7/2023 11:37:30 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-026.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.492	570633	315149	9.9093	ng/mL	101.00 >85.00	25.85	18.06-33.55
Sodium Perchlorate-18O4 _IS	Auto	3.489	315149	315149	1.0000	ng/mL	----	----	

Perchlorate

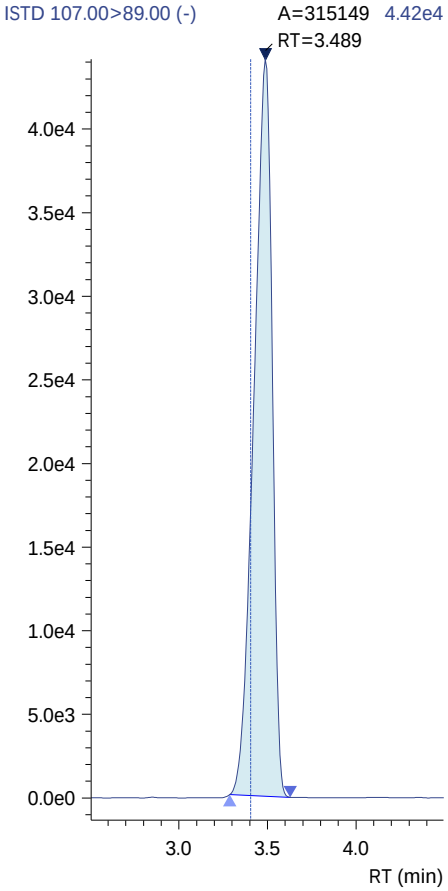
Conc 9.9093
R#1 25.85 (25.81)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:38:21 AM

EQ2300289-01

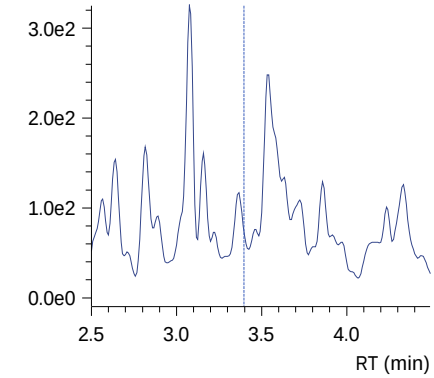
Sample ID: EQ2300289-01
Date Acquired: 6/7/2023 12:17:41 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-033.lcd
Vial: 37 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	251587	----	ng/mL	101.00 >85.00	0.00	18.06 -33.55
Sodium Perchlorate-18O4_IS	Auto	3.487	251587	251587	1.0000	ng/mL	----	----	

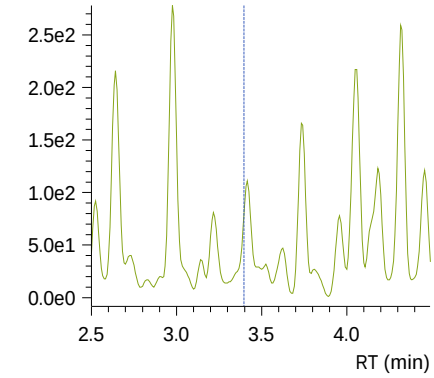
Perchlorate

Conc ----
R#1 0.00 (25.81)

Q 99.00>83.00 (-) 3.25e2



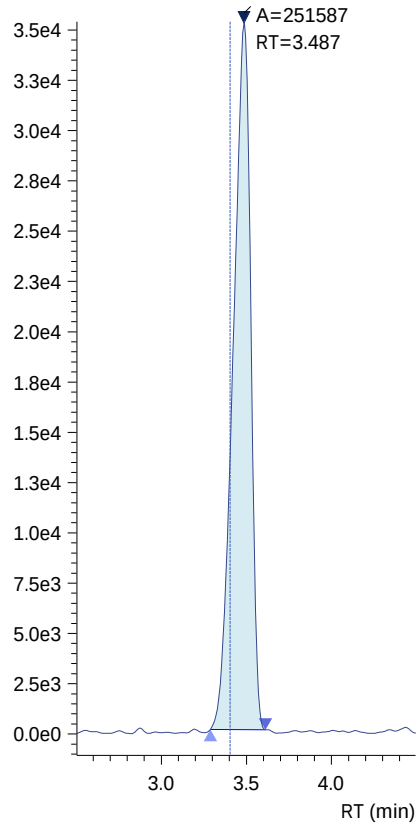
R1 101.00>85.00 (-) 2.78e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.54e4



Insight Report

Printed at 6/23/2023 8:38:21 AM

E2300533-001

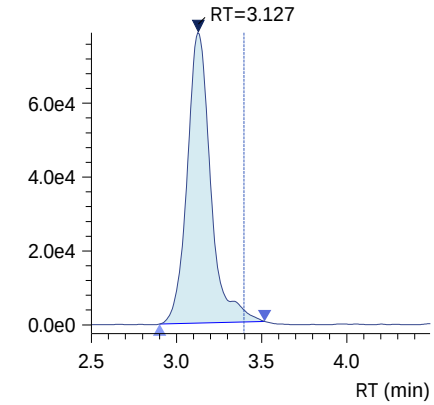
Sample ID: E2300533-001
Date Acquired: 6/7/2023 12:25:26 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-034.lcd
Vial: 34 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.127	756658	185432	22.3 315	ng/mL	101.00 >85.00	24.87	18.06 -33.55
Sodium Perchlorate -18O4_IS	Auto	3.127	185432	185432	1.0000	ng/mL	----	----	

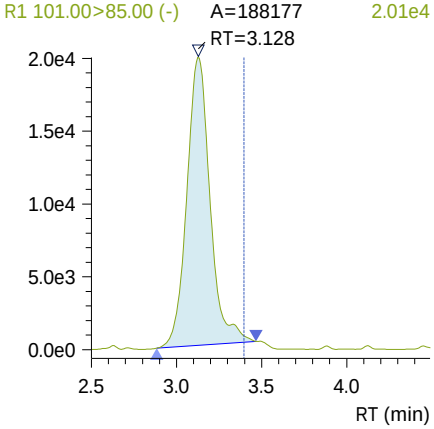
Perchlorate

Conc 22.3315
R#1 24.87 (25.81)

Q 99.00>83.00 (-) A=756658 7.91e4



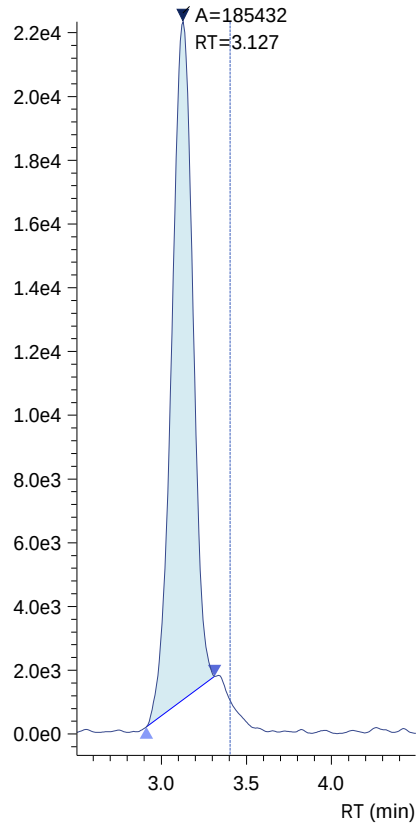
R1 101.00>85.00 (-) A=188177 2.01e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.23e4



Insight Report

Printed at 6/8/2023 10:17:10 AM

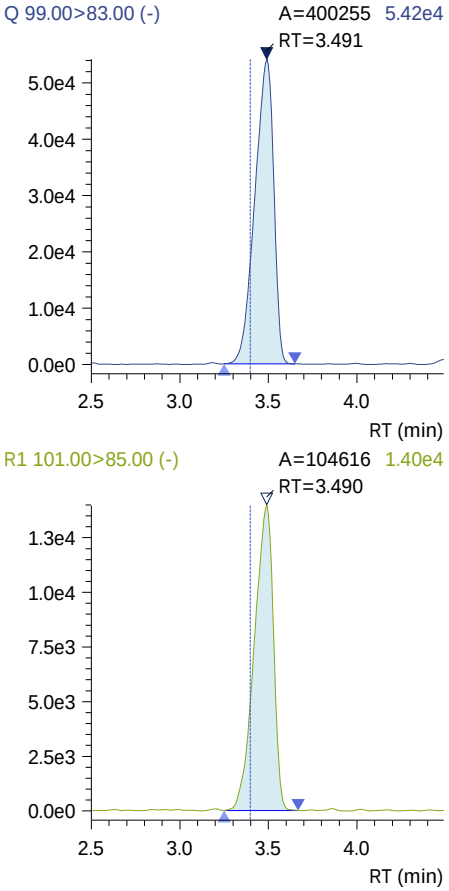
CCV

Sample ID: CCV
Date Acquired: 6/7/2023 12:42:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-037.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.491	400255	227499	9.6285	ng/mL	101.00 >85.00	26.14	18.06-33.55
Sodium Perchlorate-18O4 _IS	Auto	3.488	227499	227499	1.0000	ng/mL	----	----	

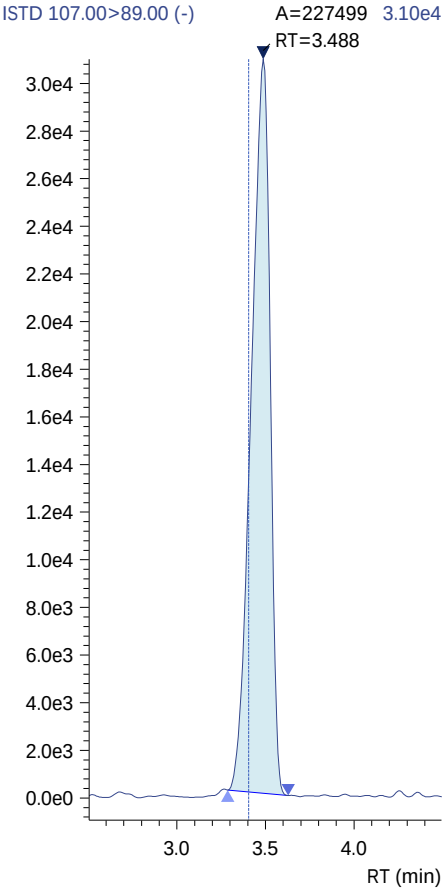
Perchlorate

Conc 9.6285
R#1 26.14 (25.81)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:38:21 AM

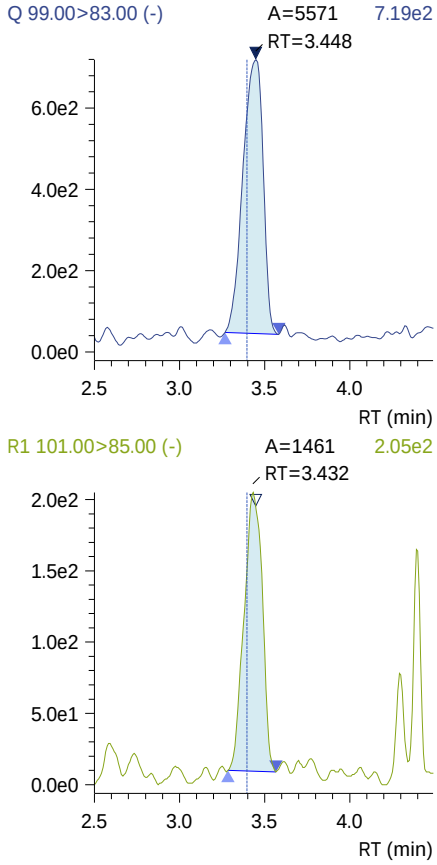
EQ2300289-02

Sample ID: EQ2300289-02
Date Acquired: 6/7/2023 1:29:22 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-038.lcd
Vial: 38 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.448	5571	276719	0.1102	ng/mL	101.00 >85.00	26.22	18.06 -33.55
Sodium Perchlorate -18O4_IS	Auto	3.446	276719	276719	1.0000	ng/mL	----	----	

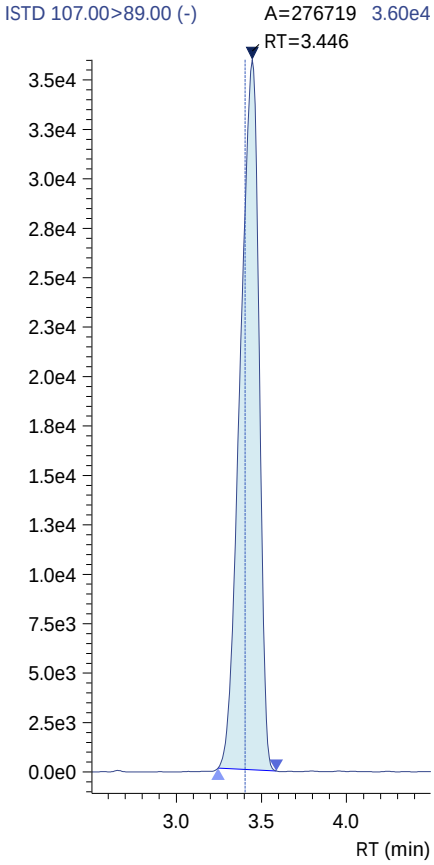
Perchlorate

Conc 0.1102
R#1 26.22 (25.81)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:38:21 AM

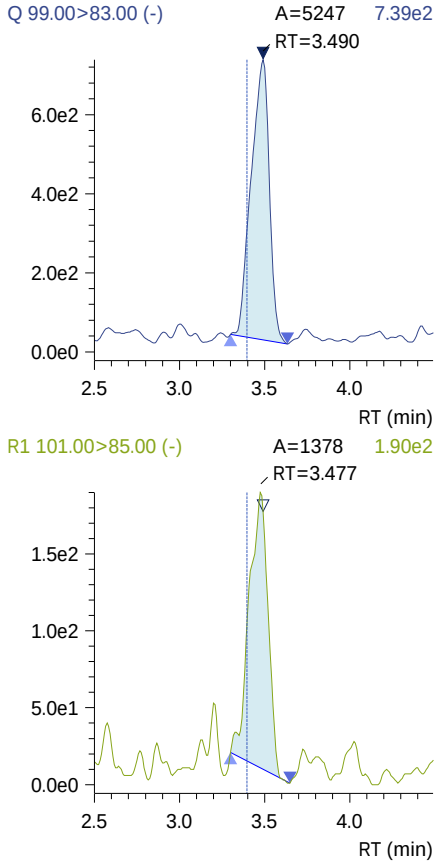
EQ2300289-03

Sample ID: EQ2300289-03
Date Acquired: 6/7/2023 1:36:12 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-039.lcd
Vial: 39 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.490	5247	297551	0.0965	ng/mL	101.00 >85.00	26.26	18.06 -33.55
Sodium Perchlorate -18O4_IS	Auto	3.484	297551	297551	1.0000	ng/mL	----	----	

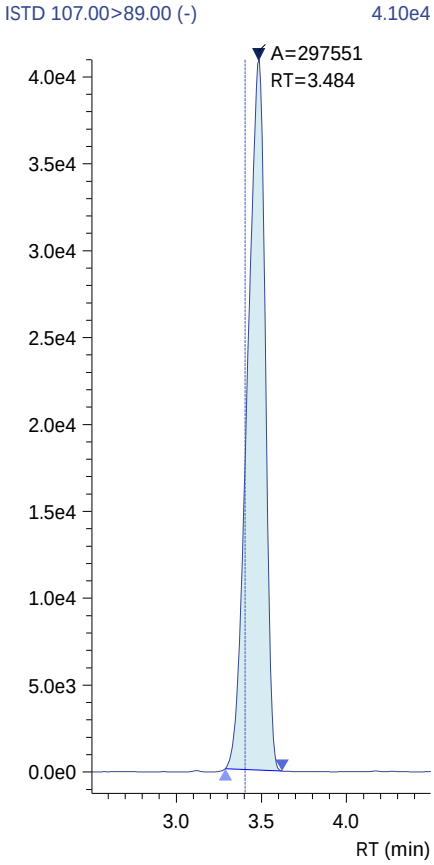
Perchlorate

Conc 0.0965
R#1 26.26 (25.81)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:38:21 AM

E2300533-002

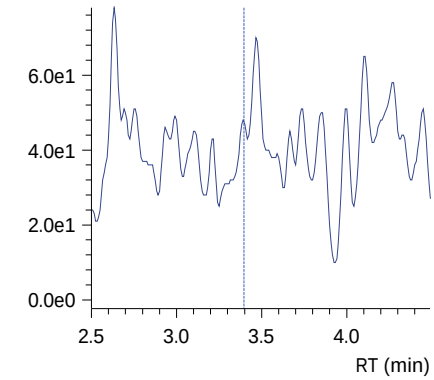
Sample ID: E2300533-002
Date Acquired: 6/7/2023 1:47:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-041.lcd
Vial: 35 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	316958	----	ng/mL	101.00 >85.00	0.00	18.06 -33.55
Sodium Perchlorate-18O4_IS	Auto	3.490	316958	316958	1.0000	ng/mL	----	----	

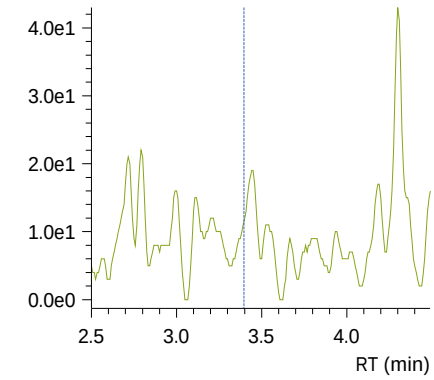
Perchlorate

Conc ----
R#1 0.00 (25.81)

Q 99.00>83.00 (-) 7.80e1



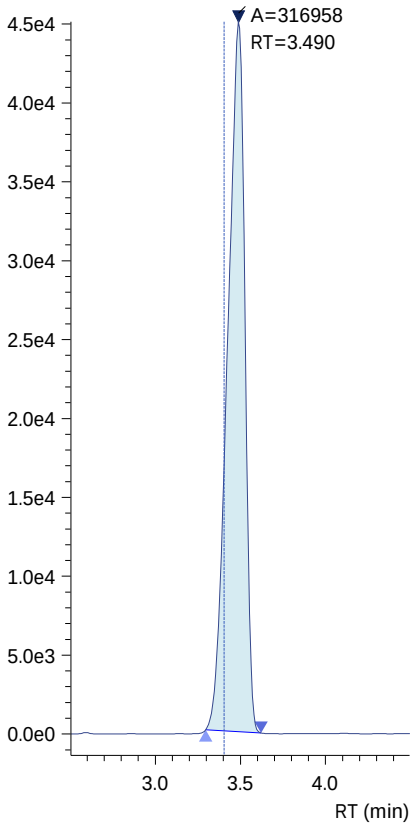
R1 101.00>85.00 (-) 4.30e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.52e4



Insight Report

Printed at 6/23/2023 8:38:21 AM

E2300533-003

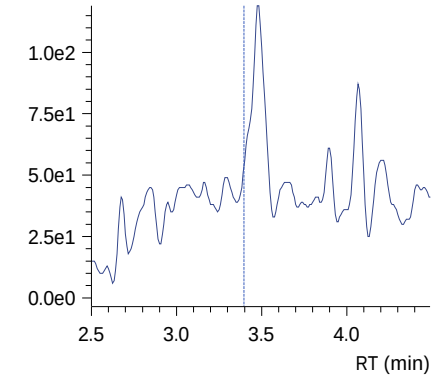
Sample ID: E2300533-003
Date Acquired: 6/7/2023 1:53:29 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-042.lcd
Vial: 36 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	320563	----	ng/mL	101.00 >85.00	0.00	18.06 -33.55
Sodium Perchlorate-18O4_IS	Auto	3.491	320563	320563	1.0000	ng/mL	----	----	

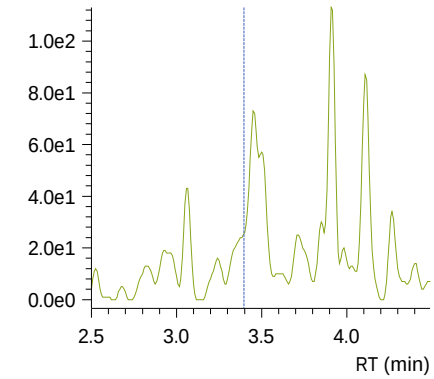
Perchlorate

Conc ----
R#1 0.00 (25.81)

Q 99.00>83.00 (-) 1.19e2



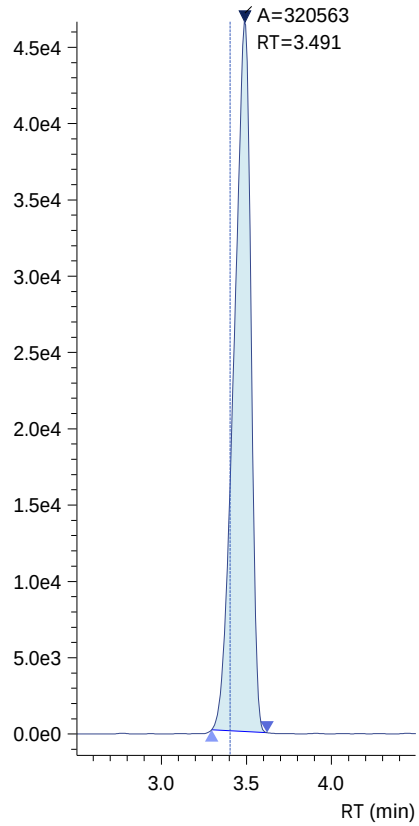
R1 101.00>85.00 (-) 1.13e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.67e4



Insight Report

Printed at 6/23/2023 8:38:21 AM

E2300533-004

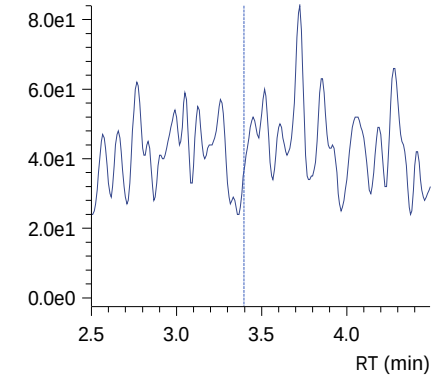
Sample ID: E2300533-004
Date Acquired: 6/7/2023 1:59:16 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-043.lcd
Vial: 37 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	284367	----	ng/mL	101.00 >85.00	0.00	18.06 -33.55
Sodium Perchlorate-18O4_IS	Auto	3.488	284367	284367	1.0000	ng/mL	----	----	

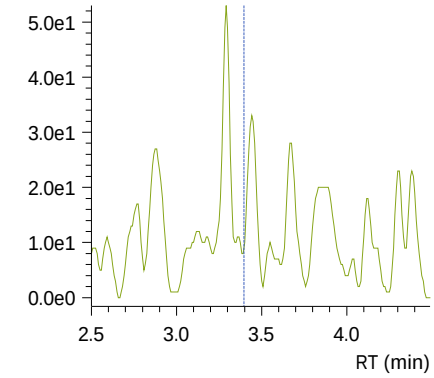
Perchlorate

Conc ----
R#1 0.00 (25.81)

Q 99.00>83.00 (-) 8.40e1



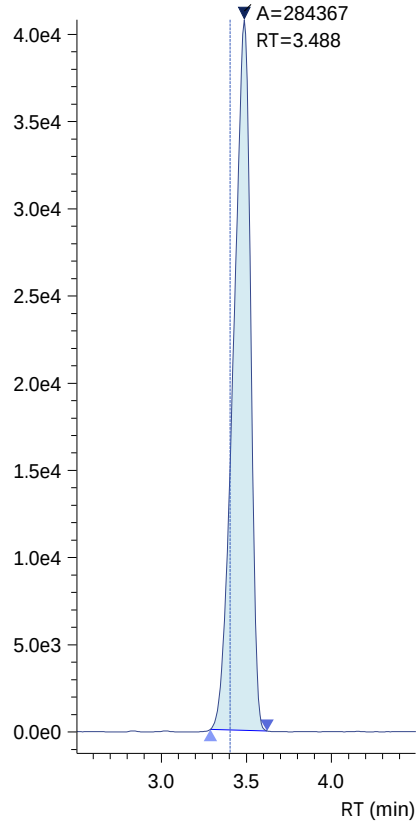
R1 101.00>85.00 (-) 5.30e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.08e4



Insight Report

Printed at 6/23/2023 8:38:21 AM

E2300533-005

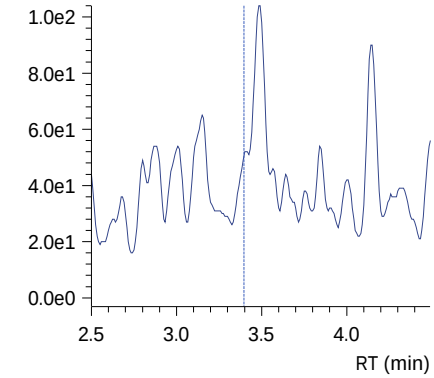
Sample ID: E2300533-005
Date Acquired: 6/7/2023 2:05:01 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-044.lcd
Vial: 38 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	289362	----	ng/mL	101.00 >85.00	0.00	18.06 -33.55
Sodium Perchlorate-18O4_IS	Auto	3.486	289362	289362	1.0000	ng/mL	----	----	

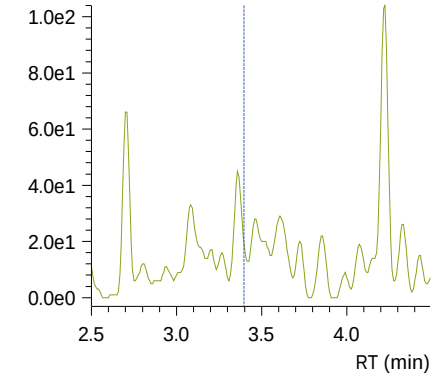
Perchlorate

Conc ----
R#1 0.00 (25.81)

Q 99.00>83.00 (-) 1.04e2



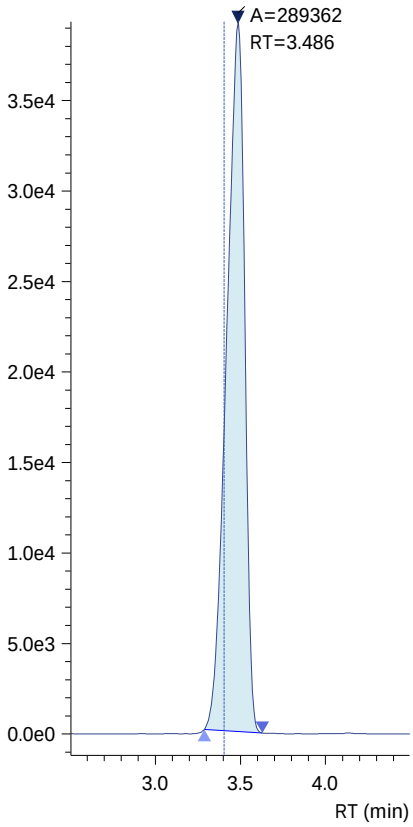
R1 101.00>85.00 (-) 1.04e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.94e4



Insight Report

Printed at 6/23/2023 8:38:21 AM

E2300533-006

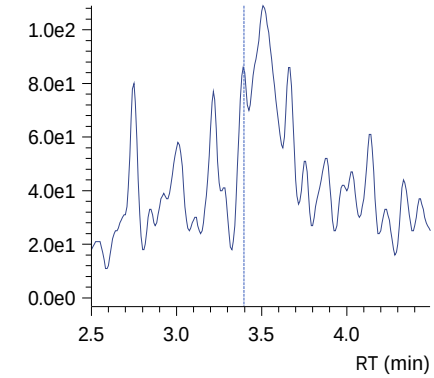
Sample ID: E2300533-006
Date Acquired: 6/7/2023 2:10:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-045.lcd
Vial: 39 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	306369	----	ng/mL	101.00 >85.00	0.00	18.06 -33.55
Sodium Perchlorate-18O4_IS	Auto	3.488	306369	306369	1.0000	ng/mL	----	----	

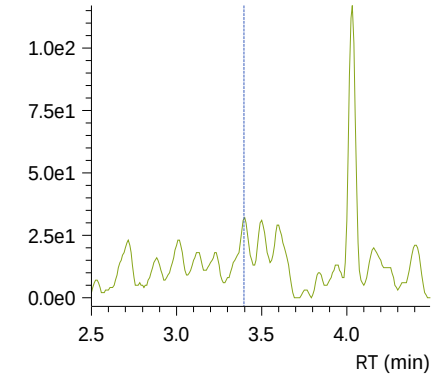
Perchlorate

Conc ----
R#1 0.00 (25.81)

Q 99.00>83.00 (-) 1.09e2



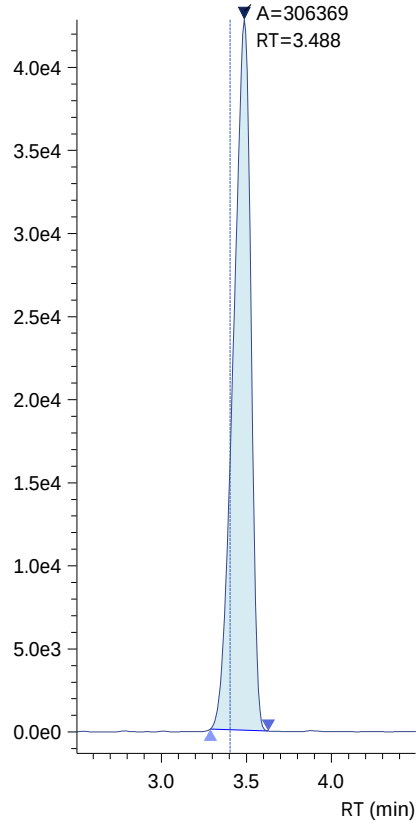
R1 101.00>85.00 (-) 1.17e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.29e4



Insight Report

Printed at 6/23/2023 8:38:21 AM

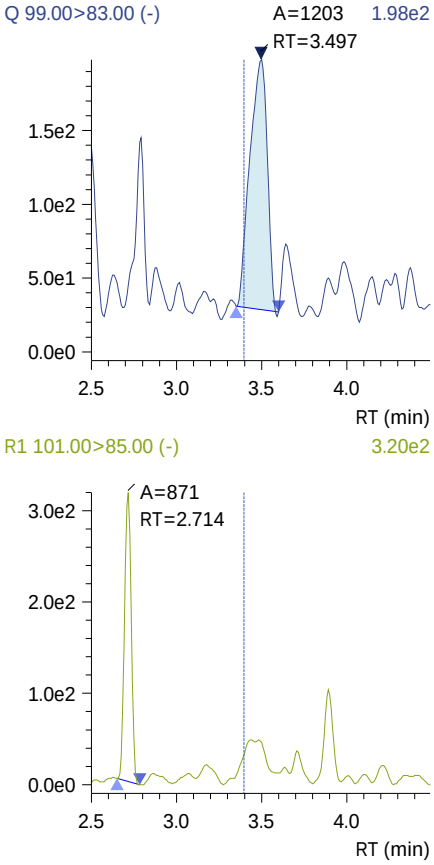
E2300533-007

Sample ID: E2300533-007
Date Acquired: 6/7/2023 2:16:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-046.lcd
Vial: 40 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.497	1203	281205	0.0234	ng/mL	101.00 >85.00	0.00	18.06 -33.55
Sodium Perchlorate -18O4_IS	Auto	3.487	281205	281205	1.0000	ng/mL	----	----	

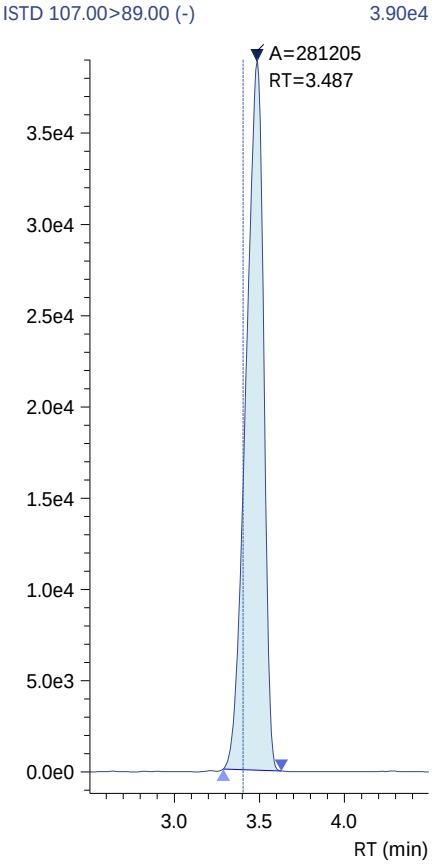
Perchlorate

Conc 0.0234
R#1 0.00 (25.81)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:38:21 AM

E2300533-008X1000

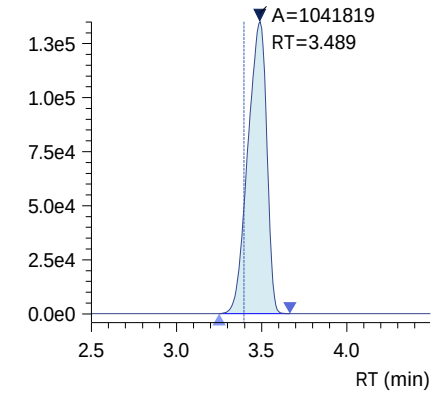
Sample ID: E2300533-008
Date Acquired: 6/7/2023 2:22:15 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-047.lcd
Vial: 41 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.489	10418 19	241806	23.5 792	ng/mL	101.00 >85.00	25.93	18.06 -33.55
Sodium Perchlorate -18O4_IS	Auto	3.485	241806	241806	1.0000	ng/mL	----	----	

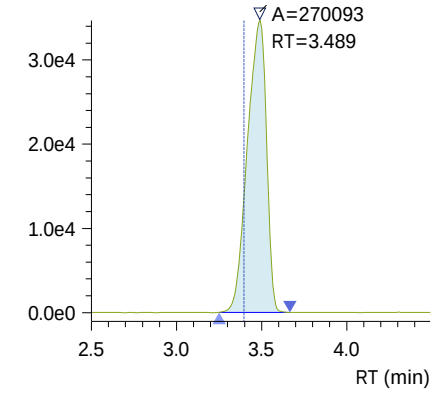
Perchlorate

Conc 23.5792
R#1 25.93 (25.81)

Q 99.00>83.00 (-) 1.35e5



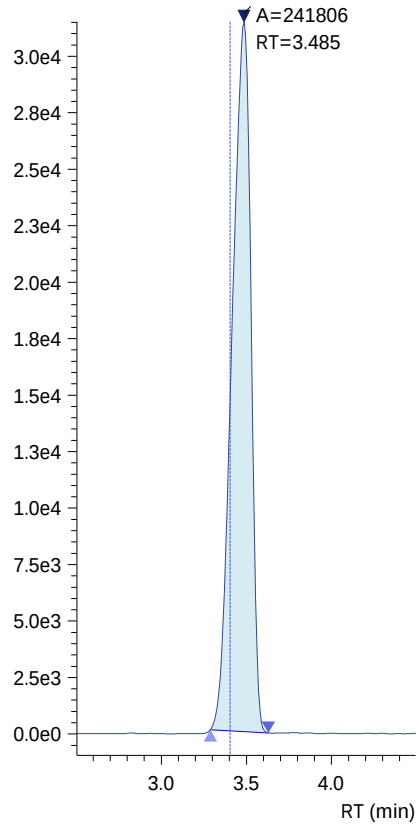
R1 101.00>85.00 (-) 3.47e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.15e4



Insight Report

Printed at 6/8/2023 10:17:10 AM

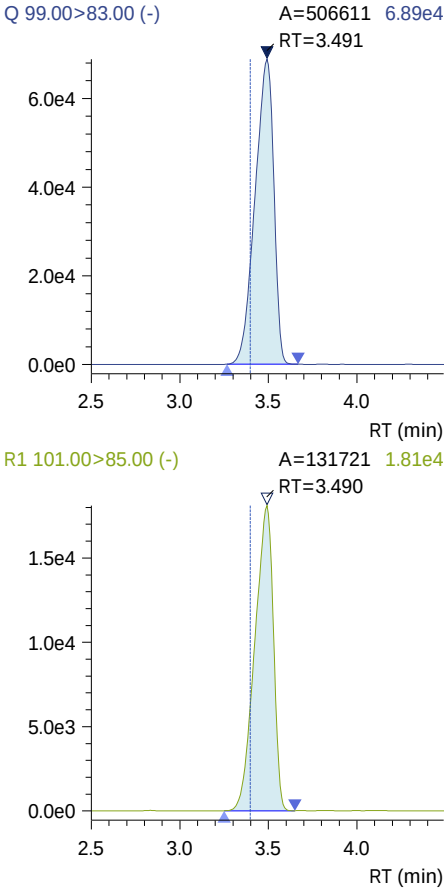
CCV

Sample ID: CCV
Date Acquired: 6/7/2023 2:27:59 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-048.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.491	506611	279459	9.9211	ng/mL	101.00 >85.00	26.00	18.06-33.55
Sodium Perchlorate-18O4 _IS	Auto	3.489	279459	279459	1.0000	ng/mL	----	----	

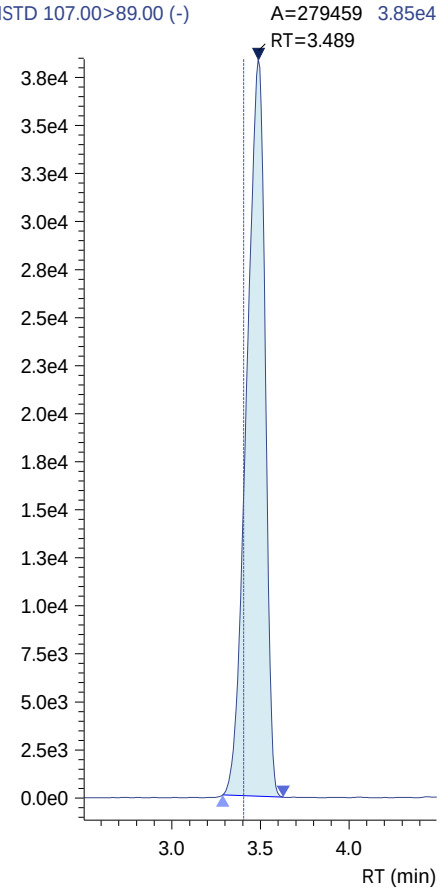
Perchlorate

Conc 9.9211
R#1 26.00 (25.81)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:38:21 AM

E2300533-009

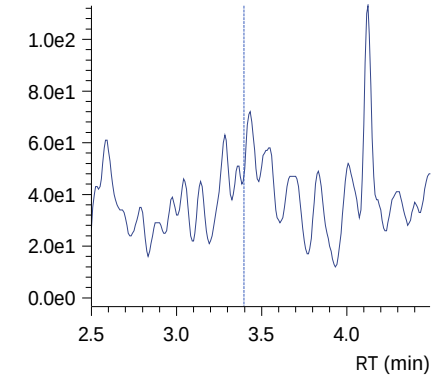
Sample ID: E2300533-009
Date Acquired: 6/7/2023 3:31:04 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-054.lcd
Vial: 42 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	260692	----	ng/mL	101.00 >85.00	0.00	18.06 -33.55
Sodium Perchlorate-18O4_IS	Auto	3.487	260692	260692	1.0000	ng/mL	----	----	

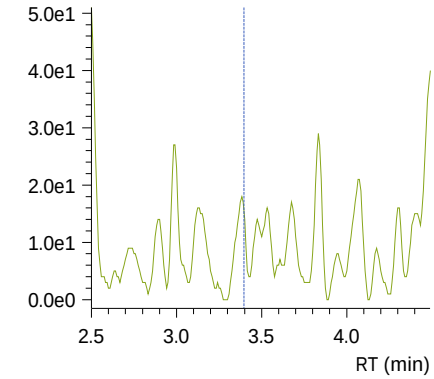
Perchlorate

Conc ----
R#1 0.00 (25.81)

Q 99.00>83.00 (-) 1.13e2



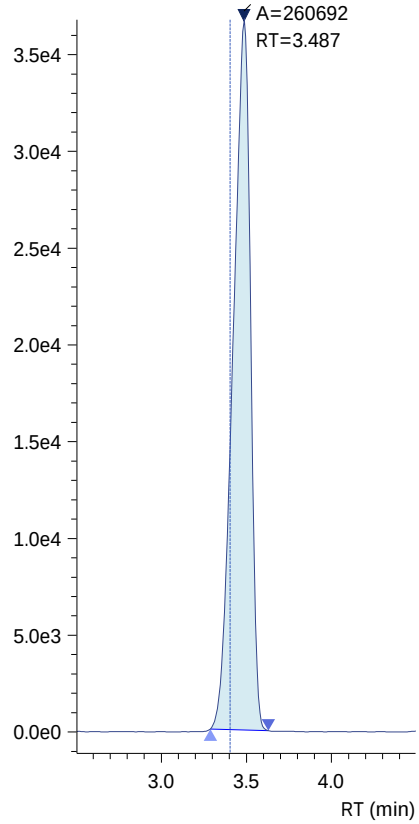
R1 101.00>85.00 (-) 5.10e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.68e4



Insight Report

Printed at 6/23/2023 8:38:21 AM

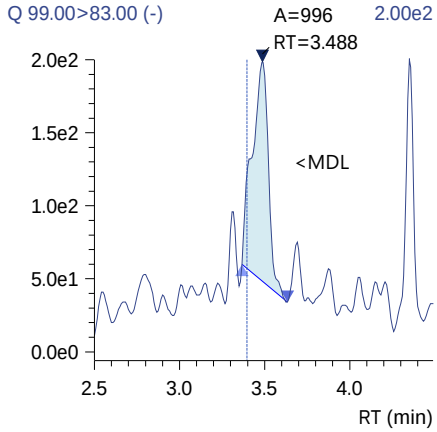
E2300533-010

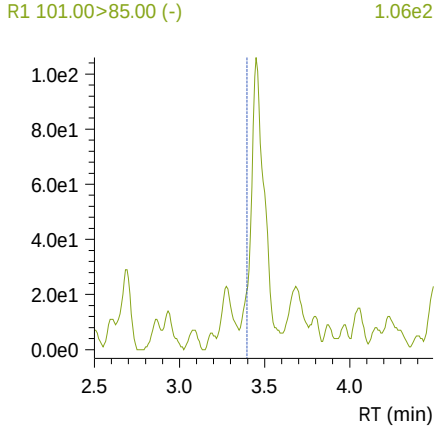
Sample ID: E2300533-010
Date Acquired: 6/7/2023 3:36:51 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-055.lcd
Vial: 43 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.488	996	266718	0.0204	ng/mL	101.00 >85.00	0.00	18.06 -33.55
Sodium Perchlorate -18O4_IS	Auto	3.487	266718	266718	1.0000	ng/mL	----	----	

Perchlorate

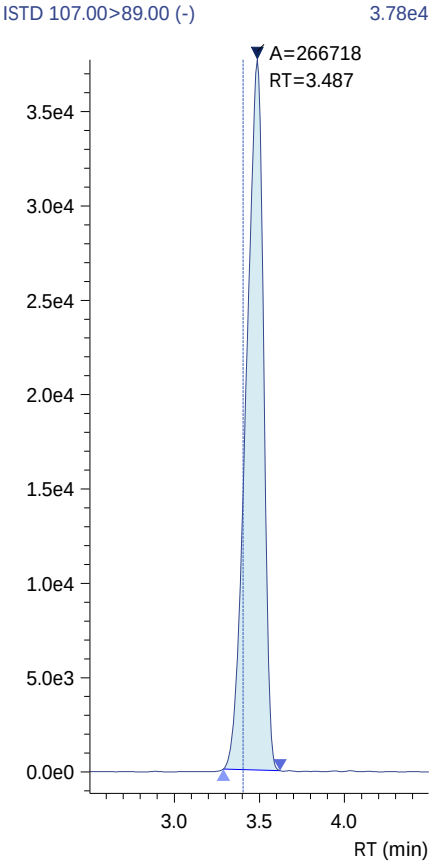
Conc 0.0204
R#1 0.00 (25.81)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:38:21 AM

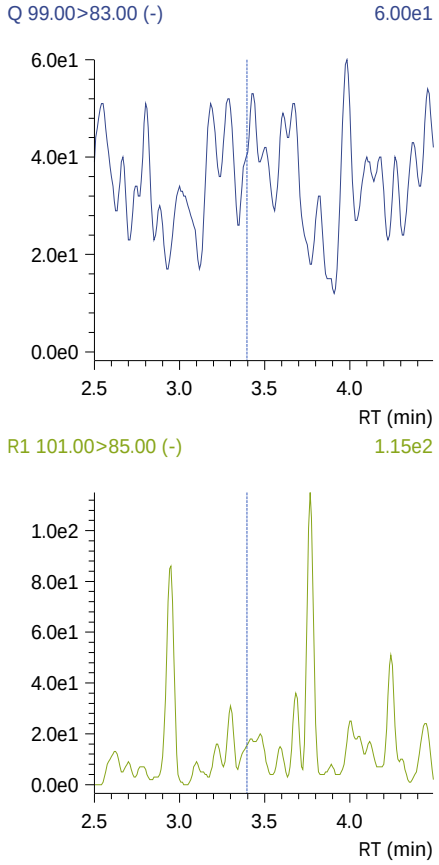
E2300533-011

Sample ID: E2300533-011
Date Acquired: 6/7/2023 3:44:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-056.lcd
Vial: 44 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	274327	----	ng/mL	101.00 >85.00	0.00	18.06 -33.55
Sodium Perchlorate-18O4_IS	Auto	3.482	274327	274327	1.0000	ng/mL	----	----	

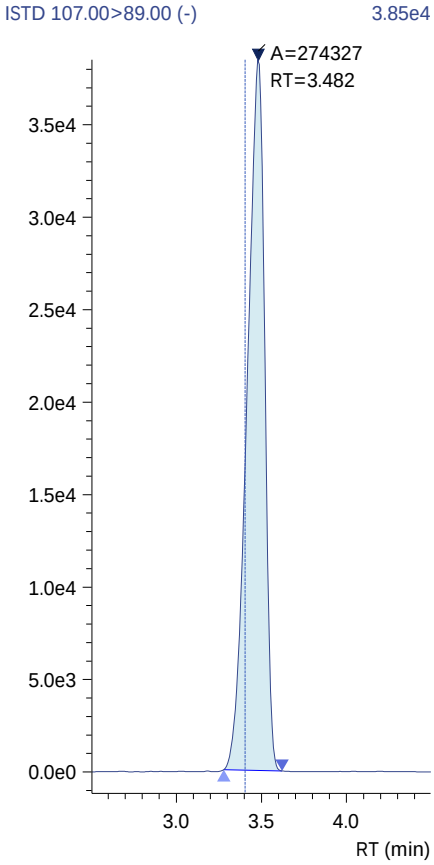
Perchlorate

Conc ----
R#1 0.00 (25.81)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:38:21 AM

E2300533-012

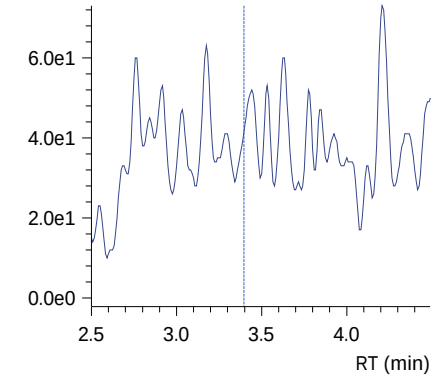
Sample ID: E2300533-012
Date Acquired: 6/7/2023 3:50:22 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-057.lcd
Vial: 45 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	298523	----	ng/mL	101.00 >85.00	0.00	18.06 -33.55
Sodium Perchlorate-18O4_IS	Auto	3.488	298523	298523	1.0000	ng/mL	----	----	

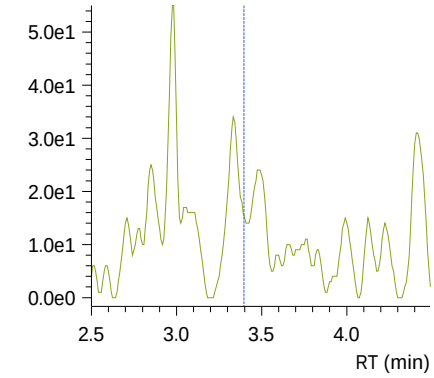
Perchlorate

Conc ----
R#1 0.00 (25.81)

Q 99.00>83.00 (-) 7.30e1



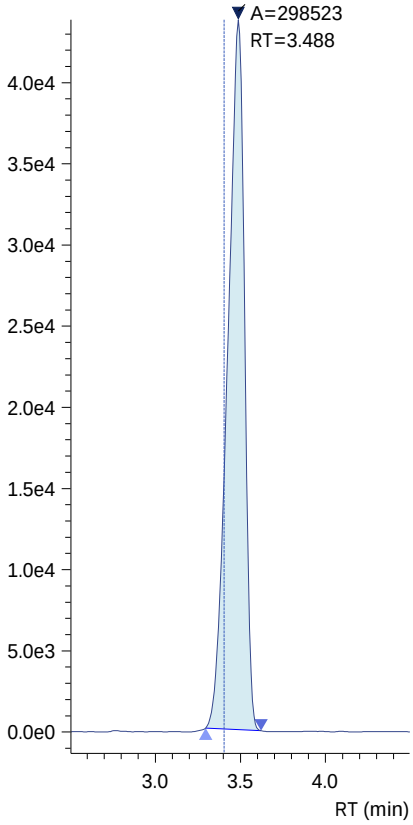
R1 101.00>85.00 (-) 5.50e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.39e4



Insight Report

Printed at 6/8/2023 10:17:10 AM

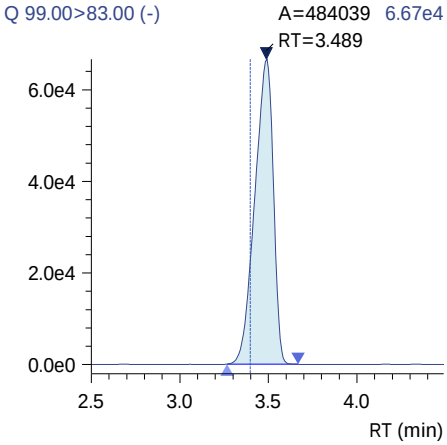
CCV

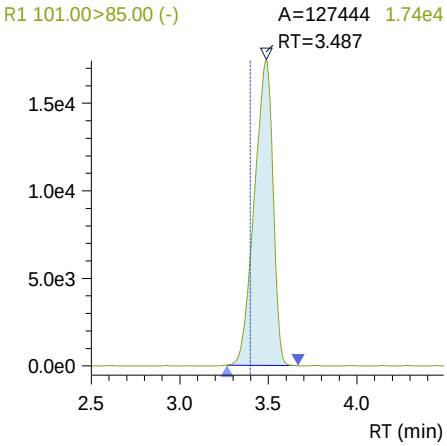
Sample ID: CCV
Date Acquired: 6/7/2023 4:01:52 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-059.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.489	484039	268982	9.8483	ng/mL	101.00 >85.00	26.33	18.06-33.55
Sodium Perchlorate-18O4 _IS	Auto	3.486	268982	268982	1.0000	ng/mL	----	----	

Perchlorate

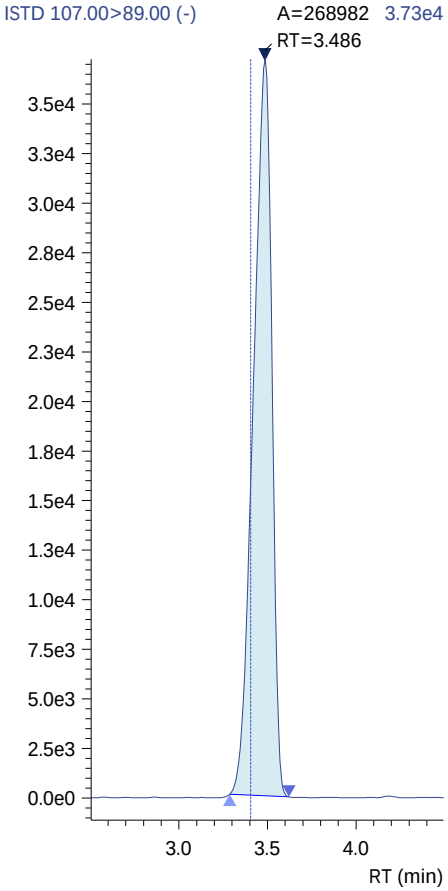
Conc 9.8483
R#1 26.33 (25.81)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:40:53 AM

Method File: I:\LCMS01\DATA\20230608\20230608.lcm
Project File: I:\LCMS01\DATA\20230608\20230608.damlp

IB

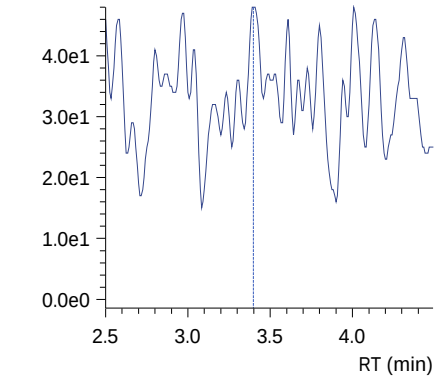
Sample ID: IB
Date Acquired: 6/8/2023 8:56:00 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-001.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	311820	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.497	311820	311820	1.0000	ng/mL	----	----	

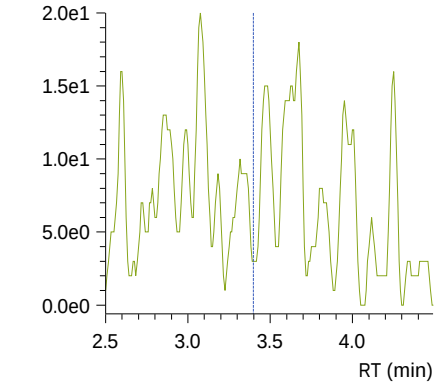
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 4.80e1



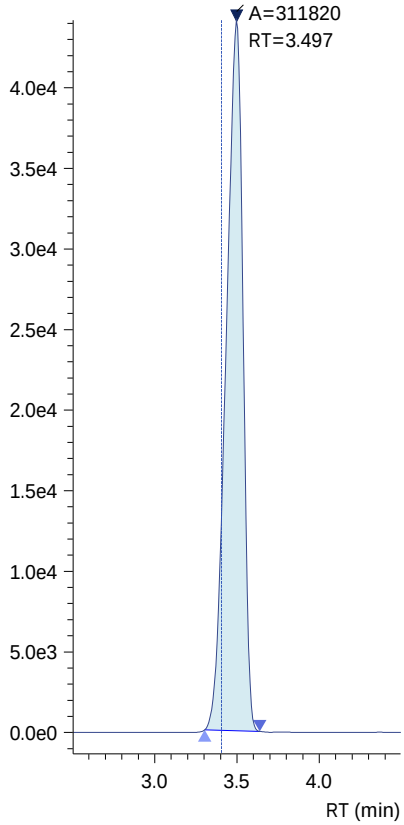
R1 101.00>85.00 (-) 2.00e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.42e4



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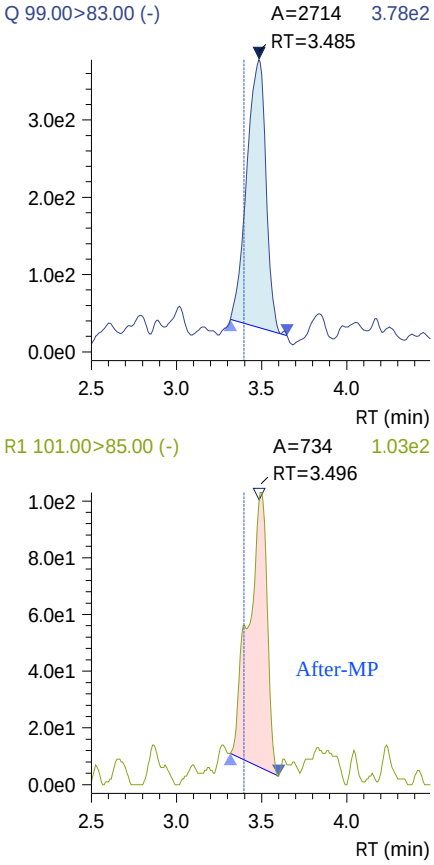
LODV

Sample ID: LODV
Date Acquired: 6/8/2023 9:02:14 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-002.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	MI R1	3.485	2714	281900	0.0527	ng/mL	101.00 >85.00	27.04	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.484	281900	281900	1.0000	ng/mL	----	----	

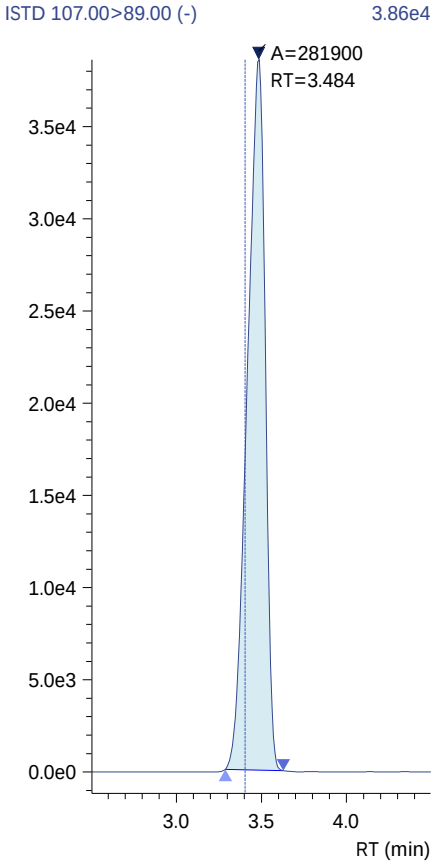
Perchlorate

Conc 0.0527
R#1 27.04 (26.34)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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Method File: I:\LCMS01\DATA\20230608\20230608.lcm
Project File: I:\LCMS01\DATA\20230608\20230608.damlp

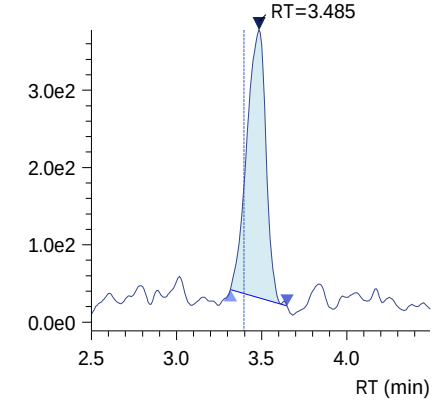
LODV

Sample ID: LODV
Date Acquired: 6/8/2023 9:02:14 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-002.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 0

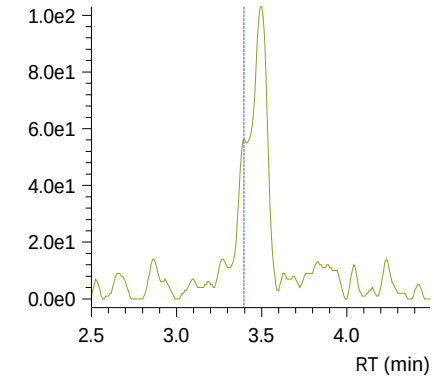
Perchlorate

Conc 0.0527
R#1 0.00 (26.34)

Q 99.00>83.00 (-) A=2714 3.78e2



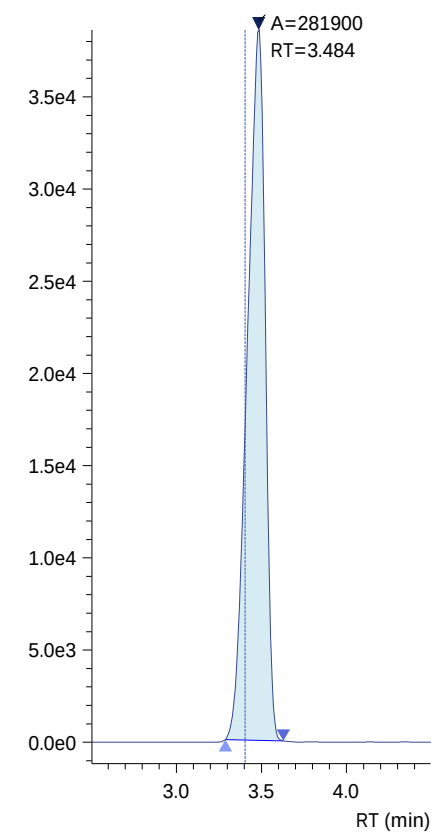
R1 101.00>85.00 (-) 1.03e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.86e4



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ICS

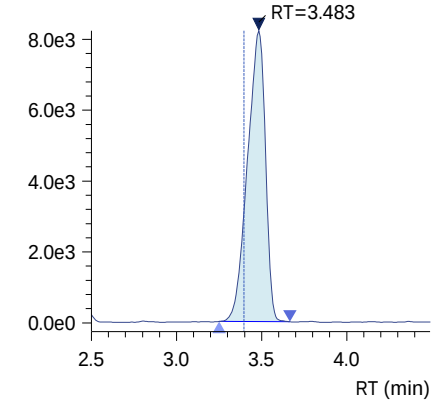
Sample ID: ICS
Date Acquired: 6/8/2023 9:07:57 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-003.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.483	60185	315867	1.0428	ng/mL	101.00 >85.00	24.74	18.44 -34.25
Sodium Perchlorate-18O4 _IS	Auto	3.482	3158 67	315867	1.0000	ng/mL	----	----	

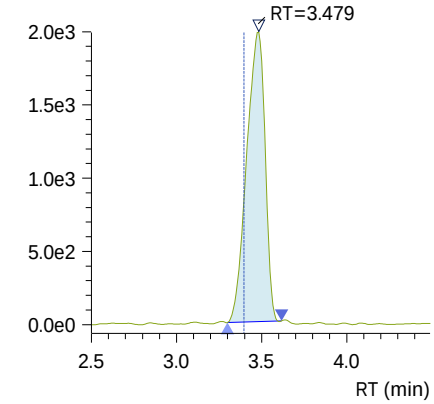
Perchlorate

Conc 1.0428
R#1 24.74 (26.34)

Q 99.00>83.00 (-) A=60185 8.24e3



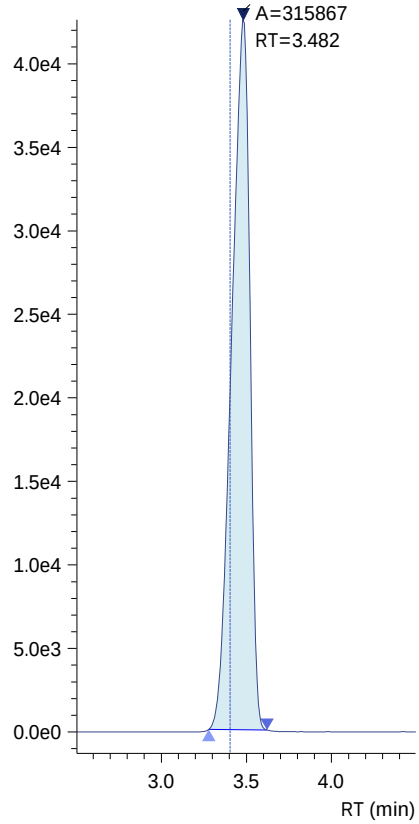
R1 101.00>85.00 (-) A=14887 2.00e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.26e4



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CCV

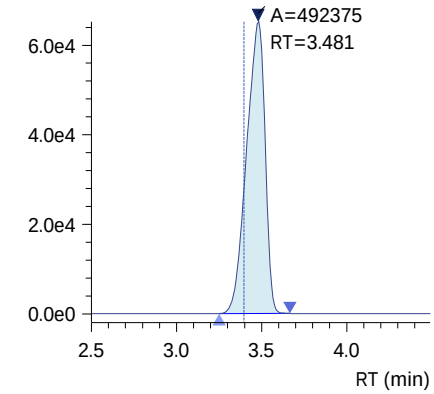
Sample ID: CCV
Date Acquired: 6/8/2023 9:13:45 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-004.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.481	492375	272206	9.8992	ng/mL	101.00 >85.00	25.46	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.478	272206	272206	1.0000	ng/mL	----	----	

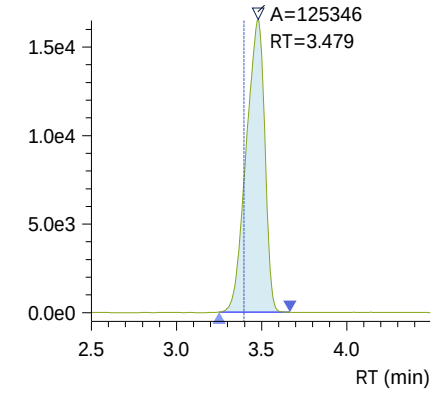
Perchlorate

Conc 9.8992
R#1 25.46 (26.34)

Q 99.00>83.00 (-) 6.53e4



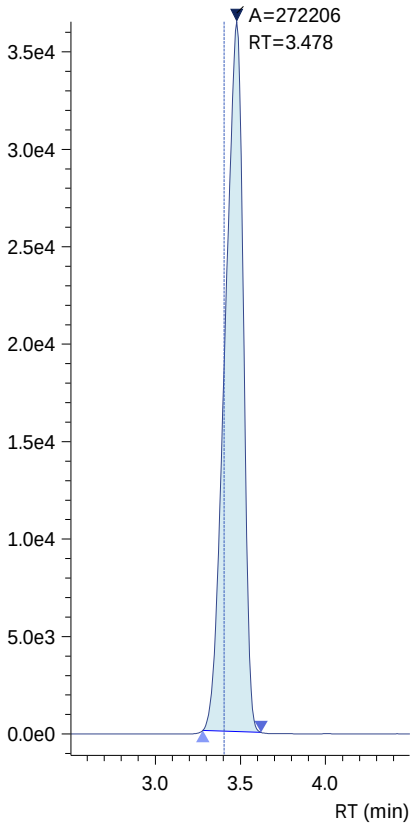
R1 101.00>85.00 (-) 1.65e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.65e4



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E2300533-013

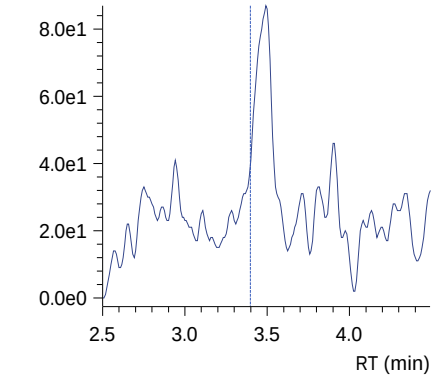
Sample ID: E2300533-013
Date Acquired: 6/8/2023 9:23:50 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-005.lcd
Vial: 46 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	299496	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.473	299496	299496	1.0000	ng/mL	----	----	

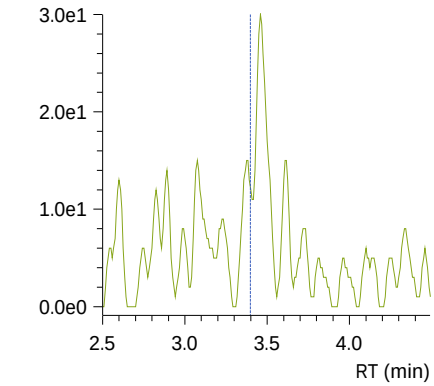
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 8.70e1



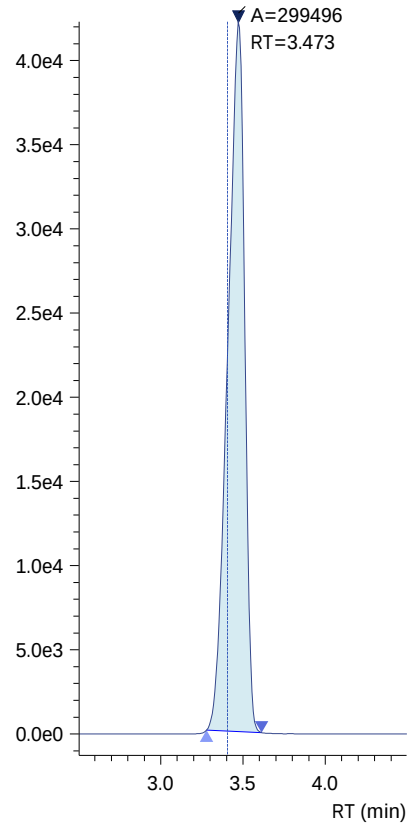
R1 101.00>85.00 (-) 3.00e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.23e4



Insight Report

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E2300533-014

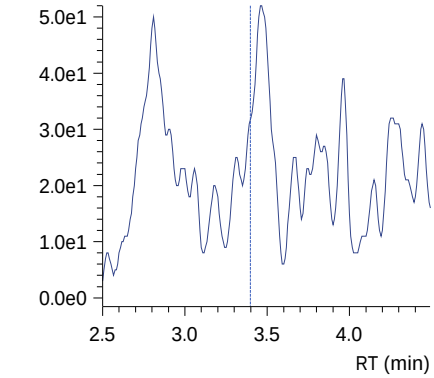
Sample ID: E2300533-014
Date Acquired: 6/8/2023 9:29:34 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-006.lcd
Vial: 47 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	244752	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.480	244752	244752	1.0000	ng/mL	----	----	

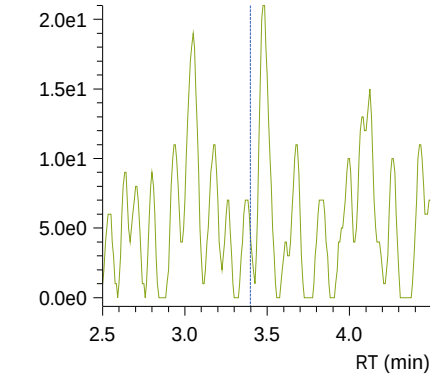
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 5.20e1



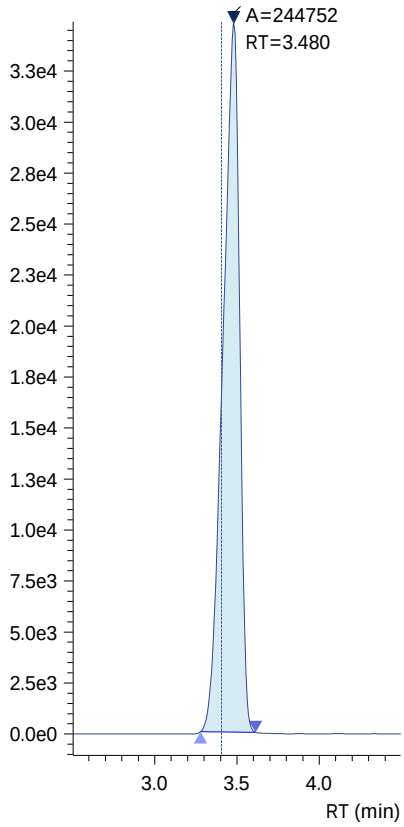
R1 101.00>85.00 (-) 2.10e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.49e4



Insight Report

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E2300533-015X20

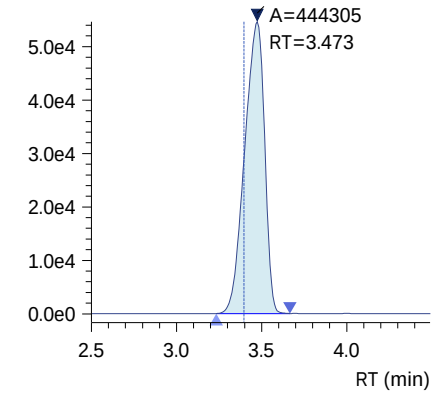
Sample ID: E2300533-015
Date Acquired: 6/8/2023 9:35:17 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-007.lcd
Vial: 48 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.473	444305	272996	8.9069	ng/mL	101.00 >85.00	26.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.470	272996	272996	1.0000	ng/mL	----	----	

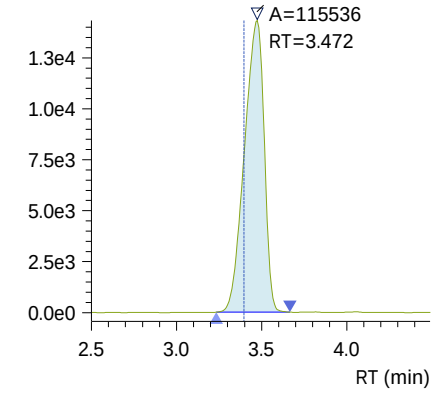
Perchlorate

Conc 8.9069
R#1 26.00 (26.34)

Q 99.00>83.00 (-) 5.47e4



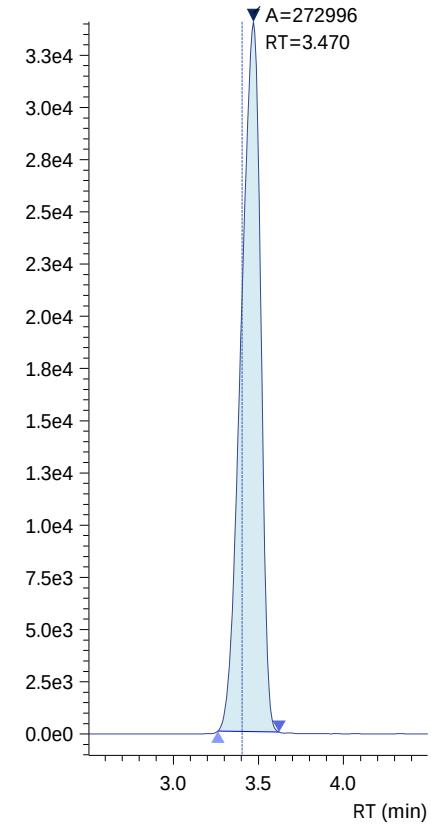
R1 101.00>85.00 (-) 1.43e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.41e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-016

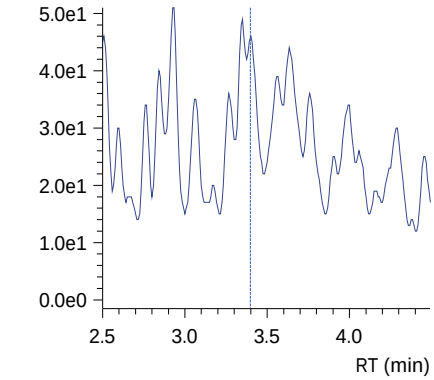
Sample ID: E2300533-016
Date Acquired: 6/8/2023 9:41:04 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-008.lcd
Vial: 49 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	259261	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.469	259261	259261	1.0000	ng/mL	----	----	

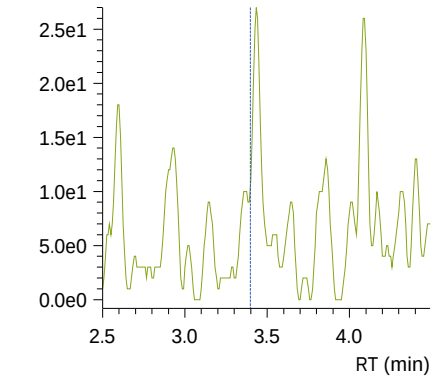
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 5.10e1



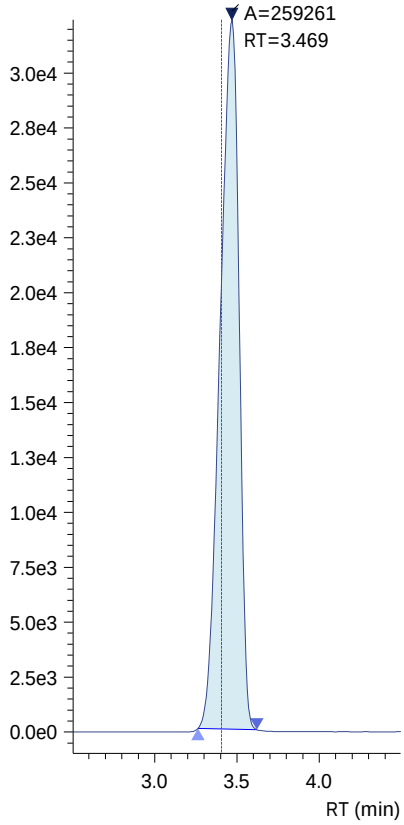
R1 101.00>85.00 (-) 2.70e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.24e4



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Printed at 6/23/2023 8:40:53 AM

E2300533-017

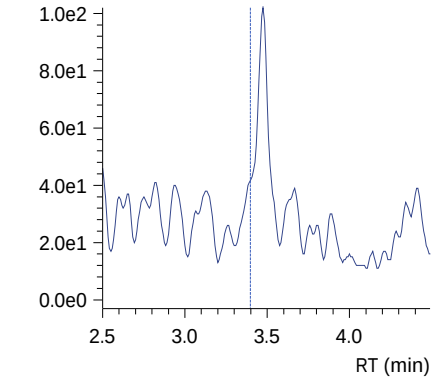
Sample ID: E2300533-017
Date Acquired: 6/8/2023 9:46:49 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-009.lcd
Vial: 50 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	261388	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.473	261388	261388	1.0000	ng/mL	----	----	

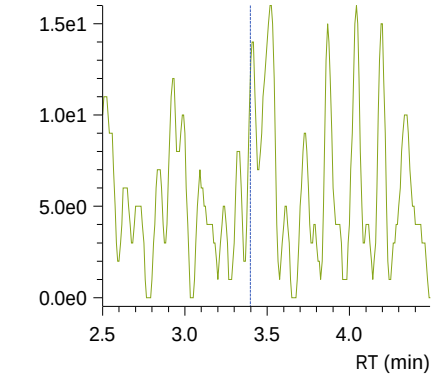
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 1.02e2



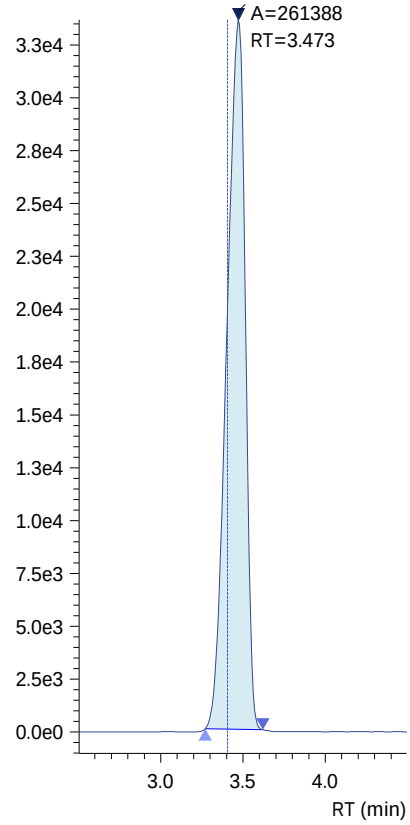
R1 101.00>85.00 (-) 1.60e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.37e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-018

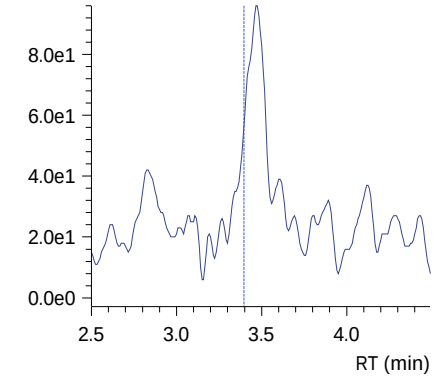
Sample ID: E2300533-018
Date Acquired: 6/8/2023 9:52:36 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-010.lcd
Vial: 51 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	259664	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.474	259664	259664	1.0000	ng/mL	----	----	

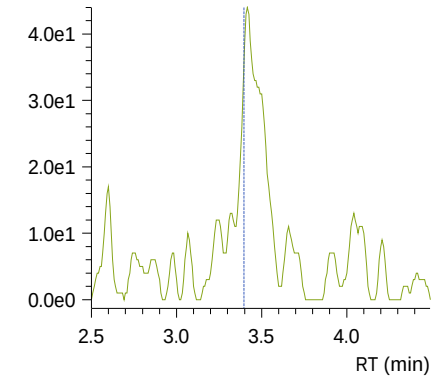
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 9.60e1



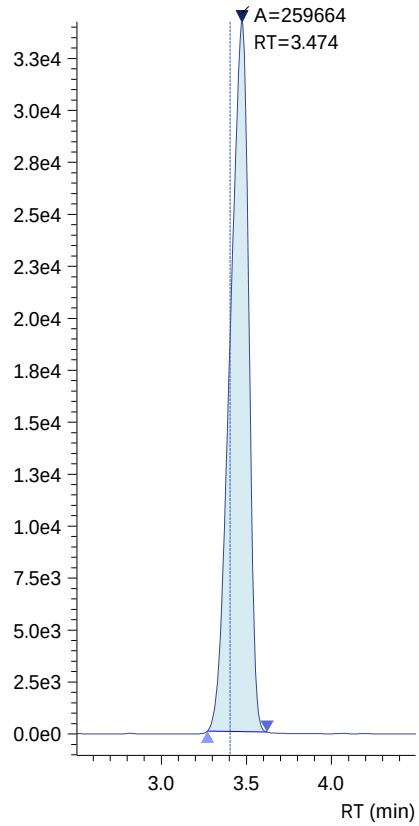
R1 101.00>85.00 (-) 4.40e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.43e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-019

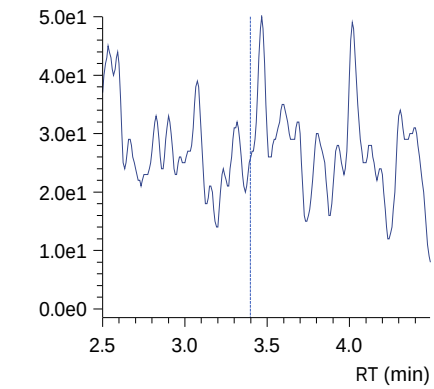
Sample ID: E2300533-019
Date Acquired: 6/8/2023 9:58:21 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-011.lcd
Vial: 52 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	260408	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.475	260408	260408	1.0000	ng/mL	----	----	

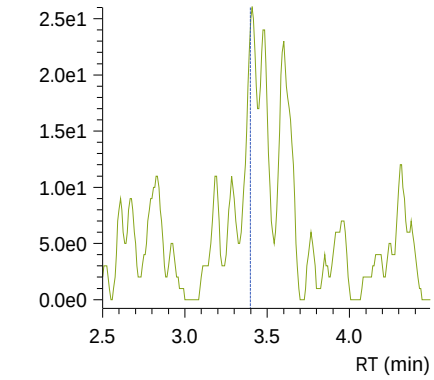
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 5.00e1



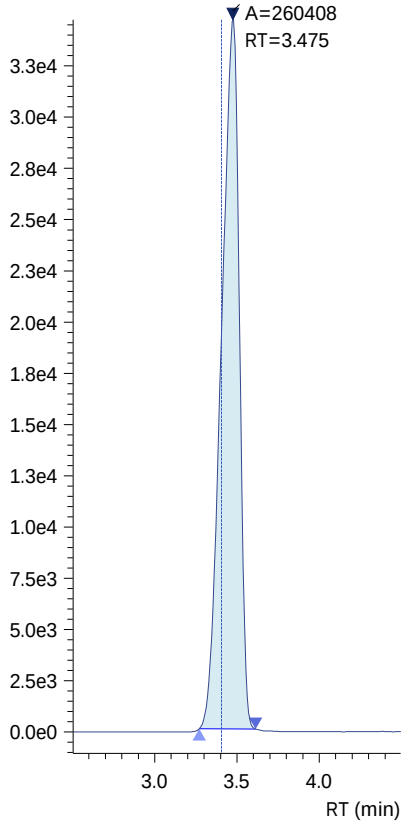
R1 101.00>85.00 (-) 2.60e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.48e4



Insight Report

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E2300533-020

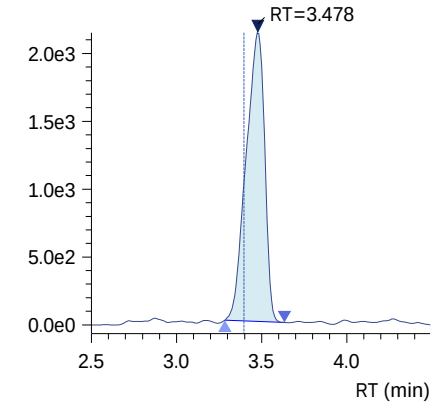
Sample ID: E2300533-020
Date Acquired: 6/8/2023 10:04:06 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-012.lcd
Vial: 53 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.478	16193	296652	0.2987	ng/mL	101.00 >85.00	26.35	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.475	296652	296652	1.0000	ng/mL	----	----	

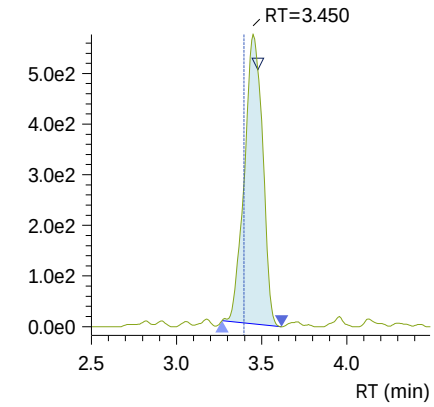
Perchlorate

Conc 0.2987
R#1 26.35 (26.34)

Q 99.00>83.00 (-) A=16193 2.15e3



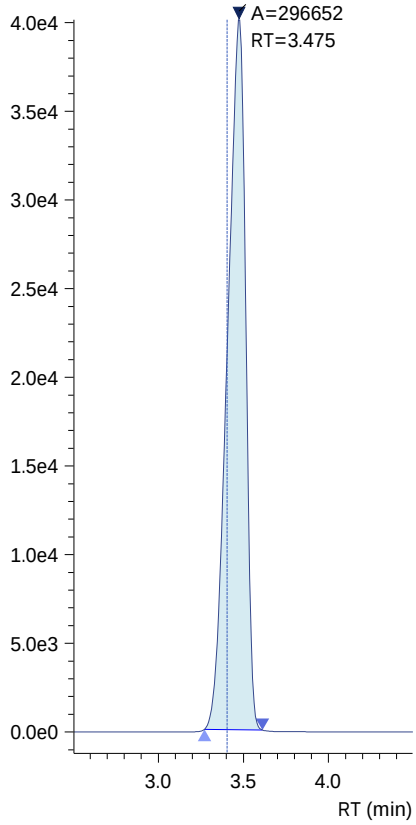
R1 101.00>85.00 (-) A=4266 5.77e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.02e4



Insight Report

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CCV

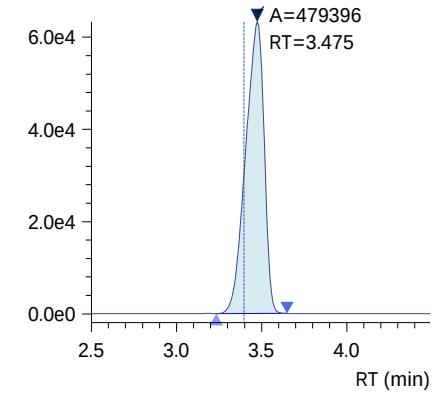
Sample ID: CCV
Date Acquired: 6/8/2023 10:09:51 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-013.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.475	479396	264474	9.9201	ng/mL	101.00 >85.00	26.50	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.472	264474	264474	1.0000	ng/mL	----	----	

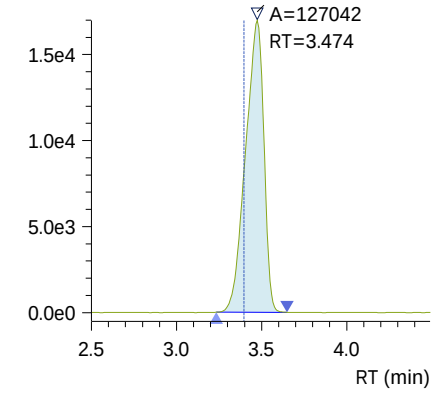
Perchlorate

Conc 9.9201
R#1 26.50 (26.34)

Q 99.00>83.00 (-) 6.34e4



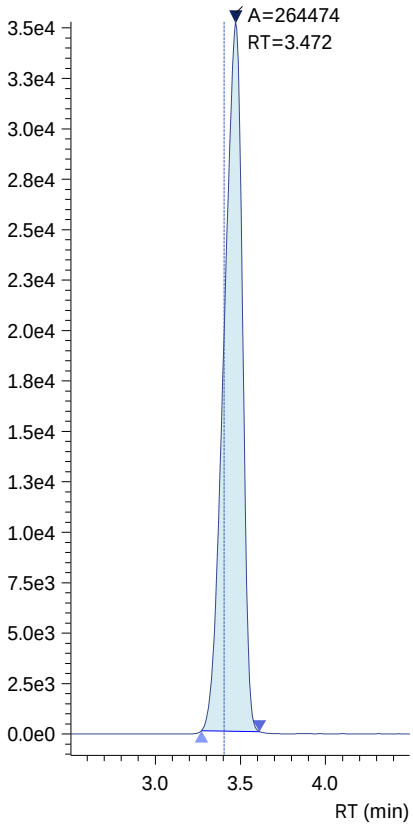
R1 101.00>85.00 (-) 1.70e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.53e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

EQ2300290-01

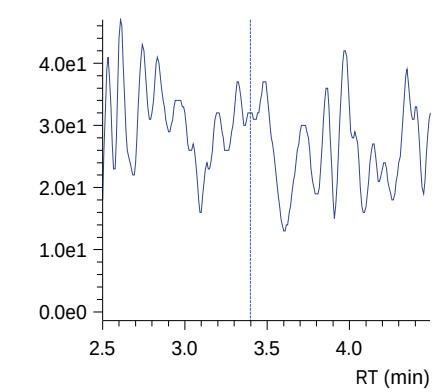
Sample ID: EQ2300290-01
Date Acquired: 6/8/2023 10:15:35 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-014.lcd
Vial: 43 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	259494	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.473	259494	259494	1.0000	ng/mL	----	----	

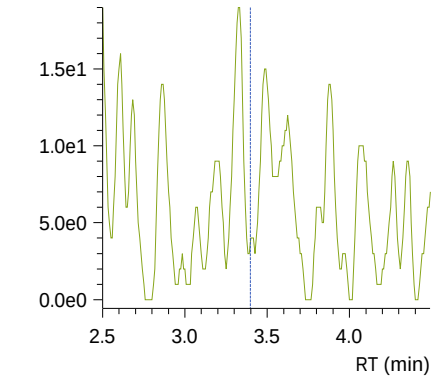
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 4.70e1



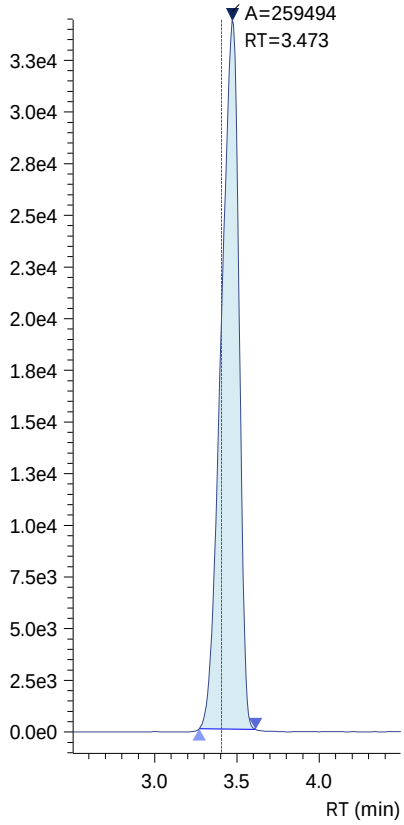
R1 101.00>85.00 (-) 1.90e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.45e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

EQ2300290-02

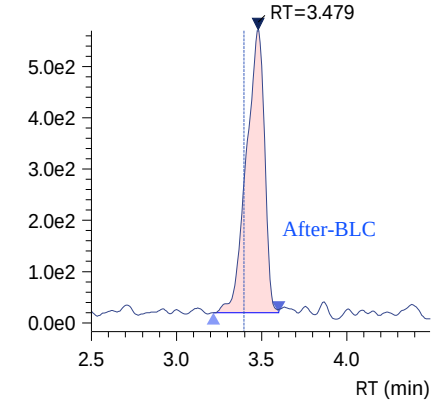
Sample ID: EQ2300290-02
Date Acquired: 6/8/2023 10:21:20 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-015.lcd
Vial: 44 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	M	3.479	4120	257411	0.0876	ng/mL	101.00 >85.00	31.02	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.473	2574 11	257411	1.0000	ng/mL	----	----	

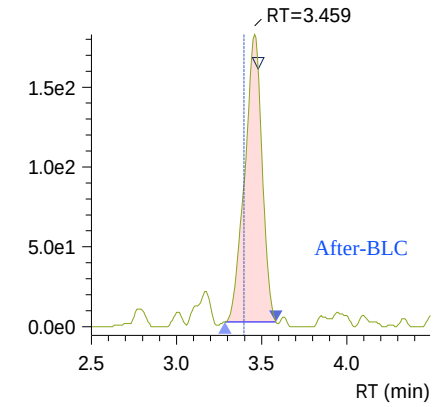
Perchlorate

Conc 0.0876
R#1 31.02 (26.34)

Q 99.00>83.00 (-) A=4120 5.70e2



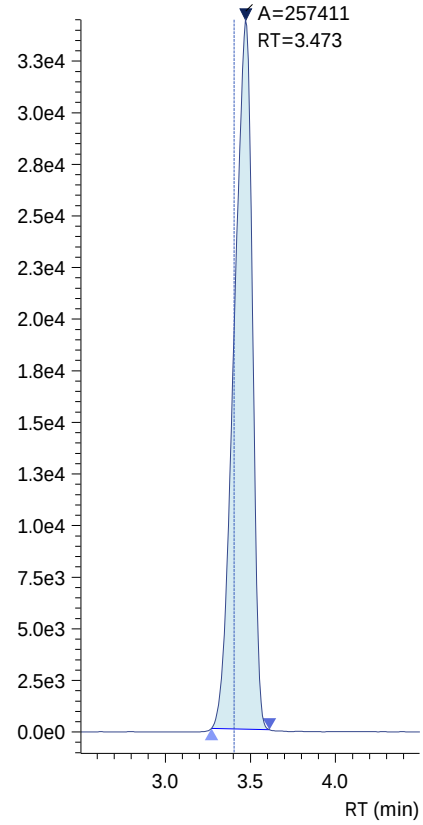
R1 101.00>85.00 (-) A=1278 1.83e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.45e4



Insight Report

Printed at 6/23/2023 8:42:45 AM

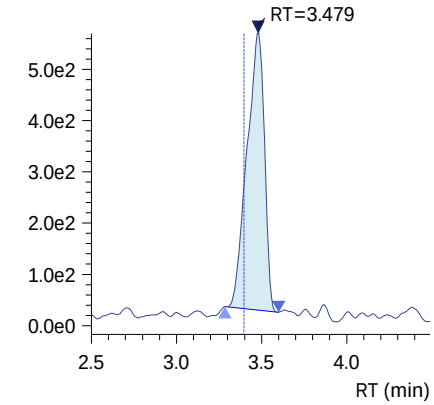
EQ2300290-02

Sample ID: EQ2300290-02
Date Acquired: 6/8/2023 10:21:20 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-015.lcd
Vial: 44 | Inj. Volume: 10.0000uL | Tray: 4

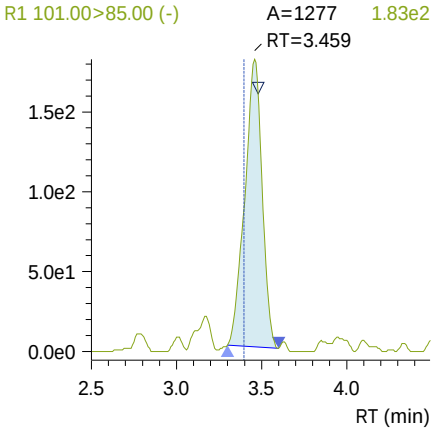
Perchlorate

Conc 0.0824
R#1 32.96 (26.34)

Q 99.00>83.00 (-) A=3875 5.70e2



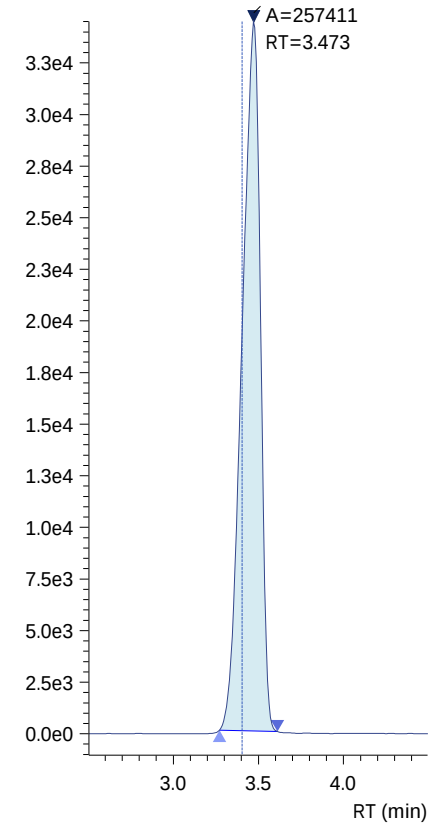
R1 101.00>85.00 (-) A=1277 1.83e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.45e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

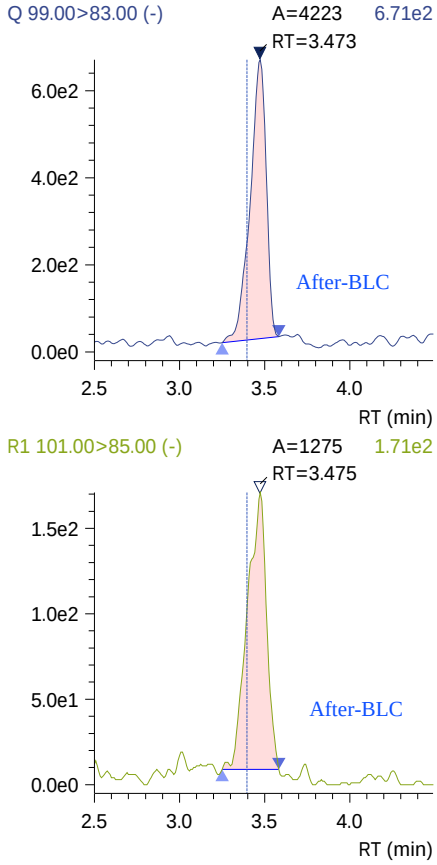
EQ2300290-03

Sample ID: EQ2300290-03
Date Acquired: 6/8/2023 10:27:06 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-016.lcd
Vial: 45 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	M	3.473	4223	257420	0.0898	ng/mL	101.00 >85.00	30.20	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.473	2574 20	257420	1.0000	ng/mL	----	----	

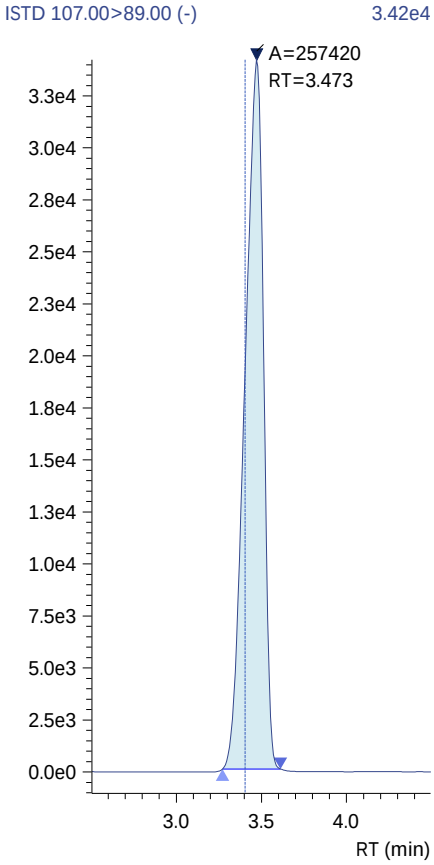
Perchlorate

Conc 0.0898
R#1 30.20 (26.34)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:42:45 AM

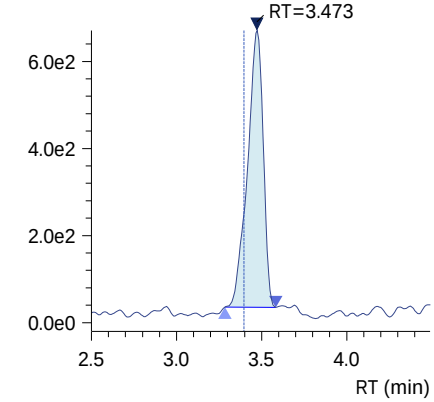
EQ2300290-03

Sample ID: EQ2300290-03
Date Acquired: 6/8/2023 10:27:06 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-016.lcd
Vial: 45 | Inj. Volume: 10.0000uL | Tray: 4

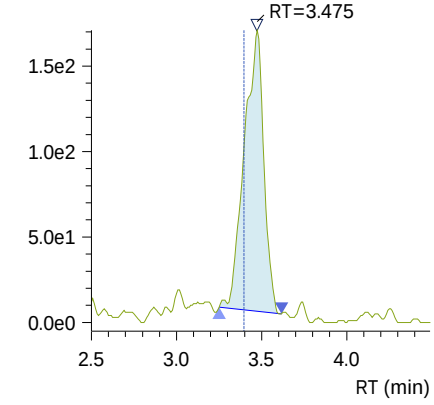
Perchlorate

Conc 0.0869
R#1 32.12 (26.34)

Q 99.00>83.00 (-) A=4086 6.71e2



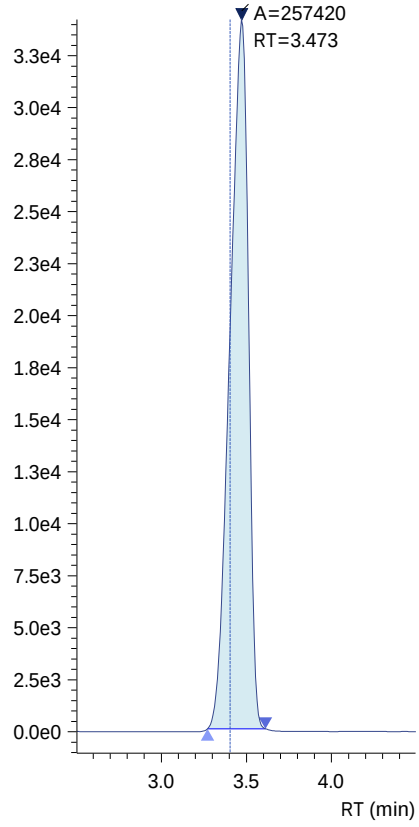
R1 101.00>85.00 (-) A=1313 1.71e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.42e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-021

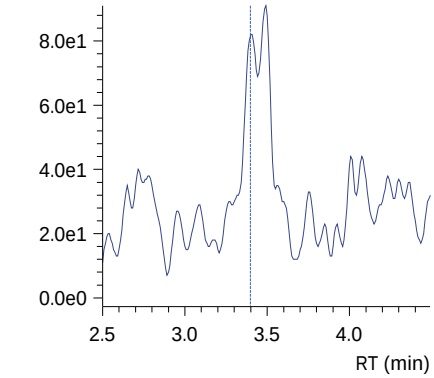
Sample ID: E2300533-021
Date Acquired: 6/8/2023 10:32:49 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-017.lcd
Vial: 54 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	287032	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.475	287032	287032	1.0000	ng/mL	----	----	

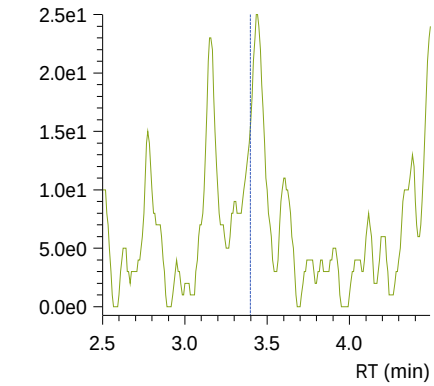
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 9.10e1



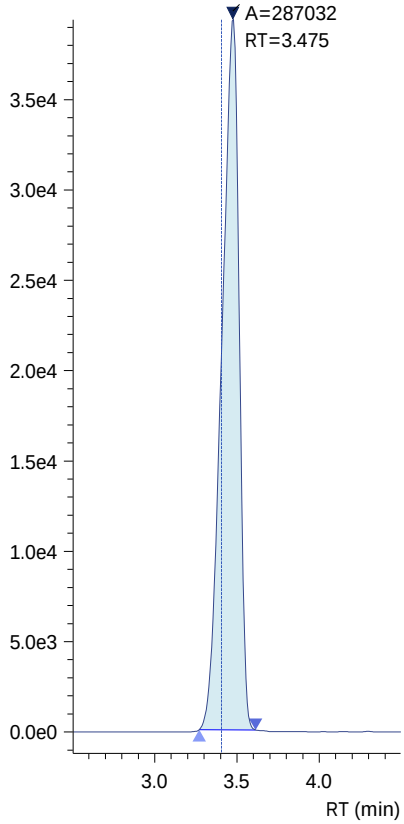
R1 101.00>85.00 (-) 2.50e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.94e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-023

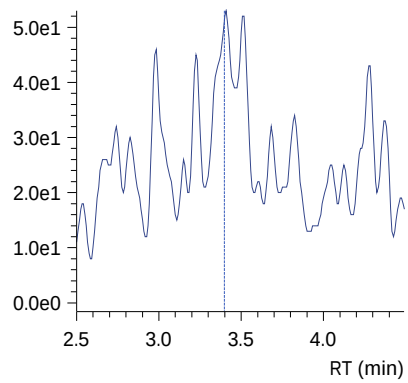
Sample ID: E2300533-023
Date Acquired: 6/8/2023 10:38:35 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-018.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	274556	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.476	274556	274556	1.0000	ng/mL	----	----	

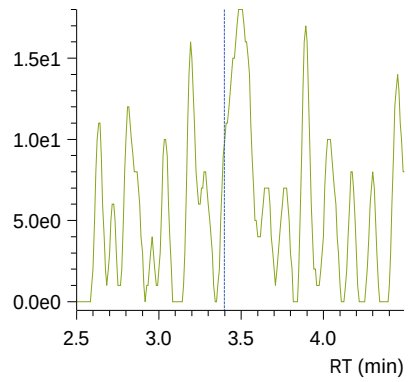
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 5.30e1



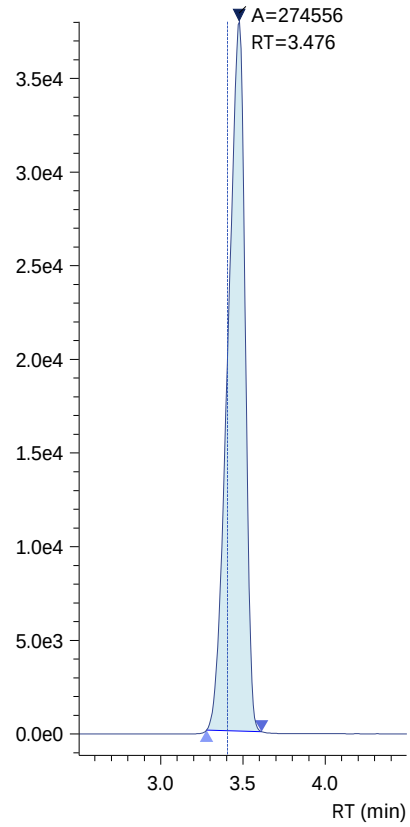
R1 101.00>85.00 (-) 1.80e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.80e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-024

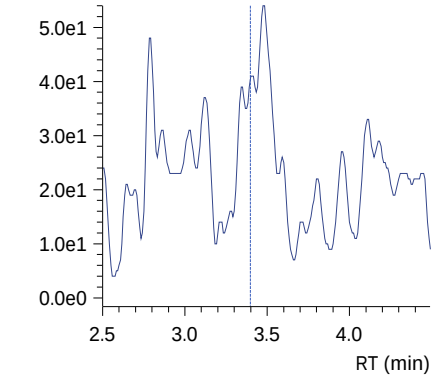
Sample ID: E2300533-024
Date Acquired: 6/8/2023 10:44:20 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-019.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	278598	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.474	278598	278598	1.0000	ng/mL	----	----	

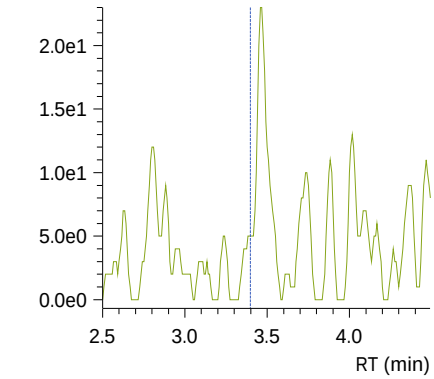
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 5.40e1



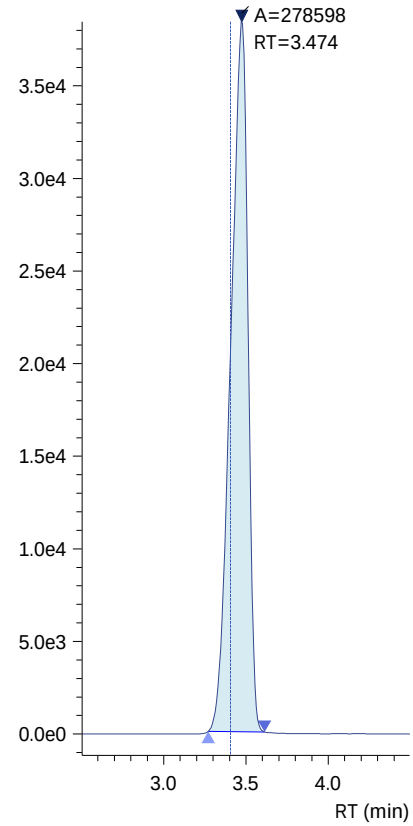
R1 101.00>85.00 (-) 2.30e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.85e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-025

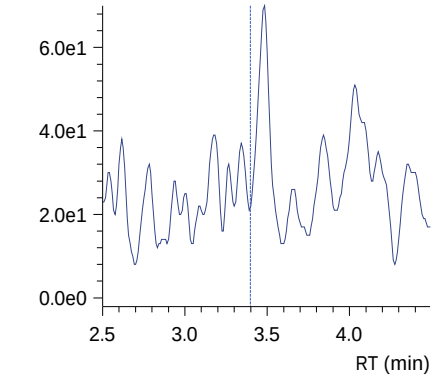
Sample ID: E2300533-025
Date Acquired: 6/8/2023 10:50:04 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-020.lcd
Vial: 3 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	267322	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.474	267322	267322	1.0000	ng/mL	----	----	

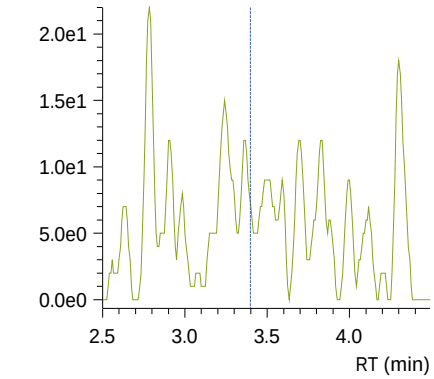
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 7.00e1



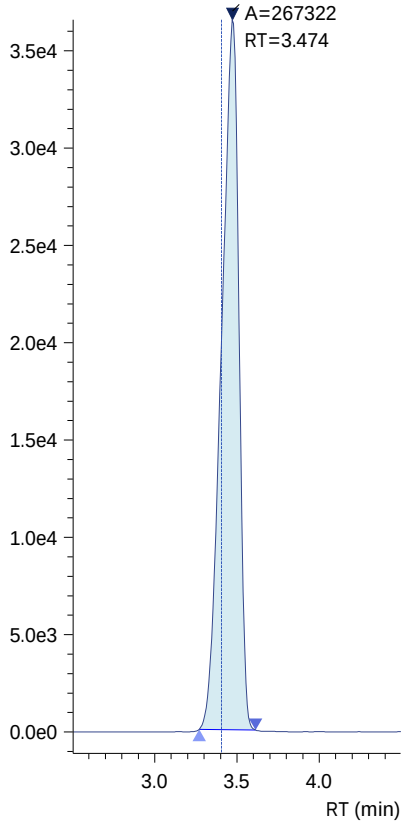
R1 101.00>85.00 (-) 2.20e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.66e4



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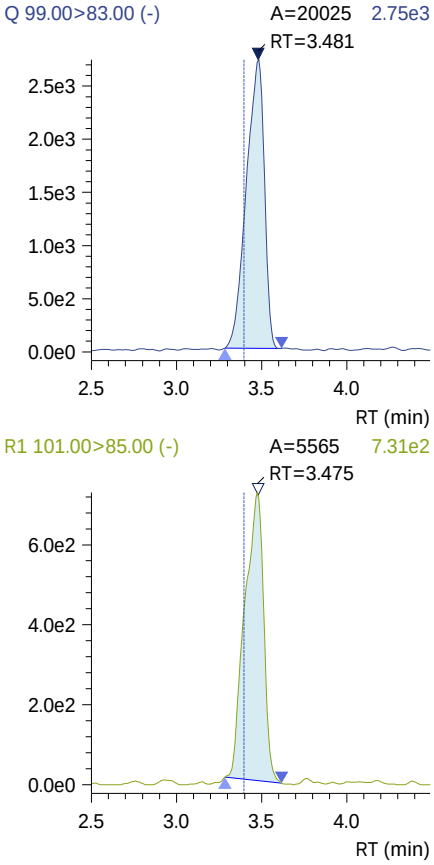
E2300533-026

Sample ID: E2300533-026
Date Acquired: 6/8/2023 10:55:48 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-021.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.481	20025	263860	0.4153	ng/mL	101.00 >85.00	27.79	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.473	263860	263860	1.0000	ng/mL	----	----	

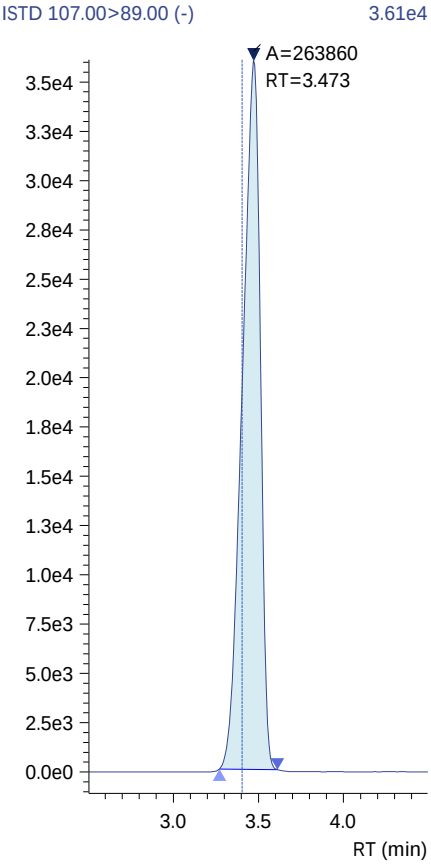
Perchlorate

Conc 0.4153
R#1 27.79 (26.34)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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E2300533-028

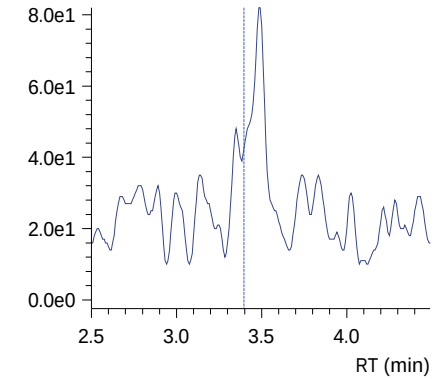
Sample ID: E2300533-028
Date Acquired: 6/8/2023 11:01:30 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-022.lcd
Vial: 5 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	265256	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.474	265256	265256	1.0000	ng/mL	----	----	

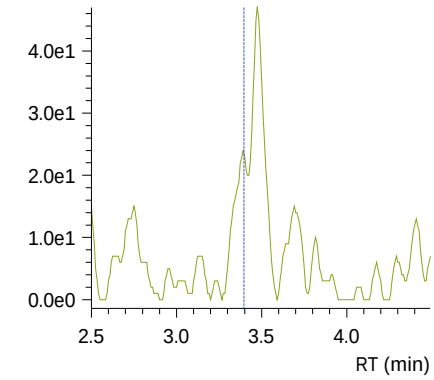
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 8.20e1



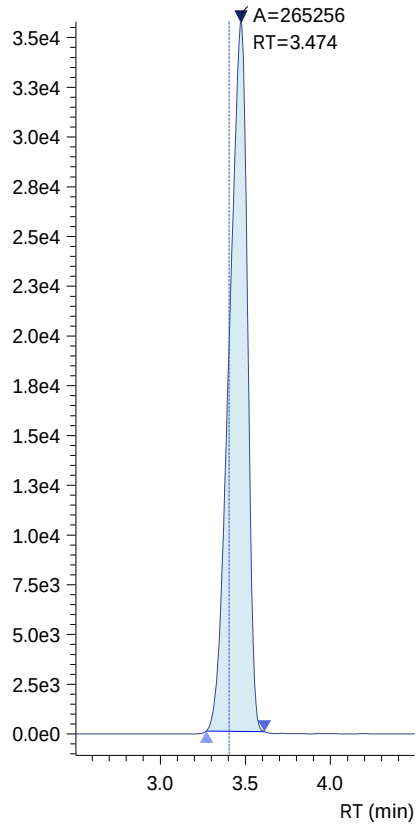
R1 101.00>85.00 (-) 4.70e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.58e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-029

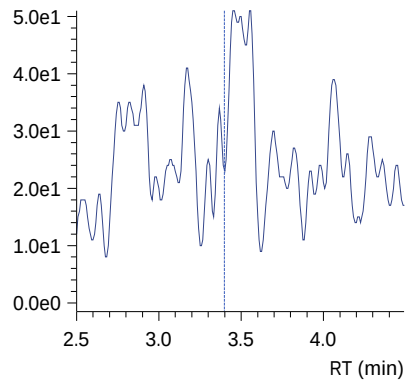
Sample ID: E2300533-029
Date Acquired: 6/8/2023 11:07:16 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-023.lcd
Vial: 6 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	266819	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.472	266819	266819	1.0000	ng/mL	----	----	

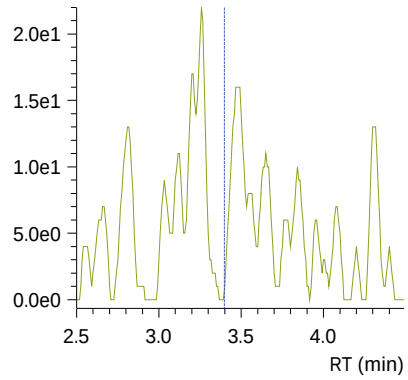
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 5.10e1



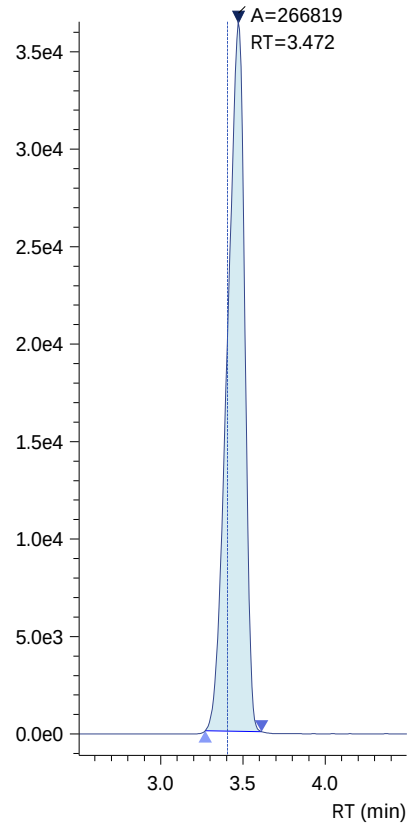
R1 101.00>85.00 (-) 2.20e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.65e4



Insight Report

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CCV

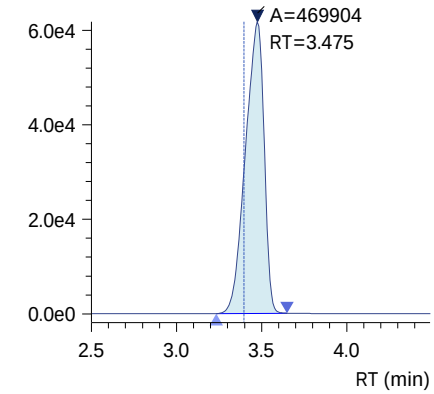
Sample ID: CCV
Date Acquired: 6/8/2023 11:13:00 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-024.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.475	469904	254284	10.1133	ng/mL	101.00 >85.00	26.62	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.472	254284	254284	1.0000	ng/mL	----	----	

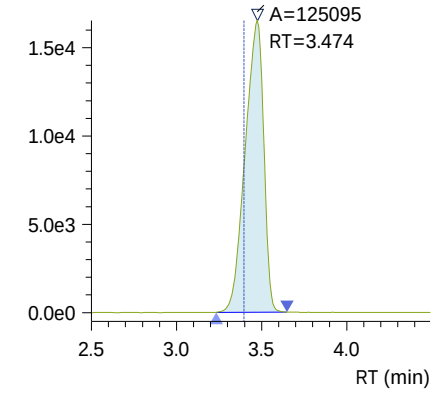
Perchlorate

Conc 10.1133
R#1 26.62 (26.34)

Q 99.00>83.00 (-) 6.18e4



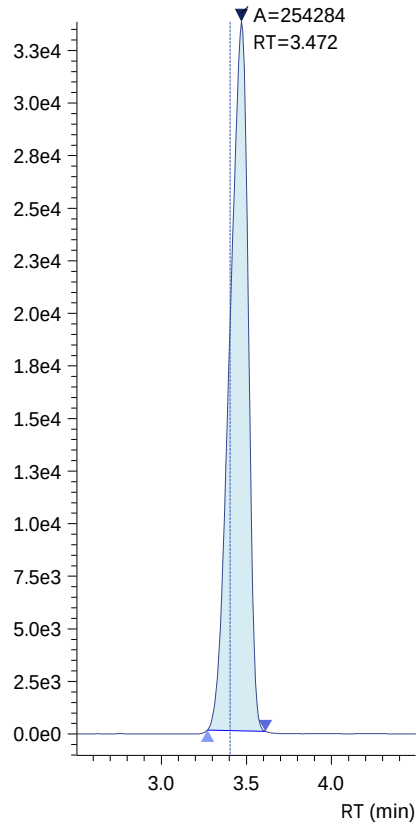
R1 101.00>85.00 (-) 1.65e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.39e4



Insight Report

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E2300533-030

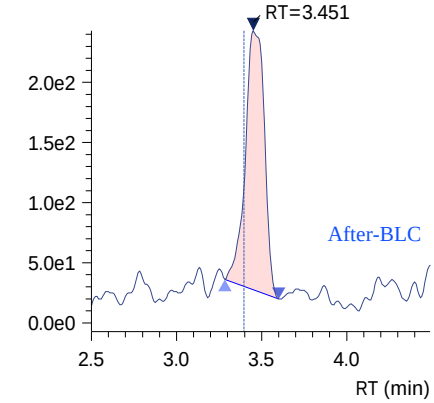
Sample ID: E2300533-030
Date Acquired: 6/8/2023 11:18:46 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-025.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	M	3.451	1699	261428	0.0356	ng/mL	101.00 >85.00	33.96	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.472	2614 28	261428	1.0000	ng/mL	----	----	

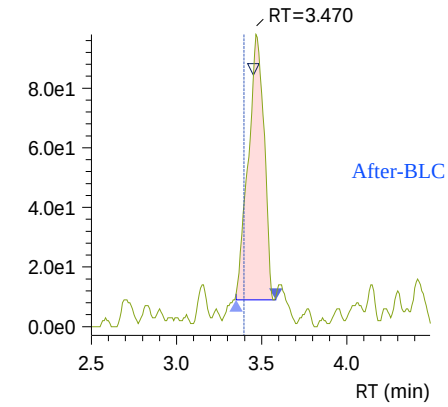
Perchlorate

Conc 0.0356
R#1 33.96 (26.34)

Q 99.00>83.00 (-) A=1699 2.43e2



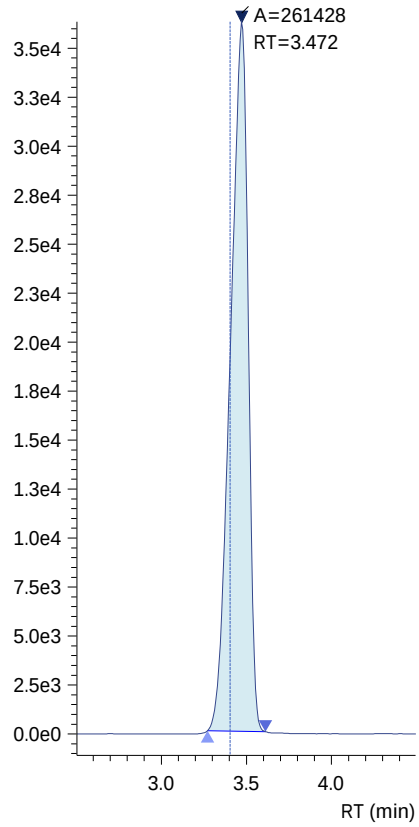
R1 101.00>85.00 (-) A=577 9.80e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.64e4



Insight Report

Printed at 6/23/2023 8:42:45 AM

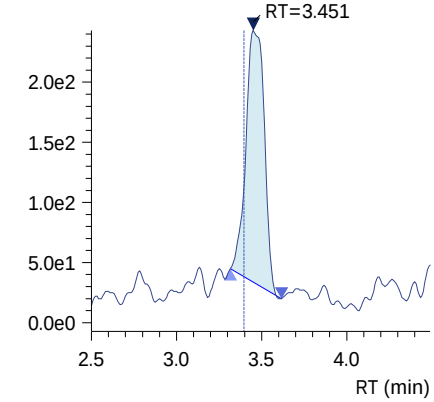
E2300533-030

Sample ID: E2300533-030
Date Acquired: 6/8/2023 11:18:46 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-025.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 4

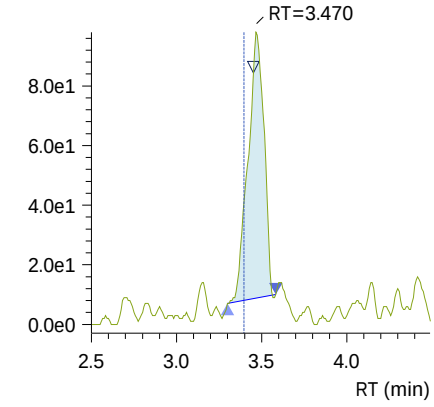
Perchlorate

Conc 0.0332
R#1 36.79 (26.34)

Q 99.00>83.00 (-) A=1585 2.43e2



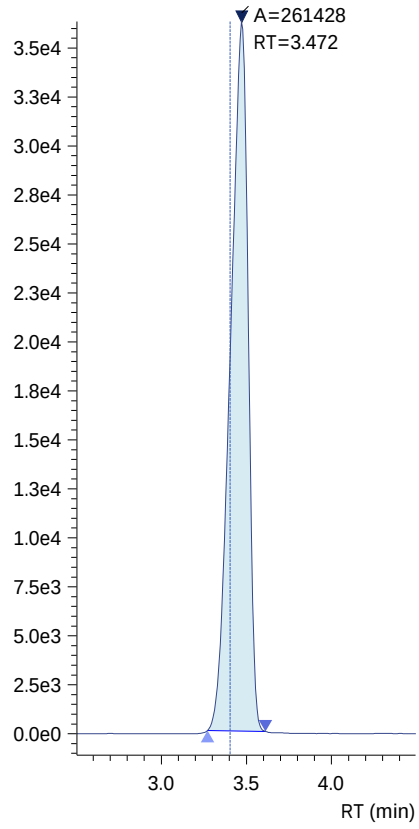
R1 101.00>85.00 (-) A=583 9.80e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.64e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-031

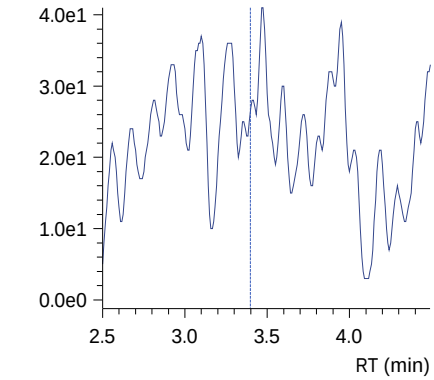
Sample ID: E2300533-031
Date Acquired: 6/8/2023 11:24:33 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-026.lcd
Vial: 8 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	278446	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.473	278446	278446	1.0000	ng/mL	----	----	

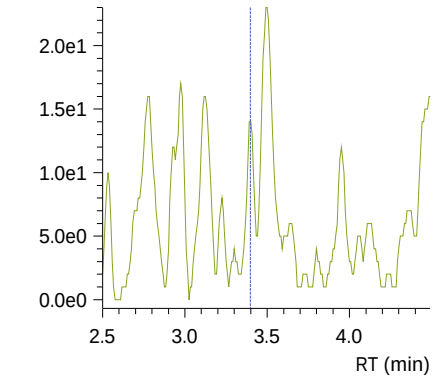
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 4.10e1



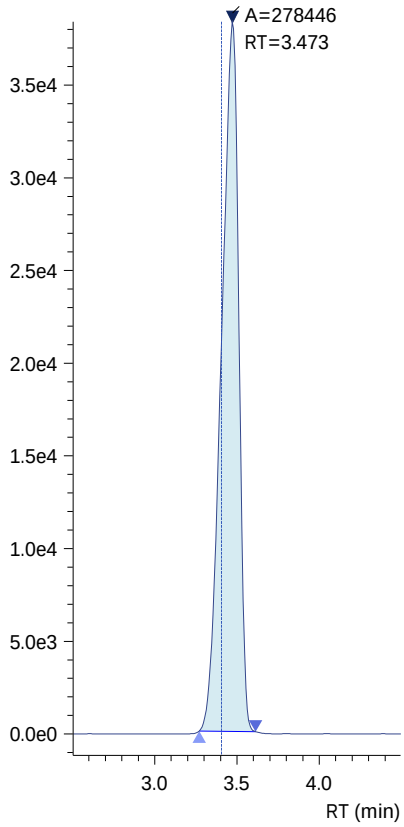
R1 101.00>85.00 (-) 2.30e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.84e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-032

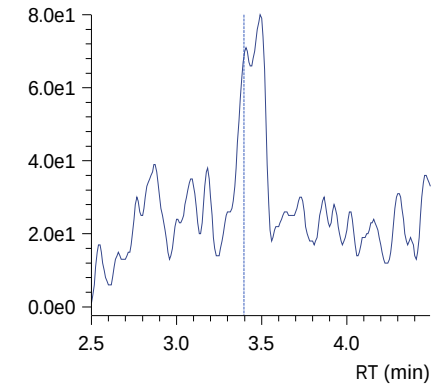
Sample ID: E2300533-032
Date Acquired: 6/8/2023 11:30:16 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-027.lcd
Vial: 9 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	267834	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.473	267834	267834	1.0000	ng/mL	----	----	

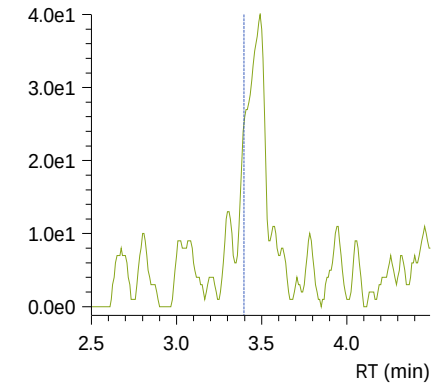
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 8.00e1



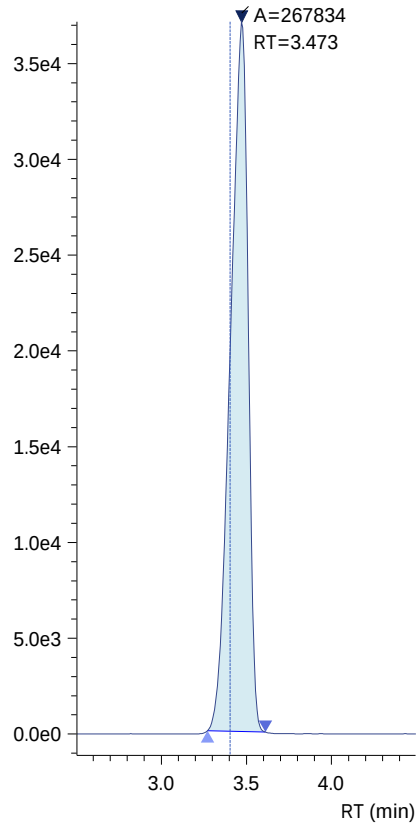
R1 101.00>85.00 (-) 4.00e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.72e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-033

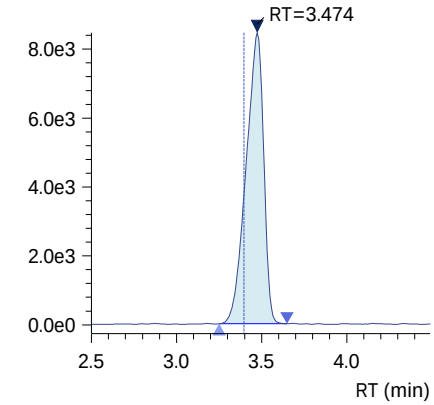
Sample ID: E2300533-033
Date Acquired: 6/8/2023 11:36:01 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-028.lcd
Vial: 10 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.474	60640	272769	1.2166	ng/mL	101.00 >85.00	26.45	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.473	2727 69	272769	1.0000	ng/mL	----	----	

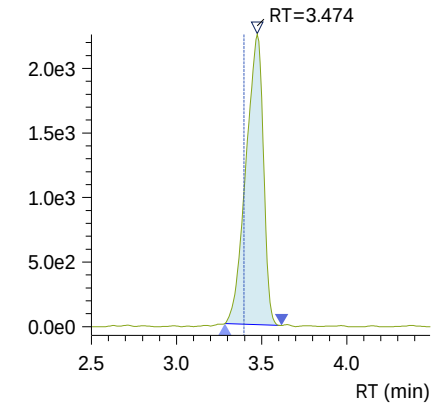
Perchlorate

Conc 1.2166
R#1 26.45 (26.34)

Q 99.00>83.00 (-) A=60640 8.48e3



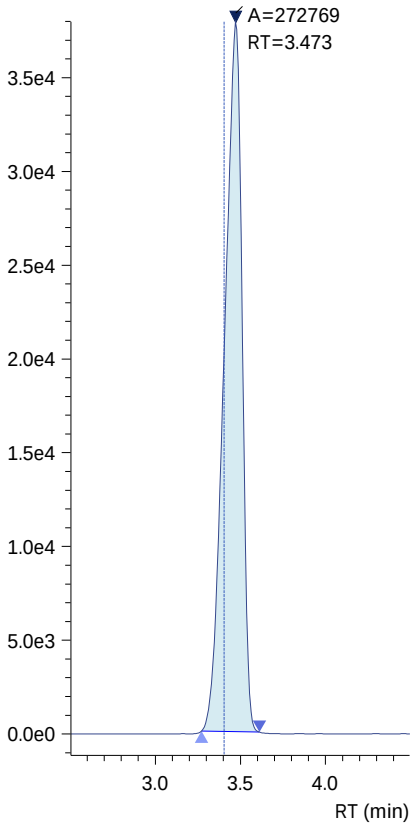
R1 101.00>85.00 (-) A=16041 2.26e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.80e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-035X5

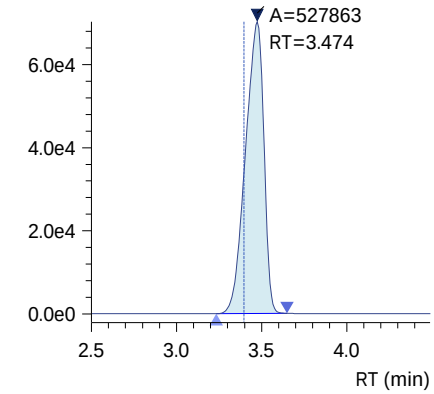
Sample ID: E2300533-035X5
Date Acquired: 6/8/2023 11:41:44 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-029.lcd
Vial: 11 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.474	5278 63	245957	11.7 453	ng/mL	101.00 >85.00	26.60	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.470	2459 57	245957	1.0000	ng/mL	----	----	

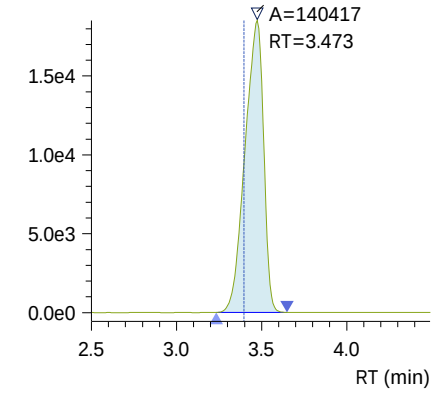
Perchlorate

Conc 11.7453
R#1 26.60 (26.34)

Q 99.00>83.00 (-) 7.03e4



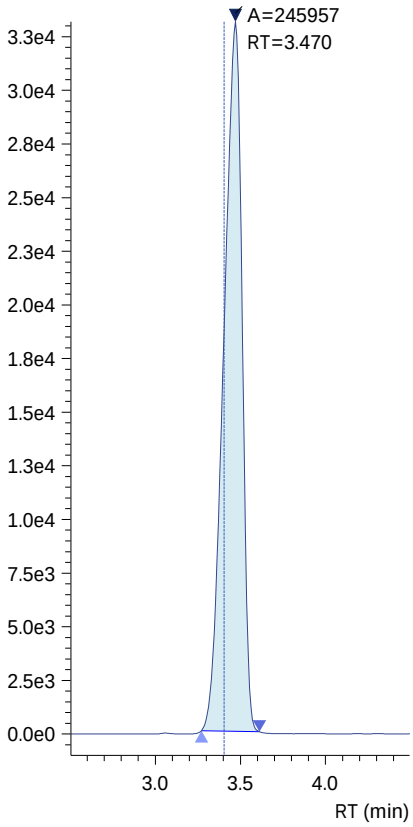
R1 101.00>85.00 (-) 1.85e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.32e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-036

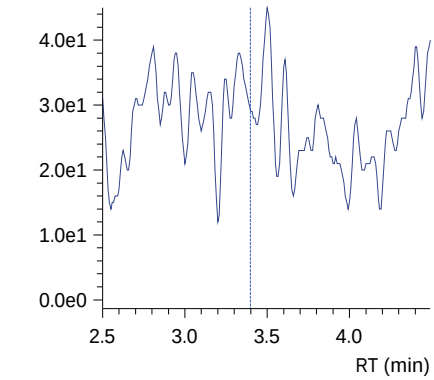
Sample ID: E2300533-036
Date Acquired: 6/8/2023 11:47:29 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-030.lcd
Vial: 12 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	256336	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.472	256336	256336	1.0000	ng/mL	----	----	

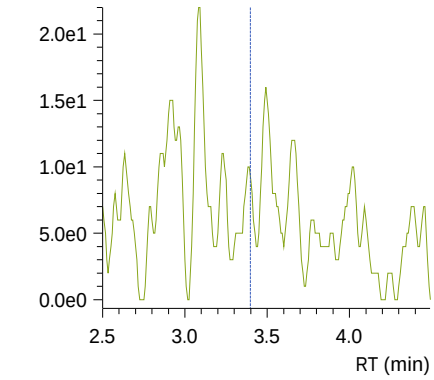
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 4.50e1



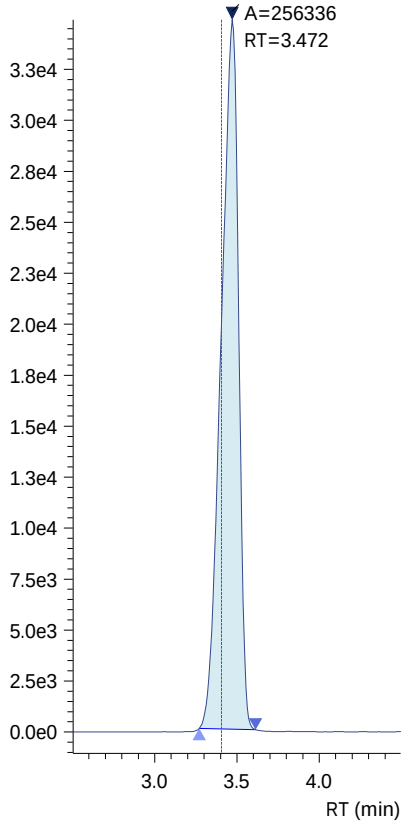
R1 101.00>85.00 (-) 2.20e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.49e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-037

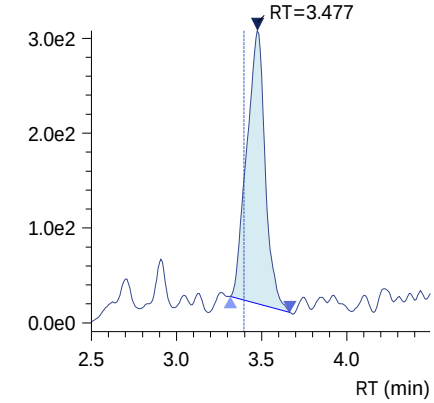
Sample ID: E2300533-037
Date Acquired: 6/8/2023 11:53:11 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-031.lcd
Vial: 13 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.477	2174	264495	0.0450	ng/mL	101.00 >85.00	32.79	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.472	264495	264495	1.0000	ng/mL	----	----	

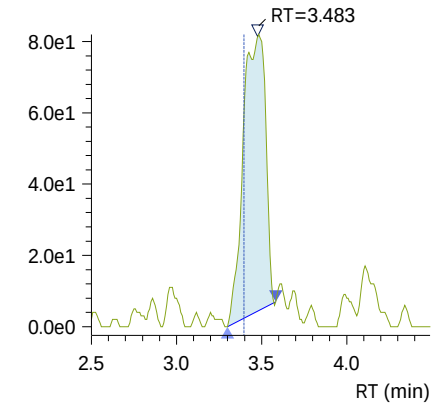
Perchlorate

Conc 0.0450
R#1 32.79 (26.34)

Q 99.00>83.00 (-) A=2174 3.08e2



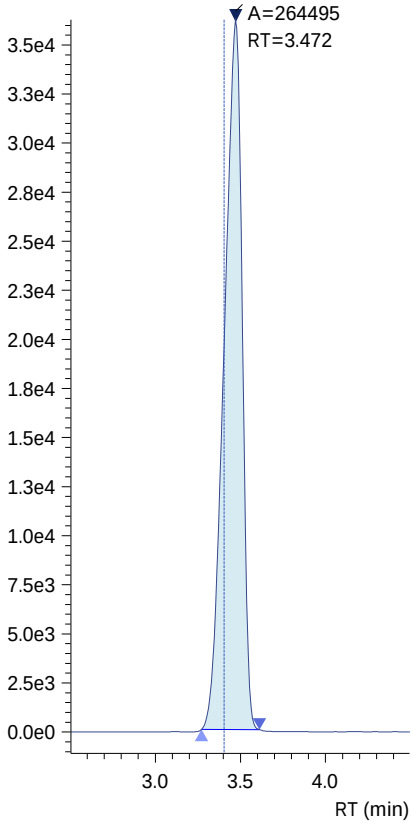
R1 101.00>85.00 (-) A=713 8.20e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.63e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-038

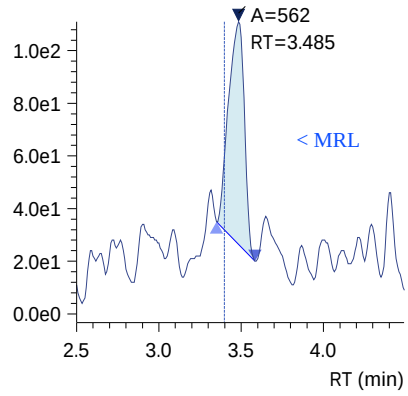
Sample ID: E2300533-038
Date Acquired: 6/8/2023 11:58:57 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-032.lcd
Vial: 14 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.485	562	262089	0.0117	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.472	262089	262089	1.0000	ng/mL	----	----	

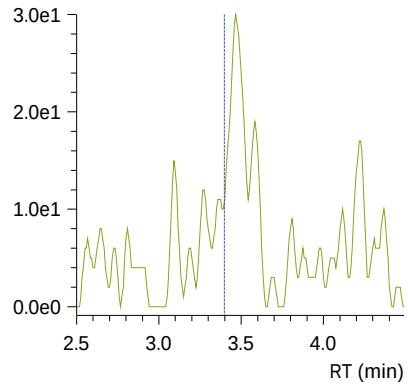
Perchlorate

Conc 0.0117
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 1.11e2



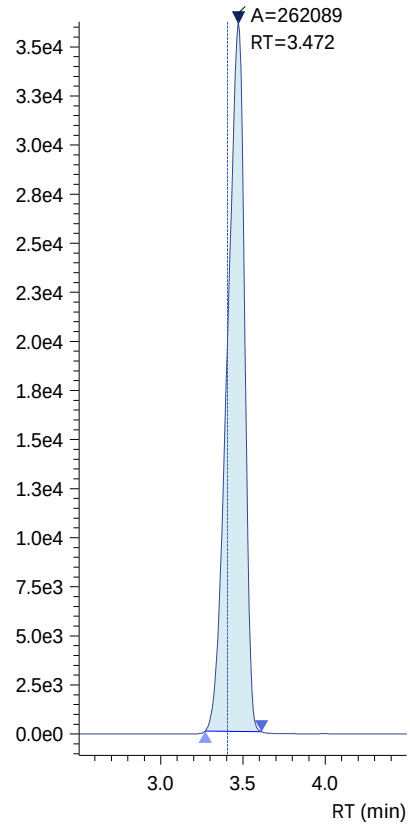
R1 101.00>85.00 (-) 3.00e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.63e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-039

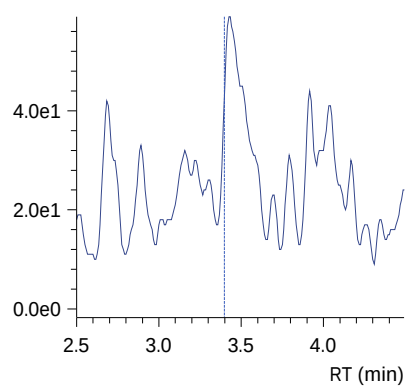
Sample ID: E2300533-039
Date Acquired: 6/8/2023 12:04:40 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-033.lcd
Vial: 15 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	260114	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.472	260114	260114	1.0000	ng/mL	----	----	

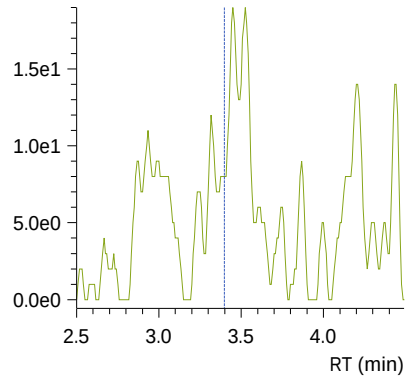
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 5.90e1



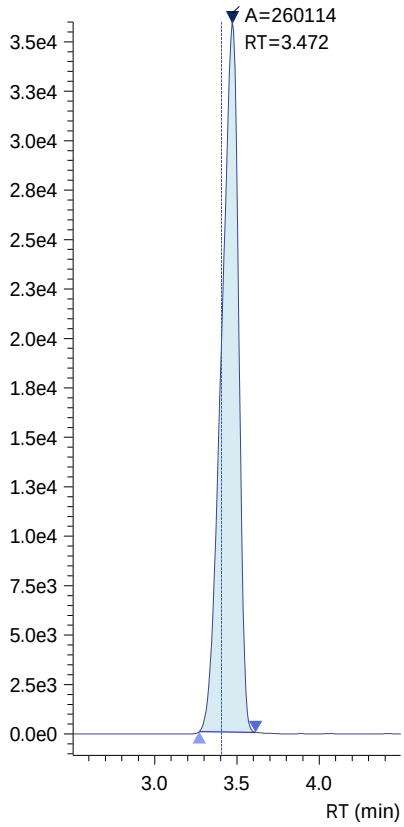
R1 101.00>85.00 (-) 1.90e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.60e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-040

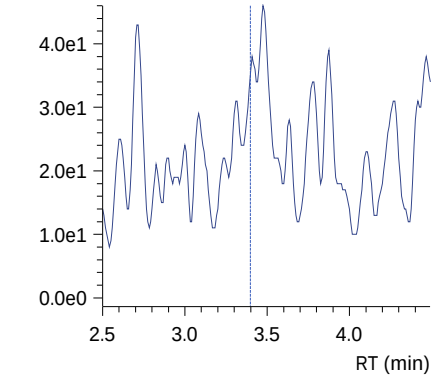
Sample ID: E2300533-040
Date Acquired: 6/8/2023 12:10:25 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-034.lcd
Vial: 16 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	244502	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.471	244502	244502	1.0000	ng/mL	----	----	

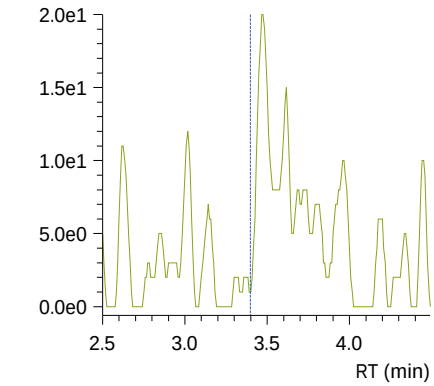
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 4.60e1



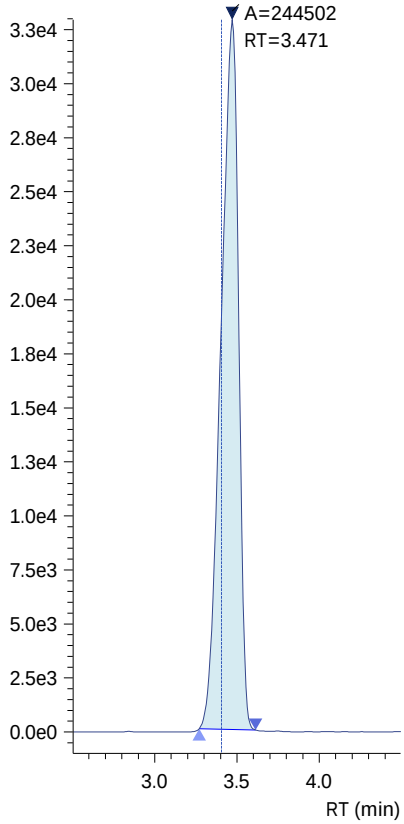
R1 101.00>85.00 (-) 2.00e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.30e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

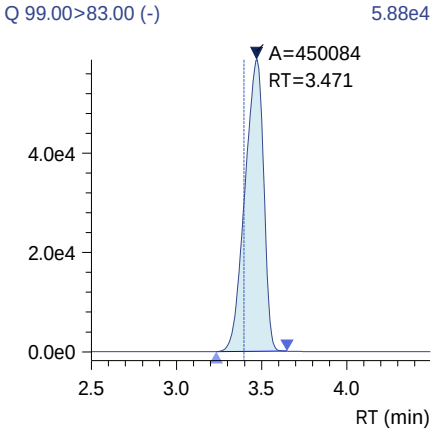
CCV

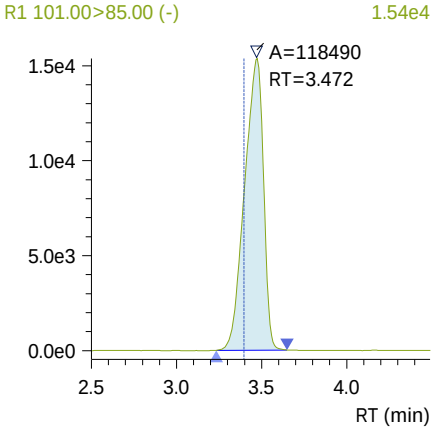
Sample ID: CCV
Date Acquired: 6/8/2023 12:16:11 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-035.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.471	4500 84	244845	10.0 602	ng/mL	101.00 >85.00	26.33	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.469	2448 45	244845	1.0000	ng/mL	----	----	

Perchlorate

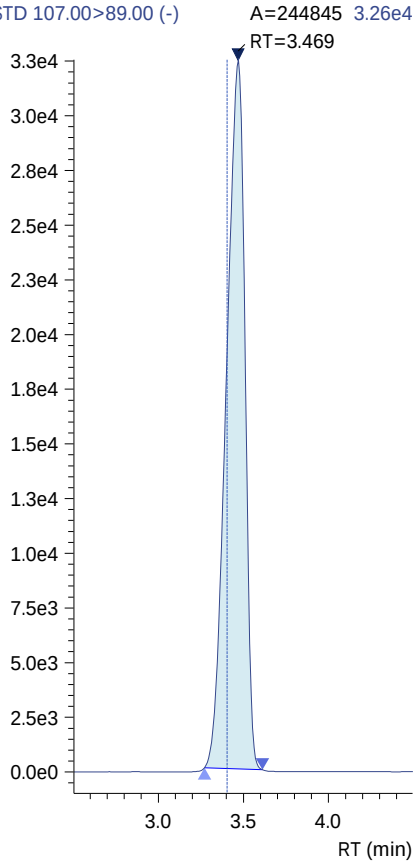
Conc 10.0602
R#1 26.33 (26.34)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-041

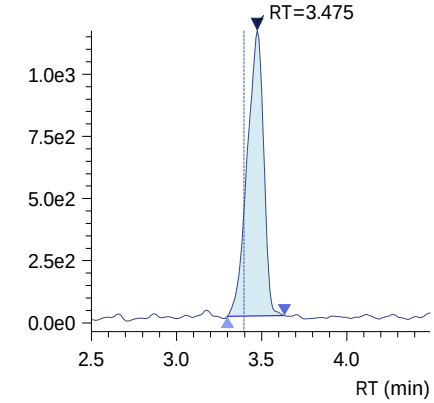
Sample ID: E2300533-041
Date Acquired: 6/8/2023 12:21:58 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-036.lcd
Vial: 17 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.475	7722	208736	0.2025	ng/mL	101.00 >85.00	22.96	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.473	208736	208736	1.0000	ng/mL	----	----	

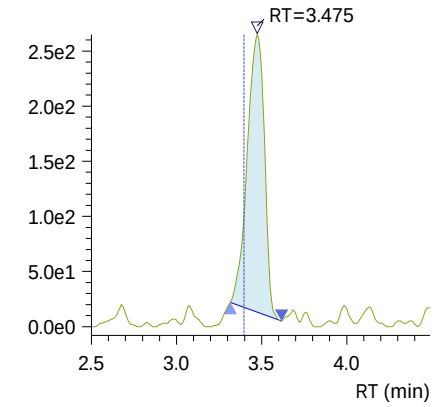
Perchlorate

Conc 0.2025
R#1 22.96 (26.34)

Q 99.00>83.00 (-) A=7722 1.18e3



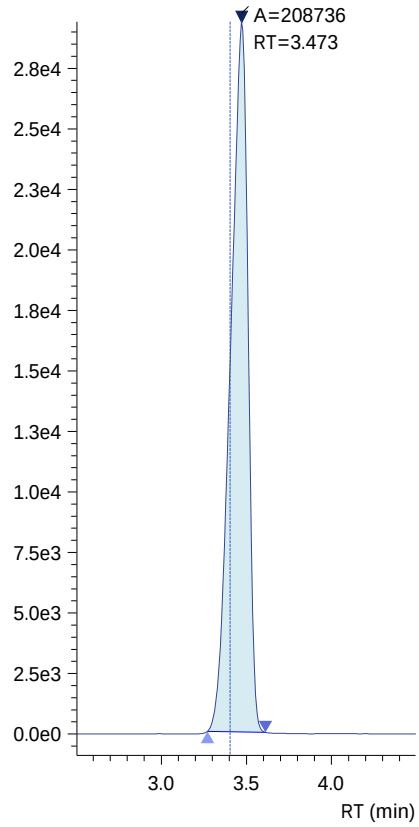
R1 101.00>85.00 (-) A=1773 2.65e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.94e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

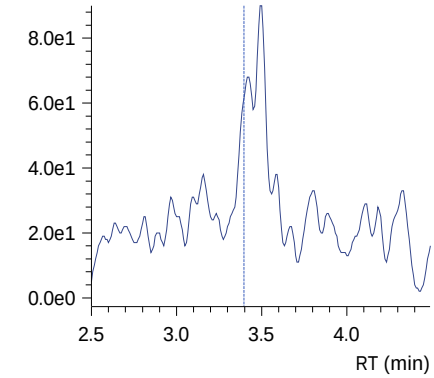
E2300533-042

Sample ID: E2300533-042
Date Acquired: 6/8/2023 12:27:43 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-037.lcd
Vial: 18 | Inj. Volume: 10.0000uL | Tray: 4

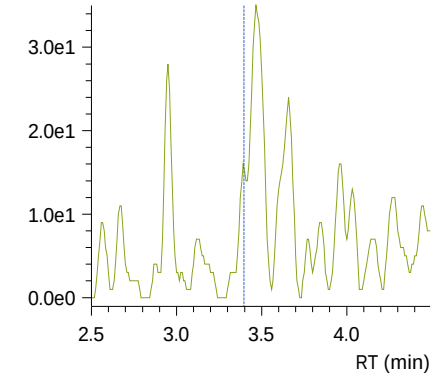
Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	243721	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.470	243721	243721	1.0000	ng/mL	----	----	

Perchlorate

Conc ----
R#1 0.00 (26.34)
Q 99.00>83.00 (-) 9.00e1

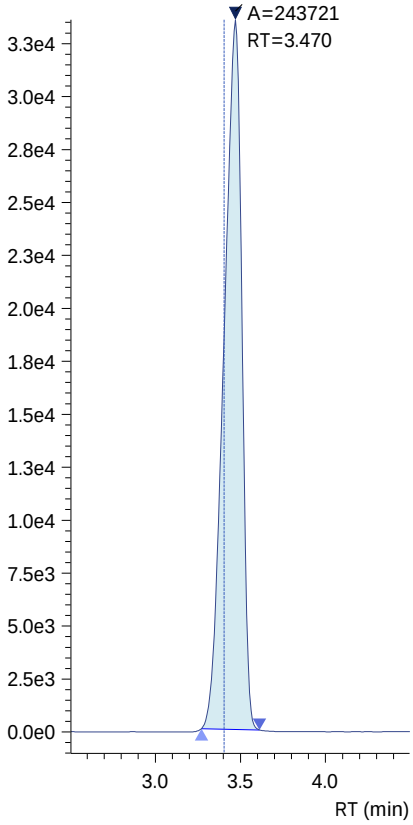


R1 101.00>85.00 (-) 3.50e1



Sodium Perchlorate-18O4_IS

Conc 1.0000
ISTD 107.00>89.00 (-) 3.36e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

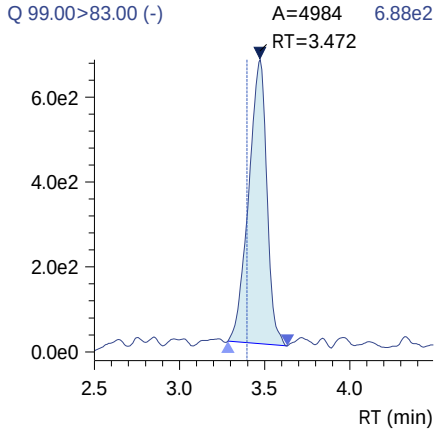
EQ2300291-04

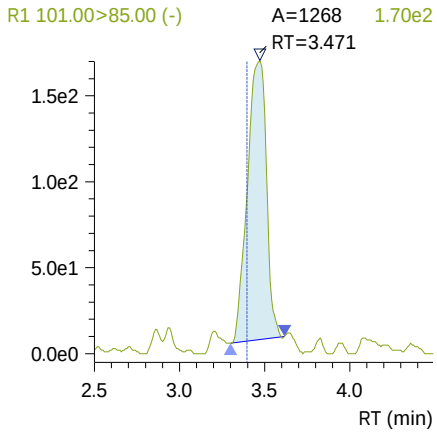
Sample ID: EQ2300291-04
Date Acquired: 6/8/2023 12:33:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-038.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.472	4984	244400	0.1116	ng/mL	101.00 >85.00	25.44	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.471	244400	244400	1.0000	ng/mL	----	----	

Perchlorate

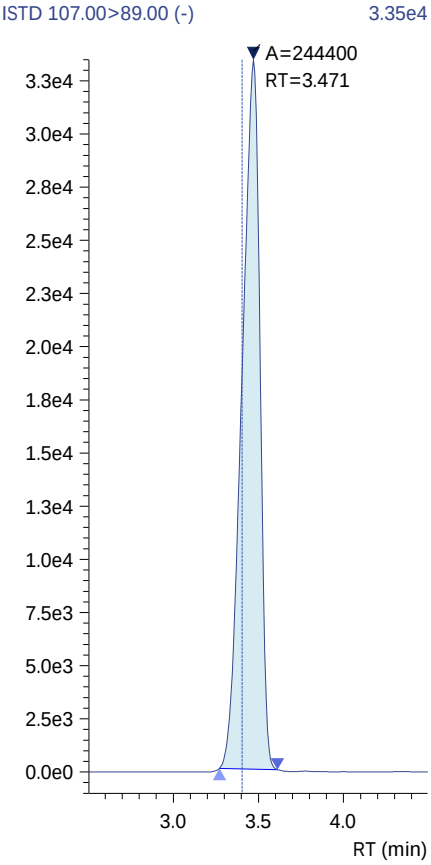
Conc 0.1116
R#1 25.44 (26.34)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:40:53 AM

EQ2300291-05

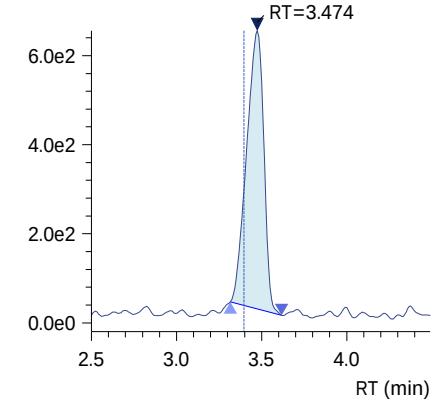
Sample ID: EQ2300291-05
Date Acquired: 6/8/2023 12:39:13 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-039.lcd
Vial: 5 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.474	4395	243456	0.0988	ng/mL	101.00 >85.00	28.87	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.470	243456	243456	1.0000	ng/mL	----	----	

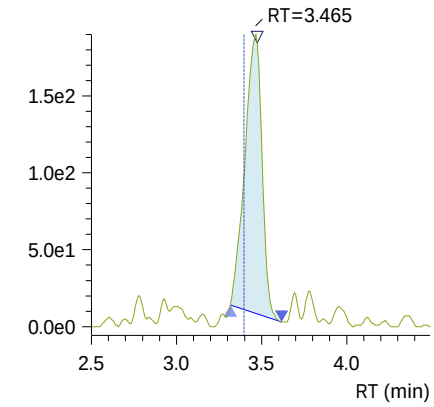
Perchlorate

Conc 0.0988
R#1 28.87 (26.34)

Q 99.00>83.00 (-) A=4395 6.56e2



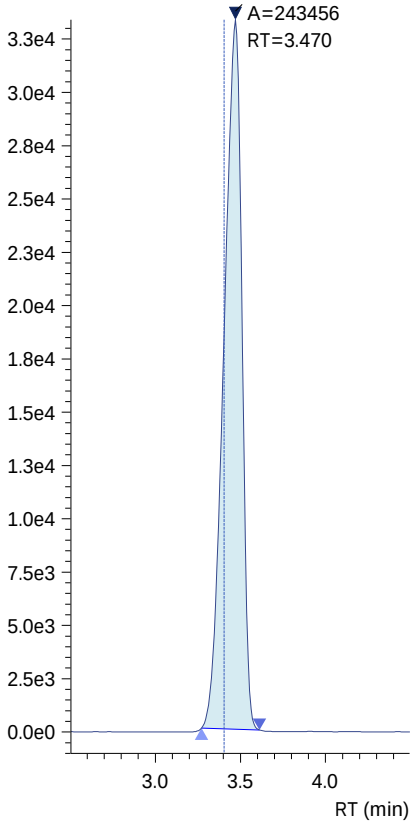
R1 101.00>85.00 (-) A=1269 1.90e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.34e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-043

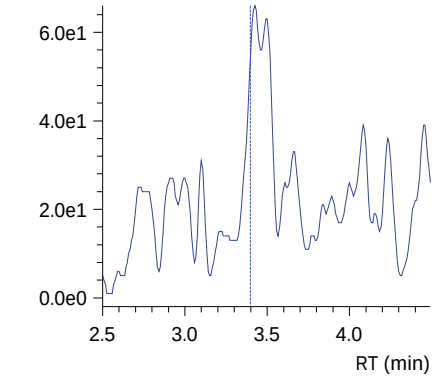
Sample ID: E2300533-043
Date Acquired: 6/8/2023 12:44:59 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-040.lcd
Vial: 19 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	264125	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.472	264125	264125	1.0000	ng/mL	----	----	

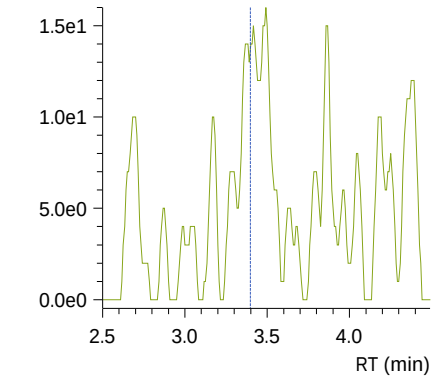
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 6.60e1



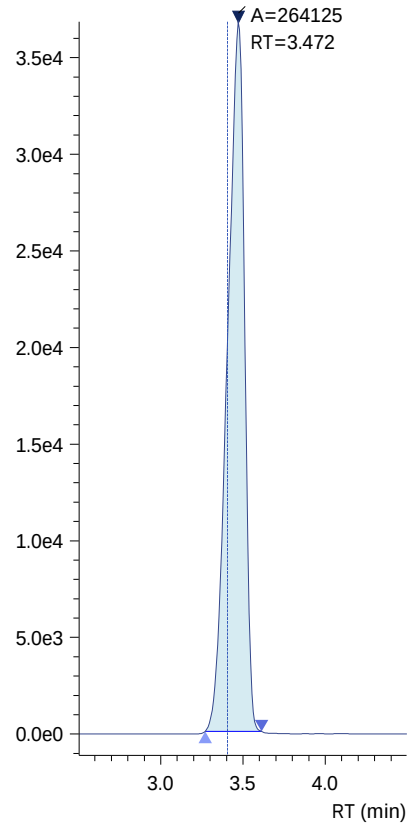
R1 101.00>85.00 (-) 1.60e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.69e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-044

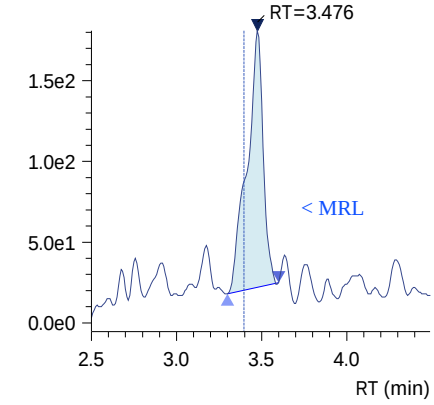
Sample ID: E2300533-044
Date Acquired: 6/8/2023 12:50:42 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-041.lcd
Vial: 20 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.476	1044	256743	0.0222	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.471	256743	256743	1.0000	ng/mL	----	----	

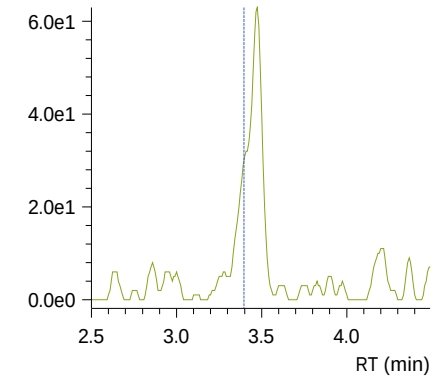
Perchlorate

Conc 0.0222
R#1 0.00 (26.34)

Q 99.00>83.00 (-) A=1044 1.81e2



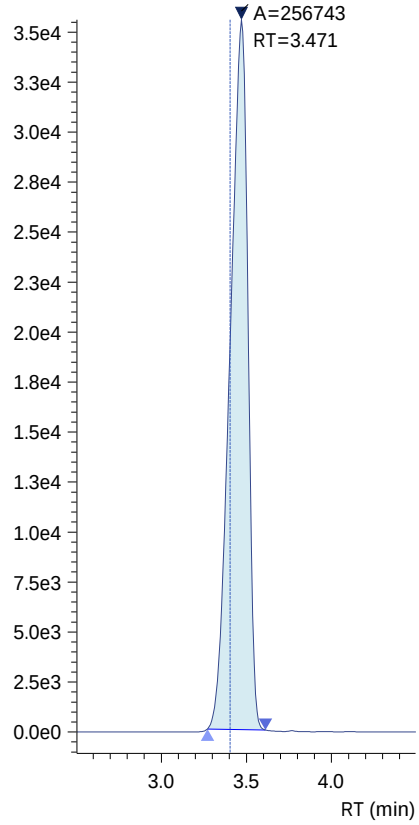
R1 101.00>85.00 (-) 6.30e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.56e4



Insight Report

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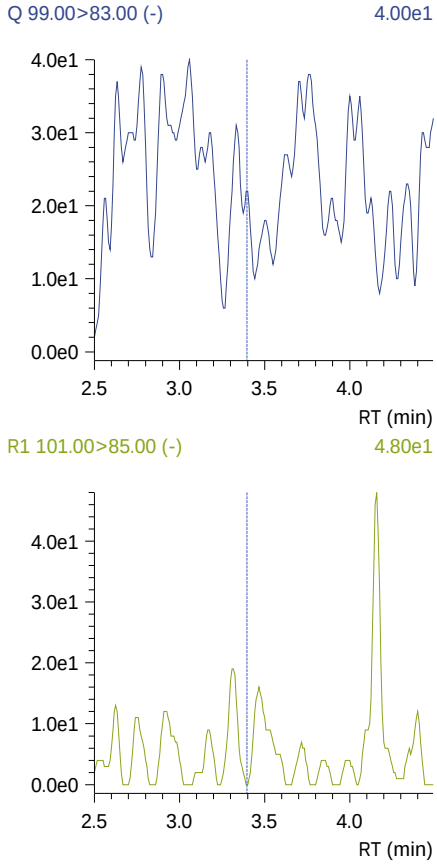
EQ2300291-01

Sample ID: EQ2300291-01
Date Acquired: 6/8/2023 12:56:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-042.lcd
Vial: 46 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	232131	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.469	232131	232131	1.0000	ng/mL	----	----	

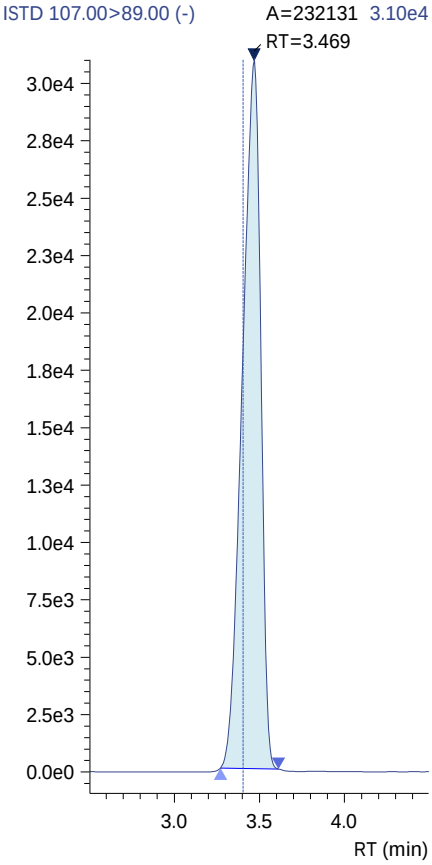
Perchlorate

Conc ----
R#1 0.00 (26.34)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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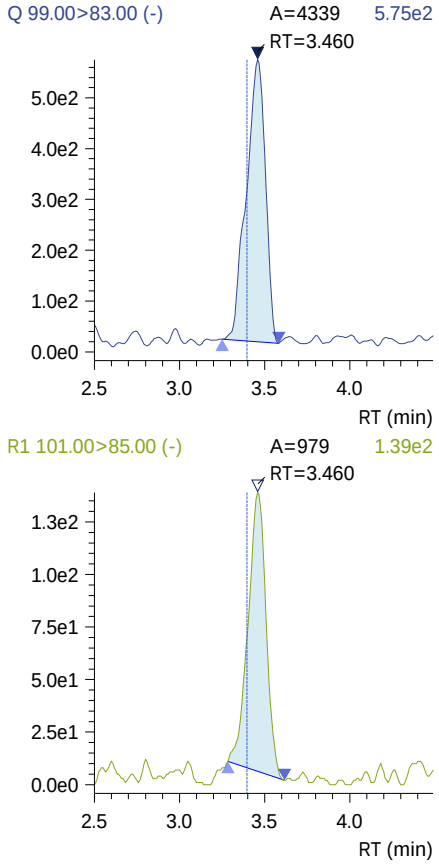
EQ2300291-02

Sample ID: EQ2300291-02
Date Acquired: 6/8/2023 1:02:15 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-043.lcd
Vial: 47 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.460	4339	229083	0.1036	ng/mL	101.00 >85.00	22.57	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.468	229083	229083	1.0000	ng/mL	----	----	

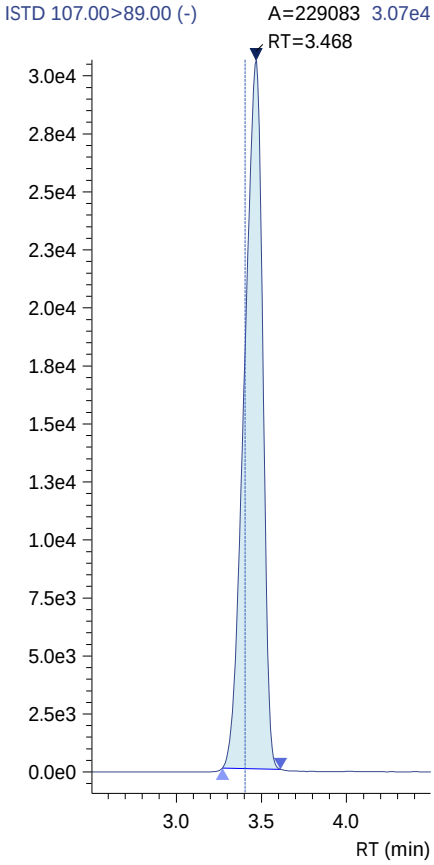
Perchlorate

Conc 0.1036
R#1 22.57 (26.34)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:40:53 AM

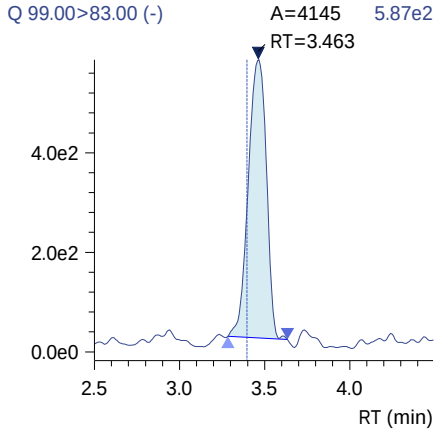
EQ2300291-03

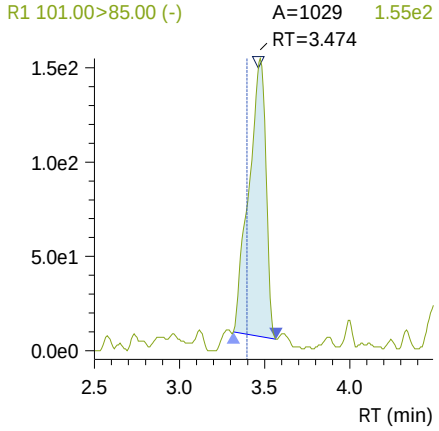
Sample ID: EQ2300291-03
Date Acquired: 6/8/2023 1:08:00 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-044.lcd
Vial: 48 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.463	4145	227982	0.0995	ng/mL	101.00 >85.00	24.81	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.468	2279 82	227982	1.0000	ng/mL	----	----	

Perchlorate

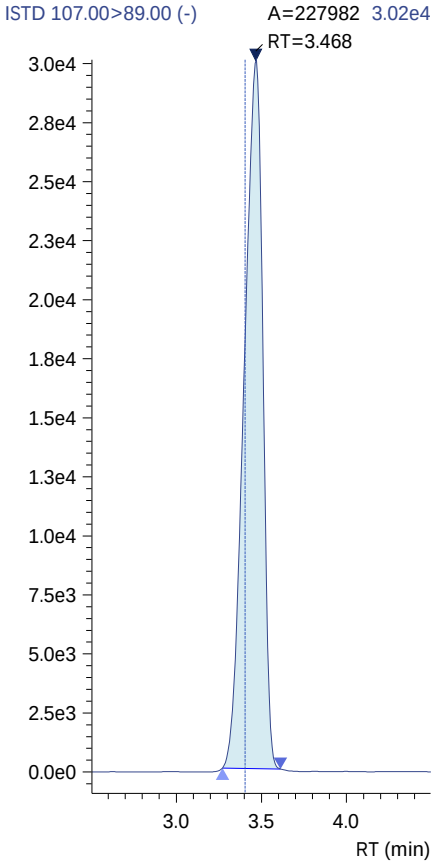
Conc 0.0995
R#1 24.81 (26.34)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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E2300533-045

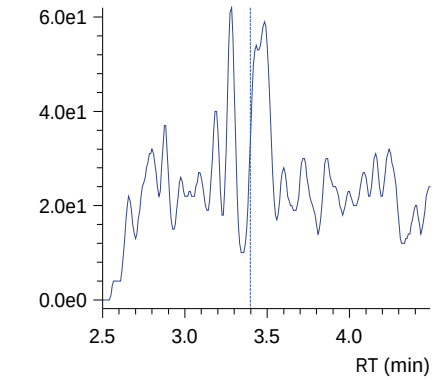
Sample ID: E2300533-045
Date Acquired: 6/8/2023 1:13:46 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-045.lcd
Vial: 21 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	254878	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.471	254878	254878	1.0000	ng/mL	----	----	

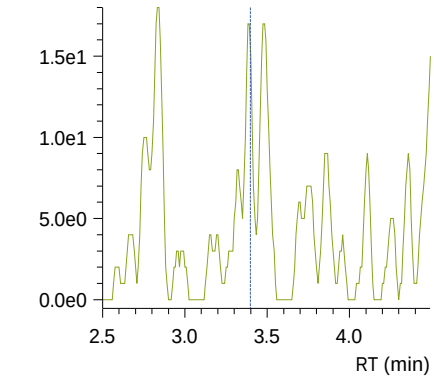
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 6.20e1



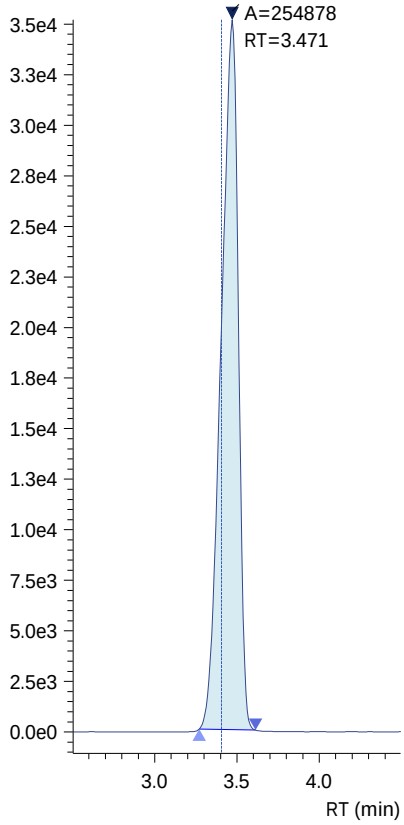
R1 101.00>85.00 (-) 1.80e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.52e4



Insight Report

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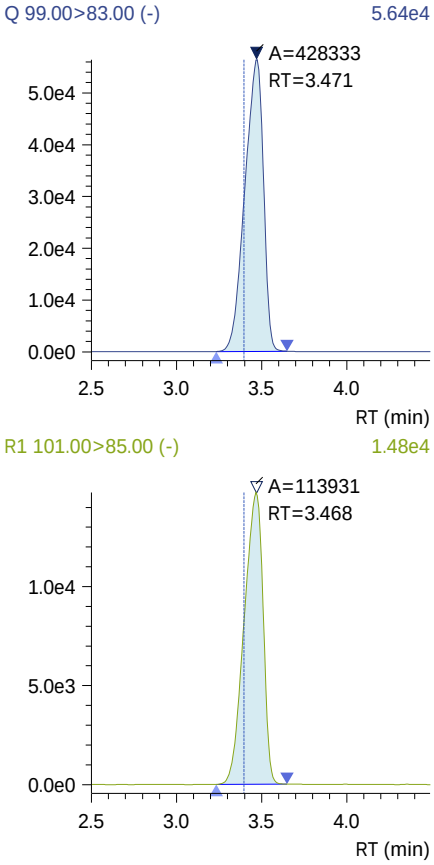
CCV

Sample ID: CCV
Date Acquired: 6/8/2023 1:19:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-046.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.471	4283	233971	10.0	ng/mL	101.00	26.60	18.44
			33		190		>85.00		-34.25
Sodium Perchlorate-18O4_IS	Auto	3.467	2339 71	233971	1.0000	ng/mL	----	----	

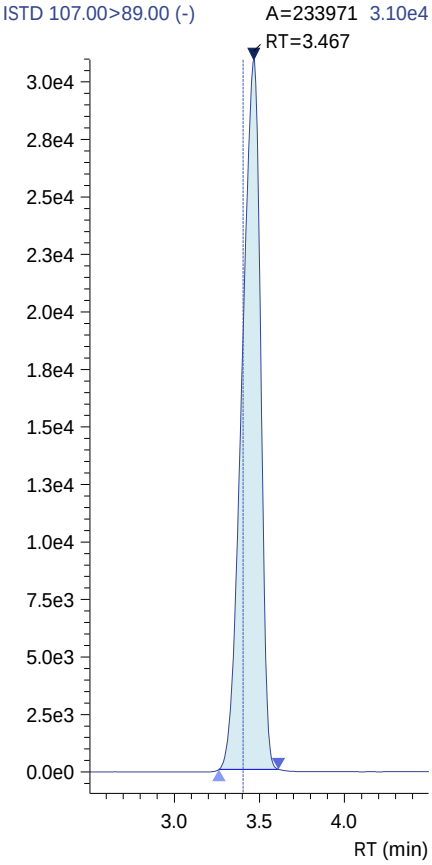
Perchlorate

Conc 10.0190
R#1 26.60 (26.34)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-046

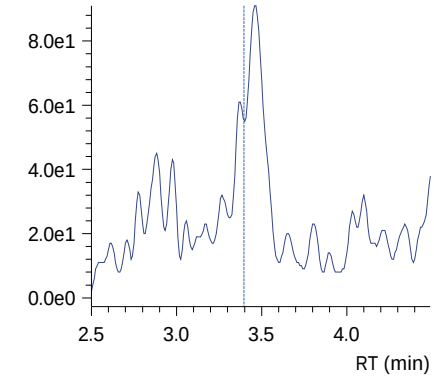
Sample ID: E2300533-046
Date Acquired: 6/8/2023 1:25:16 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-047.lcd
Vial: 22 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	245335	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.471	245335	245335	1.0000	ng/mL	----	----	

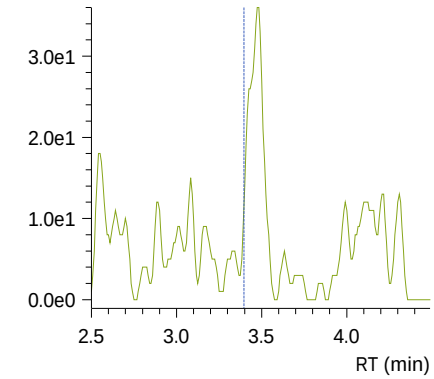
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 9.10e1



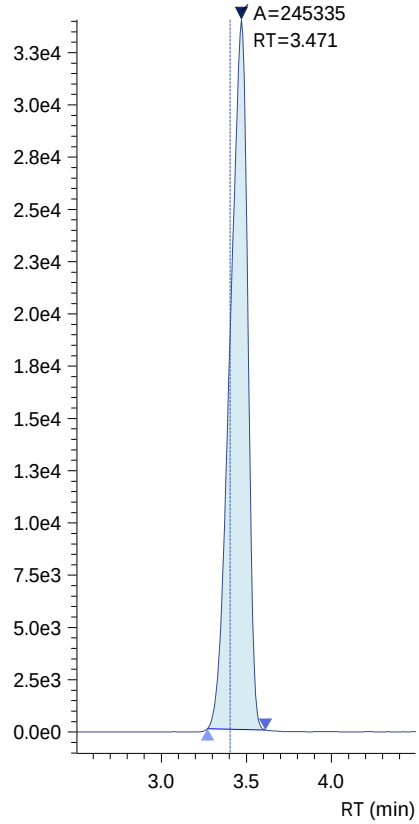
R1 101.00>85.00 (-) 3.60e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.41e4



Insight Report

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E2300533-047

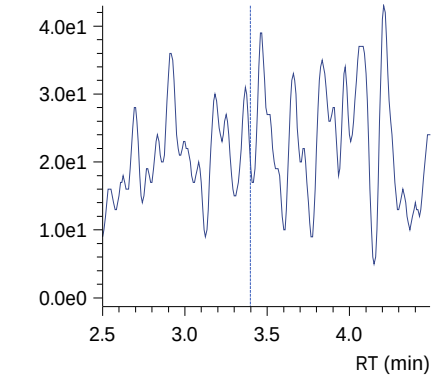
Sample ID: E2300533-047
Date Acquired: 6/8/2023 1:31:00 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-048.lcd
Vial: 23 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	244642	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.470	244642	244642	1.0000	ng/mL	----	----	

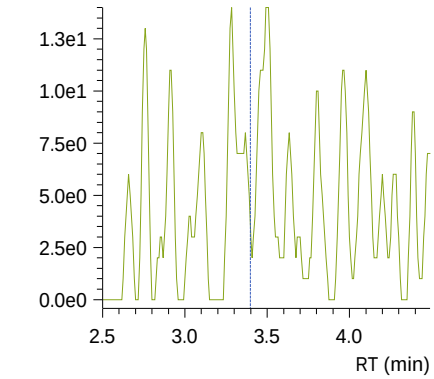
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 4.30e1



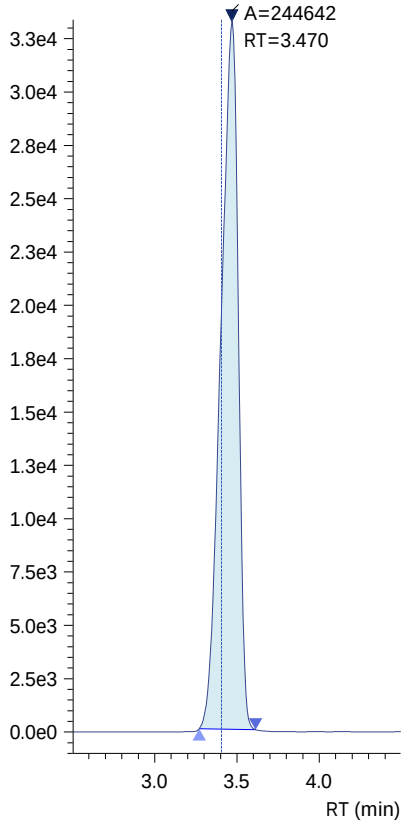
R1 101.00>85.00 (-) 1.40e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.34e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-048

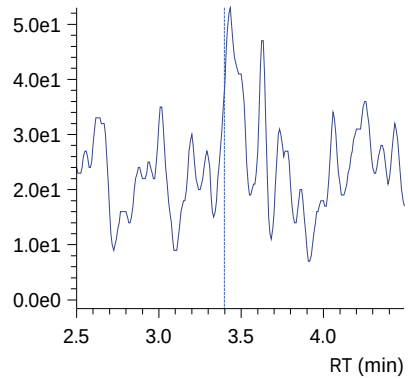
Sample ID: E2300533-048
Date Acquired: 6/8/2023 1:36:45 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-049.lcd
Vial: 24 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	236306	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.469	236306	236306	1.0000	ng/mL	----	----	

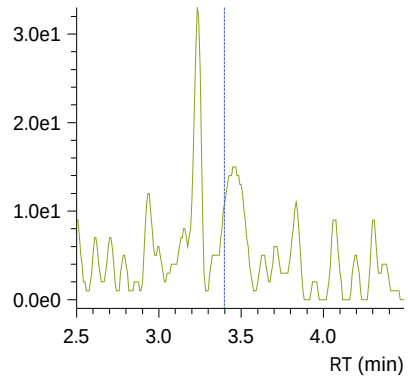
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 5.30e1



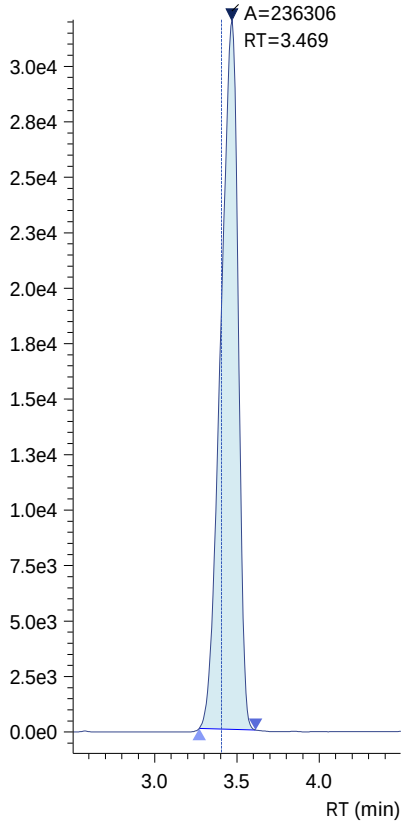
R1 101.00>85.00 (-) 3.30e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.21e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-049

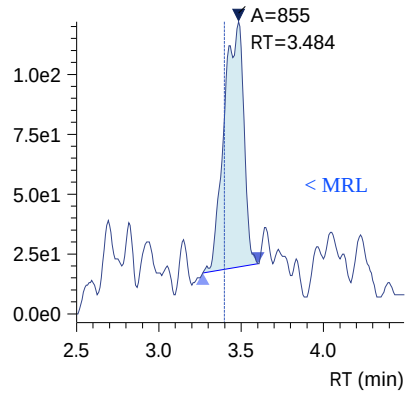
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Date Acquired: 6/8/2023 1:42:32 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-050.lcd
Vial: 25 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.484	855	249392	0.0188	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.469	249392	249392	1.0000	ng/mL	----	----	

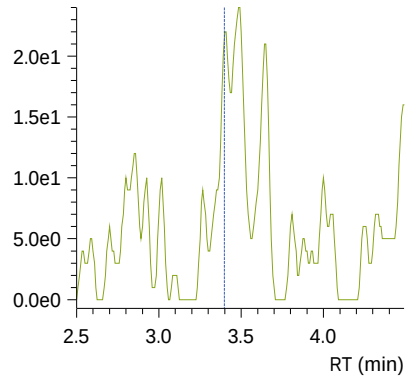
Perchlorate

Conc 0.0188
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 1.22e2



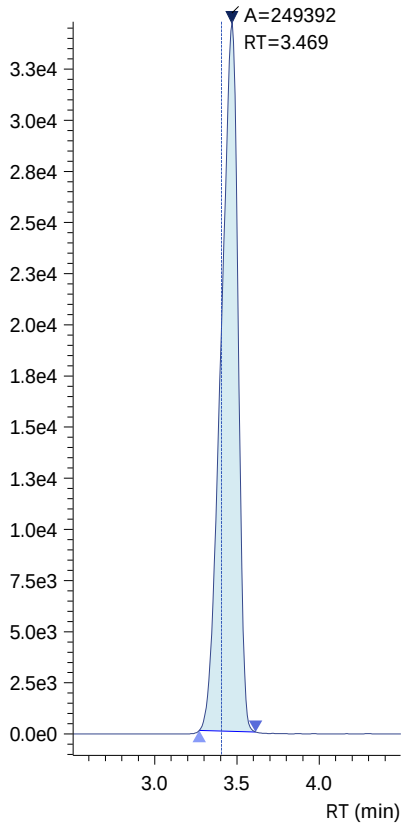
R1 101.00>85.00 (-) 2.40e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.48e4



Insight Report

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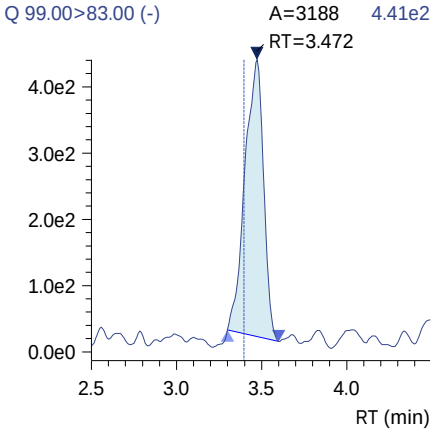
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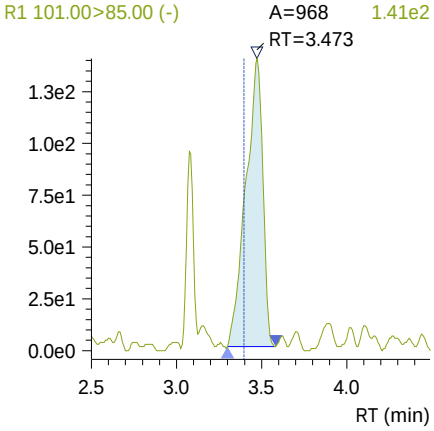
Sample ID: E2300533-050
Date Acquired: 6/8/2023 1:48:19 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-051.lcd
Vial: 26 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.472	3188	235456	0.0741	ng/mL	101.00 >85.00	30.35	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.468	235456	235456	1.0000	ng/mL	----	----	

Perchlorate

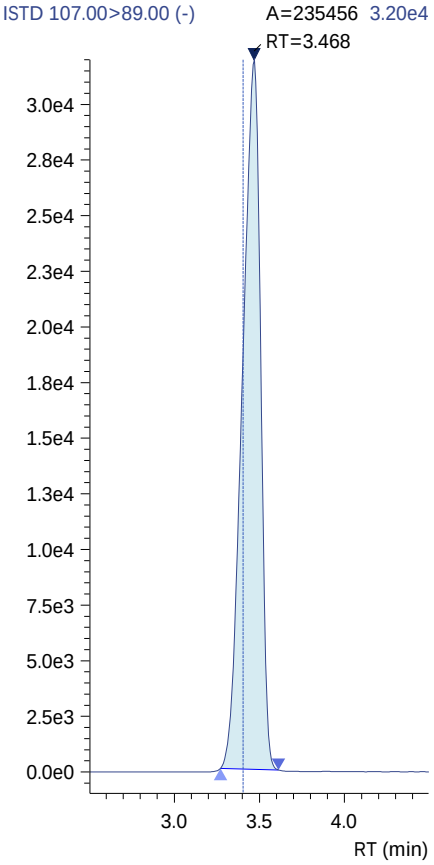
Conc 0.0741
R#1 30.35 (26.34)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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E2300533-051

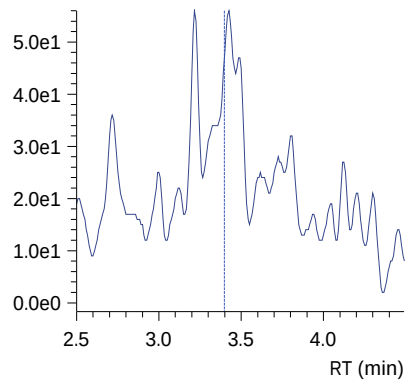
Sample ID: E2300533-051
Date Acquired: 6/8/2023 1:54:03 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-052.lcd
Vial: 27 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	238336	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.470	238336	238336	1.0000	ng/mL	----	----	

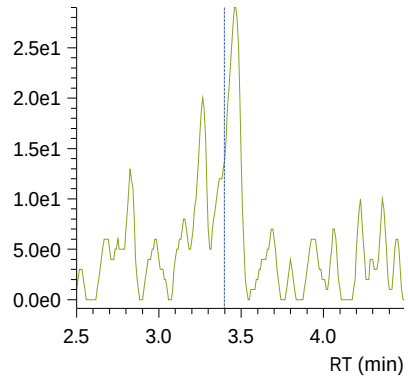
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 5.60e1



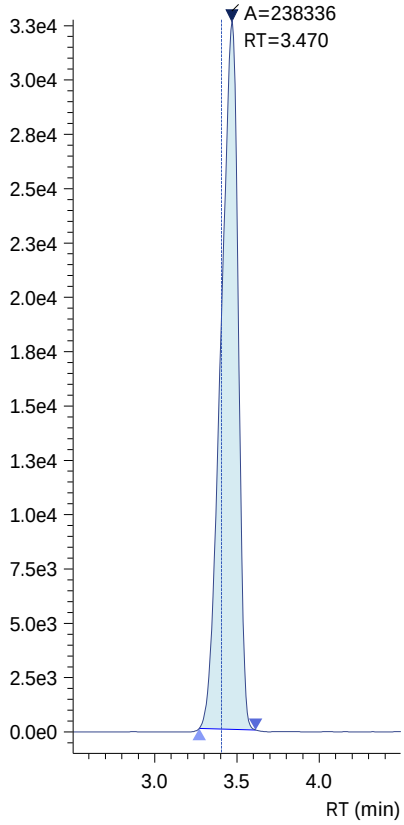
R1 101.00>85.00 (-) 2.90e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.28e4



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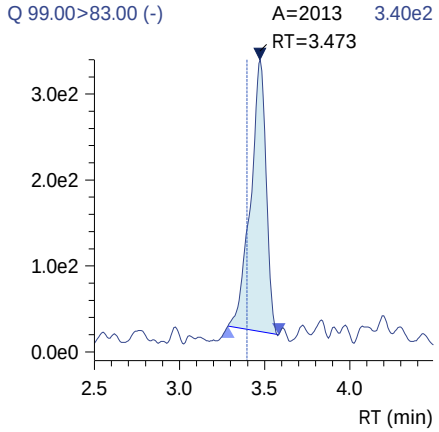
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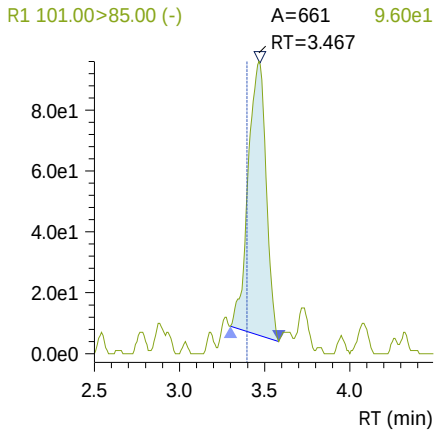
Sample ID: E2300533-052
Date Acquired: 6/8/2023 1:59:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-053.lcd
Vial: 28 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.473	2013	236842	0.0465	ng/mL	101.00 >85.00	32.86	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.468	2368 42	236842	1.0000	ng/mL	----	----	

Perchlorate

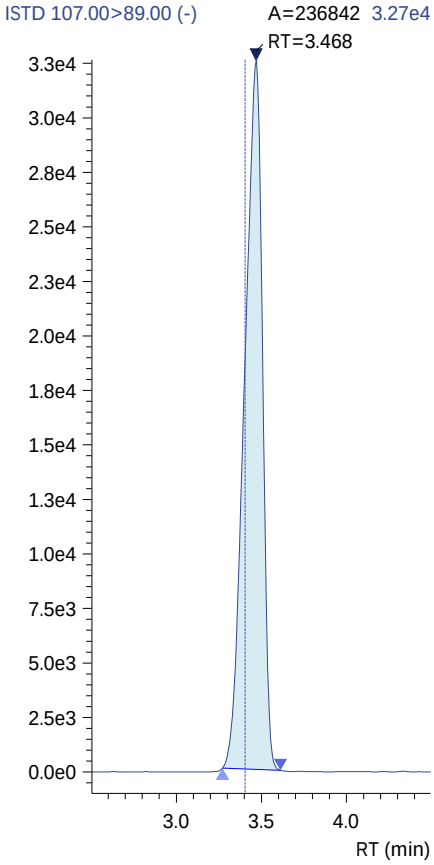
Conc 0.0465
R#1 32.86 (26.34)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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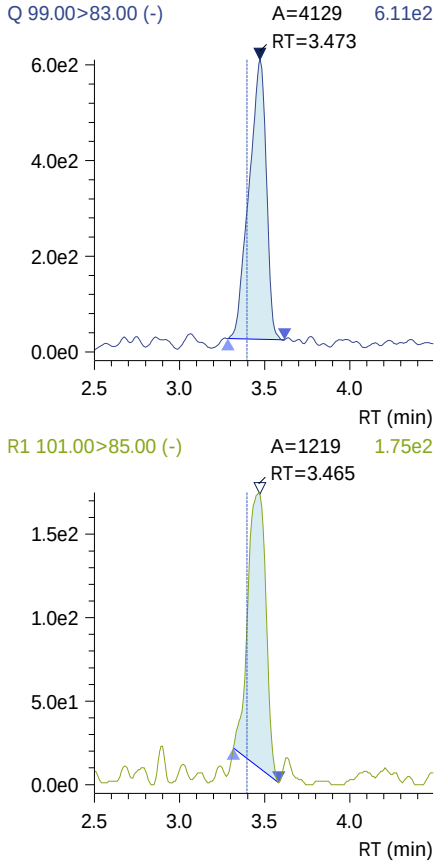
E2300533-053

Sample ID: E2300533-053
Date Acquired: 6/8/2023 2:05:36 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-054.lcd
Vial: 29 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.473	4129	229473	0.0985	ng/mL	101.00 >85.00	29.52	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.469	2294 73	229473	1.0000	ng/mL	----	----	

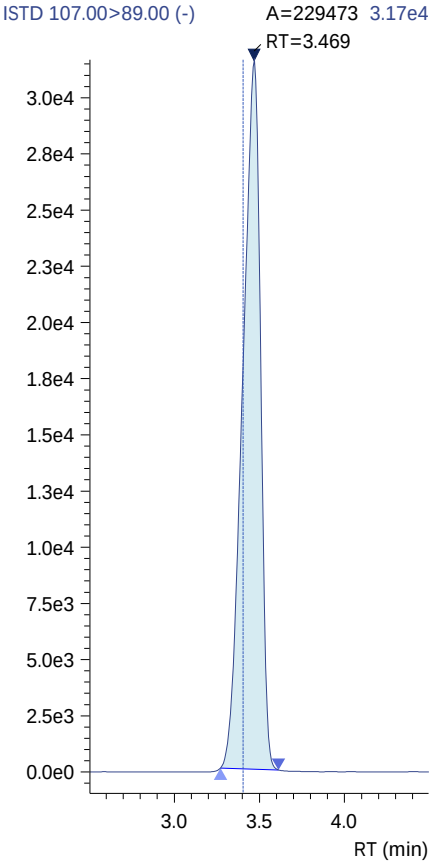
Perchlorate

Conc 0.0985
R#1 29.52 (26.34)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-054

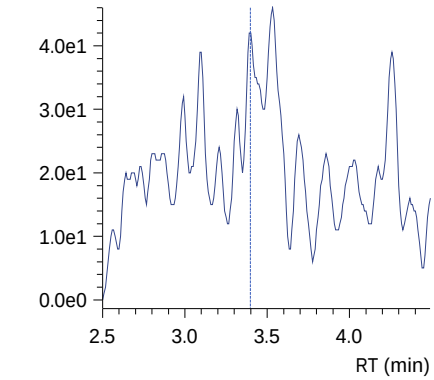
Sample ID: E2300533-054
Date Acquired: 6/8/2023 2:11:19 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-055.lcd
Vial: 30 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	235086	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.470	235086	235086	1.0000	ng/mL	----	----	

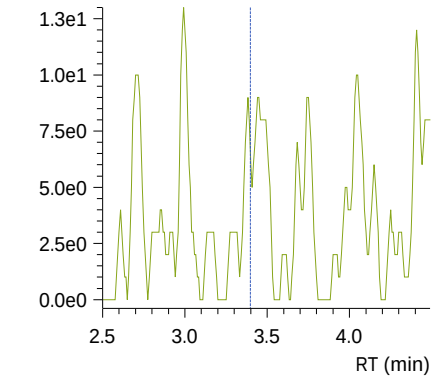
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 4.60e1



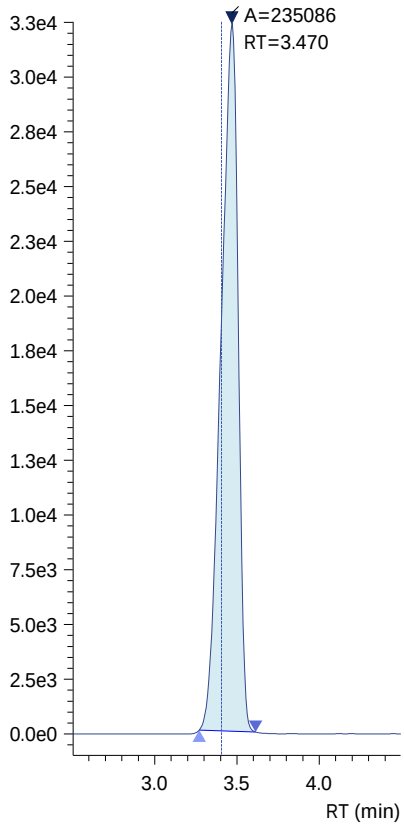
R1 101.00>85.00 (-) 1.30e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.25e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

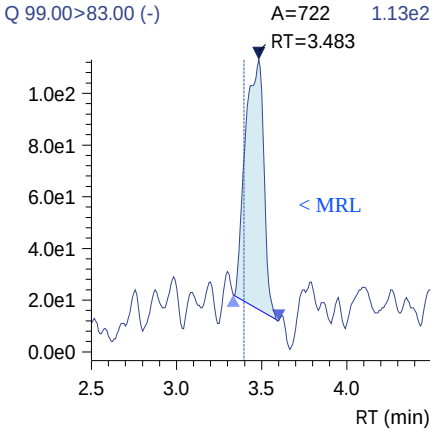
E2300533-055

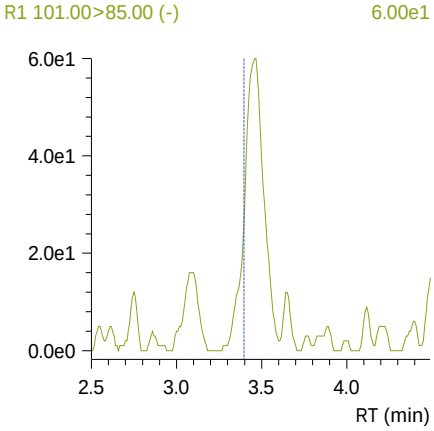
Sample ID: E2300533-055
Date Acquired: 6/8/2023 2:17:07 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-056.lcd
Vial: 31 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.483	722	220051	0.0179	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.468	22005 1	220051	1.0000	ng/mL	----	----	

Perchlorate

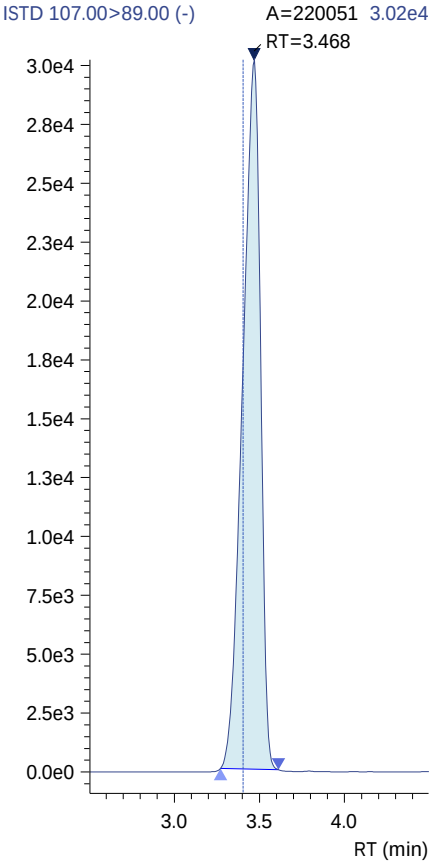
Conc 0.0179
R#1 0.00 (26.34)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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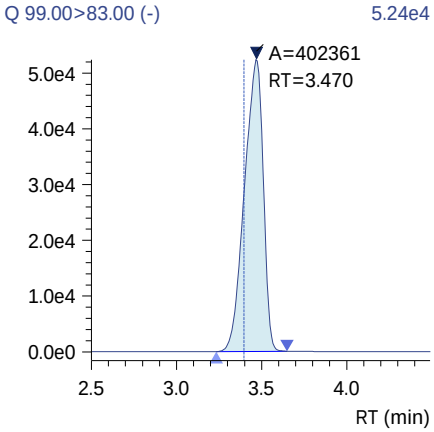
CCV

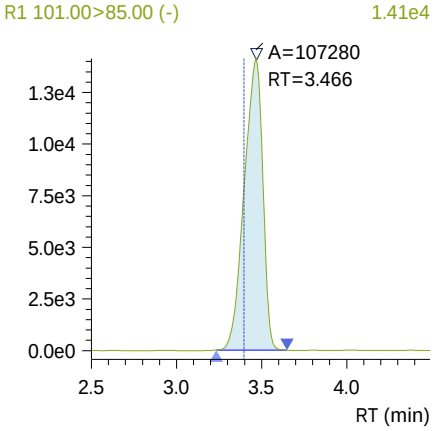
Sample ID: CCV
Date Acquired: 6/8/2023 2:22:54 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-057.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.470	402361	221285	9.9510	ng/mL	101.00 >85.00	26.66	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.466	221285	221285	1.0000	ng/mL	----	----	

Perchlorate

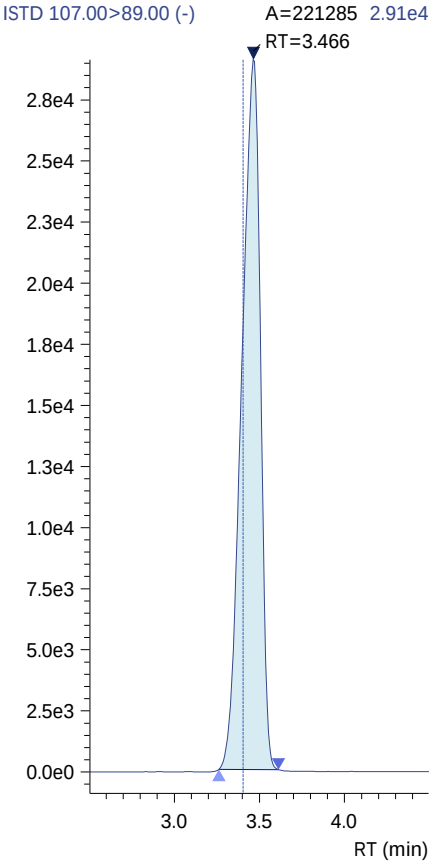
Conc 9.9510
R#1 26.66 (26.34)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:40:53 AM

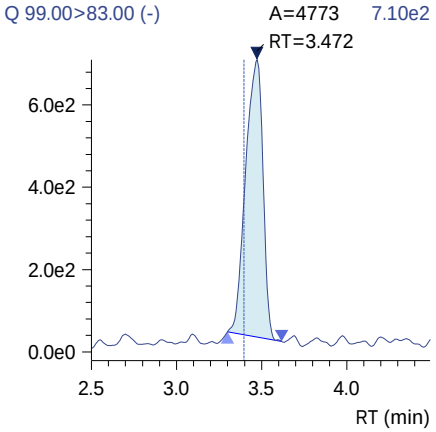
EQ2300291-06

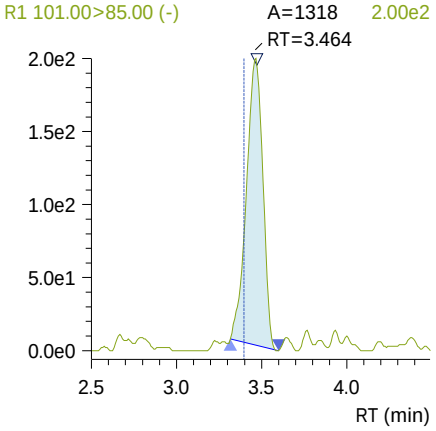
Sample ID: EQ2300291-06
Date Acquired: 6/8/2023 2:28:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-058.lcd
Vial: 6 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.472	4773	221280	0.1180	ng/mL	101.00 >85.00	27.61	18.44 -34.25
Sodium Perchlorate-18O4_IS	M	3.468	221280	221280	1.0000	ng/mL	----	----	

Perchlorate

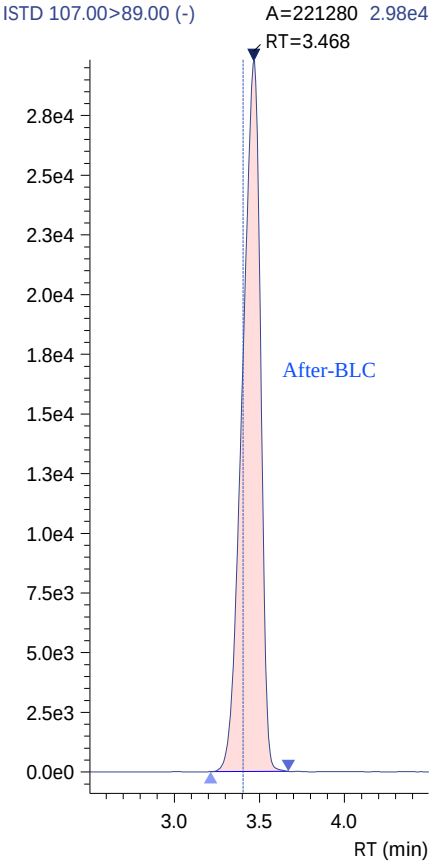
Conc 0.1180
R#1 27.61 (26.34)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

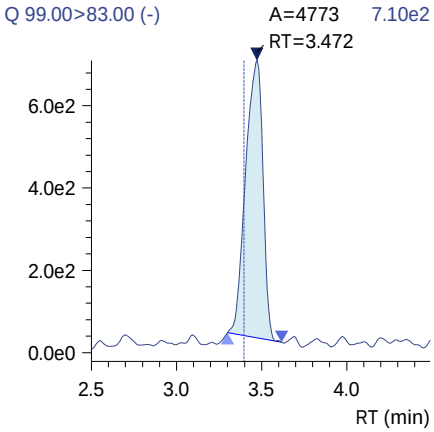
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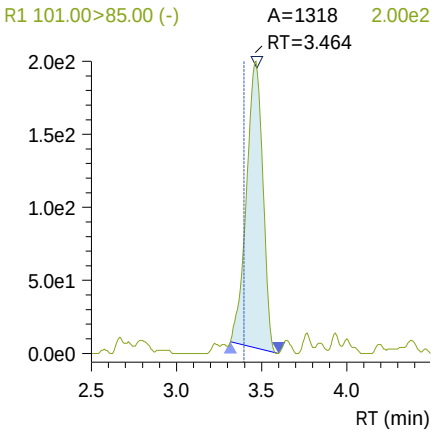
EQ2300291-06

Sample ID: EQ2300291-06
Date Acquired: 6/8/2023 2:28:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-058.lcd
Vial: 6 | Inj. Volume: 10.0000uL | Tray: 5

Perchlorate

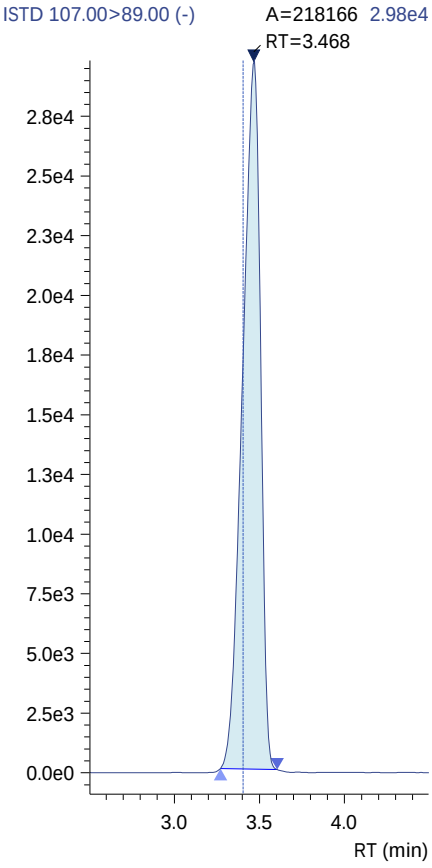
Conc 0.1197
R#1 27.61 (26.34)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:40:53 AM

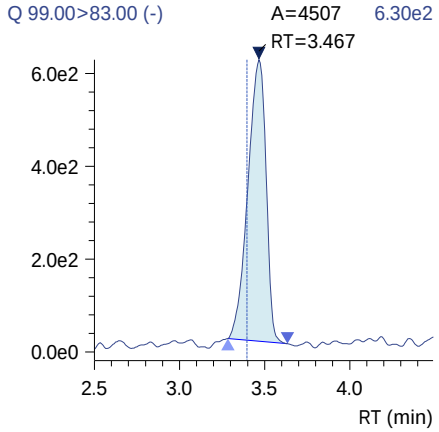
EQ2300291-07

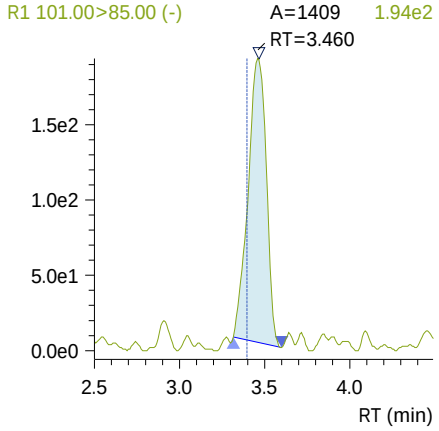
Sample ID: EQ2300291-07
Date Acquired: 6/8/2023 2:34:24 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-059.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.467	4507	219571	0.1123	ng/mL	101.00 >85.00	31.27	18.44 -34.25
Sodium Perchlorate-18O4 _IS	Auto	3.469	2195 71	219571	1.0000	ng/mL	----	----	

Perchlorate

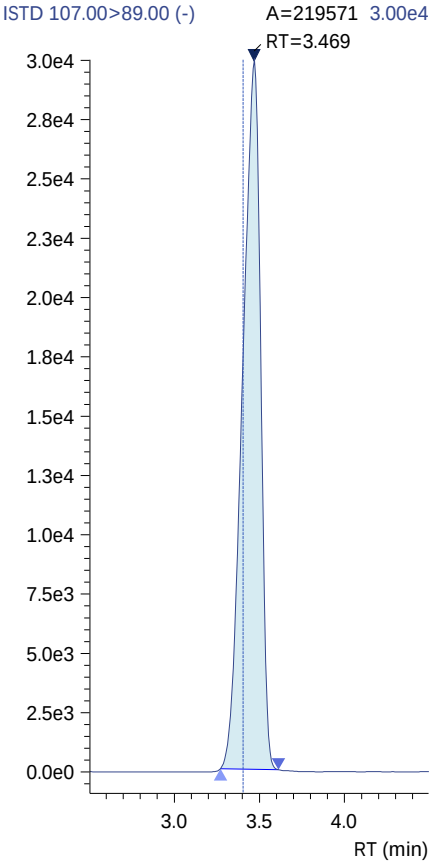
Conc 0.1123
R#1 31.27 (26.34)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-056

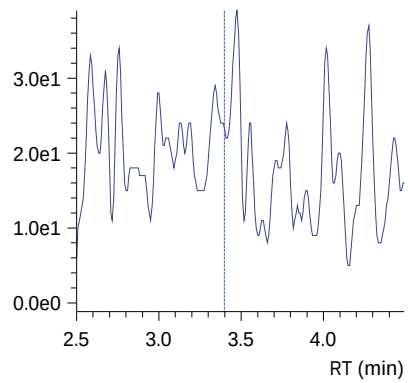
Sample ID: E2300533-056
Date Acquired: 6/8/2023 2:40:08 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-060.lcd
Vial: 32 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	213719	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.467	213719	213719	1.0000	ng/mL	----	----	

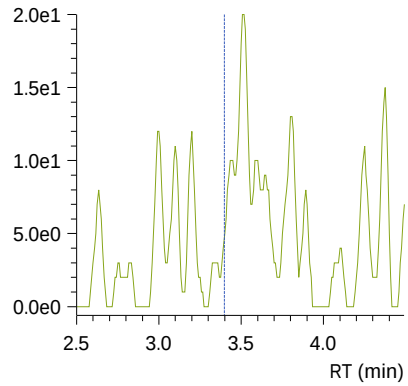
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 3.90e1



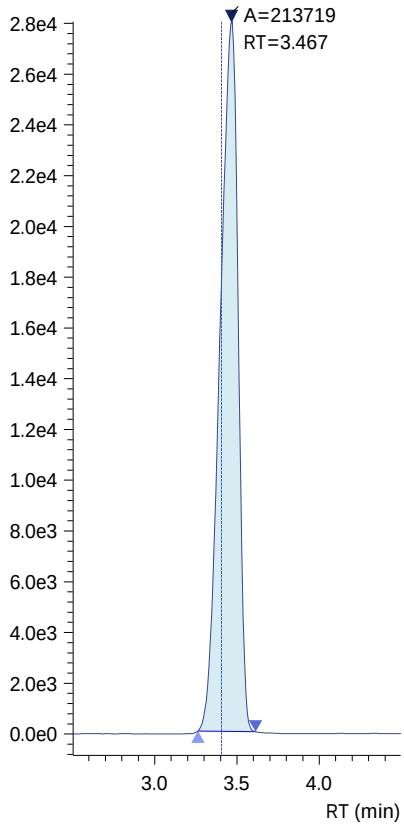
R1 101.00>85.00 (-) 2.00e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.81e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

E2300533-057

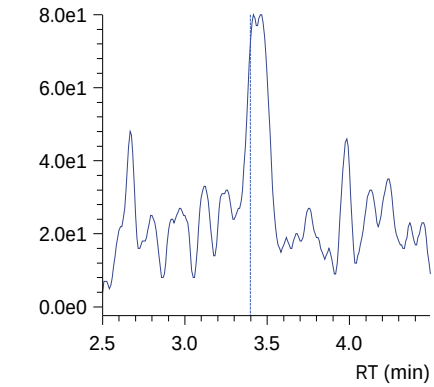
Sample ID: E2300533-057
Date Acquired: 6/8/2023 2:45:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-061.lcd
Vial: 33 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	226081	----	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.469	226081	226081	1.0000	ng/mL	----	----	

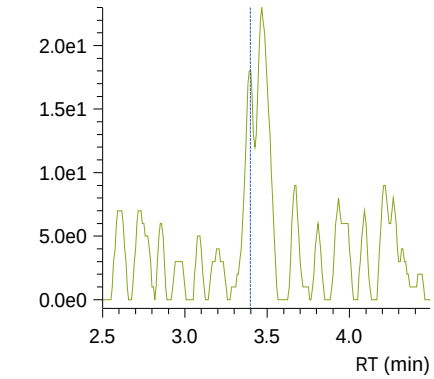
Perchlorate

Conc ----
R#1 0.00 (26.34)

Q 99.00>83.00 (-) 8.00e1



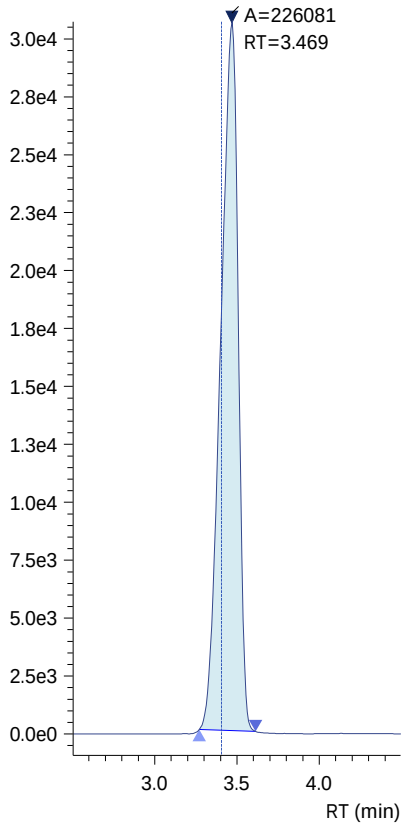
R1 101.00>85.00 (-) 2.30e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.07e4



Insight Report

Printed at 6/23/2023 8:40:53 AM

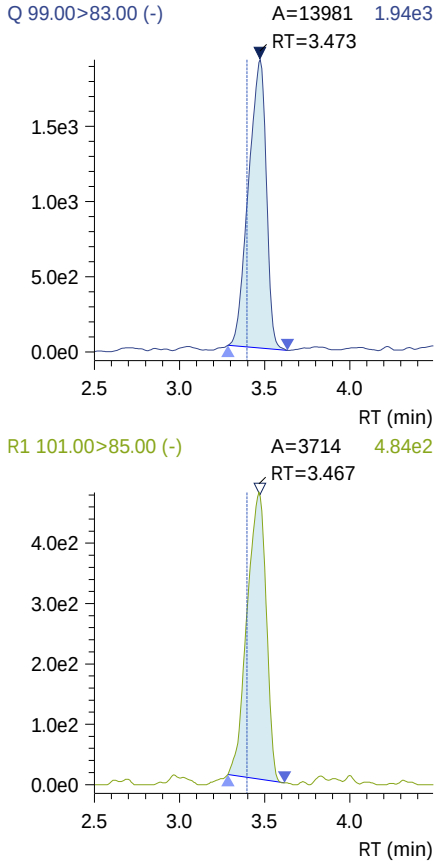
E2300533-058

Sample ID: E2300533-058
Date Acquired: 6/8/2023 2:51:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-062.lcd
Vial: 34 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.473	13981	223092	0.3430	ng/mL	101.00 >85.00	26.56	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.468	223092	223092	1.0000	ng/mL	----	----	

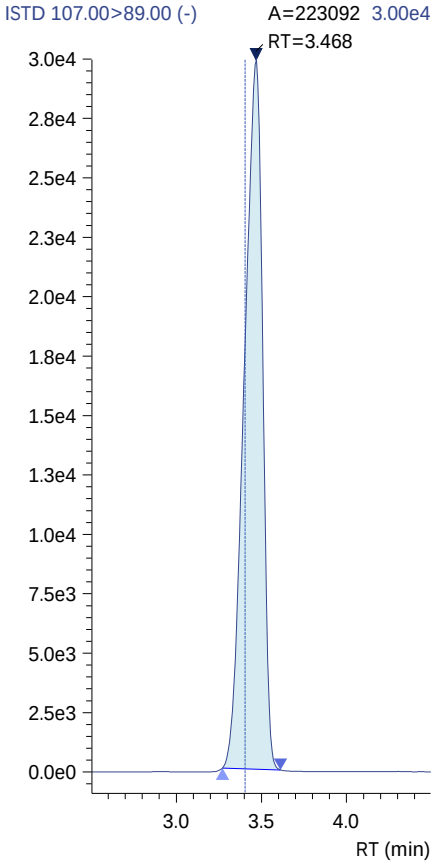
Perchlorate

Conc 0.3430
R#1 26.56 (26.34)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:40:53 AM

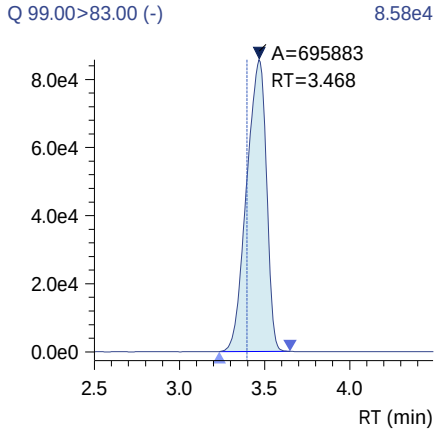
E2300533-059X5

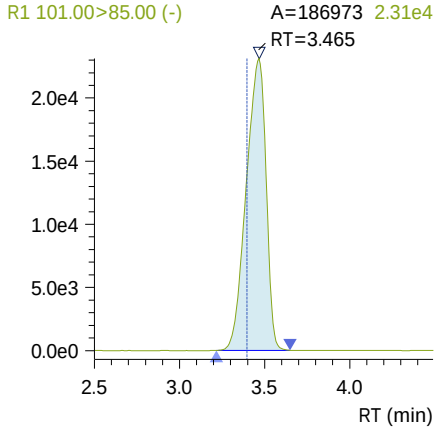
Sample ID: E2300533-059X5
Date Acquired: 6/8/2023 2:57:21 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-063.lcd
Vial: 35 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.468	6958 83	210264	18.1 124	ng/mL	101.00 >85.00	26.87	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.465	2102 64	210264	1.0000	ng/mL	----	----	

Perchlorate

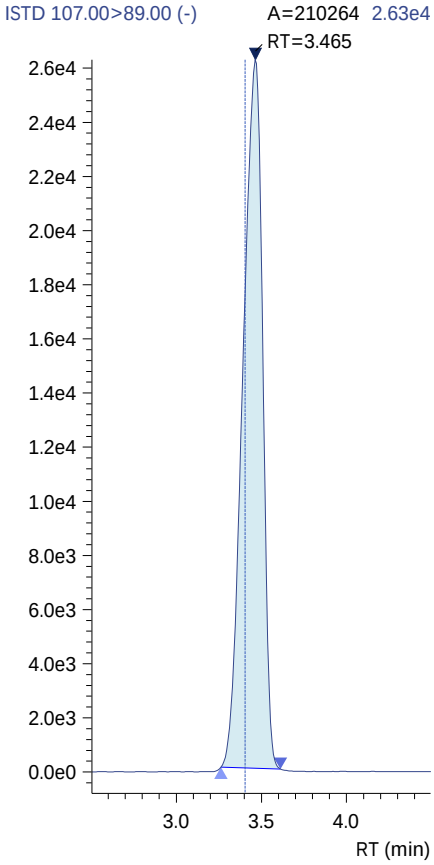
Conc 18.1124
R#1 26.87 (26.34)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:40:53 AM

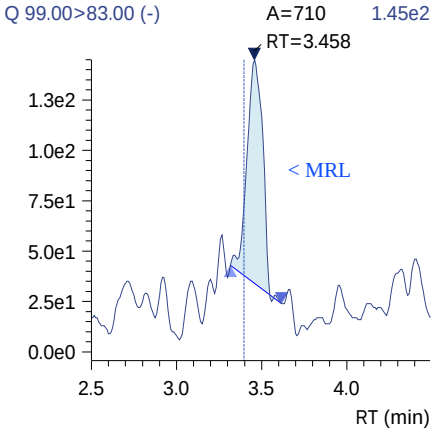
E2300533-060

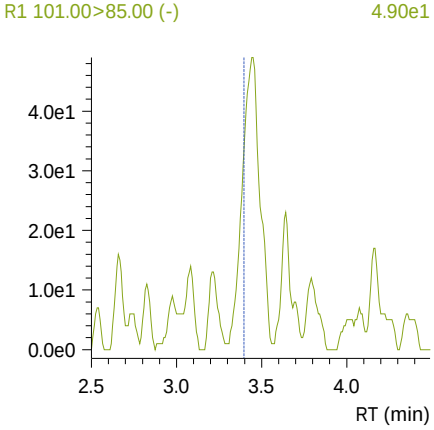
Sample ID: E2300533-060
Date Acquired: 6/8/2023 3:03:06 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-064.lcd
Vial: 36 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.458	710	227108	0.0171	ng/mL	101.00 >85.00	0.00	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.469	227108	227108	1.0000	ng/mL	----	----	

Perchlorate

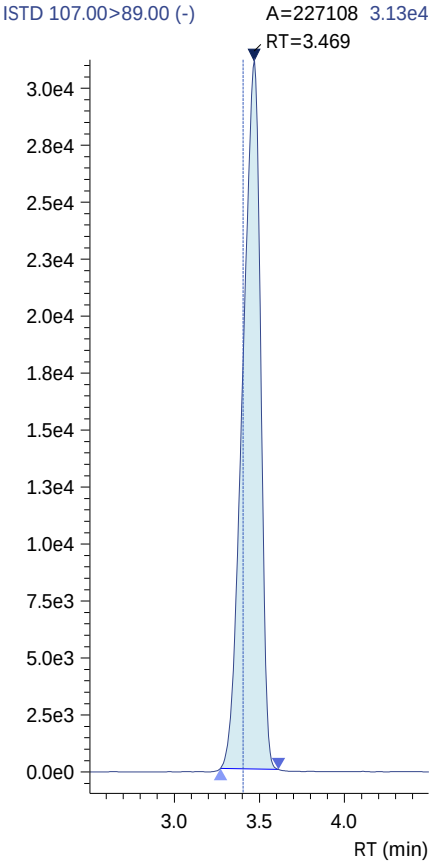
Conc 0.0171
R#1 0.00 (26.34)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:40:53 AM

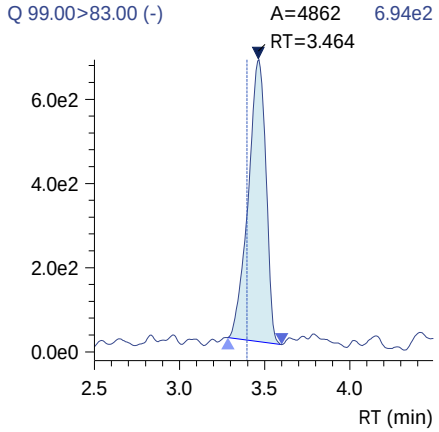
EQ2300291-08

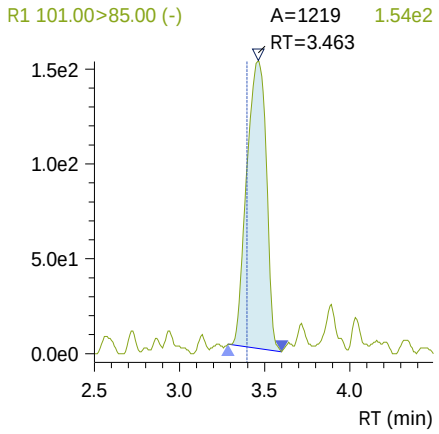
Sample ID: EQ2300291-08
Date Acquired: 6/8/2023 3:08:51 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-065.lcd
Vial: 8 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.464	4862	224039	0.1188	ng/mL	101.00 >85.00	25.06	18.44 -34.25
Sodium Perchlorate-18O4 _IS	Auto	3.469	2240 39	224039	1.0000	ng/mL	----	----	

Perchlorate

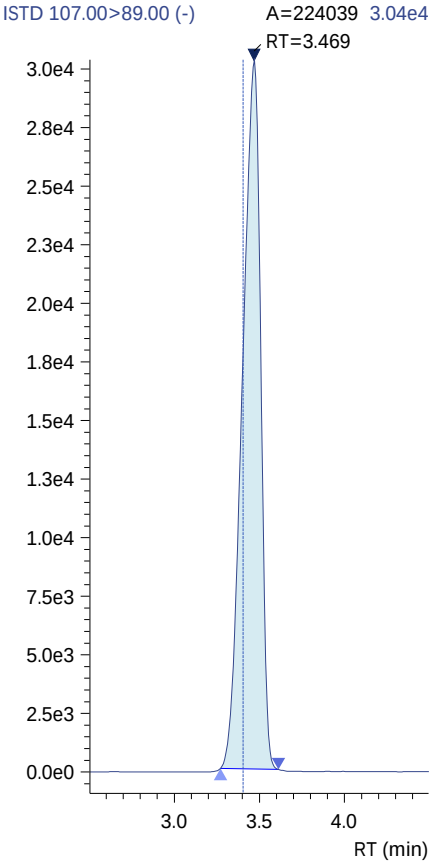
Conc 0.1188
R#1 25.06 (26.34)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:40:53 AM

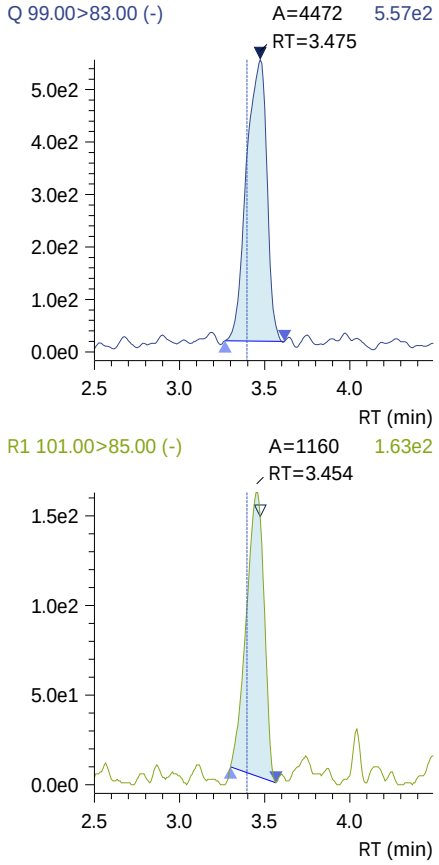
EQ2300291-09

Sample ID: EQ2300291-09
Date Acquired: 6/8/2023 3:27:26 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-066.lcd
Vial: 9 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.475	4472	214594	0.1140	ng/mL	101.00 >85.00	25.95	18.44 -34.25
Sodium Perchlorate-18O4 _IS	Auto	3.463	214594	214594	1.0000	ng/mL	----	----	

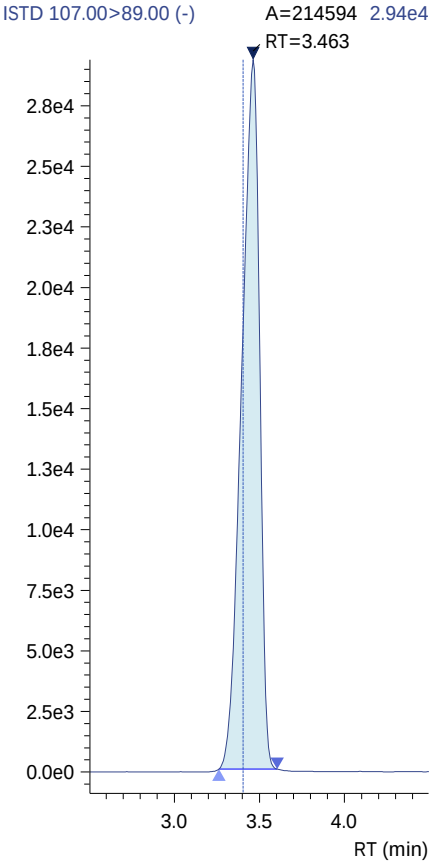
Perchlorate

Conc 0.1140
R#1 25.95 (26.34)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:40:53 AM

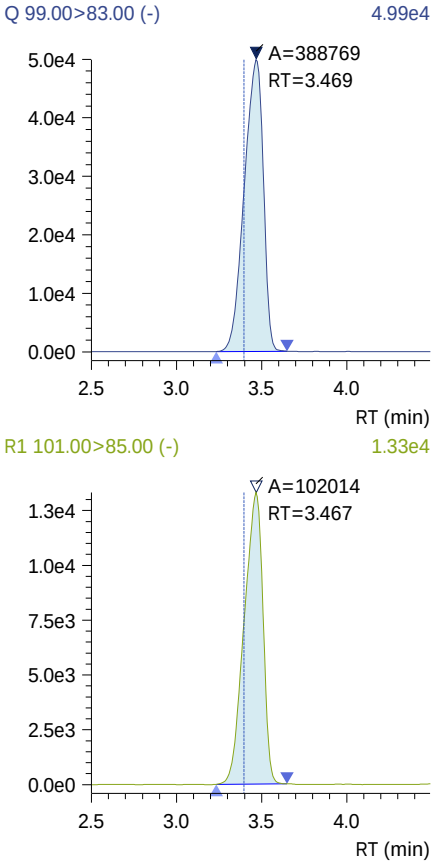
CCV

Sample ID: CCV
Date Acquired: 6/8/2023 3:33:11 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230608\20230608-067.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.469	388769	209681	10.1469	ng/mL	101.00 >85.00	26.24	18.44 -34.25
Sodium Perchlorate-18O4_IS	Auto	3.466	209681	209681	1.0000	ng/mL	----	----	

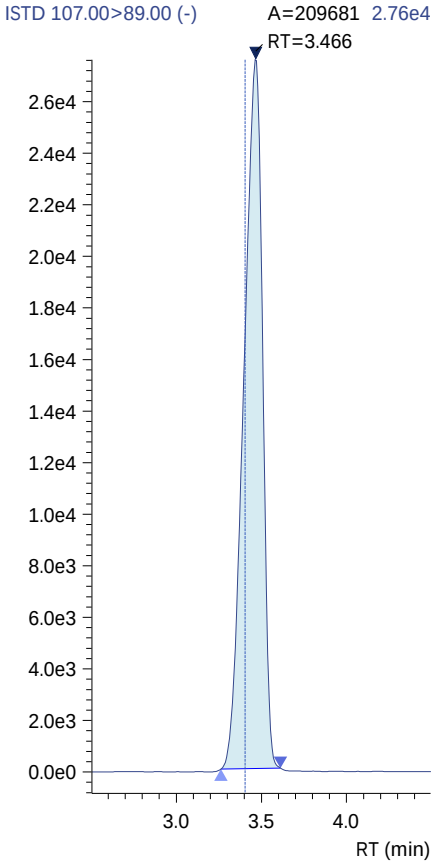
Perchlorate

Conc 10.1469
R#1 26.24 (26.34)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

Method File: I:\LCMS01\DATA\20230612\20230612\20230612.lcm
Project File: I:\LCMS01\DATA\20230612\20230612\20230612.damlp

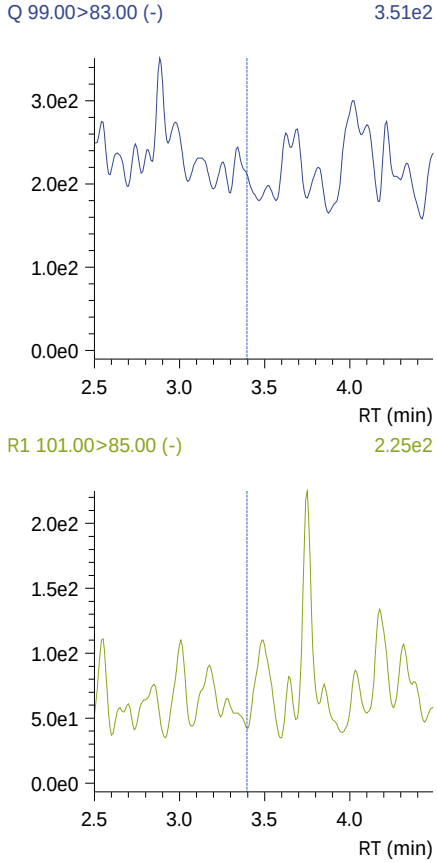
IB

Sample ID: IB
Date Acquired: 6/12/2023 9:13:34 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-001.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	157596	----	ng/mL	101.00 >85.00	0.00	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.460	157596	157596	1.0000	ng/mL	----	----	

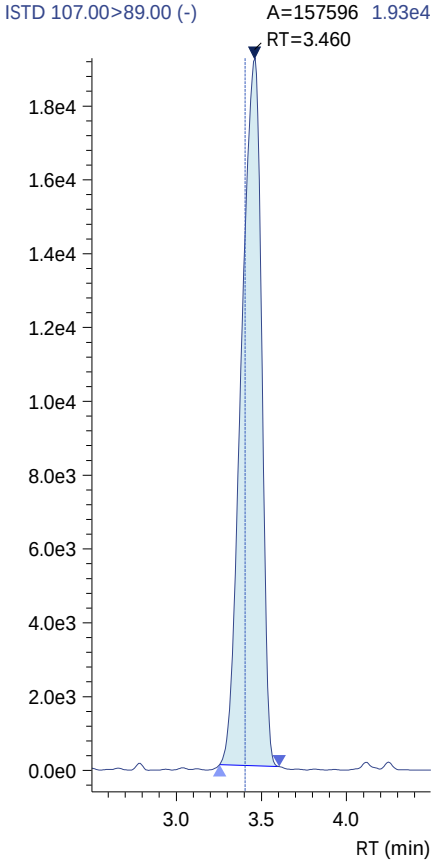
Perchlorate

Conc ----
R#1 0.00 (25.93)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

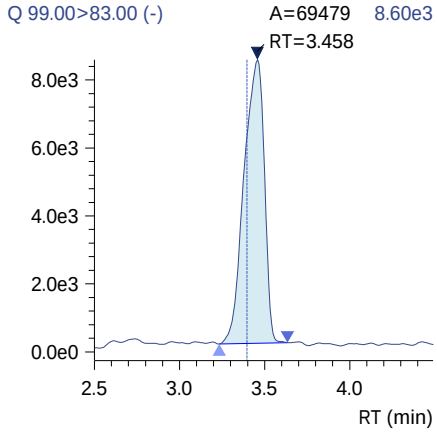
ICS

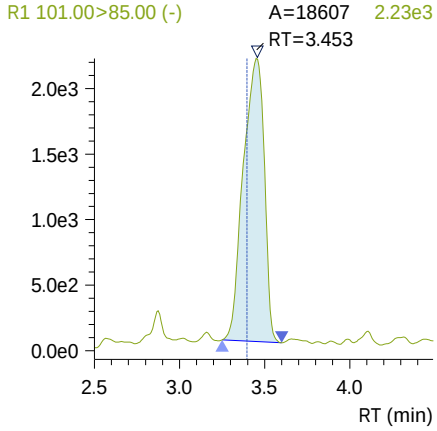
Sample ID: ICS
Date Acquired: 6/12/2023 9:25:01 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-003.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.458	69479	371731	1.0229	ng/mL	101.00 >85.00	26.78	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.454	3717 31	371731	1.0000	ng/mL	----	----	

Perchlorate

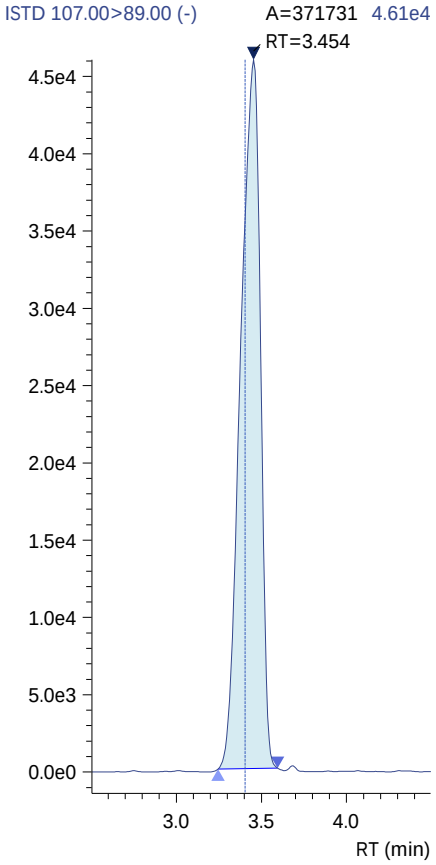
Conc 1.0229
R#1 26.78 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

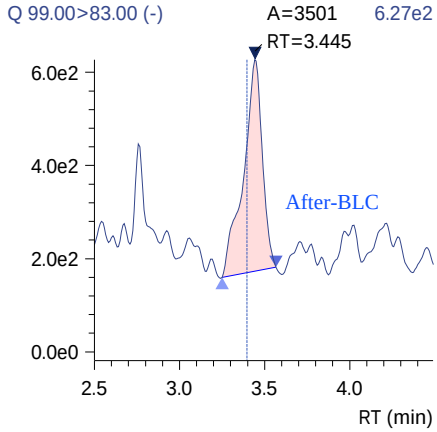
LODV

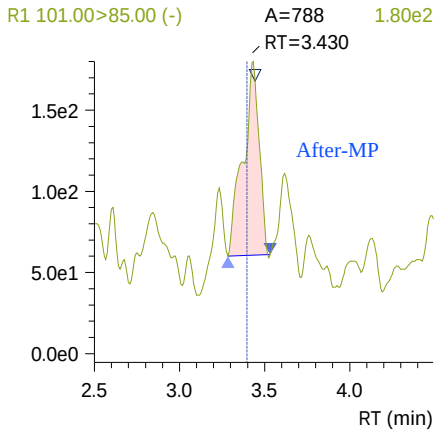
Sample ID: LODV
Date Acquired: 6/12/2023 9:30:43 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-004.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	M	3.445	3501	309622	0.0619	ng/mL	101.00 >85.00	22.50	18.15 -33.71
Sodium Perchlorate-18O4_IS	M	3.451	3096 22	309622	1.0000	ng/mL	----	----	

Perchlorate

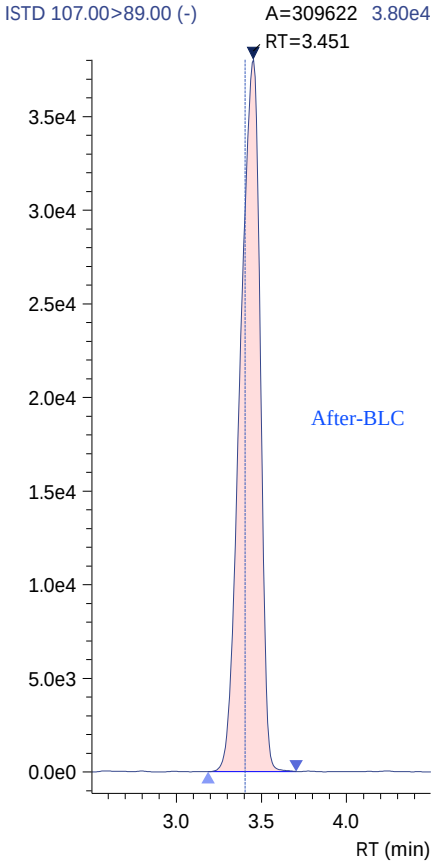
Conc 0.0619
R#1 22.50 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:46:53 AM

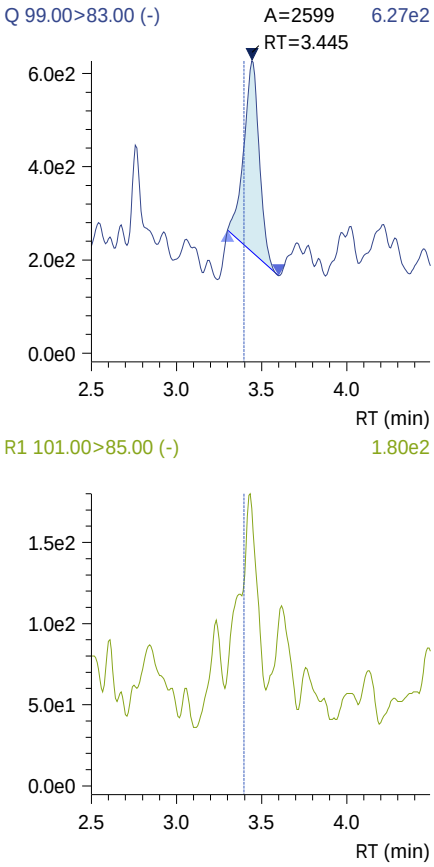
Method File: I:\LCMS01\DATA\20230612\20230612\20230612.lcm
Project File: I:\LCMS01\DATA\20230612\20230612\20230612.damlp

LODV

Sample ID: LODV
Date Acquired: 6/12/2023 9:30:43 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-004.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 0

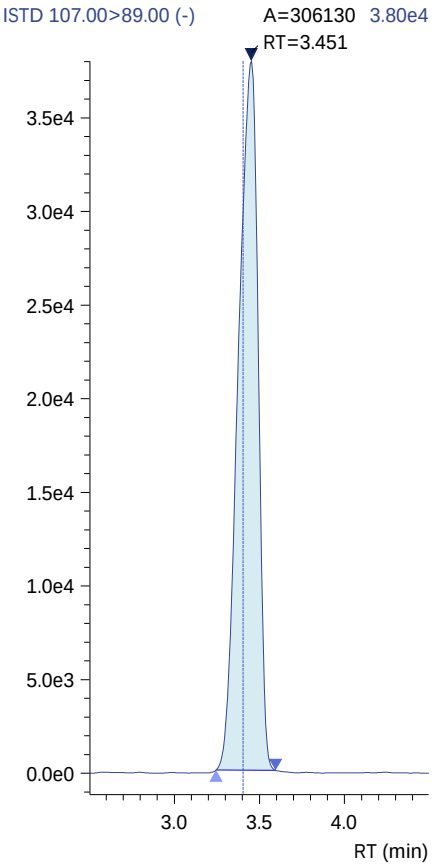
Perchlorate

Conc 0.0465
R#1 0.00 (25.93)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

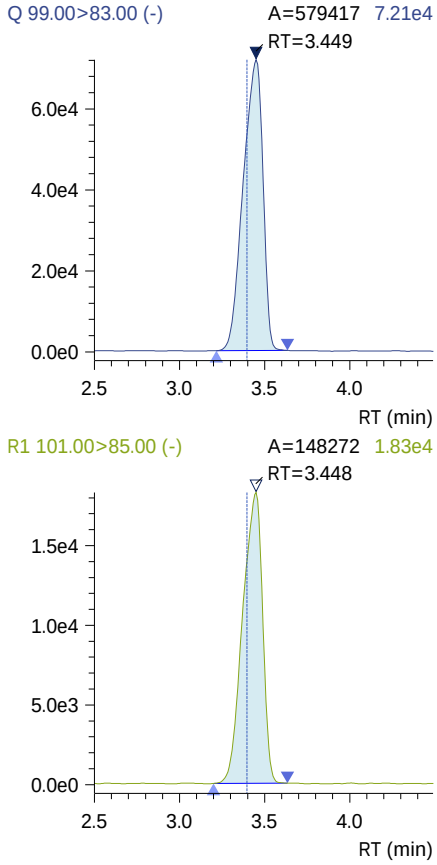
CCV

Sample ID: CCV
Date Acquired: 6/12/2023 9:38:14 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-005.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.449	5794 17	322565	9.8305	ng/mL	101.00 >85.00	25.59	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.446	3225 65	322565	1.0000	ng/mL	----	----	

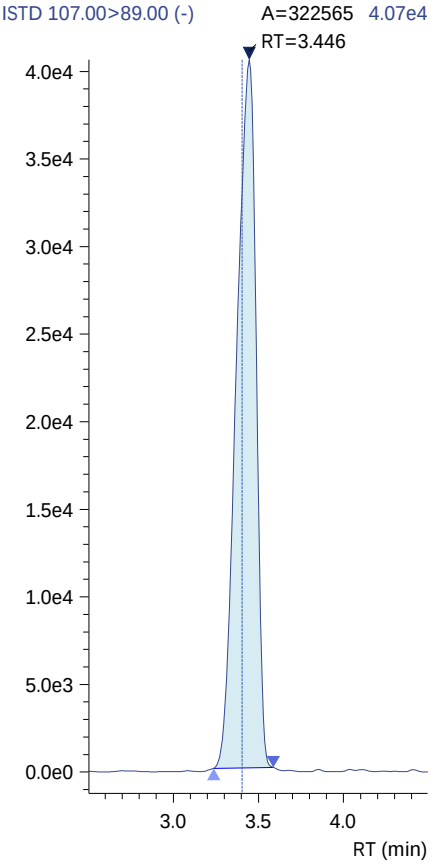
Perchlorate

Conc 9.8305
R#1 25.59 (25.93)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

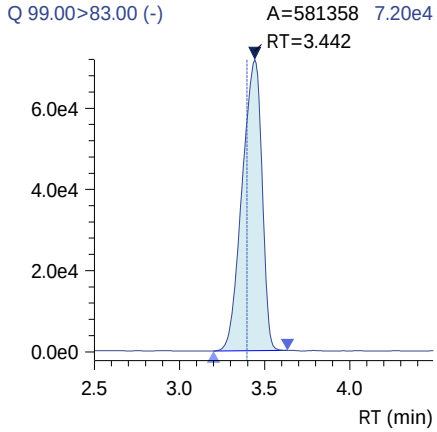
CCV

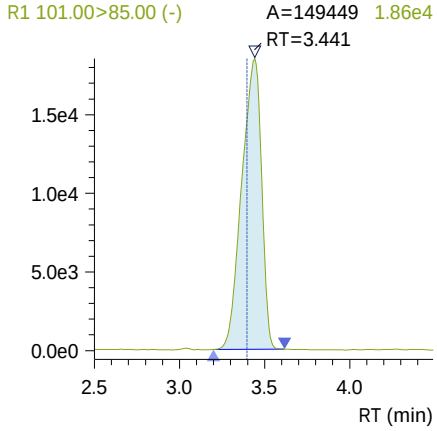
Sample ID: CCV
Date Acquired: 6/12/2023 12:41:29 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-016.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.442	581358	323592	9.8322	ng/mL	101.00	25.71	18.15
							>85.00		-33.71
Sodium Perchlorate-18O4_IS	Auto	3.439	323592	323592	1.0000	ng/mL	----	----	

Perchlorate

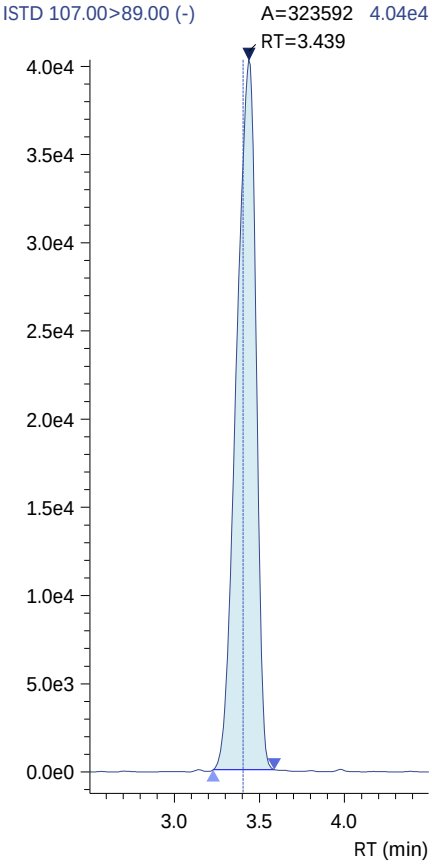
Conc 9.8322
R#1 25.71 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

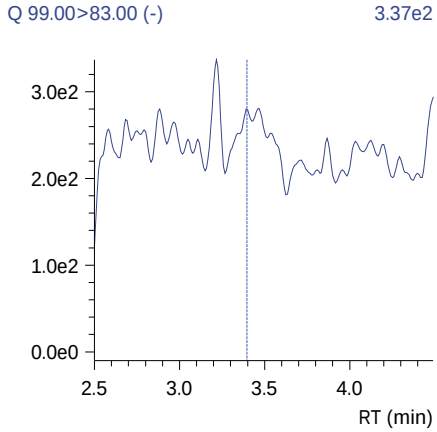
E2300533-022

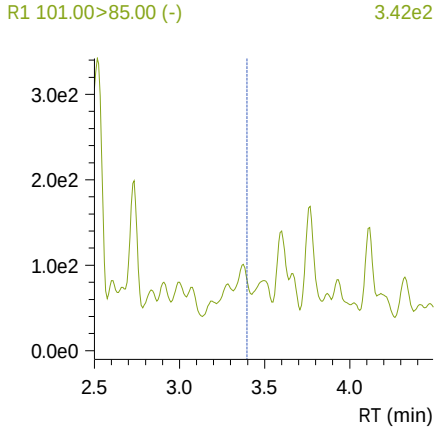
Sample ID: E2300533-022
Date Acquired: 6/12/2023 1:15:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-022.lcd
Vial: 28 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	332120	----	ng/mL	101.00 >85.00	0.00	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.440	332120	332120	1.0000	ng/mL	----	----	

Perchlorate

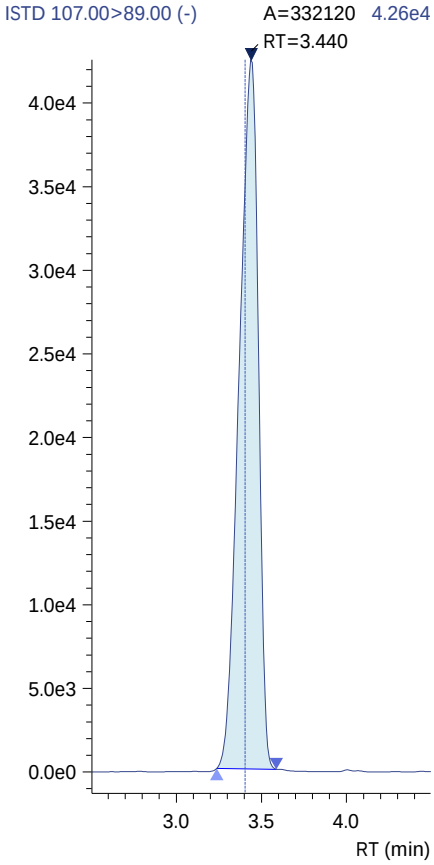
Conc ----
R#1 0.00 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

E2300533-027

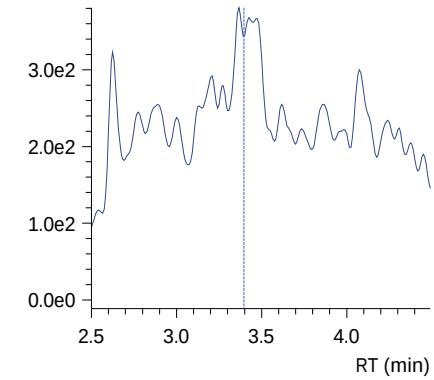
Sample ID: E2300533-027
Date Acquired: 6/12/2023 1:21:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-023.lcd
Vial: 29 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	319486	----	ng/mL	101.00 >85.00	0.00	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.442	319486	319486	1.0000	ng/mL	----	----	

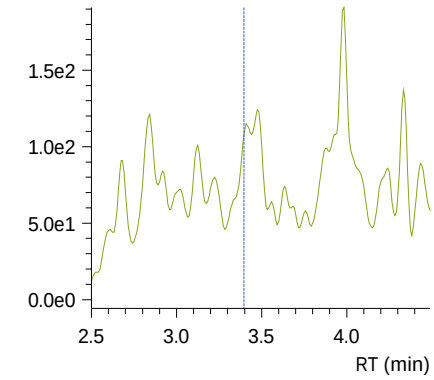
Perchlorate

Conc ----
R#1 0.00 (25.93)

Q 99.00>83.00 (-) 3.81e2



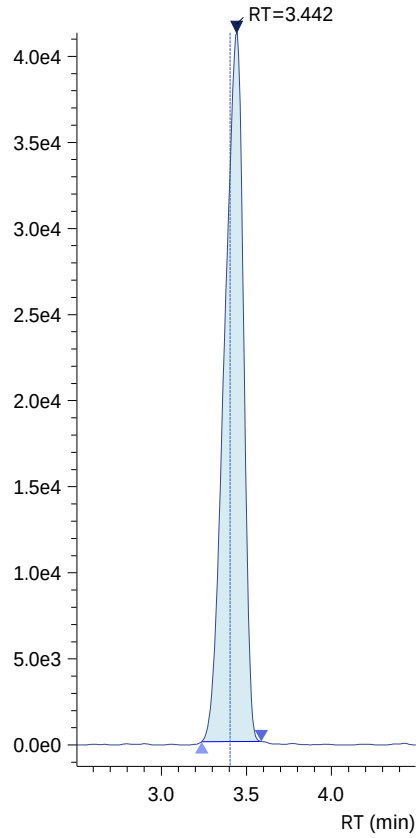
R1 101.00>85.00 (-) 1.91e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) A=319486 4.14e4



Insight Report

Printed at 6/23/2023 8:45:23 AM

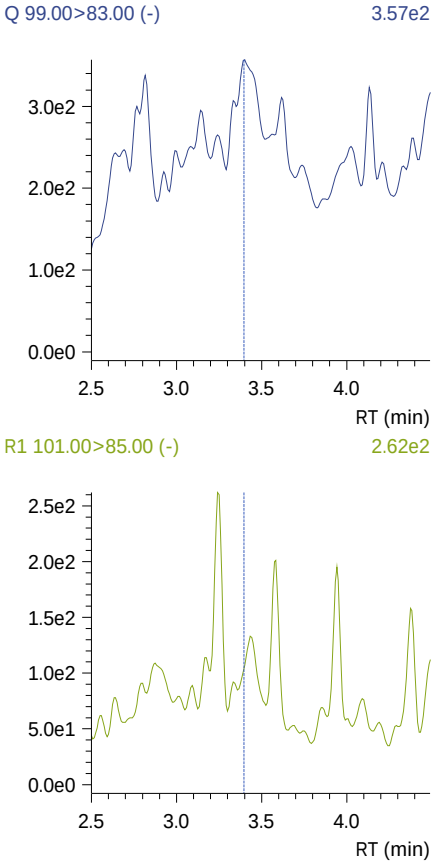
E2300533-034

Sample ID: E2300533-034
Date Acquired: 6/12/2023 1:27:21 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-024.lcd
Vial: 30 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	330933	----	ng/mL	101.00 >85.00	0.00	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.442	330933	330933	1.0000	ng/mL	----	----	

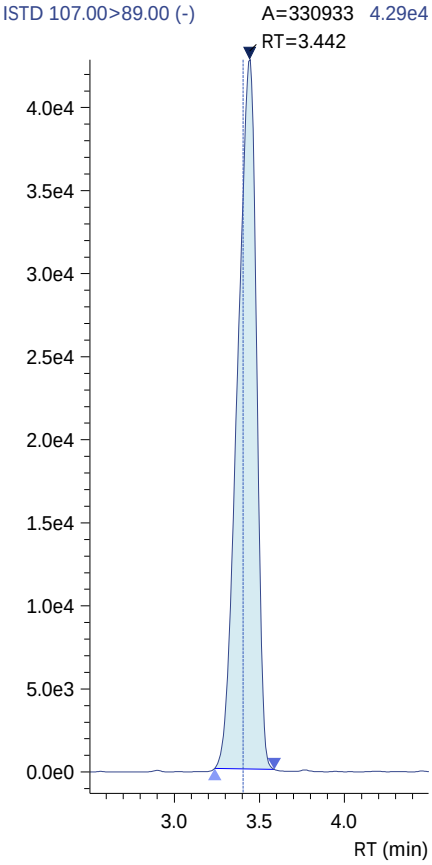
Perchlorate

Conc ----
R#1 0.00 (25.93)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

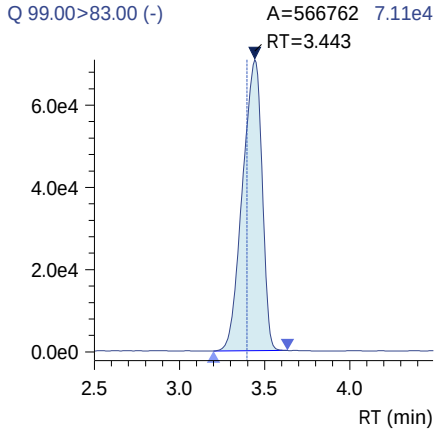
CCV

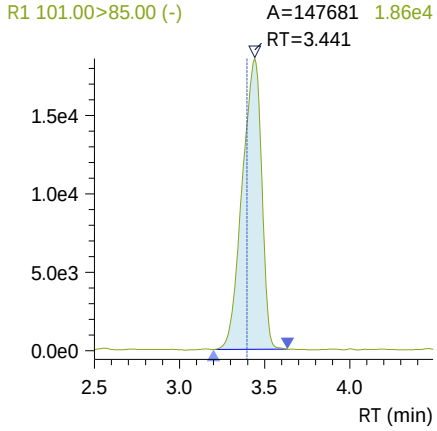
Sample ID: CCV
Date Acquired: 6/12/2023 1:44:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-027.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.443	566762	314056	9.8764	ng/mL	101.00	26.06	18.15
							>85.00		-33.71
Sodium Perchlorate-18O4_IS	Auto	3.440	314056	314056	1.0000	ng/mL	----	----	

Perchlorate

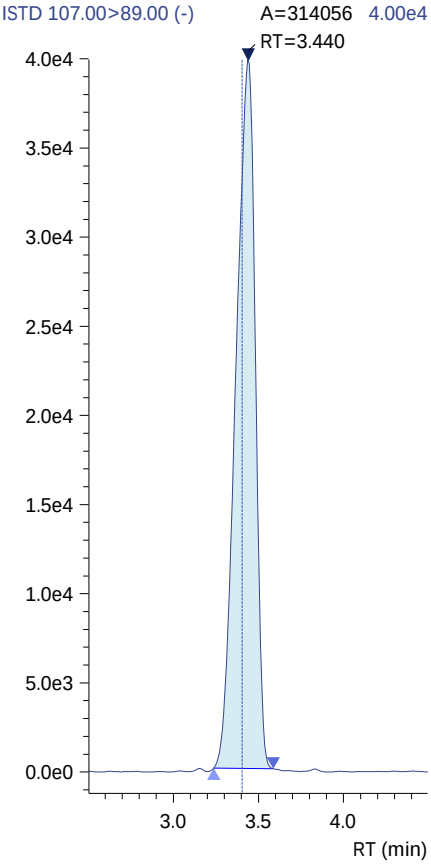
Conc 9.8764
R#1 26.06 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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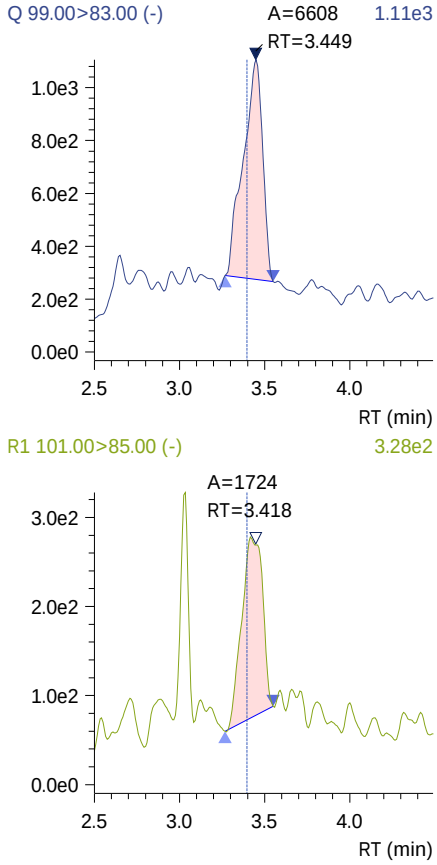
EQ2300290-04

Sample ID: EQ2300290-04
Date Acquired: 6/12/2023 1:56:01 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-029.lcd
Vial: 34 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	M	3.449	6608	329214	0.1098	ng/mL	101.00 >85.00	26.09	18.15 -33.71
Sodium Perchlorate-18O4_IS	M	3.441	3292 14	329214	1.0000	ng/mL	----	----	

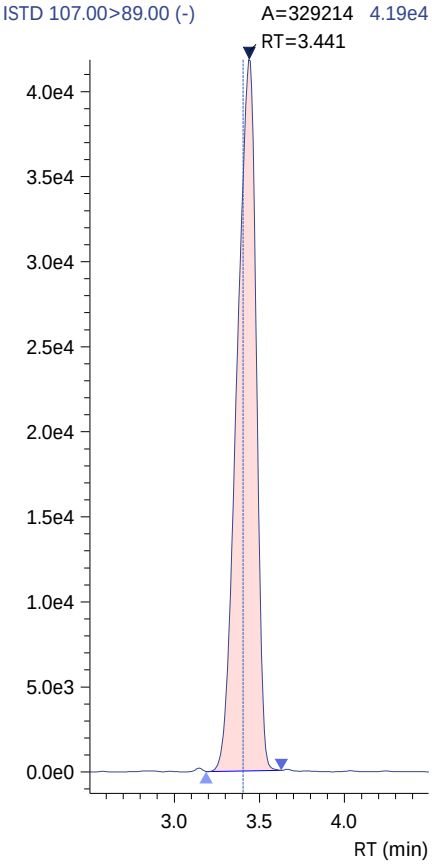
Perchlorate

Conc 0.1098
R#1 26.09 (25.93)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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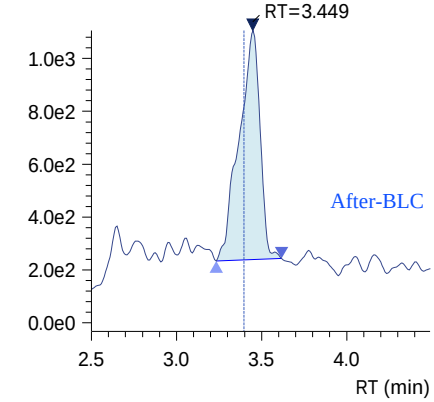
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Vial: 34 | Inj. Volume: 10.0000uL | Tray: 5

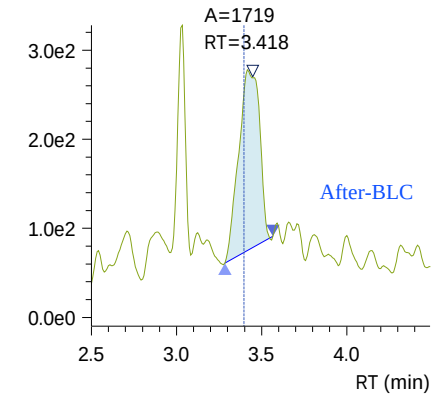
Perchlorate

Conc 0.1239
R#1 23.22 (25.93)

Q 99.00>83.00 (-) A=7400 1.11e3



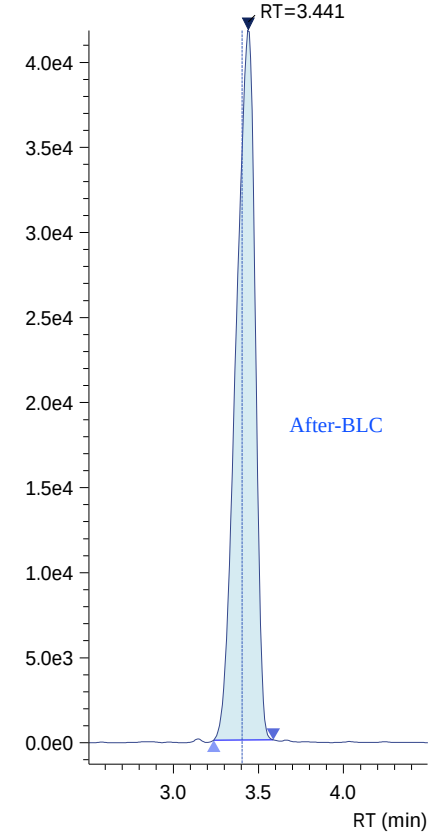
R1 101.00>85.00 (-) 3.28e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) A=326887 4.19e4



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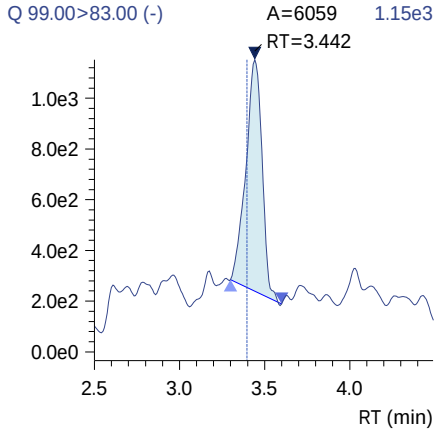
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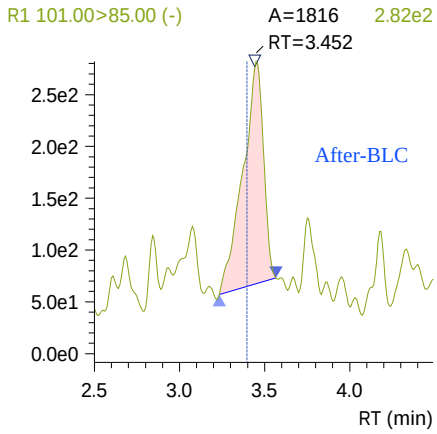
Sample ID: EQ2300290-05
Date Acquired: 6/12/2023 2:01:47 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-030.lcd
Vial: 35 | Inj. Volume: 10.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	MI R1	3.442	6059	312547	0.1061	ng/mL	101.00 >85.00	29.97	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.441	3125 47	312547	1.0000	ng/mL	----	----	

Perchlorate

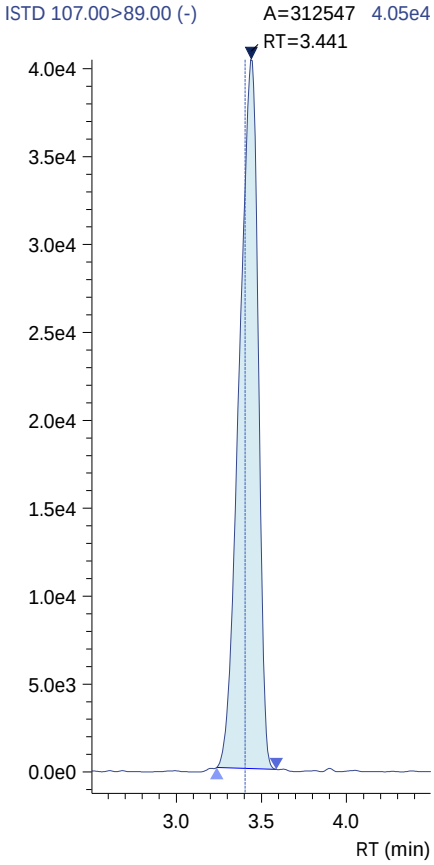
Conc 0.1061
R#1 29.97 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

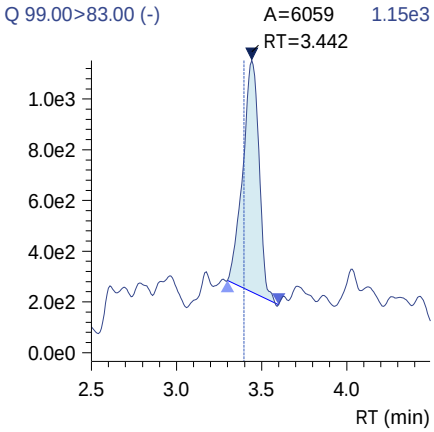
Printed at 6/23/2023 8:46:53 AM

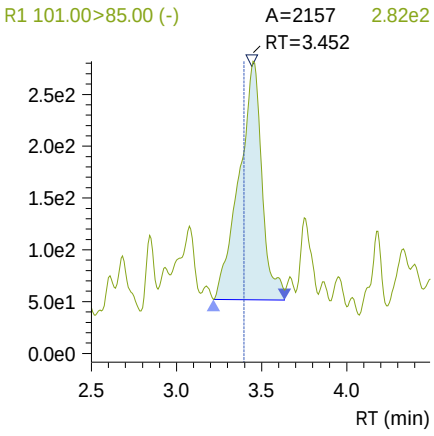
EQ2300290-05

Sample ID: EQ2300290-05
Date Acquired: 6/12/2023 2:01:47 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-030.lcd
Vial: 35 | Inj. Volume: 10.0000uL | Tray: 5

Perchlorate

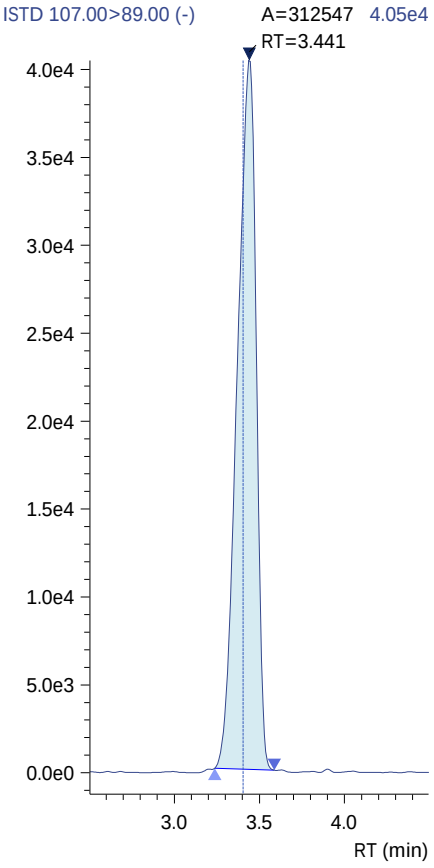
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R#1 35.61 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/23/2023 8:45:23 AM

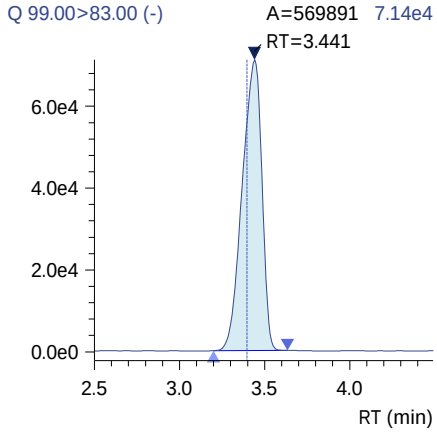
CCV

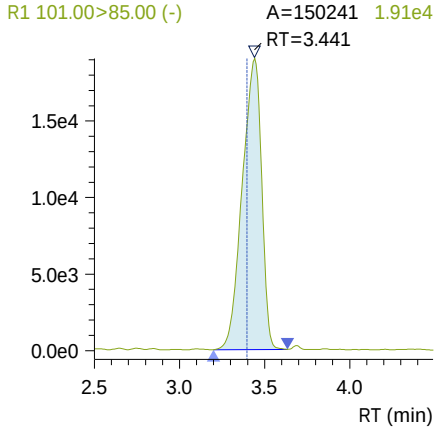
Sample ID: CCV
Date Acquired: 6/12/2023 2:07:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230612\20230612\20230612-031.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.441	569891	313397	9.9518	ng/mL	101.00 >85.00	26.36	18.15 -33.71
Sodium Perchlorate-18O4_IS	Auto	3.438	313397	313397	1.0000	ng/mL	----	----	

Perchlorate

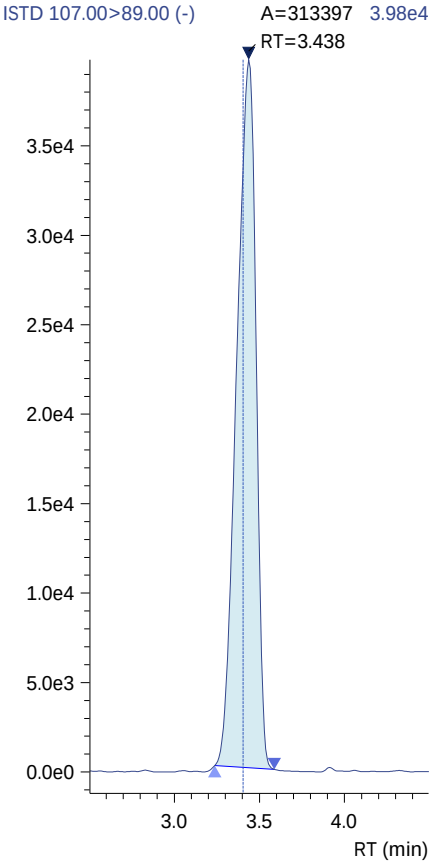
Conc 9.9518
R#1 26.36 (25.93)





Sodium Perchlorate-18O4_IS

Conc 1.0000



DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 536
CONWAY, AR 72058

February 6, 2024

DAIN-ISE

Mr. Brian Follin
US Environmental Protection Agency
Federal Facilities Section R6
1201 Elm St, Ste 500
Dallas, TX 75270

Re: Surface Water Data Transmittal – 2023, Longhorn Army Ammunition Plant, Karnack, TX

Dear Mr. Follin,

The surface water data, collected as a requirement of the 1999 Perchlorate Dispute Resolution, will be documented in the Administrative Record via data memoranda provided by the Army. The quarterly surface water sampling results along with historical data, are presented in the attached memorandum for your file and does not require your review.

The document was prepared by the Poarch Creek Indians, Government Services, LLC/Bhate Environmental Associates, Inc. 8(a) Joint Venture (PCI/Bhate JV) on behalf of the Army as part of PCI/Bhate JV's Performance Based Remediation contract for the facility. I ask that Zachary Beck, PCI/Bhate JV's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at (726) 999-0505, or by email at lena.j.sierocinski.civ@army.mil.

Sincerely,

Lena Sierocinski

Lena Sierocinski,
LHAAP Environmental Support Manager
U.S. Army Environmental Command

Copies furnished:
A. Palmie, TCEQ, Austin, TX
E. Duerkop, USFWS, Caddo Lake NWR, TX
C. Montoya USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
K. Russell, BRAC, Huntsville, AL
Z. Beck, Bhate, Lakewood, CO
P. Srivastav, APTIM, Houston, TX

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 536
CONWAY, AR 72058

February 6, 2024

DAIN-ISE

Ms. April Palmie
Texas Commission on Environmental Quality
Superfund Section, MC-136
12100 Park 35 Circle, Bldg D
Austin, TX 78753

Re: Surface Water Data Transmittal – 2023, Longhorn Army Ammunition Plant, Karnack, TX

Dear Ms. Palmie,

The surface water data, collected as a requirement of the 1999 Perchlorate Dispute Resolution, will be documented in the Administrative Record via data memoranda provided by the Army. The quarterly surface water sampling results along with historical data, are presented in the attached memorandum for your file and does not require your review.

The document was prepared by the Poarch Creek Indians, Government Services, LLC/Bhate Environmental Associates, Inc. 8(a) Joint Venture (PCI/Bhate JV) on behalf of the Army as part of PCI/Bhate JV's Performance Based Remediation contract for the facility. I ask that Zachary Beck, PCI/Bhate JV's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at (726) 999-0505, or by email at lena.j.sierocinski.civ@army.mil.

Sincerely,

Lena Sierocinski

Lena Sierocinski
LHAAP Environmental Support Manager
U.S. Army Environmental Command

Copies furnished:
A. Palmie, TCEQ, Austin, TX
E. Duerkop, USFWS, Caddo Lake NWR, TX
C. Montoya USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
K. Russell, BRAC, Huntsville, AL
Z. Beck, Bhate, Lakewood, CO
P. Srivastav, APTIM, Houston, TX

bhate

LETTER OF TRANSMITTAL

DATE: February 6, 2024

PROJECT NAME: Remediation of Multiple Sites, Longhorn Army Ammunition Plant, Karnack, Texas

TO:
Lena Sierocinski — USAEC Environmental Support Manager
Aaron Williams — USACE Project Engineer

FROM: Zack Beck — PCI|Bhate JV Project Manager

SUBJECT: **Surface Water Data Transmittal - 2023**
Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas (TX)
Contract: W9128F-13-D-0012
Delivery Order: W912BV17F0150

REMARKS

Surface water sampling data for perchlorate is currently collected at the following frequencies except when locations are dry:

Surface Water	Frequency
HBW-1	Harrison Bayou, quarterly
HBW-7	Harrison Bayou, quarterly
HBW-10	Harrison Bayou, quarterly
GPW-1	Goose Prairie Creek, quarterly
GPW-3	Goose Prairie Creek, quarterly

Surface water sampling data is updated and reported to the regulatory agencies and to the public as it is available through handouts reviewed and distributed in association with the triannual Restoration Advisory Board (RAB) meetings and included in the Administrative Record along with other RAB meeting materials. The attached handouts will be presented at the June 2024 RAB meeting. Data associated with the 2023 surface water sampling events, including the data validation report (Quality Control Summary Report) for the samples, are attached for your file.

List of Attachments:

Table 1. LHAAP Quarterly Surface Water Sampling - 2023
A Harrison Bayou and Goose Prairie Creek Perchlorate Data Handouts
B Quality Control Summary Report
C Laboratory Data Packages

LHAAP-Quarterly Surface Water Sampling 2023

January 2023 (Quarter 1)

Location ID: / Sample Date:	Units	PCL	HBW7_010523 01/05/23	HBW10_010523 01/05/23	HBW10_010523_a 01/05/23	HBW1_010523 01/05/23	GPW1_010523 01/05/23	GPW3_010523 01/05/23
Perchlorate (6850)			Harrison Bayou				Goose Prairie Creek	
Perchlorate	µg/L	17	**0.133**	**0.0594 J**	**0.0654 J**	**0.0568 J**	**0.153**	**0.137**

May 2023 (Quarter 2)

Location ID: / Sample Date:	Units	PCL	HBW7_052623 5/26/23	HBW7_052623_a 5/26/23	HBW10_052623 5/26/23	HBW1_052623 5/26/23	GPW1_052623 5/26/23	GPW3_052623 5/26/23
Perchlorate (6850)			Harrison Bayou				Goose Prairie Creek	
Perchlorate	µg/L	17	< 0.0500 U	< 0.0500 U	< 0.0500 U	< 0.0500 U	**0.0286 J**	< 0.0500 U

December 2023 (Quarter 4)

Location ID: / Sample Date:	Units	PCL	HBW1_122723 12/27/23	HBW7_122723 12/27/23	HBW10_122723 12/27/23	HBW10_122723_a 12/27/23	GPW1_122723 12/27/23	GPW3_122723 12/27/23
Perchlorate (6850)			Harrison Bayou				Goose Prairie Creek	
Perchlorate	µg/L	17	< 0.0500 U	**0.163**	**0.0494 J**	**0.0546 J**	**0.0973 J**	**0.0382 J**

Notes:

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

J - estimated value between the detection limit and limit of quantitation

U - non-detect reported to the limit of detection

ID- Identification

µg/L- micrograms per liter

LHAAP- Longhorn Army Ammunition Plant

No surface water sampling conducted in 3rd Quarter 2023 due to lack of flow

a- duplicate sample

concentrations in **Bold**- detections

Attachment A

Harrison Bayou and Goose Prairie Creek Perchlorate Data Handouts

Harrison Bayou and Goose Prairie Creek – Perchlorate Data

Surface water samples are collected quarterly from each location in Harrison Bayou and Goose Prairie Creek, unless the sampling location is dry.

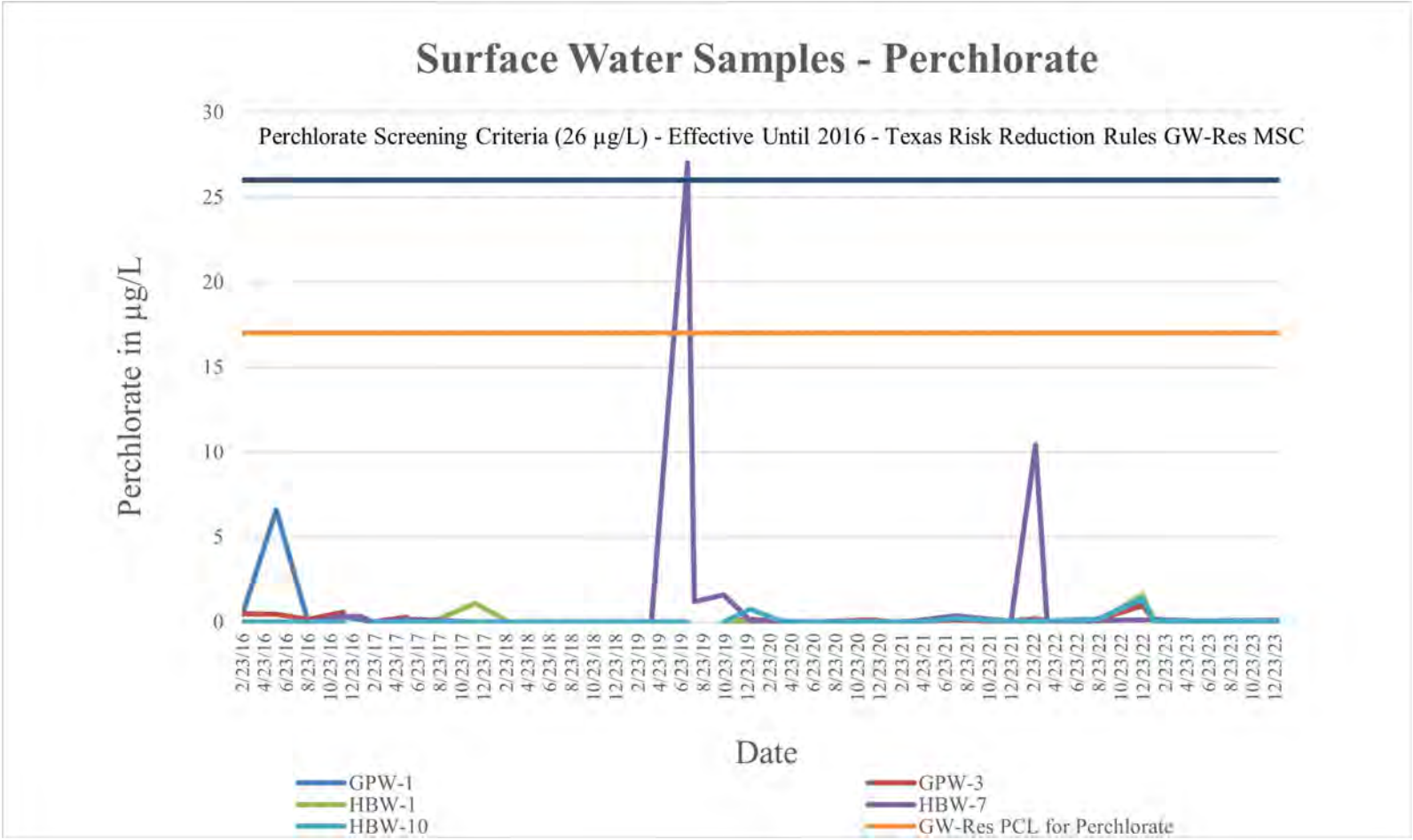
Surface Water Sample Data (in micrograms per liter)

Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd
Creek Sample ID	Feb 2016	May 2016	Aug 2016	Nov 2016	Feb 2017	May 2017	Aug 2017	Dec 2017	Mar 2018	Jun 2018	Aug 2018
GPW-1	0.447	6.59	<0.2 U	0.301 J	<1 U	0.263	Dry	<2.0 U	<2.0 U	Dry	<2.0 U
GPW-3	0.474	0.457	0.141	0.563	<1 U	0.274	Dry	<2.0 U	<2.0 U	Dry	<2.0 U
HBW-1	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<1 U	<0.2 U	<0.2 U	1.1 J	<2.0 U	Dry	<2.0 U
HBW-7	<0.2 U	<0.2 U	<0.2 U	0.318 J	<1 U	0.155	<0.2 U	<2.0 U	<2.0 U	Dry	<2.0 U
HBW-10	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<1 U	<0.2 U	0.111 J	<2.0 U	<2.0 U	Dry	<2.0 U

Quarter	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st
Creek Sample ID	Oct 2018	Jan 2019	Apr 2019	Jul 2019	Oct 2019	Jan 2020	Apr 2020	Jul 2020	Dec 2020	Feb 2021
GPW-1	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	0.163	0.0589 J	<0.05 U	0.110	<0.05 U
GPW-3	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	0.156	0.0662 J	0.0326 J	0.108	<0.05 U
HBW-1	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	0.0600 J	<0.05 U	<0.05 U	0.0374 J	<0.05 U
HBW-7	<2.0 U	<2.0 U	<2.0 U	27 (initial)/ 1.2 J (resample)	1.6 J	0.0761 J	<0.05 U	0.0318 J	0.0265 J	<0.05 U
HBW-10	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	0.0782 J	<0.05 U	<0.05 U	<0.05 U	<0.05 U

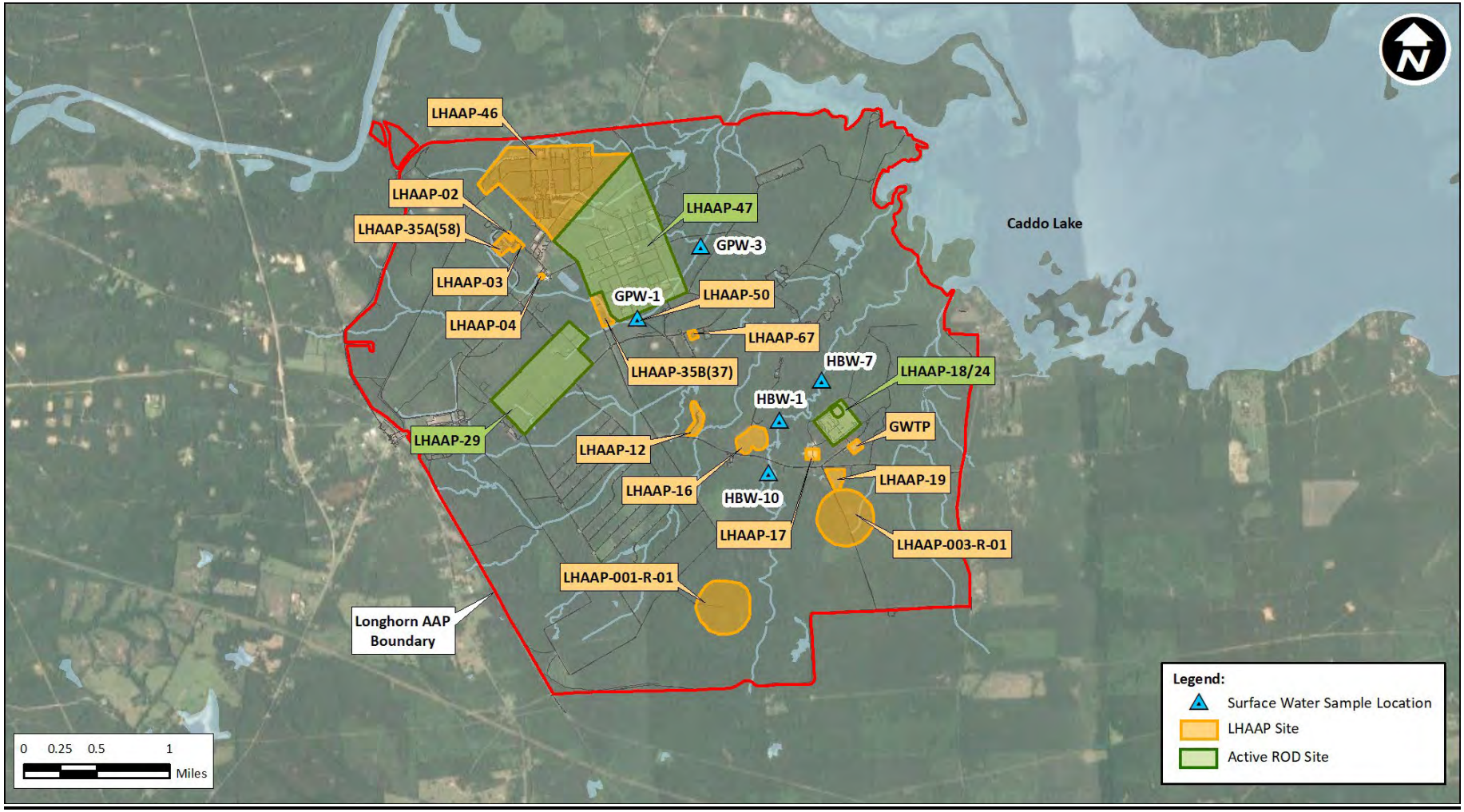
Quarter	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Creek Sample ID	Apr 2021	Jul 2021	Dec 2021	Mar 2022	Apr 2022	Aug 2022	Dec 2022	Jan 2023	May 2023	Jul-Nov 2023	Dec 2023
GPW-1	0.0268 J	0.154	0.0394 J	0.162	0.042 J	0.104	1.30	0.153	0.0286 J	Dry	0.0973 J
GPW-3	0.0321 J	0.122	0.0344 J	0.198	0.0384 J	0.132	0.938	0.137	<0.05 U	Dry	0.0382 J
HBW-1	0.0410 J	0.369	0.050 U	0.052 J	<0.05 U	0.0540 J	1.58	0.0568 J	<0.05 U	Dry	<0.05 U
HBW-7	0.0373 J	0.348	0.0359 J	10.4	0.0493 J	0.0880 J	0.125	0.133	<0.05 U	Dry	0.163
HBW-10	<0.05 U	0.207	0.0464 J	<0.05 U	<0.05 U	0.171	1.39	0.0654 J	<0.05 U	Dry	0.0546 J

U – non-detect J – Estimated Dry – no surface water ID- Identification



Note: Surface water at HBW-7 had a detection of 27 µg/L from a sample collected on 11 July 2019. Surface water at HBW-7 was resampled 19 days later (30 July 2019) with a detection of 1.2 J (estimated result) µg/L. GPW – Goose Prairie Creek sample location; HBW – Harrison Bayou sample location. GW Res – Groundwater residential limit; MSC – Medium Specific Concentration; PCL – Protective Concentration Level; µg/L – micrograms per liter. No surface water sampling was conducted in the 3rd Quarter 2023 due to dry conditions.

Longhorn Army Ammuntion Plant Creek Sampling Locations



Attachment B

Quality Control Summary Report

QUALITY CONTROL SUMMARY REPORT
2023 SURFACE WATER
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:





U.S. Army Corps of Engineers

Prepared By:

PCIbhate

11921 Freedom Drive, Suite 550
Reston, VA 20190
1-251-333-1127 • www.pcibhate.com

February 2024

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1.3.1 Continuing Calibration Verifications (CCV) 3
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1.5 Laboratory Control Sample(LCS)/Laboratory Control Sample Duplicate(LCSD) 4
1.6 Matrix Spike (MS)/Matrix Spike Duplicate Sample (MSD) 4
1.7 Internal Standards 4
1.8 Field Precision 4
2 DATA USABILITY SUMMARY 4

List of Tables

Table 1: Field Sample Identification and Laboratory Identification
Table 2: Qualified Analytical Data
Table 3: Completeness by Method

1 INTRODUCTION

The Poarch Creek Indians, LLC (PCI)/ Bhate Environmental Associates, Inc. (Bhate) Joint Venture (PBJV) reviewed three data packages from ALS Environmental, Houston, Texas. Quarterly surface water samples were collected on January 5th, May 26th and December 27th, 2023, at Goose Prairie Creek and Harrison Bayou at the Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas. The 3rd quarter sampling event was not conducted due to a lack of flow. Data were reviewed for conformance to the requirements of the following guidance documents: *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (USEPA, November 2020) and the *Final Basewide Uniform Federal Policy* [UFP] – *Quality Assurance Project Plan* [QAPP] *Longhorn Army Ammunition Plant* which is in Appendix C of the *Final Installation-Wide Work Plan for Longhorn Army Ammunition Plant Karnack, Texas* (Bhate, May 2018).

1.1 Intended Use of Data

Analyses requested included:

- SW6850 – Perchlorate

Table 1 lists the sample identification (ID) numbers and their associated laboratory ID numbers.

Table 2 lists qualified results with the associated quality control parameter that was exceeded.

1.2 Preservation and Holding Times

Sample ID data were evaluated for agreement with the chain-of-custody. All samples were received in appropriate containers, within the proper temperature range, in good condition, and with the required signatures.

1.3 Calibrations

Initial calibration acceptance criteria are specified in Worksheet 24 of the project-specific QAPP. For perchlorate, the methods criteria are a relative standard deviation (RSD) less than or equal to 20 percent (%) or a correlation coefficient (r^2) $\geq$ 0.99.

All calibrations met the method criteria.

1.3.1 Continuing Calibration Verifications (CCV)

The continuing calibration verification (CCV) acceptance criteria are specified in Worksheet 24 of the project-specific QAPP. For perchlorate, the methods criteria are if the CCV is outside $\pm$15% difference (%D) the lab will reanalyze all samples since last acceptable CCV. If reanalysis cannot be performed, all results for perchlorate in all samples since last acceptable CCV are qualified estimated concentration (J) or non-detect estimated concentration (UJ).

All CCVs were within the acceptance criteria.

1.4 Blanks

If the sample result for an associated sample was non-detect or less than 5X (10X for common laboratory contaminants) the analyte concentration in the blank, the corresponding sample result for the analyte was qualified non-detect due to blank contamination (UB). Where the sample result for the affected analyte was greater than 5X (10X) the amount in the blank, no qualifier was applied.

Perchlorate was not detected in the blanks.

1.5 Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD)

LCS/LCSD recoveries were evaluated using limits defined for each method in Worksheet 15 of the project-specific QAPP.

All LCS/LCSD recoveries were within the control limits.

1.6 Matrix Spike (MS)/Matrix Spike Duplicate Sample (MSD)

MS/MSD recoveries were evaluated using limits defined in Worksheet 15 of the project-specific QAPP. When sample results were greater than 4X the spike amount, control limits were not applicable and require no qualification. Furthermore, if a MS/MSD analyses was performed on a batched (unrelated) sample no qualification was made to the sample data.

The project MS/MSD recoveries were within the control limits.

1.7 Internal Standards

When the percent recovery for an internal standard in a sample is outside the laboratory limits, the associated sample is qualified for the analytes associated with the internal standard(s) outside of the acceptance criteria.

Internal standard recoveries were within the acceptance criteria.

1.8 Field Precision

Precision is the measure of variability of individual sample measurements. Evaluation of field duplicates for precision was done using the Relative Percent Difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. Field duplicate RPD limits were set at <30% for groundwater matrices.

The RPD between sample and duplicate were within control limits.

2 DATA USABILITY SUMMARY

The data are usable for the intended purposes of the project (see Table 3). The data quality objectives have been met for the project.

Table 1: Field Sample Identification and Laboratory Identification

Client Sample Identification	Laboratory Package	Perchlorate
HBW7_010523	E2300018	X
HBW10_010523		X
HBW10_010523_a		X
HBW1_010523_a		X
GPW1_010523		X
GPW3_010523		X
HBW7_052623	E2300516	X
HBW7_052623_a		X
HBW10_052623		X
HBW1_052623		X
GPW1_052623		X
GPW3_052623		X
HBW7_122723	E2301235	X
HBW10_122723		X
HBW10_122723_a		X
HBW1_122723		X
GPW1_122723		X
GPW3_122723		X

Notes:

SW-846 - Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, X – Sample analyzed for indicated parameter

Table 2: Qualified Analytical Data

Client Sample Identification	Laboratory Package	Analyte Name	Data Validation Qualifier	Reason for Qualification
No data were flagged.				

FD RPD – field duplicate relative percent difference outside control limits

Table 3: Completeness by Method

Analysis	No. of Rejected Results	% Completeness
Perchlorate	0	100

Attachment C

Laboratory Data Packages

January 16, 2023 Service Request No:E2300018

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd
Suite 129
Lakewood, CO 80228

Laboratory Results for: Quarterly Surface Water

Dear Marcia,

Enclosed are the results of the sample(s) submitted to our laboratory January 09, 2023
For your reference, these analyses have been assigned our service request number **E2300018.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2188. You may also contact me via email at James.Guin@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

James Guin

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
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www.alsglobal.com

ALS Environmental

Client:	Bhate Environmental Associates	**Service Request No.:**	E2300018
Project:	Quarterly Surface Water	**Date Received:**	01/09/23
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Six samples were received for analysis at ALS Environmental in Houston on 01/09/23.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2300013: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The MS/DMS were performed on an unrelated sample in the extraction batch. The results are not included in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: Bhate Environmental Associates, Inc. **Service Request:**E2300018
Project: Quarterly Surface Water/NWO1312.0150

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2300018-001	HBW7_010523	1/5/2023	0915
E2300018-002	HBW10_010523	1/5/2023	0927
E2300018-003	HBW10_010523_a	1/5/2023	0927
E2300018-004	HBW1_010523	1/5/2023	0947
E2300018-005	GPW1_010523	1/5/2023	0947
E2300018-006	GPW3_010523	1/5/2023	0955

Service Request Summary

Folder #: **E2300018**
Client Name: Bhate Environmental Associates, Inc.
Project Name: Quarterly Surface Water
Project Number: NWO1312.0150

Report To: Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd
Lakewood, CO 80228
USA
Phone Number: 303-597-2450
Cell Number:
Fax Number:
E-mail: molive@bhate.com

Project Chemist: James Guin
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 01/09/23
Internal Due Date: 1/23/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: 2878
EDD: BASIC_WQC_CASNo_LOD

6 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2300018-001	HBW7_010523	Water	01/05/23 0915	**IV**
E2300018-002	HBW10_010523	Water	01/05/23 0927	**IV**
E2300018-003	HBW10_010523_a	Water	01/05/23 0927	**IV**
E2300018-004	HBW1_010523	Water	01/05/23 0947	**IV**
E2300018-005	GPW1_010523	Water	01/05/23 0947	**IV**
E2300018-006	GPW3_010523	Water	01/05/23 0955	**IV**

Service Request Summary

Folder #: **E2300018**
Client Name: Bhate Environmental Associates, Inc.
Project Name: Quarterly Surface Water
Project Number: NWO1312.0150

Report To: Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd
Lakewood, CO 80228
USA
Phone Number: 303-597-2450
Cell Number:
Fax Number:
E-mail: molive@bhate.com

Project Chemist: James Guin
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 01/09/23
Internal Due Date: 1/23/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: 2878
EDD: BASIC_WQC_CASNo_LOD

6 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	6	IV DUE 1/30

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.

Data Qualifiers

Lab Standard

M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028-2023	12/31/2023
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2368363	12/31/2023
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Ecology	C819-22	11/14/2023

Chain of Custody

ALS Environmental - Houston HRMS
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Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

bhate ENVIRONMENTAL CONSTRUCTION ENERGY

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Page: ____ of ____

Project/Phase No: NWO1312.0150

COC Number(1): ____

LIMS Number: ____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Quarterly Surface Water Samples

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	ERPIMS LOCID (15 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Sample Analysis Requested (5): Number of containers	PERCHLORATE	Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
HBW7_010523		05 Jan 2023	09:15	-	N		WS	1	X				
HBW10_010523		05 Jan 2023	09:27	-	N		WS	1	X				
HBW10_010523_a		05 Jan 2023	09:27	-	FD		WS	1	X				
HBW1_010523		05 Jan 2023	09:37		N		WS	1	X				
GPW1_010523		05 Jan 2023	09:47		N		WS	1	X				
GPW3_010523		05 Jan 2023	09:55	-	N		WS	1	X				
				-									
				-									
				-									
				-									
				-									

Quality Assurance Samples (6)

COMMENTS:

Standard TAT 4.9° IRH

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Scott Beesinger	1/5/23	1430	[illegible]	1-6-23	0815
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: ____ Shipped No.:

____ Method of Shipment: ____

____ Fed Ex ____ Airbill Number:

____ Analytical Lab: ALS 10450 Stancliff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: SONIA WEST Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

ALS Environmental

Cooler Receipt Form

Project Chemist JH

Client/Project RHATE

Thermometer ID 11291

Date/Time Received: 1-9-23 Initials: CH Date/Time Logged in: 1-9-23 Initials CH

1. Method of delivery: ◯ US Mail ⊘ Fed Ex ◯ UPS ◯ DHL ◯ Courier ◯ Client

2. Samples received in: ⊘ Cooler ◯ Box ◯ Envelope ◯ Other

3. Were custody seals on coolers? ⊘ Yes ◯ No
   Were they intact? ⊘ Yes ◯ No ◯ N/A
   Were they signed and dated? ⊘ Yes ◯ No ◯ N/A
   If yes, how many and where? 1-F

4. Packing Material: ◯ Inserts ⊘ Baggies ⊘ Bubble Wrap ◯ Gel Packs ⊘ Wet Ice ◯ Sleeves ◯ Other

5. Foreign or Regulated Soil? ◯ Yes ◯ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
5360 5225 1695		1-9-23	0419	CH	4.4	☑
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ⊘ Yes ◯ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ⊘ Yes ◯ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ⊘ Yes ◯ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ⊘ Yes ◯ No
10. Did sample labels and tags agree with custody documents? ⊘ Yes ◯ No

Notes, Discrepancies, & Resolutions:

Service request Label:

HS-HRMSCoolerReceipt R1.0

ALS Environmental - Houston HRMS

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Houston, TX 77099
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www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 412967 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 1/12/23 09:19

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2300018-001	HBW7_010523	.01	6850/ClO4 DOD			Water	10mL	
2	E2300018-002	HBW10_010523	.01	6850/ClO4 DOD			Water	10mL	
3	E2300018-003	HBW10_010523_a	.01	6850/ClO4 DOD			Water	10mL	
4	E2300018-004	HBW1_010523	.01	6850/ClO4 DOD			Water	10mL	
5	E2300018-005	GPW1_010523	.01	6850/ClO4 DOD			Water	10mL	
6	E2300018-006	GPW3_010523	.01	6850/ClO4 DOD			Water	10mL	
7	E2300028-001	18CPTMW12SW_010923	.01	6850/ClO4 DOD			Water	10mL	
8	E2300028-002	18CPTMW12DW_010923	.01	6850/ClO4 DOD			Water	10mL	
9	E2300028-003	MW7_010923	.01	6850/ClO4 DOD			Water	10mL	
10	E2300028-004	MW8_010923	.01	6850/ClO4 DOD			Water	10mL	
11	E2300028-005	MW9_010923	.01	6850/ClO4 DOD			Water	10mL	
12	E2300028-006	MW10_010923	.01	6850/ClO4 DOD			Water	10mL	
13	E2300028-007	MW18_010923	.01	6850/ClO4 DOD			Water	10mL	
14	E2300028-008	CO9_010923	.01	6850/ClO4 DOD			Water	10mL	
15	E2300028-009	CO9_010923_a	.01	6850/ClO4 DOD			Water	10mL	
16	EQ2300013-01	MB		6850/ClO4 DOD			Liquid	10mL	
17	EQ2300013-02	LCS		6850/ClO4 DOD			Liquid	10mL	
18	EQ2300013-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
19	EQ2300013-04	MW18_010923 MS	.01	6850/ClO4 DOD			Liquid	10mL	
20	EQ2300013-05	MW18_010923 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 225386 Logbook Ref: Perchlorate (1st Source) Expires On: 01/31/2023

EQ2300013-02	1.00µL	EQ2300013-03	1.00µL	EQ2300013-04	1.00µL	EQ2300013-05	1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 226778 Logbook Ref: Perchlorate Internal Standard Expires On: 05/31/2023

E2300018-001	100.00µL	E2300018-002	100.00µL	E2300018-003	100.00µL	E2300018-004	100.00µL	E2300018-005	100.00µL	E2300018-006	100.00µL
E2300028-001	100.00µL	E2300028-002	100.00µL	E2300028-003	100.00µL	E2300028-004	100.00µL	E2300028-005	100.00µL	E2300028-006	100.00µL
E2300028-007	100.00µL	E2300028-008	100.00µL	E2300028-009	100.00µL	EQ2300013-01	100.00µL	EQ2300013-02	100.00µL	EQ2300013-03	100.00µL
EQ2300013-04	100.00µL	EQ2300013-05	100.00µL								

Preparation Materials

Water HPLC Grade	01/04/2023 Water (226857)	6850 Amber Glass screw vial	2mL Screw Top Vial (221308)	6850 0.45um syringe filters	6850 Syringe Filters (224414)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221307)		

Preparation Information Benchsheet

Prep Run#: 412967
Team: Semivoa GCMS/XMI

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 1/12/23 09:19

Preparation Steps

Step: Preparation
Started: 1/12/23 09:19
Finished: 1/12/23 15:00
By: XMI
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300018
Project:	Quarterly Surface Water/NWO1312.0150	**Date Collected:**	1/ 5/23 0915
Sample Matrix:	Water	**Date Received:**	1/ 9/23
Sample Name:	HBW7_010523	**Units:**	µg/L
Lab Code:	E2300018-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.133**		0.100	0.0500	0.0250	1	1/12/23	1/16/23 09:35	412967	791553	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300018
Project:	Quarterly Surface Water/NWO1312.0150	**Date Collected:**	1/ 5/23 0927
Sample Matrix:	Water	**Date Received:**	1/ 9/23
Sample Name:	HBW10_010523	**Units:**	µg/L
Lab Code:	E2300018-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0594**	J	0.100	0.0500	0.0250	1	1/12/23	1/16/23 09:40	412967	791553	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300018
Project:	Quarterly Surface Water/NWO1312.0150	**Date Collected:**	1/ 5/23 0927
Sample Matrix:	Water	**Date Received:**	1/ 9/23
Sample Name:	HBW10_010523_a	**Units:**	µg/L
Lab Code:	E2300018-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0654**	J	0.100	0.0500	0.0250	1	1/12/23	1/16/23 09:46	412967	791553	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300018
Project:	Quarterly Surface Water/NWO1312.0150	**Date Collected:**	1/ 5/23 0947
Sample Matrix:	Water	**Date Received:**	1/ 9/23
Sample Name:	HBW1_010523	**Units:**	µg/L
Lab Code:	E2300018-004	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0568**	J	0.100	0.0500	0.0250	1	1/12/23	1/16/23 09:52	412967	791553	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300018
Project:	Quarterly Surface Water/NWO1312.0150	**Date Collected:**	1/ 5/23 0947
Sample Matrix:	Water	**Date Received:**	1/ 9/23
Sample Name:	GPW1_010523	**Units:**	µg/L
Lab Code:	E2300018-005	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.153**		0.100	0.0500	0.0250	1	1/12/23	1/16/23 09:57	412967	791553	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300018
Project:	Quarterly Surface Water/NWO1312.0150	**Date Collected:**	1/ 5/23 0955
Sample Matrix:	Water	**Date Received:**	1/ 9/23
Sample Name:	GPW3_010523	**Units:**	µg/L
Lab Code:	E2300018-006	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.137**		0.100	0.0500	0.0250	1	1/12/23	1/16/23 10:03	412967	791553	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300018
Project:	Quarterly Surface Water/NWO1312.0150	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2300013-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	1/12/23	1/16/23 09:17	412967	791553	

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300018
Project:	Quarterly Surface Water/NWO1312.0150	**Date Analyzed:**	1/16/23
Sample Matrix:	Water		

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	412967

	Lab Control Sample EQ2300013-02			Duplicate Lab Control Sample EQ2300013-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0994	0.100	99	0.0965	0.100	97	84 - 119	3	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300018
Project:	Quarterly Surface Water/NWO1312.0150	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300013-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0994**	J	0.100	0.0500	0.0250	1	1/12/23	1/16/23 09:23	412967	791553	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300018
Project:	Quarterly Surface Water/NWO1312.0150	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300013-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0965**	J	0.100	0.0500	0.0250	1	1/12/23	1/16/23 09:29	412967	791553	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
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20221214

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XMI
2nd Review: Kneir

ICAL Date: 12/14/2022
Cal. Std. xp: 01/31/2023
ICAL ID: EC2200016

Mobile Phases : **A:**0.10% Formic Acid/Water 3210301-08 **B:**MeOH 224417

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	IB		20221214_001	Perchlorate6850c.lcm	1x	☒		12/14/2022 15:12
2	ICS		20221214_002	Perchlorate6850c.lcm	1x	☒		12/14/2022 15:29
3	LODV		20221214_003	Perchlorate6850c.lcm	1x	☒		12/14/2022 15:35
4	PERCHLORATE1		20221214_004	Perchlorate6850c.lcm	1x	☒	226061	12/14/2022 15:40
5	PERCHLORATE2		20221214_005	Perchlorate6850c.lcm	1x	☒	226062	12/14/2022 15:46
6	PERCHLORATE3		20221214_006	Perchlorate6850c.lcm	1x	☒	226063	12/14/2022 15:51
7	PERCHLORATE4		20221214_007	Perchlorate6850c.lcm	1x	☒	226064	12/14/2022 15:57
8	PERCHLORATE5		20221214_008	Perchlorate6850c.lcm	1x	☒	226065	12/14/2022 16:02
9	PERCHLORATE6		20221214_009	Perchlorate6850c.lcm	1x	☒	226066	12/14/2022 16:09
10	PERCHLORATE7		20221214_010	Perchlorate6850c.lcm	1x	☒	225881	12/14/2022 16:15
11	PERCHLORATE8		20221214_011	Perchlorate6850c.lcm	1x	☒	226068	12/14/2022 16:20
12	PERCHLORATE9		20221214_012	Perchlorate6850c.lcm	1x	☒	226069	12/14/2022 16:25
13	PERCHLORATE10		20221214_013	Perchlorate6850c.lcm	1x	☒	226070	12/14/2022 16:31
14	PERCHLORATEICV		20221214_014	Perchlorate6850c.lcm	1x	☒	226067	12/14/2022 16:37

Initial Calibration - Detailed Report

Calibration ID: EC2200016 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2200016-01	PERCHLORATE1	20221214_004	12/14/2022 15:40
02	EC2200016-02	PERCHLORATE2	20221214_005	12/14/2022 15:46
03	EC2200016-03	PERCHLORATE3	20221214_006	12/14/2022 15:51
04	EC2200016-04	PERCHLORATE4	20221214_007	12/14/2022 15:57
05	EC2200016-05	PERCHLORATE5	20221214_008	12/14/2022 16:02
06	EC2200016-06	PERCHLORATE6	20221214_009	12/14/2022 16:09
07	EC2200016-07	PERCHLORATE7	20221214_010	12/14/2022 16:15
08	EC2200016-08	PERCHLORATE8	20221214_011	12/14/2022 16:20
09	EC2200016-09	PERCHLORATE9	20221214_012	12/14/2022 16:25
10	EC2200016-10	PERCHLORATE10	20221214_013	12/14/2022 16:31

Analyte **Curve Fit** **Weighting**

Perchlorate **Average RF** **RSD = 2.927** **Average RF = 0.1567**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1615	02	0.5000	0.1479	03	0.7000	0.1579	04	1.0000	0.1573
05	2.0000	0.1505	06	5.0000	0.1573	07	10.0000	0.1541	08	20.0000	0.162
09	30.0000	0.1598	10	50.0000	0.1587						

Analyte

Perchlorate RSE = 2.93

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.103	3.1	02	0.5000	0.472	-5.6	03	0.7000	0.705	0.8
04	1.0000	1.00	0.4	05	2.0000	1.92	-3.9	06	5.0000	5.02	0.4
07	10.0000	9.83	-1.7	08	20.0000	20.7	3.4	09	30.0000	30.6	2.0
10	50.0000	50.6	1.3								

Initial Calibration Verification Summary Report

Calibration ID:	EC2200016	**Instrument ID:**	E-LCMS-01
Datafile ID:	20221214_014	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2200016-11	T	Average RF	10	9.359	ng/mL	-6.4	<= 15

Insight Report

Printed at 12/15/2022 10:55:51 AM

Method File: I:\LCMS01\DATA\20221013ICAL\20221013ICAL.lcm
Project File: I:\LCMS01\DATA\20221214\12142022 ICAL.damlp

PERCHLORATE1

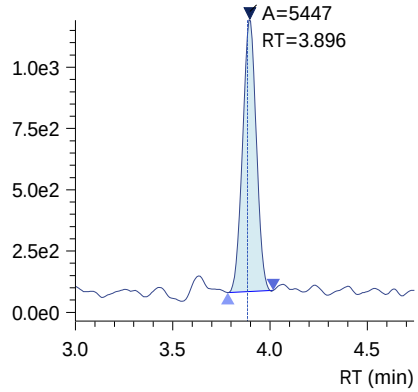
Sample ID: PERCHLORATE1
Date Acquired: 12/14/2022 3:40:29 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_004.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.896	5447	337240	0.1031	ng/mL	101.00 >85.00	35.31	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.889	337240	337240	1.0000	ng/mL	----	----	

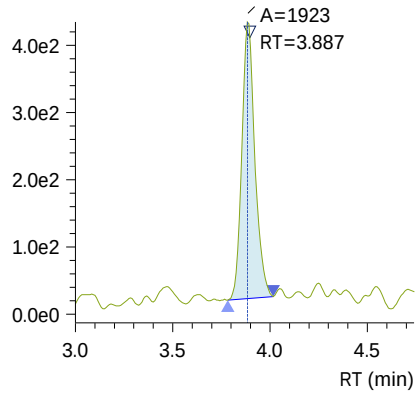
Perchlorate

Conc 0.1031
R#1 35.31 (34.02)

Q 99.00>83.00 (-) 1.19e3



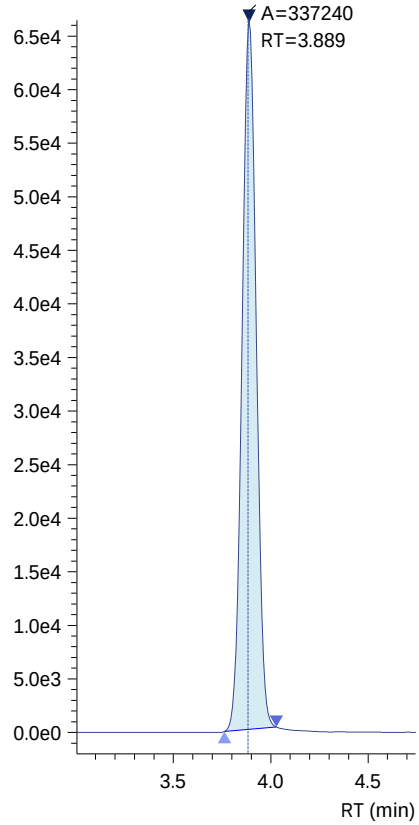
R1 101.00>85.00 (-) 4.35e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.65e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

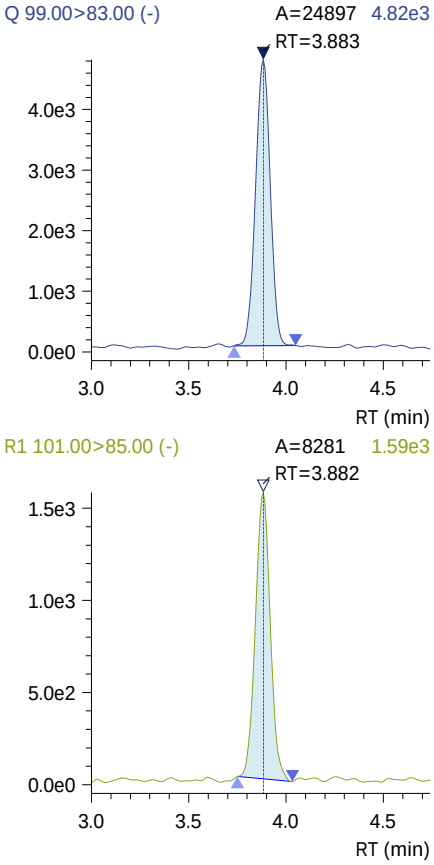
PERCHLORATE2

Sample ID: PERCHLORATE2
Date Acquired: 12/14/2022 3:46:03 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_005.lcd
Vial: 2 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.883	24897	336620	0.4720	ng/mL	101.00 >85.00	33.26	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.878	336620	336620	1.0000	ng/mL	----	----	

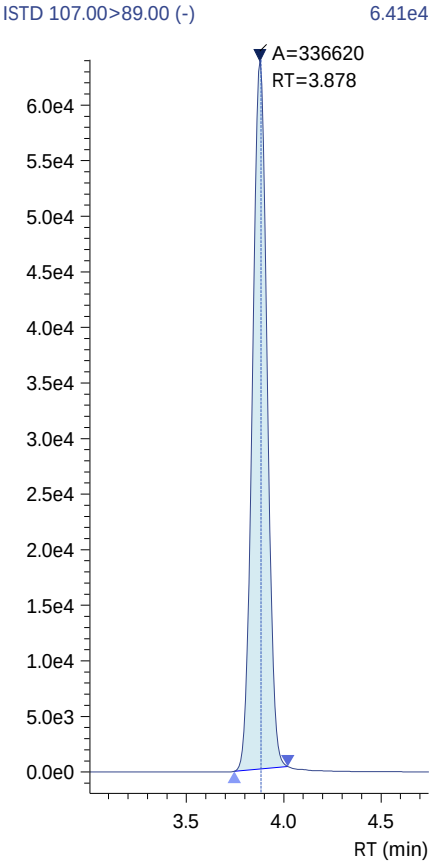
Perchlorate

Conc 0.4720
R#1 33.26 (34.02)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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PERCHLORATE3

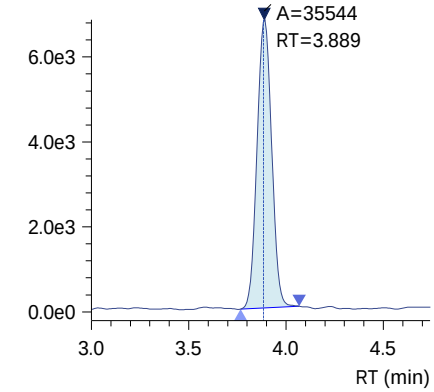
Sample ID: PERCHLORATE3
Date Acquired: 12/14/2022 3:51:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_006.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.889	35544	321596	0.7053	ng/mL	101.00 >85.00	35.09	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.885	321596	321596	1.0000	ng/mL	----	----	

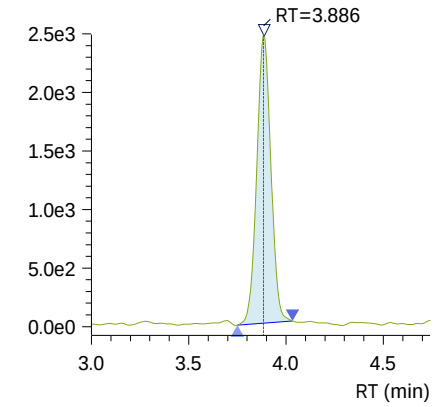
Perchlorate

Conc 0.7053
R#1 35.09 (34.02)

Q 99.00>83.00 (-) 6.88e3



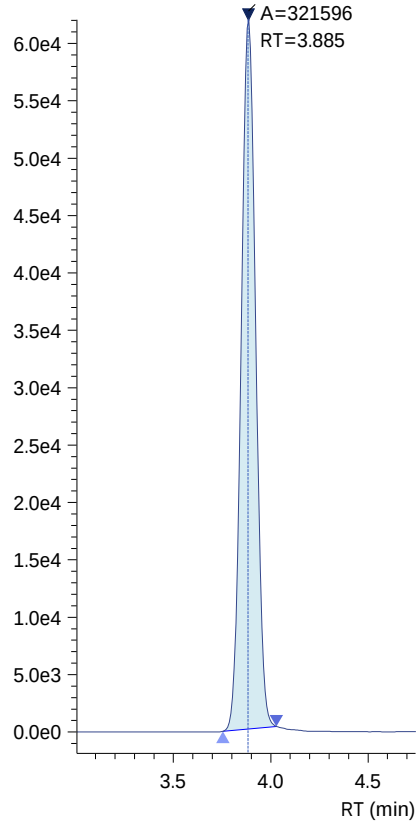
R1 101.00>85.00 (-) A=12471 2.50e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.21e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE4

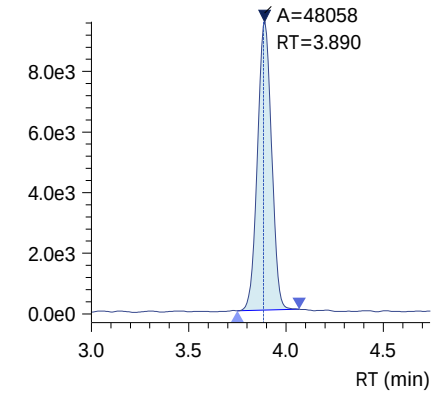
Sample ID: PERCHLORATE4
Date Acquired: 12/14/2022 3:57:06 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_007.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.890	48058	305584	1.0036	ng/mL	101.00 >85.00	33.87	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.886	305584	305584	1.0000	ng/mL	----	----	

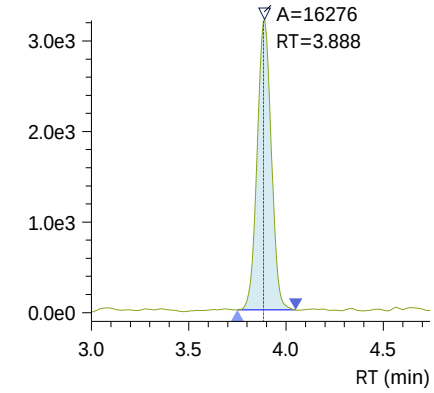
Perchlorate

Conc 1.0036
R#1 33.87 (34.02)

Q 99.00>83.00 (-) 9.64e3



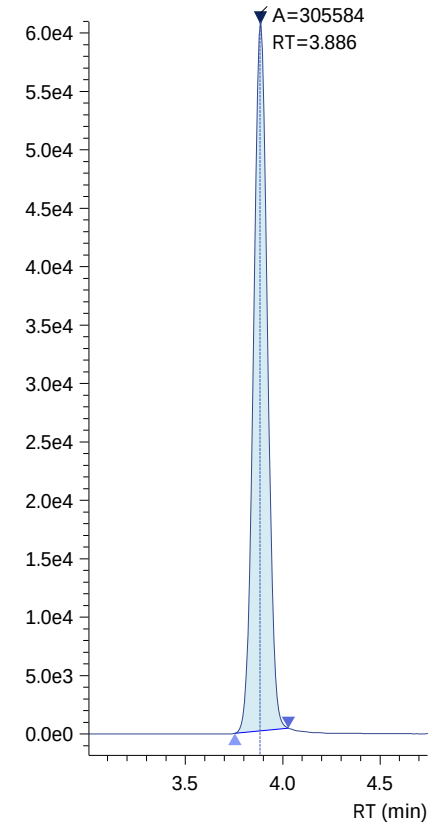
R1 101.00>85.00 (-) 3.23e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.10e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE5

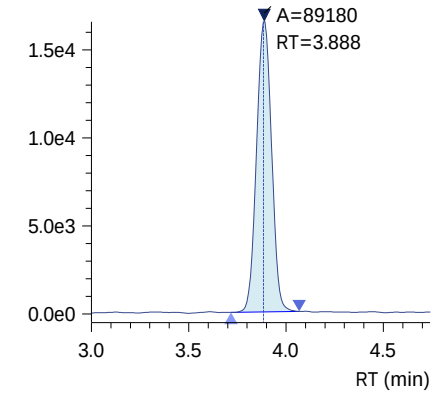
Sample ID: PERCHLORATE5
Date Acquired: 12/14/2022 4:02:38 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_008.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.888	89180	296200	1.9213	ng/mL	101.00 >85.00	32.32	23.94 -44.46
Sodium Perchlorate-18O4 _IS	Auto	3.885	296200	296200	1.0000	ng/mL	----	----	

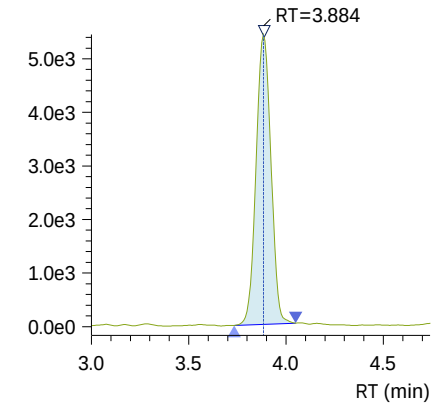
Perchlorate

Conc 1.9213
R#1 32.32 (34.02)

Q 99.00>83.00 (-) 1.66e4



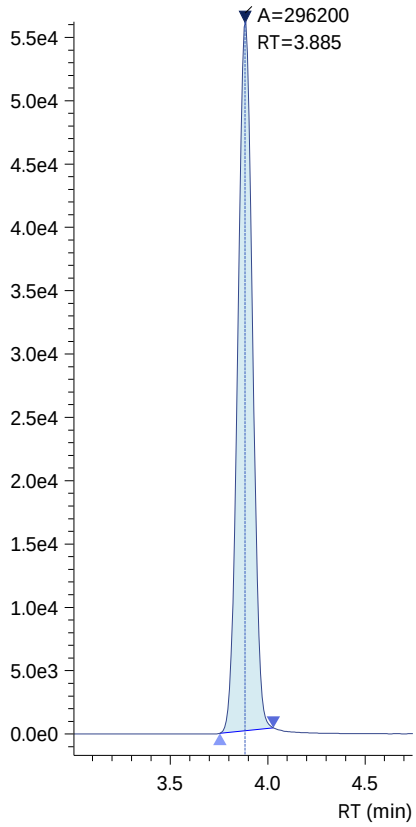
R1 101.00>85.00 (-) A=28822 5.45e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 5.62e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE6

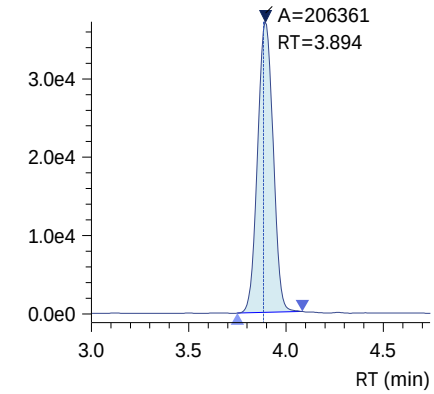
Sample ID: PERCHLORATE6
Date Acquired: 12/14/2022 4:09:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_009.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.894	206361	262312	5.0202	ng/mL	101.00 >85.00	33.93	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.889	262312	262312	1.0000	ng/mL	----	----	

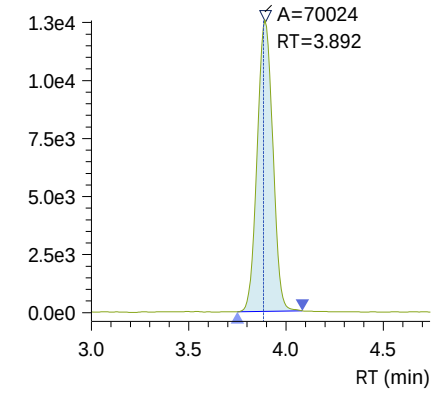
Perchlorate

Conc 5.0202
R#1 33.93 (34.02)

Q 99.00>83.00 (-) 3.73e4



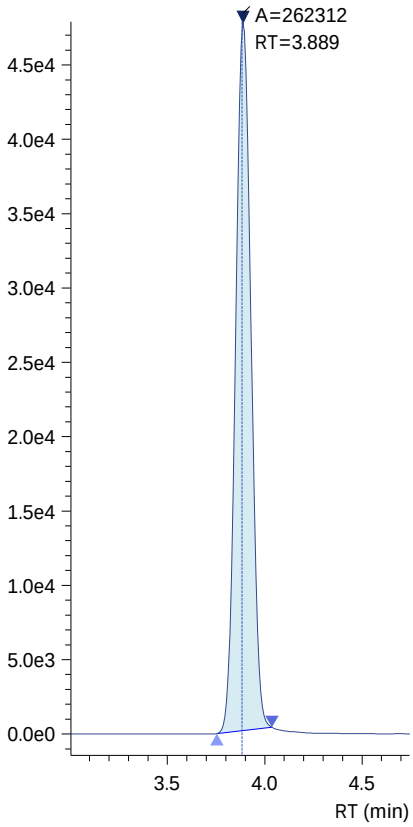
R1 101.00>85.00 (-) 1.26e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.79e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE7

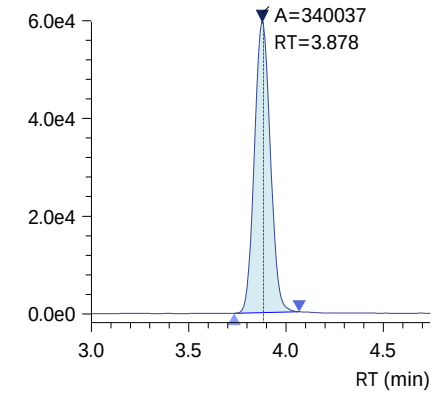
Sample ID: PERCHLORATE7
Date Acquired: 12/14/2022 4:15:00 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_010.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.878	340037	220702	9.8317	ng/mL	101.00 >85.00	34.05	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.875	220702	220702	1.0000	ng/mL	----	----	

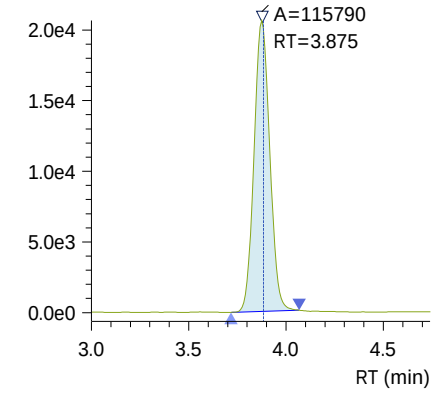
Perchlorate

Conc 9.8317
R#1 34.05 (34.02)

Q 99.00>83.00 (-) 5.98e4



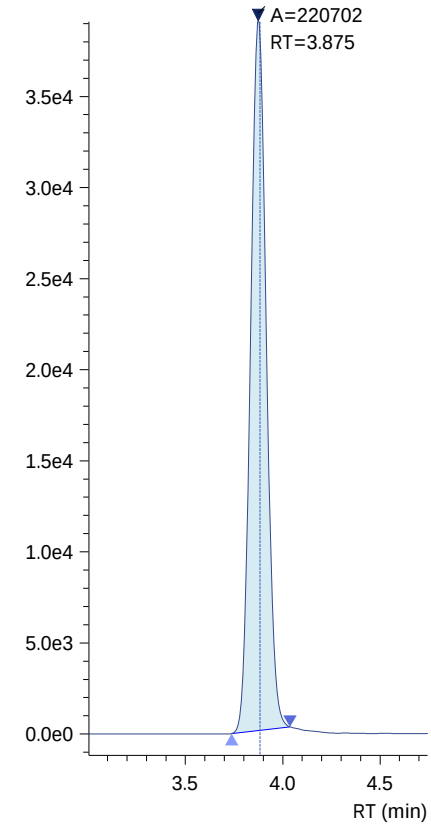
R1 101.00>85.00 (-) 2.07e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.91e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE8

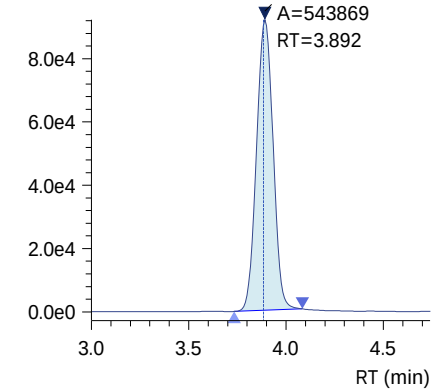
Sample ID: PERCHLORATE8
Date Acquired: 12/14/2022 4:20:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_011.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.892	543869	167819	20.6806	ng/mL	101.00 >85.00	33.45	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.888	167819	167819	1.0000	ng/mL	----	----	

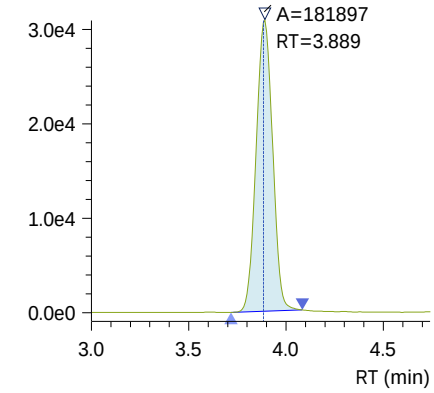
Perchlorate

Conc 20.6806
R#1 33.45 (34.02)

Q 99.00>83.00 (-) 9.23e4



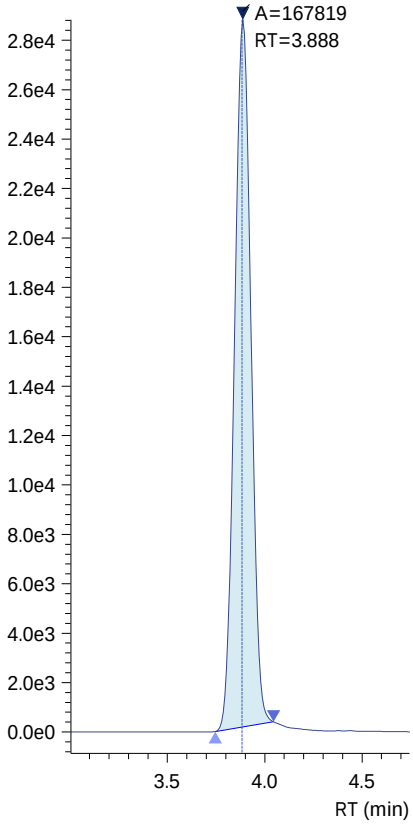
R1 101.00>85.00 (-) 3.09e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.88e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE9

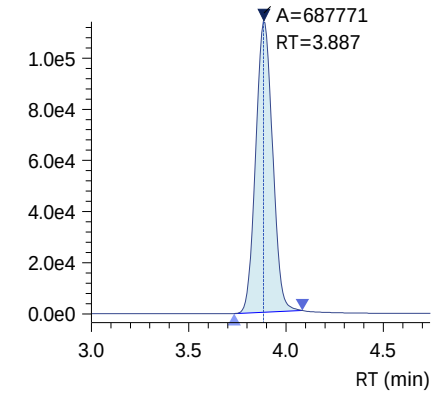
Sample ID: PERCHLORATE9
Date Acquired: 12/14/2022 4:25:58 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_012.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.887	6877 71	143493	30.5 860	ng/mL	101.00 >85.00	33.79	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.883	1434 93	143493	1.0000	ng/mL	----	----	

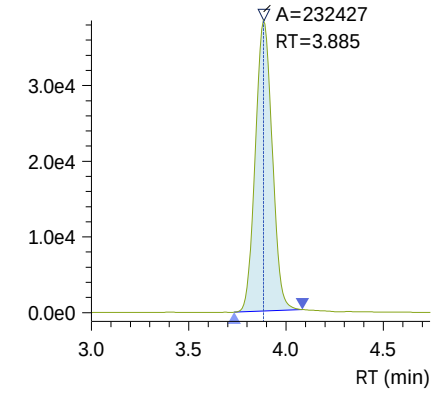
Perchlorate

Conc 30.5860
R#1 33.79 (34.02)

Q 99.00>83.00 (-) 1.14e5



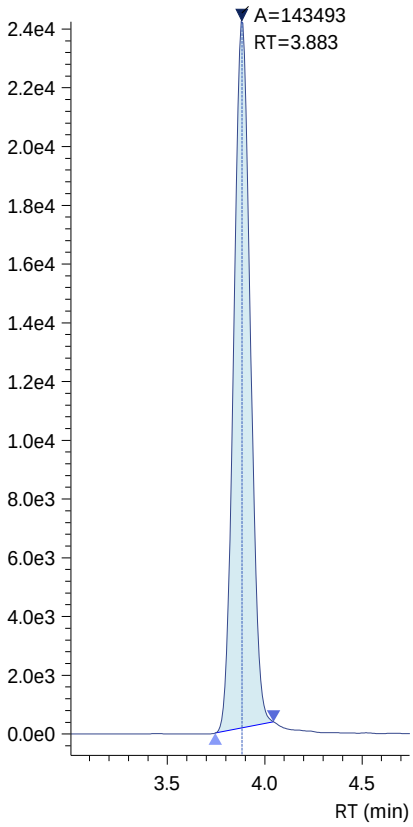
R1 101.00>85.00 (-) 3.86e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.43e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE10

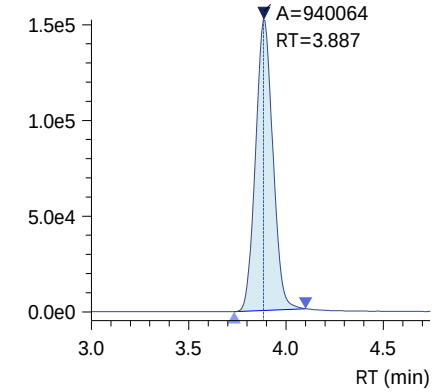
Sample ID: PERCHLORATE10
Date Acquired: 12/14/2022 4:31:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_013.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.887	9400 64	118445	50.6 464	ng/mL	101.00 >85.00	33.39	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.883	1184 45	118445	1.0000	ng/mL	----	----	

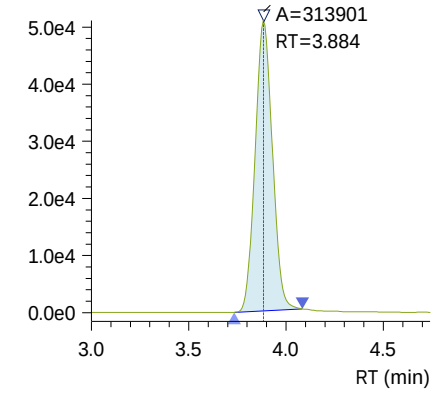
Perchlorate

Conc 50.6464
R#1 33.39 (34.02)

Q 99.00>83.00 (-) 1.53e5



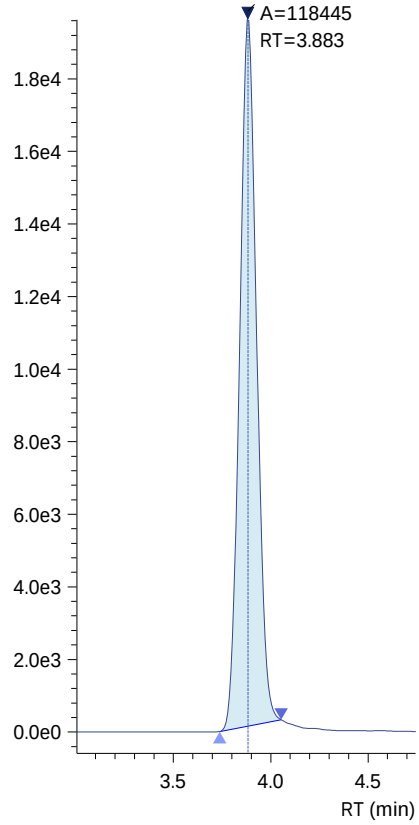
R1 101.00>85.00 (-) 5.12e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 1.96e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATEICV

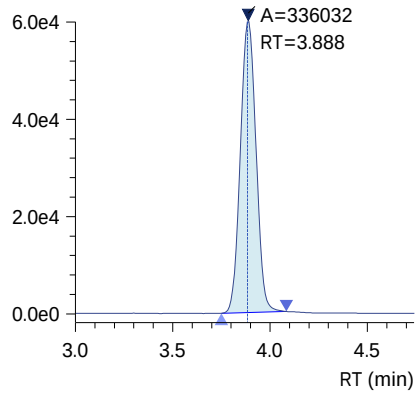
Sample ID: PERCHLORATEICV
Date Acquired: 12/14/2022 4:37:01 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_014.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.888	3360 32	229124	9.3588	ng/mL	101.00 >85.00	33.58	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.884	2291 24	229124	1.0000	ng/mL	----	----	

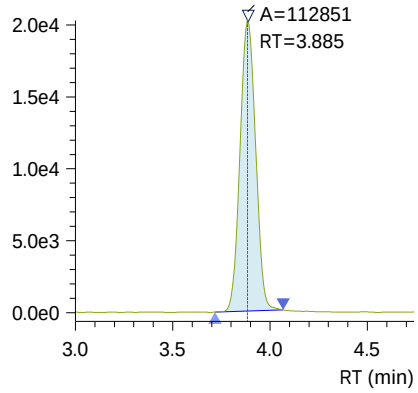
Perchlorate

Conc 9.3588
R#1 33.58 (34.02)

Q 99.00>83.00 (-) 6.01e4



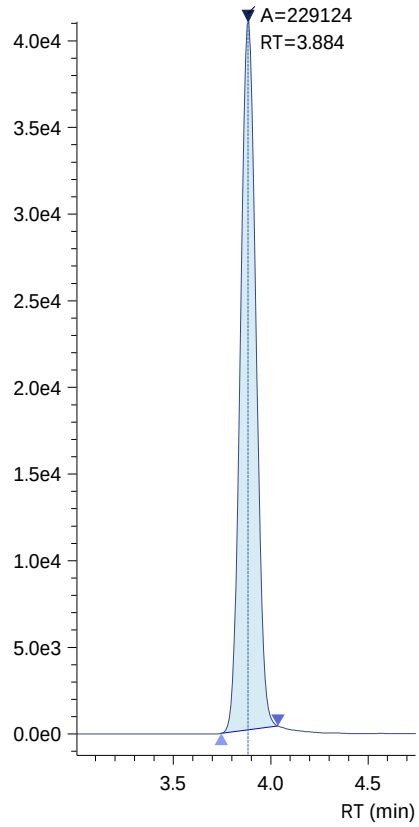
R1 101.00>85.00 (-) 2.03e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.11e4



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20230116

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XMI
2nd Review: Kneir

ICAL Date: 12/14/2022
Cal. Std. xp: 01/31/2023
ICAL ID: EC2200016

Mobile Phases : A:0.10% Formic Acid/Water 3210302-05 **B:**MeOH 224417

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	LODV		20230116-001	Perchlorate6850c.lcm	1x	☒	225199	1/16/2023 9:00
2	ICS		20230116-002	Perchlorate6850c.lcm	1x	☒	32103024	1/16/2023 9:06
3	PERCHLORATE7		20230116-003	Perchlorate6850c.lcm	1x	☒	226067	1/16/2023 9:12
4	EQ2300013-01		20230116-004	Perchlorate6850c.lcm	1x	☒		1/16/2023 9:17
5	EQ2300013-02		20230116-005	Perchlorate6850c.lcm	1x	☒		1/16/2023 9:23
6	EQ2300013-03		20230116-006	Perchlorate6850c.lcm	1x	☒		1/16/2023 9:29
7	E2300018-001		20230116-007	Perchlorate6850c.lcm	1x	☒		1/16/2023 9:35
8	E2300018-002		20230116-008	Perchlorate6850c.lcm	1x	☒		1/16/2023 9:40
9	E2300018-003		20230116-009	Perchlorate6850c.lcm	1x	☒		1/16/2023 9:46
10	E2300018-004		20230116-010	Perchlorate6850c.lcm	1x	☒		1/16/2023 9:52
11	E2300018-005		20230116-011	Perchlorate6850c.lcm	1x	☒		1/16/2023 9:57
12	E2300018-006		20230116-012	Perchlorate6850c.lcm	1x	☒		1/16/2023 10:03
13	E2300028-001		20230116-013	Perchlorate6850c.lcm	1x	☒		1/16/2023 10:09
14	PERCHLORATE7		20230116-014	Perchlorate6850c.lcm	1x	☒	226067	1/16/2023 10:14
15	E2300028-002		20230116-015	Perchlorate6850c.lcm	1x	☒		1/16/2023 10:20
16	E2300028-003		20230116-016	Perchlorate6850c.lcm	1000x	☒		1/16/2023 10:26
17	E2300028-004		20230116-017	Perchlorate6850c.lcm	200x	☒		1/16/2023 10:32
18	E2300028-005		20230116-018	Perchlorate6850c.lcm	100x	☒		1/16/2023 10:37
19	E2300028-006		20230116-019	Perchlorate6850c.lcm	1x	☒		1/16/2023 10:43
20	E2300028-008		20230116-020	Perchlorate6850c.lcm	1x	☒		1/16/2023 11:06
21	E2300028-009		20230116-021	Perchlorate6850c.lcm	1x	☒	DNU-IS	1/16/2023 11:11
22	E2300028-007		20230116-022	Perchlorate6850c.lcm	1x	☒		1/16/2023 11:25
23	EQ2300013-04		20230116-023	Perchlorate6850c.lcm	1x	☒		1/16/2023 11:30
24	EQ2300013-05		20230116-024	Perchlorate6850c.lcm	1x	☒		1/16/2023 11:36
25	PERCHLORATE7		20230116-025	Perchlorate6850c.lcm	1x	☒	226067	1/16/2023 11:53
26	E2300028-009		20230116-026	Perchlorate6850c.lcm	10x	☒	DNU-Reporting 4x	1/16/2023 15:47
27	E2300028-009		20230116-027	Perchlorate6850c.lcm	4x	☒	analyzed at 4x due to sample matrix	1/16/2023 16:06
28	PERCHLORATE7		20230116-028	Perchlorate6850c.lcm	1x	☒	226067	1/16/2023 16:12

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300018
Project:	Quarterly Surface Water/NWO1312.0150	**Date Analyzed:**	1/16/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	12/14/22
File ID:	I:\LCMS01\DATA\20230116\20230116-003	**Calibration ID:**	EC2200016
		Analysis Lot:	791553
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.03	0.1567	0.1414	-9.7	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300018
Project:	Quarterly Surface Water/NWO1312.0150	**Date Analyzed:**	1/16/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	12/14/22
File ID:	I:\LCMS01\DATA\20230116\20230116-014	**Calibration ID:**	EC2200016
		Analysis Lot:	791553
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.00	0.1567	0.1411	-10.0	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300018
Project:	Quarterly Surface Water/NWO1312.0150	**Date Analyzed:**	1/16/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	12/14/22
File ID:	I:\LCMS01\DATA\20230116\20230116-025	**Calibration ID:**	EC2200016
		Analysis Lot:	791553
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	8.55	0.1567	0.1340	-14.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300018
Project:	Quarterly Surface Water/NWO1312.0150	**Date Analyzed:**	1/16/23 09:12

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230116\20230116-003	**Lab Code:**	EQ2300016-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	791553
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2300016-01	225,748	4.10
Method Blank	EQ2300013-01	331,038	4.11
Lab Control Sample	EQ2300013-02	316,977	4.11
Duplicate Lab Control Sample	EQ2300013-03	324,274	4.11
HBW7_010523	E2300018-001	339,342	4.09
HBW10_010523	E2300018-002	329,129	4.09
HBW10_010523_a	E2300018-003	328,948	4.09
HBW1_010523	E2300018-004	324,545	4.08
GPW1_010523	E2300018-005	322,556	4.10
GPW3_010523	E2300018-006	323,091	4.10

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300018
Project:	Quarterly Surface Water/NWO1312.0150	**Date Analyzed:**	1/16/23 10:14

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230116\20230116-014	**Lab Code:**	EQ2300016-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	791553
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2300016-02	218,347	4.09

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300018
Project:	Quarterly Surface Water/NWO1312.0150	**Date Analyzed:**	1/16/23 11:53

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230116\20230116-025	**Lab Code:**	EQ2300016-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	791553
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2300016-03	192,045	4.09

Results flagged with an asterisk (*) indicate values outside control criteria.

Insight Report

Printed at 1/17/2023 9:20:01 AM

Method File: I:\LCMS01\DATA\20230116\20230116.lcm
Project File: I:\LCMS01\DATA\20230116\202230116.damlp

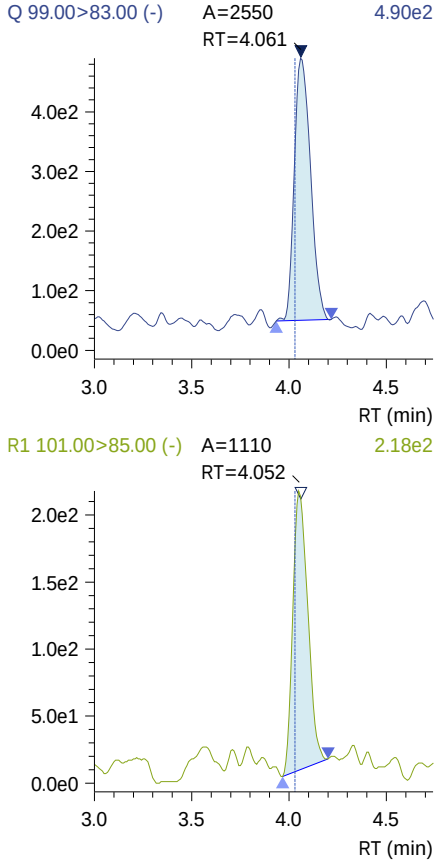
LODV

Sample ID: LODV
Date Acquired: 1/16/2023 9:00:48 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230116\20230116-001.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	4.061	2550	334207	0.0487	ng/mL	101.00 >85.00	43.52	24.11 -44.78
Sodium Perchlorate-18O4_IS	Auto	4.060	334207	334207	1.0000	ng/mL	----	----	

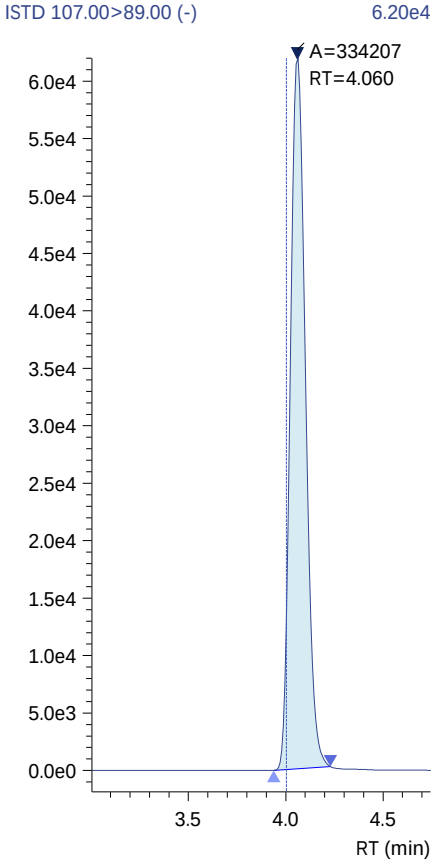
Perchlorate

Conc 0.0487
R#1 43.52 (34.45)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 1/17/2023 9:20:01 AM

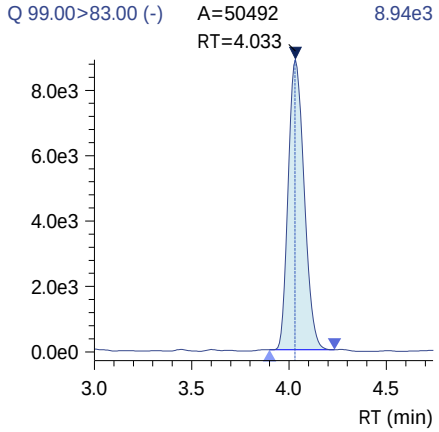
ICS

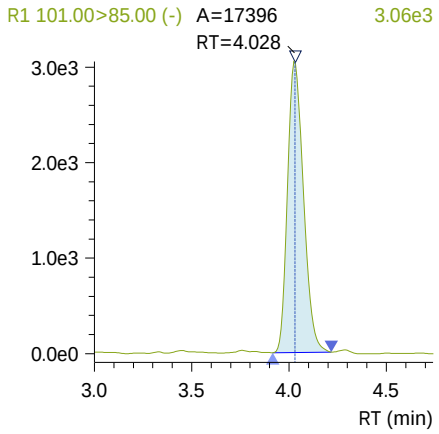
Sample ID: ICS
Date Acquired: 1/16/2023 9:06:33 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230116\20230116-002.lcd
Vial: 2 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	4.033	50492	327224	0.9847	ng/mL	101.00 >85.00	34.45	24.11 -44.78
Sodium Perchlorate-18O4 _IS	Auto	4.029	3272 24	327224	1.0000	ng/mL	----	----	

Perchlorate

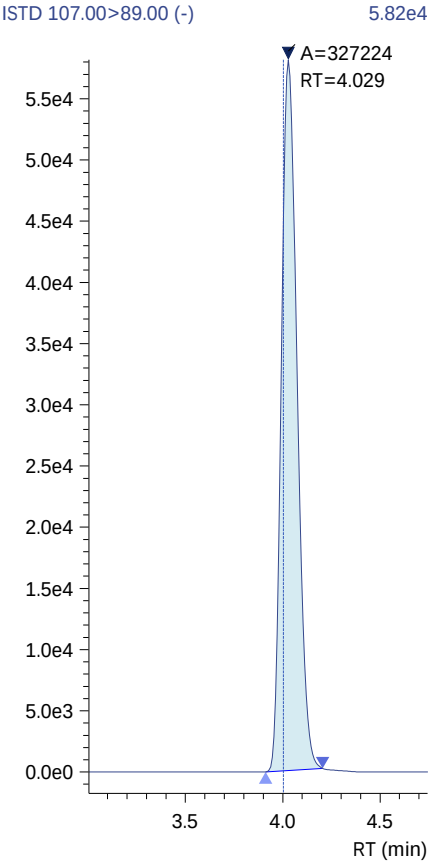
Conc 0.9847
R#1 34.45 (34.45)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 1/17/2023 9:20:01 AM

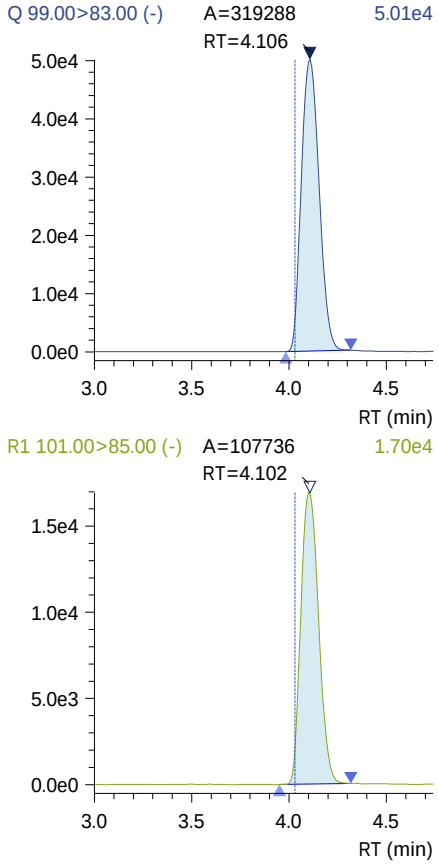
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 1/16/2023 9:12:14 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230116\20230116-003.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	4.106	319288	225748	9.0254	ng/mL	101.00 >85.00	33.74	24.11 -44.78
Sodium Perchlorate-18O4_IS	Auto	4.098	225748	225748	1.0000	ng/mL	----	----	

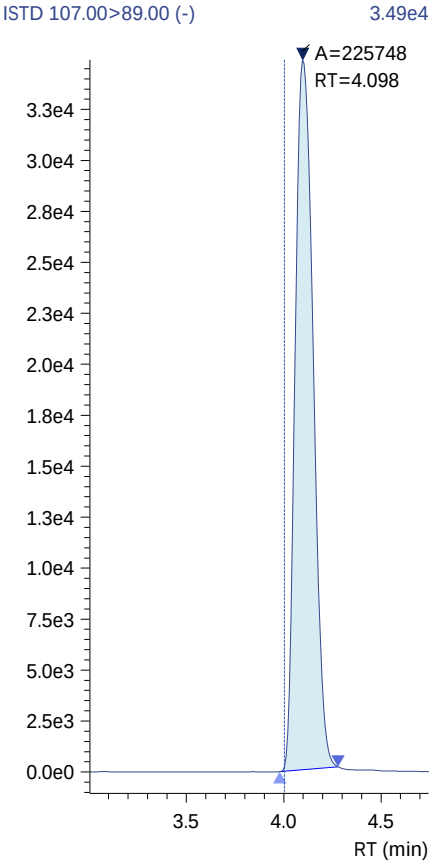
Perchlorate

Conc 9.0254
R#1 33.74 (34.45)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 1/17/2023 9:20:01 AM

EQ2300013-01

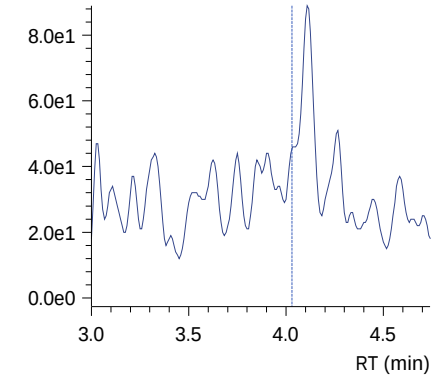
Sample ID: EQ2300013-01
Date Acquired: 1/16/2023 9:17:54 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230116\20230116-004.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	331038	----	ng/mL	101.00 >85.00	0.00	24.11 -44.78
Sodium Perchlorate-18O4_IS	Auto	4.108	331038	331038	1.0000	ng/mL	----	----	

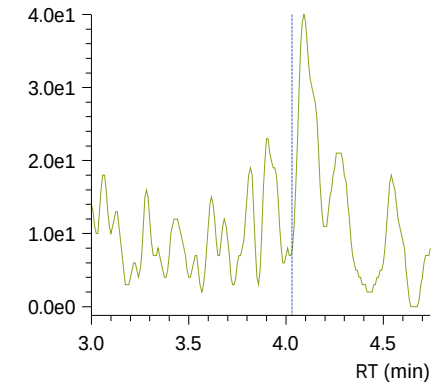
Perchlorate

Conc ----
R#1 0.00 (34.45)

Q 99.00>83.00 (-) 8.90e1



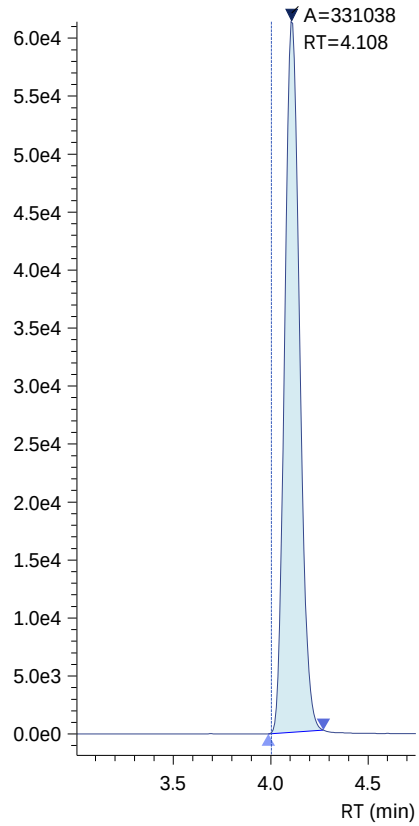
R1 101.00>85.00 (-) 4.00e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.14e4



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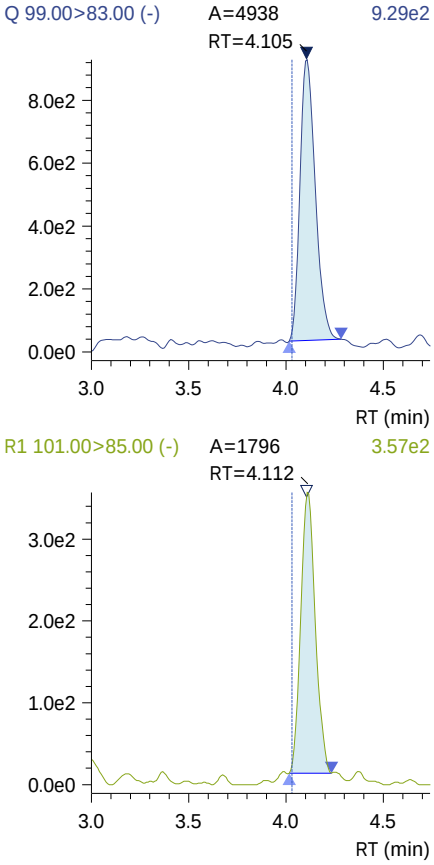
EQ2300013-02

Sample ID: EQ2300013-02
Date Acquired: 1/16/2023 9:23:38 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230116\20230116-005.lcd
Vial: 2 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	4.105	4938	316977	0.0994	ng/mL	101.00 >85.00	36.38	24.11 -44.78
Sodium Perchlorate-18O4_IS	Auto	4.108	3169 77	316977	1.0000	ng/mL	----	----	

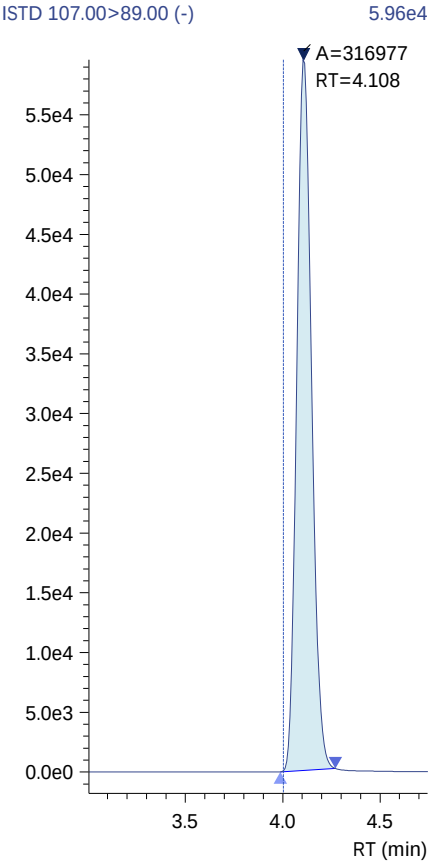
Perchlorate

Conc 0.0994
R#1 36.38 (34.45)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 1/17/2023 9:20:01 AM

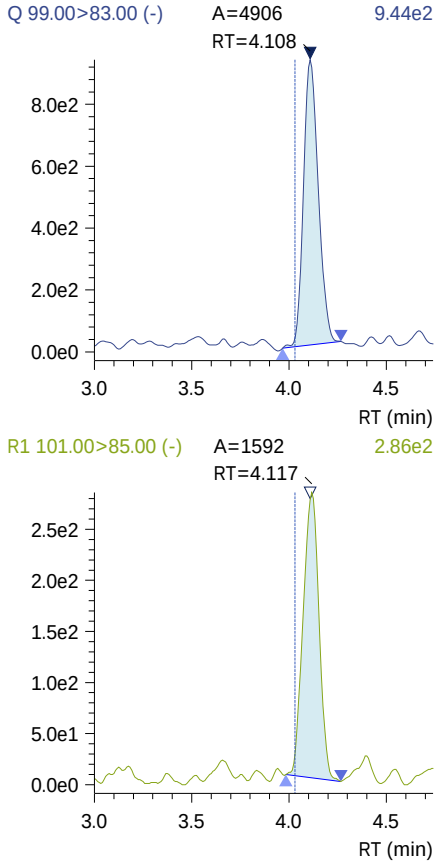
EQ2300013-03

Sample ID: EQ2300013-03
Date Acquired: 1/16/2023 9:29:22 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230116\20230116-006.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	4.108	4906	324274	0.0965	ng/mL	101.00 >85.00	32.46	24.11 -44.78
Sodium Perchlorate-18O4 _IS	Auto	4.108	3242 74	324274	1.0000	ng/mL	----	----	

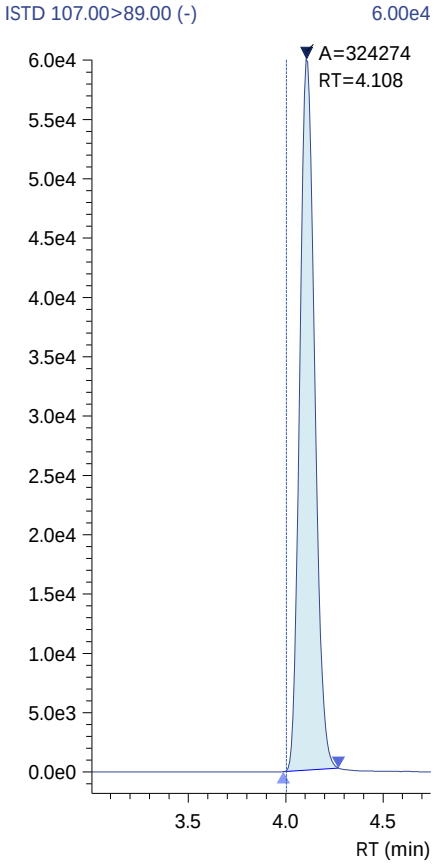
Perchlorate

Conc 0.0965
R#1 32.46 (34.45)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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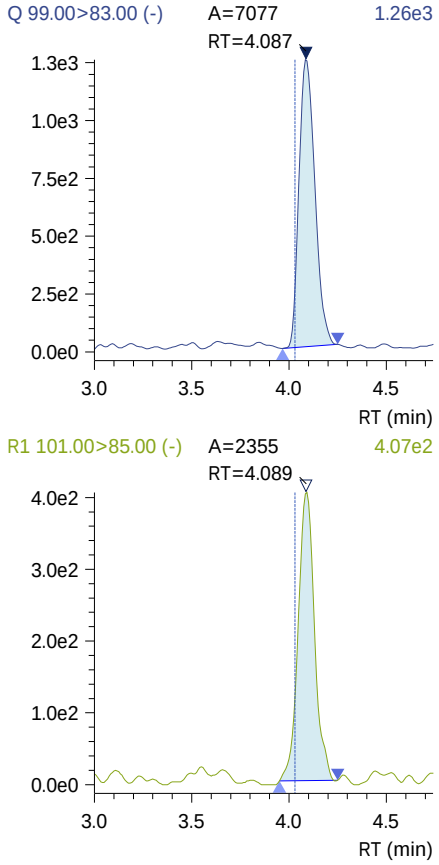
E2300018-001

Sample ID: E2300018-001
Date Acquired: 1/16/2023 9:35:04 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230116\20230116-007.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	4.087	7077	339342	0.1331	ng/mL	101.00 >85.00	33.27	24.11 -44.78
Sodium Perchlorate-18O4_IS	Auto	4.087	339342	339342	1.0000	ng/mL	----	----	

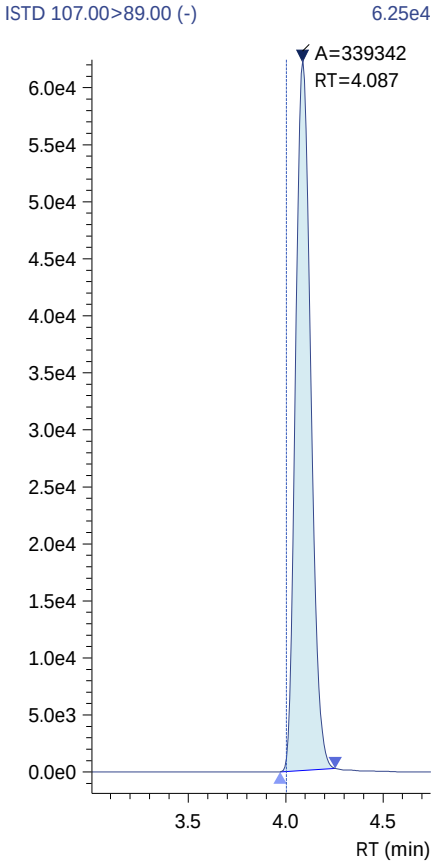
Perchlorate

Conc 0.1331
R#1 33.27 (34.45)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 1/17/2023 9:20:01 AM

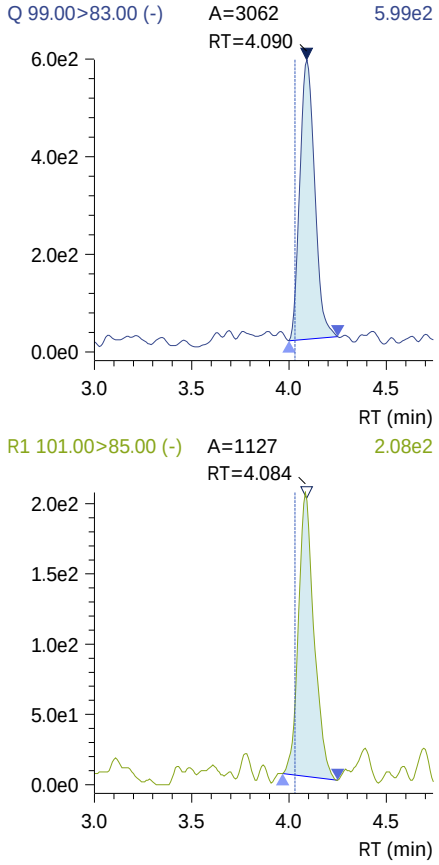
E2300018-002

Sample ID: E2300018-002
Date Acquired: 1/16/2023 9:40:44 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230116\20230116-008.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	4.090	3062	329129	0.0594	ng/mL	101.00 >85.00	36.81	24.11 -44.78
Sodium Perchlorate-18O4_IS	Auto	4.087	3291 29	329129	1.0000	ng/mL	----	----	

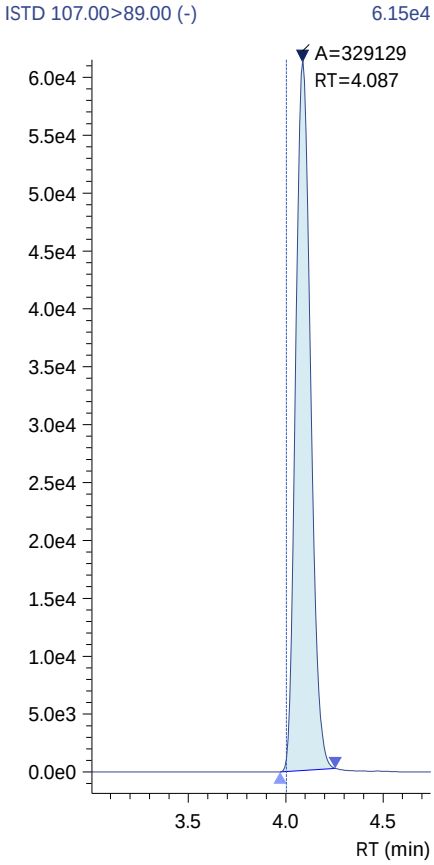
Perchlorate

Conc 0.0594
R#1 36.81 (34.45)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 1/17/2023 9:20:01 AM

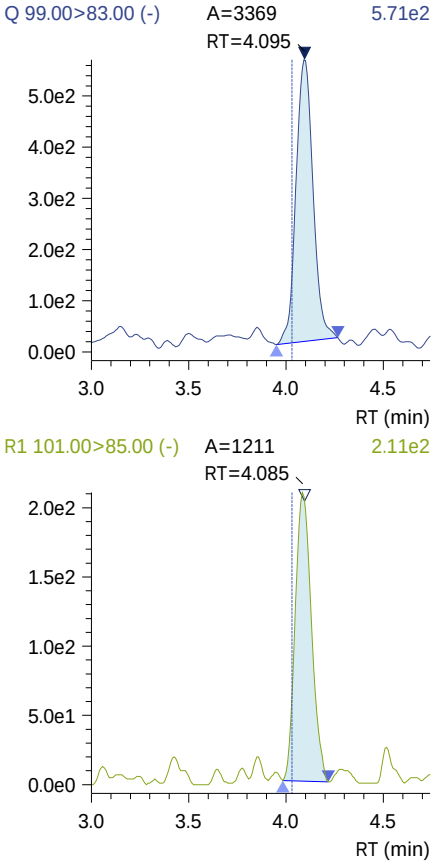
E2300018-003

Sample ID: E2300018-003
Date Acquired: 1/16/2023 9:46:24 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230116\20230116-009.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	4.095	3369	328948	0.0654	ng/mL	101.00 >85.00	35.94	24.11 -44.78
Sodium Perchlorate-18O4_IS	Auto	4.086	328948	328948	1.0000	ng/mL	----	----	

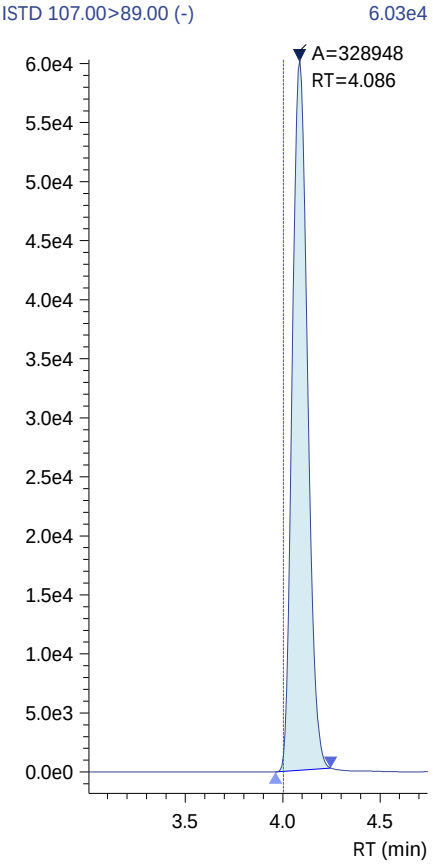
Perchlorate

Conc 0.0654
R#1 35.94 (34.45)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 1/17/2023 9:20:01 AM

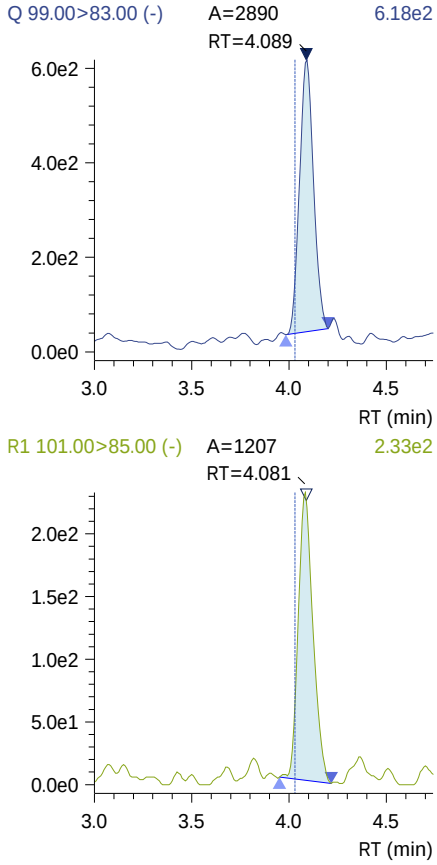
E2300018-004

Sample ID: E2300018-004
Date Acquired: 1/16/2023 9:52:07 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230116\20230116-010.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	4.089	2890	324545	0.0568	ng/mL	101.00 >85.00	41.76	24.11 -44.78
Sodium Perchlorate-18O4_IS	Auto	4.084	3245 45	324545	1.0000	ng/mL	----	----	

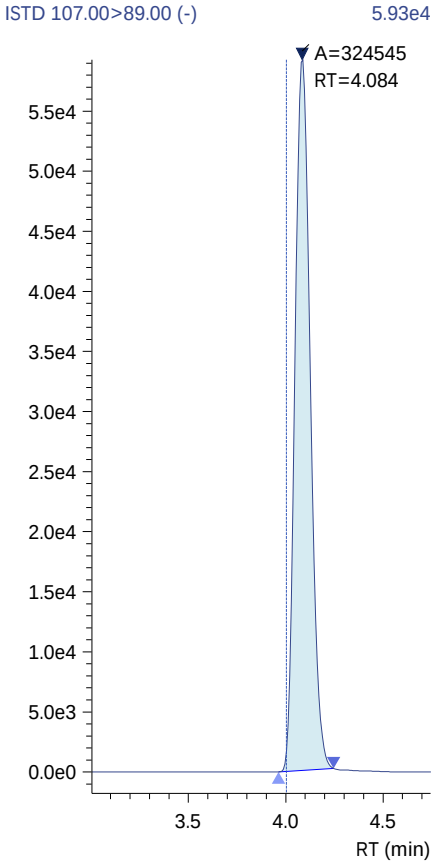
Perchlorate

Conc 0.0568
R#1 41.76 (34.45)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 1/17/2023 9:20:01 AM

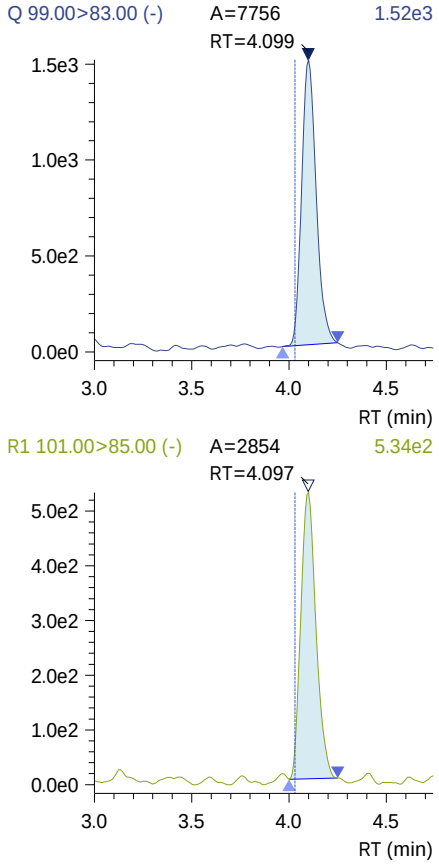
E2300018-005

Sample ID: E2300018-005
Date Acquired: 1/16/2023 9:57:48 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230116\20230116-011.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	4.099	7756	322556	0.1534	ng/mL	101.00 >85.00	36.79	24.11 -44.78
Sodium Perchlorate-18O4_IS	Auto	4.098	322556	322556	1.0000	ng/mL	----	----	

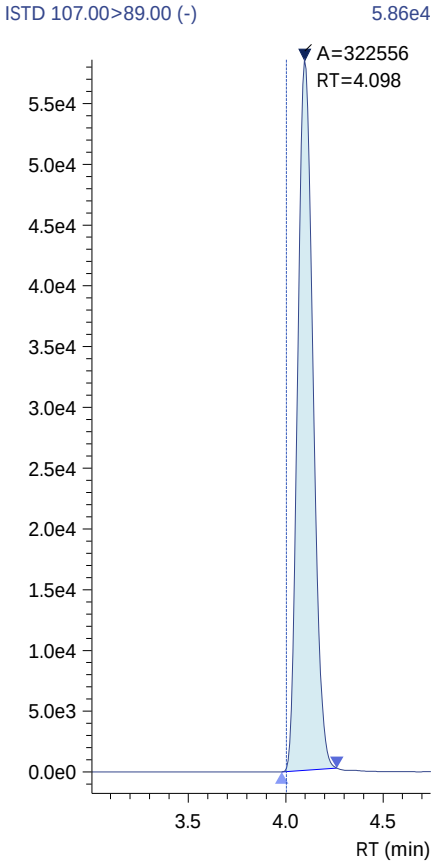
Perchlorate

Conc 0.1534
R#1 36.79 (34.45)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 1/17/2023 9:20:01 AM

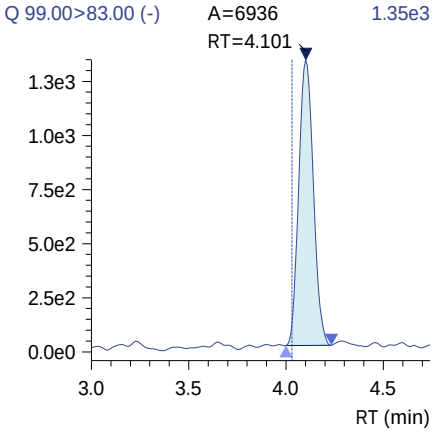
E2300018-006

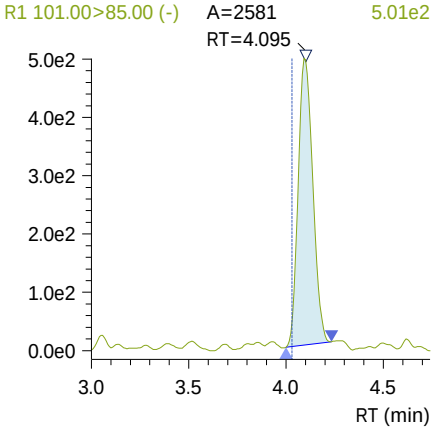
Sample ID: E2300018-006
Date Acquired: 1/16/2023 10:03:31 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230116\20230116-012.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	4.101	6936	323091	0.1370	ng/mL	101.00 >85.00	37.21	24.11 -44.78
Sodium Perchlorate-18O4_IS	Auto	4.098	3230 91	323091	1.0000	ng/mL	----	----	

Perchlorate

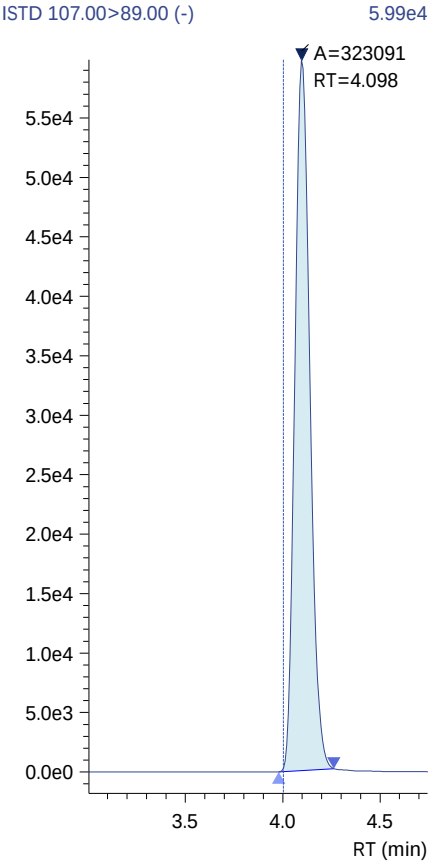
Conc 0.1370
R#1 37.21 (34.45)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 1/17/2023 9:20:01 AM

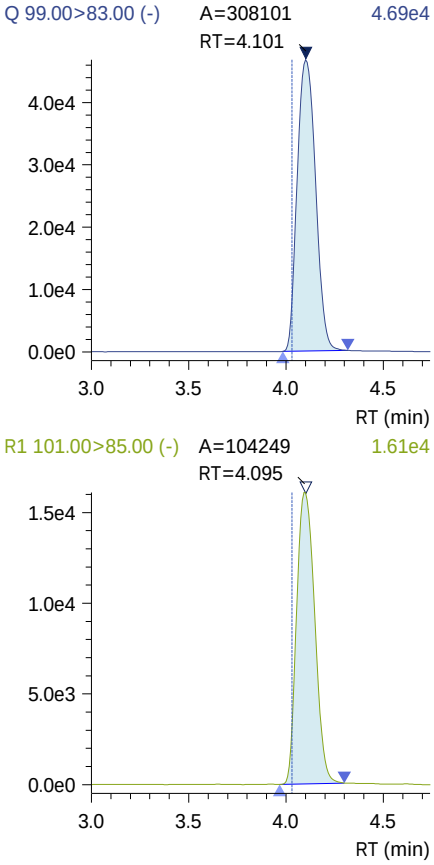
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 1/16/2023 10:14:54 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230116\20230116-014.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	4.101	308101	218347	9.0044	ng/mL	101.00 >85.00	33.84	24.11 -44.78
Sodium Perchlorate-18O4_IS	Auto	4.094	218347	218347	1.0000	ng/mL	----	----	

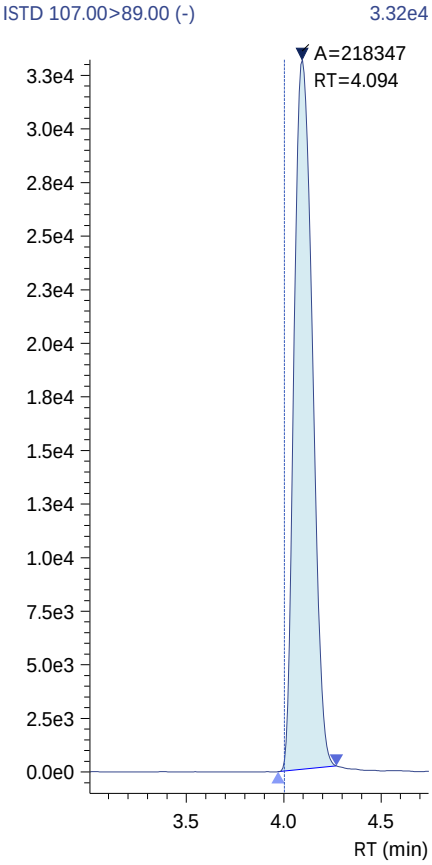
Perchlorate

Conc 9.0044
R#1 33.84 (34.45)



Sodium Perchlorate-18O4_IS

Conc 1.0000



June 08, 2023 Service Request No:E2300516

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd
Suite 129
Lakewood, CO 80228

Laboratory Results for: LHAAP / Quarterly Surface Water Samples

Dear Marcia,

Enclosed are the results of the sample(s) submitted to our laboratory May 27, 2023
For your reference, these analyses have been assigned our service request number **E2300516.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2188. You may also contact me via email at James.Guin@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

James Guin

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston Specialties Laboratory
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

ALS Environmental

Client:	Bhate Environmental Associates, Inc.	**Service Request No.:**	E230016
Project:	LHAAP/Quarterly Surface Water Samples	**Date Received:**	05/27/23
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Six samples were received for analysis at ALS Environmental in Houston on 05/27/23.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2300273: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: Bhate Environmental Associates, Inc. **Service Request:**E2300516

Project: LHAAP / Quarterly Surface Water Samples

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2300516-001	HBW7_052623	5/26/2023	0716
E2300516-002	HBW7_052623_a	5/26/2023	0716
E2300516-003	HBW10_052623	5/26/2023	0732
E2300516-004	HBW1_052623	5/26/2023	0745
E2300516-005	GPW1_052623	5/26/2023	0800
E2300516-006	GPW3_052623	5/26/2023	0812

Service Request Summary

Folder #: **E2300516**
Client Name: Bhate Environmental Associates, Inc.
Project Name: LHAAP / Quarterly Surface Water Samples
Project Number:

Report To: Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd
Lakewood, CO 80228
USA
Phone Number: 303-597-2450
Cell Number:
Fax Number:
E-mail: molive@bhate.com

Project Chemist: James Guin
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 05/27/23
Internal Due Date: 6/13/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: 2878
EDD: BASIC_WQC_CASNo_LOD

6 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	Semivoa GCMS ClO4 DOD/6850
E2300516-001	HBW7_052623	Water	05/26/23 0716	**IV**
E2300516-002	HBW7_052623_a	Water	05/26/23 0716	**IV**
E2300516-003	HBW10_052623	Water	05/26/23 0732	**IV**
E2300516-004	HBW1_052623	Water	05/26/23 0745	**IV**
E2300516-005	GPW1_052623	Water	05/26/23 0800	**IV**
E2300516-006	GPW3_052623	Water	05/26/23 0812	**IV**

Service Request Summary

Folder #: **E2300516**
Client Name: Bhate Environmental Associates, Inc.
Project Name: LHAAP / Quarterly Surface Water Samples
Project Number:

Report To: Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd
Lakewood, CO 80228
USA
Phone Number: 303-597-2450
Cell Number:
Fax Number:
E-mail: molive@bhate.com

Project Chemist: James Guin
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 05/27/23
Internal Due Date: 6/13/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: 2878
EDD: BASIC_WQC_CASNo_LOD

6 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.

Data Qualifiers

Lab Standard

M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793_2024	5/27/2024
Arkansas Department of Environmental Quality	88-00356	3/27/2024
Department of Defense	L22-90	3/31/2024
Department of Defense	L23-358	5/31/2025
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028-2023	12/31/2023
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Minnesota Department of Health	2368363	12/31/2023
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2024
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209423	4/24/2024
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2024
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	TN04016-2023	4/30/2024
Texas Commision on Environmental Quality	T104704231-23-30	4/30/2024
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Ecology	C819-22	11/14/2023

Chain of Custody

ALS Environmental - Houston Specialties Laboratory
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bhate ENVIRONMENTAL CONSTRUCTION ENERGY

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Page: _____ of _____

Project/Phase No: JVPCIBH.0001

COC Number(1): _____

LIMS Number: _____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Quarterly Surface Water Samples

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	ERPIMS LOCID (15 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Sample Analysis Requested (5): Number of containers	PERCHLORATE										Quality Assurance Samples (6): Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
HBW7_052623		26 May 2023	07:16	-	N		WS	1	X													
HBW7_052623_a		26 May 2023	07:16	-	FD		WS	1	X													
HBW10_052623		26 May 2023	07:32	-	N		WS	1	X													
HBW1_052623		26 May 2023	07:45		N		WS	1	X													
GPW1_052623		26 May 2023	08:00		N		WS	1	X													
GPW3_052623		26 May 2023	08:12	-	N		WS	1	X													
				-																		
		UK		-																		
	SC272	2.2°		-																		
		#31		-																		
		Cpc-1°		-																		

COMMENTS:

Standard TAT

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Scott Beesinger	5/26/23	1300		5/27/23	08:55
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped _____ No.:

Method of Shipment: _____

_____ Fed Ex _____ Airbill Number:

_____ Analytical Lab: ALS 10450 Stancliff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: SONIA WEST Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

ALS Environmental

Cooler Receipt Form

Project Chemist JS

Client/Project ADTM

Thermometer ID IR31

Date/Time Received: 9.27.23 Initials: PM

Date/Time Logged in: 9.27.23 Initials CG

1. Method of delivery: ◯ US Mail ⊗ Fed Ex ◯ UPS ◯ DHL ◯ Courier ◯ Client

2. Samples received in: ⊗ Cooler ◯ Box ◯ Envelope ◯ Other _____

3. Were custody seals on coolers? ⊗ Yes ◯ No
   Were they intact? ⊗ Yes ◯ No ◯ N/A
   Were they signed and dated? ⊗ Yes ◯ No ◯ N/A
   If yes, how many and where? 1-F

4. Packing Material: ◯ Inserts ⊗ Baggies ◯ Bubble Wrap ◯ Gel Packs ⊗ Wet Ice ◯ Sleeves ◯ Other _____

5. Foreign or Regulated Soil? ◯ Yes ◯ No Location of Sampling: _____

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
5300 9222 6065		9.27.23	0855	PM	2.1	☐
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ⊗ Yes ◯ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ⊗ Yes ◯ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ⊗ Yes ◯ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ⊗ Yes ◯ No
10. Did sample labels and tags agree with custody documents? ⊗ Yes ◯ No

Notes, Discrepancies, & Resolutions:

Service request Label:

HS-HRMSCoolerReceipt R1.0

ALS Environmental - Houston HRMS

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston Specialties Laboratory
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 420946 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 6/6/23 10:10

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2300516-001	HBW7_052623	.01	6850/ClO4 DOD			Water	10mL	
2	E2300516-002	HBW7_052623_a	.01	6850/ClO4 DOD			Water	10mL	
3	E2300516-003	HBW10_052623	.01	6850/ClO4 DOD			Water	10mL	
4	E2300516-004	HBW1_052623	.01	6850/ClO4 DOD			Water	10mL	
5	E2300516-005	GPW1_052623	.01	6850/ClO4 DOD			Water	10mL	
6	E2300516-006	GPW3_052623	.01	6850/ClO4 DOD			Water	10mL	
7	E2300525-001	OBOD-11-QA	.02	6850/ClO4 DOD			Water	10mL	
8	E2300528-001	130_060123	.01	6850/ClO4 DOD			Water	10mL	
9	E2300528-002	17WW03_060123	.02	6850/ClO4 DOD			Water	10mL	
10	E2300528-003	17WW01_060123	.01	6850/ClO4 DOD			Water	10mL	
11	E2300528-004	17WW01_060123_a	.01	6850/ClO4 DOD			Water	10mL	
12	E2300528-005	17WW02_060123	.01	6850/ClO4 DOD			Water	10mL	
13	E2300528-006	17WW06_060123	.01	6850/ClO4 DOD			Water	10mL	
14	E2300530-001	01MW4C1101305	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2300530-002	MW-4004C11-DP	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2300530-003	01MW3C12012305	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2300530-004	01SP19-3B012305	.01	6850/ClO4 DOD			Ground Water	10mL	
18	E2300530-005	01MW4C01012305	.01	6850/ClO4 DOD			Ground Water	10mL	
19	EQ2300273-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2300273-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2300273-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2300273-04	OBOD-11-QA MS	.02	6850/ClO4 DOD			Liquid	10mL	
23	EQ2300273-05	OBOD-11-QA DMS	.02	6850/ClO4 DOD			Liquid	10mL	
24	EQ2300273-06	17WW03_060123 MS	.02	6850/ClO4 DOD			Liquid	10mL	
25	EQ2300273-07	17WW03_060123 DMS	.02	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 227236 Logbook Ref: Perchlorate (1st Source) Expires On: 07/31/2023

EQ2300273-02 1.00µL EQ2300273-03 1.00µL EQ2300273-04 1.00µL EQ2300273-05 1.00µL EQ2300273-06 1.00µL EQ2300273-07 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 227244 Logbook Ref: Perchlorate Internal Standard Expires On: 07/31/2023

E2300516-001 100.00µL E2300516-002 100.00µL E2300516-003 100.00µL E2300516-004 100.00µL E2300516-005 100.00µL E2300516-006 100.00µL
E2300525-001 100.00µL E2300528-001 100.00µL E2300528-002 100.00µL E2300528-003 100.00µL E2300528-004 100.00µL E2300528-005 100.00µL
E2300528-006 100.00µL E2300530-001 100.00µL E2300530-002 100.00µL E2300530-003 100.00µL E2300530-004 100.00µL E2300530-005 100.00µL

Preparation Information Benchsheet

Prep Run#: 420946 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 6/6/23 10:10

EQ2300273-01	100.00µL	EQ2300273-02	100.00µL	EQ2300273-03	100.00µL	EQ2300273-04	100.00µL	EQ2300273-05	100.00µL	EQ2300273-06	100.00µL
EQ2300273-07	100.00µL										

Preparation Materials

Water HPLC Grade	HPLC water 5/18/23CG (229314)	6850 Amber Glass screw vial	2mL Screw Top Vial (221894)	6850 0.45um syringe filters	6850 0.45um syringe (229005)
6850 Luer-Lok Syringes	luer-lock syringes (228116)				

Preparation Steps

Step: Preparation
Started: 6/6/23 10:10
Finished: 6/7/23 00:10
By: XMI
Comments

Comments: _____

Reviewed By: XM Date: 06/06/23

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

Analytical Results

ALS Environmental - Houston Specialties Laboratory
10450 Stancliff Rd., Suite 210, Houston TX 77099
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www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	5/26/23 0716
Sample Matrix:	Water	**Date Received:**	5/27/23
Sample Name:	HBW7_052623	**Units:**	µg/L
Lab Code:	E2300516-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 6/23	6/6/23 12:56	420946	806642	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	5/26/23 0716
Sample Matrix:	Water	**Date Received:**	5/27/23
Sample Name:	HBW7_052623_a	**Units:**	µg/L
Lab Code:	E2300516-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 6/23	6/6/23 13:02	420946	806642	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	5/26/23 0732
Sample Matrix:	Water	**Date Received:**	5/27/23
Sample Name:	HBW10_052623	**Units:**	µg/L
Lab Code:	E2300516-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 6/23	6/6/23 13:08	420946	806642	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	5/26/23 0745
Sample Matrix:	Water	**Date Received:**	5/27/23
Sample Name:	HBW1_052623	**Units:**	µg/L
Lab Code:	E2300516-004	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 6/23	6/6/23 13:13	420946	806642	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	5/26/23 0800
Sample Matrix:	Water	**Date Received:**	5/27/23
Sample Name:	GPW1_052623	**Units:**	µg/L
Lab Code:	E2300516-005	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0286**	J	0.100	0.0500	0.0250	1	6/ 6/23	6/6/23 13:25	420946	806642	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	5/26/23 0812
Sample Matrix:	Water	**Date Received:**	5/27/23
Sample Name:	GPW3_052623	**Units:**	µg/L
Lab Code:	E2300516-006	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 6/23	6/7/23 11:03	420946	806739	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2300273-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 6/23	6/6/23 12:39	420946	806642	

Accuracy & Precision

ALS Environmental - Houston Specialties Laboratory
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/ 6/23
Sample Matrix:	Water		

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	420946

	Lab Control Sample EQ2300273-02			Duplicate Lab Control Sample EQ2300273-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.100	0.100	100	0.0910	0.100	91	84 - 119	9	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300273-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.100**		0.100	0.0500	0.0250	1	6/ 6/23	6/6/23 12:45	420946	806642	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300273-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0910**	J	0.100	0.0500	0.0250	1	6/ 6/23	6/6/23 12:50	420946	806642	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20230606-806642

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XM
2nd Review: GC

ICAL Date: 6/6/2023
Cal. Std. xp: 07/31/2023
ICAL ID: EC2300009

Mobile Phases : A:20mM ammonium acetate in water 32103045 **B:**Acetonitrile 226552

	Sample Name		File Name	Acquisition Method	Dilution	Comments	Date/Time
1	PERCHLORATE1		20230606-001	Perchlorate6850c.lcm	1x	227245	6/6/2023 10:49
2	PERCHLORATE2		20230606-002	Perchlorate6850c.lcm	1x	227246	6/6/2023 10:55
3	PERCHLORATE3		20230606-003	Perchlorate6850c.lcm	1x	227247	6/6/2023 11:01
4	PERCHLORATE4		20230606-004	Perchlorate6850c.lcm	1x	227248	6/6/2023 11:06
5	PERCHLORATE5		20230606-005	Perchlorate6850c.lcm	1x	227249	6/6/2023 11:12
6	PERCHLORATE6		20230606-006	Perchlorate6850c.lcm	1x	227250	6/6/2023 11:18
7	PERCHLORATE7		20230606-007	Perchlorate6850c.lcm	1x	227251	6/6/2023 11:24
8	PERCHLORATE8		20230606-008	Perchlorate6850c.lcm	1x	227252	6/6/2023 11:29
9	PERCHLORATE9		20230606-009	Perchlorate6850c.lcm	1x	227253	6/6/2023 11:35
10	PERCHLORATE10		20230606-010	Perchlorate6850c.lcm	1x	227254	6/6/2023 11:41
11	PERCHLORATEICV		20230606-011	Perchlorate6850c.lcm	1x	227256	6/6/2023 11:47
12	IB		20230606-012	Perchlorate6850c.lcm	1x		6/6/2023 11:52
13	LODV		20230606-013	Perchlorate6850c.lcm	1x	227501	6/6/2023 11:58
14	ICS		20230606-014	Perchlorate6850c.lcm	1x	32103024	6/6/2023 12:04
15	CCV		20230606-015	Perchlorate6850c.lcm	1x	227251	6/6/2023 12:16
16	EQ2300272-01		20230606-016	Perchlorate6850c.lcm	1x		6/6/2023 12:22
17	EQ2300272-02		20230606-017	Perchlorate6850c.lcm	1x		6/6/2023 12:27
18	EQ2300272-03		20230606-018	Perchlorate6850c.lcm	1x		6/6/2023 12:33
19	EQ2300273-01		20230606-019	Perchlorate6850c.lcm	1x		6/6/2023 12:39
20	EQ2300273-02		20230606-020	Perchlorate6850c.lcm	1x		6/6/2023 12:45
21	EQ2300273-03		20230606-021	Perchlorate6850c.lcm	1x		6/6/2023 12:50
22	E2300516-001		20230606-022	Perchlorate6850c.lcm	1x		6/6/2023 12:56
23	E2300516-002		20230606-023	Perchlorate6850c.lcm	1x		6/6/2023 13:02
24	E2300516-003		20230606-024	Perchlorate6850c.lcm	1x		6/6/2023 13:08
25	E2300516-004		20230606-025	Perchlorate6850c.lcm	1x		6/6/2023 13:13
26	CCV		20230606-026	Perchlorate6850c.lcm	1x	227251	6/6/2023 13:19
27	E2300516-005		20230606-027	Perchlorate6850c.lcm	1x		6/6/2023 13:25
28	E2300516-006		20230606-028	Perchlorate6850c.lcm	1x	DNU-CONFIRM PEAK	6/6/2023 13:31
29	E2300519-001		20230606-029	Perchlorate6850c.lcm	1x		6/6/2023 13:36
30	E2300519-002		20230606-030	Perchlorate6850c.lcm	5000x		6/6/2023 13:42
31	E2300519-003		20230606-031	Perchlorate6850c.lcm	5000x		6/6/2023 13:48
32	E2300519-004		20230606-032	Perchlorate6850c.lcm	1x		6/6/2023 13:54
33	EQ2300272-04		20230606-033	Perchlorate6850c.lcm	1x		6/6/2023 13:59
34	EQ2300272-05		20230606-034	Perchlorate6850c.lcm	1x		6/6/2023 14:05
35	E2300519-005		20230606-035	Perchlorate6850c.lcm	1x		6/6/2023 14:11
36	E2300519-006		20230606-036	Perchlorate6850c.lcm	1x		6/6/2023 14:17
37	CCV		20230606-037	Perchlorate6850c.lcm	1x		6/6/2023 14:23

Initial Calibration - Detailed Report

Calibration ID: EC2300009 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2300009-01	PERCHLORATE1	20230606-001	06/06/2023 10:49
02	EC2300009-02	PERCHLORATE2	20230606-002	06/06/2023 10:55
03	EC2300009-03	PERCHLORATE3	20230606-003	06/06/2023 11:01
04	EC2300009-04	PERCHLORATE4	20230606-004	06/06/2023 11:06
05	EC2300009-05	PERCHLORATE5	20230606-005	06/06/2023 11:12
06	EC2300009-06	PERCHLORATE6	20230606-006	06/06/2023 11:18
07	EC2300009-07	PERCHLORATE7	20230606-007	06/06/2023 11:24
08	EC2300009-08	PERCHLORATE8	20230606-008	06/06/2023 11:29
09	EC2300009-09	PERCHLORATE9	20230606-009	06/06/2023 11:35
10	EC2300009-10	PERCHLORATE10	20230606-010	06/06/2023 11:41

Analyte **Curve Fit** **Weighting**

Perchlorate **Average RF** **RSD = 3.738** **Average RF = 0.1827**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.201	02	0.5000	0.1818	03	0.7000	0.1758	04	1.0000	0.1836
05	2.0000	0.1782	06	5.0000	0.1799	07	10.0000	0.1808	08	20.0000	0.1834
09	30.0000	0.1812	10	50.0000	0.1815						

Analyte

Perchlorate RSE = 3.74

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.110	10.0	02	0.5000	0.498	-0.5	03	0.7000	0.673	-3.8
04	1.0000	1.00	0.5	05	2.0000	1.95	-2.5	06	5.0000	4.92	-1.5
07	10.0000	9.90	-1.0	08	20.0000	20.1	0.4	09	30.0000	29.7	-0.9
10	50.0000	49.7	-0.7								

Initial Calibration Verification Summary Report

Calibration ID:	EC2300009	**Instrument ID:**	E-LCMS-01
Datafile ID:	20230606-011	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2300009-11	T	Average RF	10	10.016	ng/mL	0.2	<= 15

Insight Report

Printed at 6/7/2023 10:10:58 AM

Method File: I:\LCMS01\DATA\20230606\20230606.lcm
Project File: I:\LCMS01\DATA\20230606\20230606.damlp

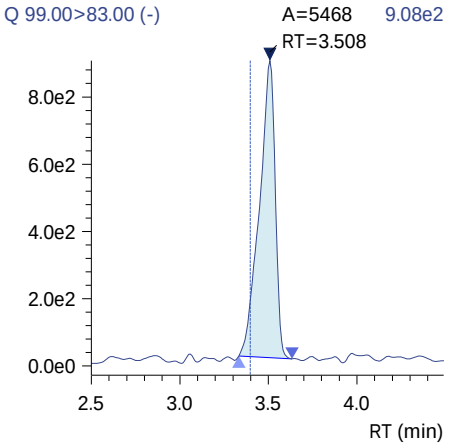
PERCHLORATE1

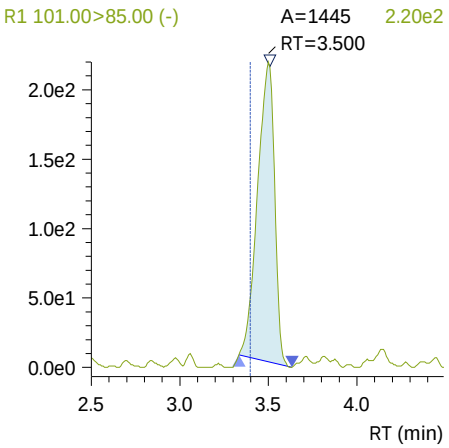
Sample ID: PERCHLORATE1
Date Acquired: 6/6/2023 10:49:38 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-001.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.508	5468	272033	0.1100	ng/mL	101.00 >85.00	26.42	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.499	272033	272033	1.0000	ng/mL	----	----	

Perchlorate

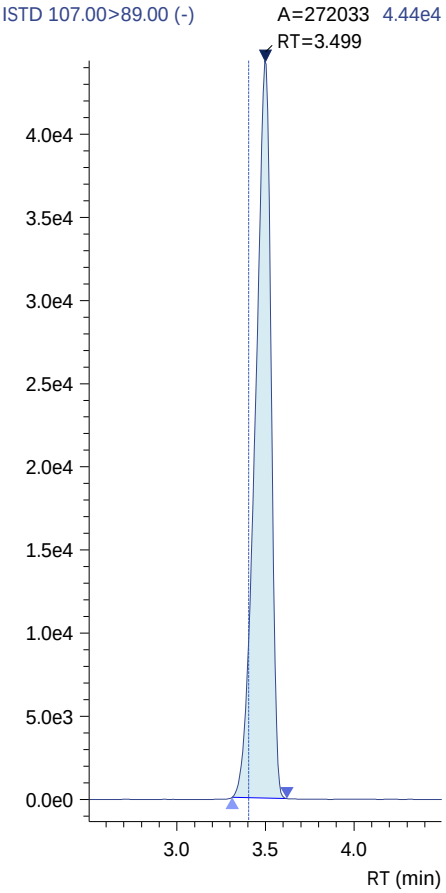
Conc 0.1100
R#1 26.42 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

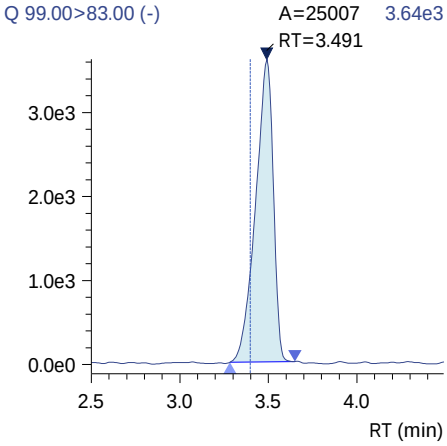
PERCHLORATE2

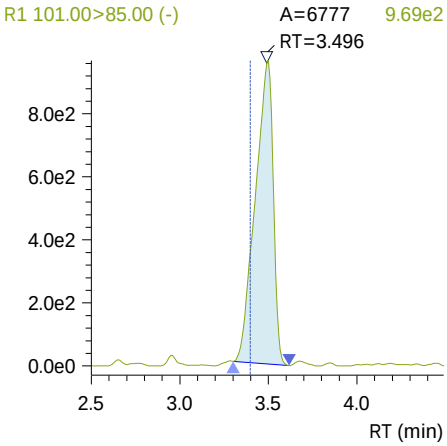
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Date Acquired: 6/6/2023 10:55:23 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-002.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.491	25007	275033	0.4976	ng/mL	101.00 >85.00	27.10	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.486	275033	275033	1.0000	ng/mL	----	----	

Perchlorate

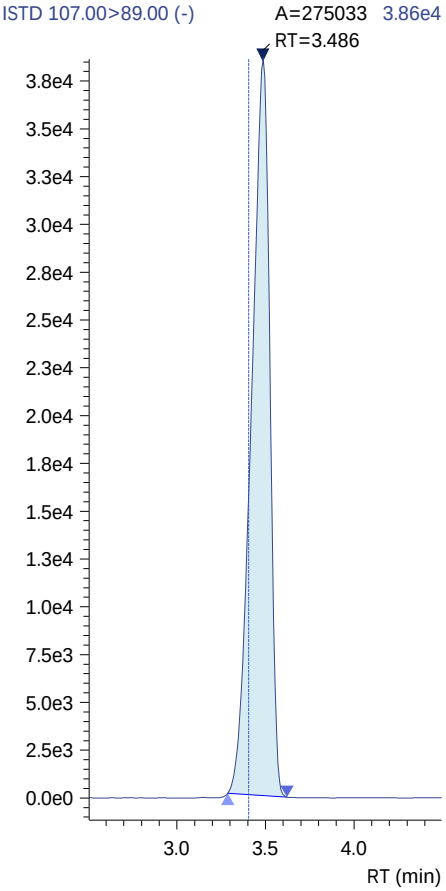
Conc 0.4976
R#1 27.10 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

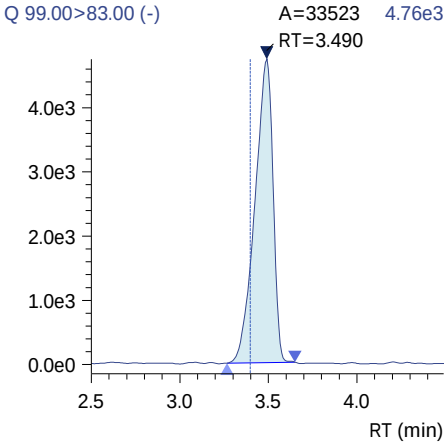
PERCHLORATE3

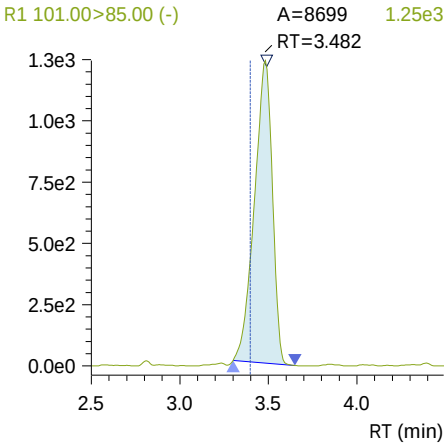
Sample ID: PERCHLORATE3
Date Acquired: 6/6/2023 11:01:08 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-003.lcd
Vial: 3 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.490	33523	272465	0.6733	ng/mL	101.00 >85.00	25.95	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.486	272465	272465	1.0000	ng/mL	----	----	

Perchlorate

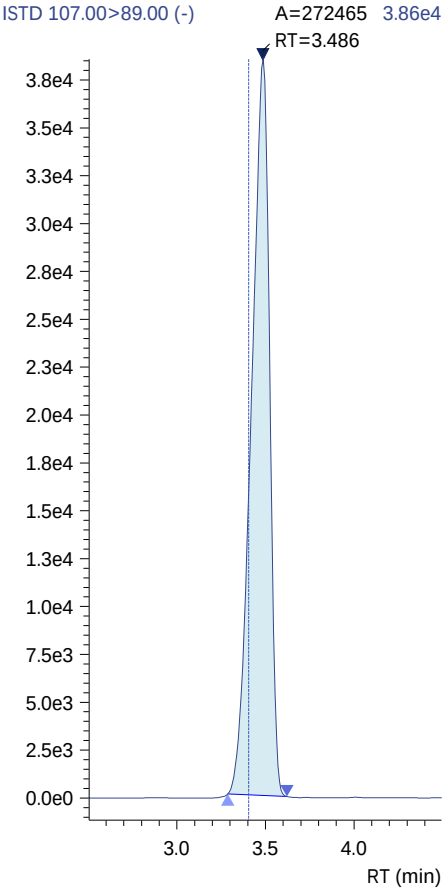
Conc 0.6733
R#1 25.95 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

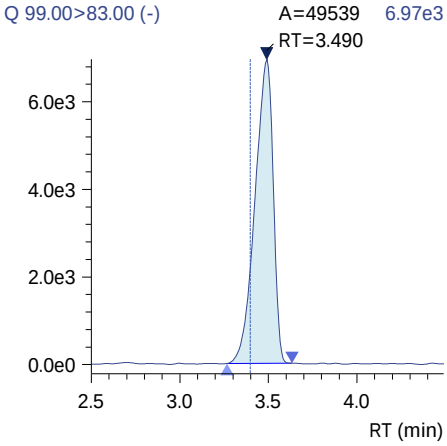
PERCHLORATE4

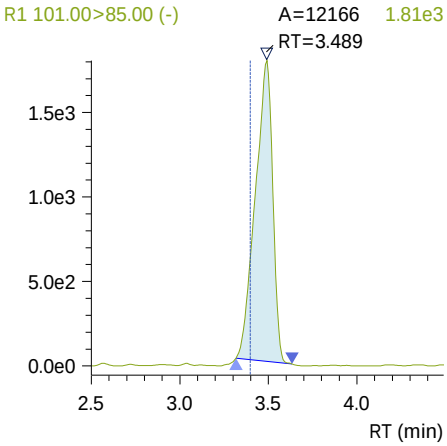
Sample ID: PERCHLORATE4
Date Acquired: 6/6/2023 11:06:52 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-004.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.490	49539	269886	1.0045	ng/mL	101.00 >85.00	24.56	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.486	269886	269886	1.0000	ng/mL	----	----	

Perchlorate

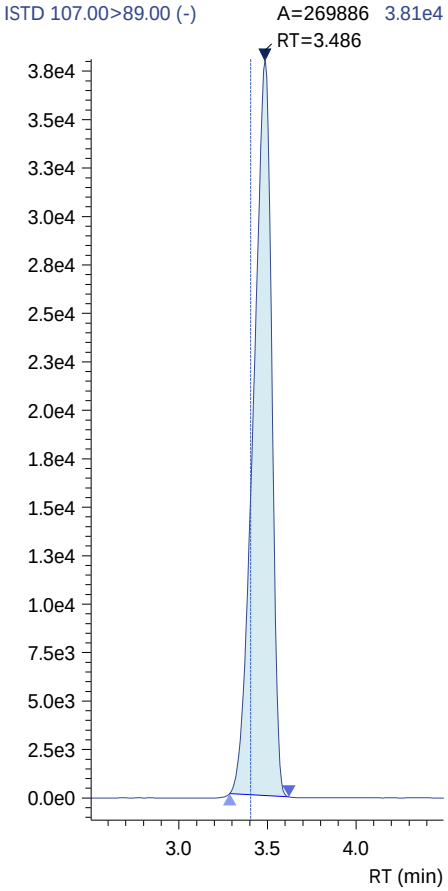
Conc 1.0045
R#1 24.56 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

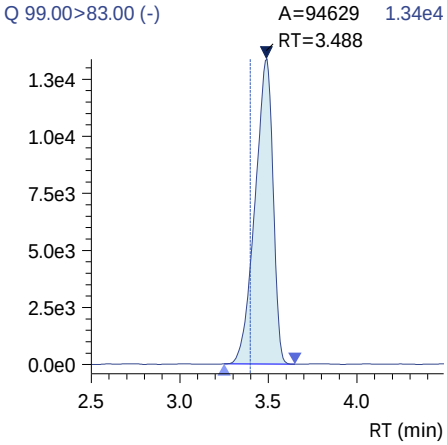
PERCHLORATE5

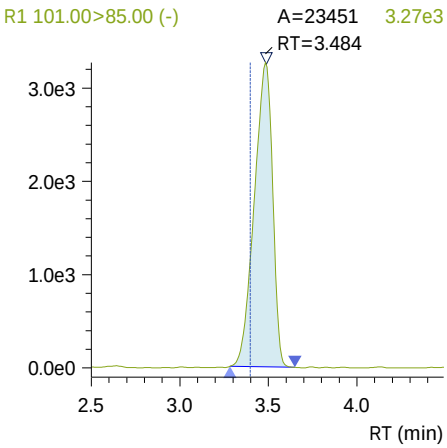
Sample ID: PERCHLORATE5
Date Acquired: 6/6/2023 11:12:36 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-005.lcd
Vial: 5 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.488	94629	265444	1.9510	ng/mL	101.00 >85.00	24.78	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.486	265444	265444	1.0000	ng/mL	----	----	

Perchlorate

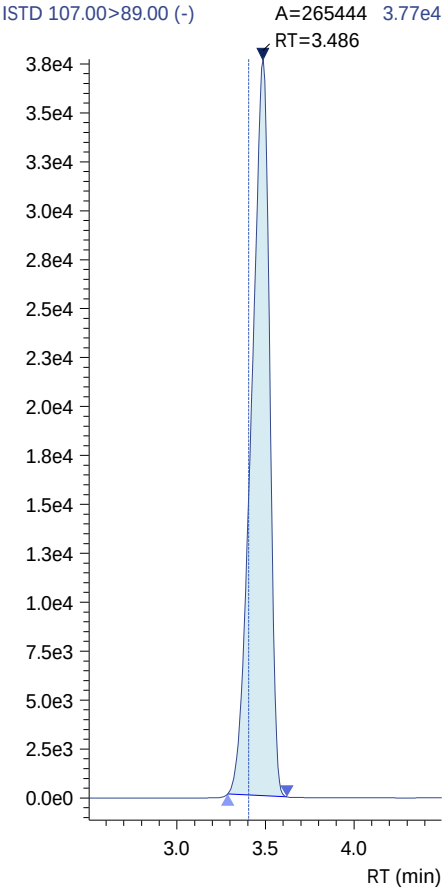
Conc 1.9510
R#1 24.78 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

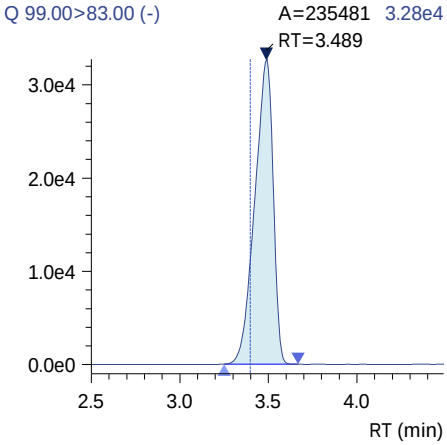
PERCHLORATE6

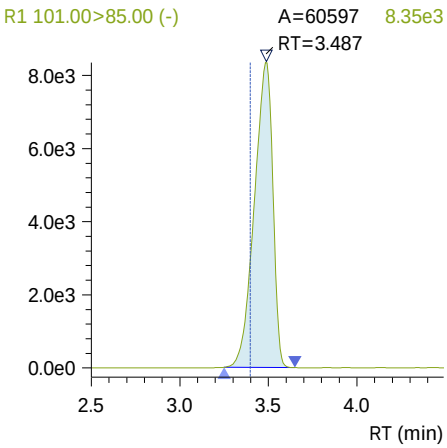
Sample ID: PERCHLORATE6
Date Acquired: 6/6/2023 11:18:22 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-006.lcd
Vial: 6 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.489	235481	261731	4.9238	ng/mL	101.00 >85.00	25.73	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.486	261731	261731	1.0000	ng/mL	----	----	

Perchlorate

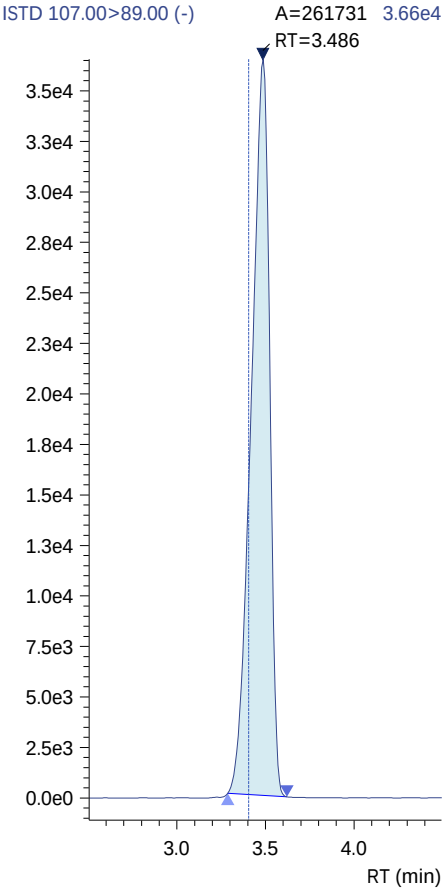
Conc 4.9238
R#1 25.73 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

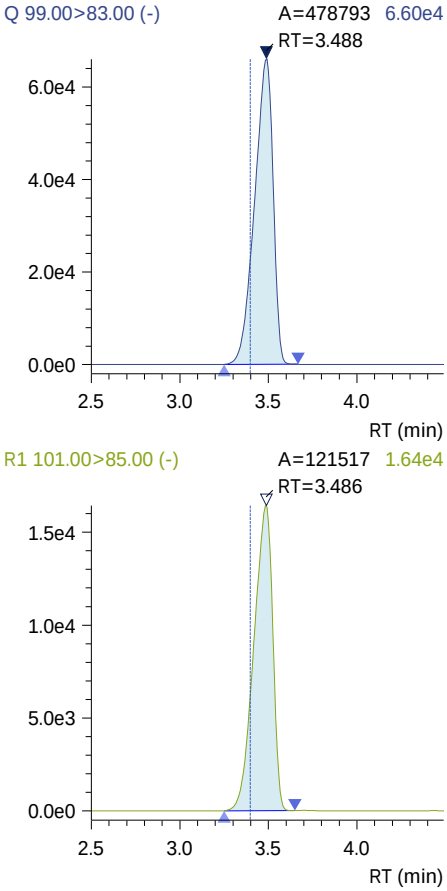
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 6/6/2023 11:24:09 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-007.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.488	478793	264810	9.8950	ng/mL	101.00 >85.00	25.38	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.485	264810	264810	1.0000	ng/mL	----	----	

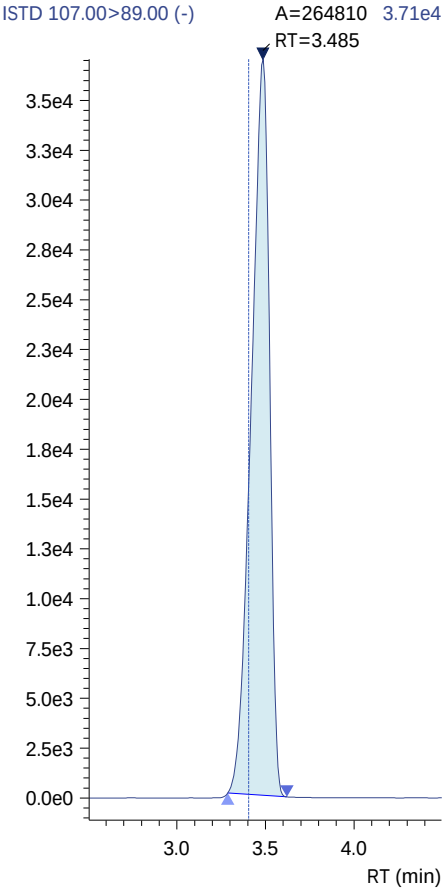
Perchlorate

Conc 9.8950
R#1 25.38 (24.52)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

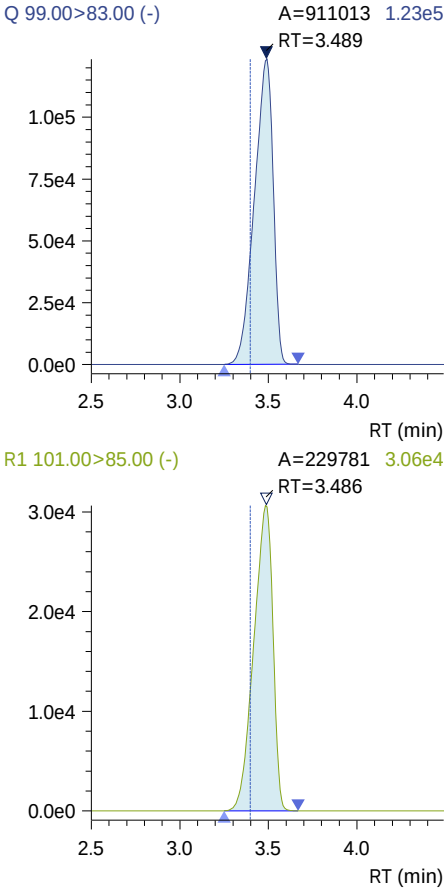
PERCHLORATE8

Sample ID: PERCHLORATE8
Date Acquired: 6/6/2023 11:29:53 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-008.lcd
Vial: 8 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.489	911013	248350	20.0754	ng/mL	101.00 >85.00	25.22	17.79-33.04
Sodium Perchlorate-18O4_IS	Auto	3.485	248350	248350	1.0000	ng/mL	----	----	

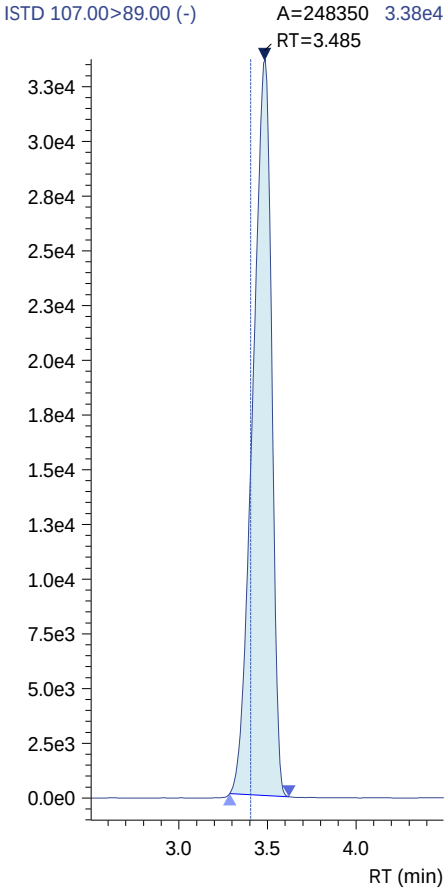
Perchlorate

Conc 20.0754
R#1 25.22 (24.52)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

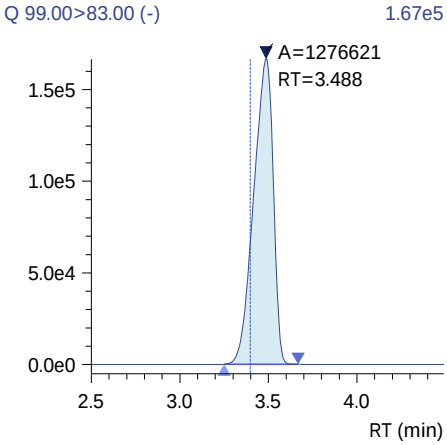
PERCHLORATE9

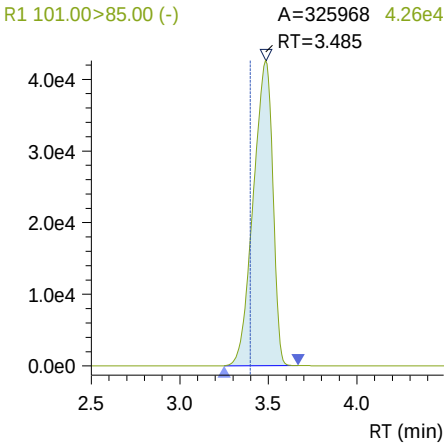
Sample ID: PERCHLORATE9
Date Acquired: 6/6/2023 11:35:36 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-009.lcd
Vial: 9 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.488	1276621	234897	29.74 32	ng/mL	101.00 >85.00	25.53	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.483	234897	234897	1.0000	ng/mL	----	----	

Perchlorate

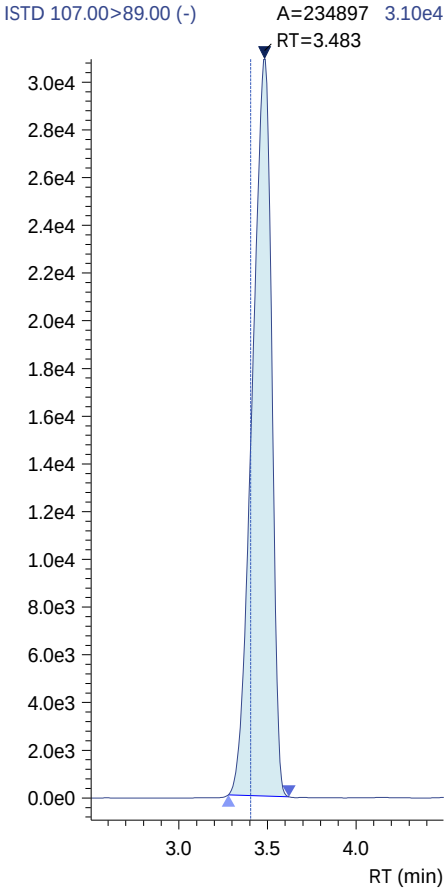
Conc 29.7432
R#1 25.53 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

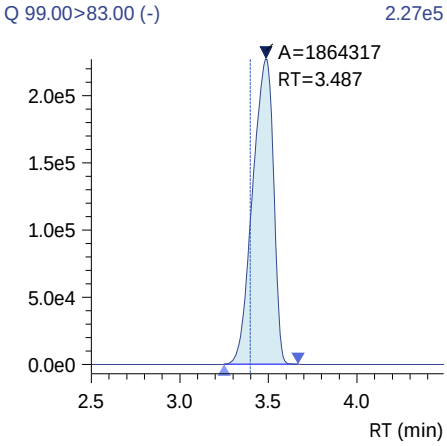
PERCHLORATE10

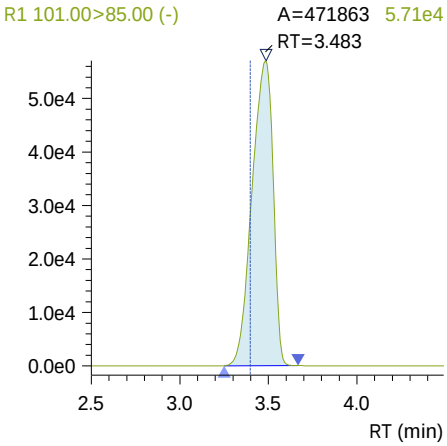
Sample ID: PERCHLORATE10
Date Acquired: 6/6/2023 11:41:20 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-010.lcd
Vial: 10 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.487	1864317	205439	49.6639	ng/mL	101.00 >85.00	25.31	17.79-33.04
Sodium Perchlorate-18O4_IS	Auto	3.483	205439	205439	1.0000	ng/mL	----	----	

Perchlorate

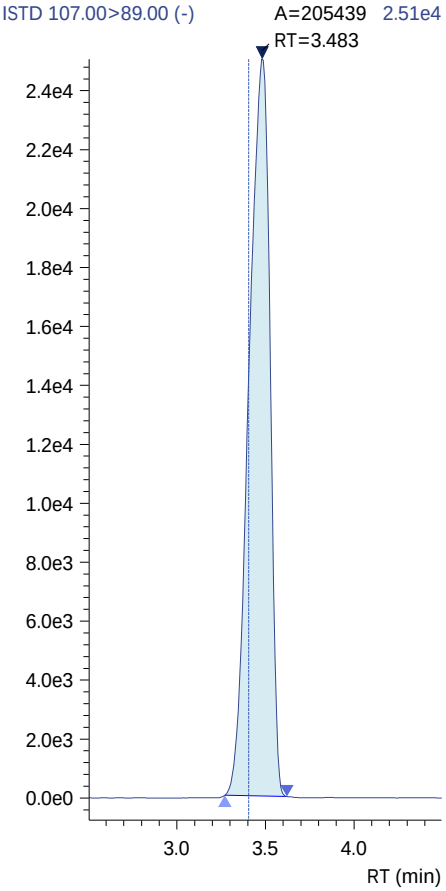
Conc 49.6639
R#1 25.31 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

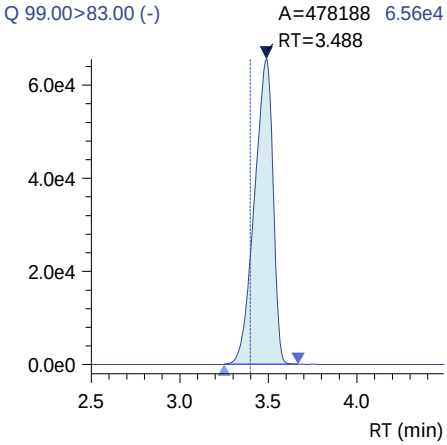
PERCHLORATEICV

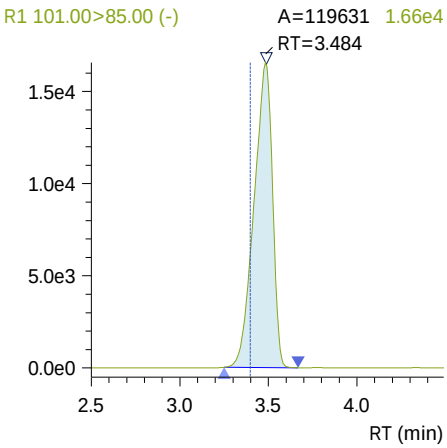
Sample ID: PERCHLORATEICV
Date Acquired: 6/6/2023 11:47:07 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-011.lcd
Vial: 11 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.488	478188	261294	10.0155	ng/mL	101.00 >85.00	25.02	17.79-33.04
Sodium Perchlorate-18O4_IS	Auto	3.484	261294	261294	1.0000	ng/mL	----	----	

Perchlorate

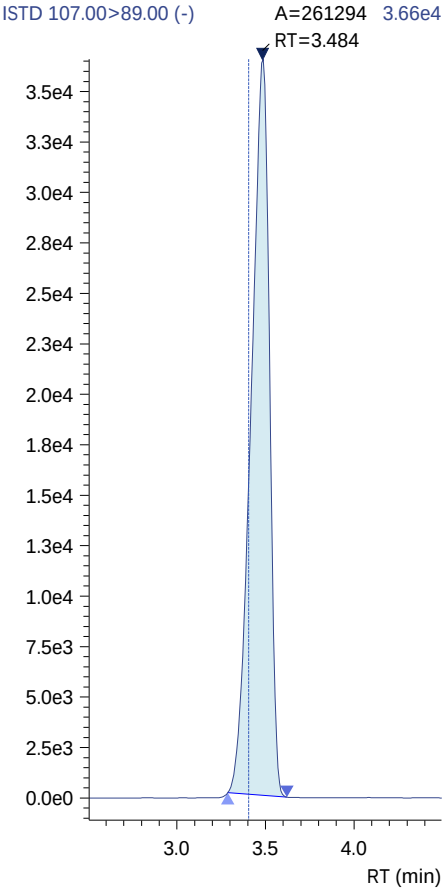
Conc 10.0155
R#1 25.02 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20230606-806642

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XM
2nd Review: GC

ICAL Date: 6/6/2023
Cal. Std. xp: 07/31/2023
ICAL ID: EC2300009

Mobile Phases : A:20mM ammonium acetate in water 32103045 **B:**Acetonitrile 226552

	Sample Name		File Name	Acquisition Method	Dilution	Comments	Date/Time
1	PERCHLORATE1		20230606-001	Perchlorate6850c.lcm	1x	227245	6/6/2023 10:49
2	PERCHLORATE2		20230606-002	Perchlorate6850c.lcm	1x	227246	6/6/2023 10:55
3	PERCHLORATE3		20230606-003	Perchlorate6850c.lcm	1x	227247	6/6/2023 11:01
4	PERCHLORATE4		20230606-004	Perchlorate6850c.lcm	1x	227248	6/6/2023 11:06
5	PERCHLORATE5		20230606-005	Perchlorate6850c.lcm	1x	227249	6/6/2023 11:12
6	PERCHLORATE6		20230606-006	Perchlorate6850c.lcm	1x	227250	6/6/2023 11:18
7	PERCHLORATE7		20230606-007	Perchlorate6850c.lcm	1x	227251	6/6/2023 11:24
8	PERCHLORATE8		20230606-008	Perchlorate6850c.lcm	1x	227252	6/6/2023 11:29
9	PERCHLORATE9		20230606-009	Perchlorate6850c.lcm	1x	227253	6/6/2023 11:35
10	PERCHLORATE10		20230606-010	Perchlorate6850c.lcm	1x	227254	6/6/2023 11:41
11	PERCHLORATEICV		20230606-011	Perchlorate6850c.lcm	1x	227256	6/6/2023 11:47
12	IB		20230606-012	Perchlorate6850c.lcm	1x		6/6/2023 11:52
13	LODV		20230606-013	Perchlorate6850c.lcm	1x	227501	6/6/2023 11:58
14	ICS		20230606-014	Perchlorate6850c.lcm	1x	32103024	6/6/2023 12:04
15	CCV		20230606-015	Perchlorate6850c.lcm	1x	227251	6/6/2023 12:16
16	EQ2300272-01		20230606-016	Perchlorate6850c.lcm	1x		6/6/2023 12:22
17	EQ2300272-02		20230606-017	Perchlorate6850c.lcm	1x		6/6/2023 12:27
18	EQ2300272-03		20230606-018	Perchlorate6850c.lcm	1x		6/6/2023 12:33
19	EQ2300273-01		20230606-019	Perchlorate6850c.lcm	1x		6/6/2023 12:39
20	EQ2300273-02		20230606-020	Perchlorate6850c.lcm	1x		6/6/2023 12:45
21	EQ2300273-03		20230606-021	Perchlorate6850c.lcm	1x		6/6/2023 12:50
22	E2300516-001		20230606-022	Perchlorate6850c.lcm	1x		6/6/2023 12:56
23	E2300516-002		20230606-023	Perchlorate6850c.lcm	1x		6/6/2023 13:02
24	E2300516-003		20230606-024	Perchlorate6850c.lcm	1x		6/6/2023 13:08
25	E2300516-004		20230606-025	Perchlorate6850c.lcm	1x		6/6/2023 13:13
26	CCV		20230606-026	Perchlorate6850c.lcm	1x	227251	6/6/2023 13:19
27	E2300516-005		20230606-027	Perchlorate6850c.lcm	1x		6/6/2023 13:25
28	E2300516-006		20230606-028	Perchlorate6850c.lcm	1x	DNU-CONFIRM PEAK	6/6/2023 13:31
29	E2300519-001		20230606-029	Perchlorate6850c.lcm	1x		6/6/2023 13:36
30	E2300519-002		20230606-030	Perchlorate6850c.lcm	5000x		6/6/2023 13:42
31	E2300519-003		20230606-031	Perchlorate6850c.lcm	5000x		6/6/2023 13:48
32	E2300519-004		20230606-032	Perchlorate6850c.lcm	1x		6/6/2023 13:54
33	EQ2300272-04		20230606-033	Perchlorate6850c.lcm	1x		6/6/2023 13:59
34	EQ2300272-05		20230606-034	Perchlorate6850c.lcm	1x		6/6/2023 14:05
35	E2300519-005		20230606-035	Perchlorate6850c.lcm	1x		6/6/2023 14:11
36	E2300519-006		20230606-036	Perchlorate6850c.lcm	1x		6/6/2023 14:17
37	CCV		20230606-037	Perchlorate6850c.lcm	1x		6/6/2023 14:23

20230607-806739

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XM
2nd Review: GC

ICAL Date: 6/6/2023
Cal. Std. xp: 07/31/2023
ICAL ID: EC2300009

Mobile Phases : A:20mM ammonium acetate in water 32103045 **B:**Acetonitrile 226552

	Sample Name		File Name	Acquisition Method	Dilution	Comments	Date/Time
1	IB		20230607-001	Perchlorate6850c.lcm	1x		6/7/2023 8:41
2	LODV		20230607-002	Perchlorate6850c.lcm	1x	227501	6/7/2023 8:51
3	ICS		20230607-003	Perchlorate6850c.lcm	1x	32103024	6/7/2023 8:57
4	CCV		20230607-004	Perchlorate6850c.lcm	1x	227251	6/7/2023 9:03
5	E2300519-007		20230607-005	Perchlorate6850c.lcm	1x	DNU-CONFIRM PEAK	6/7/2023 9:14
6	E2300519-008		20230607-006	Perchlorate6850c.lcm	1x		6/7/2023 9:19
7	E2300519-009		20230607-007	Perchlorate6850c.lcm	1x		6/7/2023 9:25
8	E2300520-001		20230607-008	Perchlorate6850c.lcm	1x		6/7/2023 9:31
9	E2300520-002		20230607-009	Perchlorate6850c.lcm	1x		6/7/2023 9:37
10	E2300520-003		20230607-010	Perchlorate6850c.lcm	1x		6/7/2023 9:42
11	E2300520-004		20230607-011	Perchlorate6850c.lcm	1x		6/7/2023 9:48
12	E2300520-005		20230607-012	Perchlorate6850c.lcm	1x		6/7/2023 9:54
13	E2300520-006		20230607-013	Perchlorate6850c.lcm	1x		6/7/2023 9:59
14	E2300520-007		20230607-014	Perchlorate6850c.lcm	1x		6/7/2023 10:05
15	CCV		20230607-015	Perchlorate6850c.lcm	1x	227251	6/7/2023 10:11
16	E2300520-008		20230607-016	Perchlorate6850c.lcm	1x		6/7/2023 10:17
17	E2300520-009		20230607-017	Perchlorate6850c.lcm	1x		6/7/2023 10:22
18	E2300520-010		20230607-018	Perchlorate6850c.lcm	1x		6/7/2023 10:28
19	E2300520-011		20230607-019	Perchlorate6850c.lcm	1x		6/7/2023 10:34
20	E2300525-001		20230607-020	Perchlorate6850c.lcm	1x		6/7/2023 10:40
21	EQ2300273-04		20230607-021	Perchlorate6850c.lcm	1x		6/7/2023 10:45
22	EQ2300273-05		20230607-022	Perchlorate6850c.lcm	1x		6/7/2023 10:51
23	E2300516-006		20230607-023	Perchlorate6850c.lcm	1x		6/7/2023 11:03
24	E2300528-001		20230607-024	Perchlorate6850c.lcm	1x		6/7/2023 11:20
25	E2300528-002		20230607-025	Perchlorate6850c.lcm	1x		6/7/2023 11:31
26	CCV		20230607-026	Perchlorate6850c.lcm	1x	227251	6/7/2023 11:37
27	EQ2300273-06		20230607-027	Perchlorate6850c.lcm	1x	DNU-RR	6/7/2023 11:43
28	EQ2300273-07		20230607-028	Perchlorate6850c.lcm	1x		6/7/2023 11:48
29	E2300528-003		20230607-029	Perchlorate6850c.lcm	1x		6/7/2023 11:54
30	E2300528-004		20230607-030	Perchlorate6850c.lcm	1x		6/7/2023 12:00
31	E2300528-005		20230607-031	Perchlorate6850c.lcm	500x		6/7/2023 12:06
32	E2300528-006		20230607-032	Perchlorate6850c.lcm	5000x		6/7/2023 12:11
33	EQ2300274-01		20230607-033	Perchlorate6850c.lcm	1x		6/7/2023 12:17
34	E2300529-001		20230607-034	Perchlorate6850c.lcm	1x		6/7/2023 12:25
35	EQ2300274-02		20230607-035	Perchlorate6850c.lcm	1x	DNU-IR	6/7/2023 12:31
36	EQ2300274-03		20230607-036	Perchlorate6850c.lcm	1x	DNU-IR	6/7/2023 12:36
37	CCV		20230607-037	Perchlorate6850c.lcm	1x	227251	6/7/2023 12:42

20230607-806739

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XM
2nd Review: GC

ICAL Date: 6/6/2023
Cal. Std. xp: 07/31/2023
ICAL ID: EC2300009

Mobile Phases : **A:**20mM ammonium acetate in water 32103045 **B:**Acetonitrile 226552

	Sample Name		File Name	Acquisition Method	Dilution	Comments	Date/Time
38	EQ2300274-02		20230607-038	Perchlorate6850c.lcm	1x		6/7/2023 13:29
39	EQ2300274-03		20230607-039	Perchlorate6850c.lcm	1x		6/7/2023 13:36
40	E2300519-007		20230607-040	Perchlorate6850c.lcm	1x		6/7/2023 13:41
41	E2300529-002		20230607-041	Perchlorate6850c.lcm	1x		6/7/2023 13:47
42	E2300529-003		20230607-042	Perchlorate6850c.lcm	1x		6/7/2023 13:53
43	E2300529-004		20230607-043	Perchlorate6850c.lcm	1x		6/7/2023 13:59
44	E2300529-005		20230607-044	Perchlorate6850c.lcm	1x		6/7/2023 14:05
45	E2300529-006		20230607-045	Perchlorate6850c.lcm	1x		6/7/2023 14:10
46	E2300529-007		20230607-046	Perchlorate6850c.lcm	1x		6/7/2023 14:16
47	E2300529--008		20230607-047	Perchlorate6850c.lcm	1000x		6/7/2023 14:22
48	CCV		20230607-048	Perchlorate6850c.lcm	1x	227251	6/7/2023 14:27
49	E2300530-001		20230607-049	Perchlorate6850c.lcm	1x		6/7/2023 15:02
50	E2300530-002		20230607-050	Perchlorate6850c.lcm	1x		6/7/2023 15:08
51	E2300530-003		20230607-051	Perchlorate6850c.lcm	1x		6/7/2023 15:13
52	E2300530-004		20230607-052	Perchlorate6850c.lcm	1x		6/7/2023 15:19
53	E2300530-005		20230607-053	Perchlorate6850c.lcm	1x		6/7/2023 15:25
54	E2300529-009		20230607-054	Perchlorate6850c.lcm	1x		6/7/2023 15:31
55	E2300529-010		20230607-055	Perchlorate6850c.lcm	1x		6/7/2023 15:36
56	E2300529-011		20230607-056	Perchlorate6850c.lcm	1x		6/7/2023 15:44
57	E2300529-012		20230607-057	Perchlorate6850c.lcm	1x		6/7/2023 15:50
58	EQ2300273-06		20230607-058	Perchlorate6850c.lcm	1x		6/7/2023 15:56
59	CCV		20230607-059	Perchlorate6850c.lcm	1x	227251	6/7/2023 16:01

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/6/23 12:16

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230606\20230606-015	**Lab Code:**	EQ2300280-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806642
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300280-01	263,663	3.48
Method Blank	EQ2300273-01	261,461	3.48
Lab Control Sample	EQ2300273-02	255,243	3.48
Duplicate Lab Control Sample	EQ2300273-03	284,022	3.48
HBW7_052623	E2300516-001	267,855	3.48
HBW7_052623_a	E2300516-002	261,244	3.48
HBW10_052623	E2300516-003	262,275	3.48
HBW1_052623	E2300516-004	264,524	3.48

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/6/23 13:19

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230606\20230606-026	**Lab Code:**	EQ2300280-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806642
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300280-03	259,328	3.48
GPW1_052623	E2300516-005	263,983	3.48

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/6/23 14:23

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230606\20230606-037	**Lab Code:**	EQ2300280-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806642
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300280-02	256,116	3.48

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/7/23 09:03

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230607\20230607-004	**Lab Code:**	EQ2300285-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806739
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300285-01	291,896	3.49

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/7/23 10:11

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230607\20230607-015	**Lab Code:**	EQ2300285-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806739
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300285-02	324,598	3.49
GPW3_052623	E2300516-006	331,838	3.49

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/7/23 11:37

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230607\20230607-026	**Lab Code:**	EQ2300285-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806739
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300285-03	315,149	3.49

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/7/23 12:42

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230607\20230607-037	**Lab Code:**	EQ2300285-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806739
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300285-04	227,499	3.49

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/7/23 14:27

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230607\20230607-048	**Lab Code:**	EQ2300285-05
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806739
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300285-05	279,459	3.49

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/7/23 16:01

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20230607\20230607-059	**Lab Code:**	EQ2300285-06
Instrument ID:	E-LCMS-01	**Analysis Lot:**	806739
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	257,009	3.49
	Upper Limit ==>	385,514	5.49
	Lower Limit ==>	128,505	1.49
Associated Analyses			
Continuing Calibration Verification	EQ2300285-06	268,982	3.49

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/ 6/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230606\20230606-015	**Calibration ID:**	EC2300009
		Analysis Lot:	806642
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.96	0.1827	0.1819	-0.4	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/ 6/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230606\20230606-037	**Calibration ID:**	EC2300009
		Analysis Lot:	806642
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.80	0.1827	0.1791	-2.0	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/ 6/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230606\20230606-026	**Calibration ID:**	EC2300009
		Analysis Lot:	806642
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.98	0.1827	0.1824	-0.2	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/ 7/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230607\20230607-004	**Calibration ID:**	EC2300009
		Analysis Lot:	806739
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.78	0.1827	0.1787	-2.2	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/ 7/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230607\20230607-015	**Calibration ID:**	EC2300009
		Analysis Lot:	806739
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.91	0.1827	0.1810	-0.9	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/ 7/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230607\20230607-026	**Calibration ID:**	EC2300009
		Analysis Lot:	806739
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.91	0.1827	0.1811	-0.9	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/ 7/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230607\20230607-037	**Calibration ID:**	EC2300009
		Analysis Lot:	806739
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.63	0.1827	0.1759	-3.7	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/ 7/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230607\20230607-048	**Calibration ID:**	EC2300009
		Analysis Lot:	806739
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.92	0.1827	0.1813	-0.8	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2300516
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	6/ 7/23

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/6/23
File ID:	I:\LCMS01\DATA\20230607\20230607-059	**Calibration ID:**	EC2300009
		Analysis Lot:	806739
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.85	0.1827	0.1800	-1.5	NA	± 15 %	Average RF

Insight Report

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IB

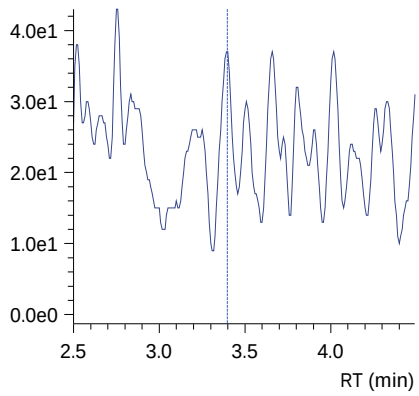
Sample ID: IB
Date Acquired: 6/6/2023 11:52:53 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-012.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	259303	----	ng/mL	101.00 >85.00	0.00	17.79-33.04
Sodium Perchlorate-18O4_IS	Auto	3.484	259303	259303	1.0000	ng/mL	----	----	

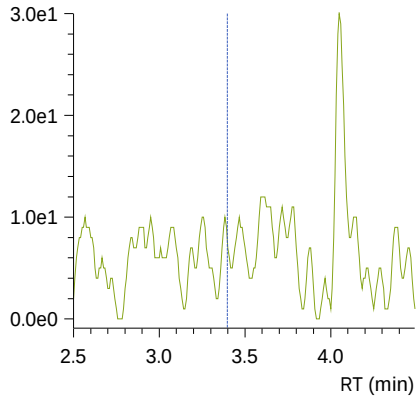
Perchlorate

Conc ----
R#1 0.00 (24.52)

Q 99.00>83.00 (-) 4.30e1



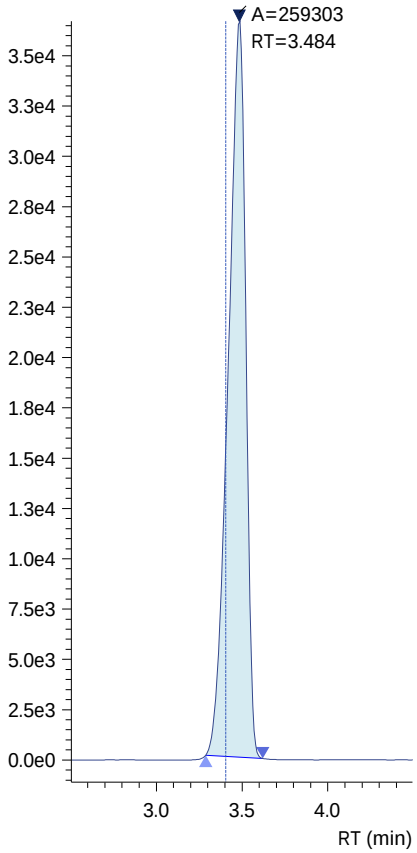
R1 101.00>85.00 (-) 3.00e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.67e4



Insight Report

Printed at 6/7/2023 10:10:58 AM

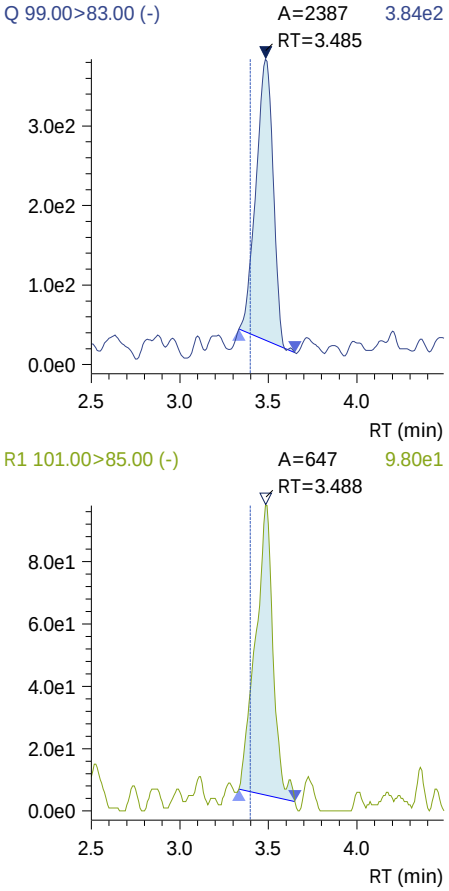
LODV

Sample ID: LODV
Date Acquired: 6/6/2023 11:58:37 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-013.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.485	2387	257935	0.0506	ng/mL	101.00 >85.00	27.11	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.484	257935	257935	1.0000	ng/mL	----	----	

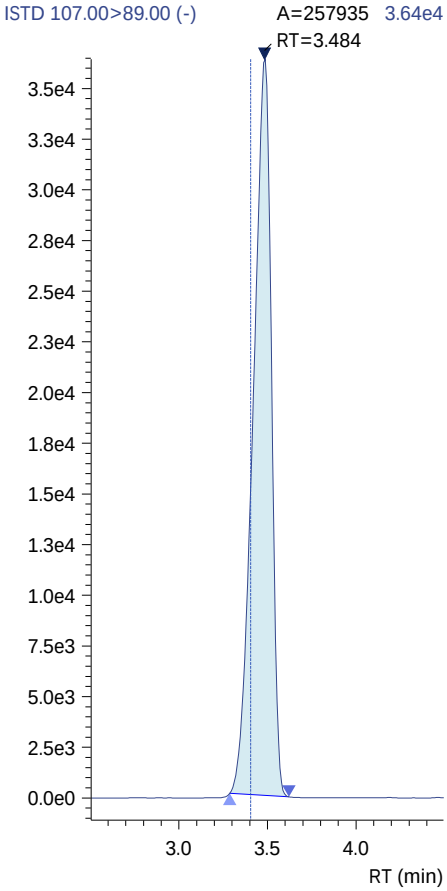
Perchlorate

Conc 0.0506
R#1 27.11 (24.52)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

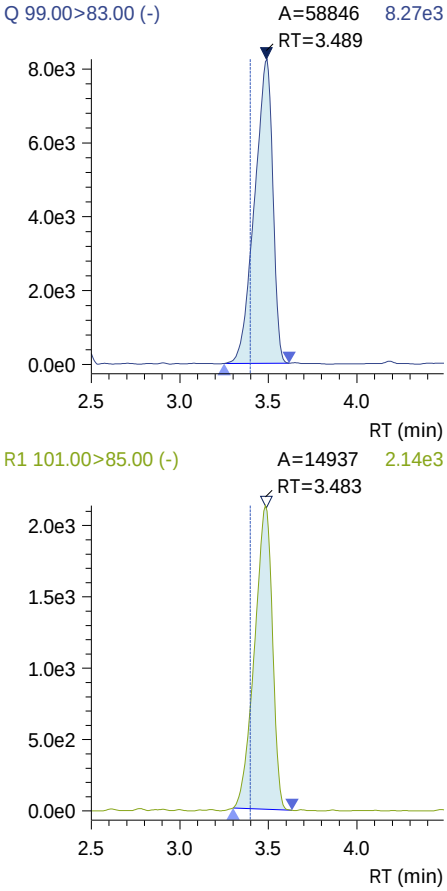
ICS

Sample ID: ICS
Date Acquired: 6/6/2023 12:04:23 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-014.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.489	58846	301715	1.0674	ng/mL	101.00 >85.00	25.38	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.484	301715	301715	1.0000	ng/mL	----	----	

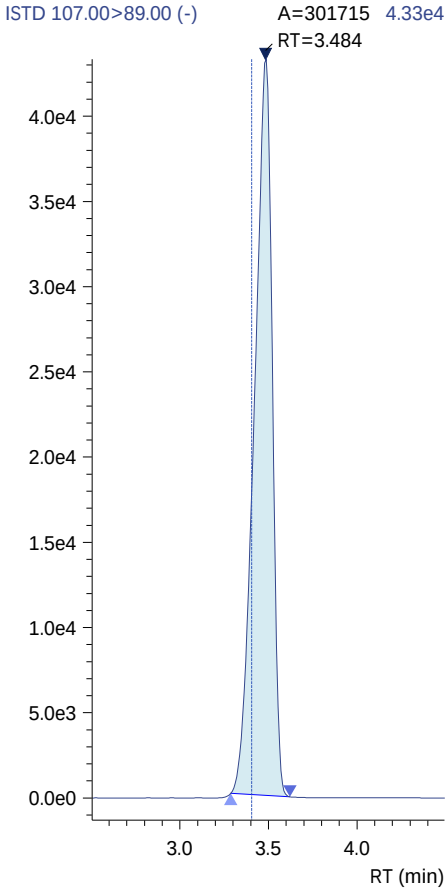
Perchlorate

Conc 1.0674
R#1 25.38 (24.52)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

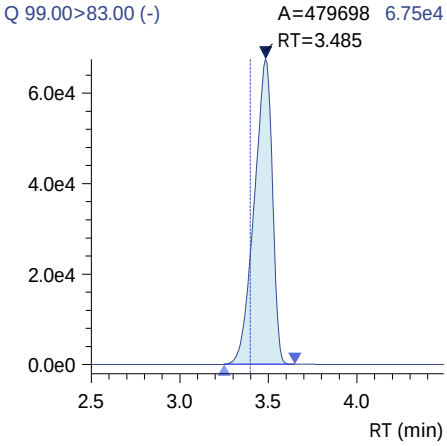
CCV

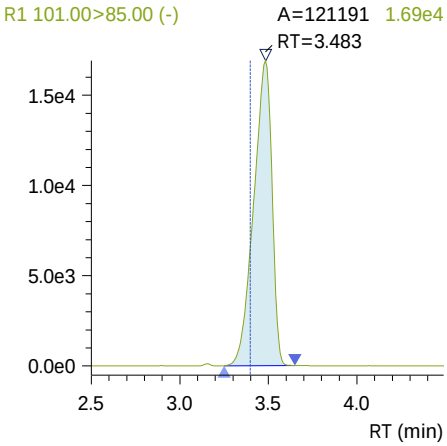
Sample ID: CCV
Date Acquired: 6/6/2023 12:16:20 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-015.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.485	479698	263663	9.9568	ng/mL	101.00 >85.00	25.26	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.481	263663	263663	1.0000	ng/mL	----	----	

Perchlorate

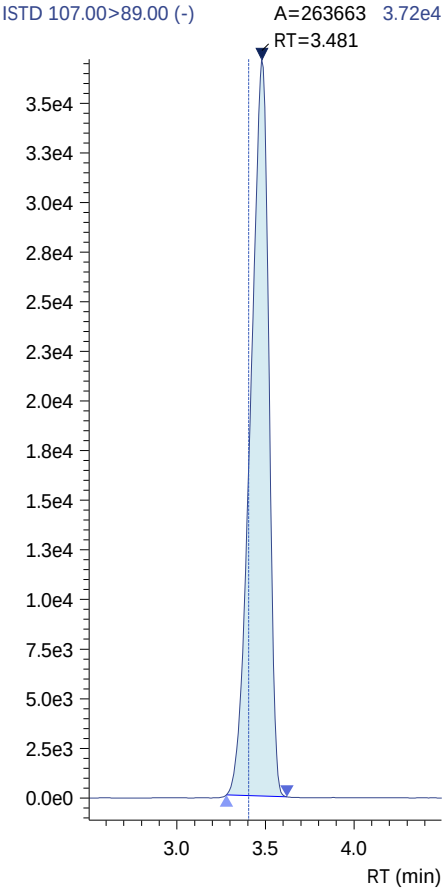
Conc 9.9568
R#1 25.26 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

EQ2300273-01

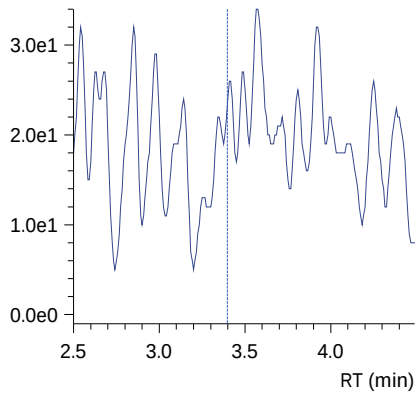
Sample ID: EQ2300273-01
Date Acquired: 6/6/2023 12:39:26 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-019.lcd
Vial: 40 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	261461	----	ng/mL	101.00 >85.00	0.00	17.79-33.04
Sodium Perchlorate-18O4_IS	Auto	3.483	261461	261461	1.0000	ng/mL	----	----	

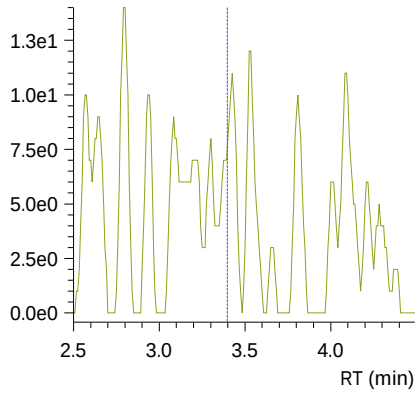
Perchlorate

Conc ----
R#1 0.00 (24.52)

Q 99.00>83.00 (-) 3.40e1



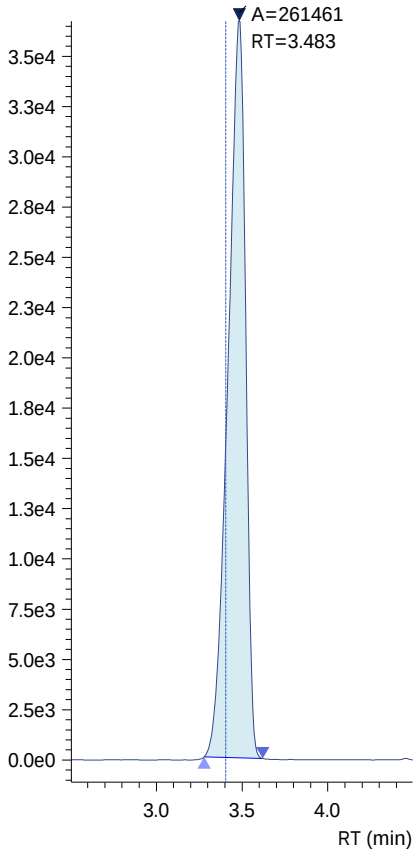
R1 101.00>85.00 (-) 1.40e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.67e4



Insight Report

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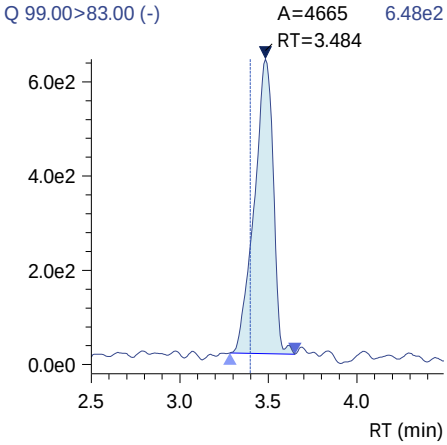
EQ2300273-02

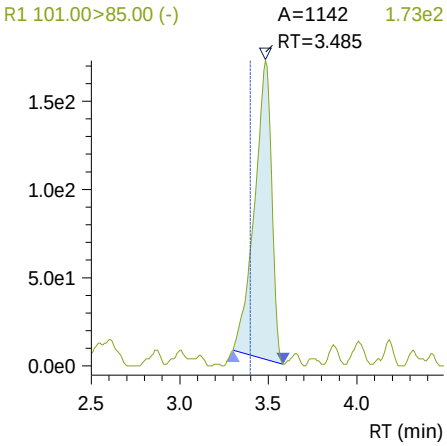
Sample ID: EQ2300273-02
Date Acquired: 6/6/2023 12:45:13 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-020.lcd
Vial: 41 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.484	4665	255243	0.1000	ng/mL	101.00 >85.00	24.47	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.482	255243	255243	1.0000	ng/mL	----	----	

Perchlorate

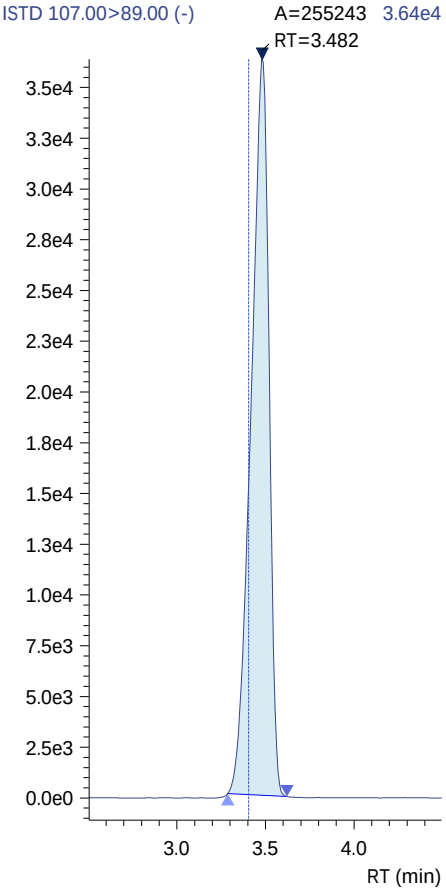
Conc 0.1000
R#1 24.47 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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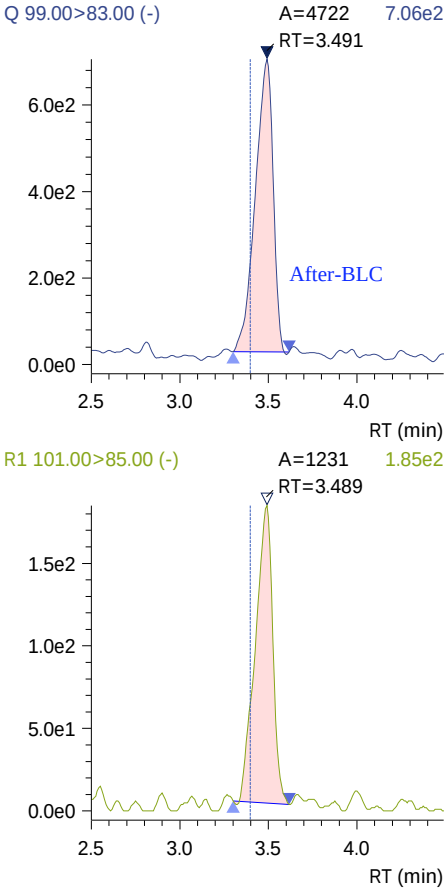
EQ2300273-03

Sample ID: EQ2300273-03
Date Acquired: 6/6/2023 12:50:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-021.lcd
Vial: 42 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	M	3.491	4722	284022	0.0910	ng/mL	101.00 >85.00	26.07	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.483	284022	284022	1.0000	ng/mL	----	----	

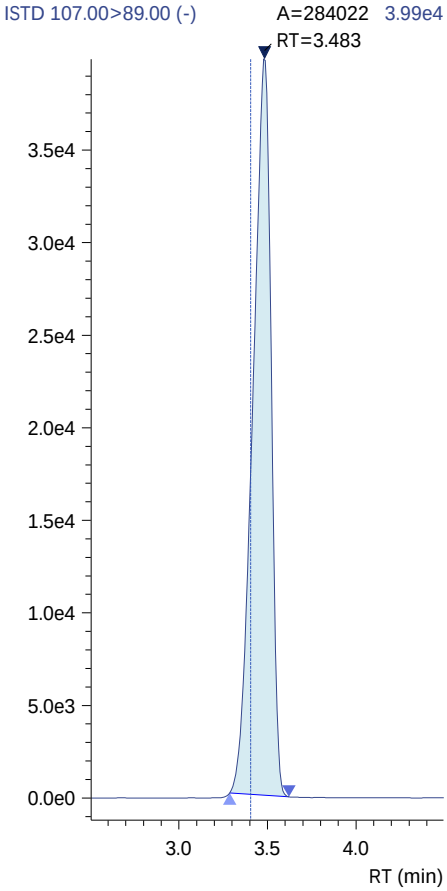
Perchlorate

Conc 0.0910
R#1 26.07 (24.52)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:13:10 AM

Method File: I:\LCMS01\DATA\20230606\20230606.lcm
Project File: I:\LCMS01\DATA\20230606\20230606.damlp

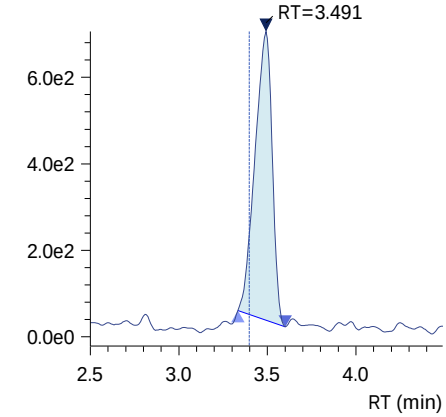
EQ2300273-03

Sample ID: EQ2300273-03
Date Acquired: 6/6/2023 12:50:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-021.lcd
Vial: 42 | Inj. Volume: 10.0000uL | Tray: 4

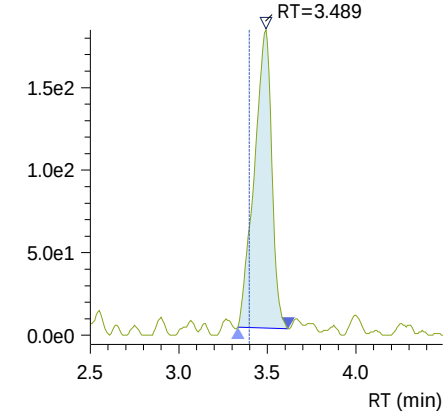
Perchlorate

Conc 0.0867
R#1 27.56 (24.52)

Q 99.00>83.00 (-) A=4500 7.06e2 RT=3.491



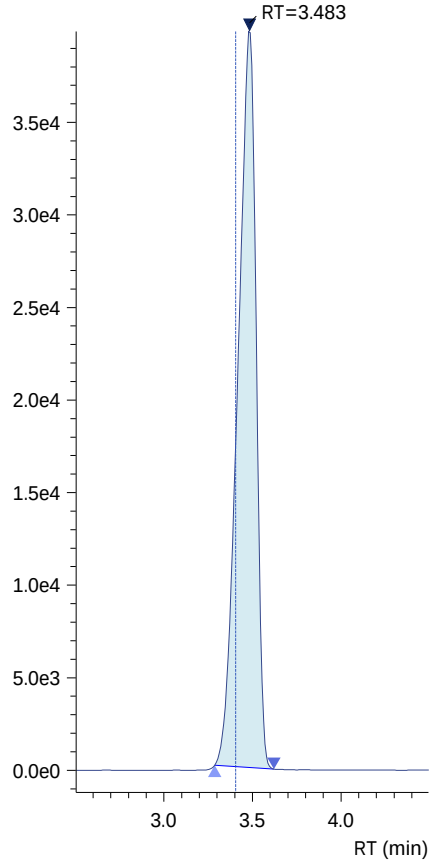
R1 101.00>85.00 (-) A=1240 1.85e2 RT=3.489



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) A=284022 3.99e4 RT=3.483



Insight Report

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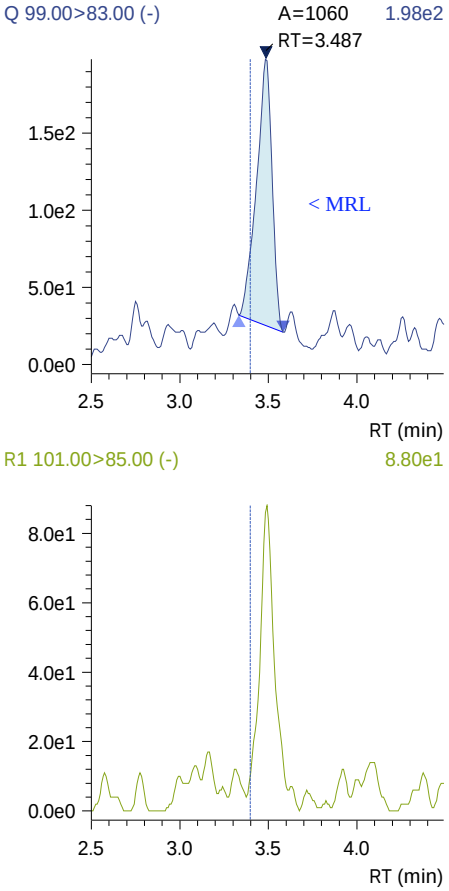
E2300516-001

Sample ID: E2300516-001
Date Acquired: 6/6/2023 12:56:41 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-022.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.487	1060	267855	0.0217	ng/mL	101.00 >85.00	0.00	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.483	267855	267855	1.0000	ng/mL	----	----	

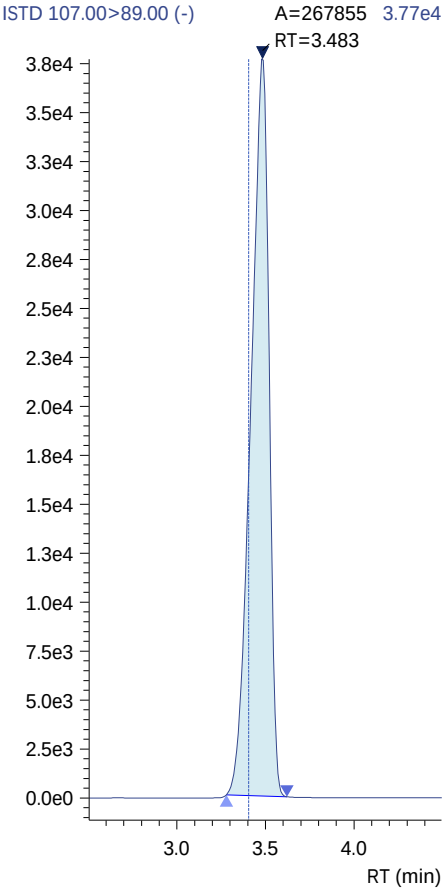
Perchlorate

Conc 0.0217
R#1 0.00 (24.52)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

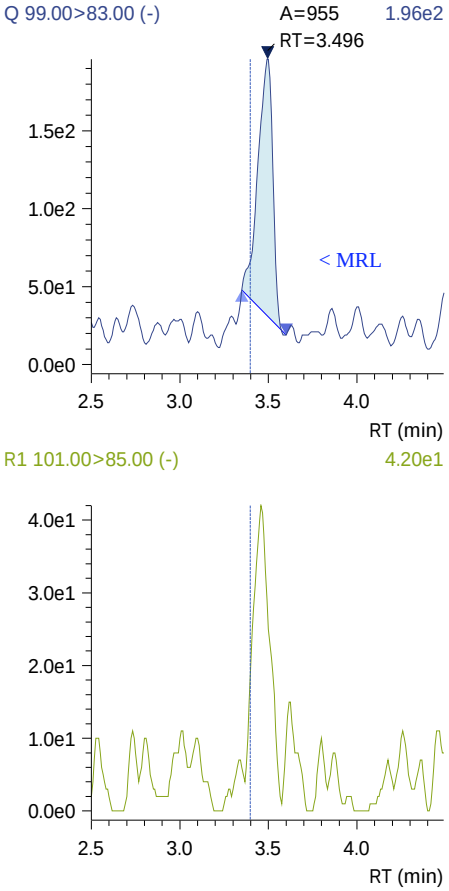
E2300516-002

Sample ID: E2300516-002
Date Acquired: 6/6/2023 1:02:24 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-023.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.496	955	261244	0.0200	ng/mL	101.00 >85.00	0.00	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.483	261244	261244	1.0000	ng/mL	----	----	

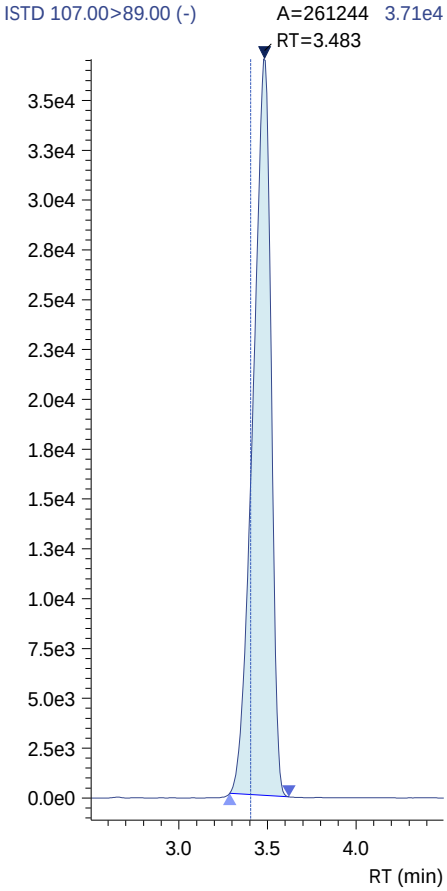
Perchlorate

Conc 0.0200
R#1 0.00 (24.52)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

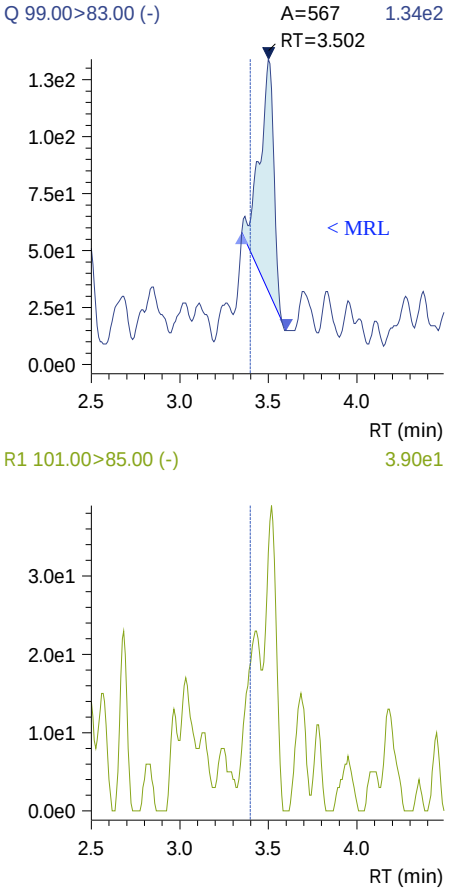
E2300516-003

Sample ID: E2300516-003
Date Acquired: 6/6/2023 1:08:10 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-024.lcd
Vial: 3 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.502	567	262275	0.0118	ng/mL	101.00 >85.00	0.00	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.483	262275	262275	1.0000	ng/mL	----	----	

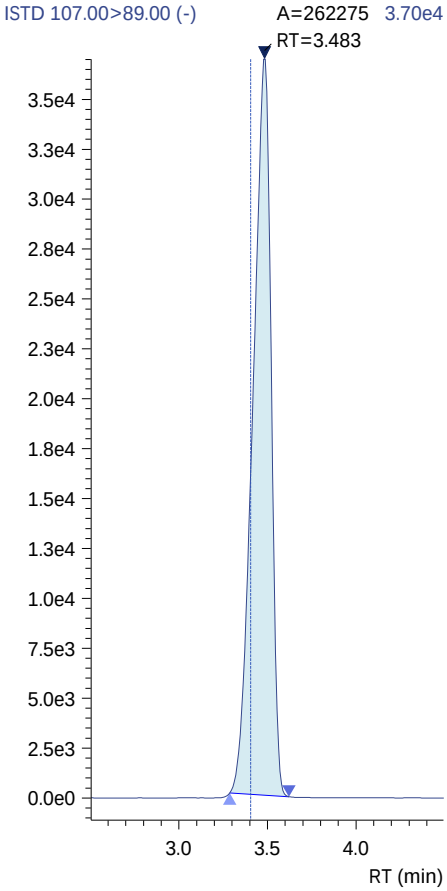
Perchlorate

Conc 0.0118
R#1 0.00 (24.52)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

E2300516-004

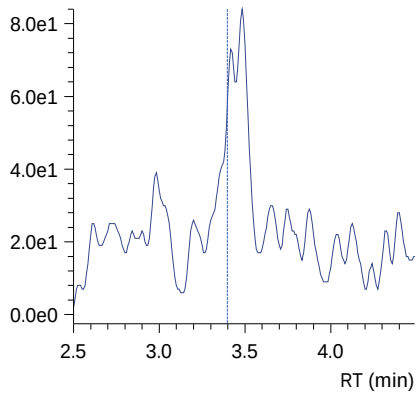
Sample ID: E2300516-004
Date Acquired: 6/6/2023 1:13:54 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-025.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	264524	----	ng/mL	101.00 >85.00	0.00	17.79-33.04
Sodium Perchlorate-18O4_IS	Auto	3.482	264524	264524	1.0000	ng/mL	----	----	

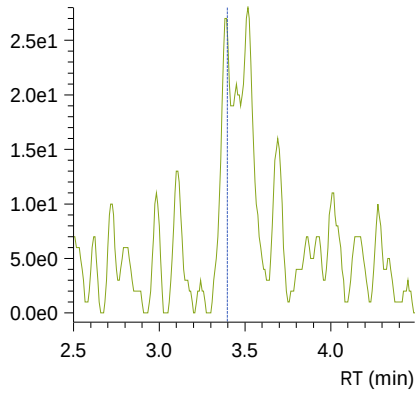
Perchlorate

Conc ----
R#1 0.00 (24.52)

Q 99.00>83.00 (-) 8.40e1



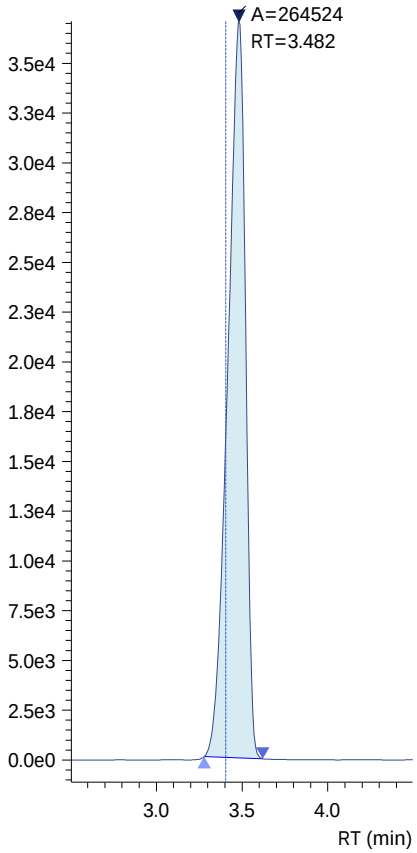
R1 101.00>85.00 (-) 2.80e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.71e4



Insight Report

Printed at 6/7/2023 10:10:58 AM

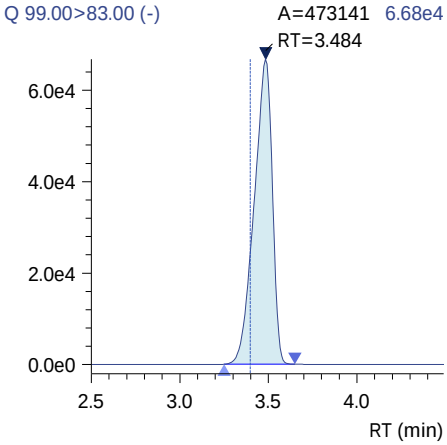
CCV

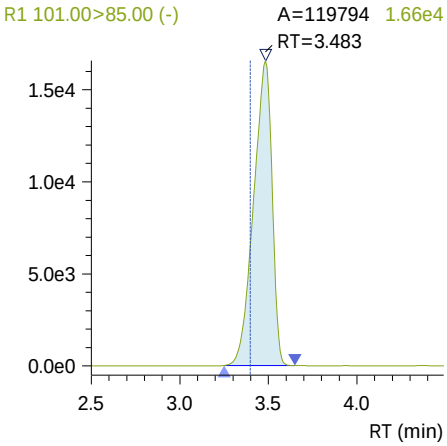
Sample ID: CCV
Date Acquired: 6/6/2023 1:19:42 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-026.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.484	473141	259328	9.9849	ng/mL	101.00 >85.00	25.32	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.481	259328	259328	1.0000	ng/mL	----	----	

Perchlorate

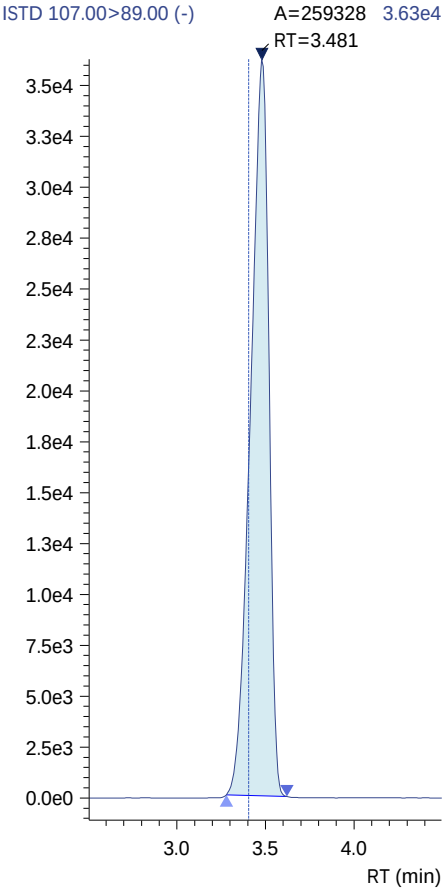
Conc 9.9849
R#1 25.32 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 11:15:17 AM

Method File: I:\LCMS01\DATA\20230606\20230606.lcm
Project File: I:\LCMS01\DATA\20230606\20230606.damlp

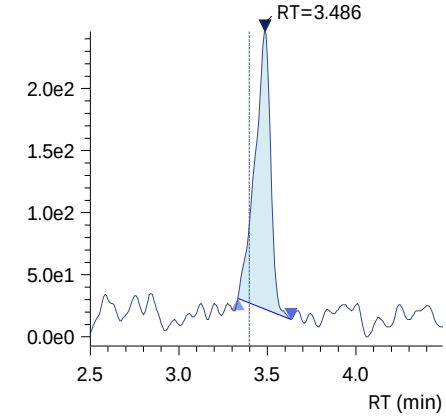
E2300516-005

Sample ID: E2300516-005
Date Acquired: 6/6/2023 1:25:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-027.lcd
Vial: 5 | Inj. Volume: 10.0000uL | Tray: 3

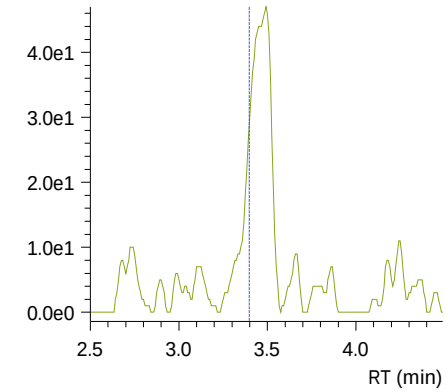
Perchlorate

Conc 0.0286
R#1 0.00 (24.52)

Q 99.00>83.00 (-) A=1379 2.46e2 RT=3.486



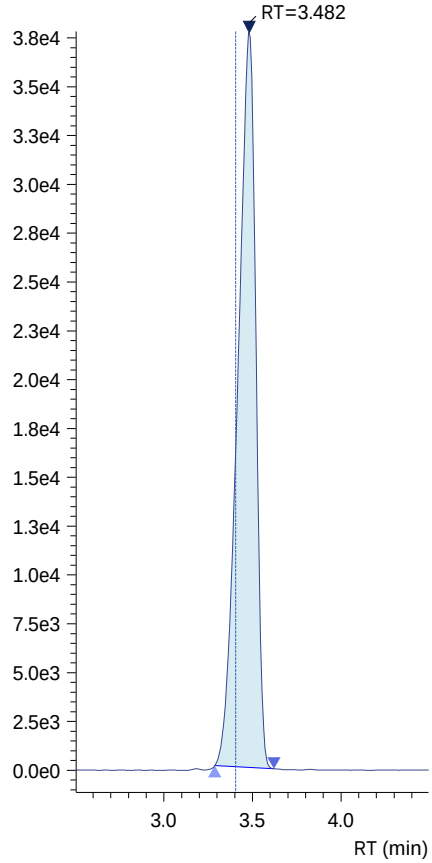
R1 101.00>85.00 (-) 4.70e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) A=263983 3.78e4 RT=3.482



Insight Report

Printed at 6/7/2023 11:13:56 AM

Method File: I:\LCMS01\DATA\20230606\20230606.lcm
Project File: I:\LCMS01\DATA\20230606\20230606.damlp

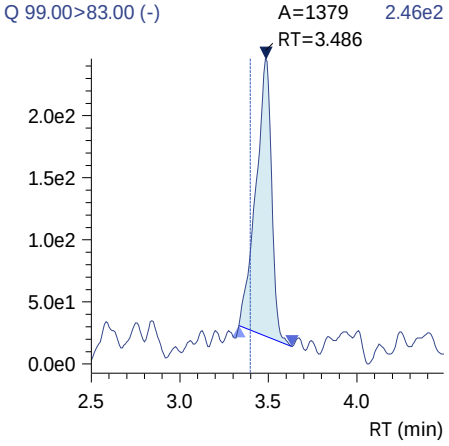
E2300516-005

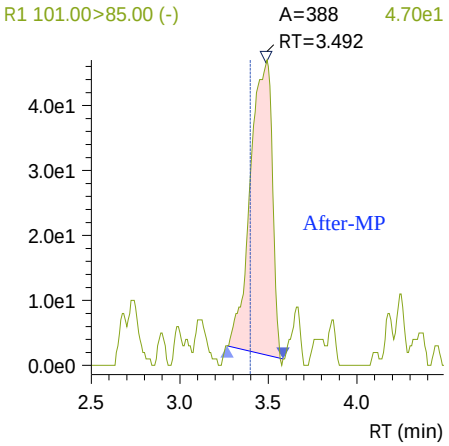
Sample ID: E2300516-005
Date Acquired: 6/6/2023 1:25:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-027.lcd
Vial: 5 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	MI R1	3.486	1379	263983	0.0286	ng/mL	101.00 >85.00	28.13	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.482	263983	263983	1.0000	ng/mL	----	----	

Perchlorate

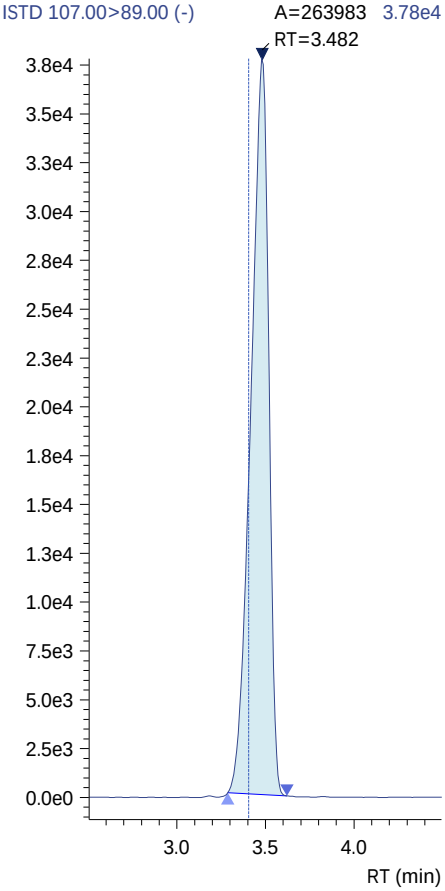
Conc 0.0286
R#1 28.13 (24.52)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/7/2023 10:10:58 AM

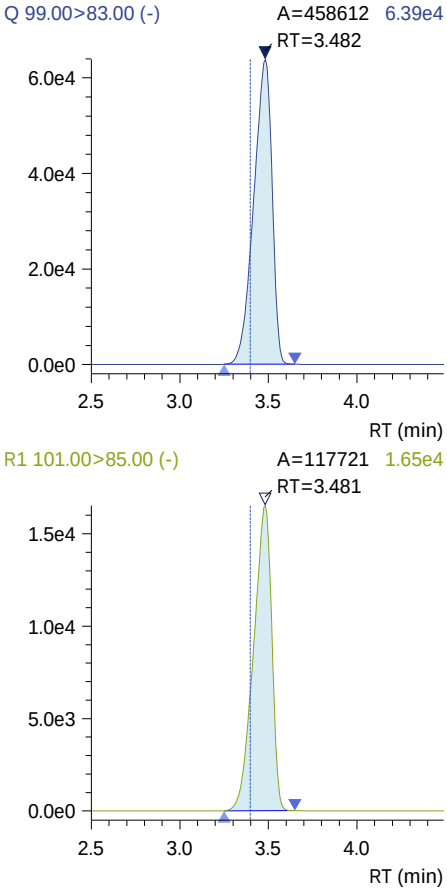
CCV

Sample ID: CCV
Date Acquired: 6/6/2023 2:23:01 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230606\20230606-037.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.482	458612	256116	9.7997	ng/mL	101.00 >85.00	25.67	17.79-33.04
Sodium Perchlorate-18O4 _IS	Auto	3.480	256116	256116	1.0000	ng/mL	----	----	

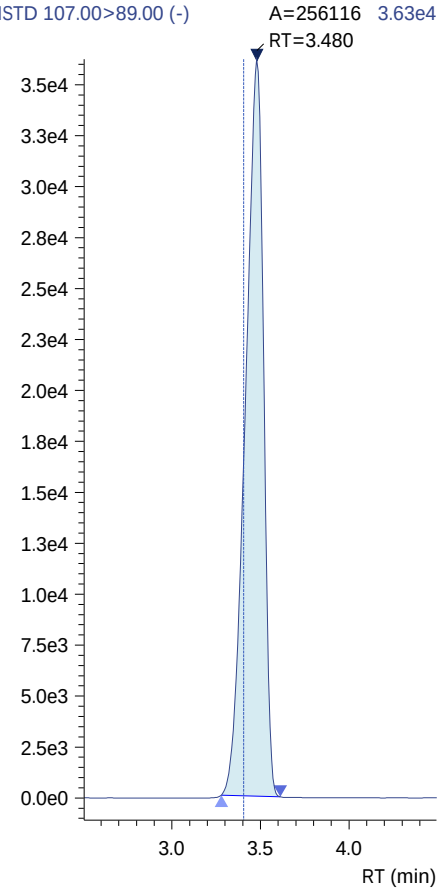
Perchlorate

Conc 9.7997
R#1 25.67 (24.52)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/8/2023 10:17:10 AM

Method File: I:\LCMS01\DATA\20230607\20230607.lcm
Project File: I:\LCMS01\DATA\20230607\20230607.damlp

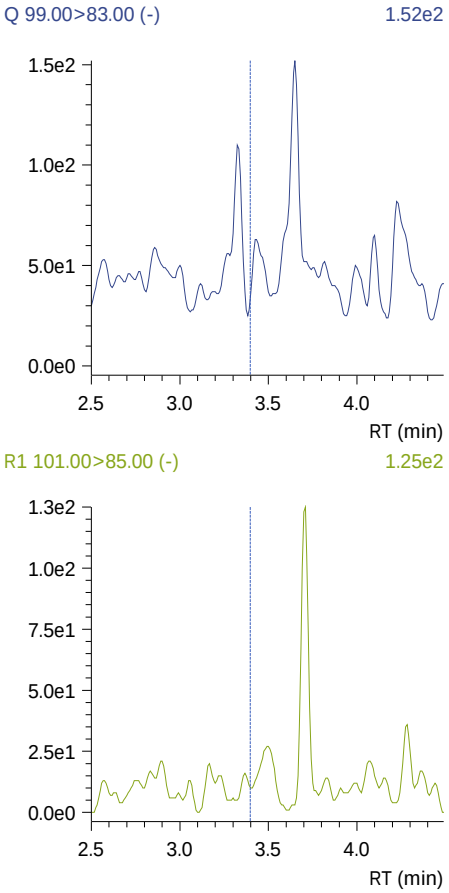
IB

Sample ID: IB
Date Acquired: 6/7/2023 8:41:34 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-001.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	363589	----	ng/mL	101.00 >85.00	0.00	18.06-33.55
Sodium Perchlorate-18O4_IS	Auto	3.472	363589	363589	1.0000	ng/mL	----	----	

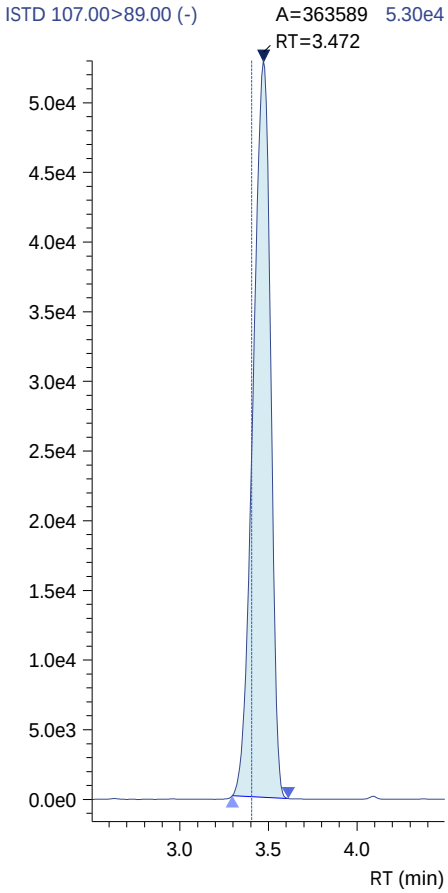
Perchlorate

Conc ----
R#1 0.00 (25.81)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/8/2023 10:19:47 AM

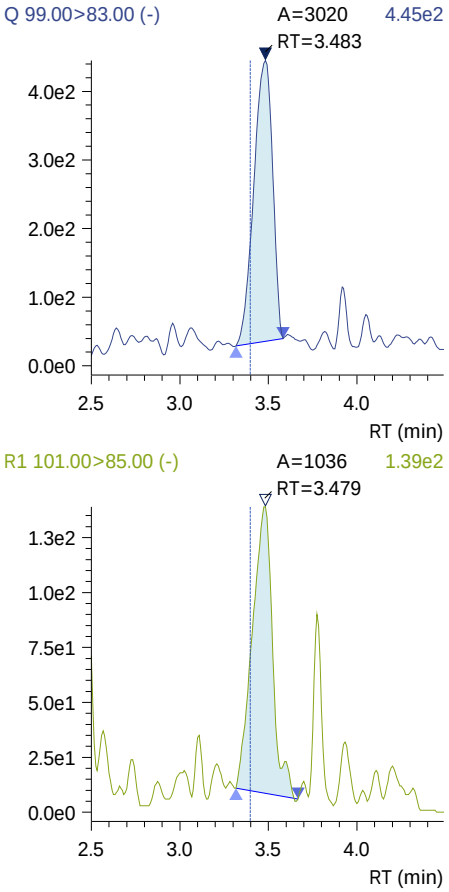
Method File: I:\LCMS01\DATA\20230607\20230607.lcm
Project File: I:\LCMS01\DATA\20230607\20230607.damlp

LODV

Sample ID: LODV
Date Acquired: 6/7/2023 8:51:37 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-002.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 0

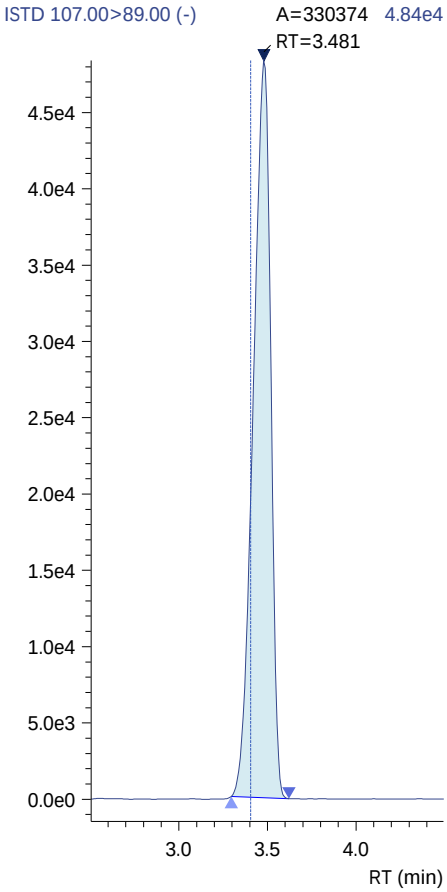
Perchlorate

Conc 0.0500
R#1 34.31 (25.81)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/8/2023 10:17:10 AM

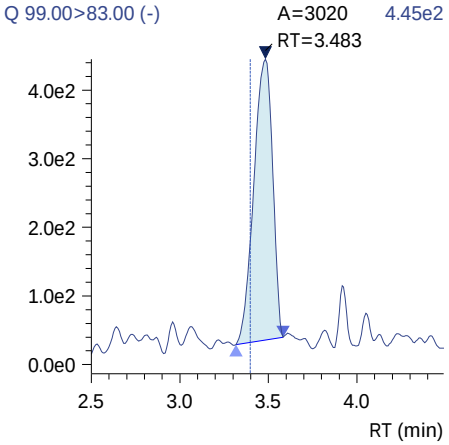
LODV

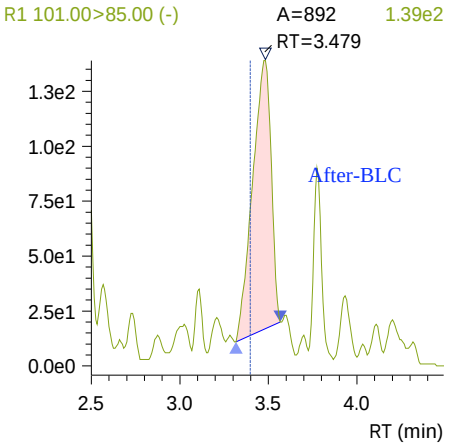
Sample ID: LODV
Date Acquired: 6/7/2023 8:51:37 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-002.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	MI R1	3.483	3020	330374	0.0500	ng/mL	101.00 >85.00	29.54	18.06-33.55
Sodium Perchlorate-18O4 _IS	Auto	3.481	330374	330374	1.0000	ng/mL	----	----	

Perchlorate

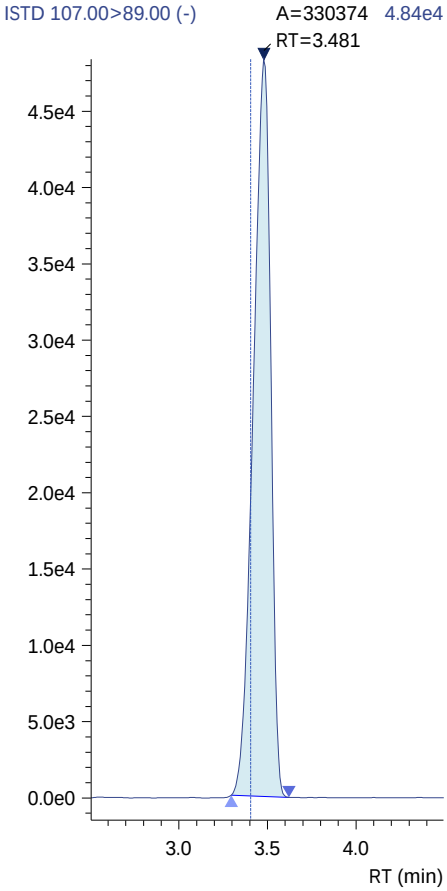
Conc 0.0500
R#1 29.54 (25.81)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/8/2023 10:17:10 AM

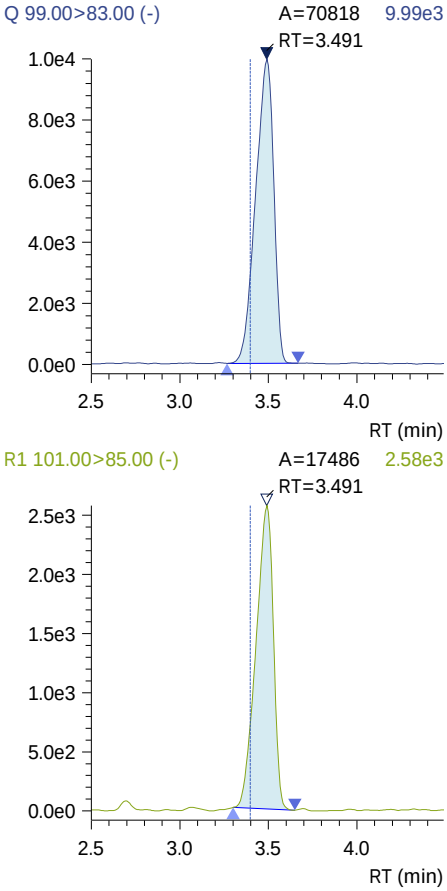
ICS

Sample ID: ICS
Date Acquired: 6/7/2023 8:57:21 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-003.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.491	70818	360222	1.0759	ng/mL	101.00 >85.00	24.69	18.06-33.55
Sodium Perchlorate-18O4 _IS	Auto	3.488	360222	360222	1.0000	ng/mL	----	----	

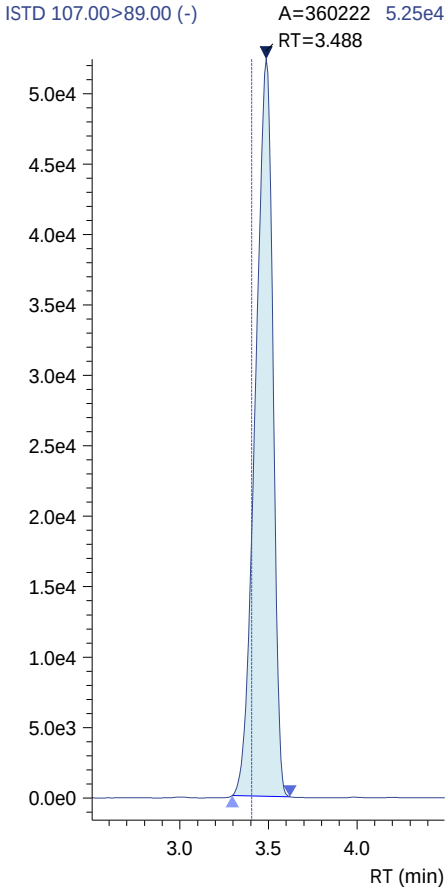
Perchlorate

Conc 1.0759
R#1 24.69 (25.81)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/8/2023 10:17:10 AM

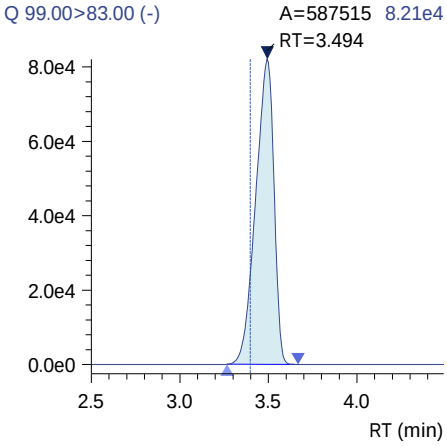
CCV

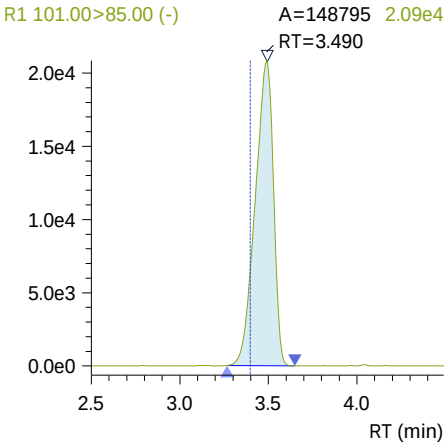
Sample ID: CCV
Date Acquired: 6/7/2023 10:11:28 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-015.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.494	587515	324598	9.9055	ng/mL	101.00 >85.00	25.33	18.06-33.55
Sodium Perchlorate-18O4 _IS	Auto	3.490	324598	324598	1.0000	ng/mL	----	----	

Perchlorate

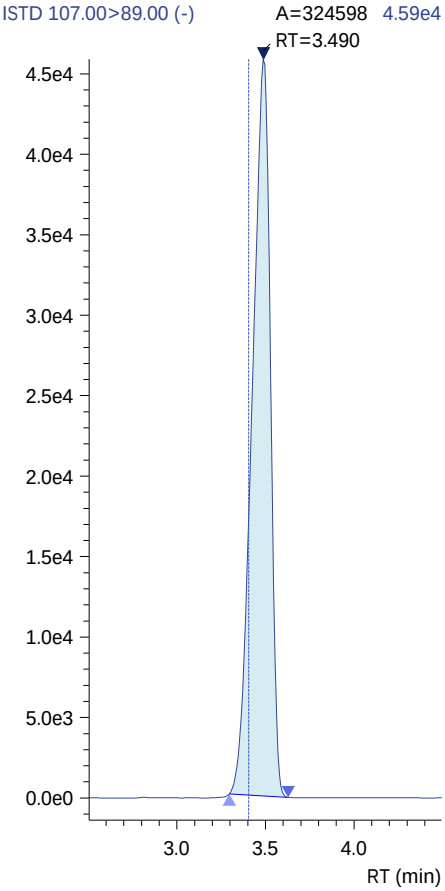
Conc 9.9055
R#1 25.33 (25.81)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/8/2023 10:17:10 AM

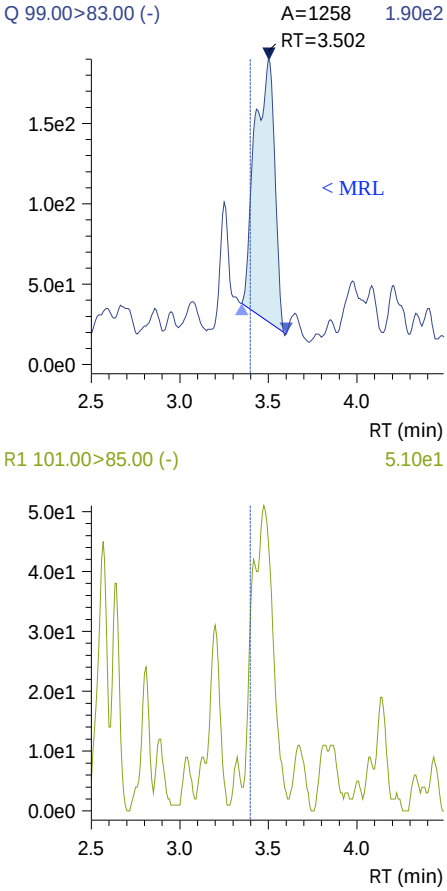
E2300516-006

Sample ID: E2300516-006
Date Acquired: 6/7/2023 11:03:07 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-023.lcd
Vial: 6 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.502	1258	331838	0.0207	ng/mL	101.00 >85.00	0.00	18.06-33.55
Sodium Perchlorate-18O4 _IS	Auto	3.490	331838	331838	1.0000	ng/mL	----	----	

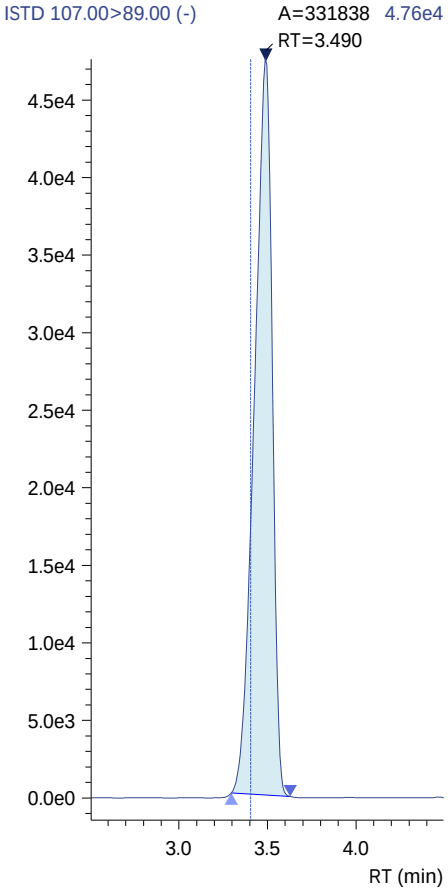
Perchlorate

Conc 0.0207
R#1 0.00 (25.81)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 6/8/2023 10:17:10 AM

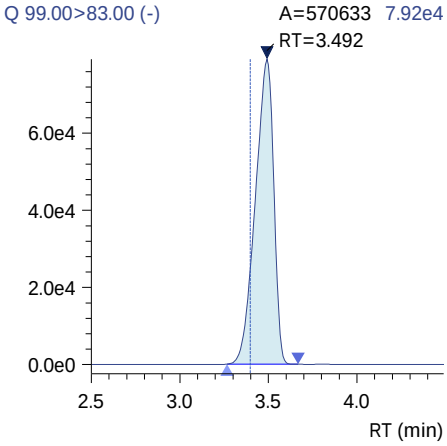
CCV

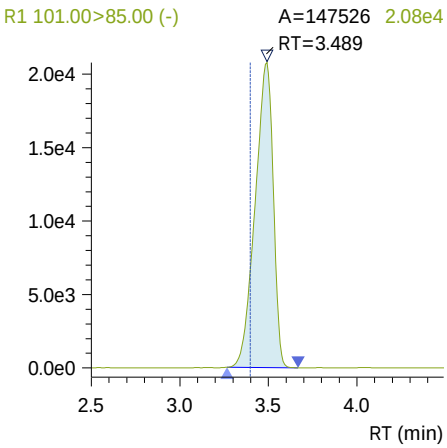
Sample ID: CCV
Date Acquired: 6/7/2023 11:37:30 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230607\20230607-026.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 2

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.492	570633	315149	9.9093	ng/mL	101.00 >85.00	25.85	18.06-33.55
Sodium Perchlorate-18O4 _IS	Auto	3.489	315149	315149	1.0000	ng/mL	----	----	

Perchlorate

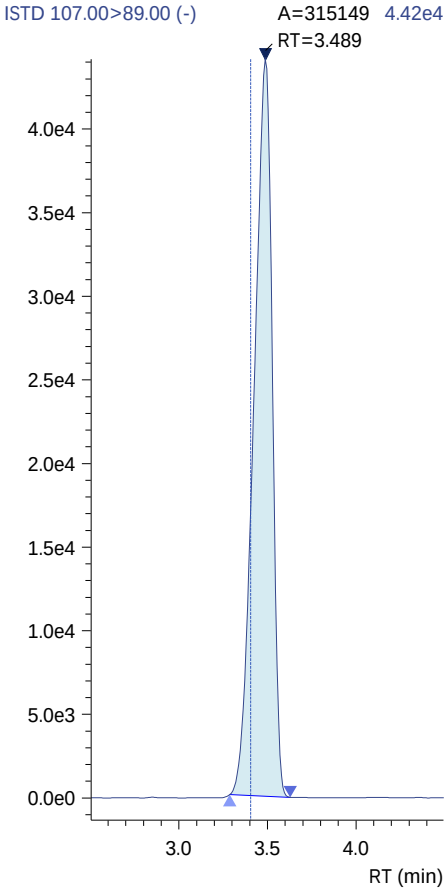
Conc 9.9093
R#1 25.85 (25.81)





Sodium Perchlorate-18O4_IS

Conc 1.0000



January 05, 2024 Service Request No:E2301235

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd
Suite 129
Lakewood, CO 80228

Laboratory Results for: LHAAP / Quarterly Surface Water Samples

Dear Marcia,

Enclosed are the results of the sample(s) submitted to our laboratory December 28, 2023
For your reference, these analyses have been assigned our service request number **E2301235.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2190. You may also contact me via email at hussam.kelany@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Hussam Kelany
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston Specialties Laboratory
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

Client:	Bhate Environmental Associates, Inc.	**Service Request No.:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Received:**	12/28/23
Sample Matrix:	Surface Water		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Six samples were received for analysis at ALS Environmental in Houston on 12/28/23.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2400006: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch.

The batch precision (MS/DMS) measurements were determined on an unrelated sample in the extraction batch. The MS/DMS results are not included in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: Bhate Environmental Associates, Inc. **Service Request:**E2301235

Project: LHAAP / Quarterly Surface Water Samples

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2301235-001	HBW7_122723	12/4/2023	0845
E2301235-002	HBW10_122723	12/4/2023	0900
E2301235-003	HBW10_122723_a	12/4/2023	0900
E2301235-004	HBW1_122723	12/4/2023	0915
E2301235-005	GPW1_122723	12/4/2023	0935
E2301235-006	GPW3_122723	12/4/2023	0950

Service Request Summary

Folder #: **E2301235**
Client Name: Bhate Environmental Associates, Inc.
Project Name: LHAAP / Quarterly Surface Water Samples
Project Number:

Report To: Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd
Lakewood, CO 80228
USA
Phone Number: 303-597-2450
Cell Number:
Fax Number:
E-mail: molive@bhate.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 12/28/23
Internal Due Date: 1/9/2024
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: 2878
EDD: BASIC_WQC_CASNo_LOD

6 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	Semivoa GCMS ClO4 DOD/6850
E2301235-001	HBW7_122723	Surface Water	12/04/23 0845	**IV**
E2301235-002	HBW10_122723	Surface Water	12/04/23 0900	**IV**
E2301235-003	HBW10_122723_a	Surface Water	12/04/23 0900	**IV**
E2301235-004	HBW1_122723	Surface Water	12/04/23 0915	**IV**
E2301235-005	GPW1_122723	Surface Water	12/04/23 0935	**IV**
E2301235-006	GPW3_122723	Surface Water	12/04/23 0950	**IV**

Service Request Summary

Folder #:	**E2301235**
Client Name:	Bhate Environmental Associates, Inc.
Project Name:	LHAAP / Quarterly Surface Water Samples
Project Number:	

Report To:	Marcia Olive Bhate Environmental Associates, Inc. 445 Union Blvd Lakewood, CO 80228 USA
Phone Number:	303-597-2450
Cell Number:	
Fax Number:	
E-mail:	molive@bhate.com

Project Chemist:	Hussam Kelany
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	12/28/23
Internal Due Date:	1/9/2024
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	2878
EDD:	BASIC_WQC_CASNo_LOD

6 120 mL-Plastic Bottle Natural WM Unpreserved

Location: EHRMS-AirArch 1

Pressure Gas:

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.

Data Qualifiers

Lab Standard

M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793_2024	5/27/2024
Arkansas Department of Environmental Quality	88-00356	3/27/2024
California State Environmental Laboratory Accreditation Program	2919	4/30/2024
Department of Defense	L22-90	3/31/2024
Department of Defense	L23-358	5/31/2025
Florida Department of Health	E87611-38	6/30/2024
Illinois Environmental Protection Agency	2000322023-11	6/30/2024
Kansas Department of Health and Environment	E-10352 2023-2024	7/31/2024
Louisiana Department of Environmental Quality	03087-2023	6/30/2024
Louisiana Department of Health and Hospitals	LA028-2024	12/31/2024
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343-2023	6/30/2024
Michigan Depratment of Environmental Quality	9971-2023	4/30/2024
Minnesota Department of Health	2645386	12/31/2024
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2024
Nevada Division of Environmental Protection	TX026932024-1	7/31/2024
New Hampshire Environmental Laboratory Accreditation Program	209423	4/24/2024
New Jersey Department of Environmental Protection	TX008-2024	6/30/2024
New York Department of Health	11707	3/31/2024
Oklahoma Department of Environmental Quality	2023-140	8/31/2024
Oregon Environmental Laboratory Accreditation Program	TX200002-011	5/15/2024
Pennsylvania Department of Environmental Protection	68-03441-017	6/30/2024
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	TN04016-2023	4/30/2024
Texas Commision on Environmental Quality	T104704231-23-30	4/30/2024
Utah Department of Health Environmental Laboratory Certification	TX026932023-14	7/31/2024
Washington Department of Ecology	C819-23	11/14/2024

Chain of Custody

ALS Environmental - Houston Specialties Laboratory
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

bhate ENVIRONMENTAL CONSTRUCTION ENERGY

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Page: _____ of _____

Project/Phase No: JVPCIBH.0001

COC Number(1): _____

LIMS Number: _____

Facility/Base I.D.: LHAAP / **BILL to PCI**

Project/Site Name: LHAAP / Quarterly Surface Water Samples

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	ERPIMS LOCID (15 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Sample Analysis Requested (5): Number of containers	PERCHLORATE	Quality Assurance Samples (6): Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
HBW7_122723		27 Dec 2023	08:45	-	N		WS	1	X				
HBW10_122723		27 Dec 2023	09:00	-	N		WS	1	X				
HBW10_122723_a		27 Dec 2023	09:00	-	FD		WS	1	X				
HBW1_122723		27 Dec 2023	09:15		N		WS	1	X				
GPW1_122723		27 Dec 2023	09:35		N		WS	1	X				
GPW3_122723		27 Dec 2023	09:50	-	N		WS	1	X				
				-									
				-									
				-									
				-									
				-									

E2301235 5
Bhate Environmental Associates, Inc.
LHAAP / Quarterly Surface Water Samples

COMMENTS:

Standard TAT

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	12/27/23	1330	1. CH	12.28.23	0919
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped No.:

_____ Method of Shipment: _____

_____ Fed _____ Ex _____ Airbill Number:

_____ Analytical Lab: ALS 10450 Stancliff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: SONIA WEST Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

51535 1231 1.6°

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F: +1 281 530 5887
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Client: BHATE Date: 12-28-2023 WO#: NA

Time Received: 0915 Received by: CB BO#: NA

Matrices: Solid/Sludge Water Oil Wipes Hydrocarbon Liquid Other

Kit ID/Cooler ID	Trip Blank ID	Cooler Temp (C) Observed/Corrected	IR #	Temp BLK Present?
S1535	NA	1.6wc / 1.5c	3	Y N
		/		Y N
		/		Y N
		/		Y N
		/		Y N

Delivery Method: ~~FedEx~~ UPS Greyhound ALS Client Other_____

Date/Time of Unpacking: 12-28-2023 Unpacked by: MB

Shipping container/cooler in good condition?	~~Yes~~	No	Not Present
Custody seals intact on shipping container/cooler?	~~Yes~~	No	Not Present
Custody seals intact on sample bottles?	Yes	No	~~Not Present~~
Chain of Custody present?	~~Yes~~	No	
Chain of Custody signed when relinquished and received?	~~Yes~~	No	
Chain of Custody – Sampler's name present?	~~Yes~~	No	
Chain of Custody agrees with sample labels?	~~Yes~~	No	
Samples in proper container/bottle?	~~Yes~~	No	
VOA/TX1005/1006 Solids in hermetically Sealed Vials:	Yes	No	~~No VOA/TX1005/1006 Solid~~
Sample containers intact?	~~Yes~~	No	
Sufficient sample volume for indicated test?	~~Yes~~	No	
All samples received within holding time?	~~Yes~~	No	
Container/Temp Blank temperature in compliance?	~~Yes~~	No	
Water - VOA vials have zero headspace?	Yes	No	~~N/A~~ No VOA submitted
Non-VOA waters preserved with HCl, H2SO4, HNO3 are pH <2?			Yes No N/A
Waters preserved with NaOH/Ascorbic acid are pH>12?	Yes	No	~~N/A~~
pH adjusted? Yes*	No	N/A	*See Preservation Logbook
pH adjusted by: _____	pH Paper Lot:	E2301235	5 --

Bhate Environmental Associates, Inc.
LHAAP / Quarterly Surface Water Samples

HS-QAFORM18

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www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston Specialties Laboratory
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 432246 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 1/4/24 13:20

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2301095-001RE	MW-E	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2301095-002RE	MW-F	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2301095-003RE	MW-G	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2301095-004RE	MW-H	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2301095-005RE	MW-I	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2301095-006RE	MW-J1	.02	6850/ClO4 DOD			Ground Water	10mL	
7	E2301095-007RE	MW-N	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2301116-001RE	MW-LA	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2301116-002RE	MW-M	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2301116-003RE	MW-K	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2301116-004RE	DUPLICATE MW-K	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2301235-001	HBW7_122723	.01	6850/ClO4 DOD			Surface Water	10mL	
13	E2301235-002	HBW10_122723	.01	6850/ClO4 DOD			Surface Water	10mL	
14	E2301235-003	HBW10_122723_a	.01	6850/ClO4 DOD			Surface Water	10mL	
15	E2301235-004	HBW1_122723	.01	6850/ClO4 DOD			Surface Water	10mL	
16	E2301235-005	GPW1_122723	.01	6850/ClO4 DOD			Surface Water	10mL	
17	E2301235-006	GPW3_122723	.01	6850/ClO4 DOD			Surface Water	10mL	
18	E2400012-001	LH18/24-SP650_010324_BIX	.01	6850/ClO4 DOD			Water	10mL	
19	E2400012-002	LH18/24-SP650_010324_AIX	.01	6850/ClO4 DOD			Water	10mL	
20	EQ2400006-01	MB		6850/ClO4 DOD			Liquid	10mL	
21	EQ2400006-02	LCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2400006-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
23	EQ2400006-04	ICS		6850/ClO4 DOD			Liquid	10mL	
24	EQ2400006-05	MW-J1 MS	.02	6850/ClO4 DOD			Liquid	10mL	
25	EQ2400006-06	MW-J1 DMS	.02	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock 2 Inventory ID 230345 Logbook Ref: Perchlorate INT. Stock2 Expires On: 03/07/2024

EQ2400006-02	10.00µL	EQ2400006-03	10.00µL	EQ2400006-04	10.00µL	EQ2400006-05	10.00µL	EQ2400006-06	10.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 230372 Logbook Ref: Perchlorate Internal Standard Expires On: 04/30/2024

E2301095-001	100.00µL	E2301095-002	100.00µL	E2301095-003	100.00µL	E2301095-004	100.00µL	E2301095-005	100.00µL	E2301095-006	100.00µL
E2301095-007	100.00µL	E2301116-001	100.00µL	E2301116-002	100.00µL	E2301116-003	100.00µL	E2301116-004	100.00µL	E2301235-001	100.00µL
E2301235-002	100.00µL	E2301235-003	100.00µL	E2301235-004	100.00µL	E2301235-005	100.00µL	E2301235-006	100.00µL	E2400012-001	100.00µL

Preparation Information Benchsheet

Prep Run#: 432246 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 1/4/24 13:20

E2400012-002 100.00µL EQ2400006-01 100.00µL EQ2400006-02 100.00µL EQ2400006-03 100.00µL EQ2400006-04 100.00µL EQ2400006-05 100.00µL
EQ2400006-06 100.00µL

Name: Perchlorate Anion Spiking Soln. 25,000 ppm Inventory ID 233096 Logbook Ref: Expires On: 02/04/2024

EQ2400006-04 20.00µL

Preparation Steps

Step: Preparation
Started: 1/4/24 13:20
Finished: 1/4/24 15:20
By: XMI
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined
Received By: _____ Date: _____ Yes No

Analytical Results

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www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	12/ 4/23 0845
Sample Matrix:	Surface Water	**Date Received:**	12/28/23
Sample Name:	HBW7_122723	**Units:**	µg/L
Lab Code:	E2301235-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.163**		0.100	0.0500	0.0250	1	1/ 4/24	1/4/24 17:50	432246	828938	*

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	12/ 4/23 0900
Sample Matrix:	Surface Water	**Date Received:**	12/28/23
Sample Name:	HBW10_122723	**Units:**	µg/L
Lab Code:	E2301235-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0494**	J	0.100	0.0500	0.0250	1	1/ 4/24	1/4/24 20:59	432246	828938	*

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	12/ 4/23 0900
Sample Matrix:	Surface Water	**Date Received:**	12/28/23
Sample Name:	HBW10_122723_a	**Units:**	µg/L
Lab Code:	E2301235-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0546**	J	0.100	0.0500	0.0250	1	1/ 4/24	1/4/24 18:01	432246	828938	*

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	12/ 4/23 0915
Sample Matrix:	Surface Water	**Date Received:**	12/28/23
Sample Name:	HBW1_122723	**Units:**	µg/L
Lab Code:	E2301235-004	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	1/ 4/24	1/4/24 20:42	432246	828938	*

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	12/ 4/23 0935
Sample Matrix:	Surface Water	**Date Received:**	12/28/23
Sample Name:	GPW1_122723	**Units:**	µg/L
Lab Code:	E2301235-005	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0973**	J	0.100	0.0500	0.0250	1	1/ 4/24	1/4/24 18:12	432246	828938	*

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	12/ 4/23 0950
Sample Matrix:	Surface Water	**Date Received:**	12/28/23
Sample Name:	GPW3_122723	**Units:**	µg/L
Lab Code:	E2301235-006	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0382**	J	0.100	0.0500	0.0250	1	1/ 4/24	1/4/24 20:47	432246	828938	*

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	NA
Sample Matrix:	Surface Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2400006-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	1/ 4/24	1/4/24 17:28	432246	828938	

Accuracy & Precision

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QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	1/ 4/24
Sample Matrix:	Surface Water		

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	432246

	Lab Control Sample EQ2400006-02			Duplicate Lab Control Sample EQ2400006-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.113	0.100	113	0.111	0.100	111	84 - 119	1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	NA
Sample Matrix:	Surface Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2400006-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.113**		0.100	0.0500	0.0250	1	1/ 4/24	1/4/24 20:09	432246	828938	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Collected:**	NA
Sample Matrix:	Surface Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2400006-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.111**		0.100	0.0500	0.0250	1	1/ 4/24	1/4/24 21:04	432246	828938	



Initial Calibration

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20230802

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XM
2nd Review: KN

ICAL Date: 8/2/2023
Cal. Std. xp: 03/07/2024
ICAL ID: EC2300012

Mobile Phases : **A:**20mM ammonium acetate in water 230388 **B:**Acetonitrile 229152

	Sample Name		File Name	Acquisition Method	Dilution	Comments	Date/Time
1	IB		2230802-001	Perchlorate6850c.lcm	1x		8/2/2023 13:05
2	IB		2230802-002	Perchlorate6850c.lcm	1x		8/2/2023 13:11
3	Perchlorate ICAL 1		2230802-003	Perchlorate6850c.lcm	1x	230373	8/2/2023 13:17
4	Perchlorate ICAL 2		2230802-004	Perchlorate6850c.lcm	1x	230375	8/2/2023 13:23
5	Perchlorate ICAL 3		2230802-005	Perchlorate6850c.lcm	1x	230376	8/2/2023 13:28
6	Perchlorate ICAL 4		2230802-006	Perchlorate6850c.lcm	1x	230377	8/2/2023 13:34
7	Perchlorate ICAL 5		2230802-007	Perchlorate6850c.lcm	1x	230378	8/2/2023 13:39
8	Perchlorate ICAL 6		2230802-008	Perchlorate6850c.lcm	1x	230379	8/2/2023 13:45
9	Perchlorate ICAL 7		2230802-009	Perchlorate6850c.lcm	1x	230380	8/2/2023 13:50
10	Perchlorate ICAL 8		2230802-010	Perchlorate6850c.lcm	1x	230381	8/2/2023 13:56
11	Perchlorate ICAL 9		2230802-011	Perchlorate6850c.lcm	1x	230382	8/2/2023 14:02
12	Perchlorate ICAL 10		2230802-012	Perchlorate6850c.lcm	1x	230383	8/2/2023 14:07
13	PerchlorateICV		2230802-013	Perchlorate6850c.lcm	1x	230385	8/2/2023 14:19

Initial Calibration - Detailed Report

Calibration ID: EC2300012 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2300012-01	Perchlorate ICAL 1	2230802-003	08/02/2023 13:17
02	EC2300012-02	Perchlorate ICAL 2	2230802-004	08/02/2023 13:23
03	EC2300012-03	Perchlorate ICAL 3	2230802-005	08/02/2023 13:28
04	EC2300012-04	Perchlorate ICAL 4	2230802-006	08/02/2023 13:34
05	EC2300012-05	Perchlorate ICAL 5	2230802-007	08/02/2023 13:39
06	EC2300012-06	Perchlorate ICAL 6	2230802-008	08/02/2023 13:45
07	EC2300012-07	Perchlorate ICAL 7	2230802-009	08/02/2023 13:50
08	EC2300012-08	Perchlorate ICAL 8	2230802-010	08/02/2023 13:56
09	EC2300012-09	Perchlorate ICAL 9	2230802-011	08/02/2023 14:02
10	EC2300012-10	Perchlorate ICAL 10	2230802-012	08/02/2023 14:07

Analyte **Curve Fit** **Weighting**

Perchlorate **Average RF** **RSD = 2.086** **Average RF = 0.1475**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1428	02	0.5000	0.1421	03	0.7000	0.1457	04	1.0000	0.149
05	2.0000	0.1515	06	5.0000	0.1475	07	10.0000	0.1503	08	20.0000	0.1477
09	30.0000	0.1485	10	50.0000	0.1496						

Analyte

Perchlorate RSE = 2.09

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.0968	-3.2	02	0.5000	0.482	-3.6	03	0.7000	0.692	-1.2
04	1.0000	1.01	1.0	05	2.0000	2.05	2.7	06	5.0000	5.00	-0.0
07	10.0000	10.2	1.9	08	20.0000	20.0	0.2	09	30.0000	30.2	0.7
10	50.0000	50.7	1.4								

Initial Calibration Verification Summary Report

Calibration ID:	EC2300012	**Instrument ID:**	E-LCMS-01
Datafile ID:	2230802-013	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2300012-11	T	Average RF	10	10.670	ng/mL	6.7	<= 15

Insight Report

Printed at 8/3/2023 9:30:46 AM

Method File: I:\LCMS01\DATA\20230802\20230802ICAL.lcm
Project File: I:\LCMS01\DATA\20230802\no use\20230802ICAL.damlp

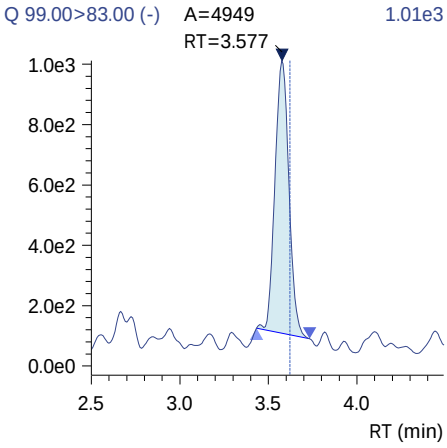
Perchlorate ICAL 1

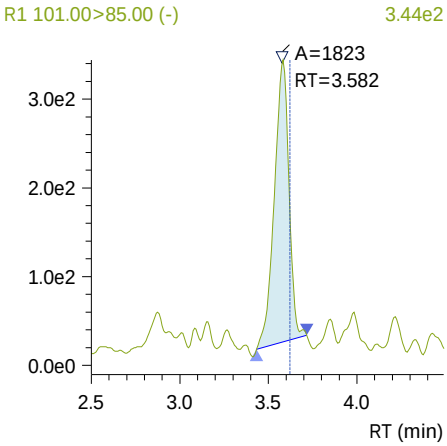
Sample ID: Perchlorate ICAL 1
Date Acquired: 8/2/2023 1:17:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-003.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.577	4949	346538	0.0968	ng/mL	101.00 >85.00	36.83	21.29-39.54
Sodium Perchlorate-18O4 _IS	Auto	3.572	346538	346538	1.0000	ng/mL	----	----	

Perchlorate

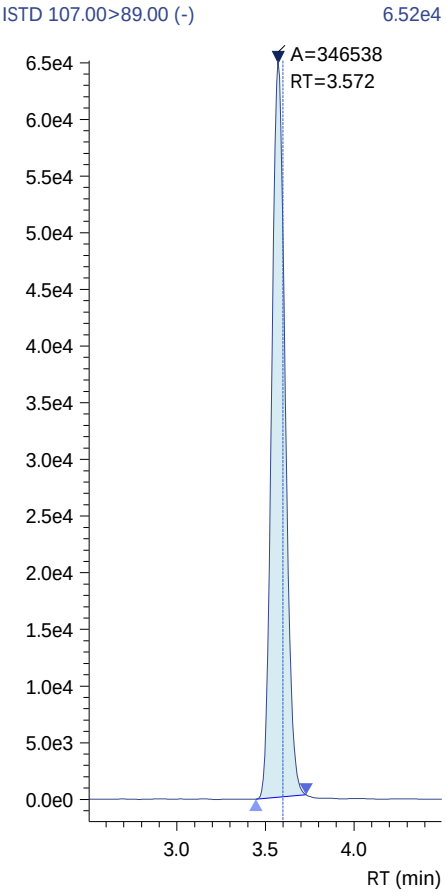
Conc 0.0968
R#1 36.83 (30.41)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 8/3/2023 9:30:46 AM

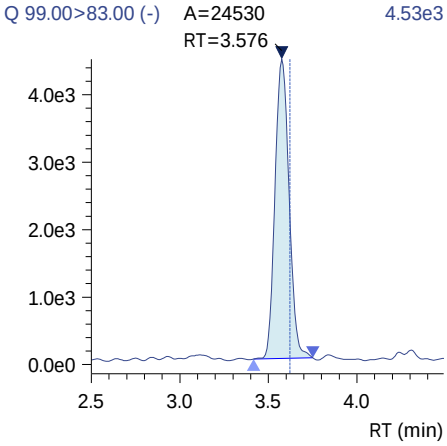
Perchlorate ICAL 2

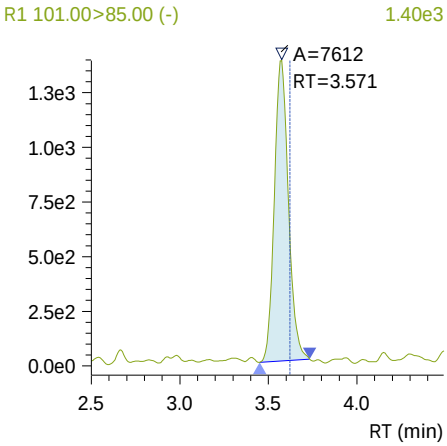
Sample ID: Perchlorate ICAL 2
Date Acquired: 8/2/2023 1:23:13 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-004.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.576	24530	345149	0.4820	ng/mL	101.00 >85.00	31.03	21.29-39.54
Sodium Perchlorate-18O4 _IS	Auto	3.571	345149	345149	1.0000	ng/mL	----	----	

Perchlorate

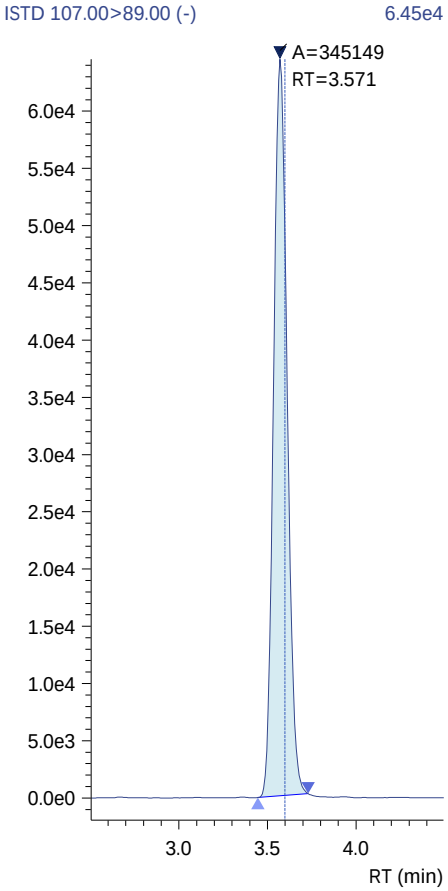
Conc 0.4820
R#1 31.03 (30.41)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 8/3/2023 9:30:46 AM

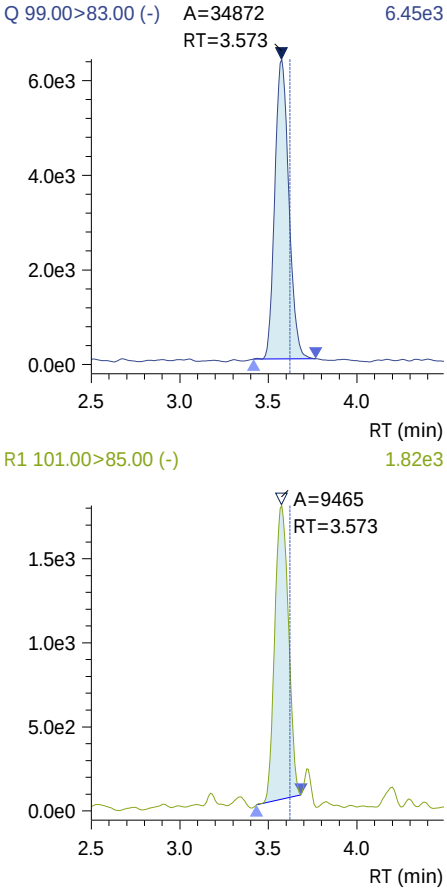
Perchlorate ICAL 3

Sample ID: Perchlorate ICAL 3
Date Acquired: 8/2/2023 1:28:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-005.lcd
Vial: 3 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.573	34872	341974	0.6915	ng/mL	101.00 >85.00	27.14	21.29-39.54
Sodium Perchlorate-18O4 _IS	Auto	3.570	341974	341974	1.0000	ng/mL	----	----	

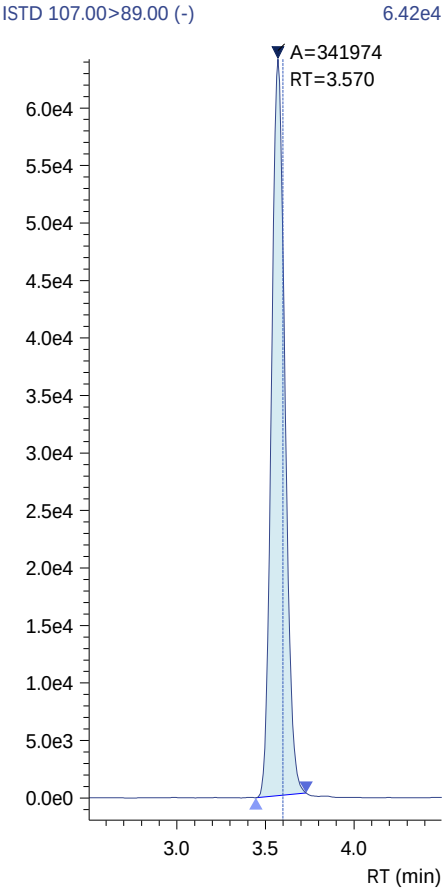
Perchlorate

Conc 0.6915
R#1 27.14 (30.41)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 8/3/2023 9:30:46 AM

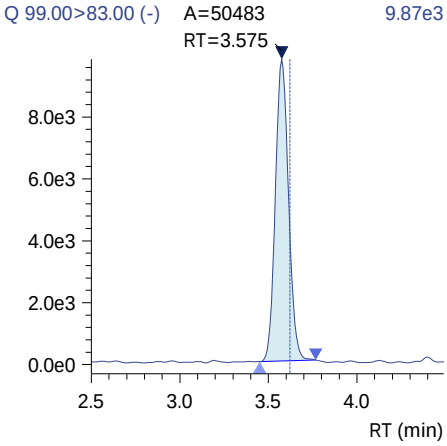
Perchlorate ICAL 4

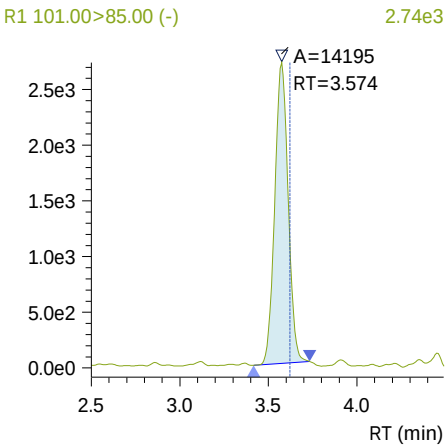
Sample ID: Perchlorate ICAL 4
Date Acquired: 8/2/2023 1:34:20 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-006.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.575	50483	338838	1.0104	ng/mL	101.00 >85.00	28.12	21.29-39.54
Sodium Perchlorate-18O4 _IS	Auto	3.570	338838	338838	1.0000	ng/mL	----	----	

Perchlorate

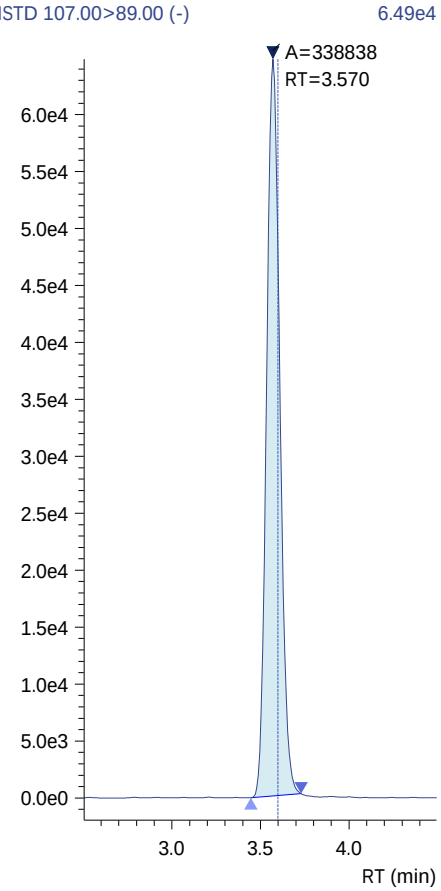
Conc 1.0104
R#1 28.12 (30.41)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 8/3/2023 9:30:46 AM

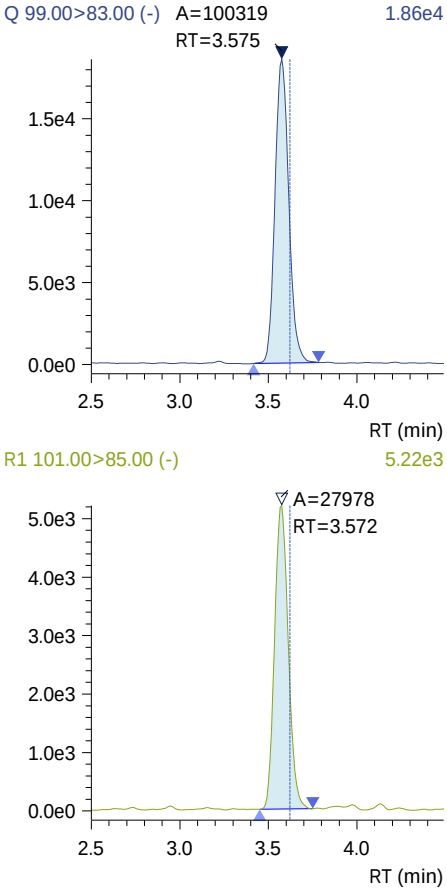
Perchlorate ICAL 5

Sample ID: Perchlorate ICAL 5
Date Acquired: 8/2/2023 1:39:51 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-007.lcd
Vial: 5 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.575	100319	331124	2.0545	ng/mL	101.00 >85.00	27.89	21.29-39.54
Sodium Perchlorate-18O4 _IS	Auto	3.570	331124	331124	1.0000	ng/mL	----	----	

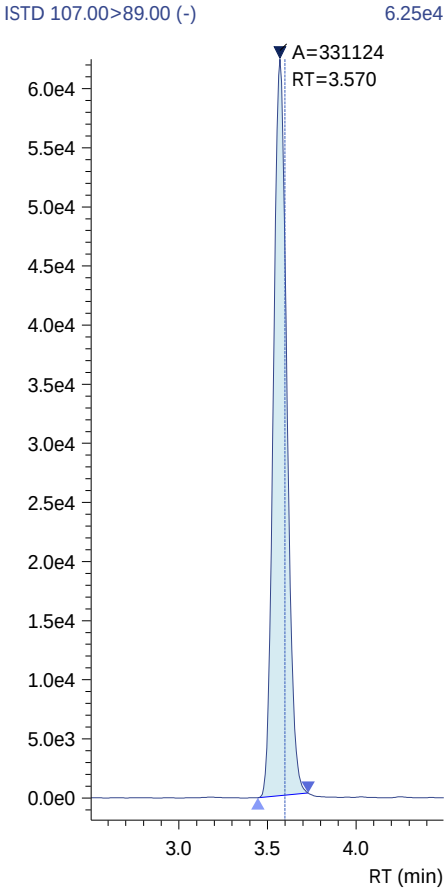
Perchlorate

Conc 2.0545
R#1 27.89 (30.41)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 8/3/2023 9:30:46 AM

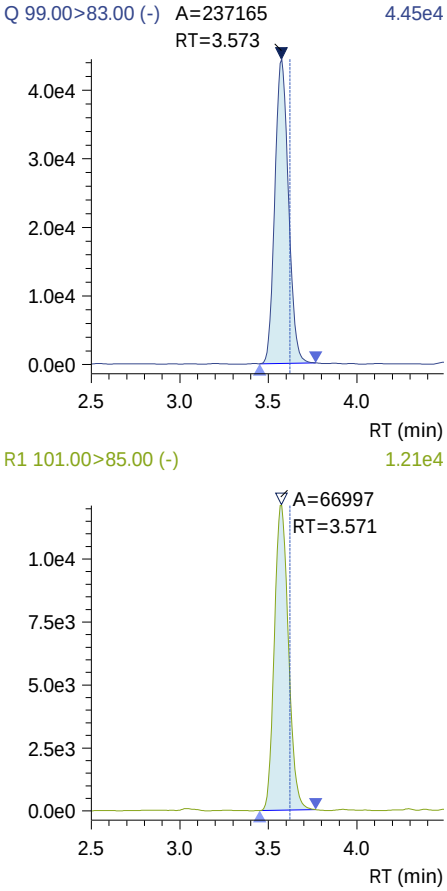
Perchlorate ICAL 6

Sample ID: Perchlorate ICAL 6
Date Acquired: 8/2/2023 1:45:24 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-008.lcd
Vial: 6 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.573	237165	321666	5.0000	ng/mL	101.00 >85.00	28.25	21.29-39.54
Sodium Perchlorate-18O4 _IS	Auto	3.570	321666	321666	1.0000	ng/mL	----	----	

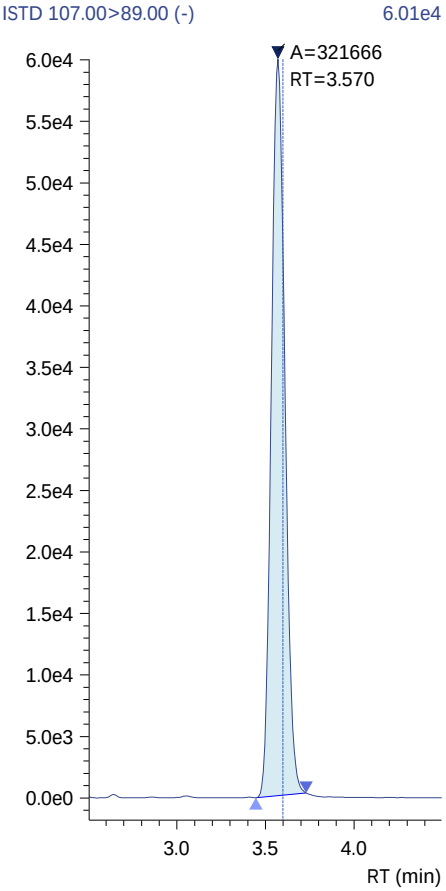
Perchlorate

Conc 5.0000
R#1 28.25 (30.41)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 8/3/2023 9:30:46 AM

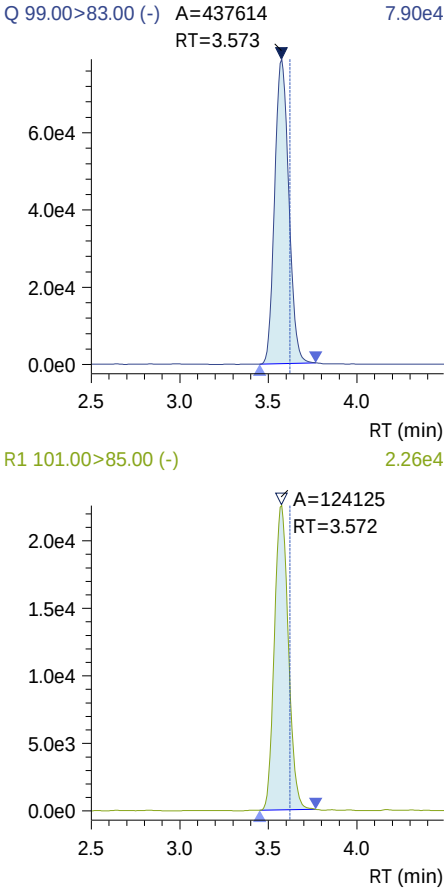
Perchlorate ICAL 7

Sample ID: Perchlorate ICAL 7
Date Acquired: 8/2/2023 1:50:57 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-009.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.573	437614	291215	10.1905	ng/mL	101.00 >85.00	28.36	21.29-39.54
Sodium Perchlorate-18O4_IS	Auto	3.570	291215	291215	1.0000	ng/mL	----	----	

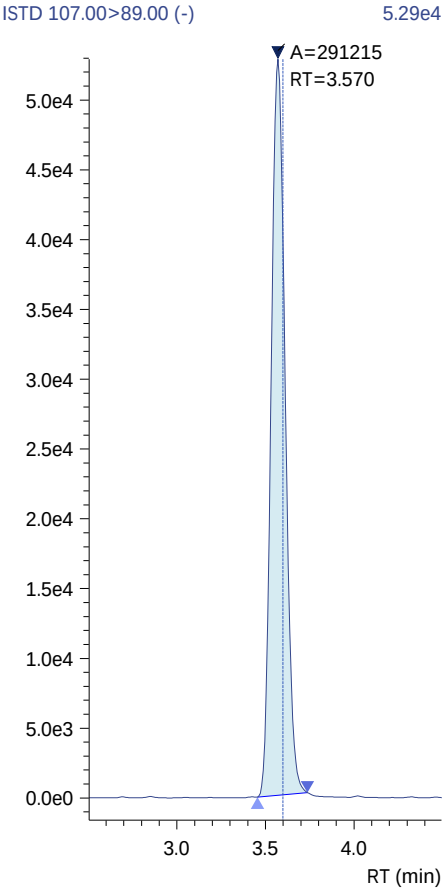
Perchlorate

Conc 10.1905
R#1 28.36 (30.41)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 8/3/2023 9:30:46 AM

Perchlorate ICAL 8

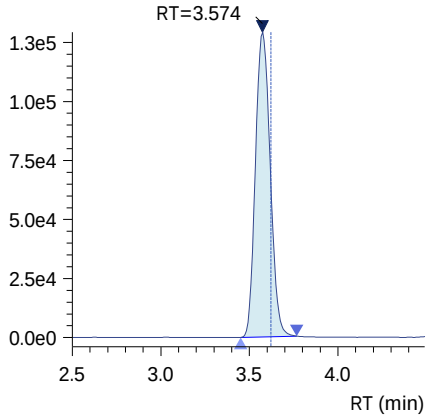
Sample ID: Perchlorate ICAL 8
Date Acquired: 8/2/2023 1:56:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-010.lcd
Vial: 8 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.574	749856	253829	20.03 36	ng/mL	101.00 >85.00	28.56	21.29-39.54
Sodium Perchlorate-18O4 _IS	Auto	3.569	253829	253829	1.0000	ng/mL	----	----	

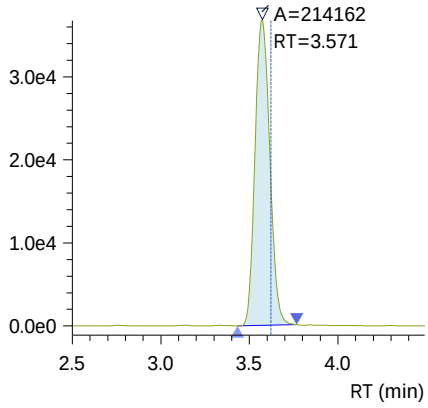
Perchlorate

Conc 20.0336
R#1 28.56 (30.41)

Q 99.00>83.00 (-) A=749856 1.29e5



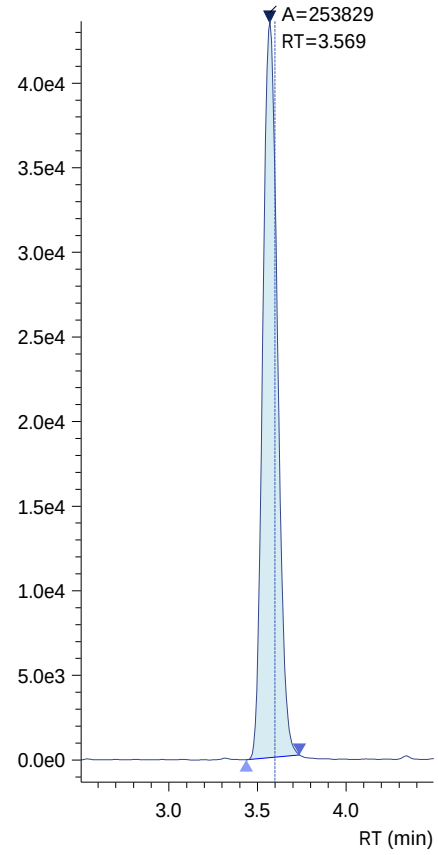
R1 101.00>85.00 (-) 3.68e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.37e4



Insight Report

Printed at 8/3/2023 9:30:46 AM

Perchlorate ICAL 9

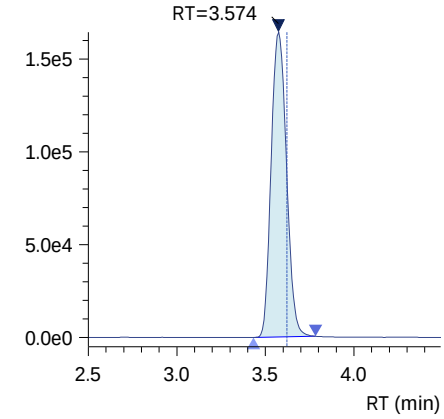
Sample ID: Perchlorate ICAL 9
Date Acquired: 8/2/2023 2:02:07 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-011.lcd
Vial: 9 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.574	990671	222379	30.2105	ng/mL	101.00 >85.00	27.95	21.29-39.54
Sodium Perchlorate-18O4_IS	Auto	3.568	222379	222379	1.0000	ng/mL	----	----	

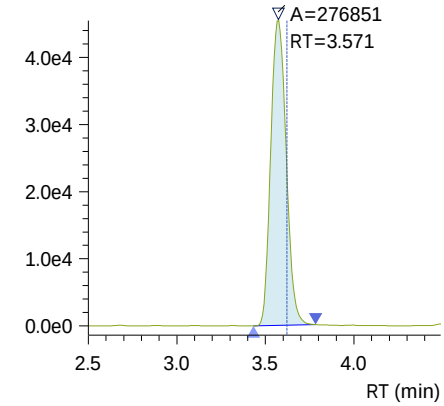
Perchlorate

Conc 30.2105
R#1 27.95 (30.41)

Q 99.00>83.00 (-) A=990671 RT=3.574 1.64e5



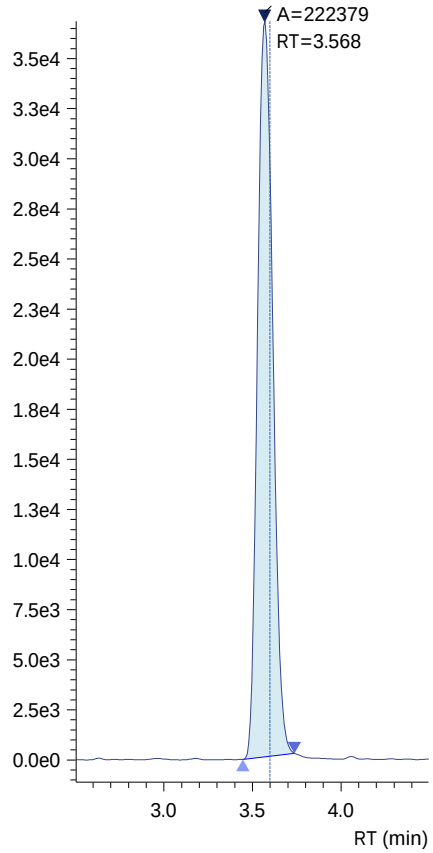
R1 101.00>85.00 (-) 4.55e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.69e4



Insight Report

Printed at 8/3/2023 9:30:46 AM

Perchlorate ICAL 10

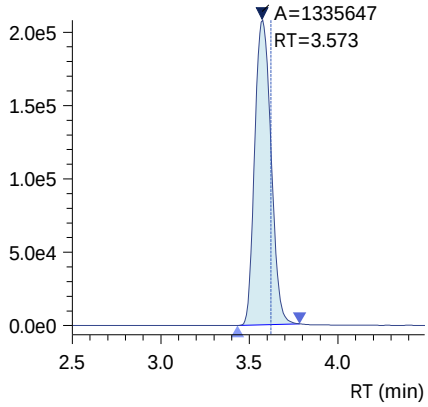
Sample ID: Perchlorate ICAL 10
Date Acquired: 8/2/2023 2:07:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-012.lcd
Vial: 10 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.573	1335647	178573	50.72 20	ng/mL	101.00 >85.00	28.04	21.29-39.54
Sodium Perchlorate-18O4 _IS	Auto	3.567	178573	178573	1.0000	ng/mL	----	----	

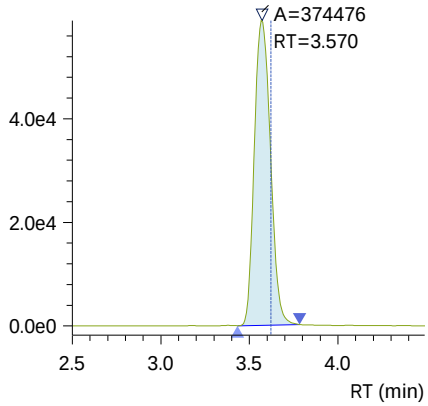
Perchlorate

Conc 50.7220
R#1 28.04 (30.41)

Q 99.00>83.00 (-) 2.08e5



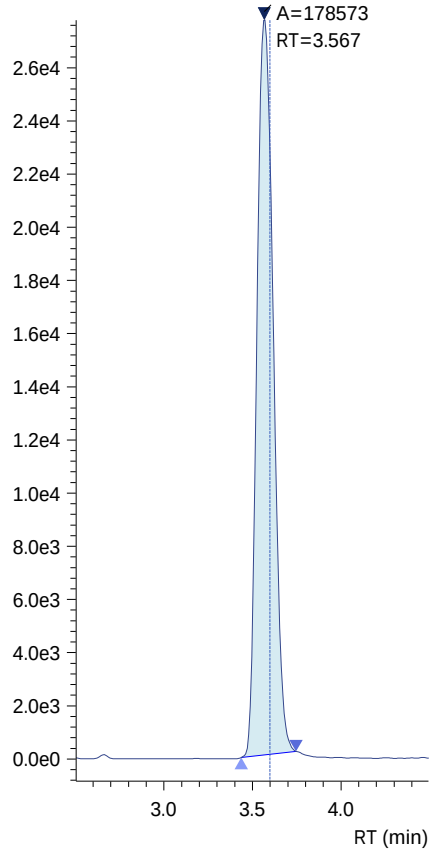
R1 101.00>85.00 (-) 5.90e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.78e4



Insight Report

Printed at 8/3/2023 9:30:46 AM

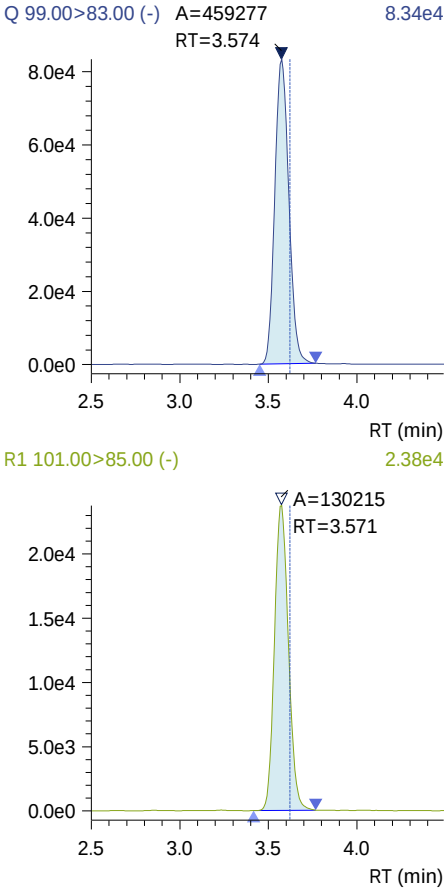
PerchlorateICV

Sample ID: PerchlorateICV
Date Acquired: 8/2/2023 2:19:46 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-013.lcd
Vial: 11 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.574	459277	291890	10.6703	ng/mL	101.00 >85.00	28.35	21.29-39.54
Sodium Perchlorate-18O4_IS	Auto	3.570	291890	291890	1.0000	ng/mL	----	----	

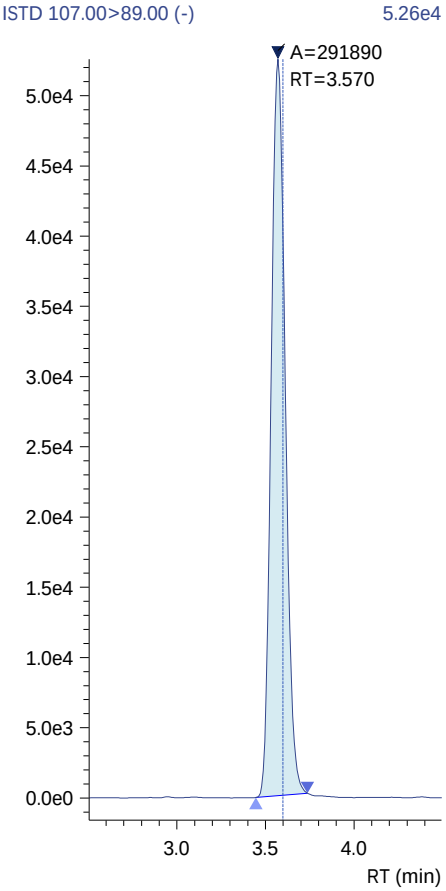
Perchlorate

Conc 10.6703
R#1 28.35 (30.41)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20240104-828938

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XM
2nd Review: GG

ICAL Date: 8/2/2023
Cal. Std. xp: 02/02/2024
ICAL ID: EC2300012

Mobile Phases : A:20mM ammonium acetate in water 232715 **B:**Acetonitrile 229152
LODV: 230386 **CCV:**230380

	File Name	Sample Name	Acquisition Method	Dilution	Comments	Date/Time
1	20240104-001	IB	Perchlorate6850c.lcm	1x		1/4/2024 17:10
2	20240104-002	LODV	Perchlorate6850c.lcm	1x		1/4/2024 17:15
3	20240104-003	CCV	Perchlorate6850c.lcm	1x		1/4/2024 17:21
4	20240104-004	EQ2400006-01 MB	Perchlorate6850c.lcm	1x		1/4/2024 17:28
5	20240104-005	EQ2400006-02 LCS	Perchlorate6850c.lcm	1x	DNU-IR	1/4/2024 17:34
6	20240104-006	EQ2400006-03 DLCS	Perchlorate6850c.lcm	1x	DNU-IR	1/4/2024 17:39
7	20240104-007	EQ2400006-04 ICS	Perchlorate6850c.lcm	1x	DNU-IR	1/4/2024 17:45
8	20240104-008	E2301235-001	Perchlorate6850c.lcm	1x		1/4/2024 17:50
9	20240104-009	E2301235-002	Perchlorate6850c.lcm	1x	DNU-IR CONFIRM PEAK	1/4/2024 17:56
10	20240104-010	E2301235-003	Perchlorate6850c.lcm	1x		1/4/2024 18:01
11	20240104-011	E2301235-004	Perchlorate6850c.lcm	1x	DNU-IR CONFIRM PEAK	1/4/2024 18:07
12	20240104-012	E2301235-005	Perchlorate6850c.lcm	1x		1/4/2024 18:12
13	20240104-013	E2301235-006	Perchlorate6850c.lcm	1x	DNU-IR	1/4/2024 18:18
14	20240104-014	CCV	Perchlorate6850c.lcm	1x		1/4/2024 18:23
15	20240104-015	IB	Perchlorate6850c.lcm	1x		1/4/2024 18:29
16	20240104-016	E2301095-001	Perchlorate6850c.lcm	1x		1/4/2024 18:34
17	20240104-017	E2301095-002	Perchlorate6850c.lcm	1x		1/4/2024 18:40
18	20240104-018	E2301095-003	Perchlorate6850c.lcm	1x		1/4/2024 18:46
19	20240104-019	E2301095-004	Perchlorate6850c.lcm	1x		1/4/2024 18:51
20	20240104-020	E2301095-005	Perchlorate6850c.lcm	1x		1/4/2024 18:57
21	20240104-021	E2301095-006	Perchlorate6850c.lcm	1x		1/4/2024 19:02
22	20240104-022	E2301095-007	Perchlorate6850c.lcm	1x		1/4/2024 19:08
23	20240104-023	E2301116-001	Perchlorate6850c.lcm	1x	DNU-IR	1/4/2024 19:13
24	20240104-024	E2301116-002	Perchlorate6850c.lcm	1x		1/4/2024 19:19
25	20240104-025	E2301116-003	Perchlorate6850c.lcm	1x		1/4/2024 19:24
26	20240104-026	CCV	Perchlorate6850c.lcm	1x		1/4/2024 19:30
27	20240104-027	IB	Perchlorate6850c.lcm	1x		1/4/2024 19:35
28	20240104-028	E2301116-004	Perchlorate6850c.lcm	1x		1/4/2024 19:41
29	20240104-029	E2400012-001	Perchlorate6850c.lcm	1x		1/4/2024 19:47
30	20240104-030	E2400012-002	Perchlorate6850c.lcm	1x		1/4/2024 19:52
31	20240104-031	EQ2400006-05 MS	Perchlorate6850c.lcm	1x		1/4/2024 19:58
32	20240104-032	EQ2400006-06 DMS	Perchlorate6850c.lcm	1x		1/4/2024 20:03
33	20240104-033	EQ2400006-02 LCS	Perchlorate6850c.lcm	1x		1/4/2024 20:09
34	20240104-034	EQ2400006-03 DLCS	Perchlorate6850c.lcm	1x	DNU-IR	1/4/2024 20:14
35	20240104-035	EQ2400006-04 ICS	Perchlorate6850c.lcm	1x		1/4/2024 20:20
36	20240104-036	CCV	Perchlorate6850c.lcm	1x		1/4/2024 20:25
37	20240104-037	IB	Perchlorate6850c.lcm	1x		1/4/2024 20:31
38	20240104-038	E2301235-004	Perchlorate6850c.lcm	1x		1/4/2024 20:42

20240104-828938

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XM
2nd Review: GG

ICAL Date: 8/2/2023
Cal. Std. xp: 02/02/2024
ICAL ID: EC2300012

Mobile Phases : A:20mM ammonium acetate in water 232715 **B:**Acetonitrile 229152
LODV: 230386 **CCV:**230380

	File Name	Sample Name	Acquisition Method	Dilution	Comments	Date/Time
39	20240104-039	E2301235-006	Perchlorate6850c.lcm	1x		1/4/2024 20:47
40	20240104-040	E2301116-001	Perchlorate6850c.lcm	1x		1/4/2024 20:53
41	20240104-041	E2301235-002	Perchlorate6850c.lcm	1x		1/4/2024 20:59
42	20240104-042	EQ2400006-03 DLCS	Perchlorate6850c.lcm	1x		1/4/2024 21:04
43	20240104-043	CCV	Perchlorate6850c.lcm	1x		1/4/2024 21:10
44	20240104-044	IB	Perchlorate6850c.lcm	1x		1/4/2024 21:15

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	1/4/24 17:21

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20240103\20240104-003	**Lab Code:**	EQ2400007-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	828938
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	297,129	3.57
	Upper Limit ==>	445,694	5.57
	Lower Limit ==>	148,565	1.57
Associated Analyses			
Continuing Calibration Verification	EQ2400007-01	331,411	3.54
Method Blank	EQ2400006-01	351,811	3.54
HBW7_122723	E2301235-001	371,110	3.54
HBW10_122723_a	E2301235-003	362,671	3.54
GPW1_122723	E2301235-005	357,080	3.54

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	1/4/24 18:23

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20240103\20240104-014	**Lab Code:**	EQ2400007-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	828938
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	297,129	3.57
	Upper Limit ==>	445,694	5.57
	Lower Limit ==>	148,565	1.57
Associated Analyses			
Continuing Calibration Verification	EQ2400007-02	332,217	3.54

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	1/4/24 19:30

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20240103\20240104-026	**Lab Code:**	EQ2400007-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	828938
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	297,129	3.57
	Upper Limit ==>	445,694	5.57
	Lower Limit ==>	148,565	1.57
Associated Analyses			
Continuing Calibration Verification	EQ2400007-03	346,468	3.53
Lab Control Sample	EQ2400006-02	364,607	3.54

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	1/4/24 20:25

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20240103\20240104-036	**Lab Code:**	EQ2400007-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	828938
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	297,129	3.57
	Upper Limit ==>	445,694	5.57
	Lower Limit ==>	148,565	1.57
Associated Analyses			
Continuing Calibration Verification	EQ2400007-04	343,422	3.54
HBW1_122723	E2301235-004	361,145	3.54
GPW3_122723	E2301235-006	358,597	3.53
HBW10_122723	E2301235-002	358,782	3.54
Duplicate Lab Control Sample	EQ2400006-03	355,905	3.54

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	1/4/24 21:10

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20240103\20240104-042	**Lab Code:**	EQ2400007-05
Instrument ID:	E-LCMS-01	**Analysis Lot:**	828938
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	297,129	3.57
	Upper Limit ==>	445,694	5.57
	Lower Limit ==>	148,565	1.57
Associated Analyses			
Continuing Calibration Verification	EQ2400007-05	336,511	3.54

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	1/ 4/24

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	8/2/23
File ID:	I:\LCMS01\DATA\20240103\20240104-003	**Calibration ID:**	EC2300012
		Analysis Lot:	828938
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.4	0.1475	0.1540	4.4	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	1/ 4/24

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	8/2/23
File ID:	I:\LCMS01\DATA\20240103\20240104-014	**Calibration ID:**	EC2300012
		Analysis Lot:	828938
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.4	0.1475	0.1532	3.9	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	1/ 4/24

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	8/2/23
File ID:	I:\LCMS01\DATA\20240103\20240104-026	**Calibration ID:**	EC2300012
		Analysis Lot:	828938
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.6	0.1475	0.1560	5.8	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	1/ 4/24

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	8/2/23
File ID:	I:\LCMS01\DATA\20240103\20240104-036	**Calibration ID:**	EC2300012
		Analysis Lot:	828938
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.5	0.1475	0.1551	5.2	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Bhate Environmental Associates, Inc.	**Service Request:**	E2301235
Project:	LHAAP / Quarterly Surface Water Samples	**Date Analyzed:**	1/ 4/24

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	8/2/23
File ID:	I:\LCMS01\DATA\20240103\20240104-042	**Calibration ID:**	EC2300012
		Analysis Lot:	828938
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.6	0.1475	0.1562	5.9	NA	± 15 %	Average RF

Insight Report

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IB

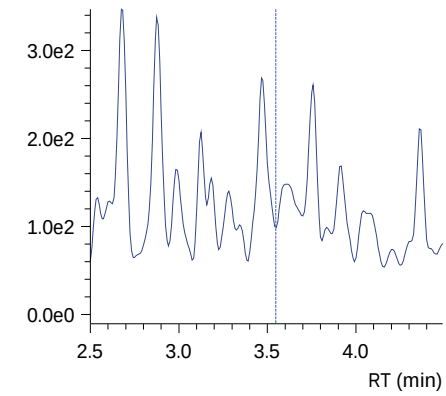
Sample ID: IB
Date Acquired: 1/4/2024 9:15:38 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20240103\20240104-044.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	358633	----	ng/mL	101.00 >85.00	0.00	23-42.72
Sodium Perchlorate-18O4_IS	Auto	3.534	358633	358633	1.0000	ng/mL	----	----	

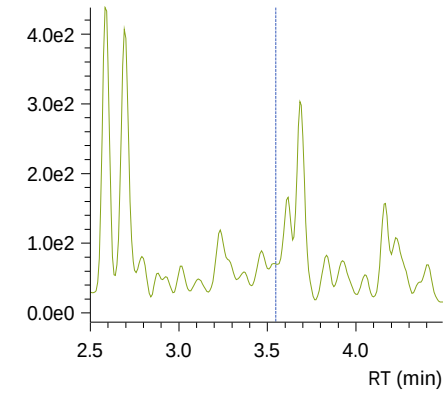
Perchlorate

Conc ----
R#1 0.00 (32.86)

Q 99.00>83.00 (-) 3.47e2



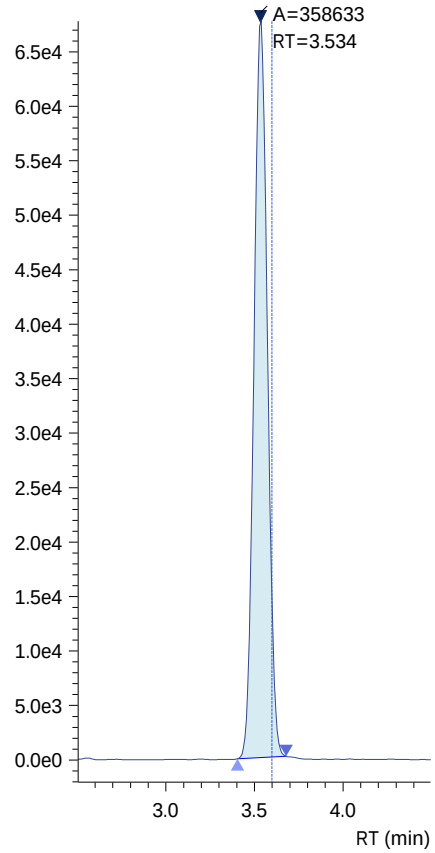
R1 101.00>85.00 (-) 4.38e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.78e4



Insight Report

Printed at 1/5/2024 9:48:03 AM

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Project File: I:\LCMS01\DATA\20240103\20240104.damlp

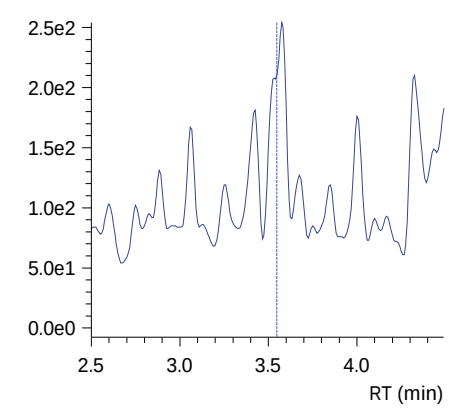
IB

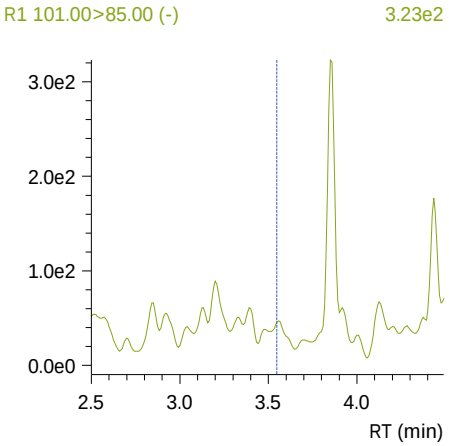
Sample ID: IB
Date Acquired: 1/4/2024 5:10:06 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20240103\20240104-001.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	354053	----	ng/mL	101.00 >85.00	0.00	23-42.72
Sodium Perchlorate-18O4_IS	Auto	3.539	3540 53	354053	1.0000	ng/mL	----	----	

Perchlorate

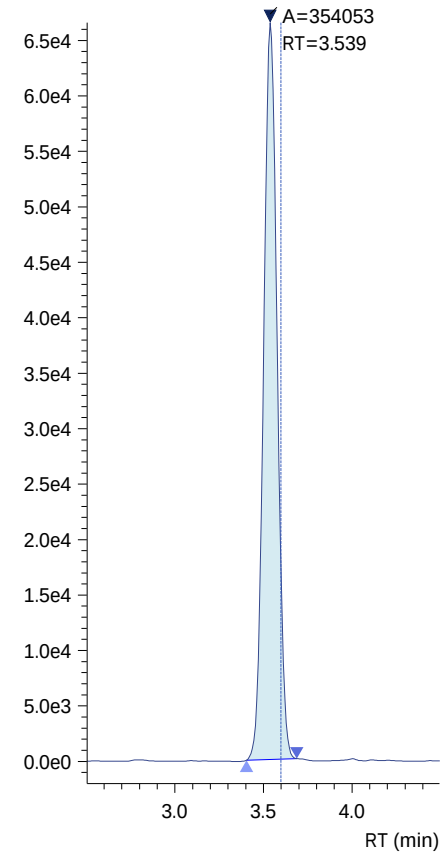
Conc ----
R#1 0.00 (32.86)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 1/5/2024 9:48:03 AM

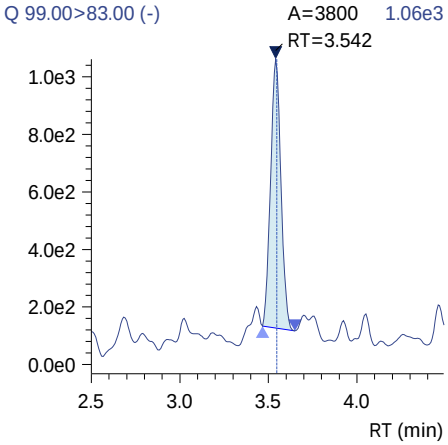
LODV

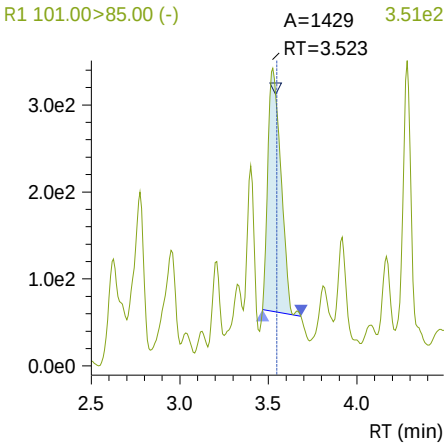
Sample ID: LODV
Date Acquired: 1/4/2024 5:15:35 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20240103\20240104-002.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.542	3800	401351	0.0642	ng/mL	101.00 >85.00	37.60	23-42.72
Sodium Perchlorate-18O4 _IS	Auto	3.537	4013 51	401351	1.0000	ng/mL	----	----	

Perchlorate

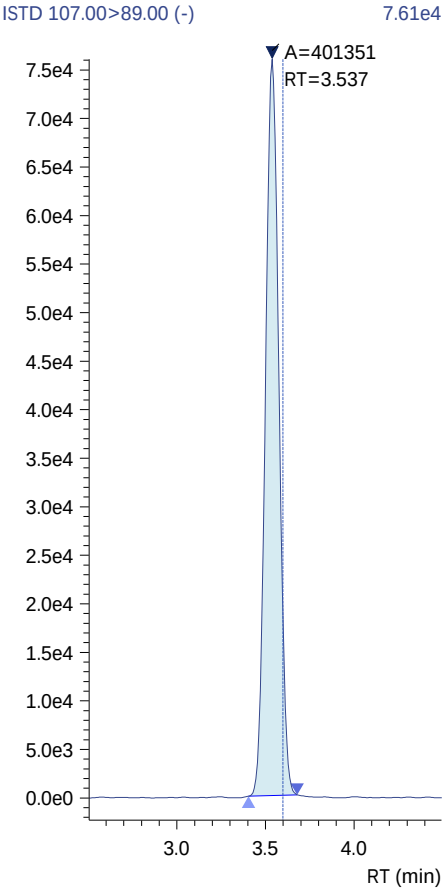
Conc 0.0642
R#1 37.60 (32.86)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 1/5/2024 9:48:03 AM

CCV

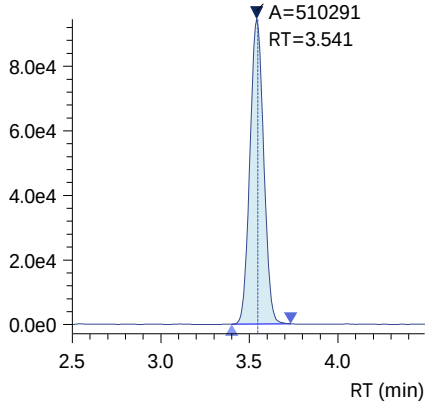
Sample ID: CCV
Date Acquired: 1/4/2024 5:21:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20240103\20240104-003.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.541	5102 91	331411	10.44 17	ng/mL	101.00 >85.00	32.69	23-42.72
Sodium Perchlorate-18O4 _IS	Auto	3.538	3314 11	331411	1.0000	ng/mL	----	----	

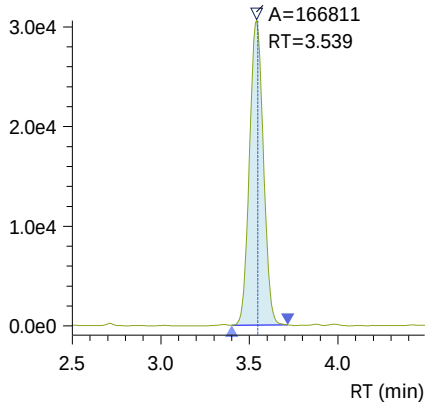
Perchlorate

Conc 10.4417
R#1 32.69 (32.86)

Q 99.00>83.00 (-) 9.46e4



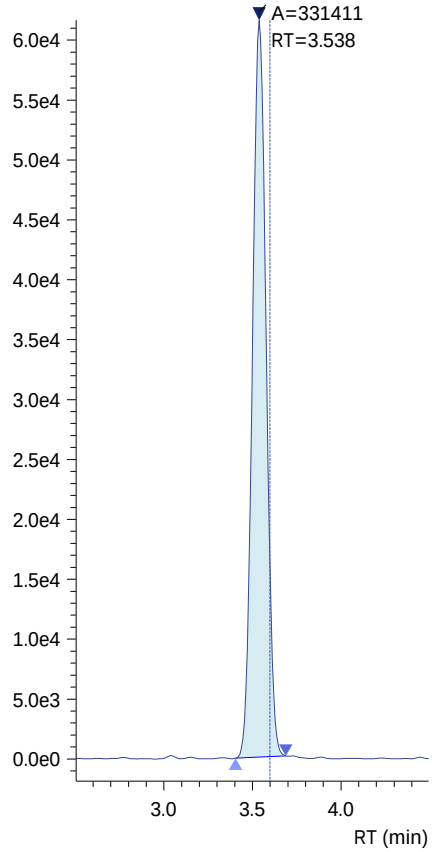
R1 101.00>85.00 (-) 3.06e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.17e4



Insight Report

Printed at 1/5/2024 9:48:03 AM

EQ2400006-01

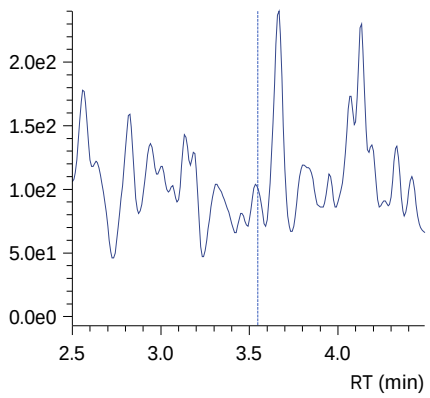
Sample ID: EQ2400006-01
Date Acquired: 1/4/2024 5:28:31 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20240103\20240104-004.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	351811	----	ng/mL	101.00 >85.00	0.00	23-42.72
Sodium Perchlorate-18O4_IS	Auto	3.538	351811	351811	1.0000	ng/mL	----	----	

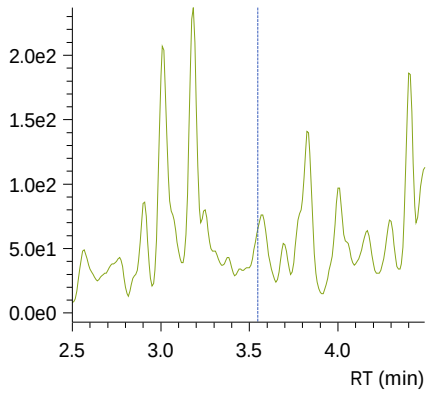
Perchlorate

Conc ----
R#1 0.00 (32.86)

Q 99.00>83.00 (-) 2.40e2



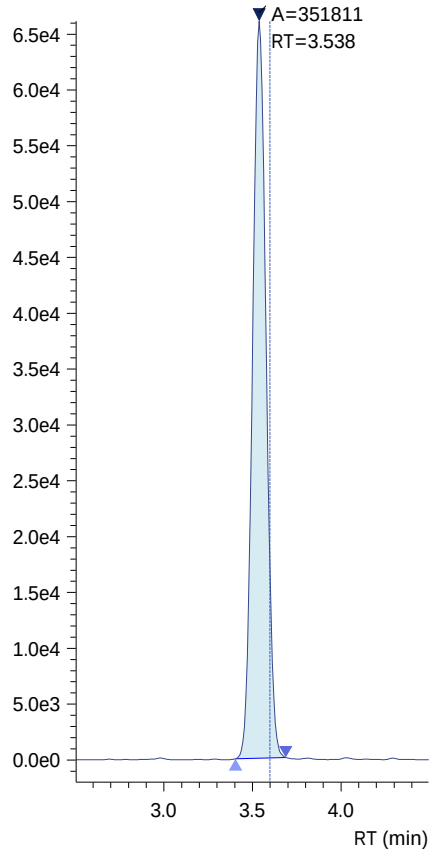
R1 101.00>85.00 (-) 2.37e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.62e4



Insight Report

Printed at 1/5/2024 9:48:03 AM

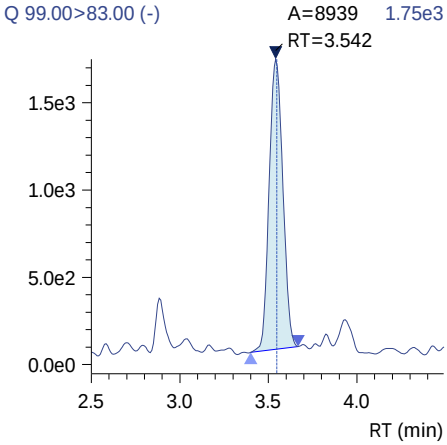
E2301235-001

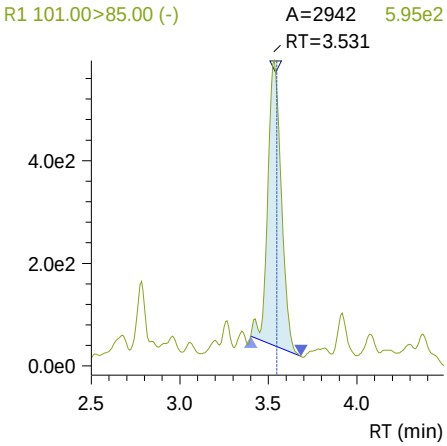
Sample ID: E2301235-001
Date Acquired: 1/4/2024 5:50:41 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20240103\20240104-008.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.542	8939	371110	0.1634	ng/mL	101.00 >85.00	32.91	23-42.72
Sodium Perchlorate-18O4 _IS	Auto	3.537	3711 10	371110	1.0000	ng/mL	----	----	

Perchlorate

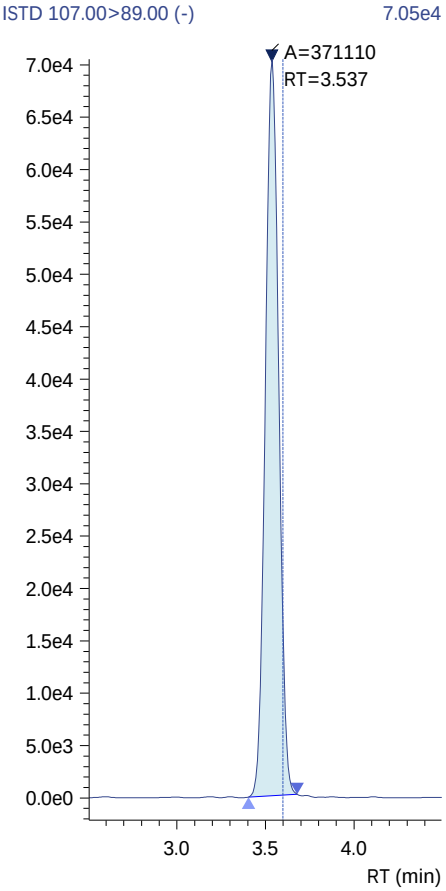
Conc 0.1634
R#1 32.91 (32.86)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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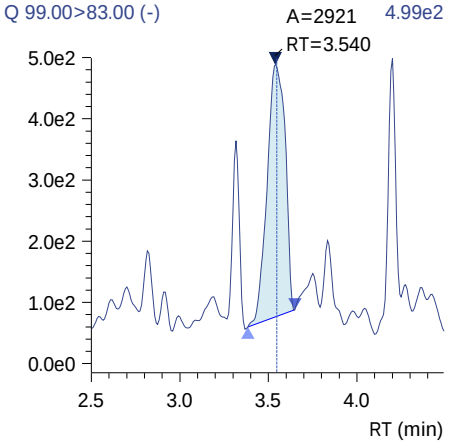
E2301235-003

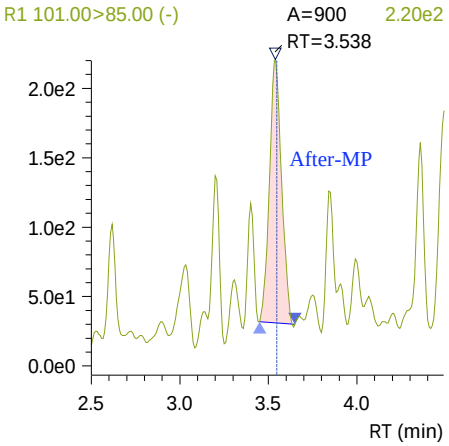
Sample ID: E2301235-003
Date Acquired: 1/4/2024 6:01:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20240103\20240104-010.lcd
Vial: 9 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	MI R1	3.540	2921	362671	0.0546	ng/mL	101.00 >85.00	30.79	23-42.72
Sodium Perchlorate-18O4 _IS	Auto	3.535	362671	362671	1.0000	ng/mL	----	----	

Perchlorate

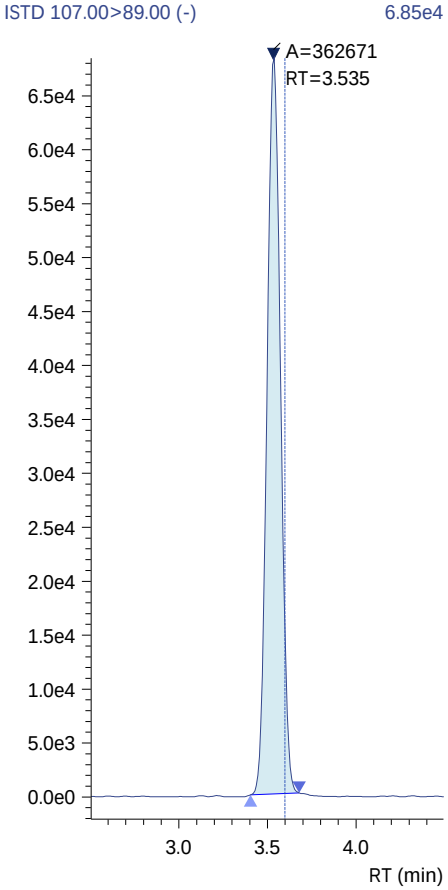
Conc 0.0546
R#1 30.79 (32.86)





Sodium Perchlorate-18O4_IS

Conc 1.0000



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E2301235-005

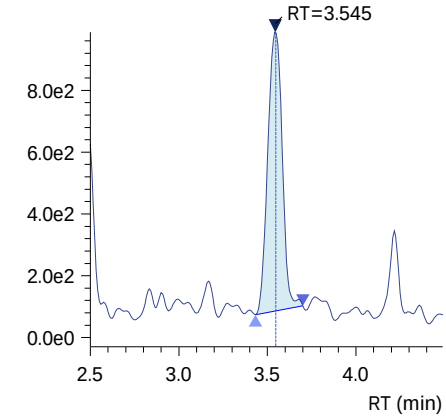
Sample ID: E2301235-005
Date Acquired: 1/4/2024 6:12:46 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20240103\20240104-012.lcd
Vial: 11 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	MI R1	3.545	5124	357080	0.0973	ng/mL	101.00 >85.00	31.32	23-42.72
Sodium Perchlorate-18O4 _IS	Auto	3.536	357080	357080	1.0000	ng/mL	----	----	

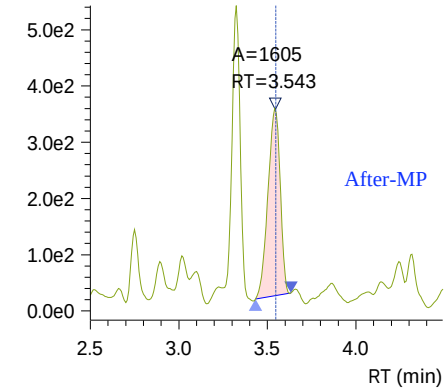
Perchlorate

Conc 0.0973
R#1 31.32 (32.86)

Q 99.00>83.00 (-) A=5124 9.88e2



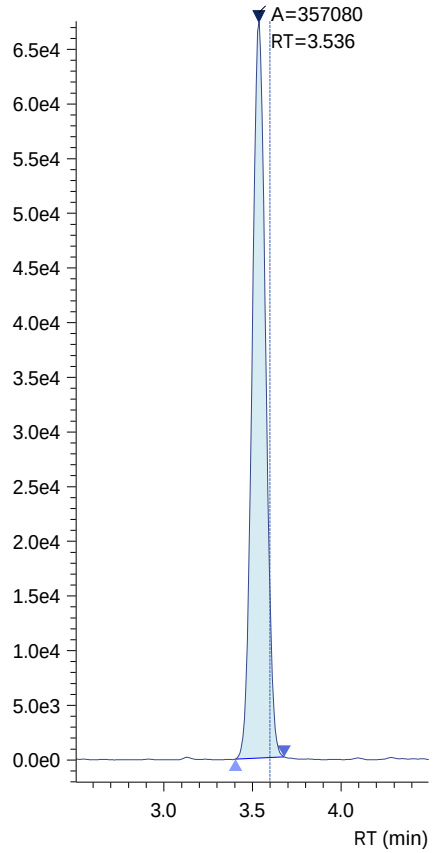
R1 101.00>85.00 (-) 5.43e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.76e4



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CCV

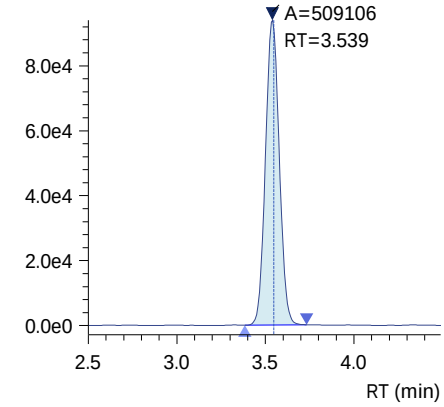
Sample ID: CCV
Date Acquired: 1/4/2024 6:23:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20240103\20240104-014.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.539	509106	332217	10.3922	ng/mL	101.00 >85.00	33.11	23-42.72
Sodium Perchlorate-18O4_IS	Auto	3.535	332217	332217	1.0000	ng/mL	----	----	

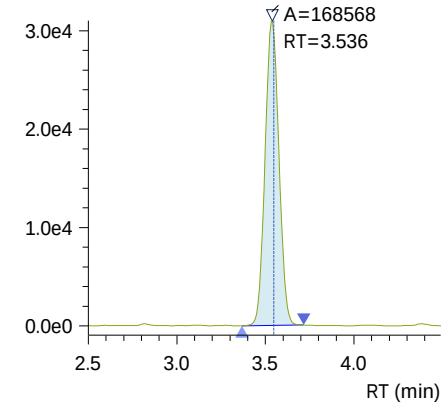
Perchlorate

Conc 10.3922
R#1 33.11 (32.86)

Q 99.00>83.00 (-) 9.40e4



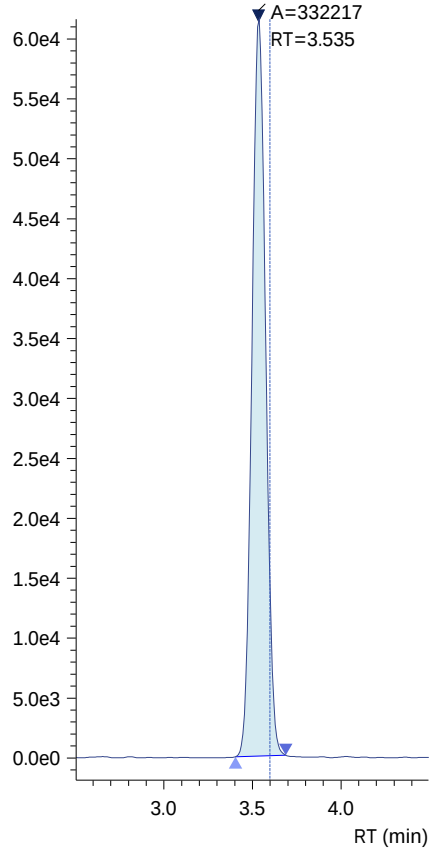
R1 101.00>85.00 (-) 3.10e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.17e4



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IB

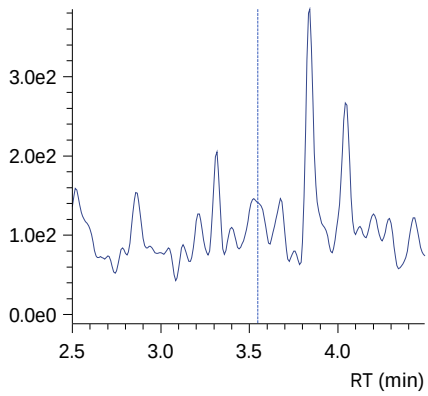
Sample ID: IB
Date Acquired: 1/4/2024 6:29:21 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20240103\20240104-015.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	351939	----	ng/mL	101.00 >85.00	0.00	23-42.72
Sodium Perchlorate-18O4_IS	Auto	3.535	351939	351939	1.0000	ng/mL	----	----	

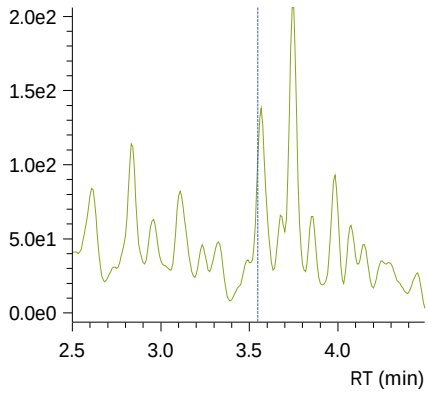
Perchlorate

Conc ----
R#1 0.00 (32.86)

Q 99.00>83.00 (-) 3.85e2



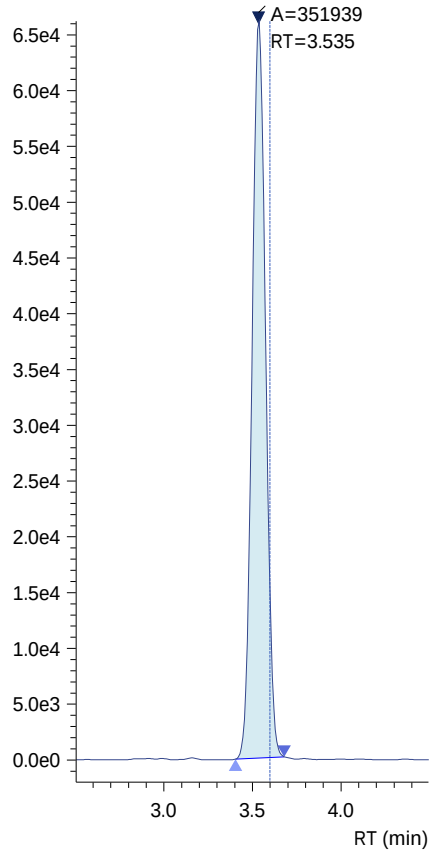
R1 101.00>85.00 (-) 2.06e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.62e4



Insight Report

Printed at 1/5/2024 9:48:03 AM

EQ2400006-02

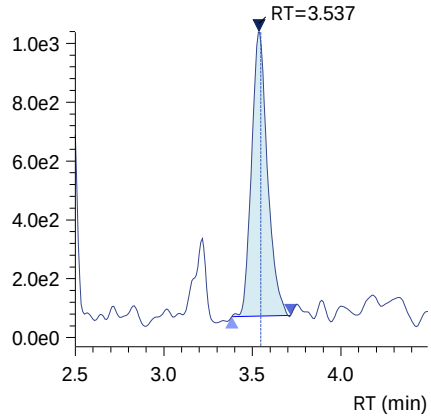
Sample ID: EQ2400006-02
Date Acquired: 1/4/2024 8:09:09 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20240103\20240104-033.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.537	6049	364607	0.1125	ng/mL	101.00 >85.00	40.93	23-42.72
Sodium Perchlorate-18O4 _IS	Auto	3.535	364607	364607	1.0000	ng/mL	----	----	

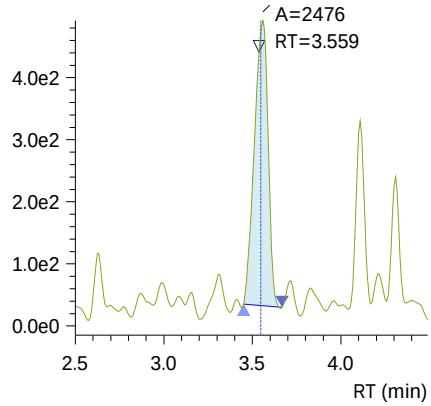
Perchlorate

Conc 0.1125
R#1 40.93 (32.86)

Q 99.00>83.00 (-) A=6049 1.04e3



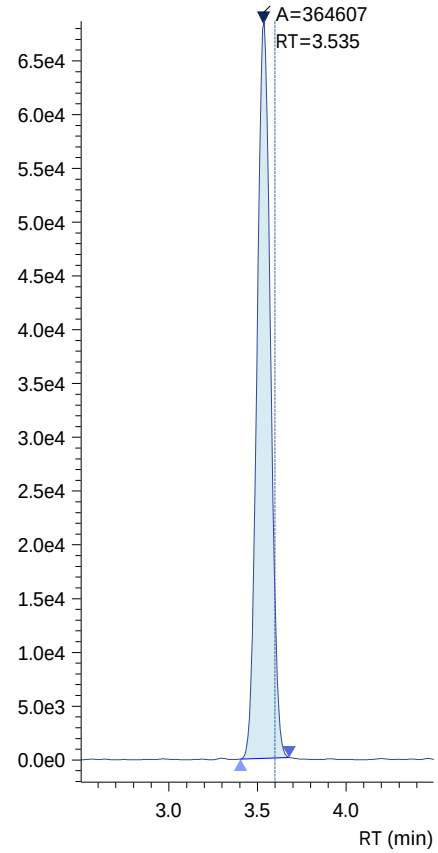
R1 101.00>85.00 (-) 4.92e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.87e4



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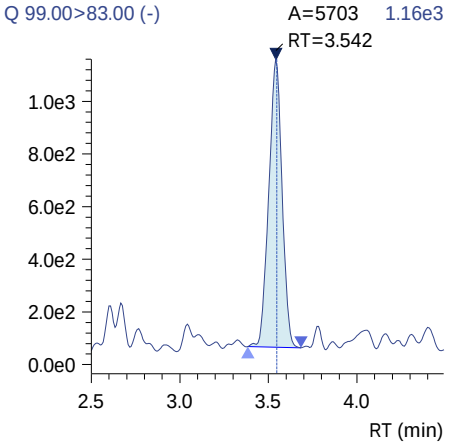
EQ2400006-04

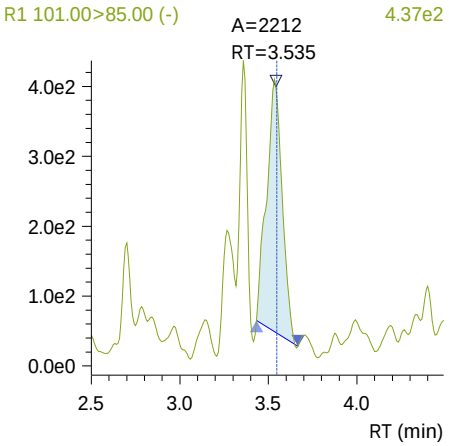
Sample ID: ICS
Date Acquired: 1/4/2024 8:20:11 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20240103\20240104-035.lcd
Vial: 6 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.542	5703	364097	0.1062	ng/mL	101.00 >85.00	38.78	23-42.72
Sodium Perchlorate-18O4 _IS	Auto	3.535	3640 97	364097	1.0000	ng/mL	----	----	

Perchlorate

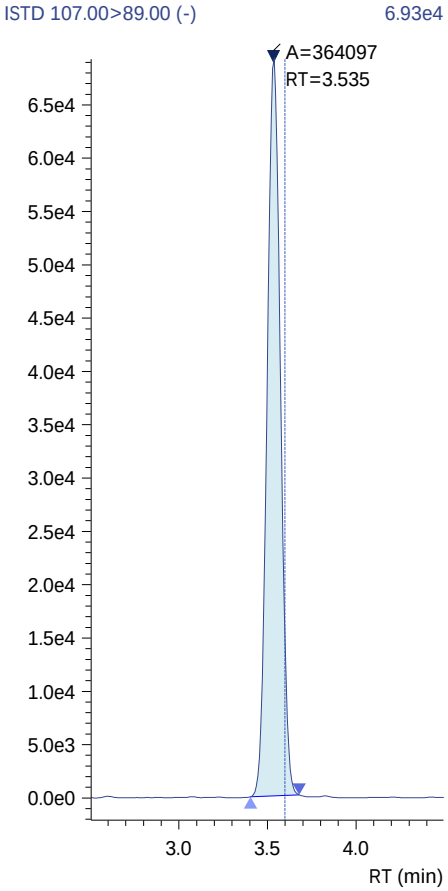
Conc 0.1062
R#1 38.78 (32.86)





Sodium Perchlorate-18O4_IS

Conc 1.0000



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CCV

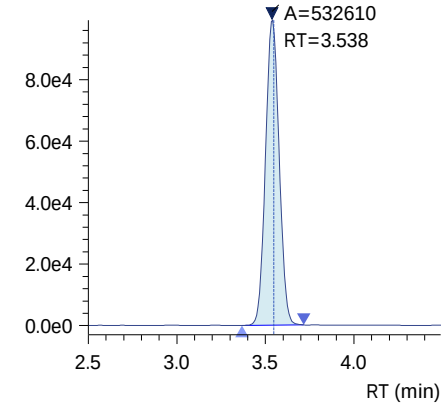
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Date Acquired: 1/4/2024 8:25:45 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20240103\20240104-036.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.538	5326 10	343422	10.51 72	ng/mL	101.00 >85.00	32.70	23-42.72
Sodium Perchlorate-18O4 _IS	Auto	3.535	3434 22	343422	1.0000	ng/mL	----	----	

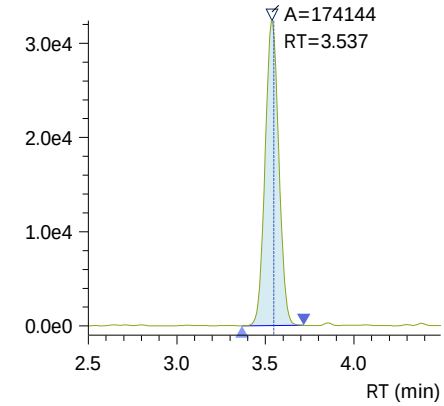
Perchlorate

Conc 10.5172
R#1 32.70 (32.86)

Q 99.00>83.00 (-) 9.94e4



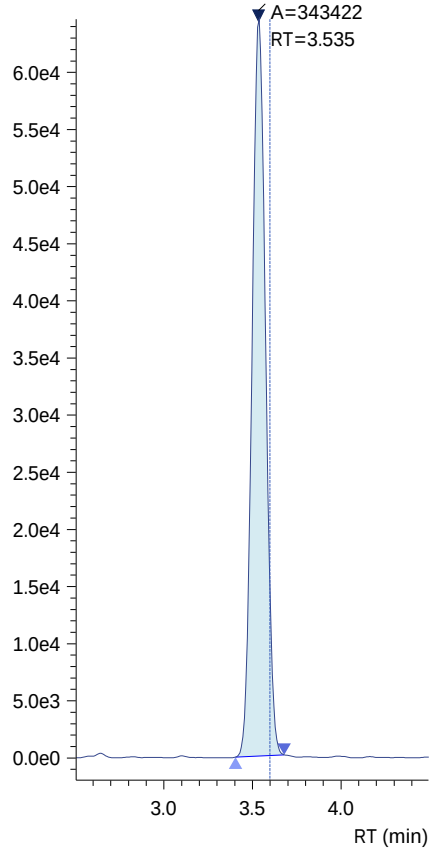
R1 101.00>85.00 (-) 3.24e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.47e4



Insight Report

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IB

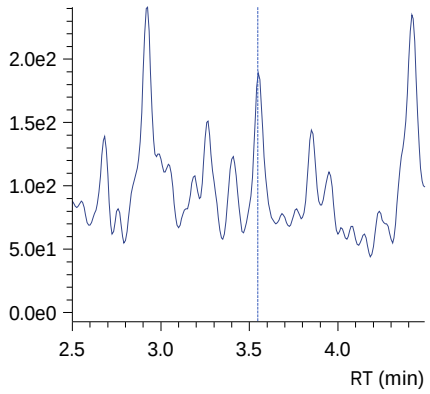
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Vial: 1 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	364506	----	ng/mL	101.00 >85.00	0.00	23-42.72
Sodium Perchlorate-18O4_IS	Auto	3.535	364506	364506	1.0000	ng/mL	----	----	

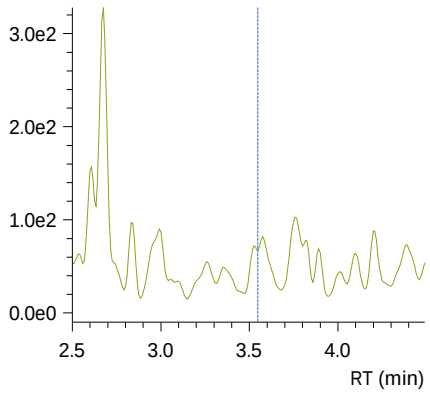
Perchlorate

Conc ----
R#1 0.00 (32.86)

Q 99.00>83.00 (-) 2.41e2



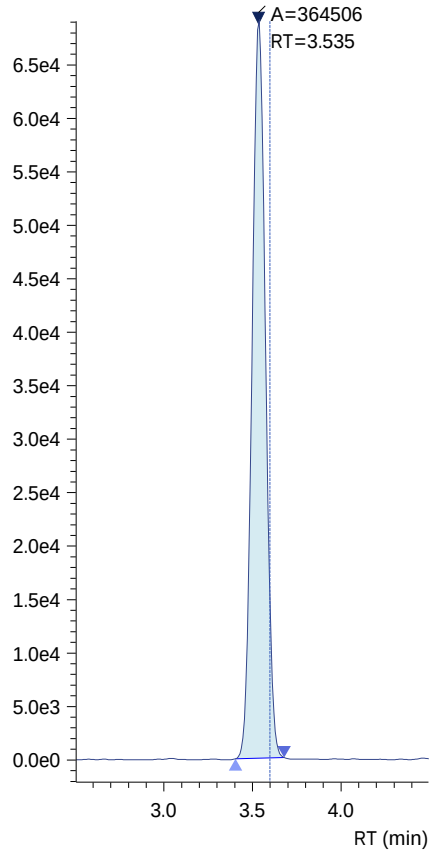
R1 101.00>85.00 (-) 3.28e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.91e4



Insight Report

Printed at 1/5/2024 9:51:45 AM

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Project File: I:\LCMS01\DATA\20240103\20240104.damlp

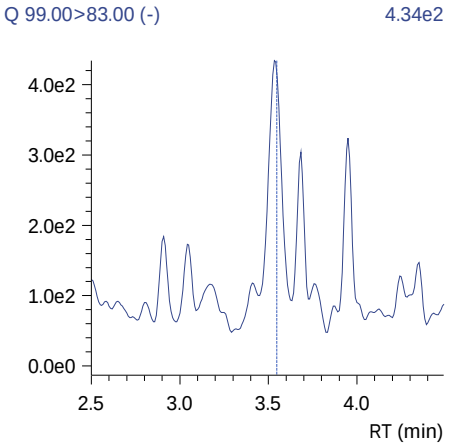
E2301235-004

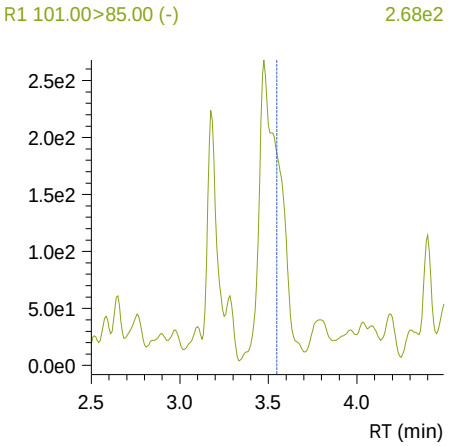
Sample ID: E2301235-004IR
Date Acquired: 1/4/2024 8:42:22 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20240103\20240104-038.lcd
Vial: 10 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	361145	----	ng/mL	101.00 >85.00	0.00	23-42.72
Sodium Perchlorate-18O4_IS	Auto	3.535	361145	361145	1.0000	ng/mL	----	----	

Perchlorate

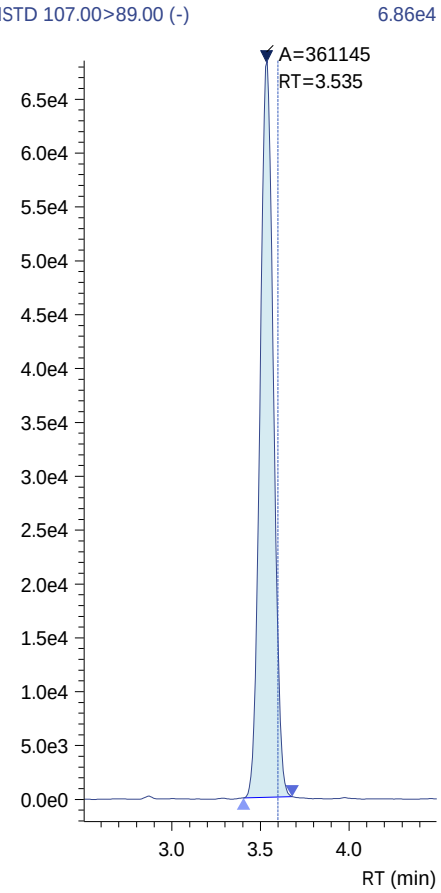
Conc ----
R#1 0.00 (32.86)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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E2301235-006

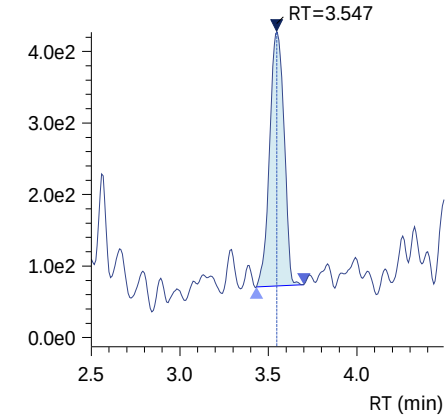
Sample ID: E2301235-006
Date Acquired: 1/4/2024 8:47:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20240103\20240104-039.lcd
Vial: 12 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	MI R1	3.547	2018	358597	0.0382	ng/mL	101.00 >85.00	37.20	23-42.72
Sodium Perchlorate-18O4 _IS	Auto	3.534	3585 97	358597	1.0000	ng/mL	----	----	

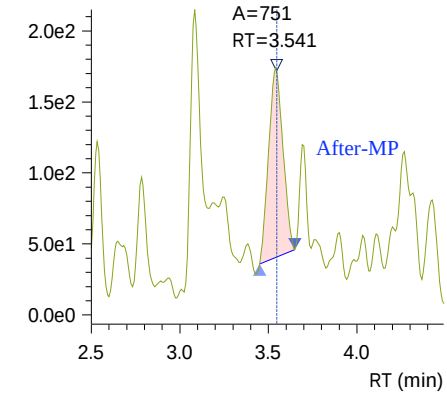
Perchlorate

Conc 0.0382
R#1 37.20 (32.86)

Q 99.00>83.00 (-) A=2018 4.27e2



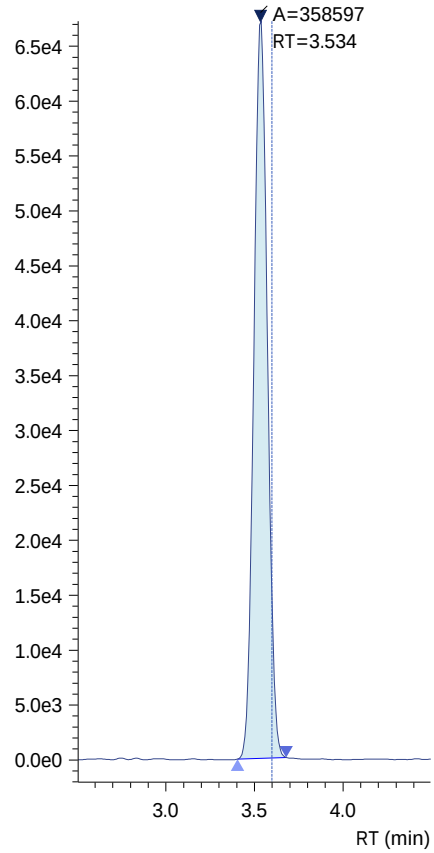
R1 101.00>85.00 (-) 2.15e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.73e4



Insight Report

Printed at 1/5/2024 9:48:03 AM

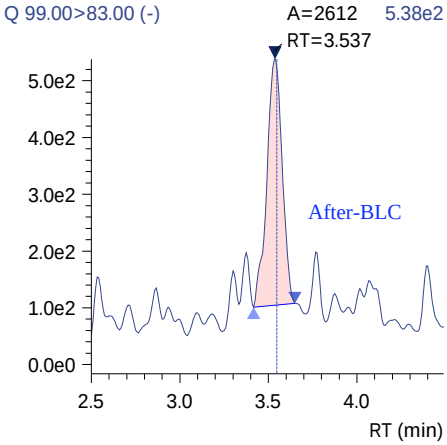
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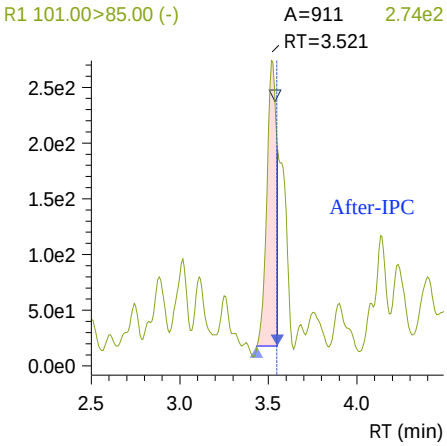
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Vial: 10 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	M	3.537	2612	358782	0.0494	ng/mL	101.00 >85.00	34.86	23-42.72
Sodium Perchlorate-18O4 _IS	Auto	3.535	3587 82	358782	1.0000	ng/mL	----	----	

Perchlorate

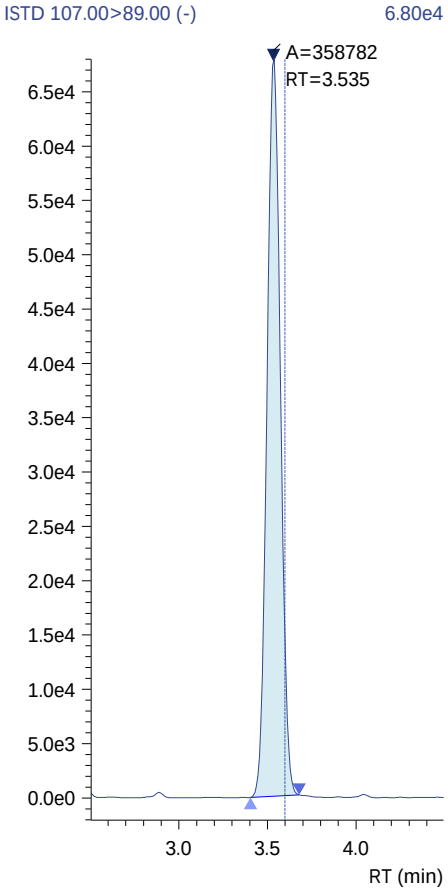
Conc 0.0494
R#1 34.86 (32.86)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 1/5/2024 9:48:03 AM

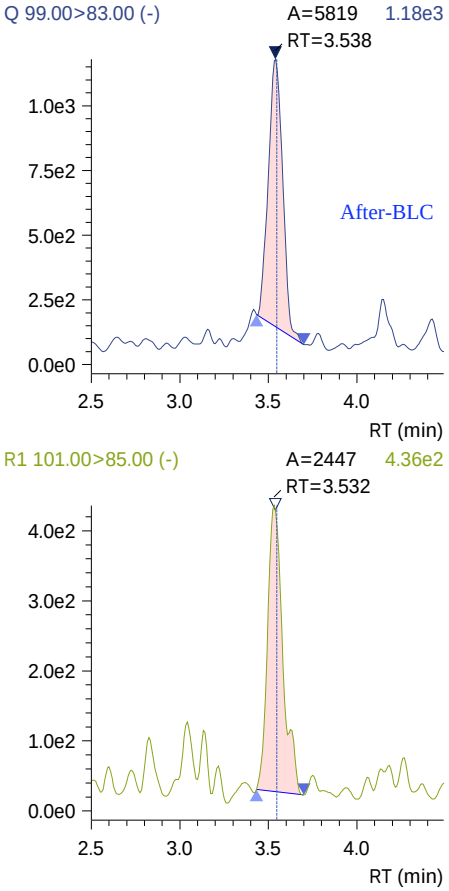
EQ2400006-03

Sample ID: EQ2400006-03
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Vial: 3 | Inj. Volume: 10.0000uL | Tray: 4

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	M	3.538	5819	355905	0.1109	ng/mL	101.00 >85.00	42.05	23-42.72
Sodium Perchlorate-18O4 _IS	Auto	3.535	355905	355905	1.0000	ng/mL	----	----	

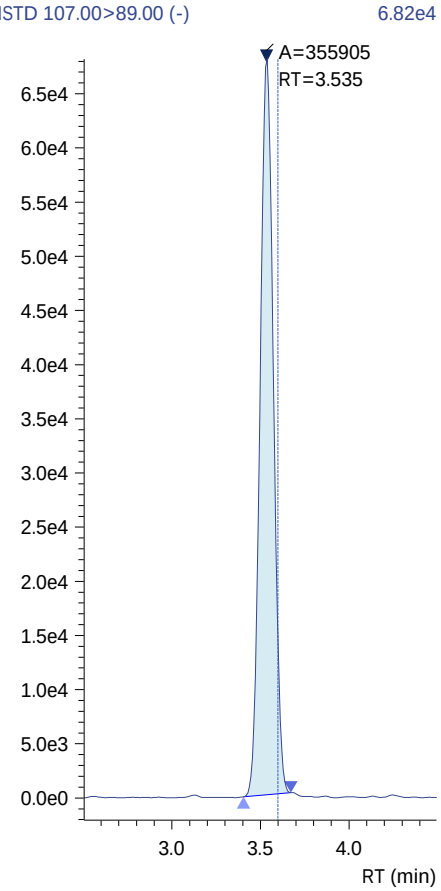
Perchlorate

Conc 0.1109
R#1 42.05 (32.86)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 1/5/2024 9:48:03 AM

CCV

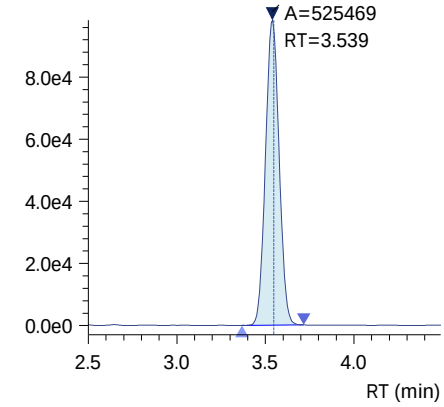
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Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20240103\20240104-043.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.539	525469	336511	10.58 93	ng/mL	101.00 >85.00	32.71	23-42.72
Sodium Perchlorate-18O4 _IS	Auto	3.535	336511	336511	1.0000	ng/mL	----	----	

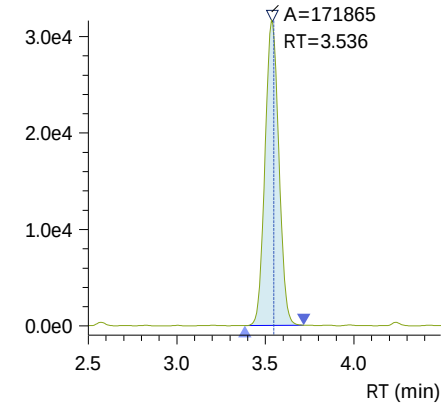
Perchlorate

Conc 10.5893
R#1 32.71 (32.86)

Q 99.00>83.00 (-) 9.83e4



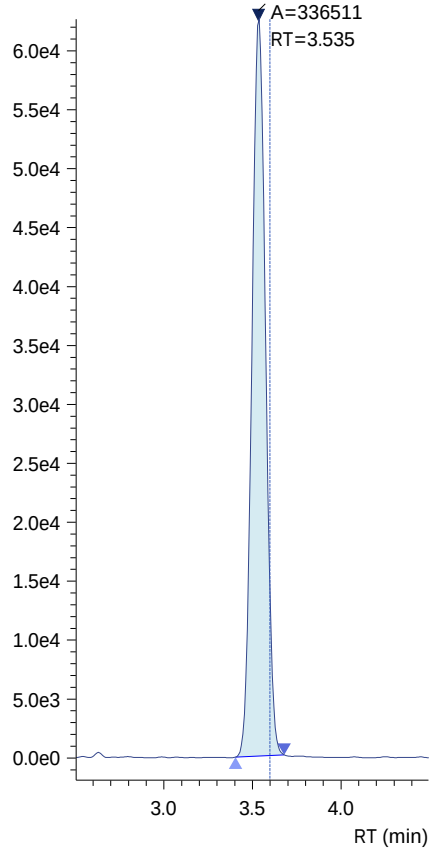
R1 101.00>85.00 (-) 3.17e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.27e4



DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
US ARMY ENVIRONMENTAL COMMAND
2455 REYNOLDS ROAD
JOINT BASE SAN ANTONIO FORT SAM HOUSTON, TX 78234-7588

February 6, 2024

SUBJECT: Draft Final Ninth Annual Remedial Action Operation Report (September 2022 - August 2023), LHAAP-35A (58) Shops Area, Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas, February 2024

Mr. Brian Follin
U.S. Environmental Protection Agency
1201 Elm Street, Suite 500
Dallas, TX 75270-2002

Dear Mr. Follin,

An electronic copy of the above referenced document has been added to the project portal's "Documents" folder at the following address for your review: (https://docs.cbifederalservices.com/sites/501032/regulators/Shared%20Documents/Forms/AllItems.aspx). An electronic copy of this letter and download instructions for the electronic file have been sent via email. The document includes revisions based upon the Environmental Protection Agency's (EPA) comments on the draft version received on January 2, 2024, and the Texas Commission on Environmental Quality's (TCEQ) comments received on December 15, 2023. Tables of responses to the EPA and TCEQ comments on the draft version are included with this draft final document. In accordance with the Federal Facility Agreement, this draft final will be considered final after 30 days without further comment.

The document was prepared by the Poarch Creek Indians, Government Services, LLC/Bhate Environmental Associates, Inc. 8(a) Joint Venture (PCI/Bhate JV) on behalf of the Army as part of PCI/Bhate JV's Performance Based Remediation contract for the facility. I ask that Zachary Beck, PCI/Bhate JV's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at (726) 999-0505, or by email at lena.j.sierocinski.civ@army.mil.

Sincerely,

Lena Sierocinski

Lena Sierocinski
LHAAP Environmental Support Manager
U.S. Army Environmental Command

Electronic copies furnished:
A. Palmie, TCEQ, Austin, TX
E. Duerkop, USFWS, Caddo Lake NWR, TX (1 hard copy and 1 CD)
C. Montoya USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
K. Russell, BRAC, Huntsville, AL
Z. Beck, Bhate, Lakewood, CO
P. Srivastav, APTIM, Houston, TX

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
US ARMY ENVIRONMENTAL COMMAND
2455 REYNOLDS ROAD
JOINT BASE SAN ANTONIO FORT SAM HOUSTON, TX 78234-7588

February 6, 2024

SUBJECT: Draft Final Ninth Annual Remedial Action Operation Report (September 2022 - August 2023), LHAAP-35A (58) Shops Area, Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas, January 2024

Ms. April Palmie
Texas Commission on Environmental Quality
Superfund Section, MC-136
12100 Park 35 Circle, Bldg D
Austin, TX 78753

Dear Ms. Palmie,

An electronic copy of the above referenced document has been added to the project portal's "Documents" folder at the following address for your review: (https://docs.cbifederalservices.com/sites/501032/regulators/Shared%20Documents/Forms/AllItems.aspx). The document includes revisions based upon the Environmental Protection Agency's (EPA) comments on the draft version received on January 2, 2024, and the Texas Commission on Environmental Quality's (TCEQ) comments received on December 15, 2023. Tables of responses to the EPA and TCEQ comments on the draft version are included with this draft final document. In accordance with the Federal Facility Agreement, this draft final will be considered final after 30 days without further comment.

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The point of contact for this action is the undersigned. I may be contacted at (726) 999-0505, or by email at lena.j.sierocinski.civ@army.mil.

Sincerely,

Lena Sierocinski

Lena Sierocinski
LHAAP Environmental Support Manager
U.S. Army Environmental Command

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B. Follin, USEPA Region 6, Dallas, TX
E. Duerkop, USFWS, Caddo Lake NWR, TX (1 hard copy and 1 CD)
C. Montoya USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
K. Russell, BRAC, Huntsville, AL
Z. Beck, Bhate, Lakewood, CO
P. Srivastav, APTIM, Houston, TX

Response to Comments on

Draft Ninth Annual Remedial Action Operation Report (September 2022–August 2023), LHAAP-35A (58) Shops Area, Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas, November 2023

Document Date: November 2023

Comment Date: 2 January 2024

Reviewers: Brian Follin - USEPA

Respondent: Lena Sierocinski - Army

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X)
2. Commenter Agrees (A) with response, or Does Not Agree (D) with response

Comment #	Section/ Page/ Paragraph	Comment	C, D, E, or X[1]	Response	A or D[2]
1	Section 2.2/p. 2-2/1st paragraph, 2nd sentence	Second part of sentence is unclear and should be revised to improve clarity and readability: "… monitoring well 35AWW26 was installed …. to determine increasing CVOC concentrations." Believe intent was to indicate the well was installed to determine if CVOC concentrations were increasing in the vicinity of the well?	C	Concur. The text in Section 2.2 will be revised to state: *"… monitoring well 35AWW26 was installed to evaluate potentially increasing CVOC concentrations upgradient of LHSMW06 and 35AWW20*."	
2	Section 2.2.1/ p. 2-2/ 1st paragraph, 2nd sentence	Sentence readability could be improved by removing the word "while" at beginning of sentence or by combining this and the previous sentence into one (preferred option): "Well development at 35AWW25 and 35AWW26 was performed on 18–19 January 2023, whereas well development at 35AWW27 was performed on 28 June 2023."	C	Concur. The text in Section 2.2.1 will be revised to state: "*Well development at 35AWW25 and 35AWW26 took place from 18 January 2023 to 19 January 2023, whereas well development at 35AWW27 took place on 28 June 2023*."	
3	Section 2.2.1/ p. 2-2/ 1st	Sentence readability would be improved by adding the word "the" before the word "bail."	C	Concur. The text in Section 2.2.1 will be revised to state: "*Development of the wells*	

Comment #	Section/ Page/ Paragraph	Comment	C, D, E, or X[1]	Response	A or D[2]
	paragraph, 3rd sentence			*was performed using the bail, surge, and purge method.*"	
4	Section 2.3.3/ p. 2-4/ 2nd paragraph, last sentence	Bacterial names should be italicized here and elsewhere in report.	C	Concur. Bacterial names *DHC* and *DHBt* will be italicized throughout the document.	
5	Section 2.3.4.1/ p. 2-5/ 1st paragraph, 2nd sentence	The modifier "water-bearing" should be removed before "zone" (i.e., "… groundwater-flow direction in the shallow zone during…").	C	Concur. The text in Section 2.3.4.1 will be revised by removing "water-bearing." In addition, this change will be made to Section 2.3.5.	
6	Section 2.3.4.1/ p. 2-5/ 2nd paragraph, 2nd sentence	Would be helpful to supply context by indicating the number of wells for which a comparison of groundwater elevations could be made.	C	Concur. The text in Section 2.3.4.1 will be revised to state: "*The shallow zone groundwater elevations increased in nine of the ten shallow wells between January and June 2023.*"	
7	Section 2.3.4.2/ p. 2-5/ 1st paragraph, 2nd sentence	Sentence should be revised by removing the letter "d" from "increased", relocating "by 0.55 ft" to after "increase," and deleting the comma after 2023 (i.e., "Monitoring well 35AWW05 (**Figure 2**), which is located in the intermediate groundwater zone, had groundwater elevations increase by 0.55 ft between January and June 2023."). However, readability and clarity could be improved by creating a more concise version of this sentence: "Groundwater elevations measured in intermediate zone monitoring well 35AWW05 (**Figure 2)** increased 0.55 ft between January and June 2023."	C	Concur. The text in Section 2.3.4.2 will be revised to state: "*Groundwater elevations measured in intermediate zone monitoring well 35AWW05 (**Figure 2)** increased 0.55 ft between January and June 2023*."	

Comment #	Section/ Page/ Paragraph	Comment	C, D, E, or X[1]	Response	A or D[2]
8	Section 2.4.1/ p. 2-6/ 3rd paragraph, 1st sentence	The word "reported" should be replaced with the word "detected" ("… had one or more COCs detected at concentrations above the laboratory detection limits.").	C	Concur. The text in Section 2.4.1 will be revised as requested by replacing "reported" with "detected."	
9	Section 2.4.1/ p. 2-6/ 4th paragraph, 1st sentence	1) Well 35AWW23 is identified as a well with one or more COC detections in June 2023 at concentrations greater than laboratory detection limits (LDLs), but page 52 of table 4 indicates all 6 COCs were less than the LDLs. 2) Well 35AWW11 should be listed in this sentence because two COCs were detected in June 2023 at concentrations greater than respective LDLs—1,1-dichloroethene at a concentration of 2.6 µg/L and vinyl chloride at a concentration of 0.61J µg/L (table 4, page 23).	C	1) Concur. Monitoring well 35AWW23 will be removed from the 4th paragraph of Section 2.4.1. 2) Concur. Monitoring well 35AWW11 will be added from the 4th paragraph of Section 2.4.1.	
10	Section 2.4.1/ p. 2-6/ 4th paragraph, 2nd sentence	One well might be missing from the list of monitoring wells with COC concentrations greater than MCLs during June 2023, depending upon which report component is correct. Using blue cell shading, table 4 currently indicates TCE and vinyl chloride were detected in well 35AWW08 at concentrations greater than respective MCLs; however, both reported values have "U" data qualifiers, indicating these are non-detections. Table 2 and fig. 6 treat both values as detections greater than MCLs, and the Mann-Kendall analysis in appendix H treats the TCE value as a detection. Need to resolve discrepancy and revise report section(s) accordingly.	C	Concur. Table 4 incorrectly indicates a U qualifier on the June 2023 35AWW08 TCE and VC results. Table 4 will be revised accordingly.	

Comment #	Section/ Page/ Paragraph	Comment	C, D, E, or X[1]	Response	A or D[2]
11	Section 3.1.1/ p. 3-2/ 2nd paragraph, last sentence	Sentence indicates there were 5 sampling events following June 2020—this is incorrect because there have been 4 sampling events (December 2020, June 2021, June 2022, and June 2023) since that time.	C	Concur. The text in Section 3.1.1 will be revised to state: "*…in the four sampling events following June 2020.*"	
12	Section 3.1.1/ p. 3-2/ 3rd paragraph, 3rd sentence	1) The MCL for PCE is incorrectly stated to be 15 µg/L at the end of the sentence. 2) The word "concentrations" near end of sentence should not be plural because there was only one concentration greater than the MCL of 5 µg/L.	C	1) Concur. The text in Section 3.1.1 will be revised to reference the MCL of PCE to 5 µg/L. 2) Concur. "Concentrations" will be revised to "concentration" to reflect the singular event.	
13	Section 3.1.1/ p. 3-2/ 1st to 3rd paragraphs	These paragraphs discuss wells with PCE detections greater than the MCL, but well 35AWW09 exceedance (PCE=450 µg/L in primary sample and 460 µg/L in duplicate sample) is not mentioned.	C	Concur. The following paragraph will be added to Section 3.1.1: "*From August 2013 to June 2023, PCE concentrations in well 35AWW09 increased from 21.9 µg/L to 460 µg/L (Table 4 and Figure 8c). PCE increased to a maximum concentration of 500 µg/L in December 2019 and has remained relatively consistent through June 2023 (460 µg/L), since monitoring well 35AWW09 is downgradient of 03WW01 and 35AWW08.*"	
14	Section 3.1.1/ p. 3-2/ 4th paragraph, last sentence	Last sentence is unclear—perhaps something such as the following: "The concentration of TCE in monitoring well 03WW01 increased from 3.0 µg/L in June 2021 to 10 µg/L in June 2022, and the concentration remained at 10 µg/L in June 2023."	C	Concur. The text in Section 3.1.1 will be revised as suggested: "*The concentration of TCE in monitoring well 03WW01 increased from 3.0 µg/L in June 2021 to 10 µg/L in June 2022, and the concentration remained at 10 µg/L in June 2023*."	
15	Section 3.1.2/ p. 3-3/ 2nd	Should cite fig. 8 because the sentence describes groundwater elevations in	C	Concur. A reference to Figure 8 will be added to Section 3.1.2.	

Comment #	Section/ Page/ Paragraph	Comment	C, D, E, or X[1]	Response	A or D[2]
	paragraph, 3rd sentence	relation to COC concentrations with time. Fig. 8 should be cited wherever COC concentration and groundwater elevation changes are discussed in relation to time.			
16	Section 3.1.2/ p. 3-3/ 3rd paragraph, last sentence	Sentence construction is awkward and likely does not convey what the authors originally intended. As currently constructed, the sentence indicates well 35AWW26 was installed upgradient of LHSMW06 and 35AWW20 to determine if CVOC concentrations were increasing at well LHSMW06. This makes the reader wonder why sampling results at the new well (35AWW26) are being used to determine if CVOC concentrations are increasing at the existing well (LHSMW06), instead of the authors (presumed) intention of indicating that the new well was installed (in part) to determine if CVOC concentrations were increasing upgradient of well LHSMW06.	C	Concur. The text in Section 3.1.2 will be revised to state: "A new monitoring well (35AWW26) was installed to evaluate potentially increasing CVOC concentrations upgradient of LHSMW06 and 35AWW20."	
17	Section 3.1.2/ p. 3-3/ 4th paragraph, 4th sentence	In scientific/technical reports with statistics, the word "significant" typically should be used only for discussions of statistical tests/results. The word "substantial" would be an acceptable replacement.	C	Concur. The text in Section 3.1.2 will be revised by replacing "significant" with "substantial."	
18	Section 3.6.2/ p. 3-8/ 1st paragraph, 1st complete sentence (begins	The word "increase" should be "decreased."	C	Concur. The text in Section 3.6.2 will be revised by replacing "increased" with "decreased."	

Comment #	Section/ Page/ Paragraph	Comment	C, D, E, or X[1]	Response	A or D[2]
	with "BAV1 vinyl chloride")				
19	Section 4.1.2, well 35WW08 subsection/ p. 4-3/ 3rd (last) paragraph, last sentence	Measurement unit (µg/L) is missing after "5.2" at end of sentence (i.e., "…and 5.2 µg/L in June 2023.").	C	Concur. The text in Section 4.1.2 will be revised to include the measurement unit of µg/L after 5.2.	
20	Section 4.1.2, well LHSMW06 subsection/ p. 4-5/ 1st paragraph, last sentence	The vinyl chloride concentration in the duplicate sample (6.7 µg/L) was slightly larger than the concentration in the primary sample (6.6 µg/L).	C	Concur. The text in Section 4.1.2 will be revised to state: "…*in June 2023 with concentrations of 21 µg/L and 6.7 µg/L (duplicate result), respectively*."	
21	Section 4.1.2, well LHSMW07 subsection/ p. 4-5/ 2nd paragraph, 2nd sentence	In the parenthetical for 1,1-DCE at the end of the sentence, a greater than symbol (>) is missing before 99.9%.	C	Concur. The text in Section 4.1.2 will be revised by adding the ">" in front of 99.9%, in the parenthetical for 1,1-DCE.	
22	Section 4.1.3.2/ p. 4-7/ 3rd paragraph, last sentence	MCL for 1,1-DCE is incorrectly stated to be 5 µg/L instead of 7 µg/L.	C	Concur. The text in Section 4.1.3.2 will be revised to state the correct MCL for 1,1-DCE of 7 µg/L.	
23	Section 4.2.1, Dissolved Oxygen subsection/ p. 4-8/ 1st paragraph, 5th sentence	The word "and" before "is an outlier" is extraneous and needs to be deleted.	C	Concur. The text in Section 4.2.1 will be revised as requested.	
24	Section 4.2.2, Oxidation-Reduction Potential	1) A comma is missing after 35WW15. 2) Sentence is somewhat misleading by indicating areas outside of the treatment area generally continued	C	1) Concur. A comma will be added to Section 4.2.2 after 35WW15. 2) Concur. The text under the ORP subsection in 4.2.2, will be revised as	

Comment #	Section/ Page/ Paragraph	Comment	C, D, E, or X[1]	Response	A or D[2]
	subsection/ p. 4-9/ 1st paragraph, 5th sentence	to have positive ORPs during the year 9 RAO—it depends on the time examined because 2 of 6 wells (33%) were negative in June, and only 1 of 6 wells (~17%) were negative in January, so this statement is truer for the month of January than for the month of June.		follows: "*Areas outside of the treatment area (LHSMW06, 35AWW06, 35AWW15, 35AWW18, 35AWW19, and 35AWW24) in general continued to have positive ORPs which ranged from -59 mV at 35AWW06 (January 2023) to 183 mV at 35AWW24 (January 2023) (Table 3). In January 2023, five of six monitoring wells outside of the EISB treatment area (or 83%) had positive ORPs. Monitoring well 35AWW06 was the outlier with a negative ORP (-59 mV). In June 2023, four of the same six monitoring wells outside of the EISB treatment area (or 67%) had positive ORPs, with 35AWW06 (-54 mV) and 35AWW15 (-55 mV) having negative ORPs. These results indicate that conditions in the western plume outside of the EISB treatment area are primarily aerobic and not supportive of anaerobic degradation*."	
25	Section 4.2.2, Dissolved gases subsection/ p. 4-10/ 1st paragraph, 5th sentence	Sentence incorrectly indicates that ethene was detected in well 35AWW19 during June 2023 (but does correctly report the nondetection as <0.500U µg/L). However, ethene was detected in the well at a concentration of 3.95 µg/L in January 2023.	C	Concur. The text within the Dissolved Gases Section of 4.2.2 will be revised to state: "*Ethene was detected within the western plume in wells LHSMW07 (20.9 µg/L [June 2023]), 35AWW20 (38.9 µg/L [June 2023]), and 35AWW19 (3.95 µg/L [January 2023])*.	
26	Section 4.3.2/ p. 4-10/ 1st	Sentence incorrectly states that BAV1 VC reductase was detected at 15,200 cells/mL in well 35AWW19 in June 2023. Table 6	C	Concur. The text in Section 4.3.2 will be revised to state: "DHC was detected at 91,800 cells/mL in January 2023 and BAV1 VC	

Comment #	Section/ Page/ Paragraph	Comment	C, D, E, or X[1]	Response	A or D[2]
	paragraph, 3rd sentence	indicates BAV1 VC reductase was detected at 8,330 cells/mL in June 2023 and 15,200 cells/mL in January 2023.		reductase was detected at 15,200 cells/mL in January 2023."	
27	Section 5.1/ p. 5-1/ 4th paragraph, 2nd sentence	Concur with conclusion that additional treatment in the vicinity of well 35AWW09 may be needed because of unfavorable geochemical conditions for reductive dechlorination.	C	Noted.	
28	Section 5.1/ p. 5-2/ 1st paragraph, 1st complete sentence on page (begins with "Therefore")	Figures 4 and 5 should be cited in this sentence instead of fig. 6 because the latter figure does not show groundwater flow.	C	Concur. Section 5.1 will be revised to include a reference to Figures 4 and 5 instead of Figure 6.	
29	Section 5.1/ p. 5-2/ 3rd paragraph, 2nd sentence	Concur with conclusion that additional treatment upgradient of wells 35AWW20 and LHSMW06 may be needed to ensure complete degradation of TCE and associated daughter products.	C	Noted.	
30	Tables 2 and 3/ Notes section below table body	MCL is incorrectly identified as maximum contaminant **limit** instead of maximum contaminant **level**.	C	Concur. The definition for MCL will be revised on Tables 2 and 3.	
31	Table 3, p. 2 of 6/ Well 35AWW11	DO value for January 12, 2023 sample is mistakenly shaded blue.	C	Clarification. The DO value recorded at 35AWW11 on 12 January 2023 was 1.85 mg/L above the EISB evaluation criteria of <0.50 mg/L. Therefore, a green color highlight and footnote will be added to explain shading of the DO value.	
32	Table 3/ p. 4 of 6/ Wells 35AWW18,	ORP values for 35AWW18 (June 2023 sample), 35AWW19 (January and June 2003 samples), and 35AWW24 (January and June 2003 samples) are mistakenly	C	Clarification. A green color highlight and footnote will be added to explain shading of the ORP and DO values presented in Table 3.	

Comment #	Section/ Page/ Paragraph	Comment	C, D, E, or X[1]	Response	A or D[2]
	35AWW19, and 35AWW24	shaded blue. Additionally, the DO value for the January 2023 sample from 35AWW24 is mistakenly shaded blue.			
33	Table 3/ p. 6 of 6/ Wells 35AWW26, LHMW06, and LHMW07	ORP values for 35AWW26 (both January samples and June 2003 sample), LHMW06 (January and June 2003 samples), and LHMW07 (June 2003 samples) are mistakenly shaded blue.	C	Clarification. A green color highlight and footnote will be added to explain shading of the ORP and DO values presented in Table 3.	
34	Fig. 1	Karnack is misspelled (missing letter "c") in the two left maps.	C	Concur. Figure 1 will be revised accordingly.	
35	Fig. 8/ Graph portion of figs	1) Graphs are too small to evaluate constituent concentrations in relation to groundwater elevations with time. Should create separate figure with graphs following approach used in most LHAAP reports. 2) The labeling of the x-axes makes it very difficult to determine which dates/times correspond to the various plotted measurements.	C	1) Concur. Separate figures (8a – 8e) for each trend chart will be created to replace Figure 8. Figure references will be updated throughout the report. 2) Concur. The x-axis labeling on each trend chart will be revised for clarity.	

Response to Comments on
Draft Ninth Annual Remedial Action Operation Report (September 2022–August 2023), LHAAP-35A (58) Shops Area, Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas, November 2023
Document Date: 30 November 2023
Comment Date: 15 December 2023

Reviewers: April Palmie - TCEQ
Respondent: Lena Sierocinski - Army

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X)
2. Commenter Agrees (A) with response, or Does Not Agree (D) with response

Comment #	Section/ Page/ Paragraph	Comment	C, D, E, or X[1]	Response	A or D[2]
1	2.1.2, 2-1	Correct the hard return between "worsen and" and "will require"	C	Concur. The hard return between "worsen and" and "will require" will be corrected.	
2	2.2, 2-2	2nd paragraph, last sentence, add boring logs.	C	Concur. The last sentence of the 2nd paragraph of Section 2.2 will be revised to state: "*Monitoring well construction diagrams and boring logs are presented in Appendix D*."	
3	5.2, 5-3	1st bullet – agree with the recommendation. 2nd bullet – after June 2024, change to "if" not "when".	C	1st bullet – Noted. 2nd bullet – Concur. The bullet will be revised as suggested.	
4	Table 2	3rd column heading should be MCL/PCL; MSC is just for soil. Update the table note. DO and ORP should not be shaded blue. Those values in the MCL/MSC column are reference ranges and really should be NV or should have a note. Maybe you could add a note that those values are reference values not MCL/PCL.	C	Concur. The MCL/PCL header and footnote will be revised as requested on Tables 2 and 3. Additionally, a footnote will be added for the field parameter EISB evaluation criteria. Values outside the EISB evaluation criteria will be highlighted green.	

Comment #	Section/ Page/ Paragraph	Comment	C, D, E, or X[1]	Response	A or D[2]
5	Appendix B	Do you have any well installation photos you could add to the photo log?	C	Concur. Photographs from the installation of monitoring wells 35AWW25, 35AWW26, and 35AWW27 will be added to the photo log presented in Appendix B.	
6	Appendix D	Drilling log for 35AWW27 is not legible. Please prepare digital boring logs such as the logs in LHAAP-35A (58) Western Plume RACR Appendix B or the recent Draft LHAAP-47 PDI report Appendix A.	C	Concur. Digital borings logs will be prepared and will replace the field copies in Appendix D.	
7	Appendix G	Correct the cover page, remove "(PROVIDED ON CD)"	C	Concur. The fly sheet for Appendix G will be revised by removing "(PROVIDED ON CD)".	

DRAFT FINAL
NINTH ANNUAL REMEDIAL ACTION OPERATION REPORT (SEPTEMBER 2022 - AUGUST 2023)
LHAAP-35A (58) SHOPS AREA
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

February 2024

Prepared For:





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ACRONYMS AND ABBREVIATIONS

<	Less than
>	Greater than
%	Percent
AECOM	AECOM Technical Services, Inc.
amsl	Above mean sea level
bgs	Below ground surface
Bhate	Bhate Environmental Associates, Inc.
COC(s)	Contaminant(s) of concern
CSM	Conceptual site model
CVOC(s)	Chlorinated volatile organic compound(s)
DCA	Dichloroethane
DCE	Dichloroethene
DHBt	*Dehalobacter*
DHC	*Dehalococcoides*
DO	Dissolved oxygen
EISB	Enhanced In-situ Bioremediation
ESD	Explanation of Significant Differences
ft	Feet (or foot)
HPLC	High Performance Liquid Chromatography
IWWP	Installation-Wide Work Plan
J	Data qualifier denoting an estimated concentration
LHAAP	Longhorn Army Ammunition Plant
LUC(s)	Land Use Control(s)
MC	Methylene chloride
MCL(s)	Maximum contaminant level(s)
µg/L	Micrograms per liter
mg/L	Milligrams per liter
mL	Milliliter

MNA	Monitored Natural Attenuation
MSC	Medium-specific concentration
mV	Millivolts
No.	Number
ORP	Oxidation-reduction potential
PBJV	Poarch Creek Indians, Government Services, LLC (PCI-GS)/Bhate Environmental Associates, Inc. (Bhate) 8(a) Joint Venture
PCI-GS	The Poach Creek Indians, Government Services, LLC
PCE	Tetrachloroethene
pH	Negative log of the hydrogen ion concentration
RA-O(s)	Remedial Action Operation(s)
RAO(s)	Remedial Action Objective(s)
RACR	Remedial Action Completion Report
RAWP	Remedial Action Work Plan
RD	Remedial Design
ROD	Record of Decision
s.u.	Standard units
Shaw	Shaw Environmental, Inc.
SVOC(s)	Semi-volatile Organic Compound(s)
TCA	Trichloroethane
TCE	Trichloroethene
TM	Technical Memorandum
TOC	Total Organic Carbon
U	Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.
U.S.	United States
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VC	Vinyl chloride
VFA	Volatile Fatty Acids
VOC(s)	Volatile Organic Compound(s)

1 INTRODUCTION

The Poarch Creek Indians, Government Services, LLC (PCI-GS)/Bhate Environmental Associates, Inc. (Bhate) 8(a) Joint Venture, herein referred to as PBJV, was awarded a solicitation number W912BV23R0022, under United States Army Corps of Engineers (USACE) contract number W912BV23C0007. PBJV is performing groundwater and surface water monitoring as part of Remedial Action Operation (RA-O) for the Enhanced In-situ Bioremediation (EISB) and Monitored Natural Attenuation (MNA) groundwater remedy at Longhorn Army Ammunition Plant (LHAAP)-35A (58). Remedial activities are required under the Record of Decision (ROD) issued for LHAAP-35A (58) in September 2010 (Shaw Environmental, Inc. [Shaw], September 2010).

The Remedial Action Work Plan (RAWP) for the entire site was prepared in August 2013 in accordance with the ROD and was implemented in September 2013 (AECOM Technical Services, Inc. [AECOM], August 2013). Within the eastern plume, EISB was performed in September 2013. The MNA remedy for the western plume at this site, as presented in the ROD, calls for an evaluation of the remedy after 2 years of implementation. The ROD also provides an implementation of a contingency remedy to enhance MNA if it has been found to be ineffective. RA-O implementation for the western plume was conducted between October 2013 and October 2015 and the Year 2 RA-O report was finalized in May 2016 (AECOM, May 2016). After 2 years of MNA, the Year 2 RA-O report concluded that MNA was ineffective and implementation of a contingency remedy was appropriate. A RAWP for the contingency remedy for the western plume was developed and finalized (Bhate, January 2018). The contingency remedy for the western plume is EISB injections, which was implemented in March and April 2018, as documented in the Remedial Action Completion Report (RACR) (Bhate, August 2018).

Groundwater monitoring at LHAAP-35A (58) was conducted quarterly following EISB injections at the eastern plume for 2 years but is now semiannual. The contingency remedy within the western plume required that quarterly sampling be completed in select performance monitoring wells for 2 years which was completed in March 2020. Therefore, as with the eastern plume, groundwater monitoring is now completed semi-annually in the western plume. This RA-O report documents Year 9 of RA-O implementation and summarizes the Land Use Control (LUC) compliance inspection; monitoring well inspection, maintenance, and repair activities; results of groundwater and surface water sampling completed in January and June 2023; and an evaluation of EISB and MNA based on those two sampling events.

LHAAP is located in east-central Texas in the northeastern corner of Harrison County between State Highway 43 in Karnack, Texas, and the western shore of Caddo Lake (**Figure 1**). The nearest cities are Marshall, Texas, approximately 14 miles to the southwest, and Shreveport, Louisiana, approximately 40 miles to the east. Caddo Lake is a large freshwater lake that bounds LHAAP to the north and east. The eastern fence of the LHAAP installation is 3.5 miles from the Texas-Louisiana border (AECOM, May 2016).

1.1 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for LHAAP-35A (58), consistent with the reasonably anticipated future use of the site as a national wildlife refuge, as presented in the ROD (Shaw, September 2010) are:

- Protection of human health by preventing human exposure to the contaminated groundwater;
- Protection of human health and the environment by preventing contaminated groundwater from migrating into nearby surface water; and,
- Returning groundwater to its potential beneficial use as a drinking water source, wherever practicable.

An Explanation of Significant Differences (ESD) was prepared and finalized for LHAAP-35A (58), Shops Area, Group 4 (Bhate, July 2018) to formalize that the LUCs and groundwater monitoring required for LHAAP-03, a small site entirely contained in the LHAAP-35A (58) eastern Volatile Organic Compound (VOC) plume and LUC boundaries, will be captured under LHAAP-35A (58). The 2018 ESD (Bhate, July 2018) specified that well 03WW01 be sampled for arsenic within the LHAAP-35A (58) RA-O and clarifies that LUCs will remain in place until the levels of the contaminants of concern (COCs) in soil and groundwater allow for unrestricted use and unlimited exposure.

1.2 Performance Objectives

The LHAAP-35A (58) site has groundwater plumes in two distinct areas: 1) eastern plume and 2) western plume. The current remedies selected for the two areas are: LUC; EISB in the area of highest levels of contamination; and MNA for the remainder of the plume, beyond the influence of the EISB treatment area. EISB was implemented as a contingency remedy within the western plume in 2018 as presented in the Final ESD ROD (Bhate, March 2018) and documented in the RACR for the Western Plume Contingency Remedy at LHAAP-35A (58) Shops Area (Bhate, August 2018). EISB was previously conducted in the eastern plume in 2013.

The performance objectives at LHAAP-35A (58) consist of two components: physical inspections and groundwater/surface water monitoring. As a component of the LUC implementation, a civil survey of the LUC boundary was conducted in November 2014 and recorded in the Harrison County Courthouse in March 2015 (AECOM, May 2016). Physical inspections are conducted annually to confirm compliance with the LUC objectives. These objectives include preventing human exposure to groundwater contamination at levels that pose an unacceptable risk to a future maintenance worker and ensuring that there is no withdrawal or use of groundwater from the site for anything other than environmental monitoring and testing until the cleanup levels (maximum contaminant levels [MCLs]) are attained. Groundwater monitoring conducted at the site since October 2013 was included in the facility-wide fourth Longhorn Five-Year Review Report, completed in 2019 (USACE, June 2019).

Groundwater and surface water monitoring are being performed to demonstrate that EISB in conjunction with MNA of the eastern and western plumes are effective remedies to:

- Detect changes in environmental conditions that may reduce the efficacy of the remedial processes,
- Identify potentially toxic and/or mobile transformation products,
- Verify that the plumes are not expanding,
- Verify that no unacceptable impacts to downgradient receptors are occurring, such as discharges of contaminated groundwater to surface water,
- Detect new releases of contaminants to the environment that could impact the effectiveness of the remedies, and
- Verify attainment of the RAOs.

Groundwater monitoring completed as part of the Year 9 RA-O activities consisted of two semi-annual groundwater sampling events, one conducted in January 2023 (Western Plume only) and one conducted in June 2023 as specified in the Eastern Plume RAWP (AECOM, August 2013) and the Western Plume RAWP (Bhate, January 2018). Semiannual surface water sampling at 35ASW03, located adjacent to the western groundwater plume in a ditch that runs parallel to 4th Street, was not performed in January or June 2023, as groundwater elevations, in the nearest upgradient monitoring well 35AWW18, were below the elevation of the ditch.

1.3 Site Description

The LHAAP-35A (58) site, also known as the Shops Area, is located in the north-central portion of LHAAP and currently covers an area of approximately 11 acres (**Figure 1**) (Shaw, September 2010). The surface features include asphalt-paved roads, a parking area, and areas that are wooded and overgrown with grasses and other vegetation (**Figure 2**). The topography is relatively flat with the surface drainage flowing into the tributaries of Goose Prairie Creek, which eventually discharges into Caddo Lake.

The Shops Area was established in 1942 as part of the installation's initial construction (Shaw, September 2011). The facility was used to provide plant-operated laundry, automotive, woodworking, metalworking, painting, refrigeration, and electrical services. The site was active throughout the LHAAP's mission and was deactivated along with the rest of the installation in 1996-1997. The LHAAP-35A (58) site boundary has changed over the years. Earlier investigations for LHAAP-35A (58) were performed in areas to the south that are no longer included within the site boundary (AECOM, May 2016).

The following sites were located within the historical LHAAP-35A (58) site boundary, but are not included within the current site boundary:

- LHAAP-04, former Pilot Wastewater Treatment Plant;
- LHAAP-56, a vehicle wash rack and oil/water separator, Building 744-A;
- LHAAP-59, Storage Building 725;
- LHAAP-60, Building 411;
- LHAAP-61, Water Treatment Plant; and

- LHAAP-66, 405-L Transformer Yard.

The current site boundary for LHAAP-35A (58) encompasses the following sites:

- LHAAP-02, vacuum truck overnight parking;
- LHAAP-03, the Paint Shop Building 722 (waste collection);
- LHAAP-60, Former Storage Building 714;
- LHAAP-68, a mobile storage tank parking area; and
- LHAAP-69, service station with underground storage tanks.

The following sites are located within the LUC boundary (groundwater use restrictions area) for LHAAP-35A (58):

- LHAAP-02, vacuum truck overnight parking;
- LHAAP-03, the Paint Shop Building 722 (waste collection);
- LHAAP-56, a vehicle wash rack and oil/water separator, Building 744-A;
- LHAAP-59, Storage Building 725;
- LHAAP-60, Former Storage Building 714;
- LHAAP-65, Former Building 209 (flammable materials storehouse);
- LHAAP-68, a mobile storage tank parking area; and
- LHAAP-69, service station with underground storage tanks.

1.4 Conceptual Site Model

Much of the following conceptual site model (CSM) information has previously been presented in the Year 2 RA-O Report (January 2015 – October 2015) (AECOM, May 2016). **Figure 3** presents the CSM from the ROD (Shaw, September 2010). Between 1992 and 2008, multiple investigations were conducted in a phased approach to evaluate the nature and extent of contamination at the LHAAP-35A (58) site. The findings from these investigations were that the shallow zone groundwater was impacted with VOCs, while the soil and former sump/waste rack sump areas (LHAAP-56) posed no unacceptable threat to human health or the environment (Shaw, September 2011). **Figure 2** shows the locations of all the shallow, intermediate, and deep zone monitoring wells, as well as surface water sampling locations, present at the site. The sources of contamination at LHAAP-35A (58) were surface spills associated with the various support services that occurred in the area. The spilled COCs migrated downward through the soil and subsequently leached into the groundwater, resulting in groundwater contamination and minor soil contamination.

Overland flow does not appear to be a complete pathway for migration of contaminants to surface water, as none of the COCs (VOCs, semi-volatile organic compounds [SVOCs], explosives, pesticides, or polychlorinated biphenyls) were detected in water samples from the on-site ditch. Likewise, no VOCs, SVOCs, explosives, or pesticides were detected in samples of the ditch

sediment. Some metals were detected in surface water and sediment at concentrations in the naturally occurring background range.

Investigation results indicate that the shallow zone groundwater is impacted with VOCs, but soil and former sump/waste rack areas pose no unacceptable risk to human health or the environment (Shaw, September 2011). The nearest surface water body to LHAAP-35A (58) is a ditch that runs parallel to 4th Street on the western boundary of the site and flows to the southeast. The depth of groundwater in wells adjacent to the ditch is well below the bottom of the ditch at 18 to 25 feet (ft) below ground surface (bgs) (e.g., in wells 35AWW16, 35AWW18, and LHSMW07).

The potentially complete exposure pathways are groundwater use as drinking water and potential migration of impacted groundwater into surface water. Shallow groundwater is not used as drinking water at the refuge and this potential exposure pathway is eliminated from any hypothetical future receptor because LUCs are in place that prohibit the use of groundwater for any purpose other than for environmental monitoring and testing. **Figure 2** shows the groundwater use restrictions area established for this site.

The hydrogeology beneath the site, as presented in the Draft Final RACR (AECOM, October 2015), consists of three water-bearing zones identified as shallow, intermediate, and deep. The shallow zone extends to approximately 40 ft bgs. The lithology of the shallow zone is characterized by discontinuous layers of fine grained soils consisting of interbedded silt, sand, and clay. According to the groundwater gauging data conducted in October 2013 (First Performance Monitoring Sampling Event), groundwater elevations in the shallow zone in October 2013 ranged from 184.21 ft above mean sea level (amsl) to 202.32 ft amsl.

Data from boring log 35AWW02, which was drilled in the deep zone to a depth of 140 ft bgs (75.06 ft amsl), and 35AWW05, which was drilled in the intermediate zone to a depth of 72 ft bgs (147.01 ft amsl), indicate the soils in the intermediate and deep zones consist mostly of clay with the occasional presence of silt and sand layers. The occurrence of predominantly clay soil beneath the shallow zone impedes the vertical migration of groundwater, which is corroborated by the difference in groundwater elevations between the shallow zone and the intermediate and deep zones (AECOM, May 2016). Based on groundwater level measurements obtained in October 2013, groundwater elevation for the intermediate zone was approximately 178 ft above amsl, and the elevation of deep zone groundwater was 175.75 ft above amsl.

Based on previous investigations, the shallow groundwater COCs at LHAAP-35A (58) are tetrachloroethene (PCE); trichloroethene (TCE); 1,1,2-trichloroethane (TCA); 1,1-dichloroethene (DCE); 1,2-dichloroethane (1,2-DCA); cis-1,2-DCE; trans-1,2-DCE; vinyl chloride (VC); methylene chloride (MC); and benzene. In addition, low concentrations of 1,1-DCA were detected in the shallow zone groundwater, but were below the groundwater medium-specific concentration (MSC); therefore, 1,1-DCA is not considered a groundwater COC at this site. No COCs were detected in samples collected from the intermediate and deep groundwater zones.

Within the eastern plume, EISB was performed in September 2013. Upon implementation of EISB upgradient of wells 03WW01 and 35AWW08, PCE concentrations decreased while

concentrations of daughter products increased, indicating reductive dechlorination had occurred. Meanwhile, PCE concentrations increased at 35AWW09, which is located 75 to 150 ft downgradient of the EISB injection points and beyond the radius of influence of the injected reagents. TCE concentrations increased to a lesser degree, indicating some natural attenuation occurs in the eastern plume.

The MNA remedy for the western plume at this site, as presented in the ROD, called for an evaluation of the MNA remedy after 2 years of implementation. After 2 years of MNA, the Year 2 RA-O report (AECOM, May 2016) concluded that MNA was ineffective and implementation of a contingency remedy was appropriate. A RAWP for the contingency remedy for the western plume was developed and finalized (Bhate, January 2018). The contingency remedy for the western plume is EISB injections, which was implemented in March and April 2018, as documented in the RACR (Bhate, August 2018). Immediately after EISB injections, concentrations of TCE and 1,1-DCE declined in 35AWW20, followed by a transitory increase in TCE that demonstrates the biosurfactant properties of EISB results in desorption of TCE from the soil to the dissolved phase. Shortly thereafter, reductive dechlorination occurs as TCE degrades into daughter products 1,1-DCE and VC. At LHSMW07, the concentration of 1,1-DCE is reduced, with no increase in TCE or VC. This is likely indicative that no TCE was sorbed to the soil in this area and VC was reduced quickly. As of June 2023, COCs persist at concentrations that exceed MCLs at wells 35AWW18, 35AWW20, 35AWW26, LHSMW06, and LHSMW07 in the western plume and wells 03WW01, 35AWW09, 35AWW14 in the eastern plume.

Although arsenic has not been designated as a COC, it is included in the shallow zone groundwater monitoring program in accordance with the Revised Technical Memorandum, Steps to Remedy-in-Place for LHAAP-03/LHAAP-58 (AECOM, November 2012); the ESD for LHAAP-03 groundwater and LUCs (Bhate, July 2018); and the 2013 RAWP (AECOM, August 2013). Four quarters of arsenic monitoring were completed to be compliant with the Eastern Plume RAWP (AECOM, August 2013). However, per the Year 2 RA-O Report (AECOM, May 2016), arsenic monitoring was recommended for additional wells located within the eastern plume (03WW01, 35AWW08, and 35AWW09). Continuation of the arsenic sampling program during the period of implementation and monitoring of EISB effectiveness within the western plume was also recommended based upon the recommendation to implement EISB for the western plume.

Arsenic was reported at concentrations above the MCL of 0.010 milligrams per liter (mg/L) during the Year 1 RA-O monitoring period and during the July 2015 sampling event of the Year 2 RA-O monitoring period in wells 03WW01, 1004TW001, 1004TW006, 35AWW08, 35AWW20, and LHSMW07 (AECOM, May 2016). Background concentrations of arsenic at Site LHAAP-58 were reported up to 0.0621 mg/L for perimeter well 110 in a filtered sample that was collected on 16 December 2004 (Shaw, June 2007). The location of perimeter well 110 is displayed on **Figure 1**. Since implementation of EISB, arsenic has exceeded the background concentration one time, at 35AWW08 (0.148 mg/L) in November 2017. In June 2023, arsenic exceeded the MCL in only one well, 35AWW09 (0.0319 mg/L).

As presented in Section 1.1, sampling at well 03WW01 will continue to be conducted per the ESD for LHAAP-35A (58) that requires the groundwater underlying LHAAP-03 be included with the

LHAAP-35A (58) groundwater remedy. Based on historical arsenic results and the ESD (Bhate, July 2018), the Year 4 RA-O Report (Bhate, October 2018) recommended to continue monitoring arsenic in eastern plume monitoring wells 03WW01, 35AWW08, and 35AWW09 and western plume monitoring wells 35AWW20 and LHSMW06.

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2 SITE ACTIVITIES AT LHAAP-35A (58)

2.1 Annual LUC Compliance Inspection, Maintenance, and Repairs

2.1.1 Annual LUC Compliance Inspection

The objectives of the LUCs at LHAAP-35A (58) are to prevent human exposure to groundwater contamination presenting an unacceptable risk to human health, and to ensure that there is no withdrawal or use of groundwater beneath the site for any purpose other than environmental monitoring and testing until the cleanup levels are attained (AECOM, August 2013). The ESD for LHAAP-03 groundwater and LUCs formally changed the duration of the LUCs, which will remain in effect until COC concentrations in groundwater and soil are reduced to levels that allow unrestricted use and unlimited exposure (Bhate, July 2018).

As shown on **Figure 2**, the sites that are included in the LUC boundary under LHAAP-58 include LHAAP-02, LHAAP-03, LHAAP-35A, LHAAP-56, LHAAP-59, LHAAP-60, LHAAP-65, LHAAP-68, and LHAAP-69. Notices of the groundwater use restrictions accompany all property transfer documents and were recorded at the Harrison County Courthouse in March 2015 in accordance with the Texas Administrative Code Title 30, §335.566. Additional details regarding the implementation of the LUCs are presented in the RACR (AECOM, October 2015).

The annual LUC compliance inspection was conducted for LHAAP-35A (58) on 12 July 2023. The Annual Land Use Control Compliance Certification Documentation form for the Year 9 RA-O period is presented in **Appendix A**. No compliance issues or concerns were noted during the July 2023 annual inspection.

2.1.2 Well Field Operation & Maintenance

Inspections of the condition/integrity of monitoring wells were conducted in June 2023 and were documented in a photographic log (**Appendix B**) and during each sampling event with the information recorded on the field sampling forms. No significant maintenance items were observed during the June 2023 inspection. However, similar to the Year 7 inspection, there are hinges on several monitoring wells noted to have rust observed at varying degrees (35AWW10, 35AWW12, 35AWW17, 35AWW19, and 35AWW21). The hinges have not worsened since Year 7. The hinges will continue to be monitored to see if they worsen and will require replacement or repair. In addition, monitoring well LHSMW06 was noted as needing paint during the previous Year 8 inspection. Monitoring well LHSMW06 was painted in January 2023 as required. During the Year 9 annual reporting period (September 2022 through August 2023), mowing was conducted prior to the groundwater sampling events in January 2023 and June 2023. **Appendix B** provides photos of the June 2023 monitoring well conditions and **Appendix C** provides the Well Inspection Forms, which contain information about the individual well surface conditions observed during each of the Year 9 sampling events conducted in January 2023 and June 2023.

2.2 Monitoring Well Installation Activities

As discussed in the Year 8 RA-O Report (Bhate, March 2023), it was recommended to install two additional western plume monitoring wells (35AWW25 and 35AWW26) to define the downgradient and upgradient extent of the shallow western plume. Therefore, in November 2022 monitoring well 35AWW25 was installed to define the downgradient extent of chlorinated volatile organic compound (CVOC) contamination in the western plume, and monitoring well 35AWW26 was installed to evaluate potentially increasing CVOC concentrations upgradient of LHSMW06 and 35AWW20. In addition, the Year 8 RA-O Report (Bhate, March 2023) recommended a new monitoring well (35AWW27) be installed downgradient of monitoring well 35AWW14 to define the extent of CVOCs in this area between the eastern and western plumes. In June 2023, monitoring well 35AWW27 was installed.

The three new well locations are presented on **Figure 2**. Monitoring well installations were completed by Walker Hill Environmental (a licensed Texas driller) utilizing a hollow stem auger, per the standard operating procedures provided in the Installation Wide Work Plan (IWWP) (Bhate, May 2018). The monitoring wells are constructed of 2-inch schedule 40 polyvinyl chloride materials with solid riser and 10 feet of 0.010-inch machine slotted screen. The filter pack, extending a minimum of 2 feet above the screen, consists of 20 to 40 mesh silica sand. A 2-foot-thick bentonite seal was then placed via gravity methods above the filter pack and allowed to hydrate for a minimum 30 minutes between lifts. The remainder of the borehole annular space was filled with Portland cement grout. Monitoring well construction diagrams and boring logs are presented in **Appendix D.**

The monitoring wells were completed with a 4-inch by 4-inch steel stickup, set within a 3-foot by 3-foot concrete pad. Each monitoring well is protected by four steel bollards filled with sand.

2.2.1 Monitoring Well Development

Well development at 35AWW25 and 35AWW26 took place from 18 January 2023 to 19 January 2023, whereas well development at 35AWW27 took place on 28 June 2023. Development of the wells was performed using the bail, surge, and purge method. The new monitoring wells were developed with a stainless-steel submersible pump outfitted with disposable high-density polyethylene tubing. Water quality parameters (pH, conductivity, temperature, oxidation-reduction potential [ORP], dissolved oxygen [DO], and turbidity) of the well development water were measured and recorded on Well Development Logs. Well development continued until the water quality parameters stabilized and the development water was generally sediment-free or clear.

2.2.2 Monitoring Well Survey

The monitoring wells installed in November 2022 and June 2023 were surveyed by MTX Surveying, a Texas-licensed surveyor, on 20 January 2023 and 31 July 2023 (**Appendix D**). Latitude and Longitude are in the North American Datum of 1983 Geographic Coordinates, FL North Zone, U.S. Survey Foot. The vertical datum is the North American Vertical Datum of 1988, U.S. Survey Foot.

2.2.3 Investigative Derived Waste Management

Monitoring well purge water, decontamination fluids, and disposable sampling equipment such as sample tubing and nitrile gloves were generated as Investigative-Derived Waste during the well development and groundwater sampling events conducted during the reporting period (September 2022 through August 2023). All generated purge water was containerized at the point of generation and transported to the Groundwater Treatment Plant for on-site treatment. Soils generated from the installation of the monitoring wells were spread on-site, based on the analytical results of the soils generated (**Appendix G**) and in accordance with the Installation-Wide Work Plan (Bhate, May 2018).

2.3 Groundwater Monitoring for RA-O

Groundwater monitoring at LHAAP-35A (58) was conducted quarterly following EISB injections at the eastern plume for 2 years, then semi-annually, but is now conducted on an annual basis. The contingency remedy was implemented within the western plume in March 2018 and required that quarterly sampling be conducted at select performance monitoring wells for 2 years, which was completed in March 2020. Groundwater monitoring is now conducted semi-annually at the western plume. During the Year 9 RA-O, groundwater sampling was completed annually for the eastern plume in June 2023 and semi-annually for the western plume in January and June 2023.

2.3.1 Eastern Plume Monitoring

In accordance with the RAWP (AECOM, August 2013), the following shallow zone wells located within the eastern and western plumes are sampled annually in June 2023: 03WW01, 35AWW08, 35AWW09, 35AWW10, 35AWW12, 35AWW13, 35AWW14, 35AWW15, 35AWW16, 35AWW17, 35AWW18, 35AWW21, 35AWW22, 35AWW24, and LHSMW06. Several of these wells also help define the western plume.

Monitoring well LHSMW04 was dry in both January and June 2023 and, therefore, was not sampled during the Year 9 RA-O. Intermediate groundwater zone well 35AWW01 was also sampled in June 2023. Monitoring well 35AWW02 (**Figure 2**), which is the only well screened in the deep groundwater zone, was not included in the sampling program, in accordance with the RAWP (AECOM, August 2013). Therefore, this monitoring well was not gauged or sampled during the Year 9 RA-O sampling events.

2.3.2 Western Plume Monitoring

Six shallow wells located within the western plume were required to be sampled quarterly for 2 years post injection. Per the Western Plume RAWP (Bhate, January 2018), the wells include 35AWW06, 35AWW11, 35AWW19, 35AWW20, 35AWW23, and LHSMW07. The eighth and final quarterly event was completed in March 2020. Therefore, western plume monitoring only is required to be sampled semi-annually during the Year 9 RA-O. The Year 9 RA-O semiannual events occurred in January and June 2023. Although not considered performance monitoring wells for

the Western Plume RAWP, LHSMW06, 35AWW14, 35AWW15, 35AWW16, 35AWW17, 35AWW18, and 35AWW24 which are sampled as part of the eastern plume monitoring, also help define the western plume. As discussed in Section 2.2, three additional monitoring wells were added to the western plume monitoring program during the Year 9 RA-O. Monitoring well 35AWW25 which had water during development activities in November 2022 was dry during both the January and June 2023 semiannual monitoring events. Monitoring well 35AWW26 was sampled in both January and June 2023, while monitoring well 35AWW27 (installed in June 2023) was sampled in August 2023 as part of the second semiannual sampling event for the Year 9 RA-O. Additionally, monitoring well 35AWW04 was dry in both January and June 2023 and was not sampled during the Year 9 RA-O. Intermediate groundwater zone well 35AWW05 was also sampled in January and June 2023.

2.3.3 Sampling Procedures and Analysis

Before collecting groundwater samples, the wells were gauged using a water level probe and the depth to water was recorded to the nearest 0.01 ft from the top of casing. During the Year 9 RA-O period, groundwater samples were collected using the low-flow sampling technique described in the Groundwater Sampling Procedures in the IWWP (Bhate, May 2018). After water quality parameters stabilized and were within acceptable ranges, samples were collected at the same low flow rate.

The MNA analyte list was modified for the Year 9 sampling events to follow the recommendations put forth in the Final Technical Memorandum (TM) - MNA Parameters (Bhate, February 2019) (**Appendix E**). The TM modified the MNA analyte list for consistency across several sites and to reduce redundant or non-essential parameters. Analytes eliminated in the Year 9 RA-O sampling events were alkalinity; nitrite; sulfide; total iron; dissolved iron and manganese; and total phosphorous. For the eastern plume only, chloride, nitrate, sulfate, dissolved gases, total organic carbon (TOC), dechlorinating bacteria, and volatile fatty acids (VFAs) were also eliminated. Groundwater samples collected from each well during Year 9 (January and June 2023) were analyzed by ALS Environmental for VOCs (SW8260C). Select wells were also analyzed by ALS Environmental for dissolved gases (RSK-175); TOC (SM5310C); total arsenic (SW6020A); chloride, nitrate, and sulfate (SW9056A); VFAs (High Performance Liquid Chromatography-METACIDS); and/or dechlorinating bacteria (*dehalococcoides* [*DHC*]/*dehalobacter* [*DHBt*]) (CENSUS ® quantitative polymerase chain reaction).

The LHAAP-35A (58) monitoring wells are shown on **Figure 2**. **Table 1** presents the monitoring wells that were gauged during the Year 9 RA-O period. Each of the monitoring wells were secure and sampled with no technical issues encountered.

During the Year 9 RA-O sampling, three monitoring wells (LHSMW04, 35AWW04, and 35AWW25) were noted as dry. Monitoring well LHSMW04, located to the east of the eastern groundwater plume, has been periodically dry. However, the absence of data from this well has had no effect on evaluating EISB or MNA. Monitoring well LHSMW04 is located between 35AWW09 and 35AWW12 and the sampling results for these two wells provide ample data to evaluate this area. Monitoring well 35AWW04, located downgradient of the western plume has been dry dating

back to April 2016. Monitoring well 35AWW04 and 35AWW25 are located in the western plume downgradient of monitoring well 35AWW18.

Groundwater Sample Collection Forms are presented in **Appendix F**. Chain of custody forms, laboratory reports, and quality control summary reports are presented with the laboratory results in **Appendix G**.

2.3.4 Groundwater Elevation and Flow Direction

2.3.4.1 Shallow Groundwater Zone

Groundwater levels for the Year 9 RA-O were measured in January and June 2023. The groundwater flow direction in the shallow zone during the Year 9 RA-O monitoring period at LHAAP-35A (58) is interpreted to the southeast in the western portion of the site and to the east-southeast in the eastern portion of the site. In the southeast corner of the site groundwater flows in the east-northeast direction (see **Figures 4 and 5**). This corresponds well with the flow directions presented in the Remedial Design (RD) document (Shaw, September 2011), which was interpreted to the southeast in the westernmost area, and to the east for the remainder of the site.

The shallow zone groundwater elevations increased in nine of the ten shallow wells between January and June 2023. The greatest elevation increased between January to June 2023, 1.65 ft, occurred in shallow monitoring well LHSMW06.

2.3.4.2 Intermediate Groundwater Zone

Monitoring well 35AWW01 was measured in June 2023 and 35AWW05 was measured in January and June 2023. Groundwater elevations measured in intermediate zone monitoring well 35AWW05 (**Figure 2)** increased 0.55 ft between January and June 2023. A potentiometric surface map cannot be constructed to determine the groundwater flow direction based upon two monitoring wells. The groundwater elevations are presented in **Table 1**.

2.3.5 Vertical Gradient

There are two pairs of shallow and intermediate zone co-located wells, which include monitoring wells 35AWW08 (shallow) and 35AWW01 (intermediate), and LHSMW07 (shallow) and 35AWW05 (intermediate). **Figure 2** presents the location of these co-located wells. During the Year 9 RA-O monitoring period, the elevation difference between wells 35AWW08 and 35AWW01 was 15.47 ft in June 2023. During the Year 9 RA-O monitoring period, the elevation differences between wells LHSMW07 and 35AWW05 was 28.96 ft in January 2023 and 29.09 ft in June 2023. These elevation differences are consistent with those observed in the first 8 years of RA-O monitoring. This difference in elevation between the shallow groundwater zone and the intermediate groundwater zone indicates that there is hydraulic separation between these two zones. Because the shallow zone groundwater elevations are higher than the intermediate zone groundwater elevations, a downward vertical gradient appears to exist at this site.

2.4 Groundwater Analytical Results

2.4.1 Shallow Zone

The COCs for shallow zone groundwater are PCE, TCE, cis-1,2-DCE; trans-1,2-DCE; MC; VC; 1,1,2-TCA; 1,2-DCA; 1,1-DCE; and benzene (AECOM, May 2016). Analytical results for the June 2023 annual sampling event in the eastern plume are presented in **Table 2**. The analytical results for the January and June 2023 sampling events from the western plume are presented in **Table 3**. **Figure 6** presents the analytical data for COCs that exceeded MCLs during January and/or June 2023.

Twenty-five shallow zone wells were sampled for COCs during the Year 9 RA-O, not including wells LHSMW04, 35AWW04, and 35AWW25 which were dry during the January and June 2023 sampling events. Select wells were also sampled for MNA parameters per the RAWP (AECOM, August 2013) and the TM - MNA Parameters (Bhate, February 2019).

During the January 2023 western plume semiannual sampling event, wells 35AWW06, 35AWW11, 35AWW19, 35AWW20, 35AWW23, 35AWW26, LHSMW06, and LHSMW07 had one or more COCs detected at concentrations above the laboratory detection limits. Monitoring wells 35AWW20, 35AWW26, LHSMW06, and LHSMW07 had concentrations of COCs exceeding the MCLs, which are shown on **Figure 6**.

During the June 2023 event, monitoring wells 03WW01, 35AWW06, 35AWW08, 35AWW09, 35AWW11, 35AWW14, 35AWW18, 35AWW19, 35AWW20, 35AWW26, LHSMW06, and LHSMW07 had one or more COCs at concentrations above laboratory detection limits. Monitoring wells 03WW01, 35AWW09, 35AWW14, 35AWW18, 35AWW20, 35AWW26, LHSMW06, and LHSMW07 had concentrations of COCs exceeding the MCLs, which are posted on **Figure 6**.

Groundwater monitoring well sampling forms were completed for each well sampled and are included in **Appendix F**. The laboratory analytical results are included in **Appendix G**.

2.4.2 Intermediate Zone

Wells 35AWW01 (eastern plume) and 35AWW05 (western plume) (**Figure 7**), which are completed in the intermediate groundwater zone, were sampled during the Year 9 RA-O monitoring period. Analytical results for both intermediate groundwater zone wells were below laboratory detection limits for all analytes. The laboratory analytical results are shown in **Table 2** (35AWW01) and **Table 3** (35AWW05). Groundwater monitoring well sampling forms were completed for each well sampled and are included in **Appendix F**. The laboratory analytical reports are included in **Appendix G**. **Figure 7** shows that neither well had concentrations of COCs exceeding the MCLs.

2.4.3 Arsenic Monitoring

During the Year 9 RA-O monitoring period, arsenic analysis was completed in select monitoring wells in accordance with the Revised Technical Memorandum, Steps to Remedy-in-Place for LHAAP-03/LHAAP-58 (AECOM, November 2012); the ESD for LHAAP-03 groundwater and LUCs

(Bhate, July 2018); the 2013 RAWP (AECOM, August 2013); and the 4th Annual RA-O Report (Bhate, October 2018). The 4th Annual RA-O Report recommended continued arsenic monitoring in eastern plume monitoring wells 03WW01, 35AWW08, and 35AWW09 and western plume monitoring wells 35AWW20 and LHSMW06. 03WW01 is included as outlined in the ESD for LHAAP-03 (Bhate July 2018). In January 2023, groundwater from monitoring wells 35AWW20 and LHSMW06 was analyzed for arsenic. In June 2023, groundwater from the following monitoring wells was analyzed for arsenic: 03WW01, 35AWW01, 35AWW08, 35AWW09, 35AWW20, and LHSMW06. Monitoring of arsenic at 35AWW01 is included as this well is an intermediate groundwater well evaluated for MNA. Analytical results for the June 2023 sampling event in the eastern plume are presented in **Table 2**. The analytical results for the January and June 2023 sampling events from the western plume are presented in **Table 3**.

In January 2023, arsenic was not detected in the groundwater above the MCL of 0.010 mg/L in 35AWW20 or LHSMW06. In June 2023, arsenic was detected above the MCL in 35AWW08 (0.0319 mg/L) but below the site background level of 0.0621 mg/L (Shaw, June 2007). However, since June 2019 arsenic detected at 35AWW08 has decreased by 69 percent (%) from 0.116 mg/L (June 2019) to 0.0319 mg/L (June 2023). The other five wells sampled for arsenic in June 2023 had concentrations below the MCL and the site background level. Arsenic in groundwater has generally been declining over the last 4 years at 35AWW08, 35AWW20, and LHSMW06 within the EISB remedy area of influence. The declining arsenic detections indicate the presence of arsenic is transitory; as the aquifer recovers from the reducing conditions caused by the EISB remedy, arsenic concentrations recover to background levels. The laboratory analytical reports are included in **Appendix G**.

2.5 Surface Water Sampling

The Eastern Plume RAWP (AECOM, August 2013) specifies that surface water monitoring for COCs (1,1,2-TCA; 1,1-DCA; 1,1-DCE; 1,2-DCA; benzene; cis-1,2-DCE; TCE; PCE; and VC) be performed at surface water sample location 35ASW03, which is located in a ditch that runs parallel to 4th Street, on the western boundary of the site, adjacent to the western groundwater plume. **Figure 2** shows the surface water sampling location.

The Draft Final RACR for LHAAP-35A (58) (AECOM, October 2015) states that "*the water level in 35AWW18 will be gauged for comparison with the ditch bottom elevation at 35ASW03*." The surveyed bottom of the ditch at the lowest point is 213.58 ft amsl. The gauged water level in the nearest upgradient monitoring well 35AWW18 in June 2023 was 198.16 ft amsl.

Surface water samples are collected to evaluate the potential effect of the plume on surface water. However, no surface water was present at location 35ASW03 in January or June 2023. Therefore, it is not likely that the groundwater at LHAAP-58 will contribute to the nearby surface water.

2.6 Well Abandonment

No additional wells are recommended for abandonment beyond those previously recommended in the Year 2 RA-O Report (AECOM, May 2016), which included 35AWW02, 35AWW03, and

1004TW0001. As noted in the Year 3 RA-O Report (Bhate, April 2018), well 1004TW006 was recommended for abandonment but could not be located.

3 PERFORMANCE MONITORING OF EISB

The EISB target area within the eastern groundwater plume is located within the vicinity of wells 03WW01 and 35AWW08. **Figure 6** presents the 2013 injection locations within the eastern groundwater plume. Well 35AWW10 is considered an upgradient clean well and well 35AWW09 is located downgradient of the EISB area, but within the eastern groundwater plume. Groundwater monitoring was performed in August 2013 prior to EISB implementation (baseline event), in October 2013 after the EISB injections, quarterly for 2 years and has been semiannual since October 2016. The EISB performance in the eastern groundwater plume and key parameters are discussed below and much of the information is provided in **Tables 2, 4, and 5**.

The EISB target area within the western groundwater plume is located within the vicinity of wells 35AWW06, 35AWW20, and LHSMW07 (Bhate, January 2018). EISB injections were also implemented near monitoring wells 35AWW11, 35AWW14, and 35AWW23. **Figure 6** presents the EISB injection point locations within the western groundwater plume. Monitoring well 35AWW15 is considered an upgradient clean well, and 35AWW24 is located downgradient of the EISB treatment area and defines the downgradient edge of the western groundwater plume. Within the western groundwater plume, a total of six monitoring wells (LHSMW07, 35AWW06, 35AWW11, 35AWW19, 35AWW20, 35AWW23) have been evaluated via a total of 8 quarterly performance monitoring events over the 2 years following injections to assess the EISB in the western plume (Bhate, January 2018). The quarterly groundwater performance monitoring was completed in March 2020 when monitoring was reduced to semiannual. The first semiannual sampling event was completed in June 2020 in the Year 6 monitoring period. This Year 9 RA-O report presents the results of the semiannual sampling events conducted in January and June 2023. The EISB performance in the western groundwater plume and key parameters are discussed below. Information pertinent to the discussion is provided in **Tables 3, 4, and 6**.

The monitoring program is intended to track the biologic degradation of the chlorinated solvents from PCE through VC and finally to ethene (PCE to TCE to cis-1,2-DCE to VC and finally ethene), while also monitoring the in-situ conditions for favorable biologic activity. Analytes eliminated in March and June 2019, per the Final TM – MNA Parameters (Bhate, February 2019), were alkalinity; nitrite; sulfide; total iron; dissolved iron and manganese; and total phosphorous. For the eastern plume only, chloride, nitrate, sulfate, dissolved gases, TOC, dechlorinating bacteria, and VFAs were also eliminated.

3.1 Analysis of VOCs

VOCs that exceeded the MCL during the January and June 2023 sampling event in the shallow groundwater are posted on **Figure 6**. No VOCs exceeded the MCL during the reporting period (September 2022 through August 2023), in the intermediate groundwater, as indicated on **Figure 7**. **Figures 8a – 8e** include COC concentration over time trend graphs at key monitoring wells within the EISB treatment zone.

3.1.1 Eastern Plume

Major reductions in PCE concentrations have been observed in the eastern two monitoring wells, 03WW01 and 35AWW08, located within the influence of the EISB treatment area.

Between August 2013 (baseline sampling event) and June 2023, PCE concentrations detected for well 35AWW08 have decreased from 1,640 micrograms per liter (µg/L) to non-detect, with concentrations below the MCL during the Year 9 RA-O reporting period (September 2022 through August 2023); PCE was non-detect at an elevated limit of detection (less than [<] 2.5 µg/L) in June 2023 (**Table 4**). This difference in PCE concentrations in well 35AWW08 has decreased approximately 99.7 % since the remedy was implemented. PCE concentrations in well 35AWW08 remained below the MCL of 5 µg/L in 8 of the past 10 sampling events, with a concentration of 6.7 µg/L detected in June 2020 (**Figure 8b**). PCE concentrations in well 35AWW08 have remained below the MCL of 5 µg/L in the four sampling events following June 2020.

From August 2013 to June 2023, PCE concentrations in well 03WW01 decreased from 368 µg/L to 4.8 µg/L (**Table 4**). This is a decrease of approximately 99.9% of PCE in well 03WW01. PCE concentrations in well 03WW01 were below the MCL of 5 µg/L between October 2016 and December 2020, except for detected concentration above the MCL of 5 µg/L in December 2018. During the last two sampling events, PCE was detected above the MCL at 9.9 µg/L in June 2022 and 4.8 µg/L in June 2023.

From August 2013 to June 2023, PCE concentrations in well 35AWW09 increased from 21.9 µg/L to 460 µg/L (**Table 4** and **Figure 8c**). PCE increased to a maximum concentration of 500 µg/L in December 2019 and has remained relatively consistent through June 2023 (460 µg/L), since monitoring well 35AWW09 is downgradient of 03WW01 and 35AWW08.

TCE, a degradation product of PCE, initially decreased in monitoring well 03WW01 between August 2013 and October 2013 (following EISB injections), but subsequently increased (due to reduction of PCE into TCE) indicating the occurrence of early stages of dechlorination (**Table 4** and **Figure 8a**). TCE detected in monitoring well 03WW01 dropped below the MCL of 5 µg/L in October 2016 and has remained below the MCL through June 2021, except for detected concentrations above the MCL of 5.7 µg/L in December 2018 and 24 µg/L in December 2020. The concentration of TCE in monitoring well 03WW01 increased from 3.0 µg/L in June 2021 to 10 µg/L in June 2022, and the concentration remained at 10 µg/L in June 2023.

The maximum detected TCE concentration in both the January and June 2023 sampling events was in well 35AWW09 at a concentration of 180 µg/L. Over the last six sampling events, TCE at 35AWW09 has remained relatively consistent from December 2019 (160 µg/L) through June 2023 (180 µg/L) (**Table 4** and **Figure 8c**).

The concentrations of cis-1,2-DCE remained below the MCL of 70 µg/L in the eastern plume monitoring wells (**Table 4**) during the June 2023 sampling event. VC was detected in two eastern plume wells (03WW01 and 35AWW08) in June 2023, at 3.7 J [Data qualifier denoting an estimated concentration] µg/L and 2.6 J µg/L, respectively. In part, the low concentrations of degradation daughter products cis-1,2-DCE and VC present during the Year 9 RA-O reporting

period (September 2022 through August 2023) are a result of the minimal amount of parent compounds remaining at the site.

3.1.2 Western Plume

PCE was not detected above the MCL of 5 µg/L in the western plume wells during the Year 9 RA-O sampling events (**Table 3**). PCE has not been detected above the MCL in the western plume since December 2008 when it was detected at monitoring 35AWW06 (**Table 4**).

In January and June 2023, well 35AWW20 had detected concentrations of TCE; 1,1-DCE; VC; 1,2-DCA; 1,1,2-TCA, cis-1,2-DCE; and benzene above MCLs (**Table 3**). During Year 9, TCE increased at 35AWW20 from 100 µg/L in December 2021 to 200 µg/L in January 2023 and increased from 150 µg/L in June 2022 to 180 µg/L in June 2023. The TCE concentrations fluctuate seasonally and with changes in groundwater elevation over the same time period (**Figure 8d**). Although there was an increase in TCE during the reporting period (September 2022 through August 2023) at 35AWW20, there is an overall decrease of 68.4% in TCE from 570 µg/L in December 2018 to 180 µg/L in June 2023.

TCE has remained below the MCL in well 35AWW23 since June 2019 and was not detected in June 2023. TCE was detected above the MCL in LHSMW06 in January and June 2023 at concentrations of 24 µg/L and 21 µg/L, respectively. LHSMW06 is outside the treatment area and cross gradient of 35AWW20; TCE concentrations in January 2023 were the highest recorded in this well. A new monitoring well (35AWW26) was installed to evaluate potentially increasing CVOC concentrations upgradient of LHSMW06 and 35AWW20. TCE was not detected at monitoring well 35AWW26 in January or June 2023.

The TCE daughter product, cis-1,2-DCE, was detected in well 35AWW20 above the MCL (5 µg/L) in September 2019 (110 µg/L), December 2019 (70 J µg/L), March 2020 (71 µg/L), June 2021 (87 µg/L), December 2021 (86 µg/L), June 2022 (89 µg/L), January 2023 (110 µg/L), and June 2023 (85 µg/L) (**Table 4**). The daughter product VC has remained elevated at well 35AWW20 with concentrations during the Year 9 RA-O of 990 µg/L in January 2023 and 940 µg/L in June 2023. It should be noted that VC increased between March 2019 (54 J µg/L) to as high as 2,800 J µg/L in December 2019 (**Figure 8d**). This substantial increase and then decrease in VC could be a result of the degradation of cis-1,2-DCE and/or 1,1-DCE. VC was also detected above the MCL of 2 µg/L in well LHSMW06 in the January 2023 sampling event at 7.6 µg/L and at 6.7 µg/L (duplicate result) in the June 2023 sampling event. The TCE and 1,1-DCE concentrations in monitoring well 35AWW14, located in an area downgradient of LHSMW06, have increased from below the respective MCLs in October 2013 to above the MCLs in October 2016, and remained above the MCLs through June 2023. Due to the results observed at LHSMW06, a new monitoring well (35AWW27) was installed further downgradient from LHSMW06 in June 2023 and sampled in August 2023. The concentrations of the COCs including TCE, 1,1-DCE, and VC at 35AWW27 were detected below their respective MCLs in August 2023.

In January and June 2023, 1,1,2-TCA was detected above the MCL (5 µg/L) in well 35AWW20 with a concentration of 63 µg/L and 57 µg/L; 1,1,2-TCA was not detected in any other western plume wells sampled during the Year 9 RA-O (**Table 3**). 1,1-DCE, which is a daughter product of both

1,1,2-TCA and TCE, was detected above the MCL (7 µg/L) in five wells (35AWW18, 35AWW20, 35AWW26, LHSMW06, and LHSMW07) during the Year 9 RA-O reporting period (September 2022 through August 2023). The only VOC detected in 35AWW18 was 1,1-DCE; concentrations were detected at 29 µg/L in June 2023 (**Tables 3 and 4**). Neither potential parent compound (1,1,2-TCA or TCE) are detected in 30AWW18 and the well is not within the zone of influence of active EISB. Therefore, the presence of 1,1-DCE represents migration of this daughter product from upgradient areas where degradation occurred. Concentrations of 1,1-DCE in western plume well 35AWW20 remained elevated during the Year 9 RA-O reporting period (September 2022 through August 2023) with a concentration of 2,600 µg/L in January 2023 and 1,700 µg/L in June 2023. 1,1-DCE has decreased 56.4% at 35AWW20 from 3,900 µg/L in September 2019 to 1,700 µg/L in June 2023 (**Tables 3 and 4**). Concentrations of 1,1-DCE in western plume well LHSMW06 exceeded the MCL (7 µg/L) during each sampling event with detections of 22 µg/L in January 2023 to 21 µg/L in June 2023.

Concentrations of 1,1-DCE at LHSMW07 also exceeded the MCL (7 µg/L) during each sampling event while exhibiting an increase during the reporting period (September 2022 through August 2023) from 17 µg/L in January 2023 to 93 µg/L in June 2023. Detections of 1,1-DCE at LHSMW07 during the reporting period (September 2022 through August 2023) may be attributable to the reduction of parent compounds TCE and 1,1,2-TCA in the western plume near LHSMW07 and upgradient well 35AWW20. 1,1-DCE has been detected at LHSMW07 at concentrations as high as 2,100 µg/L in July 2015. However, 1,1-DCE has decreased in LHSMW07 from 600 µg/L in November 2017, prior to the March 2018 western plume contingency implementation, as shown on **Figure 8e** (**Table 4**).

All COCs remain below the respective MCLs in upgradient well 35AWW15 and downgradient wells 35AWW06, 35AWW11, 35AWW19, 35AWW23, and 35AWW24. In addition, a new downgradient well 35AWW27 installed in June 2023 was as below the MCLs for all COCs.

3.2 Analysis of Field Parameters

The field parameters (negative log of the hydrogen ion concentration [pH], DO, ORP, temperature, and specific conductivity) were measured in the LHAAP-35A (58) wells during the Year 9 RA-O monitoring events. **Table 5** contains the Year 9 RA-O field parameters for wells 03WW01 and 35AWW08, which are located in the eastern plume. In June 2023, pH at 35AWW08 and 03WW01 were within the range of 6.0 to 8.5 standard units (s.u.) generally required to support microbial populations responsible for reductive dechlorination, but below the optimal range of 6.8 to 7.5 s.u. The pH in these two wells were generally more acidic following EISB treatment performed in September 2013, potentially related to substrate fermentation and organic acid production. Anaerobic conditions were observed in both wells, with DO <0.5 mg/L and negative ORP.

Table 6 contains the Year 9 RA-O field parameters for wells located in the western plume. During the reporting period (September 2022 through August 2023), pH was within the range of 6.0 to 8.5 s.u. generally required to support microbial populations responsible for reductive dechlorination, with the exception of well 35AWW24 where COCs remain below MCLs. While DO

was <0.5 mg/L and ORP was negative for the wells located within the EISB treatment area, ORP was -37 and -17 millivolts (mV) in 35AWW20, where the highest concentrations of COCs were observed during January and June 2023, respectively. Per the *Technical Protocol for Evaluating Attenuation of Chlorinated Solvents in Ground Water*, ORP must be <-50 mV for the reductive pathway to be possible (U.S. Environmental Protection Agency [USEPA], September 1998), indicating that the groundwater at 35AWW20 is not reducing enough to allow reductive dechlorination to occur. Downgradient of 35AWW20, the ORP was negative at well 35AWW23 (-107 mV) in June 2023.

3.3 TOC Levels

TOC is an indicator of the presence of carbon substrate. The level of TOC is typically less than 10 mg/L in areas outside of the EISB treatment area (AECOM, May 2016). Therefore, TOC present above 10 mg/L is indicative of the presence of substrates in groundwater near the sampled monitoring well.

3.3.1 Eastern Plume

After injection of the carbon substrate in October 2013, there was an initial spike of the TOC levels in both wells (03WW01 and 35AWW08), indicating effective substrate distribution from the injection points to the impacted zone. Over the course of the first 8 years of monitoring, the TOC levels have decreased, which is expected as the carbon substrate is consumed and due to migration away from the injection area. The most recent residual TOC levels (June 2021) of 103 mg/L in 03WW01 and 119 mg/L in 35AWW08 indicate that TOC remains at sufficiently high concentrations to support reductive dechlorination (i.e., greater than 10 mg/L), albeit at lower amounts compared to the period immediately after injection in October 2013 (**Table 5**). TOC analysis was not performed in 2023. Groundwater monitoring performed at the eastern plume was reduced to VOC analysis only on an annual basis for the Year 9 RA-O in compliance with the Eastern Plume RAWP (AECOM, August 2013).

3.3.2 Western Plume

Within the western plume, TOC increased in the sampled monitoring wells following the March/April 2018 contingency EISB injections when compared to the baseline sampling results (March 2018), within the influence of the injection points with the exception of 35AWW19. The greatest increases were observed in 35AWW06 and 35AWW11. TOC was consumed and fell below the level generally required to support microbial growth (i.e., less than 10 mg/L) in all wells by June 2020, with the exception of 35AWW06, 35AWW20, and 35AWW23. The June 2023 data indicates the highest TOC observed in the western plume is observed at well 35AWW20 at 15.9 mg/L (**Table 6**). Historically, EISB injections increased TOC in 35AWW20 to a maximum of 53 mg/L in September 2018, indicating distribution of electron donor in this area was successful but not ideal.

3.4 Analysis of Anions

Although sulfate reduction occurs through competing reactions to reductive dechlorination, the decrease in sulfate concentration is indicative of reducing aquifer conditions. Nitrate is not naturally-occurring in either plume area; therefore, nitrate is also not observed as an artifact of reductive dechlorination.

3.4.1 Eastern Plume

Decreased sulfate concentrations in October 2014 through October 2016 in the two EISB wells (03WW01 and 35AWW08) relative to levels in nearby wells outside of the EISB treatment (35AWW09 and 35AWW10), indicate the development of reducing conditions conducive to reductive dechlorination that occurred following initial injections (AECOM, November 2015; AECOM, May 2016; Bhate, April 2018). Note that the largest reductions in COC concentrations occur at the same time the largest reductions in sulfate concentrations are observed. Sulfate concentrations in 03WW01 reduced from an August 2013 baseline concentration of 534 mg/L to non-detectable levels (<0.5 mg/L) in October 2016. Since then, sulfate concentrations increased in monitoring well 03WW01 to 180 mg/L in June 2021, which is likely due to untreated groundwater moving through the eastern plume. In monitoring well 35AWW08, data trends show that sulfate was reduced from an August 2013 baseline concentration of 1,480 mg/L to < 10 mg/L in October 2016 as a result of EISB and remain low (**Table 5**). Sulfate analysis was not conducted in 2023. Groundwater monitoring performed at the eastern plume was reduced to VOC analysis only on an annual basis for the Year 9 RA-O in compliance with the Eastern Plume RAWP (AECOM, August 2013).

3.4.2 Western Plume

Following the EISB injections, sulfate decreased in each of the wells influenced by the EISB injections by approximately 50%, with the exception of well 35AWW19 where sulfate reduction was observed to a lesser extent, presumably due to poor distribution of TOC in areas where COCs are historically below MCLs. In June 2023, sulfate concentrations at the center of the western plume in 35AWW20 remain depressed at 1,090 mg/L compared to pre-injection sulfate concentration of 2,150 mg/L in November 2017 (**Table 6**). Sulfate concentrations have returned to pre-injection levels in impacted well LHSMW07 (3,000 mg/L). While sulfate concentrations greater than (>) 20 mg/L can be a potential cause for concern for reductive dechlorination, there is evidence that it is not inhibitory at this site where cis-1,2-DCE and VC daughter products are generated.

3.5 Dissolved Gases

3.5.1 Eastern Plume

Dissolved gas analyses were not conducted in 2023. Groundwater monitoring performed at the eastern plume was reduced to VOC analysis only on an annual basis for the Year 9 RA-O in compliance with the Eastern Plume RAWP (AECOM, August 2013). Historical concentrations of methane, ethane, ethene, and carbon dioxide are summarized in **Table 5**.

3.5.2 Western Plume

Methane following the EISB treatment of the western plume increased within 6 to 9 months of implementation. In 35AWW20, the well with the highest COC concentrations in the western plume, methane increased from 2,600 µg/L in January 2023 to 3,350 µg/L in June 2023. The highest methane detected in the western plume during the reporting period (September 2022 through August 2023) was 7,440 µg/L in 35AWW23 in June 2023. Methane is one line of evidence that methanogenesis is occurring. Carbon dioxide levels generally increased in monitoring wells influenced by the EISB treatment (**Table 6**). However, fluctuating trends in carbon dioxide levels have been observed since December 2018 in the western plume monitoring wells. Ethene has increased in 35AWW20 from 1.3 µg/L in June 2019 to 38.9 µg/L in June 2023. Ethene production is one line of evidence that complete reduction of the COCs is occurring, although ethene may volatilize quickly through the vadose zone and is not retained by groundwater for long periods.

3.6 Dechlorinating Bacteria

3.6.1 Eastern Plume

The *DHBt* population increased significantly, within 3 to 6 months, after injection in the eastern plume in the two monitoring wells influenced by the EISB treatment. *DHBt* population in the eastern plume peaked in October 2014 in groundwater collected from monitoring well 35AWW08 and in May 2014 in groundwater collected from monitoring well 03WW01. As of June 2021, the *DHBt* population in the eastern plume was less than 5,000 cells per milliliter (mL) in either monitoring well and was not evaluated in June 2023.

Bacterial cultures containing *DHC* species, the bacteria responsible for degrading cis-1,2-DCE to VC, were introduced during the bioaugmentation event in October 2013. During the Year 3 RA-O sampling event (October 2016), *DHC* species spiked to the highest levels observed to 9,460,000 cells/mL in 03WW01 and to 25,600,000 cells/mL in 35AWW08, indicating effective distribution of the introduced culture within the eastern plume per the RAWP. Since the Year 3 RA-O sampling event (July 2018), *DHC* concentrations have generally decreased, which is anticipated as the concentration of CVOCs decreases to below 50 µg/L. Concentrations of *DHC* in the Year 7 RA-O in June 2021 were 196 cells/mL in 03WW01 and 122,000 cells/mL in 35AWW08 (**Table 5**). *DHC* species counts were still adequate in June 2021 for the continued degradation of PCE/TCE to VC, however, *DHC* was not analyzed for during the current reporting period (September 2022 through August 2023).

Microbial analyses were not conducted in 2023. Groundwater monitoring performed at the eastern plume was reduced to VOC analysis only on an annual basis during the Year 9 RA-O in compliance with the Eastern Plume RAWP (AECOM, August 2013).

3.6.2 Western Plume

The *DHBt* population increased significantly, within 3 to 6 months, after injection in the western plume in each of the monitoring wells influenced by the EISB treatment. *DHC* increased within 6 months to a year in most of the monitoring wells, but not to the degree *DHBt* populations

increased. The critical performance monitoring well in the western plume, 35AWW20, indicated an increasing trend of *DHC* population to 115,000 cells/mL through June 2020. *DHC* population tapered off to 7,800 cells/mL in December 2020. However, *DHC* population was detected at 91,800 cells/mL in January 2023 and 40,800 cells mL in June 2023. *DHBt* populations have a decreasing trend at 35AWW20 from a maximum of 5,970,000 cells/mL in July 2018 to 43,800 cells/mL in June 2023 (**Table 6**). BAV1 vinyl chloride reductase populations have decreased at 35AWW20 to 8,300 cells/mL in June 2023, from a high cell count observed in June 2022 at 67,400 cells/mL.

The increase in dechlorinating bacteria populations corresponds with the reduction of TCE and increase in VC in well 35AWW20 over this period of time, indicating reductive dechlorination is not stalling at cis-1,2-DCE even though the observed concentrations of cis-1,2-DCE are relatively stable. The *DHC* and the BAV1 vinyl chloride reductase populations at 35AWW20 are present at sufficient population to reduce TCE and VC to ethene completely via reductive dechlorination.

3.7 EISB Performance Monitoring Summary

In summary, the EISB treatment has been effective in reducing the VOC concentrations for both the western and eastern plumes (PCE by as much as 100%), and the conditions are still conducive for continued reductive dechlorination. Although biologic activity has slowed and substrate mass is decreasing, the COC mass requiring treatment is also greatly diminished. Reductions of VOCs (**Figures 8a – 8e**) and increases in carbon dioxide, methane, and ethene (**Tables 5** and **6**) have been observed throughout both the eastern and western plume areas. The individual COC lateral extents comparing October 2016 MCL exceedances and those documented in June 2023 show a greatly contracted plume footprint (**Figure 9**). In June 2023 the western 1,1-DCE plume downgradient of 35AWW18 is dashed as inferred. Although downgradient wells 35AWW19 and 35AWW24 are below the MCL and partially define the 1,1-DCE plume, monitoring well 35AWW04 and 35AWW25, to the south-southwest of 35AWW18 were dry in June 2023 (**Figure 9**). Combining the reduction in maximum concentrations and the reduction in aerial extent indicate significant remediation progress.

4 NATURAL ATTENUATION EVALUATION

This section presents the results of the natural attenuation evaluation in accordance with the three lines of evidence discussed in the Final RD (Shaw, September 2011) for LHAAP-35A (58) groundwater COCs. The discussion below pertains only to the shallow zone where COCs are detected above cleanup levels. Analytes eliminated from the sampling and analysis plan starting in 2019, per the Draft TM – MNA Parameters (Bhate, February 2019) were alkalinity, nitrite, sulfide, total iron, dissolved manganese, total phosphorous, and dissolved iron (lab analysis). For the eastern plume only, chloride, nitrate, sulfate, dissolved gasses, TOC, dechlorinating bacteria, and VFAs were also eliminated.

Per the August 2013 RAWP (AECOM, August 2013), 18 shallow monitoring wells were included in the MNA monitoring program for VOCs (35AWW06, 35AWW08, 35AWW10, 35AWW11, 35AWW12, 35AWW13, 35AWW14, 35AWW15, 35AWW16, 35AWW17, 35AWW18, 35AWW19, 35AWW20, 35AWW21, 35AWW22, LHSMW04, LHSMW06, and LHSMW07). Well 35AWW01 is the intermediate groundwater well evaluated for MNA. Note that LHSMW04 was not sampled because it was dry. Following the 2018 EISB treatment within the western plume, wells 35AWW20, LHSMW07, 35AWW19, 35AWW23 and 35AWW24 became performance monitoring wells for the contingency remedy.

4.1 First Line of Evidence: Change in COC Concentrations over Time and with Distance

Natural attenuation is the combination of multiple mechanisms, including biodegradation, volatilization, dilution, advection, and absorption that reduce contaminant concentrations. The decrease of COC concentrations over time and distance in the absence of any other treatment is evidence of natural attenuation (AECOM, May 2016). The change in groundwater COC concentrations over time and with distance was evaluated at LHAAP-35A (58). COC exceedances for the Year 9 RA-O monitoring period are presented on **Figure 6**.

The only wells where COCs were detected above their respective MCLs during the Year 9 RA-O groundwater sampling events are 03WW01, 35AWW08, 35AWW09, 35AWW14, 35AWW18, 35AWW20, 35AWW26, LHSMW06, and LHSMW07 (**Tables 2 and 3**). Organics that exceed their respective MCLs are posted on **Figure 6**.

The Draft Final RACR for LHAAP-35A (58) (AECOM, October 2015) states that historical groundwater data indicates that monitoring wells 35AWW20 and LHSMW07 in the western plume, and wells 35AWW08 and 35AWW09 in the eastern plume will be the primary focus of COC trend analysis as they represent the highest relative COC concentrations. Additionally, COCs exceeded MCLs in well 03WW01, located in the eastern plume, during this monitoring period and is therefore discussed herein.

Mann-Kendall analysis for the available historical data in each well (typically starting in 2008) through the end of the Year 9 RA-O period (June 2023) was completed for various COCs for monitoring wells 03WW01, 35AWW08, 35AWW09, 35AWW20, LHSMW06, and LHSMW07. The

results are presented in **Appendix H** in tables and graphs with statistical results presented on the lower left-hand side of the table. The GSI Environmental, Inc., Mann-Kendall Toolkit, Version 1.0 software was used for this analysis. Data used to generate the Mann-Kendall analysis is presented in **Table 4.** A summary table of the Mann-Kendall results is presented below.

Mann-Kendall Trend Summary

Monitoring Well	PCE	TCE	cis-1,2-DCE	1,1-DCE	VC
03WW01	**Decreasing***	**Decreasing**	**No Trend***	--	--
35AWW08	**Decreasing***	**Decreasing**	**Decreasing**	--	--
35AWW09	**Increasing**	**Increasing**	**Increasing***	--	--
35AWW20	--	**Decreasing**	**Decreasing**	**Decreasing**	**Increasing**
LHSMW06	--	**Increasing**	--	**Increasing**	**Increasing**
LHSMW07	--	**Decreasing***	--	**Decreasing**	**No Trend**

Note:
* Most recent concentrations are below MCLs

Of the analyzed parameters and wells using Mann-Kendall statistical analysis set, four monitoring wells, 03WW01 and 35AWW08 located within the eastern plume and 35AWW20 and LHSMW07 located in the western plume, showed a decreasing trend in parent compounds (PCE and/or TCE) concentrations over time.

4.1.1 Eastern Plume

Figures 8a – 8e shows COC concentration profiles in wells 03WW01, 35AWW08, and 35AWW09, and the table above summarizes the Mann-Kendall trend results for these same wells.

Well 03WW01

This well is located within the September 2013 EISB area. PCE concentration has decreased 99.9% between August 2013 (368 µg/L) and June 2023 (4.8 µg/L) and TCE has decreased 95.5% between October 2014 (223 µg/L) and June 2023 (10 µg/L). Degradation of TCE resulted in the maximum concentration of cis-1,2-DCE at 117 µg/L in April 2016, with a subsequent decline in the Year 9 RA-O to 6.1 µg/L in June 2023.

The Mann-Kendall trend analysis in 03WW01 was conducted for PCE; TCE; and cis-1,2-DCE for analytical results from November 2008 through the end of the Year 9 RA-O period (June 2023) (**Appendix H**). The Mann-Kendall results indicate statistical evidence of a decreasing trend in concentrations for PCE (confidence factor > 99.9%). PCE was below the MCL of 5 µg/L from June 2019 through December 2020 but was detected at 4.8 µg/L in June 2023. Since June 2019, TCE in 03WW01 has been below the MCL of 5 µg/L with the exceptions of December 2020 (24 µg/L) and

June 2022/2023 (10 µg/L). TCE in 03WW01 shows a decreasing trend with a 99.9% confidence factor. There is no trend for daughter product cis-1,2-DCE with an 85.6% confidence factor, with concentrations below the MCL of 70 µg/L since July 2018 and a result of 6.1 µg/L in June 2023.

Well 35AWW08

This well is located within the September 2013 EISB area. PCE concentrations decreased rapidly after the introduction of the carbon substrate and bacterial augmentation, and the PCE concentration as of June 2023 was below the detection limit (2.5 U [undetected: The analyte was analyzed for, but not detected and reported to the limit of detection] µg/L). TCE concentrations increased after substrate injection and more rapidly after bioaugmentation, reaching a peak of 953 µg/L in May 2014 followed by a decrease to below the detection limit (2.5 U µg/L) in December 2019. In June 2023 TCE was detected just above the MCL at 5.2 µg/L which represents a 99.5% decrease from May 2014. The initial increase in TCE concentrations is an indication of PCE degradation.

Degradation of TCE resulted in a temporary increase in cis-1,2-DCE concentrations, especially during the Year 2 monitoring period, reaching a high of 79.6 µg/L in October 2015. In June 2023, cis-1,2-DCE was detected at 5.2 µg/L.

The Mann-Kendall trend analysis in 35AWW08 was conducted for PCE; TCE; and cis-1,2-DCE for analytical results from November 2008 through the end of the Year 3 RA-O period (June 2023) (**Appendix H**). The results provide statistical evidence of a decreasing trend in concentrations for PCE (confidence factor > 99.9%) and TCE (confidence factor of >99.9%). PCE in 35AWW08 shows a decreasing trend with a confidence factor > 99.9%. PCE is currently non-detect and below the MCL of 5 µg/L in June 2023. Although TCE was detected at 53 µg/L in June 2021, TCE was 5.2 µg/L in June 2023 and shows a decreasing trend with a >99.9% confidence factor. The trend for daughter product cis-1,2-DCE is decreasing with a 98.3% confidence factor, with concentrations below the MCL of 70 µg/L since April 2016 and 5.2 µg/L in June 2023.

Well 35AWW09

This well is located downgradient of the September 2013 EISB area. PCE and TCE were detected in this well at concentrations above their respective MCLs during the Year 9 RA-O monitoring period. PCE concentrations increased from 57.6 J µg/L in October 2013 to 460 µg/L (duplicate result) in June 2023. Similarly, TCE concentrations exhibited a significant increase from 8.97 J µg/L in October 2013 to 180 µg/L in June 2023. Daughter product cis-1,2-DCE was detected below the MCL at 1.6 µg/L (duplicate result 1.3 µg/L) in June 2023. VC was not detected during the Year 9 RA-O period.

The Mann-Kendall trend analysis in 35AWW09 was conducted for PCE; TCE; and cis-1,2-DCE for analytical results from August 2013 through the end of the Year 9 RA-O monitoring period (June 2023) (**Appendix H**). The results provide statistical evidence of an increasing trend in PCE (100% confidence factor) and TCE (100% confidence factor) concentrations. The cis-1,2-DCE results indicate an increasing trend with a confidence factor of 99.9%, however, concentrations are currently below the MCL in June 2023.

The cause of the increase in COCs in well 35AWW09 appears to be migration of COCs in groundwater from the upgradient contaminated area (e.g., 35AWW08 and 03WW01). The initial increase in concentrations in 35AWW09 is likely associated with continued plume migration of contaminants downgradient of the EISB injection locations. COCs observed in well 35AWW09 in June 2023 are lower than pre-EISB concentrations observed in wells 03WW01 and 35AWW08. Decreasing trends were observed in wells 03WW01 and 35AWW08 prior to implementation of EISB, indicating natural attenuation processes, including dispersion and dilution, were already occurring. The influence of biodegradation associated with EISB appears to remain within the area targeted for EISB (immediately upgradient of monitoring wells 35AWW08 and 03WW01) with little to no influence observed in 35AWW09.

4.1.2 Western Plume

Figures 8d and 8e show COC concentration profiles in wells 35AWW20 and LHSMW07 respectively, and the table above summarizes the Mann-Kendall trend results for these same wells.

Well 35AWW20

Well 35AWW20 is located downgradient of the March 2018 EISB area that included KB-1 Plus™ inoculation. The concentrations of TCE; cis-1,2-DCE; 1,1-DCE; and VC were detected in this well above their MCLs during the semiannual Year 9 RA-O monitoring events (**Table 3**). EISB injections were completed in the western plume in March and April 2018 (Bhate, August 2018). Concentrations of TCE have decreased by approximately 43.8% between November 2017 (320 µg/L) and June 2023 (180 µg/L), while the concentration of 1,1-DCE decreased by 10.5%, between November 2017 (1,900 µg/L) and June 2023 (1,700 µg/L). Conversely, as TCE has decreased, the TCE daughter product cis-1,2-DCE has slightly increased from November 2017 (53 µg/L) to June 2023 (85 µg/L), and the degradation product VC significantly increased between November 2017 and June 2023 from 78 µg/L to 940 µg/L.

The Mann-Kendall trend analysis in 35AWW20 was conducted for TCE; cis-1,2-DCE; 1,1-DCE; and VC for analytical results from October 2013 through the end of the Year 9 RA-O period (June 2023) (**Appendix H**). The results indicate evidence of a decreasing trend over time at 35AWW20 for TCE (>99.9% confidence factor); cis-1,2-DCE (confidence factor of 96.6%); and 1,1-DCE (>99.9% confidence factor). Conversely, VC concentrations indicate an increasing trend over the same time period (confidence factor of 99.9%), supporting that reductive dechlorination is occurring in the vicinity of 35AWW20. PCE trends were not evaluated at 35AWW20 because it has been non-detect or below the MCL since 2013.

In addition to the above COCs, 1,1,2-TCA (63 µg/L [January 2023] / 57 µg/L [June 2023]) and 1,2-DCA (14 µg/L [January 2023]/ 13 µg/L [June 2023]) (the daughter product of 1,1,2-TCA through reductive dechlorination) concentrations exceed the MCLs (5 µg/L for 1,1,2-TCA and also for 1,2-DCA) in 35AWW20 during the Year 9 RA-O monitoring events (**Table 3**). Prior to EISB treatment, 1,1,2-TCA fluctuated between a minimum of 48.3 µg/L in February 2014 and a maximum of 82.7 µg/L in October 2016. Additionally, the 1,1,2-TCA daughter product, 1,2-DCA, fluctuated

between a minimum of 13.2 µg/L in February 2014 and a maximum of 20.3 µg/L in October 2013. During the period following EISB treatment (March 2018 through June 2023), 1,1,2-TCA fluctuated between a minimum of 38 J µg/L in March 2019 and a maximum of 88 µg/L in December 2018, and 1,2-DCA fluctuated between a minimum of 8.7 µg/L (duplicate) in November 2017 and a maximum of 26 µg/L in December 2018 for 1,2-DCA.

Well LHSMW06

This well is not located within an EISB injection area. The COCs TCE; cis-1,2-DCE, 1,1-DCE; and VC exceeded their respective MCLs in the January and June 2023 sampling events (**Table 3**). The Mann-Kendall trend analysis in LHSMW06 was conducted for TCE; 1,1-DCE; and VC for analytical results from December 1994 through the end of the Year 9 RA-O period (June 2023). The results indicate increasing trends in concentrations (with confidence factors of > 99.9%) for TCE; 1,1-DCE; and VC over time; the maximum detected concentrations of TCE and VC during this reporting period (September 2022 through August 2023) were in June 2023 with concentrations of 21 µg/L and 6.7 µg/L (duplicate result), respectively.

Well LHSMW07

Well LHSMW07 is located downgradient of the March 2018 EISB area that included KB-1 Plus™ inoculation. During the initial 3-year monitoring period, the COCs 1,1-DCE; TCE; and VC were detected in this well at concentrations above their respective MCLs as well as the first sampling event in Year 4 (November 2017). However, during the Year 9 RA-O sampling events completed in January and June 2023, 1,1-DCE exceeded its MCL of 7 ug/L with concentrations of 17 µg/L and 93 µg/L, respectively. TCE remained below the MCL of 5 µg/L. VC was detected at 56 µg/L, above the MCL of 2 ug/L, in January 2023 and 54 µg/L in June 2023.

The Mann-Kendall trend analysis in LHSMW07 was conducted for TCE; 1,1-DCE; and VC for analytical results from December 1994 through the end of the Year 9 RA-O period (June 2023). The results indicate a decreasing trend in concentrations for TCE (confidence factor of 99.9%) and 1,1-DCE (confidence factor of >99.9%). There was no statistical evidence of a trend for VC (confidence factor of 88.7%).

For the first time in April 2014, 1,1,2-TCA was detected above the MCL of 5 µg/L at 5.68 µg/L and again in October 2016 at a concentration of 7.72 µg/L (Bhate, April 2018). It was detected at a concentration of 0.73 J µg/L in September 2018, below the MCL of 5 µg/L. However, 1,1,2-TCA was not detected during the Year 7, 8, and 9 RA-O periods. The daughter product of 1,1,2-TCA, 1,1-DCA, remained below the MCL during the Year 9 RA-O sampling events, at concentrations of 16 µg/L in January 2023 and 13 µg/L in June 2023.

4.1.3 Plume Stability

Figures 8a – 8e show trends associated with key wells located in the eastern and western plume cores and leading edges. **Figure 9** compares the extent of the plumes associated with each COC in October 2016 compared to June 2023. The stability of each plume with regards to these COCs is evaluated through these figures in conjunction with the analyses presented in the sections above.

4.1.3.1 Eastern Plume

Based on the southeasterly direction of groundwater flow over the 9-year RA-O monitoring period, the following wells are considered to be along the groundwater flow path: 35AWW10, 35AWW08, 03WW01, 35AWW09, and 35AWW21. The COC concentrations in the upgradient well, 35AWW10, and the downgradient well, 35AWW21, remained below detection limits during the Year 9 RA-O event. **Table 4** presents historical monitoring well COC concentrations for these monitoring wells.

Figures 8a – 8c provide plots of groundwater COC concentrations and groundwater elevation changes over time in wells 35AWW08, 03WW01, and 35AWW09. Monitoring well 35AWW08 has a Mann-Kendall decreasing trend for PCE, TCE, and cis-1,2-DCE in June 2023. Monitoring well 03WW01, which is hydraulically downgradient of 35AWW08 and upgradient of 35AWW09, has a Mann-Kendall decreasing trend for PCE and TCE and no statistical trend for cis-1,2-DCE. TCE in 03WW01 was detected above the MCL in June 2023 at 10 µg/L, while PCE and cis-1,2-DCE were below the MCL in June 2023. The TCE daughter product cis-1,2-DCE remained well below the MCL at 03WW01 since July 2018.

Monitoring well 35AWW09 is located approximately 75 ft downgradient from 03WW01. There is an increasing trend in concentrations of PCE, TCE, and cis-1,2-DCE in 35AWW09. The increase in concentrations in 35AWW09 is likely associated with downgradient dissolved phase migration from areas of higher concentration observed in 2008 and 2011 in wells 35AWW08 and 03WW01. A review of the historical data for 35AWW09 does not indicate any correlation between groundwater elevations and COC concentrations.

The concentrations of COCs in downgradient wells 35AWW12 and 35AWW21 remained below the detection limits. No increased concentrations or detections of new COCs at boundary area wells 35AWW10, 35AWW13, 35AWW22, 35AWW12, and 35AWW21 occurred; therefore, plume expansion is not occurring, and the extent of the eastern plume is stable.

4.1.3.2 Western Plume

Based on the southeasterly direction of groundwater flow, the following wells are considered to be along the groundwater flow path from 35AWW15, 35AWW20, 35AWW23, and 35AWW19, to 35AWW24, with a more southerly component from LHSMW07 and 35AWW06 to 35AWW17. Groundwater also flows southeasterly from LHSMW06 and 35AWW23 to 35AWW19 and from 35AWW11 to 35AWW14. The COC concentrations in upgradient well 35AWW15 have remained below detection limits throughout the Year 9 reporting period (September 2022 through August 2023). The in-plume well (35AWW20) exhibits the highest levels of COCs, which have, based on the Mann-Kendall analysis, shown decreasing trends for TCE; 1,1-DCE; and cis-1,2-DCE. Only VC is showing an increasing trend indicating ongoing reductive dechlorination at 35AWW20.

The 1,1-DCE concentration in monitoring well 35AWW19, located in a downgradient direction of the western plume, has decreased from above the MCL in January 2014 through December 2018, to below the MCL of 7 µg/L in March 2019. Detections of 1,1-DCE in monitoring well 35AWW19 remained below the MCLs in the Year 9 RA-O sampling events suggesting that migration of the

plume is no longer occurring in this portion of the western plume. However, 1,1-DCE detected at monitoring well 35AWW18 has recently increased from 4.1 µg/L in December 2019, to above the MCL in June 2020 (18 µg/L) and has remained above the MCL through June 2023 (29 µg/L) (**Table 4**). Monitoring well 35AWW18 is downgradient of 35AWW20 indicating plume migration in a southeasterly direction in this portion of the western plume. Monitoring well 35AWW04 and 35AWW25, which were not sampled during this reporting period (September 2022 through August 2023) because they were dry, are also downgradient of 35AWW18 along this flow path.

It should be noted that 1,1-DCE and VC were detected in cross-gradient well LHSMW06 above the MCLs (7 µg/L and 2 µg/L, respectively), in the June 2023 sampling event. Concentrations of 1,1-DCE were 22 µg/L in January 2023 and 21 µg/L in June 2023, and VC concentrations were 7.6 µg/L in January 2023 and 6.7 µg/L (duplicate result) in June 2023. No detections of COCs have been observed at boundary area wells 35AWW15, 35AWW16, and 35AWW17; therefore, plume expansion is not occurring along the western extent of the western plume. Along the southwest extent of the western plume 1,1-DCE exceeds the MCL at 35AWW18. Therefore, a new monitoring well (35AWW25) was installed downgradient of 35WW18. In August 2023, monitoring well 35AWW25 was dry.

4.2 Second Line of Evidence: Geochemical Indicators

Tables 2 and 3 include the geochemical indicator parameters that are useful for MNA evaluation. Some geochemical parameters are measured in the field and are recorded during sampling events. The field parameters for LHAAP-35A (58) wells include: DO, ORP, pH, conductivity, turbidity, and temperature. The other geochemical indicators analyzed in the laboratory include: alkalinity, chloride, nitrate, nitrite, iron, sulfate, sulfide, methane, ethane, ethene, TOC, phosphorous, manganese, and dechlorinating bacteria. Analytes eliminated in 2019 per the Draft TM – MNA Parameters (Bhate, February 2019) were alkalinity, nitrite, sulfide, total iron, dissolved manganese, total phosphorous, and dissolved iron (lab analysis). For the eastern plume only, chloride, nitrate, sulfate, dissolved gases, TOC, dechlorinating bacteria, and VFAs were also eliminated. TOC continues to be evaluated due to the March/April 2018 EISB treatment with the western plume.

A summary of the geochemical aquifer conditions following EISB injections in each plume area is presented in **Tables 5 and 6**. The following discussion examines the geochemical indicators recorded during the Year 9 RA-O monitoring period.

4.2.1 Eastern Plume

- pH – Neutral pH (6.0 to 8.5 standard units) is desirable for MNA. During the Year 9 RA-O monitoring period, groundwater was observed within this range at 03WW01 (6.52 s.u.), 35AWW09 (6.58 s.u.), 35AWW08 (6.75 s.u.), and 35AWW14 (6.87 s.u.) throughout the impacted areas of the eastern plume. Outside the plume, the pH ranged from 5.87 s.u. in 35AWW21 to 6.63 s.u. in 35AWW13 in the shallow zone, indicating the decline in pH has occurred site-wide and is not attributed to EISB. The pH was 7.04 s.u in intermediate well 35AWW01.

- Dissolved Oxygen – DO is the most thermodynamically favored electron acceptor used by microbes for biodegradation of organic carbon, whether natural or anthropogenic (USEPA, September 1998). Anaerobic bacteria generally cannot function at DO concentrations > 0.5 mg/L and hence, reductive dechlorination will not occur. In June 2023, eastern plume treatment area wells 03WW01, 35AWW08, and 35AWW09 had DO measurements ranging from 0.03 to 0.07 mg/L. The DO levels in the treatment area are conducive to reductive dechlorination. The DO levels observed in eastern plume wells outside the treatment area ranged from 0.02 to 0.09 mg/L in June 2023 (**Table 2**); DO at 35AWW14 (8.37 mg/L) is an outlier and likely due to the sample collection with a bailer. The DO levels are below the 0.5 mg/L threshold and support anaerobic conditions outside of the EISB treatment area.
- Oxidation-Reduction Potential – The ORP levels indicate how oxidative or reductive the groundwater is in the aquifer matrix and provide real-time data to determine if conditions are conducive for anaerobic biodegradation. When ORP values are less than -50 mV, the anaerobic biodegradation pathway is considered possible in accordance with the biodegradation scoring criteria presented in the *Technical Protocol for Evaluating Attenuation of Chlorinated Solvents in Ground Water* (USEPA, September 1998). In June 2023, ORP measurements at 03WW01 (-89 mV) and 35AWW08 (-111 mV) indicated anaerobic conditions are likely for reductive dechlorination within the treatment area (**Tables 2 and 5**); however, ORP is one of many lines of evidence of reductive dechlorination. The ORP measured outside of the EISB area in June 2023 was 75 mV at well 35AWW09 (**Table 2**). This strong positive ORP indicates that conditions in the eastern plume outside of the EISB treatment area (35AWW09) are generally aerobic and not supportive of anaerobic degradation.

The qualitative assessment of geochemical indicators in the shallow groundwater zone at LHAAP-35A (58) indicates naturally occurring geochemical conditions outside the EISB treatment zone are not supportive of MNA via the biodegradation process. However, the areas influenced by the EISB treatment continue to allow for MNA.

4.2.2 Western Plume

- pH – Neutral pH (6.0 to 8.5 standard units) is desirable for MNA. During the Year 9 RA-O monitoring period, groundwater pH ranged from 5.92 s.u. (35AWW19) to 7.19 s.u. (35AWW06) throughout the impacted areas of the western plume. Outside the plume, the pH ranged from 6.15 s.u. (35AWW15) to 7.13 s.u. (35AWW27) in the shallow zone, indicating the decline in pH occurred site-wide and is not attributed to EISB.
- Chloride – During biodegradation of chlorinated hydrocarbons in groundwater, chloride is released to groundwater. This results in higher chloride concentrations in the contaminant plume as compared to background levels in upgradient wells or in unimpacted downgradient wells (USEPA, September 1998). Prior to EISB injection, the chloride levels in the shallow zone detected in November 2017 ranged from 1,040 mg/L in 35AWW06 to 2,650 mg/L in 35AWW11 (**Table 6**). Chloride levels in 35AWW11 were slightly lower in June 2023 than the pre-EISB injection results but still elevated (779 mg/L) (**Table 3**). Chloride levels in the shallow

zone were also elevated in LHSMW07 and remained stable over the Year 9 RA-O sampling events from 2,030 mg/L in January 2023 to 1,930 mg/L in June 2023. Additionally, chloride levels within the other western plume EISB treatment area wells provide evidence of biodegradation in the western plume. Although, chloride was not analyzed for in any wells outside the treatment area in Year 9, these January and June 2023 chloride levels can be compared to background chloride concentrations in downgradient wells such as 35AWW24, which had chloride concentrations below 120 mg/L in March 2018 through June 2019 (**Table 6**).

- Dissolved Oxygen – DO is the most thermodynamically favored electron acceptor used by microbes for biodegradation of organic carbon, whether natural or anthropogenic (USEPA, September 1998). Anaerobic bacteria generally cannot function at DO concentrations > 0.5 mg/L and hence, reductive dechlorination will not occur. The DO levels observed in western plume wells 35AWW06, 35AWW11, 35AWW19, 35AWW20, 35AWW23, 35AWW24, and LHSMW07 were < 0.5 mg/L in June 2023 (**Table 6**). These DO levels are adequate to support anaerobic conditions within the EISB treatment area.
- Oxidation-Reduction Potential – The ORP levels indicate how oxidative or reductive the groundwater is in the aquifer matrix and provide real-time data to determine if conditions are conducive for anaerobic biodegradation. ORP values < 50 mV indicate that the aquifer is sulfate-reducing, and values < -200 mV are required before anaerobic conditions are favorable for the complete biological reductive dechlorination of chlorinated ethenes. During the monitoring period, wells located within proximity of the EISB treatment area (35AWW06, 35AWW11, 35AWW20, 35AWW23, and LHSMW07) in general exhibited negative ORP values ranging from -107 mV at 35AWW23 (June 2023) to 52 mV at LHSMW07 (June 2023) (**Table 3**). LHSMW07 was the only monitoring well in the EISB treatment are with a positive ORP. Areas outside of the treatment area (LHSMW06, 35AWW06, 35AWW15, 35AWW18, 35AWW19, and 35AWW24) in general continued to have positive ORPs which ranged from -59 mV at 35AWW06 (January 2023) to 183 mV at 35AWW24 (January 2023) (**Table 3**). In January 2023, five of six monitoring wells outside of the EISB treatment area (or 83%) had positive ORPs. Monitoring well 35AWW06 was the outlier with a negative ORP (-59 mV). In June 2023, four of the same six monitoring wells outside of the EISB treatment area (or 67%) had positive ORPs, with 35AWW06 (-54 mV) and 35AWW15 (-55 mV) having negative ORPs. These results indicate that conditions in the western plume outside of the EISB treatment area are primarily aerobic and not supportive of anaerobic degradation.
- Nitrate – After DO has been depleted in the microbiological treatment zone, nitrate may be used as an electron acceptor for anaerobic biodegradation of organic carbon by denitrification. In order for reductive dechlorination to occur, nitrate concentrations in the contaminated portion of the aquifer must be < 10.0 mg/L (USEPA, September 1998). Nitrate concentrations were non-detect or below 1 mg/L in the western plume monitoring wells in each of the sampling events during the Year 9 RA-O monitoring period (**Table 3**). Based on these observations, nitrate reduction in the shallow zone is not a likely mode of microbial

respiration at the site, and the lack of nitrate is favorable for achieving the reducing conditions ideal for anaerobic reductive dechlorination.

- Sulfate – After DO and nitrate have been depleted in the microbiological treatment zone, sulfate may be used as an electron acceptor for anaerobic biodegradation. This process is termed "sulfate reduction" and results in the production of sulfide. Concentrations of sulfate > 20 mg/L may cause competitive exclusion of dechlorination. However, in many plumes with high concentrations of sulfate, reductive dechlorination still occurs (USEPA, September 1998). Concentrations have fluctuated within the plume. Sulfate concentrations decreased in 35AWW06 downgradient of the main plume from 1,560 mg/L in November 2017 to 197 mg/L in June 2021 and was most recently detected at 834 mg/L in June 2023 (**Table 6**). Concentrations decreased in 35AWW20 from 2,150 mg/L in November 2017 to 882 mg/L in July 2018, increased to 955 mg/L in June 2021, and was most recently detected at 1,090 mg/L in June 2023 (**Table 6**).
- Dissolved gases – Methanogenesis occurs in highly reducing conditions and generally occurs after oxygen, nitrate, and sulfate have been depleted. Ethane and ethene are the end products of reductive dechlorination of CVOCs and their levels increase if complete reductive dechlorination takes place. Methane levels above 500 µg/L are considered to indicate methanogenic conditions (USEPA, September 1998). In June 2023, methane concentrations above 500 µg/L were present in wells 35AWW06, 35AWW11, 35AWW20, 35AWW23, and LHSMW07 (**Tables 3 and 6**). Ethene was detected within the western plume in wells LHSMW07 (20.9 µg/L [June 2023]), 35AWW20 (38.9 µg/L [June 2023]), and 35AWW19 (3.95 µg/L [January 2023]). The presence of ethene indicates complete degradation of VOCs within the wells containing the highest VOC detections in the western plume.
- Total Organic Carbon – Regardless of the electron acceptor being used, organic carbon is a required source of reduced carbon and energy to sustain microbial activity. TOC is utilized as a carbon and energy source to support the reductive dechlorination of the chlorinated COCs. TOC concentrations > 20 mg/L are considered adequate to support microbial activity (USEPA, September 1998). TOC concentrations in the western plume increased following EISB injections, which is to be expected. However, during the Year 9 reporting period (September 2022 through August 2023) wells in the western plume had TOC concentrations < 20 mg/L (**Table 3**). Although the TOC concentration detected in September 2018 after EISB injections was relatively low in 35AWW20 (53 mg/L) and has declined to 15.9 mg/L (June 2023), ethene was detected (38.9 µg/L), indicating that complete reductive dechlorination is occurring along the groundwater flow path (**Table 6**).
- VFAs – The presence of VFAs (**Table 3**) confirms the fermentation of carbon substrates and should be observed coincident with elevated TOC. Acetic acid was detected in well 35AWW23 during the Year 9 reporting period (September 2022 through August 2023) at 0.88 J mg/L (January 2023), confirming that some fermentation is occurring even though COC concentrations were already below MCLs in this well. All other VFAs were non-detect, indicating fermentation was not occurring where remedial action was required.

The qualitative assessment of geochemical indicators in the shallow groundwater zone at LHAAP-35A (58) indicates that geochemical conditions in many areas of the plume are supportive of MNA, both within the areas influenced by the EISB treatment and also downgradient of that area.

4.3 Third Line of Evidence: Microbial Analysis

If the first two lines of evidence for MNA are deemed inadequate or inconclusive, and/or if the need for a contingency remedy is evaluated, data from field or microcosm studies will be necessary to establish the third line of evidence for MNA.

Dechlorinating bacteria, *DHC ethenogenes*, and associated functional genes have been analyzed in wells within and outside the eastern and western plumes. Microbial population analyses were discontinued during the Year 7 reporting period (September 2020 through August 2021) at wells 35AWW09, 35AWW10 and 35AWW24, located outside of the EISB areas as recommended in the Year 5 RA-O Report. It has been established that the microbial populations are limited and unaffected by the EISB injections in these areas. Microbial population analyses were eliminated for all eastern plume wells during the Year 9 reporting period (September 2022 through August 2023) per the Draft TM – MNA Parameters (Bhate, February 2019).

4.3.1 Eastern Plume

Dechlorinating bacteria, *DHC* and *DHBt*, *BAV1 VC reductase*, and associated functional genes were analyzed in groundwater samples from wells 03WW01, 35AWW08, and 35AWW09, within and outside the eastern plume. Generally, the microbial population counts, and the functional gene counts have been at or below the laboratory reporting limits in areas not influenced by bioaugmentation such as at 35AWW09, indicating a limited natural population of the bacteria and the absence of gene expression necessary for anaerobic biological degradation of the COCs. After the September 2013 EISB injection event, microbial populations increased; as COC concentrations declined to levels that no longer supported these specific bacteria, population counts also declined. Microbial analyses were not performed in Year 9 in the eastern plume; however, historical results for dechlorinating bacteria are summarized in **Table 5**.

4.3.2 Western Plume

Dechlorinating bacteria, *DHC ethenogenes, DHBt*, BAV1 VC reductase, and associated functional genes were analyzed in groundwater samples from wells within and outside the western plume in the Year 9 reporting period (September 2022 through August 2023). The highest microbial populations detected at the site were recorded during the Year 9 reporting period (September 2022 through August 2023) in 35AWW20. *DHC* was detected at 91,800 cells/mL in January 2023 and BAV1 VC reductase was detected at 15,200 cells/mL in January 2023. The presence of BAV1 VC reductase indicates that complete reductive dechlorination can occur to allow VC to reduce to ethene over time. *DHBt* increased from 1,120 cells/mL in March 2018 to 5,970,000 cells/mL in July 2018, then were non-detect in June 2019. Since then, *DHBt* has slowly increased in 35AWW20 to 43,800 cells/mL in June 2023 (**Table 6**).

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5 CONCLUSIONS AND RECOMMENDATIONS

COC concentration data and geochemical indicator measurements were collected over the course of the monitoring period at LHAAP-35A (58) to evaluate the effectiveness of the EISB and MNA groundwater remedy. A tiered approach based on assessment of three lines of evidence was used to evaluate the occurrence of natural attenuation in groundwater. The first line of evidence evaluated reductions in COC concentrations over time and with increasing distance from source areas, including evaluation of Mann-Kendall tests for trends; the second line of evidence evaluated geochemical indicators; and the third line of evidence evaluated microbial conditions in the aquifer. The results of the tiered evaluation and the conclusions are summarized below.

5.1 Conclusions

During the Year 9 reporting period (September 2022 through August 2023) three new monitoring wells were installed in the western plume to define upgradient (35AWW26) and downgradient COC plume extents (35AWW25 and 35AWW27 (**Figure 2**). Groundwater data for Year 9 RA-O were then collected in January and June 2023. The groundwater flow direction at the site is interpreted to the southeast in the western portion of the site and to the east-southeast in the eastern portion of the site (**Figures 4 and 5**).

The EISB treatment in the eastern and western plume area appears to be effectively reducing the VOC concentrations, and the current groundwater conditions are conducive to continued reductions of VOCs throughout most of the site. **Figures 8a – 8e** present the graphical depiction of the trends of the COCs of various monitoring wells within LHAAP-58. With the exception of 35AWW09, the trend plots display decreasing COC trends in both the eastern and western plumes. Furthermore, **Figure 9** presents the change in the plumes from October 2016 to June 2023, which demonstrates the reduced lateral extent of the plumes.

The primary initial influence of EISB within the eastern plume was a reduction of PCE in 03WW01 and 35AWW08. TCE concentrations were observed to increase at each well after the September 2013 substrate injection, as PCE was degraded to TCE, followed by a decrease in concentration as the rate of TCE formation became lower than the rate of TCE biodegradation. Generally, cis-1,2-DCE was observed to increase in these two wells as a direct result of biodegradation of TCE. PCE; TCE; cis-1,2-DCE; and VC which had reduced to non-detect at well 03WW01 by the end of the Year 3 RA-O (October 2016). PCE concentration decreased at 03WW01 in June 2023 to 4.8 J µg/L, while TCE concentration increased in 03WW01 to 10 µg/L over the same period, indicating reductive dechlorination is occurring while daughter products cis-1,2-DCE and VC remain below MCLs in June 2023. All COCs were below the respective MCLs in well 35AWW08 in June 2023 (**Table 5**).

Concentrations of PCE and TCE in 35AWW09, located within the eastern plume but outside the EISB area, have increasing concentration trends based on the Mann-Kendall analysis. Due to aquifer geochemical conditions outside of the EISB area that are unfavorable to reductive dechlorination, additional treatment in the area of 35AWW09 may need to be considered. The

concentrations of COCs in downgradient well 35AWW21, which is located outside the eastern plume, have remained below the detection limits. Therefore, based on the inferred east-southeastern groundwater flow path (**Figures 4 and 5**), COC levels are not migrating beyond the original plume boundaries. Since COCs have not appeared at 35AWW21, other natural attenuation properties such as dilution, dispersion, sorption, and volatilization appear to be occurring at a rate sufficient to mitigate off-site migration. Concentrations of COCs downgradient of monitoring wells, 35AWW08 and 03WW01, have exhibited no increase in COC concentrations or new detections of COCs. Specifically, the boundary area wells 35AWW10, 35AWW13, 35AWW22, 35AWW12, and 35AWW21 do not have increasing COC trends. Therefore, it appears that the lateral extent of the eastern plume is stable.

In the western plume, EISB treatment was completed in March and April 2018 per the Final RAWP (Bhate, January 2018). The concentrations of COCs (PCE; TCE; cis-1,2-DCE; and VC), in upgradient well 35AWW15 have remained below detection limits during this monitoring period. Concentrations of COCs in perimeter wells, 35AWW15, 35AWW16, and 35AWW17, which are located away from the most impacted area, remain non-detect or below MCLs. Perimeter well 35AWW18 had concentrations of 1,1-DCE above the MCL during this monitoring period. It was recommended in the Year 7 Annual RA-O Report to sample downgradient monitoring well 35AWW04; however, the well has been dry since April 2016. Therefore, a new shallow zone monitoring well (35AWW25) was installed in November 2022 to bound the downgradient extent of the 1,1-DCE groundwater plume. Although groundwater was present during 35AWW25 well development activities in November 2023, the well was also dry in both January and June 2023. PCE concentrations in LHSMW07 and 35AWW20, wells within the influence of the EISB treatment, have remained well below the MCL (5 µg/L) since the EISB treatment and was not detected in either well during the June 2023 sampling event. While TCE, 1,1-DCE, and cis-1,2-DCE exceeded their respective MCLs at 35AWW20 during the current reporting period (September 2022 through August 2023), there are strong decreasing trends based on the Mann-Kendall analyses. Conversely, VC has an increasing trend at 35AWW20 based on the Mann-Kendall analysis; however, VC decreased from 2,800 µg/L in December 2019 to 940 µg/L in June 2023. Over the same time period from December 2019 to June 2023 ethene has also increased at 35AWW20 from 6.3 µg/L to 38.9 µg/L, indicating complete reductive dechlorination occurring. Concentrations of TCE and cis-1,2-DCE have been non-detect or below MCLs since September 2018 in LHSMW07. LHSMW07 exhibits a decreasing trend for 1,1-DCE and the concentration detected in June 2023 (93 µg/L) is much lower than pre EISB treatment, when 1,1-DCE was as high as 2,100 µg/L in July 2015. VC has seasonal fluctuations from non-detect in July 2018 to 54 µg/L in June 2023 in LHSMW07.

Despite the decreasing trends observed within the western plume, 1,1-DCE, TCE, cis-1,2-DCE, and VC continue to exceed their respective MCLs at 35AWW20 and LHSMW06 in June 2023. As a result, additional treatment upgradient of 35AWW20 and LHSMW06 may need to be considered to ensure complete degradation of TCE and the associated daughter products to ethene.

The qualitative assessment of geochemical indicators and the absence of dechlorinating bacteria in the shallow groundwater zone (outside of the EISB zone) at LHAAP-35A (58) indicates current naturally occurring geochemical conditions are not optimal for, but may not preclude, MNA.

A LUC compliance inspection was conducted on 12 July 2023. No change in land or groundwater use has occurred at the site, and current land use complies with the ROD (Bhate/APTIM Federal Services, LLC, June 2018). No compliance issues or concerns were noted during the annual inspection (**Appendix A**). Based on the well inspection completed in June 2023.

5.2 Recommendations

Based on the Year 9 RA-O activities and evaluation, recommendations for the Year 10 RA-O activities are as follows:

- The Year 10 RA-O groundwater monitoring plan is presented in **Table 7**. As recommended in the Year 8 RA-O Report (Bhate, March 2023), the final semiannual sampling event of the western plume was completed in January 2023. It is recommended that groundwater monitoring of the western plume be reduced to VOC analysis on an annual basis, in compliance with the RAWP Contingency Remedy for the Western Plume (Bhate, January 2018). Year 10 annual sampling of the western plume will align with annual sampling of the eastern plume in June 2024.
- Surface water sampling will be conducted in June 2024 if the groundwater elevation in 35AWW18 is at or above the surveyed ditch elevation.
- Additional arsenic sampling will continue at select wells in June 2024.
- Based on the upgradient VOC concentrations at new monitoring well 35AWW26, additional PCE/TCE mass has not been identified and the upgradient extent of PCE/TCE has been defined. In addition, reductive dechlorination and the production of ethene continues at 35AWW20. Therefore, additional EISB injections in the western plume upgradient of monitoring well 35AWW20 and LHSMW06 are not recommended at this time.
- Although groundwater geochemical conditions are unfavorable for MNA outside of the EISB treatment zone in the eastern plume, boundary wells remain below MCLs for all COCs. Therefore, additional EISB injections in the eastern plume are not recommended at this time.

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6 REFERENCES

AECOM. November 2012. *Revised Technical Memorandum, Steps to Remedy-in-Place for LHAAP-03/LHAAP-58, Longhorn Army Ammunition Plant, Karnack, Texas*.

AECOM. August 2013. *Final Remedial Action Work Plan LHAAP-35A (58), Shops Area, Group 4 Longhorn Army Ammunition Plant, Karnack, Texas*.

AECOM. October 2015. *Draft Final Remedial Action Completion Report, LHAAP-35A (58), Former Sump Water Tank, Longhorn Army Ammunition Plant, Karnack, Texas*.

AECOM. November 2015. *Draft Final 1st Annual Remedial Action Operation Report (October 2013 – October 2014), LHAAP-35A (58) Shops Area, Longhorn Army Ammunition Plant, Karnack, Texas*.

AECOM. May 2016. *Draft Final 2nd Annual Remedial Action Operation Report (January 2015 – October 2015), LHAAP-35A (58) Shops Area, Longhorn Army Ammunition Plant, Karnack, Texas*.

Bhate. January 2018. *Revised Final Remedial Action Work Plan Contingency Remedy for Western Plume LHAAP-35A (58), Shops Area, Group 4 Longhorn Army Ammunition Plant, Karnack, Texas*.

Bhate. March 2018. *Final Explanation of Significant Differences Record of Decision (ROD) for Western Plume Contingency Remedy at LHAAP-35A (58), Shops Area, Longhorn Army Ammunition Plant Karnack, Texas.*

Bhate. April 2018. *Draft Final 3rd Annual Remedial Action Operation Report (March 2016 – October 2016), LHAAP-35A (58) Shops Area, Longhorn Army Ammunition Plant, Karnack, Texas*.

Bhate. May 2018. *Final Installation-Wide Work Plan for Longhorn Army Ammunition Plant Karnack, Texas.*

Bhate/APTIM Federal Services, LLC. June 2018. *Final Record of Decision (ROD), LHAAP-03, Former Waste Collection Pad, Building 722-Paint Shop, Longhorn Army Ammunition Plant, Karnack, Texas.*

Bhate. July 2018. *Final Explanation of Significant Differences, LHAAP-35A (58), Shops Area, Group 4 Record of Decision dated September 2010, Longhorn Army Ammunition Plant Karnack, Texas.*

Bhate. October 2018. *Draft Final 4th Annual Remedial Action Operation Report (November 2017 and June/July 2018), LHAAP-35A (58) Shops Area, Longhorn Army Ammunition Plant, Karnack, Texas*.

Bhate. August 2018. *Draft Final Remedial Action Completion Report, Contingency Remedy for Western Plume, LHAAP-35A (58), Shops Area, Group 4, Longhorn Army Ammunition Plant, Karnack, Texas*.

Bhate. February 2019. *Final Technical Memorandum - Monitored Natural Attenuation Monitoring Parameters, Longhorn Army Ammunition Plant, Karnack, Texas.*

Bhate. March 2023. *Draft Final Year 8 Annual Remedial Action Operation Report (September 2021 - August 2022), LHAAP-35A (58) Shops Area, Longhorn Army Ammunition Plant, Karnack, Texas*.

Shaw. June 2007. *Evaluation of Perimeter Well Data for Use as Groundwater Background, Karnack, Texas*.

Shaw. September 2010. *Record of Decision, LHAAP-35A (58), Shops Area, Group 4, Longhorn Army Ammunition Plant, Karnack, Texas*.

Shaw. September 2011. *Final Remedial Design, LHAAP-35A (58), Shop Area, Group 4, Longhorn Army Ammunition Plant, Karnack, Texas*.

USACE. June 2019. *Final Five-Year Review Report for Longhorn Army Ammunition Plant, Town of Karnack, Harrison County, Texas*.

USEPA. September 1998. *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater, EPA/600/R-98/128*.

FIGURES

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Longhorn Army Ammunition Plant
Location and Site Vicinity Map

Figure 1

Year 9 Annual Remedial Action Operation Report (September 2022 – August 2023)
LHAAP-35A (58), Shops Area
Longhorn Army Ammunition Plant
Karnack, Texas

DRAWN BY: MRM

DATE: 1/10/2024

SCALE: As Shown

PROJECT NO: JVPCIBH.0001.0010.01

PCIbhate

Figure 2

Monitoring Well Location Map

Year 9 Annual Remedial Action Operation Report (September 2022 – August 2023)
LHAAP-35A (58), Shops Area
Longhorn Army Ammunition Plant
Karnack, Texas

DRAWN BY: MRM

DATE: 9/27/2023

SCALE: As Shown

PROJECT NO: JVPCIBH.0001.0010.01

PCIbhate

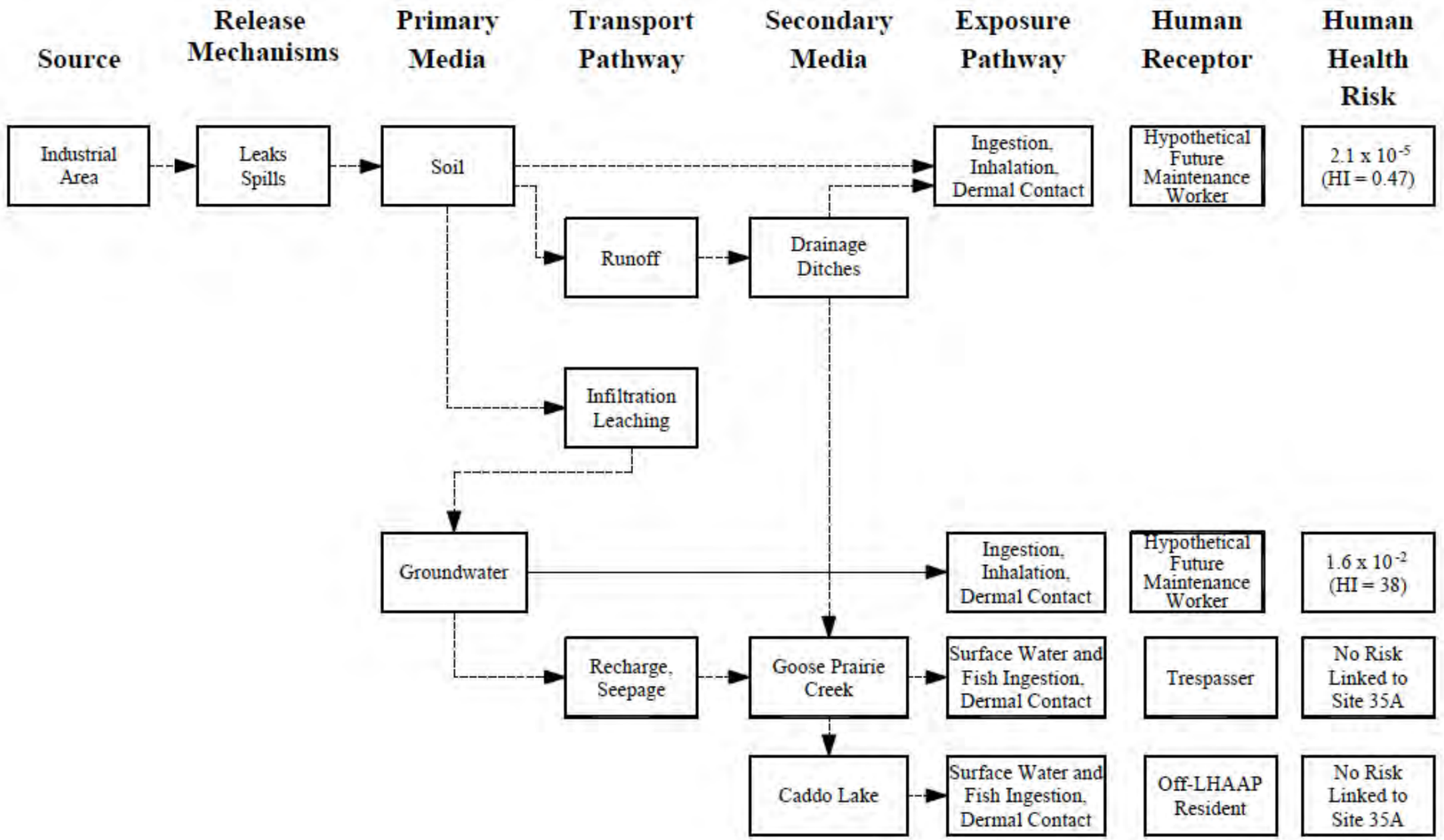
LHAAP-61
LHAAP-02
LHAAP-35A (58)
LHAAP-03
LHAAP-60
LHAAP-68
LHAAP-69
LHAAP-56
LHAAP-59
LHAAP-65
32ND ST.
TACKET DR
AVE F
AVE G
10TH ST.
9TH ST.
8TH ST.
11TH ST.
6TH ST.
4TH ST.
Goose Prairie Creek
35AWW03
35AWW13
35AWW22
35AWW07
35AWW07R
35AWW15
35AWW10
35AWW01
35AWW02
LHSMW04
35AWW12
03WW01
LHSMW05
35AWW09
35AWW08
35AWW26
LHSMW06
1004TW001
35AWW20
1004TW006
35AWW11
35AWW21
LHSMW03
35AWW16
35AWW14
35AWW05
LHSMW07
35AWW27
35AWW23
35AWW06
35ASW03
35AWW18
35AWW17
35AWW19
35AWW24
35AWW04
35AWW25

Aerial Photography Source: Google Earth, April 2018

0 75 150 300
Feet

Legend:

- 35AWW06 — Sampled Well Locations
- Shallow Monitoring Well Location
- Shallow Temporary Monitoring Well Location
- Intermediate Monitoring Well Location
- Deep Monitoring Well Location
- Surface Water Sample Location
- Groundwater Use Restrictions Area
- Installation Restoration Program (IRP) Area
- Direction of Groundwater Flow (June 2023)
- Stream
- 401 — Building Number



Source: Shaw, May 2010

Conceptual Site Model

Figure 3

Year 9 Annual Remedial Action Operation Report (September 2022 – August 2023)
LHAAP-35A (58), Shops Area
Longhorn Army Ammunition Plant
Karnack, Texas

DRAWN BY: MRM

DATE: 1/10/2024

SCALE: As Shown

PROJECT NO: JVPCIBH.0001.0010.01

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LHAAP-35A (58)

32ND ST.
TACKET DR
AVE F
10TH ST.
9TH ST.
18TH ST.
AVE G
4TH ST.
6TH ST.
11TH ST.

35AWW03 (NM)
35AWW13 (NM)
35AWW22 (NM)
35AWW07R (NM)
35AWW15 (203.47)
35AWW10 (NM)
LHSMW04 (Dry)
35AWW12 (NM)
LHSMW05 (NM)
03WW01 (NM)
35AWW09 (NM)
35AWW26 (203.53)
35AWW08 (NM)
LHSMW06 (203.81)
35AWW21 (NM)
35AWW11 (191.73)
1004TW001 (NM)
1004TW006 (NM)
35AWW20 (203.63)
LHSMW03 (NM)
35AWW16 (NM)
192.00
35AWW14 (NM)
35AWW27 (NM)
LHSMW07 (202.90)
35AWW23 (199.66)
202.00
35AWW06 (201.28)
35AWW18 (NM)
35AWW17 (NM)
200.00
198.00
196.00
194.00
35AWW19 (194.66)
35AWW24 (194.64)
35AWW04 (Dry)
35AWW25 (Dry)

Aerial Photography Source: Google Earth, April 2018

0 75 150 300
Feet

Legend:

- Shallow Monitoring Well Location
- Shallow Temporary Monitoring Well Location
- (194.66) Potentiometric Surface Elevation in Feet Above Mean Sea Level
- (NM) Not Measured
- Potentiometric Surface Contour
- Direction of Groundwater Flow
- Installation Restoration Program (IRP) Area
- *401* Building Number

January 2023
Shallow Potentiometric Map

Figure 4

Year 9 Annual Remedial Action Operation Report (September 2022 – August 2023)
LHAAP-35A (58), Shops Area
Longhorn Army Ammunition Plant
Karnack, Texas

DRAWN BY: MRM

DATE: 9/27/2023

SCALE: As Shown

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LHAAP-35A (58)

32ND ST.
TACKET DR
AVE "F"
AVE "G"
18TH ST.
9TH ST.
10TH ST.
11TH ST.
6TH ST.
4TH ST.

35AWW03 (NM)
35AWW13 (195.67)
35AWW22 (186.35)
35AWW07R (NM)
35AWW15 (204.77)
35AWW10 (203.46)
LHSMW05 (NM)
LHSMW04 (Dry)
35AWW12 (186.49)
03WW01 (187.12)
35AWW09 (186.06)
35AWW26 (205.18)
LHSMW06 (205.46)
35AWW08 (188.50)
35AWW21 (186.57)
1004TW006 (NM)
35AWW20 (204.57)
1004TW001 (NM)
LHSMW03 (NM)
35AWW11 (192.35)
35AWW16 (203.80)
35AWW14 (188.49)
LHSMW07 (203.58)
35AWW23 (200.80)
35AWW27 (190.10)
35AWW06 (201.53)
35AWW18 (198.16)
35AWW17 (198.27)
35AWW19 (195.58)
35AWW24 (195.77)
35AWW04 (Dry)
35AWW25 (Dry)

204.00
202.00
200.00
198.00
196.00
194.00
192.00
190.00
188.00

Aerial Photography Source: Google Earth, April 2018

0 75 150 300 Feet

Legend:

- Shallow Monitoring Well Location
- Shallow Temporary Monitoring Well Location
- (195.77) Potentiometric Surface Elevation in Feet Above Mean Sea Level
- (NM) Not Measured
- Potentiometric Surface Contour
- Direction of Groundwater Flow
- Installation Restoration Program (IRP) Area
- *401* Building Number

June 2023
Shallow Potentiometric Map

Figure 5

Year 9 Annual Remedial Action Operation Report (September 2022 – August 2023)
LHAAP-35A (58), Shops Area
Longhorn Army Ammunition Plant
Karnack, Texas

DRAWN BY: MRM

DATE: 9/12/2023

SCALE: As Shown

PROJECT NO: JVPCIBH.0001.0010.01

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Legend
J = Estimated value
COC = Contaminant of Concern
USEPA = United States Environmental Protection Agency
MCL = Maximum Contaminant Limit
DCA = Dichloroethane
DCE = Dichloroethene
PCE = Tetrachloroethene
TCA = Trichloroethane
TCE = Trichloroethene
VC = Vinyl Chloride
Bold Red values exceed the USEPA MCL
All results and MCLs are reported in micrograms per liter (µg/L)

COCs shown on this figure	
COC	MCL
1,1-DCE	7
1,1,2-TCA	5
1,2-DCA	5
Benzene	5
cis-1,2-DCE	70
PCE	5
trans-1,2-DCE	100
TCE	5
VC	2

LHSMW06		1/13/2023	6/7/2023	6/7/2023
COC	MCL	Result	Result	Dup. Result
1,1-DCE	7	**22**	**21**	**21**
cis-1,2-DCE	70	**130**	**120**	**120**
TCE	5	**24**	**21**	**20**
VC	2	**7.6**	**6.6**	**6.7**

35AWW26		1/13/2023	1/13/2023	6/6/2023
COC	MCL	Result	Dup. Result	Result
1,1-DCE	7	**72**	**76**	**94**
VC	2	**12**	**12**	**7.4**

03WW01		6/6/2023
COC	MCL	Result
TCE	5	**10**
VC	2	**3.7 J**

35AWW20		1/12/2023	6/5/2023
COC	MCL	Result	Result
1,1,2-TCA	5	**63**	**57**
1,1-DCE	7	**2,600**	**1,700**
1,2-DCA	5	**14**	**13**
Benzene	5	**7.9**	**7.3**
cis-1,2-DCE	70	**110**	**85**
TCE	5	**220**	**180**
VC	2	**990**	**940**

35AWW09		6/6/2023	6/6/2023
COC	MCL	Result	Dup. Result
PCE	5	**450**	**460**
TCE	5	**180**	**180**

LHSMW07		1/12/2023	6/5/2023
COC	MCL	Result	Result
1,1-DCE	7	**17**	**93**
VC	2	**56**	**54**

35AWW08		6/6/2023
COC	MCL	Result
TCE	5	**5.2**
VC	2	**2.6 J**

35AWW14		6/7/2023
COC	MCL	Result
1,1-DCE	7	**9.3**
TCE	5	**10**

35AWW18		6/7/2023
COC	MCL	Result
1,1-DCE	7	**29**

LHAAP-35A (58)
HARRELL ST
TACKET DR
AVE "F"
AVE "G"
8TH ST.
9TH ST.
10TH ST.
11TH ST.
6TH ST.
8H ST.
Goose Prairie Creek
35AWW03 (NS)
35AWW13
35AWW22
35AWW07R (NS)
35AWW10
35AWW15
LHSMW05 (NS)
LHSMW04 (NS, Dry)
35AWW12
35AWW21
1004TW001 (NS)
1004TW006 (NS)
35AWW11
LHSMW03 (NS)
35AWW16
35AWW27
35AWW23
35AWW06
35AWW17
35AWW19
35AWW04 (NS, Dry)
35AWW24
35AWW25 (NS, Dry)
207
102
102-R
L-6
101
GH-1
103

Aerial Photography Source: Google Earth, April 2018

0 100 200 400 Feet

Legend:
- Shallow Monitoring Well Location
- Shallow Temporary Monitoring Well Location
- Shallow Monitoring Well Location — No exceedances above MCLs for listed COCs
- Shallow Monitoring Well Location - Removed from RA(O)
- KB1® Plus Injection Point Locations (March 2018)
- KB1® Injection Point Locations (March 2018)
- Injection Locations (2013)
- (NS) Not Sampled
- Installation Restoration Program (IRP) Area
- Direction of Groundwater Flow (June 2023)
- Stream
- 401 Building Number

COC Exceedances in Shallow Groundwater (January - June 2023)

Figure 6

Year 9 Annual Remedial Action Operation Report (September 2022 – August 2023)
LHAAP-35A (58), Shops Area
Longhorn Army Ammunition Plant
Karnack, Texas

DRAWN BY: MRM
DATE: 9/27/2023
SCALE: As Shown
PROJECT NO.: JVPCIBH.0001.0010.01

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Legend
COC = Contaminant of Concern
MCL = Maximum Contaminant Level
DCA = Dichloroethane
DCE = Dichloroethene
PCE = Tetrachloroethene
TCA = Trichloroethane
TCE = Trichloroethene
VC = Vinyl Chloride
All results and MCLs are reported in micrograms per liter (µg/L)

COCs shown on this figure

COC	MCL
1,1-DCE	7
1,1,2-TCA	5
1,2-DCA	5
Benzene	5
cis-1,2-DCE	70
PCE	5
trans-1,2-DCE	100
TCE	5
VC	2

HARRELL ST.
32ND ST.
TACKET DR
AVE "F"
AVE "G"
8TH ST.
9TH ST.
10TH ST.
11TH ST.
6TH ST.
4TH ST.
LHAAP-35A (58)
35AWW01
35AWW05
Goose Prairie Creek
207
102
102
102-R
103
AVE "P"
L-6
101
GH-1
401

Aerial Photography Source: Google Earth, April 2018

0 100 200 400 Feet

Legend:
- Intermediate Monitoring Well Location, No exceedances above MCLs for listed COCs
- Installation Restoration Program (IRP) Area
- Stream
- *401* Building Number

Figure 7
COC Exceedances in Intermediate Groundwater (January – June 2023)

Year 9 Annual Remedial Action Operation Report (September 2022 – August 2023)
LHAAP-35A (58), Shops Area
Longhorn Army Ammunition Plant
Karnack, Texas

PROJECT NO: JVPCIBH.0001.0010.01
SCALE: As Shown
DATE: 9/12/2023
DRAWN BY: MRM

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Figures

Figure 8a: COC Concentration Trends 03WW01

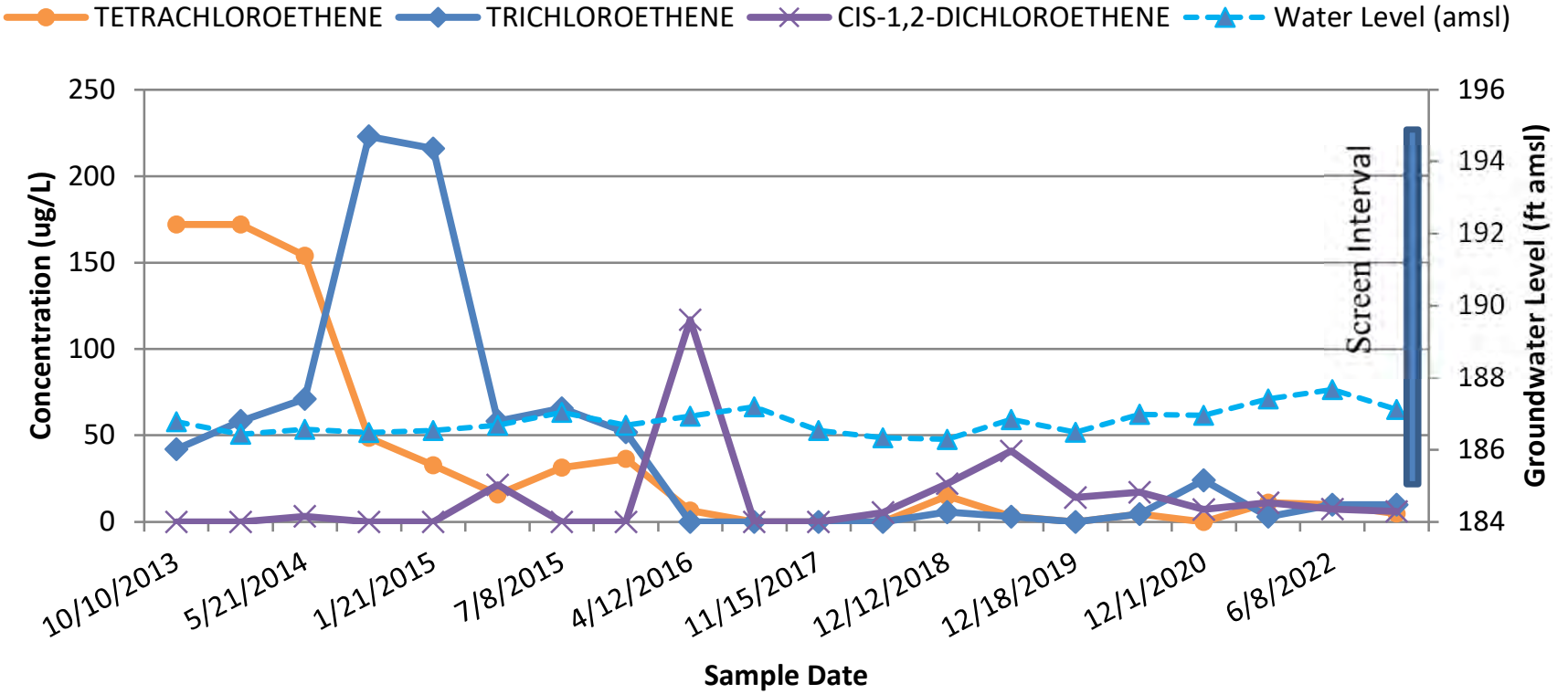


Figure 8b: COC Concentration Trends 35AWW08

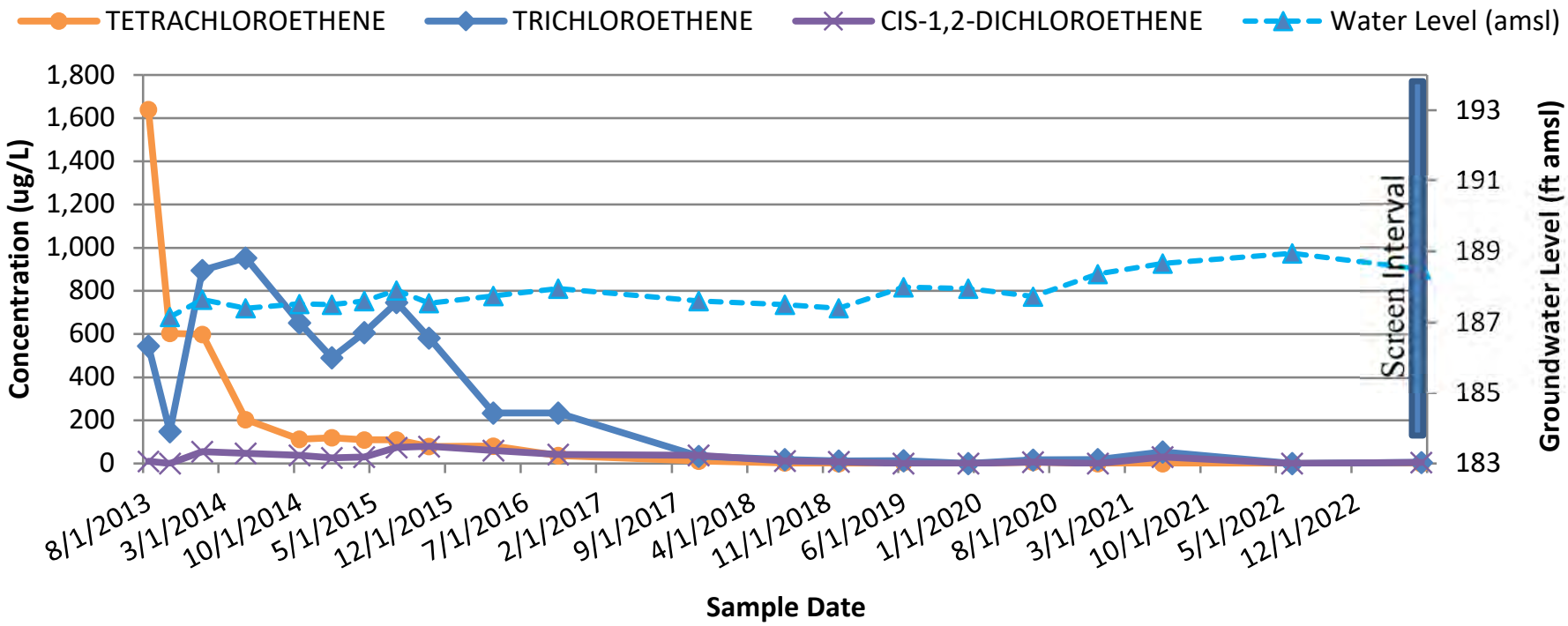


Figure 8c: COC Concentration Trends 35AWW09

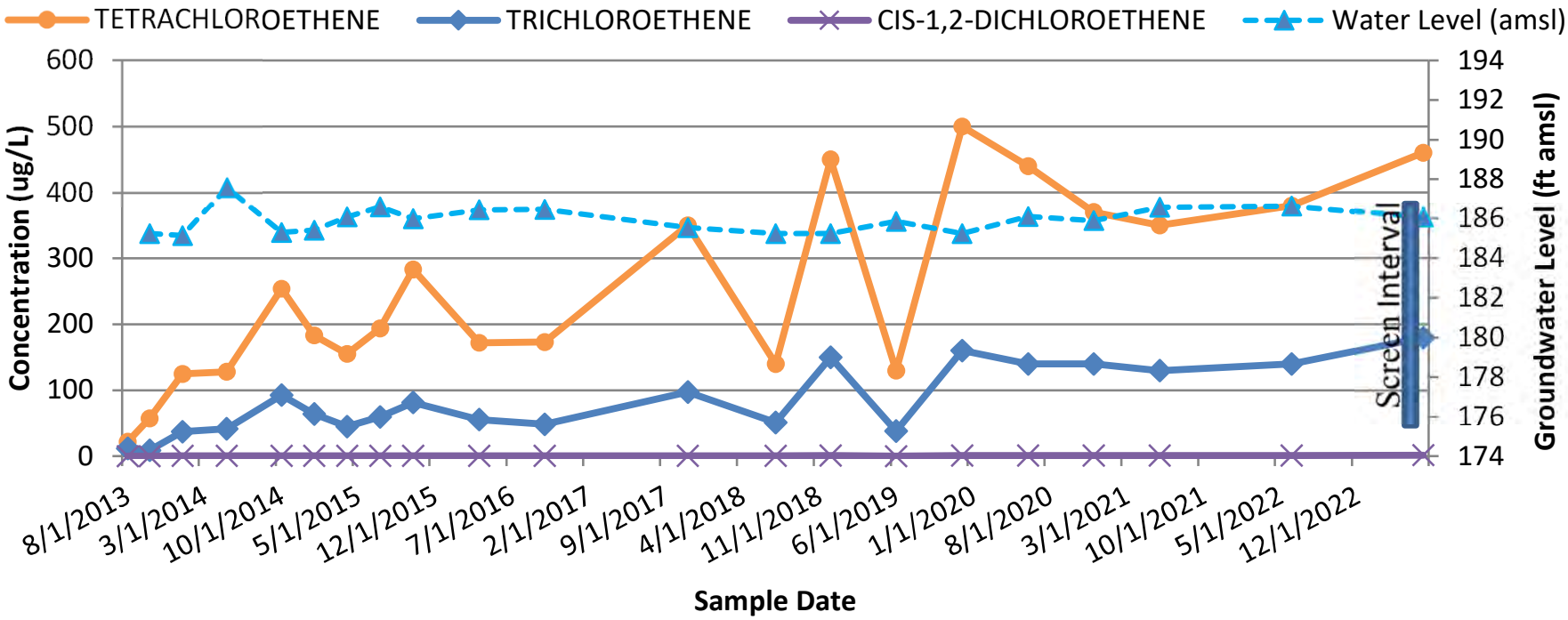
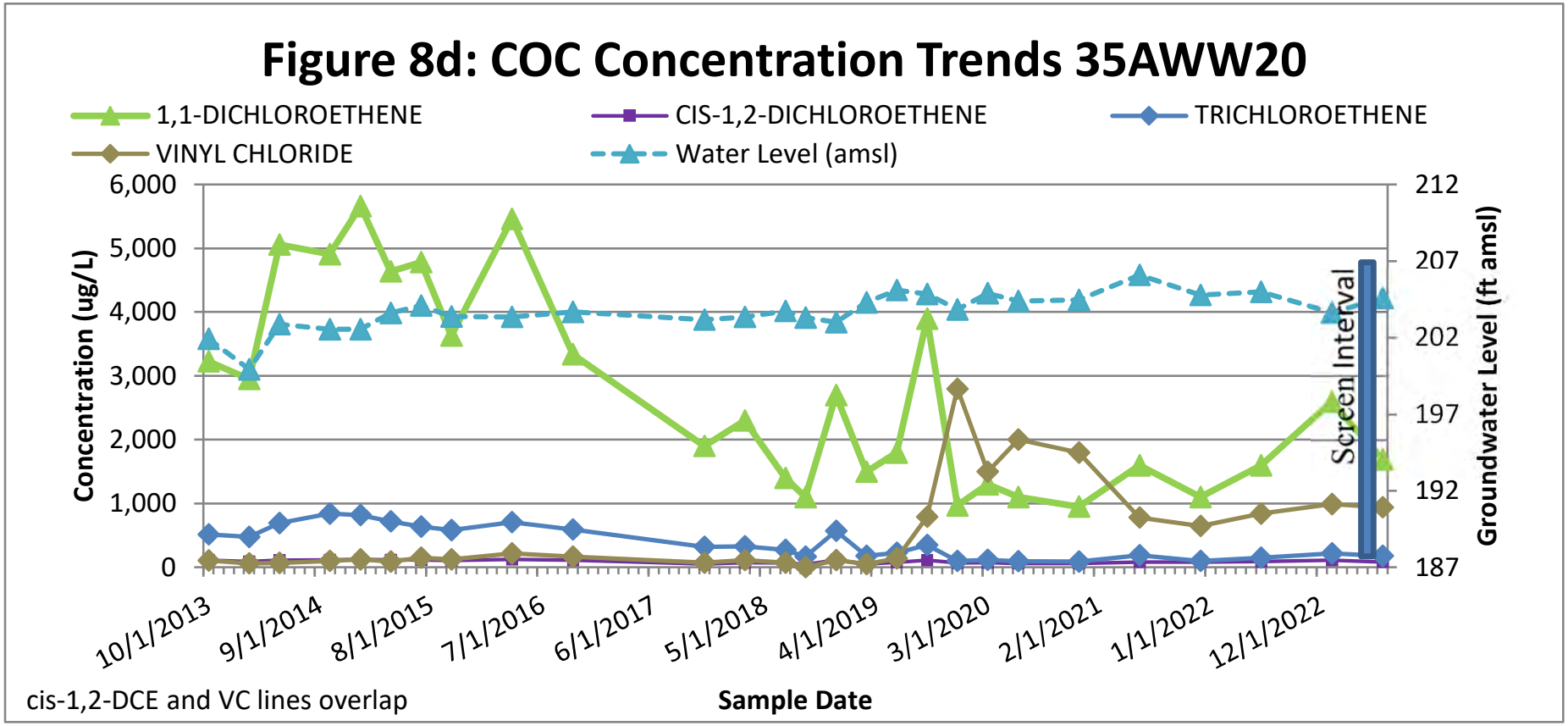
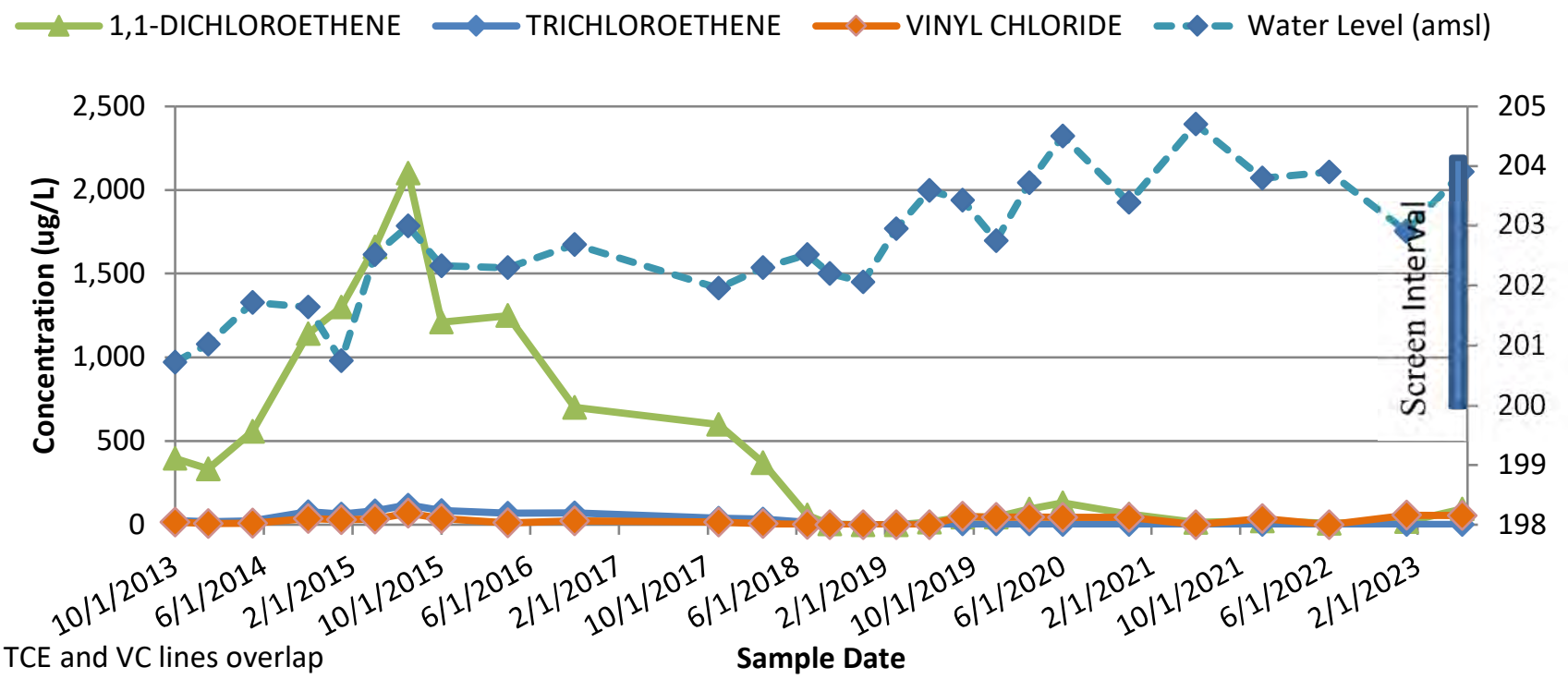


Figure 8d: COC Concentration Trends 35AWW20



cis-1,2-DCE and VC lines overlap

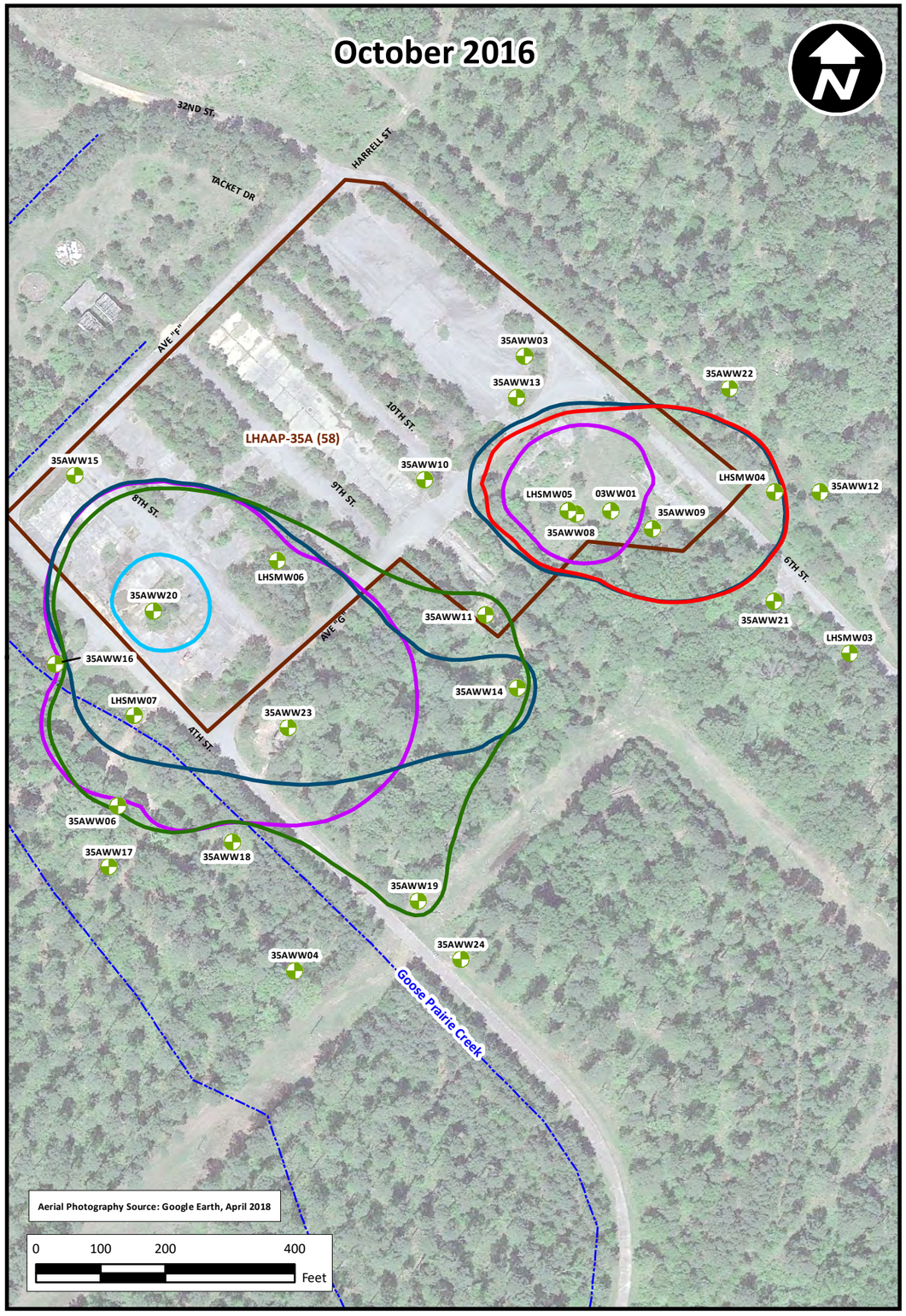
Figure 8e: COC Concentration Trends LHSMW07

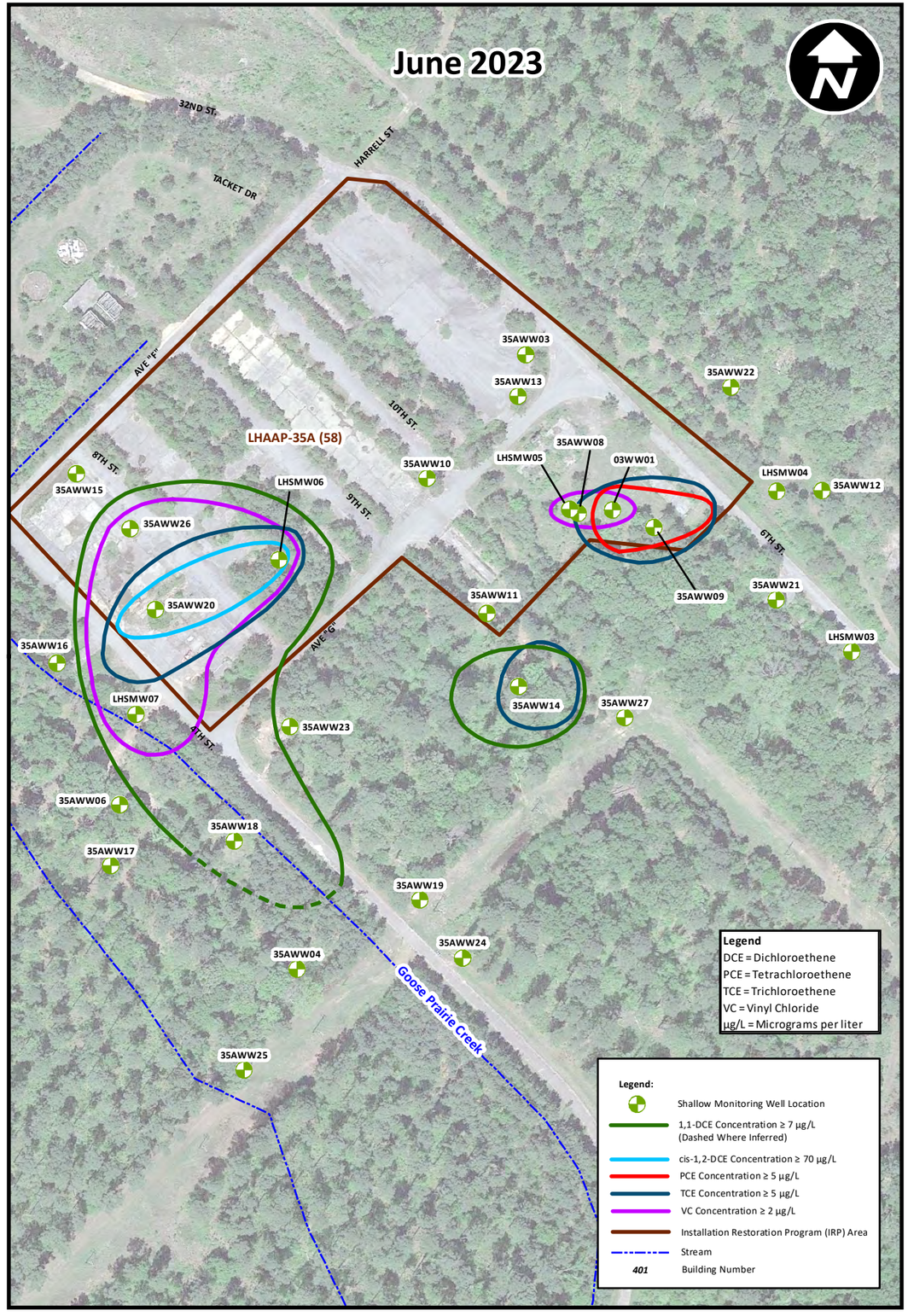


TCE and VC lines overlap

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Lateral Extent of Plume Comparison (October 2016 and June 2023)

Figure 9

Year 9 Annual Remedial Action Operation Report (September 2022 – August 2023)
LHAAP-35A (58), Shops Area
Longhorn Army Ammunition Plant
Karnack, Texas

DRAWN BY: MRM

DATE: 9/12/2023

SCALE: As Shown

PROJECT NO: JVPCIBH.0001.0010.01

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Figures

TABLES

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Table 1
Groundwater Elevation Data
LHAAP-35A (58), Longhorn Army Ammunition Plant, Karnack,
Texas Year 9 RA-O Report

Well Identification	Aquifer	Sampling Date	Screen Intervals (ft from Top of Casing)	Top of Casing Elevation (ft)	Depth to Water (ft from Top of Casing)	Groundwater Elevation (ft above msl)
03WW01	Shallow	10/9/2013	22.51-32.51	216.29	29.51	186.78
		1/29/2014	22.51-32.51	216.29	29.86	186.43
		5/20/2014	22.51-32.51	216.29	29.72	186.57
		10/27/2014	22.51-32.51	216.29	29.81	186.48
		1/20/2015	22.51-32.51	216.29	29.75	186.54
		4/14/2015	22.51-32.51	216.29	29.60	186.69
		7/7/2015	22.51-32.51	216.29	29.25	187.04
		10/7/2015	22.51-32.51	216.29	29.60	186.69
		4/12/2016	22.51-32.51	216.29	29.36	186.93
		10/3/2016	22.51-32.51	216.29	29.09	187.20
		12/18/2019	22.51-32.51	216.29	29.80	186.49
		7/18/2018	22.51-32.51	216.29	29.96	186.33
		12/11/2018	22.51-32.51	216.29	30.00	186.29
		6/3/2019	22.51-32.51	216.29	29.45	186.84
		12/18/2019	22.51-32.51	216.29	29.80	186.49
		6/23/2020	22.51-32.51	216.29	29.30	186.99
		12/1/2020	22.51-32.51	216.29	29.33	186.96
		6/2/2021	22.51-32.51	216.29	28.88	187.41
		6/8/2022	22.51-32.51	216.29	28.62	187.67
		6/6/2023	22.51-32.51	216.29	29.17	187.12
1004TW001	Shallow	5/28/2014	NA	NM	18.05	NC
		10/30/2014	NA	NM	18.40	NC
		7/8/2015	NA	NM	17.00	NC
		4/14/2016	NA	NM	17.75	NC
		10/4/2016	NA	NM	17.46	NC
		11/17/2017	NA	NM	17.84	NC
1004TW006	Shallow	1/31/2014	NA	NM	19.17	NC
35AWW01	Intermediate	10/11/2013	63.07-73.07	218.03	40.58	177.45
		1/31/2014	63.07-73.07	218.03	40.21	177.82
		5/29/2014	63.07-73.07	218.03	39.31	178.72
		10/31/2014	63.07-73.07	218.03	40.17	177.86
		1/27/2015	63.07-73.07	218.03	39.40	178.63
		4/10/2015	63.07-73.07	218.03	40.06	177.97
		7/10/2015	63.07-73.07	218.03	39.10	178.93
		10/6/2015	63.07-73.07	218.03	39.79	178.24
		4/12/2016	63.07-73.07	218.03	38.86	179.17
		10/5/2016	63.07-73.07	218.03	39.01	179.02
		12/20/2019	63.07-73.07	218.03	45.81	172.22
		7/2/2018	63.07-73.07	218.03	43.00	175.03
		12/13/2018	63.07-73.07	218.03	40.27	177.76
		6/10/2019	63.07-73.07	218.03	44.52	173.51
		12/18/2019	63.07-73.07	218.03	45.18	172.85
		6/25/2020	63.07-73.07	218.03	44.22	173.81
		12/7/2020	63.07-73.07	218.03	44.75	173.28
		6/1/2021	63.07-73.07	218.03	44.50	173.53
		6/6/2022	63.07-73.07	218.03	43.33	174.70
		6/6/2023	63.07-73.07	218.03	45.00	173.03
35AWW02	Deep	10/22/2013	128.59 - 138.59	218.05	42.30	175.75
		4/13/2016	128.59 - 138.59	218.05	42.26	175.79
		10/4/2016	128.59 - 138.59	218.05	42.70	175.35

Table 1
Groundwater Elevation Data
LHAAP-35A (58), Longhorn Army Ammunition Plant, Karnack,
Texas Year 9 RA-O Report

Well Identification	Aquifer	Sampling Date	Screen Intervals (ft from Top of Casing)	Top of Casing Elevation (ft)	Depth to Water (ft from Top of Casing)	Groundwater Elevation (ft above msl)
35AWW03	Shallow	2/1/2014	11.93 - 21.93	219.66	DRY	NC
		5/29/2014	11.93 - 21.93	219.66	DRY	NC
		10/30/2014	11.93 - 21.93	219.66	DRY	NC
		7/9/2015	11.93 - 21.93	219.66	DRY	NC
		4/13/2016	11.93 - 21.93	219.66	DRY	NC
		10/4/2016	11.93 - 21.93	219.66	DRY	NC
		11/16/2017	11.93 - 21.93	219.66	DRY	NC
35AWW04	Shallow	4/14/2016	16.51 - 26.51	220.66	DRY	NC
		10/4/2016	16.51 - 26.51	220.66	DRY	NC
		12/2/2001	16.51 - 26.51	220.66	DRY	NC
		6/8/2022	16.51 - 26.51	220.66	DRY	NC
		1/12/2023	16.51 - 26.51	220.66	DRY	NC
		6/6/2023	16.51 - 26.51	220.66	DRY	NC
35AWW05	Intermediate	10/16/2013	63.4 - 73.4	221.41	43.70	177.71
		2/1/2014	63.4 - 73.4	221.41	37.70	183.71
		5/22/2014	63.4 - 73.4	221.41	43.12	178.29
		10/21/2014	63.4 - 73.4	221.41	43.60	177.81
		1/23/2015	63.4 - 73.4	221.41	42.90	178.51
		4/8/2015	63.4 - 73.4	221.41	42.55	178.86
		7/10/2015	63.4 - 73.4	221.41	42.67	178.74
		10/5/2015	63.4 - 73.4	221.41	43.31	178.10
		4/14/2016	63.4 - 73.4	221.41	41.40	180.01
		10/5/2016	63.4 - 73.4	221.41	42.43	178.98
		11/13/2017	63.4 - 73.4	221.41	45.72	175.69
		7/2/2018	63.4 - 73.4	221.41	45.47	175.94
		12/12/2018	63.4 - 73.4	221.41	43.67	177.74
		6/10/2019	63.4 - 73.4	221.41	46.20	175.21
		12/3/2020	63.4 - 73.4	221.41	46.71	174.70
		6/2/2021	63.4 - 73.4	221.41	46.25	175.16
		12/2/2021	63.4 - 73.4	221.41	47.15	174.26
		6/9/2022	63.4 - 73.4	221.41	45.55	175.86
		1/13/2023	63.4 - 73.4	221.41	47.47	173.94
		6/7/2023	63.4 - 73.4	221.41	46.92	174.49
35AWW06	Shallow	10/15/2013	19.05 - 29.05	220.43	21.50	198.93
		1/30/2014	19.05 - 29.05	220.43	21.14	199.29
		5/21/2014	19.05 - 29.05	220.43	20.65	199.78
		10/29/2014	19.05 - 29.05	220.43	20.55	199.88
		1/28/2015	19.05 - 29.05	220.43	20.58	199.85
		4/15/2015	19.05 - 29.05	220.43	18.95	201.48
		7/7/2015	19.05 - 29.05	220.43	19.47	200.96
		10/7/2015	19.05 - 29.05	220.43	19.97	200.46
		4/11/2016	19.05 - 29.05	220.43	19.95	200.48
		10/3/2016	19.05 - 29.05	220.43	19.53	200.90
		9/11/2019	19.05 - 29.05	220.43	18.90	201.53
		12/19/2019	19.05 - 29.05	220.43	19.32	201.11
		3/24/2020	19.05 - 29.05	220.43	18.68	201.75
		9/26/2018	19.05 - 29.05	220.43	20.35	200.08
		12/11/2018	19.05 - 29.05	220.43	19.96	200.47
		3/19/2019	19.05 - 29.05	220.43	19.50	200.93
		6/4/2019	19.05 - 29.05	220.43	18.95	201.48
		9/11/2019	19.05 - 29.05	220.43	18.90	201.53
		12/19/2019	19.05 - 29.05	220.43	19.32	201.11
		3/24/2020	19.05 - 29.05	220.43	18.68	201.75
		4/7/2020	19.05 - 29.05	220.43	18.77	201.66
		6/24/2020	19.05 - 29.05	220.43	18.45	201.98
		12/1/2020	19.05 - 29.05	220.43	18.55	201.88
		6/3/2021	19.05 - 29.05	220.43	18.16	202.27
		12/1/2021	19.05 - 29.05	220.43	18.23	202.20
		6/8/2022	19.05 - 29.05	220.43	18.50	201.93
		1/12/2023	19.05 - 29.05	220.43	19.15	201.28
		6/5/2023	19.05 - 29.05	220.43	18.90	201.53

Table 1
Groundwater Elevation Data
LHAAP-25A (58), Longhorn Army Ammunition Plant, Karnack,
Texas Year 9 RA-O Report

Well Identification	Aquifer	Sampling Date	Screen Intervals (ft from Top of Casing)	Top of Casing Elevation (ft)	Depth to Water (ft from Top of Casing)	Groundwater Elevation (ft above msl)
35AWW07R	Shallow	10/16/2013	21.55 - 31.25	212.11	27.90	184.21
		2/3/2014	21.55 - 31.25	212.11	28.90	183.21
		5/29/2014	21.55 - 31.25	212.11	25.83	186.28
		10/30/2014	21.55 - 31.25	212.11	26.55	185.56
		7/10/2015	21.55 - 31.25	212.11	24.08	188.03
		4/13/2016	21.55 - 31.25	212.11	24.34	187.77
		10/4/2016	21.55 - 31.25	212.11	24.82	187.29
		11/17/2017	21.55 - 31.25	212.11	26.14	185.97
35AWW08	Shallow	10/9/2013	21.83 - 31.83	216.95	29.80	187.15
		1/29/2014	21.83 - 31.83	216.95	29.30	187.65
		5/20/2014	21.83 - 31.83	216.95	29.55	187.40
		10/27/2014	21.83 - 31.83	216.95	29.43	187.52
		1/20/2015	21.83 - 31.83	216.95	29.45	187.50
		4/14/2015	21.83 - 31.83	216.95	29.35	187.60
		7/7/2015	21.83 - 31.83	216.95	29.05	187.90
		10/7/2015	21.83 - 31.83	216.95	29.41	187.54
		4/12/2016	21.83 - 31.83	216.95	29.20	187.75
		10/3/2016	21.83 - 31.83	216.95	29.00	187.95
		12/18/2019	21.83 - 31.83	216.95	29.00	187.95
		7/18/2018	21.83 - 31.83	216.95	29.45	187.50
		12/11/2018	21.83 - 31.83	216.95	29.55	187.40
		6/3/2019	21.83 - 31.83	216.95	28.95	188.00
		12/18/2019	21.83 - 31.83	216.95	29.00	187.95
		6/23/2020	21.83 - 31.83	216.95	29.22	187.73
		12/1/2020	21.83 - 31.83	216.95	28.58	188.37
		6/2/2021	21.83 - 31.83	216.95	28.28	188.67
		6/8/2022	21.83 - 31.83	216.95	28.00	188.95
		6/6/2023	21.83 - 31.83	216.95	28.45	188.50
35AWW09	Shallow	10/10/2013	26.69 - 41.29	217.47	32.21	185.26
		1/29/2014	26.69 - 41.29	217.47	32.32	185.15
		5/20/2014	26.69 - 41.29	217.47	29.87	187.60
		10/27/2014	26.69 - 41.29	217.47	32.15	185.32
		1/21/2015	26.69 - 41.29	217.47	32.04	185.43
		4/14/2015	26.69 - 41.29	217.47	31.38	186.09
		7/7/2015	26.69 - 41.29	217.47	30.87	186.60
		10/7/2015	26.69 - 41.29	217.47	31.46	186.01
		4/12/2016	26.69 - 41.29	217.47	31.02	186.45
		10/3/2016	26.69 - 41.29	217.47	31.00	186.47
		12/18/2019	26.69 - 41.29	217.47	32.22	185.25
		7/16/2018	26.69 - 41.29	217.47	32.22	185.25
		12/11/2018	26.69 - 41.29	217.47	32.21	185.26
		6/3/2019	26.69 - 41.29	217.47	31.60	185.87
		12/18/2019	26.69 - 41.29	217.47	32.22	185.25
		6/23/2020	26.69 - 41.29	217.47	31.35	186.12
		12/7/2020	26.69 - 41.29	217.47	31.55	185.92
		6/2/2021	26.69 - 41.29	217.47	30.88	186.59
		6/6/2022	26.69 - 41.29	217.47	30.82	186.65
		6/6/2023	26.69 - 41.29	217.47	31.41	186.06

Table 1
Groundwater Elevation Data
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Well Identification	Aquifer	Sampling Date	Screen Intervals (ft from Top of Casing)	Top of Casing Elevation (ft)	Depth to Water (ft from Top of Casing)	Groundwater Elevation (ft above msl)
35AWW10	Shallow	10/10/2013	18.16 - 32.76	220.76	20.15	200.61
		1/29/2014	18.16 - 32.76	220.76	18.85	201.91
		5/20/2014	18.16 - 32.76	220.76	17.10	203.66
		10/28/2014	18.16 - 32.76	220.76	19.55	201.21
		1/27/2015	18.16 - 32.76	220.76	17.78	202.98
		4/14/2015	18.16 - 32.76	220.76	16.45	204.31
		7/7/2015	18.16 - 32.76	220.76	17.17	203.59
		10/7/2015	18.16 - 32.76	220.76	19.45	201.31
		4/13/2016	18.16 - 32.76	220.76	17.41	203.35
		10/3/2016	18.16 - 32.76	220.76	18.98	201.78
		12/19/2019	18.16 - 32.76	220.76	19.72	201.04
		7/12/2018	18.16 - 32.76	220.76	18.95	201.81
		12/12/2018	18.16 - 32.76	220.76	18.75	202.01
		6/4/2019	18.16 - 32.76	220.76	16.05	204.71
		12/19/2019	18.16 - 32.76	220.76	19.72	201.04
		6/29/2020	18.16 - 32.76	220.76	17.25	203.51
		12/7/2020	18.16 - 32.76	220.76	18.65	202.11
		6/1/2021	18.16 - 32.76	220.76	15.55	205.21
		6/6/2022	18.16 - 32.76	220.76	17.34	203.42
		6/6/2023	18.16 - 32.76	220.76	17.30	203.46
35AWW11	Shallow	10/15/2013	22.24 - 36.84	220.15	31.36	188.79
		2/3/2014	22.24 - 36.84	220.15	31.80	188.35
		5/21/2014	22.24 - 36.84	220.15	31.55	188.60
		10/29/2014	22.24 - 36.84	220.15	31.73	188.42
		1/27/2015	22.24 - 36.84	220.15	31.60	188.55
		4/14/2015	22.24 - 36.84	220.15	31.25	188.90
		7/8/2015	22.24 - 36.84	220.15	30.72	189.43
		10/7/2015	22.24 - 36.84	220.15	31.20	188.95
		4/12/2016	22.24 - 36.84	220.15	31.03	189.12
		10/3/2016	22.24 - 36.84	220.15	30.48	189.67
		9/11/2019	22.24 - 36.84	220.15	29.46	190.69
		12/18/2019	22.24 - 36.84	220.15	29.68	190.47
		3/24/2020	22.24 - 36.84	220.15	29.03	191.12
		9/27/2018	22.24 - 36.84	220.15	31.10	189.05
		12/11/2018	22.24 - 36.84	220.15	31.05	189.10
		3/19/2019	22.24 - 36.84	220.15	30.00	190.15
		6/3/2019	22.24 - 36.84	220.15	29.27	190.88
		9/11/2019	22.24 - 36.84	221.15	29.46	191.69
		12/18/2019	22.24 - 36.84	220.15	29.68	190.47
		3/24/2020	22.24 - 36.84	221.15	29.03	192.12
		6/23/2020	22.24 - 36.84	221.15	29.11	192.04
		12/1/2020	22.24 - 36.84	221.15	28.95	192.20
		6/2/2021	22.24 - 36.84	221.15	28.30	192.85
		12/1/2021	22.24 - 36.84	221.15	28.45	192.70
		6/8/2022	22.24 - 36.84	221.15	28.18	192.97
		1/12/2023	22.24 - 36.84	221.15	29.42	191.73
		6/5/2023	22.24 - 36.84	221.15	28.80	192.35

Table 1
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Well Identification	Aquifer	Sampling Date	Screen Intervals (ft from Top of Casing)	Top of Casing Elevation (ft)	Depth to Water (ft from Top of Casing)	Groundwater Elevation (ft above msl)
35AWW12	Shallow	10/18/2013	22.17 - 36.77	215.99	30.05	185.94
		1/31/2014	22.17 - 36.77	215.99	28.10	187.89
		5/29/2014	22.17 - 36.77	215.99	29.00	186.99
		10/30/2014	22.17 - 36.77	215.99	30.11	185.88
		1/28/2015	22.17 - 36.77	215.99	29.45	186.54
		4/7/2015	22.17 - 36.77	215.99	28.70	187.29
		7/9/2015	22.17 - 36.77	215.99	28.22	187.77
		10/5/2015	22.17 - 36.77	215.99	29.35	186.64
		4/12/2016	22.17 - 36.77	215.99	28.54	187.45
		10/5/2016	22.17 - 36.77	215.99	28.87	187.12
		12/18/2019	22.17 - 36.77	215.99	30.33	185.66
		6/29/2018	22.17 - 36.77	215.99	30.05	185.94
		12/14/2018	22.17 - 36.77	215.99	29.66	186.33
		6/10/2019	22.17 - 36.77	215.99	28.59	187.40
		12/18/2019	22.17 - 36.77	215.99	30.33	185.66
		6/25/2020	22.17 - 36.77	215.99	28.95	187.04
		12/7/2020	22.17 - 36.77	215.99	29.72	186.27
		6/2/2021	22.17 - 36.77	215.99	28.00	187.99
		6/6/2022	22.17 - 36.77	215.99	29.22	186.77
		6/5/2023	22.17 - 36.77	215.99	29.50	186.49
35AWW13	Shallow	10/11/2013	24.72 - 39.32	219.12	25.07	194.05
		2/3/2014	24.72 - 39.32	219.12	24.91	194.21
		5/22/2014	24.72 - 39.32	219.12	23.80	195.32
		10/21/2014	24.72 - 39.32	219.12	24.85	194.27
		1/23/2015	24.72 - 39.32	219.12	24.70	194.42
		4/8/2015	24.72 - 39.32	219.12	23.72	195.40
		7/9/2015	24.72 - 39.32	219.12	23.39	195.73
		10/6/2015	24.72 - 39.32	219.12	24.61	194.51
		4/13/2016	24.72 - 39.32	219.12	24.10	195.02
		10/6/2016	24.72 - 39.32	219.12	24.41	194.71
		12/18/2019	24.72 - 39.32	219.12	25.05	194.07
		6/29/2018	24.72 - 39.32	219.12	24.37	194.75
		12/11/2018	24.72 - 39.32	219.12	25.03	194.09
		6/7/2019	24.72 - 39.32	219.12	23.08	196.04
		12/18/2019	24.72 - 39.32	219.12	25.05	194.07
		6/29/2020	24.72 - 39.32	219.12	23.32	195.80
		12/7/2020	24.72 - 39.32	219.12	24.61	194.51
		6/1/2021	24.72 - 39.32	219.12	22.95	196.17
		6/6/2022	24.72 - 39.32	219.12	23.63	195.49
		6/6/2023	24.72 - 39.32	219.12	23.45	195.67

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Well Identification	Aquifer	Sampling Date	Screen Intervals (ft from Top of Casing)	Top of Casing Elevation (ft)	Depth to Water (ft from Top of Casing)	Groundwater Elevation (ft above msl)
35AWW14	Shallow	10/18/2013	17.06 - 31.76	218.41	30.80	187.61
		1/31/2014	17.06 - 31.76	218.41	30.95	187.46
		5/28/2014	17.06 - 31.76	218.41	30.57	187.84
		10/29/2014	17.06 - 31.76	218.41	31.00	187.41
		1/20/2015	17.06 - 31.76	218.41	30.85	187.56
		4/7/2015	17.06 - 31.76	218.41	30.48	187.93
		7/8/2015	17.06 - 31.76	218.41	29.75	188.66
		10/1/2015	17.06 - 31.76	218.41	30.19	188.22
		4/12/2016	17.06 - 31.76	218.41	29.67	188.74
		10/5/2016	17.06 - 31.76	218.41	29.31	189.10
		12/19/2019	17.06 - 31.76	218.41	29.55	188.86
		7/18/2018	17.06 - 31.76	218.41	29.58	188.83
		12/13/2018	17.06 - 31.76	218.41	29.55	188.86
		6/7/2019	17.06 - 31.76	218.41	28.65	189.76
		12/19/2019	17.06 - 31.76	218.41	29.55	188.86
		6/25/2020	17.06 - 31.76	218.41	28.77	189.64
		12/7/2020	17.06 - 31.76	218.41	30.75	187.66
		6/1/2021	17.06 - 31.76	218.41	27.80	190.61
		6/6/2022	17.06 - 31.76	218.41	29.41	189.00
		6/7/2023	17.06 - 31.76	218.41	29.92	188.49
35AWW15	Shallow	10/16/2013	25.67 - 40.37	222.97	20.65	202.32
		2/1/2014	25.67 - 40.37	222.97	20.40	202.57
		5/28/2014	25.67 - 40.37	222.97	19.64	203.33
		10/21/2014	25.67 - 40.37	222.97	20.18	202.79
		1/23/2015	25.67 - 40.37	222.97	20.15	202.82
		4/10/2015	25.67 - 40.37	222.97	19.31	203.66
		7/10/2015	25.67 - 40.37	222.97	18.95	204.02
		10/6/2015	25.67 - 40.37	222.97	19.56	203.41
		4/14/2016	25.67 - 40.37	222.97	19.51	203.46
		10/5/2016	25.67 - 40.37	222.97	19.34	203.63
		12/20/2019	25.67 - 40.37	222.97	19.87	203.10
		7/18/2018	25.67 - 40.37	222.97	19.50	203.47
		12/12/2018	25.67 - 40.37	222.97	16.55	206.42
		6/7/2019	25.67 - 40.37	222.97	17.77	205.20
		12/20/2019	25.67 - 40.37	222.97	19.87	203.10
		6/25/2020	25.67 - 40.37	222.97	17.93	205.04
		12/7/2020	25.67 - 40.37	222.97	17.05	205.92
		6/1/2021	25.67 - 40.37	222.97	16.95	206.02
		12/2/2021	25.67 - 40.37	222.97	22.88	200.09
		6/9/2022	25.67 - 40.37	222.97	18.05	204.92
		1/13/2023	25.67 - 40.37	222.97	19.50	203.47
		6/7/2023	25.67 - 40.37	222.97	18.20	204.77
35AWW16	Shallow	10/22/2013	21.75 - 36.45	220.88	19.58	201.30
		1/31/2014	21.75 - 36.45	220.88	19.28	201.60
		5/28/2014	21.75 - 36.45	220.88	18.60	202.28
		10/30/2014	21.75 - 36.45	220.88	19.96	200.92
		1/27/2015	21.75 - 36.45	220.88	18.90	201.98
		4/7/2015	21.75 - 36.45	220.88	18.22	202.66
		7/9/2015	21.75 - 36.45	220.88	17.79	203.09
		10/6/2015	21.75 - 36.45	220.88	18.20	202.68
		4/12/2016	21.75 - 36.45	220.88	18.43	202.45
		10/4/2016	21.75 - 36.45	220.88	17.90	202.98
		12/19/2019	21.75 - 36.45	220.88	18.00	202.88
		6/29/2018	21.75 - 36.45	220.88	18.10	202.78
		12/12/2018	21.75 - 36.45	220.88	18.26	202.62
		6/10/2019	21.75 - 36.45	220.88	17.30	203.58
		12/19/2019	21.75 - 36.45	220.88	18.00	202.88
		6/25/2020	21.75 - 36.45	220.88	16.68	204.20
		12/1/2020	21.75 - 36.45	220.88	17.25	203.63
		6/1/2021	21.75 - 36.45	220.88	16.28	204.60
		6/9/2022	21.75 - 36.45	220.88	16.88	204.00
		6/7/2023	21.75 - 36.45	220.88	17.08	203.80

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Well Identification	Aquifer	Sampling Date	Screen Intervals (ft from Top of Casing)	Top of Casing Elevation (ft)	Depth to Water (ft from Top of Casing)	Groundwater Elevation (ft above msl)
35AWW17	Shallow	10/18/2013	26.97 - 41.67	221.44	28.00	193.44
		2/1/2014	26.97 - 41.67	221.44	36.90	184.54
		5/29/2014	26.97 - 41.67	221.44	26.60	194.84
		10/31/2014	26.97 - 41.67	221.44	26.80	194.64
		1/28/2015	26.97 - 41.67	221.44	26.00	195.44
		4/10/2015	26.97 - 41.67	221.44	25.65	195.79
		7/10/2015	26.97 - 41.67	221.44	25.42	196.02
		10/5/2015	26.97 - 41.67	221.44	25.93	195.51
		4/11/2016	26.97 - 41.67	221.44	25.60	195.84
		10/3/2016	26.97 - 41.67	221.44	25.30	196.14
		12/18/2019	26.97 - 41.67	221.44	24.00	197.44
		6/29/2018	26.97 - 41.67	221.44	25.07	196.37
		12/17/2018	26.97 - 41.67	221.44	24.78	196.66
		6/10/2019	26.97 - 41.67	221.44	24.28	197.16
		12/18/2019	26.97 - 41.67	221.44	24.00	197.44
		6/29/2020	26.97 - 41.67	221.44	23.40	198.04
		12/1/2020	26.97 - 41.67	221.44	23.12	198.32
		6/3/2021	26.97 - 41.67	221.44	23.02	198.42
		6/9/2022	26.97 - 41.67	221.44	22.61	198.83
		6/7/2023	26.97 - 41.67	221.44	23.17	198.27
35AWW18	Shallow	10/18/2013	26.85 - 41.55	221.75	28.35	193.40
		2/1/2014	26.85 - 41.55	221.75	27.90	193.85
		5/29/2014	26.85 - 41.55	221.75	27.65	194.10
		10/31/2014	26.85 - 41.55	221.75	27.50	194.25
		1/28/2015	26.85 - 41.55	221.75	27.11	194.64
		4/10/2015	26.85 - 41.55	221.75	25.90	195.85
		7/10/2015	26.85 - 41.55	221.75	26.42	195.33
		10/5/2015	26.85 - 41.55	221.75	26.67	195.08
		4/11/2016	26.85 - 41.55	221.75	26.40	195.35
		10/5/2016	26.85 - 41.55	221.75	25.93	195.82
		12/18/2019	26.85 - 41.55	221.75	24.82	196.93
		6/29/2018	26.85 - 41.55	221.75	24.55	197.20
		12/17/2018	26.85 - 41.55	221.75	25.59	196.16
		6/4/2019	26.85 - 41.55	221.75	24.85	196.90
		12/18/2019	26.85 - 41.55	221.75	24.82	196.93
		6/25/2020	26.85 - 41.55	221.75	24.17	197.58
		12/1/2020	26.85 - 41.55	221.75	23.95	197.80
		6/1/2021	26.85 - 41.55	221.75	23.63	198.12
		6/9/2022	26.85 - 41.55	221.75	23.27	198.48
		6/7/2023	26.85 - 41.55	221.75	23.59	198.16

Table 1
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Well Identification	Aquifer	Sampling Date	Screen Intervals (ft from Top of Casing)	Top of Casing Elevation (ft)	Depth to Water (ft from Top of Casing)	Groundwater Elevation (ft above msl)
35AWW19	Shallow	10/22/2013	16.89 - 31.39	219.71	30.65	189.06
		1/31/2014	16.89 - 31.39	219.71	30.68	189.03
		5/28/2014	16.89 - 31.39	219.71	30.30	189.41
		10/29/2014	16.89 - 31.39	219.71	30.45	189.26
		1/20/2015	16.89 - 31.39	219.71	30.15	189.56
		4/7/2015	16.89 - 31.39	219.71	29.84	189.87
		7/8/2015	16.89 - 31.39	219.71	29.16	190.55
		10/1/2015	16.89 - 31.39	219.71	29.46	190.25
		4/12/2016	16.89 - 31.39	219.71	28.87	190.84
		10/5/2016	16.89 - 31.39	219.71	28.13	191.58
		9/11/2019	16.89 - 31.39	219.71	25.55	194.16
		12/18/2019	16.89 - 31.39	219.71	25.90	193.81
		3/24/2020	16.89 - 31.39	219.71	26.00	192.34
		9/27/2018	16.89 - 31.39	219.71	27.79	191.92
		12/10/2018	16.89 - 31.39	219.71	27.58	192.13
		3/19/2019	16.89 - 31.39	219.71	27.00	192.71
		6/3/2019	16.89 - 31.39	219.71	26.45	193.26
		9/11/2019	16.89 - 31.39	219.71	25.55	194.16
		12/18/2019	16.89 - 31.39	219.71	25.90	193.81
		3/24/2020	16.89 - 31.39	219.71	26.00	193.71
		6/24/2020	16.89 - 31.39	219.71	24.92	194.79
		12/3/2020	16.89 - 31.39	219.71	24.63	195.08
		6/3/2021	16.89 - 31.39	219.71	23.98	195.73
		12/1/2021	16.89 - 31.39	219.71	23.88	195.83
		6/8/2022	16.89 - 31.39	219.71	23.80	195.91
		1/12/2023	16.89 - 31.39	219.71	25.05	194.66
		6/5/2023	16.89 - 31.39	219.71	24.13	195.58

Table 1
Groundwater Elevation Data
LHAAP-35A (58), Longhorn Army Ammunition Plant, Karnack,
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Well Identification	Aquifer	Sampling Date	Screen Intervals (ft from Top of Casing)	Top of Casing Elevation (ft)	Depth to Water (ft from Top of Casing)	Groundwater Elevation (ft above msl)
35AWW20	Shallow	10/15/2013	20.94 - 35.64	223.05	21.12	201.93
		2/3/2014	20.94 - 35.64	223.05	23.12	199.93
		5/21/2014	20.94 - 35.64	223.05	20.18	202.87
		10/29/2014	20.94 - 35.64	223.05	20.50	202.55
		1/27/2015	20.94 - 35.64	223.05	20.50	202.55
		4/15/2015	20.94 - 35.64	223.05	19.45	203.60
		7/8/2015	20.94 - 35.64	223.05	18.95	204.10
		10/8/2015	20.94 - 35.64	223.05	19.67	203.38
		4/13/2016	20.94 - 35.64	223.05	19.69	203.36
		10/4/2016	20.94 - 35.64	223.05	19.38	203.67
		9/11/2019	20.94 - 35.64	223.05	18.20	204.85
		12/19/2019	20.94 - 35.64	223.05	19.20	203.85
		3/24/2020	20.94 - 35.64	223.05	18.15	204.90
		9/26/2018	20.94 - 35.64	223.05	19.75	203.30
		12/10/2018	20.94 - 35.64	223.05	20.03	203.02
		3/19/2019	20.94 - 35.64	223.05	18.76	204.29
		6/4/2019	20.94 - 35.64	223.05	17.95	205.10
		9/11/2019	20.94 - 35.64	223.05	18.20	204.85
		12/19/2019	20.94 - 35.64	223.05	19.20	203.85
		3/24/2020	20.94 - 35.64	223.05	18.15	204.90
		6/24/2020	20.94 - 35.64	223.05	18.65	204.40
		12/3/2020	20.94 - 35.64	223.05	18.58	204.47
		6/3/2021	20.94 - 35.64	223.05	16.95	206.10
		12/1/2021	20.94 - 35.64	223.05	18.27	204.78
		6/8/2022	20.94 - 35.64	223.05	18.07	204.98
		1/12/2023	20.94 - 35.64	223.05	19.42	203.63
		6/5/2023	20.94 - 35.64	223.05	18.48	204.57
35AWW21	Shallow	10/16/2013	27.56 - 42.26	219.05	34.36	184.69
		2/4/2014	27.56 - 42.26	219.05	33.55	185.50
		5/22/2014	27.56 - 42.26	219.05	32.40	186.65
		10/21/2014	27.56 - 42.26	219.05	33.90	185.15
		1/23/2015	27.56 - 42.26	219.05	33.06	185.99
		4/8/2015	27.56 - 42.26	219.05	31.73	187.32
		7/9/2015	27.56 - 42.26	219.05	31.11	187.94
		10/6/2015	27.56 - 42.26	219.05	32.74	186.31
		4/13/2016	27.56 - 42.26	219.05	31.44	187.61
		10/4/2016	27.56 - 42.26	219.05	32.10	186.95
		12/20/2019	27.56 - 42.26	219.05	34.18	184.87
		6/29/2018	27.56 - 42.26	219.05	33.77	185.28
		12/13/2018	27.56 - 42.26	219.05	32.90	186.15
		6/10/2019	27.56 - 42.26	219.05	31.38	187.67
		12/20/2019	27.56 - 42.26	219.05	34.18	184.87
		6/29/2020	27.56 - 42.26	219.05	32.28	186.77
		12/7/2020	27.56 - 42.26	219.05	33.33	185.72
		6/1/2021	27.56 - 42.26	219.05	30.70	188.35
		6/9/2022	27.56 - 42.26	219.05	32.70	186.35
		6/6/2023	27.56 - 42.26	219.05	32.48	186.57

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Well Identification	Aquifer	Sampling Date	Screen Intervals (ft from Top of Casing)	Top of Casing Elevation (ft)	Depth to Water (ft from Top of Casing)	Groundwater Elevation (ft above msl)
35AWW22	Shallow	10/22/2013	22.27 - 36.77	219.14	32.13	187.01
		1/31/2014	22.27 - 36.77	219.14	32.08	187.06
		5/28/2014	22.27 - 36.77	219.14	32.00	187.14
		10/29/2014	22.27 - 36.77	219.14	32.45	186.69
		1/20/2015	22.27 - 36.77	219.14	33.32	185.82
		4/8/2015	22.27 - 36.77	219.14	32.09	187.05
		7/9/2015	22.27 - 36.77	219.14	31.72	187.42
		10/5/2015	22.27 - 36.77	219.14	32.30	186.84
		4/12/2016	22.27 - 36.77	219.14	32.00	187.14
		10/5/2016	22.27 - 36.77	219.14	31.91	187.23
		12/18/2019	22.27 - 36.77	219.14	32.87	186.27
		7/18/2018	22.27 - 36.77	219.14	33.80	185.34
		12/14/2018	22.27 - 36.77	219.14	32.72	186.42
		6/10/2019	22.27 - 36.77	219.14	32.40	186.74
		12/18/2019	22.27 - 36.77	219.14	32.87	186.27
		6/24/2020	22.77 - 36.77	219.14	32.20	186.94
		12/7/2020	22.77 - 36.77	219.14	32.27	186.87
		6/2/2021	22.77 - 36.77	219.14	32.10	187.04
		6/6/2022	22.77 - 36.77	219.14	32.08	187.06
		6/5/2023	22.77 - 36.77	219.14	32.79	186.35
35AWW23	Shallow	7/17/2018	28.2 - 43.2	223.07	23.55	199.52
		12/10/2018	28.2 - 43.2	223.07	20.71	202.36
		6/3/2019	28.2 - 43.2	223.07	23.97	199.10
		9/11/2019	28.2 - 43.2	223.07	22.00	201.07
		12/18/2019	28.2 - 43.2	223.07	23.45	199.62
		3/24/2020	28.2 - 43.2	223.07	22.60	200.47
		6/24/2020	28.2 - 43.2	223.07	22.44	200.63
		12/3/2020	28.2 - 43.2	223.07	22.55	200.52
		6/3/2021	28.2 - 43.2	223.07	23.05	200.02
		12/1/2021	28.2 - 43.2	223.07	22.22	200.85
		6/8/2022	28.2 - 43.2	223.07	22.53	200.54
		1/12/2023	28.2 - 43.2	223.07	23.41	199.66
		6/5/2023	28.2 - 43.2	223.07	22.27	200.80
35AWW24	Shallow	7/17/2018	25.10 - 35.10	219.04	26.60	192.44
		9/27/2018	25.10 - 35.10	219.04	20.11	198.93
		12/10/2018	25.10 - 35.10	219.04	26.75	192.29
		3/19/2019	25.10 - 35.10	219.04	26.06	192.98
		6/3/2019	25.10 - 35.10	219.04	25.47	193.57
		12/19/2019	25.10 - 35.10	219.04	25.09	193.95
		6/25/2020	25.10 - 35.10	219.04	24.25	194.79
		12/3/2020	25.10 - 35.10	219.04	23.85	195.19
		6/1/2021	25.10 - 35.10	219.04	23.15	195.89
		12/2/2021	25.10 - 35.10	219.04	23.15	195.89
		6/8/2022	25.10 - 35.10	219.04	23.27	195.77
		1/13/2023	25.10 - 35.10	219.04	24.40	194.64
		6/7/2023	25.10 - 35.10	219.04	23.27	195.77
35AWW25	Shallow	1/13/2023	16.14 - 26.14	220.54	DRY	NC
		6/6/2023	16.14 - 26.14	220.54	DRY	NC
35AWW26	Shallow	1/13/2023	23.53 - 33.53	223.97	20.44	203.53
		6/6/2023	23.53 - 33.53	223.97	18.79	205.18
35AWW27	Shallow	8/2/2023	24.19 - 34.19	218.60	28.50	190.10
LHSMW03	Shallow	10/9/2013	24.82 - 34.82	217.26	DRY	NC
		2/3/2014	24.82 - 34.82	217.26	31.00	186.26
		5/28/2014	24.82 - 34.82	217.26	29.40	187.86
		10/29/2014	24.82 - 34.82	217.26	31.20	186.06
		7/8/2015	24.82 - 34.82	217.26	28.21	189.05
		4/13/2016	24.82 - 34.82	217.26	28.75	188.51
		10/4/2016	24.82 - 34.82	217.26	29.51	187.75
		11/17/2017	24.82 - 34.82	217.26	31.36	185.90

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Groundwater Elevation Data
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Well Identification	Aquifer	Sampling Date	Screen Intervals (ft from Top of Casing)	Top of Casing Elevation (ft)	Depth to Water (ft from Top of Casing)	Groundwater Elevation (ft above msl)
LHSMW04	Shallow	10/9/2013	21.11 - 31.11	216.95	DRY	NC
		1/31/2014	21.11 - 31.11	216.95	DRY	NC
		5/20/2014	21.11 - 31.11	216.95	DRY	NC
		10/30/2014	21.11 - 31.11	216.95	DRY	NC
		1/20/2015	21.11 - 31.11	216.95	DRY	NC
		4/7/2015	21.11 - 31.11	216.95	DRY	NC
		7/8/2015	21.11 - 31.11	216.95	DRY	NC
		10/1/2015	21.11 - 31.11	216.95	DRY	NC
		3/28/2016	21.11 - 31.11	216.95	29.72	187.23
		4/12/2016	21.11 - 31.11	216.95	29.65	187.30
		10/4/2016	21.11 - 31.11	216.95	DRY	NC
		12/19/2019	21.11 - 31.11	216.95	DRY	NC
		7/17/2018	21.11 - 31.11	216.95	DRY	NC
		12/11/2018	21.11 - 31.11	216.95	DRY	NC
		6/4/2019	21.11 - 31.11	216.95	DRY	NC
		12/19/2019	21.11 - 31.11	216.95	DRY	NC
		6/24/2020	21.11 - 31.11	216.95	DRY	NC
		12/3/2020	21.11 - 31.11	216.95	DRY	NC
		6/3/2021	21.11 - 31.11	216.95	DRY	NC
		12/2/2021	21.11 - 31.11	216.95	DRY	NC
		6/9/2022	21.11 - 31.11	216.95	DRY	NC
		1/12/2023	21.11 - 31.11	216.95	DRY	NC
		6/6/2023	21.11 - 31.11	216.95	DRY	NC
LHSMW05	Shallow	10/9/2013	14.32 - 24.32	217.59	DRY	NC
		1/31/2014	14.32 - 24.32	217.59	DRY	NC
		5/20/2014	14.32 - 24.32	217.59	DRY	NC
		10/30/2014	14.32 - 24.32	217.59	DRY	NC
		1/20/2015	14.32 - 24.32	217.59	DRY	NC
		4/7/2015	14.32 - 24.32	217.59	DRY	NC
		7/10/2015	14.32 - 24.32	217.59	DRY	NC
		10/1/2015	14.32 - 24.32	217.59	DRY	NC
		4/12/2016	14.32 - 24.32	217.59	DRY	NC
		10/4/2016	14.32 - 24.32	217.59	DRY	NC
LHSMW06	Shallow	10/16/2013	13.32 - 23.32	223.18	20.97	202.21
		1/30/2014	13.32 - 23.32	223.18	20.50	202.68
		5/28/2014	13.32 - 23.32	223.18	19.30	203.88
		10/29/2014	13.32 - 23.32	223.18	19.81	203.37
		1/20/2015	13.32 - 23.32	223.18	19.92	203.26
		4/7/2015	13.32 - 23.32	223.18	18.92	204.26
		7/8/2015	13.32 - 23.32	223.18	18.21	204.97
		10/1/2015	13.32 - 23.32	223.18	18.98	204.20
		4/12/2016	13.32 - 23.32	223.18	19.11	204.07
		10/5/2016	13.32 - 23.32	223.18	18.91	204.27
		11/16/2017	13.32 - 23.32	223.18	19.31	203.87
		7/2/2018	13.32 - 23.32	223.18	18.80	204.38
		12/13/2018	13.32 - 23.32	223.18	19.18	204.00
		6/7/2019	13.32 - 23.32	223.18	16.93	206.25
		12/20/2019	13.32 - 23.32	223.18	18.72	204.46
		6/25/2020	13.32 - 23.32	223.18	17.28	205.90
		12/3/2020	13.32 - 23.32	223.18	18.53	204.65
		6/3/2021	13.32 - 23.32	223.18	16.07	207.11
		12/2/2021	13.32 - 23.32	223.18	18.17	205.01
		6/9/2022	13.32 - 23.32	223.18	17.77	205.41
		1/13/2023	13.32 - 23.32	223.18	19.37	203.81
		6/7/2023	13.32 - 23.32	223.18	17.72	205.46

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Well Identification	Aquifer	Sampling Date	Screen Intervals (ft from Top of Casing)	Top of Casing Elevation (ft)	Depth to Water (ft from Top of Casing)	Groundwater Elevation (ft above msl)
LHSMW07	Shallow	10/15/2013	19.73 - 29.73	221.27	20.55	200.72
		1/30/2014	19.73 - 29.73	221.27	20.25	201.02
		5/22/2014	19.73 - 29.73	221.27	19.55	201.72
		10/29/2014	19.73 - 29.73	221.27	19.63	201.64
		1/28/2015	19.73 - 29.73	221.27	20.53	200.74
		4/15/2015	19.73 - 29.73	221.27	18.75	202.52
		7/7/2015	19.73 - 29.73	221.27	18.27	203.00
		10/8/2015	19.73 - 29.73	221.27	18.94	202.33
		4/14/2016	19.73 - 29.73	221.27	18.97	202.30
		10/4/2016	19.73 - 29.73	221.27	18.58	202.69
		9/11/2019	19.73 - 29.73	221.27	17.84	203.43
		12/19/2019	19.73 - 29.73	221.27	18.52	202.75
		3/24/2020	19.73 - 29.73	221.27	17.55	202.52
		9/26/2018	19.73 - 29.73	221.27	19.07	202.20
		12/10/2018	19.73 - 29.73	221.27	19.21	202.06
		3/19/2019	19.73 - 29.73	221.27	18.32	202.95
		6/3/2019	19.73 - 29.73	221.27	17.68	203.59
		9/11/2019	19.73 - 29.73	221.27	17.84	203.43
		12/19/2019	19.73 - 29.73	221.27	18.52	202.75
		3/24/2020	19.73 - 29.73	221.27	17.55	203.72
		6/24/2020	19.73 - 29.73	221.27	17.22	204.05
		12/3/2020	19.73 - 29.73	221.27	17.88	203.39
		6/2/2021	19.73 - 29.73	221.27	16.57	204.70
		12/1/2021	19.73 - 29.73	221.27	17.47	203.80
		6/8/2022	19.73 - 29.73	221.27	17.37	203.90
		1/12/2023	19.73 - 29.73	221.27	18.37	202.90
		6/7/2023	19.73 - 29.73	221.27	17.69	203.58

Notes:
ft - feet
msl = mean sea level
NA - Not available
NC - Not calculated
NM - Not measured

Table 2. Eastern Plume Semi-Annual Analytical Data, June 2023
LHAAP-35A (58), Longhorn Army Ammunition Plant, Karnack, Texas Year 9 RA-O Report

Location ID: / Sample Date:	Units	MCL/PCL	03WW01_060623 6/6/23	35AWW01_060623 6/6/23	35AWW08_060623 6/6/23	35AWW09_060623 6/6/23	35AWW09_060623_a 6/6/23	35AWW10_060623 6/6/23	35AWW12_060523 6/5/23	35AWW12_060523_a 6/5/23
Location Description			Site 58 - E, inside site boundary.	Site 58 - E, inside site boundary.	Site 58 - E, inside site boundary.	Site 58 - E, inside site boundary.	Site 58 - E, inside site boundary. Field Duplicate	Site 58 - ESE, inside site boundary.	Site 58 - E, outside site boundary.	Site 58 - E, outside site boundary. Field Duplicate
Location Depth			Shallow	Intermediate	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Lab Package			HS23060596-01	HS23060596-03	HS23060596-02	HS23060596-04	HS23060596-05	HS23060596-07	HS23060280-08	HS23060280-09
Volatile Organic Compounds (8260C)										
1,1,1,2-Tetrachloroethane	µg/L	110	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,1-Trichloroethane	µg/L	200	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2,2-Tetrachloroethane	µg/L	14	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-Trichloroethane	µg/L	5	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-Dichloroethane	µg/L	10000	< 2.5 U	< 0.50 U	< 2.5 U	**0.75 J**	**0.97 J**	< 0.50 U	< 0.50 U	< 0.50 U
1,1-Dichloroethene	µg/L	7	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-Dichloropropene	µg/L	2.9	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,3-Trichlorobenzene	µg/L	310	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,3-Trichloropropane	µg/L	0.041	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,4-Trichlorobenzene	µg/L	70	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,4-Trimethylbenzene	µg/L	5100	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-Dibromoethane	µg/L	0.05	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-Dichlorobenzene	µg/L	600	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-Dichloroethane	µg/L	5	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-Dichloropropane	µg/L	5	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3,5-Trimethylbenzene	µg/L	5100	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-Dichlorobenzene	µg/L	3100	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-Dichloropropane	µg/L	29	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-Dichlorobenzene	µg/L	75	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
2,2-Dichloropropane	µg/L	42	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
2-Butanone	µg/L	61000	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
2-Chlorotoluene	µg/L	2000	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
2-Hexanone	µg/L	6100	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
4-Chlorotoluene	µg/L	2000	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
4-Isopropyltoluene	µg/L	10000	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
4-Methyl-2-pentanone	µg/L	8200	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Acetone	µg/L	92000	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Benzene	µg/L	5	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Bromobenzene	µg/L	2000	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Bromochloromethane	µg/L	4100	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Bromodichloromethane	µg/L	4.6	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Bromoform	µg/L	36	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Bromomethane	µg/L	140	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Carbon disulfide	µg/L	10000	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Carbon tetrachloride	µg/L	5	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Chlorobenzene	µg/L	100	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Chloroethane	µg/L	41000	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Chloroform	µg/L	1000	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Chloromethane	µg/L	220	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
cis-1,2-Dichloroethene	µg/L	70	**6.1**	< 0.50 U	**5.2**	**1.3**	**1.6**	< 0.50 U	< 0.50 U	< 0.50 U
cis-1,3-Dichloropropene	µg/L	5.3	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Dibromochloromethane	µg/L	34	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Dibromomethane	µg/L	380	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Dichlorodifluoromethane	µg/L	20000	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Ethylbenzene	µg/L	700	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U

Table 2. Eastern Plume Semi-Annual Analytical Data, June 2023
LHAAP-35A (58), Longhorn Army Ammunition Plant, Karnack, Texas Year 9 RA-O Report

Location ID: / Sample Date:	Units	MCL/PCL	03WW01_060623 6/6/23	35AWW01_060623 6/6/23	35AWW08_060623 6/6/23	35AWW09_060623 6/6/23	35AWW09_060623_a 6/6/23	35AWW10_060623 6/6/23	35AWW12_060523 6/5/23	35AWW12_060523_a 6/5/23
Location Description			Site 58 - E, inside site boundary.	Site 58 - E, inside site boundary.	Site 58 - E, inside site boundary.	Site 58 - E, inside site boundary.	Site 58 - E, inside site boundary. Field Duplicate	Site 58 - ESE, inside site boundary.	Site 58 - E, outside site boundary.	Site 58 - E, outside site boundary. Field Duplicate
Location Depth			Shallow	Intermediate	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Lab Package			HS23060596-01	HS23060596-03	HS23060596-02	HS23060596-04	HS23060596-05	HS23060596-07	HS23060280-08	HS23060280-09
Volatile Organic Compounds (8260C)										
Hexachlorobutadiene	µg/L	20	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Isopropylbenzene	µg/L	10000	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
m,p-Xylene	µg/L	10000	< 5.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methylene chloride	µg/L	5	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
n-Butylbenzene	µg/L	4100	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
n-Propylbenzene	µg/L	4100	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Naphthalene	µg/L	2000	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
o-Xylene	µg/L	10000	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
sec-Butylbenzene	µg/L	4100	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Styrene	µg/L	100	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
tert-Butylbenzene	µg/L	4100	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Tetrachloroethene	µg/L	5	**4.8 J**	< 0.50 U	< 2.5 U	**450**	**460**	< 0.50 U	< 0.50 U	< 0.50 U
Toluene	µg/L	1000	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
trans-1,2-Dichloroethene	µg/L	100	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
trans-1,3-Dichloropropene	µg/L	29	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Trichloroethene	µg/L	5	**10**	< 0.50 U	**5.2**	**180**	**180**	< 0.50 U	< 0.50 U	< 0.50 U
Trichlorofluoromethane	µg/L	31000	< 2.5 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Vinyl chloride		2	**3.7 J**	< 0.50 U	**2.6 J**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Volatile Fatty Acids (HPLC-METACIDS)										
Acetic Acid	mg/L	NV	NA	NA	NA	NA	NA	NA	NA	NA
Butyric Acid	mg/L	NV	NA	NA	NA	NA	NA	NA	NA	NA
Lactic Acid	mg/L	NV	NA	NA	NA	NA	NA	NA	NA	NA
Propionic Acid	mg/L	51	NA	NA	NA	NA	NA	NA	NA	NA
Pyruvic Acid	mg/L	NV	NA	NA	NA	NA	NA	NA	NA	NA
ICP-MS Metals (6020A)										
Arsenic	mg/L	0.01	**0.00867**	**0.000503 J**	**0.0319**	**0.000498 J**	**0.000528 J**	NA	NA	NA
Anions (9056A)										
Chloride	mg/L	NV	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	mg/L	NV	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters		**EISB evaluation criteria**								
Temperature	^{0}C	NV	20.07	21.48	20.75	22.90		25.36	22.4	
pH	s.u.	5-9	6.52	7.04	6.75	6.58		5.85	6.55	
DO	mg/L	< 0.5	0.07	0.06	0.03	0.05		0.03	0.02	
ORP	mV	< 0.0	-89	-67	-111	75		163	122	

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.

Green highlighting indicates field parameters outside EISB evaluation criteria

MCL/PCL - Maximum Contaminant Level/Protective Concentration Limit

NA - Not Analyzed

µg/L - micrograms per liter

ID - Identification

DO - Dissolved Oxygen

Bold values - Detected result

mg/L - milligrams per liter

J - Es. mated: Between the method detection limit and reporting limit and/or due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected.

NV - No Value

°C - Celsius

s.u. - standard units

mV - milivolts

EISB - Enhanced In-Situ Bioremediation

Table 2. Eastern Plume Semi-Annual Analytical Data, June 2023
LHAAP-35A (58), Longhorn Army Ammunition Plant, Karnack,
Texas Year 9 RA-O Report

Location ID: / Sample Date:	Units	MCL/PCL	35AWW13_060623 6/6/23	35AWW14_060723 6/7/23	35AWW16_060723 6/7/23	35AWW17_060723 6/7/23	35AWW21_060623 6/6/23	35AWW22_060523 6/5/23
Location Description			Site 58 - SE, outside site boundary.	Site 58 - SE, outside site boundary.	Site 58 - SW, outside site boundary, near Building 744-A.	Site 58 - SW, outside site boundary.	Site 58 - ESE, outside site boundary, beside Building 725.	Site 58 - ENE, outside site boundary.
Location Depth			Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Lab Package			HS23060596-06	HS23060722-09	HS23060722-03	HS23060722-04	HS23060596-09	HS23060280-07
Volatile Organic Compounds (8260C)								
1,1,1,2-Tetrachloroethane	µg/L	110	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,1-Trichloroethane	µg/L	200	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2,2-Tetrachloroethane	µg/L	14	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-Trichloroethane	µg/L	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-Dichloroethane	µg/L	10000	< 0.50 U	**9.9**	< 0.50 U	< 0.50 U	**0.58 J**	< 0.50 U
1,1-Dichloroethene	µg/L	7	< 0.50 U	**9.3**	< 0.50 U	< 0.50 U	**1.1**	< 0.50 U
1,1-Dichloropropene	µg/L	2.9	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,3-Trichlorobenzene	µg/L	310	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,3-Trichloropropane	µg/L	0.041	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,4-Trichlorobenzene	µg/L	70	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,4-Trimethylbenzene	µg/L	5100	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-Dibromoethane	µg/L	0.05	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-Dichlorobenzene	µg/L	600	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-Dichloroethane	µg/L	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-Dichloropropane	µg/L	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3,5-Trimethylbenzene	µg/L	5100	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-Dichlorobenzene	µg/L	3100	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-Dichloropropane	µg/L	29	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-Dichlorobenzene	µg/L	75	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
2,2-Dichloropropane	µg/L	42	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
2-Butanone	µg/L	61000	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
2-Chlorotoluene	µg/L	2000	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
2-Hexanone	µg/L	6100	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
4-Chlorotoluene	µg/L	2000	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
4-Isopropyltoluene	µg/L	10000	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
4-Methyl-2-pentanone	µg/L	8200	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Acetone	µg/L	92000	< 0.50 U	**7.3**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Benzene	µg/L	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Bromobenzene	µg/L	2000	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Bromochloromethane	µg/L	4100	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Bromodichloromethane	µg/L	4.6	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Bromoform	µg/L	36	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Bromomethane	µg/L	140	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Carbon disulfide	µg/L	10000	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Carbon tetrachloride	µg/L	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Chlorobenzene	µg/L	100	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Chloroethane	µg/L	41000	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Chloroform	µg/L	1000	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Chloromethane	µg/L	220	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
cis-1,2-Dichloroethene	µg/L	70	< 0.50 U	**4.3**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
cis-1,3-Dichloropropene	µg/L	5.3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Dibromochloromethane	µg/L	34	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Dibromomethane	µg/L	380	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Dichlorodifluoromethane	µg/L	20000	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Ethylbenzene	µg/L	700	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U

Table 2. Eastern Plume Semi-Annual Analytical Data, June 2023
LHAAP-35A (58), Longhorn Army Ammunition Plant, Karnack, Texas Year 9 RA-O Report

Location ID: / Sample Date:	Units	MCL/PCL	35AWW13_060623 6/6/23	35AWW14_060723 6/7/23	35AWW16_060723 6/7/23	35AWW17_060723 6/7/23	35AWW21_060623 6/6/23	35AWW22_060523 6/5/23
Location Description			Site 58 - SE, outside site boundary.	Site 58 - SE, outside site boundary.	Site 58 - SW, outside site boundary, near Building 744-A.	Site 58 - SW, outside site boundary.	Site 58 - ESE, outside site boundary, beside Building 725.	Site 58 - ENE, outside site boundary.
Location Depth			Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Lab Package			HS23060596-06	HS23060722-09	HS23060722-03	HS23060722-04	HS23060596-09	HS23060280-07
Volatile Organic Compounds (8260C)								
Hexachlorobutadiene	µg/L	20	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Isopropylbenzene	µg/L	10000	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
m,p-Xylene	µg/L	10000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methylene chloride	µg/L	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
n-Butylbenzene	µg/L	4100	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
n-Propylbenzene	µg/L	4100	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Naphthalene	µg/L	2000	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
o-Xylene	µg/L	10000	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
sec-Butylbenzene	µg/L	4100	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Styrene	µg/L	100	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
tert-Butylbenzene	µg/L	4100	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Tetrachloroethene	µg/L	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Toluene	µg/L	1000	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
trans-1,2-Dichloroethene	µg/L	100	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
trans-1,3-Dichloropropene	µg/L	29	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Trichloroethene	µg/L	5	< 0.50 U	**10**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Trichlorofluoromethane	µg/L	31000	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Vinyl chloride		2	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Volatile Fatty Acids (HPLC-METACIDS)								
Acetic Acid	mg/L	NV	NA	NA	NA	NA	NA	NA
Butyric Acid	mg/L	NV	NA	NA	NA	NA	NA	NA
Lactic Acid	mg/L	NV	NA	NA	NA	NA	NA	NA
Propionic Acid	mg/L	51	NA	NA	NA	NA	NA	NA
Pyruvic Acid	mg/L	NV	NA	NA	NA	NA	NA	NA
ICP-MS Metals (6020A)								
Arsenic	mg/L	0.01	NA	NA	NA	NA	NA	NA
Anions (9056A)								
Chloride	mg/L	NV	NA	NA	NA	NA	NA	NA
Nitrate	mg/L	10	NA	NA	NA	NA	NA	NA
Sulfate	mg/L	NV	NA	NA	NA	NA	NA	NA
Field Parameters		**EISB evaluation criteria**						
Temperature	^{0}C	NV	25.14	22.12	24.08	21.50	23.94	21.95
pH	s.u.	5-9	6.63	6.87	6.89	6.55	5.87	6.44
DO	mg/L	< 0.5	0.09	8.37	0.05	0.02	0.04	0.08
ORP	mV	< 0.0	88	122	79	54	160	101

Notes:

Blue Highlighting Indicates concentrations above the MCL/PCL.
Green highlighting indicates field parameters outside EISB evaluation criteria
MCL/PCL - Maximum Contaminant Level/Protective Concentration Limit
NA - Not Analyzed
µg/L - micrograms per liter
ID - Identification
DO - Dissolved Oxygen
Bold values - Detected result
mg/L - milligrams per liter
J - Estimated: Between the method detection limit and reporting limit and/or due to discrepancies in meeting certain analyte-specific quality control criteria.
U - Undetected: The analyte was analyzed for, but not detected.
NV - No Value
°C - Celsius
s.u. - standard units
mV - milivolts
EISB - Enhanced In-Situ Bioremediation

Table 3. Western Plume Analytical Data, January, June, and August 2023
LHAAP-35A (58), Longhorn Army Ammunition Plant, Karnack, Texas
Year 9 RA-O Report

Location ID: Sample Date:	Units	MCL/PCL	35AWW05_011323 1/13/23	35AWW05_011323_a 1/13/23	35AWW05_060723 6/7/23	35AWW06_011223 1/12/23	35AWW06_060523 6/5/23	35AWW11_011223 1/12/23	35AWW11_060523 6/5/23	35AWW15_011323 1/13/23	35AWW15_060723 6/7/23
Location Description			Site 58 - SW, outside site boundary.	Site 58 - SW, outside site boundary. Field Duplicate	Site 58 - SW, outside site boundary.	Site 58 - SW, outside site boundary.	Site 58 - SW, outside site boundary.	Site 58 - SE, inside site boundary.	Site 58 - SE, inside site boundary.	Site 58 - W, inside site boundary.	Site 58 - W, inside site boundary.
Location Depth			Intermediate	Intermediate	Intermediate	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Lab Package			HS23010794-02	HS23010794-03	HS23060722-01	HS23010587-04	HS23060280-04	HS23010587-01	HS23060280-06	HS23010794-07	HS23060722-02
Volatile Organic Compounds (8260C)											
1,1,1,2-Tetrachloroethane	µg/L	110	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,1,1-Trichloroethane	µg/L	200	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,1,2,2-Tetrachloroethane++	µg/L	14	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,1,2-Trichloroethane	µg/L	5	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,1-Dichloroethane	µg/L	10000	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	**0.56 J**	< 1.0 U	**0.74 J**	< 1.0 U	< 0.50 U
1,1-Dichloroethene	µg/L	7	< 1.0 U	< 1.0 U	< 0.50 U	**1.0**	**1.2**	**2.5**	**2.6**	< 1.0 U	< 0.50 U
1,1-Dichloropropene	µg/L	2.9	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2,3-Trichlorobenzene	µg/L	310	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2,3-Trichloropropane	µg/L	0.041	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2,4-Trichlorobenzene	µg/L	70	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2,4-Trimethylbenzene	µg/L	5100	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2-Dibromoethane	µg/L	0.05	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2-Dichlorobenzene	µg/L	600	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2-Dichloroethane	µg/L	5	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2-Dichloropropane	µg/L	5	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,3,5-Trimethylbenzene	µg/L	5100	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,3-Dichlorobenzene	µg/L	3100	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,3-Dichloropropane	µg/L	29	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,4-Dichlorobenzene	µg/L	75	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
2,2-Dichloropropane	µg/L	42	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
2-Butanone	µg/L	61000	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
2-Chlorotoluene	µg/L	2000	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
2-Hexanone	µg/L	6100	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
4-Chlorotoluene	µg/L	2000	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
4-Isopropyltoluene	µg/L	10000	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
4-Methyl-2-pentanone	µg/L	8200	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Acetone	µg/L	92000	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Benzene	µg/L	5	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Bromobenzene	µg/L	2000	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Bromochloromethane	µg/L	4100	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Bromodichloromethane	µg/L	4.6	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Bromoform	µg/L	36	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Bromomethane	µg/L	140	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Carbon disulfide	µg/L	10000	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Carbon tetrachloride	µg/L	5	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Chlorobenzene	µg/L	100	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Chloroethane	µg/L	41000	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Chloroform	µg/L	1000	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Chloromethane	µg/L	220	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
cis-1,2-Dichloroethene	µg/L	70	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
cis-1,3-Dichloropropene	µg/L	5.3	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Dibromochloromethane	µg/L	34	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Dibromomethane	µg/L	380	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Dichlorodifluoromethane	µg/L	20000	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Ethylbenzene	µg/L	700	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Hexachlorobutadiene	µg/L	20	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Isopropylbenzene	µg/L	10000	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U

Table 3. Western Plume Analytical Data, January, June, and August 2023
LHAAP-58, Longhorn Army Ammunition Plant, Karnack, Texas
Year 9 RA-O Report

Location ID: Sample Date:	Units	MCL/PCL	35AWW05_011323 1/13/23	35AWW05_011323_a 1/13/23	35AWW05_060723 6/7/23	35AWW06_011223 1/12/23	35AWW06_060523 6/5/23	35AWW11_011223 1/12/23	35AWW11_060523 6/5/23	35AWW15_011323 1/13/23	35AWW15_060723 6/7/23
Location Description			Site 58 - SW, outside site boundary.	Site 58 - SW, outside site boundary. Field Duplicate	Site 58 - SW, outside site boundary.	Site 58 - SW, outside site boundary.	Site 58 - SW, outside site boundary.	Site 58 - SE, inside site boundary.	Site 58 - SE, inside site boundary.	Site 58 - W, inside site boundary.	Site 58 - W, inside site boundary.
Location Depth			Intermediate	Intermediate	Intermediate	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Lab Package			HS23010794-02	HS23010794-03	HS23060722-01	HS23010587-04	HS23060280-04	HS23010587-01	HS23060280-06	HS23010794-07	HS23060722-02
Volatile Organic Compounds (8260C)											
m,p-Xylene	µg/L	10000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methylene chloride	µg/L	5	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
n-Butylbenzene	µg/L	4100	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
n-Propylbenzene	µg/L	4100	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Naphthalene	µg/L	2000	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
o-Xylene	µg/L	10000	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
sec-Butylbenzene	µg/L	4100	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Styrene	µg/L	100	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
tert-Butylbenzene	µg/L	4100	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Tetrachloroethene	µg/L	5	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Toluene	µg/L	1000	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
trans-1,2-Dichloroethene	µg/L	100	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
trans-1,3-Dichloropropene	µg/L	29	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Trichloroethene	µg/L	5	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Trichlorofluoromethane	µg/L	31000	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Vinyl chloride		2	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	**0.61 J**	< 1.0 U	< 0.50 U
Total Organic Carbon (415.1/SM5310C)											
Total Organic Carbon	mg/L	NV	NA	NA	NA	**6.28**	**7.23**	**6.28**	**7.35**	NA	NA
Volatile Fatty Acids (HPLC-METACIDS)											
Acetic Acid	mg/L	NV	NA	NA	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	NA	NA
Butyric Acid	mg/L	NV	NA	NA	NA	< 1.0 U	< 5.0 U	< 1.0 U	< 5.0 U	NA	NA
Lactic Acid	mg/L	NV	NA	NA	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	NA
Propionic Acid	mg/L	51	NA	NA	NA	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	NA	NA
Pyruvic Acid	mg/L	NV	NA	NA	NA	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	NA	NA
ICP-MS Metals (6020A)											
Arsenic	mg/L	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anions (9056A)											
Chloride	mg/L	NV	NA	NA	NA	**905**	**918**	**2,090**	**779**	NA	NA
Nitrate	mg/L	10	NA	NA	NA	< 0.0500 U	< 0.0500 U	< 0.100 U	**0.121**	NA	NA
Sulfate	mg/L	NV	NA	NA	NA	**855**	**834**	**563**	**1.23**	NA	NA
Dissolved Gases (RSK-175)											
Carbon Dioxide	µg/L	NV	NA	NA	NA	**67,000**	**110,000**	**430,000 D**	**250,000 M**	NA	NA
Ethane	µg/L	NV	NA	NA	NA	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	NA	NA
Ethene	µg/L	NV	NA	NA	NA	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	NA	NA
Methane	µg/L	NV	NA	NA	NA	**2,570**	**4,790**	**3,220**	**6,110**	NA	NA
Dechlorinating Bacteria											
BAV1 Vinyl Chloride Reductase	cells/mL	NV	NA	NA	NA	< 0.50 U	**0.50 J**	< 0.60 U	**0.30 J**	NA	NA
Dehalobacter spp.	cells/mL	NV	NA	NA	NA	**2,270**	**1,230**	**140,000**	**15,000**	NA	NA
Dehalococoides	cells/mL	NV	NA	NA	NA	**14.1**	**11.1**	**864**	**416**	NA	NA
tceA Reductase	cells/mL	NV	NA	NA	NA	< 0.50 U	< 0.50 U	< 0.60 U	< 0.60 U	NA	NA
Vinyl Chloride Reductase	cells/mL	NV	NA	NA	NA	< 0.50 U	**1.50**	**189**	**117**	NA	NA
Field Parameters		**EISB evaluation criteria**									
Temperature	^{0}C	NV	15.84		21.46	15.72	20.35	17.10	22.16	16.72	21.69
pH	s.u.	5-9	7.08		7.26	7.03	7.19	6.09	7.01	6.15	7.21
DO	mg/L	< 0.5	0.23		0.03	0.04	0.09	1.85	0.09	0.18	0.04
ORP	mV	< 0.0	-58		-80	-59	-54	-30	-36	83	-55

Notes:

Blue highlighting indicates concentrations above the MCL/PCL.

Green highlighting indicates field parameters outside EISB evaluation criteria.

MCL/PCL - Maximum Contaminant Level/Protective Concentration Limit

NA - Not Analyzed

µg/L - micrograms per liter

M - Manual integrated compound

D - The reported value is from a dilution.

ID - Identification

Bold Values - Detected result

DO - Dissolved Oxygen

mg/L - milligrams per liter

J - Es. mated: Between the method detection limit and reporting limit and/or due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected.

NV - No Value

ORP - Oxidation-Reduction Potential

°C - Celsius

s.u. - standard units

mV - milivolts

EISB - Enhanced In-Situ Bioremediation

Table 3. Western Plume Analytical Data, January, June, and August 2023
LHAAP-58, Longhorn Army Ammunition Plant, Karnack, Texas
Year 9 RA-O Report

Location ID: Sample Date:	Units	MCL/PCL	35AWW18_060723 6/7/23	35AWW19_011223 1/12/23	35AWW19_060523 6/5/23	35AWW20_011223 1/12/23	35AWW20_060523 6/5/23	35AWW23_011223 1/12/23	35AWW23_060523 6/5/23	35AWW24_011323 1/13/23	35AWW24_060723 6/7/23
Location Description			Site 58 - SSW, outside site boundary.	Site 58 - S, outside site boundary.	Site 58 - S, outside site boundary.	Site 58 - SW, inside site boundary.	Site 58 - SW, inside site boundary.	Site 58 - SW, outside site boundary.	Site 58 - SW, outside site boundary.	Downgradient Western Plume well	Downgradient Western Plume well
Location Depth			Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Lab Package			HS23060722-05	HS23010587-06	HS23060280-01	HS23010587-02	HS23060280-02	HS23010587-05	HS23060280-05	HS23010794-01	HS23060722-08
Volatile Organic Compounds (8260C)											
1,1,1,2-Tetrachloroethane	µg/L	110	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,1,1-Trichloroethane	µg/L	200	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,1,2,2-Tetrachloroethane++	µg/L	14	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,1,2-Trichloroethane	µg/L	5	< 0.50 U	< 1.0 U	< 0.50 U	**63**	**57**	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,1-Dichloroethane	µg/L	10000	**5.9**	**0.81 J**	**0.92 J**	**480**	**430**	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,1-Dichloroethene	µg/L	7	**29**	**5.0**	**4.8**	**2,600**	**1,700**	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,1-Dichloropropene	µg/L	2.9	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2,3-Trichlorobenzene	µg/L	310	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2,3-Trichloropropane	µg/L	0.041	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2,4-Trichlorobenzene	µg/L	70	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2,4-Trimethylbenzene	µg/L	5100	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2-Dibromoethane	µg/L	0.05	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2-Dichlorobenzene	µg/L	600	< 0.50 U	< 1.0 U	< 0.50 U	**29**	**27**	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2-Dichloroethane	µg/L	5	< 0.50 U	**1.3**	**1.4**	**14**	**13**	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2-Dichloropropane	µg/L	5	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,3,5-Trimethylbenzene	µg/L	5100	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,3-Dichlorobenzene	µg/L	3100	< 0.50 U	< 1.0 U	< 0.50 U	**1.4**	**1.2**	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,3-Dichloropropane	µg/L	29	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
1,4-Dichlorobenzene	µg/L	75	< 0.50 U	< 1.0 U	< 0.50 U	**5.0**	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
2,2-Dichloropropane	µg/L	42	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
2-Butanone	µg/L	61000	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
2-Chlorotoluene	µg/L	2000	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
2-Hexanone	µg/L	6100	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
4-Chlorotoluene	µg/L	2000	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
4-Isopropyltoluene	µg/L	10000	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
4-Methyl-2-pentanone	µg/L	8200	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Acetone	µg/L	92000	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	**13**	< 0.50 U	< 1.0 U	< 0.50 U
Benzene	µg/L	5	< 0.50 U	< 1.0 U	< 0.50 U	**7.9**	**7.3**	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Bromobenzene	µg/L	2000	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Bromochloromethane	µg/L	4100	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Bromodichloromethane	µg/L	4.6	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Bromoform	µg/L	36	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Bromomethane	µg/L	140	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Carbon disulfide	µg/L	10000	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Carbon tetrachloride	µg/L	5	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Chlorobenzene	µg/L	100	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Chloroethane	µg/L	41000	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Chloroform	µg/L	1000	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Chloromethane	µg/L	220	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
cis-1,2-Dichloroethene	µg/L	70	< 0.50 U	< 1.0 U	< 0.50 U	**110**	**85**	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
cis-1,3-Dichloropropene	µg/L	5.3	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Dibromochloromethane	µg/L	34	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Dibromomethane	µg/L	380	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Dichlorodifluoromethane	µg/L	20000	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Ethylbenzene	µg/L	700	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Hexachlorobutadiene	µg/L	20	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Isopropylbenzene	µg/L	10000	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U

Table 3. Western Plume Analytical Data, January, June, and August 2023
LHAAP-58, Longhorn Army Ammunition Plant, Karnack, Texas
Year 9 RA-O Report

Location ID: Sample Date:	Units	MCL/PCL	35AWW18_060723 6/7/23	35AWW19_011223 1/12/23	35AWW19_060523 6/5/23	35AWW20_011223 1/12/23	35AWW20_060523 6/5/23	35AWW23_011223 1/12/23	35AWW23_060523 6/5/23	35AWW24_011323 1/13/23	35AWW24_060723 6/7/23
Location Description			Site 58 - SSW, outside site boundary.	Site 58 - S, outside site boundary.	Site 58 - S, outside site boundary.	Site 58 - SW, inside site boundary.	Site 58 - SW, inside site boundary.	Site 58 - SW, outside site boundary.	Site 58 - SW, outside site boundary.	Downgradient Western Plume well	Downgradient Western Plume well
Location Depth			Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Lab Package			HS23060722-05	HS23010587-06	HS23060280-01	HS23010587-02	HS23060280-02	HS23010587-05	HS23060280-05	HS23010794-01	HS23060722-08
Volatile Organic Compounds (8260C)											
m,p-Xylene	µg/L	10000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methylene chloride	µg/L	5	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
n-Butylbenzene	µg/L	4100	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
n-Propylbenzene	µg/L	4100	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Naphthalene	µg/L	2000	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
o-Xylene	µg/L	10000	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
sec-Butylbenzene	µg/L	4100	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Styrene	µg/L	100	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
tert-Butylbenzene	µg/L	4100	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Tetrachloroethene	µg/L	5	< 0.50 U	< 1.0 U	< 0.50 U	**0.60 J**	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Toluene	µg/L	1000	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	**0.64 J**	< 1.0 U	< 0.50 U
trans-1,2-Dichloroethene	µg/L	100	< 0.50 U	< 1.0 U	< 0.50 U	**9.2**	**7.5**	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
trans-1,3-Dichloropropene	µg/L	29	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Trichloroethene	µg/L	5	< 0.50 U	< 1.0 U	**1.1**	**220**	**180**	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Trichlorofluoromethane	µg/L	31000	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Vinyl chloride		2	< 0.50 U	< 1.0 U	< 0.50 U	**990**	**940**	< 1.0 U	< 0.50 U	< 1.0 U	< 0.50 U
Total Organic Carbon (415.1/SM5310C)											
Total Organic Carbon	mg/L	NV	NA	**2.48**	**1.72**	**14.5**	**15.9**	**14.7**	**12.6**	NA	NA
Volatile Fatty Acids (HPLC-METACIDS)											
Acetic Acid	mg/L	NV	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	**0.88 J**	< 2.0 U	NA	NA
Butyric Acid	mg/L	NV	NA	< 1.0 U	< 5.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 5.0 U	NA	NA
Lactic Acid	mg/L	NV	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	NA
Propionic Acid	mg/L	51	NA	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	NA	NA
Pyruvic Acid	mg/L	NV	NA	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	NA	NA
ICP-MS Metals (6020A)											
Arsenic	mg/L	0.01	NA	NA	NA	**0.0009201 J**	**0.00174 J**	NA	NA	NA	NA
Anions (9056A)											
Chloride	mg/L	NV	NA	**456**	**430**	**660**	**661**	**792**	**1,950**	NA	NA
Nitrate	mg/L	10	NA	< 0.0500 U	< 0.0500 U	**0.0452 J**	< 0.0500 U	< 0.0500 U	< 0.100 U	NA	NA
Sulfate	mg/L	NV	NA	**701**	**567**	**1,180**	**1,090**	**1.68**	**449**	NA	NA
Dissolved Gases (RSK-175)											
Carbon Dioxide	µg/L	NV	NA	**110,000**	**92,000**	**330,000 D**	**200,000**	**360,000 D**	**220,000 M**	NA	NA
Ethane	µg/L	NV	NA	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	< 0.500 U	NA	NA
Ethene	µg/L	NV	NA	**3.95**	< 0.500 U	**35.8**	**38.9**	< 0.500 U	< 0.500 U	NA	NA
Methane	µg/L	NV	NA	**3.37**	**1.28**	**2,600**	**3,350**	**4,590**	**7,440**	NA	NA
Dechlorinating Bacteria											
BAV1 Vinyl Chloride Reductase	cells/mL	NV	NA	**0.10 J**	< 0.60 U	**15,200**	**8,330**	**0.10 J**	< 0.60 U	NA	NA
Dehalobacter spp.	cells/mL	NV	NA	**6,740**	**1,120**	**23,100**	**43,800**	**193**	**61.9**	NA	NA
Dehalococcoides	cells/mL	NV	NA	**6.30**	**1.90**	**91,800**	**40,800**	**180**	**82.1**	NA	NA
tceA Reductase	cells/mL	NV	NA	< 0.60 U	< 0.60 U	< 0.50 U	**0.30 J**	**8.1**	**0.8**	NA	NA
Vinyl Chloride Reductase	cells/mL	NV	NA	**0.70**	< 0.60 U	**0.70**	**1.90**	**45.5**	**15.9**	NA	NA
Field Parameters		**EISB evaluation criteria**									
Temperature	^{0}C	NV	21.58	18.30	21.14	17.02	21.57	16.61	21.43	16.64	23.05
pH	s.u.	5-9	6.89	5.92	6.21	6.43	6.68	6.54	6.98	5.30	5.79
DO	mg/L	< 0.5	0.05	0.30	0.05	0.18	0.08	0.03	0.08	0.82	0.08
ORP	mV	< 0.0	85	58	137	-37	-17	-144	-107	183	168

Notes:

Blue highlighting indicates concentrations above the MCL/PCL.
Green highlighting indicates field parameters outside EISB evaluation criteria.
MCL/PCL - Maximum Contaminant Level/Protective Concentration Limit
NA - Not Analyzed
µg/L - micrograms per liter
M - Manual integrated compound
D - The reported value is from a dilution.
ID - Identification
Bold Values - Detected result

mg/L - milligrams per liter
J - Estimated: Between the method detection limit and reporting limit and/or due to discrepancies in meeting certain analyte-specific quality control criteria.
U - Undetected: The analyte was analyzed for, but not detected.
NV - No Value
ORP - Oxidation-Reduction Potential
°C - Celsius
s.u. - standard units
mV - milivolts
EISB - Enhanced In-Situ Bioremediation

Table 3. Western Plume Analytical Data, January, June, and August 2023
LHAAP-58, Longhorn Army Ammunition Plant, Karnack, Texas
Year 9 RA-O Report

Location ID: Sample Date:	Units	MCL/PCL	35AWW26_011323 1/13/23	35AWW26_011323_a 1/13/23	35AWW26_060623 6/6/23	35AWW27_080223 8/2/23	LHSMW06_011323 1/13/23	LHSMW06_060723 6/7/23	LHSMW06_060723.a 6/7/23	LHSMW07_011223 1/12/23	LHSMW07_060523 6/5/23
Location Description			Site 58 - W, inside site boundary.	Site 58 - W, inside site boundary. Field Duplicate	Downgradient Western Plume well	Downgradient Western Plume well	Site 58 - SW, inside site boundary, beside Building 715.	Site 58 - SW, inside site boundary, beside Building 715.	Site 58 - SW, inside site boundary, beside Building 715. Field Duplicate	Site 58 - SW, outside site boundary.	Site 58 - SW, outside site boundary.
Location Depth			Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Lab Package			HS23010794-05	HS23010794-06	HS23060596-08	HS23080325-01	HS23010794-04	HS23060722-06	HS23060722-07	HS23010587-03	HS23060280-03
Volatile Organic Compounds (8260C)											
1,1,1,2-Tetrachloroethane	µg/L	110	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
1,1,1-Trichloroethane	µg/L	200	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
1,1,2,2-Tetrachloroethane++	µg/L	14	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
1,1,2-Trichloroethane	µg/L	5	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
1,1-Dichloroethane	µg/L	10000	**17**	**18**	**25**	**2.3**	**8.2**	**8.2**	**8.1**	**16**	**13**
1,1-Dichloroethene	µg/L	7	**72**	**76**	**94**	**2.2**	**22**	**21**	**21**	**17**	**93**
1,1-Dichloropropene	µg/L	2.9	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2,3-Trichlorobenzene	µg/L	310	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2,3-Trichloropropane	µg/L	0.041	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2,4-Trichlorobenzene	µg/L	70	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2,4-Trimethylbenzene	µg/L	5100	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2-Dibromoethane	µg/L	0.05	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2-Dichlorobenzene	µg/L	600	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
1,2-Dichloroethane	µg/L	5	< 1.0 U	< 1.0 U	< 0.50 U	**0.78 J**	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	**0.66 J**
1,2-Dichloropropane	µg/L	5	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
1,3,5-Trimethylbenzene	µg/L	5100	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
1,3-Dichlorobenzene	µg/L	3100	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
1,3-Dichloropropane	µg/L	29	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
1,4-Dichlorobenzene	µg/L	75	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
2,2-Dichloropropane	µg/L	42	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
2-Butanone	µg/L	61000	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
2-Chlorotoluene	µg/L	2000	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
2-Hexanone	µg/L	6100	< 1.0 U	< 1.0 U	< 0.50 U	< 2.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
4-Chlorotoluene	µg/L	2000	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
4-Isopropyltoluene	µg/L	10000	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
4-Methyl-2-pentanone	µg/L	8200	< 1.0 U	< 1.0 U	< 0.50 U	< 2.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Acetone	µg/L	92000	< 1.0 U	< 1.0 U	< 0.50 U	< 2.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Benzene	µg/L	5	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Bromobenzene	µg/L	2000	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Bromochloromethane	µg/L	4100	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Bromodichloromethane	µg/L	4.6	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Bromoform	µg/L	36	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Bromomethane	µg/L	140	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Carbon disulfide	µg/L	10000	< 1.0 U	< 1.0 U	< 0.50 U	< 2.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Carbon tetrachloride	µg/L	5	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Chlorobenzene	µg/L	100	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Chloroethane	µg/L	41000	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Chloroform	µg/L	1000	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Chloromethane	µg/L	220	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
cis-1,2-Dichloroethene	µg/L	70	**1.5**	**1.4**	**1.9**	**0.62 J**	**130**	**120**	**120**	**0.96 J**	**1.2**
cis-1,3-Dichloropropene	µg/L	5.3	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Dibromochloromethane	µg/L	34	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Dibromomethane	µg/L	380	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Dichlorodifluoromethane	µg/L	20000	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Ethylbenzene	µg/L	700	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Hexachlorobutadiene	µg/L	20	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Isopropylbenzene	µg/L	10000	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U

Table 3. Western Plume Analytical Data, January, June, and August 2023
LHAAP-58, Longhorn Army Ammunition Plant, Karnack, Texas
Year 9 RA-O Report

Location ID: Sample Date:	Units	MCL/PCL	35AWW26_011323 1/13/23	35AWW26_011323_a 1/13/23	35AWW26_060623 6/6/23	35AWW27_080223 8/2/23	LHSMW06_011323 1/13/23	LHSMW06_060723 6/7/23	LHSMW06_060723.a 6/7/23	LHSMW07_011223 1/12/23	LHSMW07_060523 6/5/23
Location Description			Site 58 - W, inside site boundary.	Site 58 - W, inside site boundary. Field Duplicate	Downgradient Western Plume well	Downgradient Western Plume well	Site 58 - SW, inside site boundary, beside Building 715.	Site 58 - SW, inside site boundary, beside Building 715.	Site 58 - SW, inside site boundary, beside Building 715. Field Duplicate	Site 58 - SW, outside site boundary.	Site 58 - SW, outside site boundary.
Location Depth			Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Lab Package			HS23010794-05	HS23010794-06	HS23060596-08	HS23080325-01	HS23010794-04	HS23060722-06	HS23060722-07	HS23010587-03	HS23060280-03
Volatile Organic Compounds (8260C)											
m,p-Xylene	µg/L	10000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methylene chloride	µg/L	5	< 1.0 U	< 1.0 U	< 0.50 U	< 2.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
n-Butylbenzene	µg/L	4100	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
n-Propylbenzene	µg/L	4100	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Naphthalene	µg/L	2000	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
o-Xylene	µg/L	10000	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
sec-Butylbenzene	µg/L	4100	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Styrene	µg/L	100	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
tert-Butylbenzene	µg/L	4100	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Tetrachloroethene	µg/L	5	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	**4.3**	**3.1**	**3.0**	< 1.0 U	< 0.50 U
Toluene	µg/L	1000	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
trans-1,2-Dichloroethene	µg/L	100	< 1.0 U	< 1.0 U	**0.48 J**	< 0.50 U	**2.7**	**2.2**	**2.3**	< 1.0 U	< 0.50 U
trans-1,3-Dichloropropene	µg/L	29	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Trichloroethene	µg/L	5	< 1.0 U	< 1.0 U	< 0.50 U	**1.7**	**24**	**21**	**20**	**2.0**	**2.4**
Trichlorofluoromethane	µg/L	31000	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U
Vinyl chloride		2	**12**	**12**	**7.4**	< 0.50 U	**7.6**	**6.6**	**6.7**	**56**	**54**
Total Organic Carbon (415.1/SM5310C)											
Total Organic Carbon	mg/L	NV	NA	NA	NA	NA	NA	NA	NA	**6.78**	**7.25**
Volatile Fatty Acids (HPLC-METACIDS)											
Acetic Acid	mg/L	NV	NA	NA	NA	NA	NA	NA	NA	< 2.0 U	< 2.0 U
Butyric Acid	mg/L	NV	NA	NA	NA	NA	NA	NA	NA	< 1.0 U	< 5.0 U
Lactic Acid	mg/L	NV	NA	NA	NA	NA	NA	NA	NA	< 1.0 U	< 1.0 U
Propionic Acid	mg/L	51	NA	NA	NA	NA	NA	NA	NA	< 1.5 U	< 1.5 U
Pyruvic Acid	mg/L	NV	NA	NA	NA	NA	NA	NA	NA	< 0.10 U	< 0.10 U
ICP-MS Metals (6020A)											
Arsenic	mg/L	0.01	NA	NA	NA	NA	< 0.00125 U	**0.000466 J**	< 0.00125 U	NA	NA
Anions (9056A)											
Chloride	mg/L	NV	NA	NA	NA	NA	NA	NA	NA	**2,030**	**1,930**
Nitrate	mg/L	10	NA	NA	NA	NA	NA	NA	NA	< 0.100 U	< 0.100 U
Sulfate	mg/L	NV	NA	NA	NA	NA	NA	NA	NA	**3,170**	**3,000**
Dissolved Gases (RSK-175)											
Carbon Dioxide	µg/L	NV	NA	NA	NA	NA	NA	NA	NA	**160,000 M**	**130,000**
Ethane	µg/L	NV	NA	NA	NA	NA	NA	NA	NA	< 0.500 U	< 0.500 U
Ethene	µg/L	NV	NA	NA	NA	NA	NA	NA	NA	**49.4**	**20.9**
Methane	µg/L	NV	NA	NA	NA	NA	NA	NA	NA	**5,950**	**2,860**
Dechlorinating Bacteria											
BAV1 Vinyl Chloride Reductase	cells/mL	NV	NA		NA	NA	NA	NA	NA	**0.8**	**0.50 J**
Dehalobacter spp.	cells/mL	NV	NA		NA	NA	NA	NA	NA	**15,400**	**16,400**
Dehalococoides	cells/mL	NV	NA		NA	NA	NA	NA	NA	**7,340**	**1,120**
tceA Reductase	cells/mL	NV	NA		NA	NA	NA	NA	NA	**1.50**	**0.40 J**
Vinyl Chloride Reductase	cells/mL	NV	NA		NA	NA	NA	NA	NA	**4,340**	**988.0**
Field Parameters		**EISB evaluation criteria**									
Temperature	^{0}C	NV	17.34		29.69	21.18	15.21	24.85		16.30	20.46
pH	s.u.	5-9	6.45		6.83	7.13	6.33	6.81		6.36	6.84
DO	mg/L	< 0.5	0.40		0.02	0.28	0.14	0.05		0.09	0.07
ORP	mV	< 0.0	39		106	-19	95	96		-23	52

Notes:

Blue highlighting indicates concentrations above the MCL/PCL.
Green highlighting indicates field parameters outside EISB evaluation criteria.
MCL/PCL - Maximum Contaminant Level/Protective Concentration Limit
NA - Not Analyzed
µg/L - micrograms per liter
M - Manual integrated compound
D - The reported value is from a dilution.
ID - Identification
Bold Values - Detected result

mg/L - milligrams per liter
J - Estimated: Between the method detection limit and reporting limit and/or due to discrepancies in meeting certain analyte-specific quality control criteria.
U - Undetected: The analyte was analyzed for, but not detected.
NV - No Value
ORP - Oxidation-Reduction Potential
°C - Celsius
s.u. - standard units
mV - milivolts
EISB - Enhanced In-Situ Bioremediation

Table 4
Historical Monitoring Well COC Concentrations
LHAAP-35A (58), Longhorn Army Ammunition Plan, Karnack, Texas Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	03WW01-11/24/2008		03WW01-5/9/2011		03WW01-082013 8/20/2013		03WW01-101013 10/10/2013		03WW01-12914 1/29/2014		03WW01-052114 5/21/2014		03WW01-102814 10/28/2014		03WW01-012115 1/21/2015		03WW01-041515 4/15/2015		03WW01-070815 7/8/2015		03WW01-100815 10/8/2015	
1,1-DICHLOROETHENE	µg/L	7	<20	U	<2.5	U	<2	U	<5	U	<10	U	<10	U	<100	U	<100	U	<50	U	<100	U	<100	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<20	U	1.1		0.978		<2.5	U	<5	U	3.3		<50	U	<50	U	21.4		<50	U	<50	U
TETRACHLOROETHENE	µg/L	5	2,570		418		368		172		172		154		48.6		32.8		15.9		31.4		36.4	
TRANS-1,2-DICHLOROETHENE	µg/L	100	<20	U	<2.5	U	<1	U	<2.5	U	<5	U	<5	U	<50	U	<50	U	<25	U	<50	U	<50	U
TRICHLOROETHENE	µg/L	5	196		69.1		94.8		42.1		58.4		71.2		223		216		131		65.6		51.8	
VINYL CHLORIDE	µg/L	2	<20	U	<2.5	U	<1	U	<2.5	U	<5	U	<5	U	<50	U	<50	U	<25	U	<50	U	<50	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL.
µg/L - micrograms per liter
MCL - Maximum Contaminant Level
NA - not analyzed
J - Estimated value; analyte concentration was less than the limit of quantification
U - Analyte was not detected.
UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	03WW01-041316 4/13/2016		03WW01-100416 10/4/2016		03WW01-111517 11/15/2017		03WW01-071818 7/18/2018		03WW01_121218 12/12/2018		03WW01_060419 6/4/2019		03WW01_121819 12/18/2019		03WW01_062320 6/23/2020		03WW01_120120 12/1/20		03WW01_060221 6/02/21	
1,1-DICHLOROETHENE	µg/L	7	<25	U	<10	U	<2.5	U	<0.5	U	<0.5	U	<2.5	U	<5.0	U	< 2.5	U	< 5.0	U	< 5.0	U
CIS-1,2-DICHLOROETHENE	µg/L	70	117		<5	U	<2.5	U	5.3		22		41		14		17		7.2	J	11	
TETRACHLOROETHENE	µg/L	5	6.49		<5	U	<2.5	U	<0.5	U	15		3.2		<5.0	U	4.5	J	< 5.0	U	11	
TRANS-1,2-DICHLOROETHENE	µg/L	100	<12.5	U	<5	U	<2.5	U	<0.5	U	<0.5	U	<2.5	U	<5.0	U	< 2.5	U	< 5.0	U	< 5.0	U
TRICHLOROETHENE	µg/L	5	<12.5	U	<5	U	<2.5	U	<0.5	U	5.7		2.9		<5.0	U	4.5	J	24		3.0	
VINYL CHLORIDE	µg/L	2	<12.5	U	<5	U	<2.5	U	4.8		7.6		11		5.4	J	7.2		< 5.0	U	1.6	

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
µg/L - micrograms per liter
MCL - Maximum Contaminant Level
NA - not analyzed
J - Estimated value; analyte concentration was less than the limit of quantification
U - Analyte was not detected.
UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	03WW01_060622 6/06/22		03WW01_060623 6/6/23		35ASW03-101713 10/17/2013		35ASW03-020314 2/3/2014		35ASW03-052814 5/28/2014		35ASW03-012315 1/23/2015		35ASW03-041015 4/10/2015		35ASW03-041316 4/13/2016		35ASW03_060321 6/03/21		35AWW01-981108 11/8/1998	
1,1-DICHLOROETHENE	µg/L	7	< 0.5	U	< 2.5	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
CIS-1,2-DICHLOROETHENE	µg/L	70	7.3		6.1		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1	U
TETRACHLOROETHENE	µg/L	5	9.9		4.8	J	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	0.74	J	< 2.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1	U
TRICHLOROETHENE	µg/L	5	10		10		<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.259	J	<0.5	U	<0.5	U	<1	U
VINYL CHLORIDE	µg/L	2	<0.50	U	3.7	J	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
µg/L - micrograms per liter
MCL - Maximum Contaminant Level
NA - not analyzed
J - Estimated value; analyte concentration was less than the limit of quantification
U - Analyte was not detected.
UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW01-981108FD 11/8/1998		35AWW01-040909 9/9/2004		35AWW01-020608 2/6/2008		35AWW01-111908 11/19/2008		35AWW01-101113 10/11/2013		35AWW01-013114 1/31/2014		35AWW01FD-013114 1/31/2014		35AWW01-052914 5/29/2014		35AWW01-103114 10/31/2014		35AWW01-012715 1/27/2015	
1,1-DICHLOROETHENE	µg/L	7	<1	U	<5	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<1	U	<5	U	<1	U	<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<1	U	<5	U	<1	U	<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<1	U	<5	U	<1	U	<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<1	U	<5	U	<1	U	<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<1	U	<5	U	<1	U	<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
µg/L - micrograms per liter
MCL - Maximum Contaminant Level
NA - not analyzed
J - Estimated value; analyte concentration was less than the limit of quantification
U - Analyte was not detected.
UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW01-041015 4/10/2015	35AWW01FD-041015 4/10/2015	35AWW01-071015 7/10/2015	35AWW01FD-071015 7/10/2015	35AWW01-100615 10/6/2015	35AWW01FD-100615 10/6/2015	35AWW01-041216 4/12/2016	35AWW01FD-041216 4/12/2016	35AWW01-100516 10/5/2016	35WW01-111617 11/16/2017
1,1-DICHLOROETHENE	µg/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<0.5 U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	µg/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	µg/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	µg/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
µg/L - micrograms per liter
MCL - Maximum Contaminant Level
NA - not analyzed
J - Estimated value; analyte concentration was less than the limit of quantification
U - Analyte was not detected.
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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW01-070218 7/2/2018		35AWW01_121318 12/13/2018		35AWW01_061019 6/10/2019		35AWW01_122019 12/20/2019		35AWW01_062520 6/25/2020		35AWW01_062520-a 6/25/2020		35AWW01_120720 12/7/20		35AWW01_060121 6/01/21		35AWW01_060121-a 6/01/21		35AWW01_060622 6/06/22	
1,1-DICHLOROETHENE	µg/L	7	<0.5	UJ	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	UJ	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<1.0	U	<1.0	U	<1.0	U	<1.0	U	<1.0	U	<1.0	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	UJ	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
µg/L - micrograms per liter
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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW01_060622-a 6/06/22		35AWW01_060623 6/6/23		35AWW02-981108 11/8/1998		35AWW02-040910 9/10/2004		35AWW02-112608 11/26/2008		35AWW02-112608-FD 11/26/2008		35AWW02-102213 10/22/2013		35AWW05-040908 9/8/2004		35AWW05-112108 11/21/2008		35AWW05-101613 10/16/2013	
1,1-DICHLOROETHENE	µg/L	7	<0.5	U	<0.5	U	<1	U	<5	U	<1	U	<1	U	<1	U	<5	U	0.551	J	<1	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<1	U	<5	U	<1	U	<1	U	<0.5	U	<5	U	<1	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<1.0	U	<0.5	U	<1	U	<5	U	<1	U	<1	U	<0.5	U	<5	U	<1	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<1	U	<5	U	<1	U	<1	U	<0.5	U	<5	U	<1	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<1	U	<5	U	<1	U	<1	U	<0.5	U	<5	U	<1	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<1	U	<5	U	<1	U	<1	U	<0.5	U	<5	U	<1	U	<0.5	U

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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW05-020114 2/1/2014	35AWW05-052214 5/22/2014	35AWW05FD-052214 5/22/2014	35AWW05-102114 10/21/2014	35AWW05-012315 1/23/2015	35AWW05FD-012315 1/23/2015	35AWW05-040815 4/8/2015	35AWW05-071015 7/10/2015	35AWW05-100515 10/2/2015	35AWW05-041416 4/14/2016
1,1-DICHLOROETHENE	µg/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	µg/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	µg/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	µg/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Notes:
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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW05-100516 10/5/2016		35AWW05-111317 11/13/2017		35AWW05-070218 7/2/2018		35AWW05-070218_a 7/2/2018		35AWW05_121218 12/12/2018		35AWW05_061019 6/10/2019		35AWW05_120320 12/3/20		35AWW05_060221 6/02/21		35AWW05_120221 12/2/21		35AWW05_060922 6/09/22	
1,1-DICHLOROETHENE	µg/L	7	<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW05_011323 1/13/23		35AWW05_011323_a 1/13/23		35AWW05_060723 6/7/23		35AWW06-120308 12/3/2008		35AWW06-110509 5/9/2011		35AWW06-101513 10/15/2013		35AWW06-013014 1/30/2014		35AWW06-052114 5/21/2014		35AWW06-102914 10/29/2014		35AWW06-012815 1/28/2015	
1,1-DICHLOROETHENE	µg/L	7	<1.0	U	<1.0	U	<0.5	U	57.6		21.3		15.8		14.2		12		16		13.5	
CIS-1,2-DICHLOROETHENE	µg/L	70	<1.0	U	<1.0	U	<0.5	U	0.37	J	<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<1.0	U	<1.0	U	<0.5	U	7.19		<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<1.0	U	<1.0	U	<0.5	U	<1	U	<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<1.0	U	<1.0	U	<0.5	U	0.811	J	<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<1.0	U	<1.0	U	<0.5	U	<1	U	<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

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µg/L - micrograms per liter
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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW06-041515 4/15/2015		35AWW06-070715 7/7/2015		35AWW06-100715 10/7/2015		35AWW06-041116 4/11/2016		35AWW06-100316 10/3/2016		35AWW06-111417 11/14/2017		35AWW06-71818 7/18/2018		35AWW06_092618 9/26/2018		35AWW06_121118 12/11/2018		35AWW06_031919 03/19/2019	
1,1-DICHLOROETHENE	µg/L	7	4.17		18.6		12.8		13		7.48		3.9		<0.5	UJ	<0.5	U	3.4		<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U

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Blue Highlighting Indicates Analyte Detected Above MCL
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Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW06_031 919_a 03/19/2019		35AWW06_060 419 6/4/2019		35AWW06_091 119 9/11/2019		35AWW06_091 119_a 9/11/2019		35AWW06_121 919 12/19/2019		35AWW06_032 420 03/24/2020		35AWW06_062 420 6/24/2020		35AWW06_120 120 12/1/20		35AWW06_060 321 6/03/21		35AWW06_12 0121 12/1/21	
1,1-DICHLOROETHENE	µg/L	7	1.4		<0.5	U	0.92	J	0.88	J	<0.5	UJ	0.78	J	0.99	J	0.78	J	0.9	J	1.4	
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	0.51	J	<0.5	U	<0.5	U	<0.5	U

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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW06_060822 6/08/22		35AWW06_011223 1/12/23		35AWW06_060523 6/5/23		35AWW07R-101613 10/16/2013		35AWW08-112408 11/24/2008		35AWW08-110509 5/9/2011		35AWW08-082013 8/20/2013		35AWW08-101013 10/10/2013		35AWW08-012914 1/29/2014		35AWW08-052014 5/20/2014	
1,1-DICHLOROETHENE	µg/L	7	1	J	1.0		1.2		<1	U	<100	U	<25	U	<10	U	<10	U	<10	U	<10	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<1.0	U	<0.5	U	0.709	J	<100	U	13.4	J	9.35	J	<5	U	55.9		47.2	
TETRACHLOROETHENE	µg/L	5	<0.5	U	<1.0	U	<0.5	U	0.586	J	9,590		6,480		1,640		603	J	599		204	
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<1.0	U	<0.5	U	<0.5	U	<100	U	<25	U	<5	U	<5	U	<5	U	2.82	J
TRICHLOROETHENE	µg/L	5	<0.5	U	<1.0	U	<0.5	U	1.03		675		1,150		544		149	J	895		953	
VINYL CHLORIDE	µg/L	2	<0.5	U	<1.0	U	<0.5	U	<0.5	U	<100	U	<25	U	<5	U	<5	U	<5	U	<5	U

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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
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Sample Identification: / Sample Date:	Units	MCL	35AWW08-102714 10/27/2014		35AWW08-012115 1/21/2015		35AWW08-041515 4/15/2015		35AWW08-070815 7/8/2015		35AWW08-100815 10/8/2015		35AWW08-041316 4/13/2016		35AWW08-100416 10/4/2016		35AWW08-111517 11/15/2017		35AWW08-071818 7/18/2018		35AWW08-111517 12/12/2018	
1,1-DICHLOROETHENE	µg/L	7	<50	U	<50	U	<50	U	<100	U	<25	U	<25	U	<10	U	<5	U	<2.5	UJ	<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	38.6	J	27.2	J	30.7	J	73.5	J	79.6		60.9		41.7		38		12	J	8.9	J
TETRACHLOROETHENE	µg/L	5	112		119		110		110		79		80.1		36.9		12		<2.5	UJ	< 5.0	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<25	U	<25	U	<25	U	<50	U	<12.5	U	<12.5	U	<5	U	<5	U	<2.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	653		491		607		746		581		234		235		33		19	J	12	
VINYL CHLORIDE	µg/L	2	<25	U	<25	U	<25	U	<50	U	<12.5	U	14.2	J	7.46	J	<5	U	9.0	J	<0.5	U

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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
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1,1-DICHLOROETHENE	µg/L	7	<2.5	U	< 5.0	U	< 2.5	U	< 5.0	U	< 12	U	< 2.5	U	< 2.5	U	<1	U	<1	UJ	<1	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<2.5	U	< 5.0	U	7.3		18		30		< 2.5	U	5.2		<0.5	U	<0.5	UJ	0.317	J
TETRACHLOROETHENE	µg/L	5	4.8	J	< 5.0	U	6.7		< 5.0	U	< 25	U	< 5.0	U	< 2.5	U	21.9		57.6	J	125	
TRANS-1,2-DICHLOROETHENE	µg/L	100	<2.5	U	< 5.0	U	4.5	J	< 5.0	U	< 12	U	3.9	J	< 2.5	U	<0.5	U	<0.5	UJ	<0.5	U
TRICHLOROETHENE	µg/L	5	13		< 5.0	U	17		< 5.0	U	53		< 2.5	U	5.2		11.9		8.97	J	37.3	
VINYL CHLORIDE	µg/L	2	<2.5	U	< 5.0	U	<2.5	U	6.1	J	24	J	< 2.5	U	2.6 J		<0.5	U	<0.5	UJ	<0.5	U

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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW09-052014 5/20/2014		35AWW09-102714 10/27/2014		35AWW09-012115 1/21/2015		35AWW09-041415 4/14/2015		35AWW09-070715 7/7/2015		35AWW09-100715 10/7/2015		35AWW09-041216 4/12/2016		35AWW09-100316 10/3/2016		35AWW09-111517 11/15/2017		35AWW09-071618 7/12/2018	
1,1-DICHLOROETHENE	µg/L	7	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<0.5	U	2.7	
CIS-1,2-DICHLOROETHENE	µg/L	70	0.502	J	0.703	J	0.486	J	0.483	J	0.622	J	0.717	J	0.515	J	0.437	J	0.78	J	0.94	J
TETRACHLOROETHENE	µg/L	5	128		254		183		155		194		283		172		173		450		130	
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	41.7		93		64.3		45		59.5		81.3		55.7		48.2		150		38	
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
µg/L - micrograms per liter
MCL - Maximum Contaminant Level
NA - not analyzed
J - Estimated value; analyte concentration was less than the limit of quantification
U - Analyte was not detected.
UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW09_121 118 12/11/2018		35AWW09_060 319 6/3/2019		35AWW09_121 819 12/18/2019		35AWW09_062 320 6/23/2020		35AWW09_120 720 12/7/20		35AWW09_060 221 6/02/21		35AWW09_060 221-a 6/02/21		35AWW09_06 0622 6/06/22		35AWW09_06 0623 6/6/23		35AWW09_06 0623_a 6/6/23	
1,1-DICHLOROETHENE	µg/L	7	<0.5	U	<0.5	U	<0.5	U	<0.5	U	< 5.0	U	< 5.0	U	< 5.0	U	< 5.0	U		U	<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	0.94	J	<0.5	U	1.1		1.1		1.1		0.88	J	0.89	J	1.1		1.3		1.6	
TETRACHLOROETHENE	µg/L	5	150		130		500		440		370		350		310		380		450		460	
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	150		38		160		140		140		130	J	130	J	140		180		180	
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:
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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW10-082913 8/29/2013	35AWW10-101013 10/10/2013	35AWW10-012914 1/29/2014	35AWW10-052014 5/20/2014	35AWW10-102814 10/28/2014	35AWW10-012715 1/27/2015	35AWW10-041415 4/14/2015	35AWW10-070715 7/7/2015	35AWW10-100715 10/7/2015	35AWW10-041316 4/13/2016
1,1-DICHLOROETHENE	µg/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	µg/L	5	<0.5 U	<0.5 U	<0.5 U	0.401 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	µg/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	µg/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Notes:
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µg/L - micrograms per liter
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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW10-100316 10/3/2016		35AWW10-111517 11/15/2017		35AWW10-071218 07/12/2018		35AWW10_121218 12/12/18		35AWW10_121218_a 12/12/2018		35AWW10_060419 6/4/2019		35AWW10_060419_a 6/4/2019		35AWW10_121919 12/19/2019		35AWW10_121919-a 12/19/2019		35AWW10_062920 6/29/2020	
1,1-DICHLOROETHENE	µg/L	7	<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	UJ	<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	UJ	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	UJ	<1.0	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	UJ	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	UJ	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	UJ	<0.5	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW10_120720 12/7/20		35AWW10_120720-a 12/7/20		35AWW10_060121 6/01/21		35AWW10_060622 6/06/22		35AWW10_060623 6/6/23		35AWW11-101513 10/15/2013		35AWW11-020314 2/3/2014		35AWW11-052114 5/21/2014		35AWW11-102914 10/29/2014		35AWW11-012715 1/27/2015	
1,1-DICHLOROETHENE	µg/L	7	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	7.7		10.1		11.6		21.9		12.5	
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<1.0	U	<1.0	U	<1.0	U	<1.0	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.442	J	<0.5	U	<0.5	U	0.369	J	<0.5	U

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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW11-041415 4/14/2015		35AWW11-070815 7/8/2015		35AWW11-100715 10/7/2015		35AWW11-041216 4/12/2016		35AWW11-100316 10/3/2016		35AWW11-111417 11/14/2017		35AWW11-071618 07/16/2018		35AWW11_092718 9/27/2018		35AWW11_121118 12/11/2018		35AWW11_031919 03/19/2019	
1,1-DICHLOROETHENE	µg/L	7	13.5		16.8		14.7		21.3		16		12		9		2.3		1.6		<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	0.292	J	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	0.273	J	<0.5	U	<0.5	U	0.532	J	0.328	J	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW11_060319 6/3/2019		35AWW11_091119 9/11/2019		35AWW11_121819 12/18/2019		35AWW11_032420 03/24/2020		35AWW11_032420-a 03/24/2020		35AWW11_062320 6/23/2020		35AWW11_120120 12/1/20		35AWW11_120120_a 12/1/20		35AWW11_060221 6/02/21		35AWW11_120121 12/1/21	
1,1-DICHLOROETHENE	µg/L	7	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.53	J	<0.5	U	0.62	J	1.5	
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1.0	U	<1.0	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	1.4		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW11_060822 6/08/22		35AWW11_011223 1/12/23		35AWW11_060523 6/5/23		35AWW12-101813 10/18/2013		35AWW12FD-101813 10/18/2013		35AWW12-013114 1/31/2014		35AWW12FD-013114 1/31/2014		35AWW12-052914 5/29/2014		35AWW12-103014 10/30/2014		35AWW12-012815 1/28/2015	
1,1-DICHLOROETHENE	µg/L	7	2.1	J	2.5		2.6		<0.5	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<1.0	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<1.0	U	<1.0	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.343	J	0.326	J
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<1.0	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<1.0	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<1.0	U	0.61	J	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW12-040715 4/7/2015		35AWW12FD-040715 4/7/2015		35AWW12-070915 7/9/2015		35AWW12-100515 10/5/2015		35AWW12FD-100515 10/5/2015		35AWW12-041216 4/12/2016		35AWW12-100516 10/5/2016		35AWW12FD-100516 10/5/2016		35AWW12-111617 11/16/2017		35AWW12-062918 06/29/2018	
1,1-DICHLOROETHENE	µg/L	7	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<0.5	U	<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	UJ
TETRACHLOROETHENE	µg/L	5	0.279	J	0.251	J	<0.5	U	0.511	J	0.426	J	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	UJ
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	UJ
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	UJ
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

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Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW12_121418 12/14/2018		35AWW12_121418 12/14/2018		35AWW12_061019a 6/10/2019		35AWW12_121819 12/18/2019		35AWW12_062520 6/25/2020		35AWW12_120720 12/7/20		35AWW12_060221 6/02/21		35AWW12_060622 06/06/22		35AWW12_060622-a 6/06/22		35AWW12_060523 6/5/23	
1,1-DICHLOROETHENE	µg/L	7	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1.0	U	<0.5	U	<1.0	U	<0.5	U	<1.0	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
µg/L - micrograms per liter
MCL - Maximum Contaminant Level
NA - not analyzed
J - Estimated value; analyte concentration was less than the limit of quantification
U - Analyte was not detected.
UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW12_060523_a 6/5/23		35AWW13-101113 10/11/2013		35AWW13FD-101113 10/11/2013		35AWW13-020314 2/3/2014		35AWW13-052214 5/22/2014		35AWW13-102114 10/21/2014		35AWW13FD-102114 10/21/2014		35AWW13-012315 1/23/2015		35AWW13-040815 4/8/2015		35AWW13-070915 7/9/2015	
1,1-DICHLOROETHENE	µg/L	7	<0.5	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
µg/L - micrograms per liter
MCL - Maximum Contaminant Level
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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW13-100615 10/6/2015		35AWW13-041316 4/13/2016		35AWW13-100616 10/6/2016		35AWW13-111617 11/16/2017		35AWW13-062818 06/29/2018		35AWW13_121118 12/11/2018		35AWW13_060719 6/7/2019		35AWW13_121819 12/18/2019		35AWW13_062920 6/29/2020		35AWW13_120720 12/7/20	
1,1-DICHLOROETHENE	µg/L	7	<1	U	<1	U	<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
µg/L - micrograms per liter
MCL - Maximum Contaminant Level
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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW13_060121 6/01/21		35AWW13_060622 6/06/22		35AWW13_060623 6/6/23		35AWW14-101813 10/18/2013		35AWW14-013114 1/31/2014		35AWW14-052814 5/28/2014		35AWW14FD-052814 5/28/2014		35AWW14-103014 10/30/2014		35AWW14-012115 1/21/2015		35AWW14-040715 4/7/2015	
1,1-DICHLOROETHENE	µg/L	7	<0.5	U	<0.5	U	<0.5	U	1.63	J	1.63	J	1.22	J	1.07	J	1.57	J	1.8	J	1.78	J
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	2.04		1.75		1.46		1.47		1.94		1.91		2.08	
TETRACHLOROETHENE	µg/L	5	<1.0	U	<1.0	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	0.663	J	0.669	J	0.612	J	0.565	J	0.806	J	0.707	J	0.786	J
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	0.272	J	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
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Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW14-070915 7/9/2015		35AWW14-100215 10/2/2015		35AWW14-041316 4/13/2016		35AWW14-100616 10/6/2016		35AWW14-111717 11/17/2017		35AWW14-071818 07/18/2018		35AWW14_121318 12/13/2018		35AWW14_060719 6/7/19		35AWW14_121919 12/19/2019		35AWW14_062520 6/25/2020	
1,1-DICHLOROETHENE	µg/L	7	1.7	J	2.47		3.25		10.4		8.7		9.7	J	10		12		15	J	9.3	
CIS-1,2-DICHLOROETHENE	µg/L	70	1.7		1.96		1.78		5.09		3.5		4.0	J	4.6		5.2		3.7	J	4.6	
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	UJ	<1.0	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U
TRICHLOROETHENE	µg/L	5	0.632	J	1.06		1.79		10.2		7.4		8.4	J	9.4		12		11	J	11	
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	0.303	J	0.303	J	<0.5	UJ	1.3		<0.5	U	0.75	J	<0.5	U

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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW14_120720 12/7/20		35AWW14_060121 6/01/21		35AWW14_060622 6/06/22		35AWW14_060723 6/7/23		35AWW15-101613 10/16/2013		35AWW15FD-101613 10/16/2013		35AWW15-020114 2/1/2014		35AWW15-052814 5/28/2014		35AWW15-102114 10/21/2014		35AWW15-012315 1/23/2015	
1,1-DICHLOROETHENE	µg/L	7	9.4		10		9.6		9.3		<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
CIS-1,2-DICHLOROETHENE	µg/L	70	4.5		5.0		5.0		4.3		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<1.0	U	<1.0	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	11		14		13		10		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW15-041015 4/10/2015		35AWW15-071015 7/10/2015		35AWW15-100615 10/6/2015		35AWW15-041416 4/14/2016		35AWW15-100516 10/5/2016		35AWW15-111617 11/16/2017		35AWW15-071818 07/18/2018		35AWW15-071818_a 07/18/2018		35AWW15_121218 12/12/2018		35AWW15_060719 6/7/2019	
1,1-DICHLOROETHENE	µg/L	7	<1	U	<1	U	<1	U	<1	U	<1	U	<0.5	U	<0.5	UJ	<0.5	UJ	<0.5	U	<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	UJ	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	UJ	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	UJ	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	UJ	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	UJ	<0.5	U	<0.5	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW15_122019 12/20/2019	35AWW15_062520 6/25/2020	35AWW15_120120 12/1/20	35AWW15_060121 6/01/21	35AWW15_120221 12/2/21	35AWW15_060922 6/09/22	35AWW15_011323 1/13/23	35AWW15_060723 6/7/23	35AWW16-102213 10/22/2013	35AWW16-013114 1/31/2014
1,1-DICHLOROETHENE	µg/L	7	<0.5 UJ	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.0 U	<0.5 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5 UJ	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.0 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	µg/L	5	<0.5 UJ	<1.0 U	<0.5 U	<1.0 U	<0.5 U	<1.0 U	<1.0 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5 UJ	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.0 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	µg/L	5	<0.5 UJ	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.0 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	µg/L	2	<0.5 UJ	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1.0 U	<0.5 U	<0.5 U	<0.5 U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
µg/L - micrograms per liter
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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
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Sample Identification: / Sample Date:	Units	MCL	35AWW16-052814 5/28/2014		35AWW16-103014 10/30/2014		35AWW16-012715 1/27/2015		35AWW16FD-012715 1/27/2015		35AWW16-040715 4/7/2015		35AWW16-070915 7/9/2015		35AWW16FD-070915 7/9/2015		35AWW16-100615 10/6/2015		35AWW16-041216 4/12/2016		35AWW16-100416 10/4/2016	
1,1-DICHLOROETHENE	µg/L	7	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
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Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW16FD-100416 10/4/2016		35AWW16-111317 11/13/2017		35AWW16-111317_a 11/13/2017		35AWW16-062918 06/29/2018		35AWW16-062918_a 06/29/2018		35AWW16_121218 12/12/2018		35AWW16_061019 6/10/2019		35AWW16_121919 12/19/2019		35AWW16_062520 6/25/2020		35AWW16_120120 12/1/20	
1,1-DICHLOROETHENE	µg/L	7	<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	1.4		<0.5	UJ	<0.5	U	<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<1.0	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U

Notes:
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Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW16_060121 6/01/21		35AWW16_060922 6/09/22		35AWW16_060723 6/7/23		35AWW17-101813 10/18/2013		35AWW17-020114 2/1/2014		35AWW17-052914 5/29/2014		35AWW17-103114 10/31/2014		35AWW17-012815 1/28/2015		35AWW17-041015 4/10/2015		35AWW17-071015 7/10/2015	
1,1-DICHLOROETHENE	µg/L	7	<0.5	U	<0.5	U	<0.5	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	UJ
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ
TETRACHLOROETHENE	µg/L	5	<1.0	U	<1.0	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
µg/L - micrograms per liter
MCL - Maximum Contaminant Level
NA - not analyzed
J - Estimated value; analyte concentration was less than the limit of quantification
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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW17-100515 10/2/2015		35AWW17-041116 4/11/2016		35AWW17-100316 10/3/2016		35AWW17-111317 11/13/2017		35AWW17-062918 06/29/2018		35AWW17_121718 12/17/2018		35AWW17_061019 6/10/2019		35AWW17_121819 12/18/2019		35AWW17_062920 6/29/2020		35AWW17_120120 12/1/20	
1,1-DICHLOROETHENE	µg/L	7	<1	U	<1	U	<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1.0	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

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Table 4
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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW17_060321 6/03/21		35AWW17_060922 6/09/22		35AWW17_060723 6/7/23		35AWW18-101813 10/18/2013		35AWW18-020114 2/1/2014		35AWW18-052914 5/29/2014		35AWW18-103114 10/31/2014		35AWW18-012815 1/28/2015		35AWW18-041015 4/10/2015		35AWW18-071015 7/10/2015	
1,1-DICHLOROETHENE	µg/L	7	<0.5	U	<0.5	U	<0.5	U	<1	U	<1	U	<1	U	0.792	J	0.726	J	0.78	J	<1	UJ
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ
TETRACHLOROETHENE	µg/L	5	<1.0	U	<1.0	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
µg/L - micrograms per liter
MCL - Maximum Contaminant Level
NA - not analyzed
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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW18-100515 10/2/2015		35AWW18-041116 4/11/2016		35AWW18FD-041116 4/11/2016		35AWW18-100516 10/5/2016		35AWW18-111317 11/13/2017		35AWW18-062918 06/29/2018		35AWW18_121718 12/17/2018		35AWW18_121718_a 12/17/2018		35AWW18_060419 6/4/2019		35AWW18_121819 12/18/2019	
1,1-DICHLOROETHENE	µg/L	7	<1	U	2.13		2.09		0.97	J	<0.5	U	1.2		2		2.3		3.5		4.1	
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
µg/L - micrograms per liter
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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW18_062520 6/25/2020		35AWW18_120120 12/1/20		35AWW18_120120_a 12/1/20		35AWW18_060121 6/01/21		35AWW18_060922 6/09/22		35AWW18_060723 6/7/23		35AWW19-102213 10/22/2013		35AWW19-013114 1/31/2014		35AWW19-052814 5/28/2014		35AWW19-103014 10/30/2014	
1,1-DICHLOROETHENE	µg/L	7	18		22		22		20		15		29		6.45		9.31		9.98		10.9	
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<1.0	U	<1.0	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.379	J	0.619	J	0.596	J	0.81	J
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

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Table 4
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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW19-012115 1/21/2015		35AWW19-040715 4/7/2015		35AWW19-070915 7/9/2015		35AWW19FD-070915 7/9/2015		35AWW19-100215 10/2/2015		35AWW19-041216 4/13/2016		35AWW19-100616 10/6/2016		35AWW19-111717 11/17/2017		35AWW19-071818 07/18/2018		35AWW19_092718 9/27/2018	
1,1-DICHLOROETHENE	µg/L	7	17.4		17.5		13.4		11.7		14.7		13.5		12.9		7.7		13	J	8.8	
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U
TRICHLOROETHENE	µg/L	5	0.941	J	1.13		0.807	J	0.751	J	0.939	J	0.899	J	0.754	J	<0.5	U	<0.5	UJ	0.59	J
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U

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Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW19_121 018 12/10/2018		35AWW19_031 919 03/19/2019		35AWW19_060 319 6/3/2019		35AWW19_091 119 9/11/2019		35AWW19_121 819 12/18/2019		35AWW19_032 420 03/24/2020		35AWW19_062 420 6/24/2020		35AWW19_120 320 12/3/20		35AWW19_060 321 6/03/21		35AWW19_120 121 12/1/21	
1,1-DICHLOROETHENE	µg/L	7	7.5		3.6		2.6		5.3		4.5		4.4		4.6		3.2		2.9		2.4	
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1.0	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	0.59	J	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

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Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW19_060822 6/08/22		35AWW19_011223 1/12/23		35AWW19_060523 6/5/23		35AWW20-101513 10/15/2013		35AWW20-020314 2/3/2014		35AWW20-052114 5/21/2014		35AWW20-102914 10/29/2014		35AWW20-012715 1/27/2015		35AWW20-041515 4/15/2015		35AWW20-070815 7/8/2015	
1,1-DICHLOROETHENE	µg/L	7	2.9		5.0		4.8		3,230		2,950		5,060		4,910		5,660		4,640		4,780	
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<1.0	U	<0.5	U	110		87.7		110		119		123		120		118	
TETRACHLOROETHENE	µg/L	5	<1.0	U	<1.0	U	<0.5	U	1.65		1.53		<10	U	<10	U	<10	U	<12.5	U	<12.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<1.0	U	<0.5	U	3.77		3.52		<10	U	<10	U	<10	U	<12.5	U	<12.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<1.0	U	1.1		513		479		695		843		820		718		636	
VINYL CHLORIDE	µg/L	2	<0.5	U	<1.0	U	<0.5	U	105		62.4		65.7		102		122		90.6		151	

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LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
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Sample Identification: / Sample Date:	Units	MCL	35AWW20-100815 10/8/2015		35AWW20-041316 4/13/2016		35AWW20-100416 10/4/2016		35AWW20-111417 11/14/2017		35AWW20-111417_a 11/14/2017		35AWW20-071618 07/16/2018		35AWW20_092618 9/26/2018		35AWW20_092618-a 9/26/2018		35AWW20_121018 12/10/2018		35AWW20_031919 03/19/2019	
1,1-DICHLOROETHENE	µg/L	7	3,630		5,460		3,440		1,900		2,000		1,400		1,100		970		2,700		1,500	
CIS-1,2-DICHLOROETHENE	µg/L	70	105		126		115		53		50		69		45		40		120		49	J
TETRACHLOROETHENE	µg/L	5	<12.5	U	<12.5	U	<10	U	0.80	J	0.77	J	<0.5	U	0.81	J	0.71	J	1.3		<0.5	UJ
TRANS-1,2-DICHLOROETHENE	µg/L	100	<12.5	U	5.16	J	<10	U	6.7		5.6		2.9		1.8		1.7		6.1		4.9	J
TRICHLOROETHENE	µg/L	5	582		707		594		320		320		270		170		140		570		180	
VINYL CHLORIDE	µg/L	2	126		216		166		78		75		71		<0.5	U	<0.5	U	110		54	J

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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW20_060419 6/4/2019		35AWW20_091119 9/11/2019		35AWW20_121919 12/19/2019		35AWW20_032420 03/24/2020		35AWW20_062420 6/24/2020		35AWW20_120320 12/3/20		35AWW20_060321 6/03/21		35AWW20_120121 12/1/21		35AWW20_060822 6/08/22		35AWW20_011223 1/12/23	
1,1-DICHLOROETHENE	µg/L	7	1,800		3,900		970	J	1,300		1,100		950		1,600		1,100		1,600		2,600	
CIS-1,2-DICHLOROETHENE	µg/L	70	79		110		70	J	71		63		63		87		86		89		110	
TETRACHLOROETHENE	µg/L	5	<2.5	U	<0.5	U	<5.0	UJ	<2.5	U	0.61	J	<0.5	U	<10	U	0.66	J	<0.5	U	0.6	J
TRANS-1,2-DICHLOROETHENE	µg/L	100	13		14		9.1	J	6.6		7.2		6.7		<5.0	U	4.9		6.4	U	9.2	
TRICHLOROETHENE	µg/L	5	230		350		99	J	120		94		91		190		100		150		220	
VINYL CHLORIDE	µg/L	2	140		790		2,800	J	1,500		2,000		1,800		780		650		840		990	

Notes:
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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW20_060523 6/5/23	35AWW21-101613 10/16/2013	35AWW21-020414 2/4/2014	35AWW21-052214 5/22/2014	35AWW21-102114 10/21/2014	35AWW21-012315 1/23/2015	35AWW21-040815 4/8/2015	35AWW21-070915 7/9/2015	35AWW21-100615 10/6/2015	35AWW21-041316 4/13/2016
1,1-DICHLOROETHENE	µg/L	7	1,700	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	µg/L	70	85	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	µg/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	µg/L	100	7.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	µg/L	5	180	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	µg/L	2	940	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
µg/L - micrograms per liter
MCL - Maximum Contaminant Level
NA - not analyzed
J - Estimated value; analyte concentration was less than the limit of quantification
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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW21FD-041316 4/13/2016		35AWW21-100416 10/4/2016		35AWW21FD-100416 10/4/2016		35AWW21-111317 11/13/2017		35AWW21-062918 06/29/2018		34AWW21_121318 12/13/2018		35AWW21_060419 6/4/2019		34AWW21_122019 12/20/2019		34AWW21_122019-a 12/20/2019		34AWW21_062920 6/29/2020	
1,1-DICHLOROETHENE	µg/L	7	<1	U	<1	U	<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1.0	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:
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µg/L - micrograms per liter
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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	34AWW21_062920_a 6/29/2020		34AWW21_120720 12/7/20		34AWW21_060121 6/01/21		34AWW21_060922 6/09/22		35AWW21_060623 6/6/23		35AWW22-102213 10/22/2013		35AWW22-013114 1/31/2014		35AWW22-052914 5/29/2014		35AWW22-103014 10/30/2014		35AWW22FD-103014 10/30/2014	
1,1-DICHLOROETHENE	µg/L	7	<0.5	U	<0.5	U	<0.5	U	<0.5	U	1.1		<1	U	<1	U	<1	U	<1	U	<1	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<1.0	U	<0.5	U	<1.0	U	<1.0	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
µg/L - micrograms per liter
MCL - Maximum Contaminant Level
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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW22-012115 1/21/2015		35AWW22FD-012115 1/21/2015		35AWW22-040715 4/7/2015		35AWW22-070915 7/9/2015		35AWW22-100515 10/5/2015		35AWW22-041316 4/13/2016		35AWW22-100616 10/6/2016		35AWW22-111717 11/17/2017		35AWW22-071818 07/18/2018		35AWW22_121418 12/14/2018	
1,1-DICHLOROETHENE	µg/L	7	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<0.5	U	<0.5	UJ	<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
µg/L - micrograms per liter
MCL - Maximum Contaminant Level
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Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW22_06101 9 6/10/2019		35AWW22_12181 9 12/18/2019		35AWW22_06 2420 6/24/2020		35AWW22_1 20720 12/7/20		35AWW22_06 0221 6/02/21		35AWW22_0 60622 6/06/22		35AWW22_0 60623 6/06/23		35AWW23- 071718 07/17/2018		35AWW23_121 018 12/10/2018		35AWW23_060 319 6/3/2019	
1,1-DICHLOROETHENE	µg/L	7	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	2.1		2.5		<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	12		20		4.3	
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<1.0	U	<0.5	U	<1.0	U	<1.0	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	2.6		5.3		1.8	
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
µg/L - micrograms per liter
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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW23_091 119 9/11/2019		35AWW23_121 819 12/18/2019		35AWW23_032 420 03/24/2020		35AWW23_062 420 6/24/2020		35AWW23_120 320 12/3/20		35AWW23_060 321 6/03/21		35AWW23_120 221 12/2/21		35AWW23_06 0822 6/08/22		35AWW23_011 223 1/12/23		35AWW23_06 0523 6/5/23	
1,1-DICHLOROETHENE	µg/L	7	0.7	J	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1.0	U	<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	7.8		7.6		6.5		5.0		2.7		1.0		0.63	J	<0.5	U	<1.0	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1.0	U	<0.5	U	<1.0	U	<1.0	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1.0	U	<0.5	U
TRICHLOROETHENE	µg/L	5	3.8		2.7		1.3		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1.0	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	1.1		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1.0	U	<0.5	U

Notes:
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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW24-071718 07/17/2018		35AWW24_092718 9/27/2018		35AWW24_121018 12/10/2018		35AWW24_031919 03/19/2019		35AWW24_060319 6/3/2019		35AWW24_121919 12/19/2019		35AWW24_062520 6/25/2020		35AWW24_062520-a 6/25/2020		35AWW24_120320 12/3/20		35AWW24_060121 6/01/21	
1,1-DICHLOROETHENE	µg/L	7	<0.5	U	<0.5	U	<0.5	U	0.81	J	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U	<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<1.0	U	<1.0	U	<0.5	U	<1.0	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U	<0.5	U
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U	<0.5	U

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µg/L - micrograms per liter
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Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	35AWW24_060121-a 6/01/21		35AWW24_120221 12/2/21		35AWW24_060822 6/08/22		35AWW24_060822-a 6/08/22		35AWW24_011323 1/13/23		35AWW24_060723 6/7/23		35AWW26_011323 1/13/23		35AWW26_011323_a 1/13/23		35AWW26_060623 6/6/23		35AWW27_080223 8/2/23	
1,1-DICHLOROETHENE	µg/L	7	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1.0	U	<0.5	U	72		76		94		2.2	
CIS-1,2-DICHLOROETHENE	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1.0	U	<0.5	U	1.5		1.4		1.9		0.62	J
TETRACHLOROETHENE	µg/L	5	<1.0	U	<0.5	U	<1.0	U	<1.0	U	<1.0	U	<0.5	U	<1.0	U	<1.0	U	<0.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1.0	U	<0.5	U	<1.0	U	<1.0	U	0.48	J	<0.5	U
TRICHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1.0	U	<0.5	U	<1.0	U	<1.0	U	<0.5	U	1.7	
VINYL CHLORIDE	µg/L	2	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1.0	U	<0.5	U	12		12		7.4		<0.5	U

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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	LHSMW04-941201 12/1/1994	LHSMW04-960812 8/12/1996	LHSMW04-980513 5/13/1998	LHSMW04-040909 9/9/2004	LHSMW04-FEB2007 2/20/2007	LHSMW04-013008 1/30/2008	LHSMW04-112508 11/25/2008	LHSMW04-032916 3/29/2016	LHSMW04-041316 4/13/2016	LHSMW05-941201 12/1/1994
1,1-DICHLOROETHENE	µg/L	7	<5 U	<0.2 U	<1 U	<5 U	<2 U	<1 U	<1 U	<1 U	<2.5 U	<5 U
CIS-1,2-DICHLOROETHENE	µg/L	70	NA	<0.2 U	<1 U	<5 U	<2 U	<1 U	0.292 J	0.666 J	0.851 J	NA
TETRACHLOROETHENE	µg/L	5	<5 U	<0.25 U	<1 U	<5 U	6.4	8.74	25.7	419	397	870
TRANS-1,2-DICHLOROETHENE	µg/L	100	NA	<0.29 U	<1 U	<5 U	<2 U	<1 U	<1 U	<0.5 U	<1.25 U	NA
TRICHLOROETHENE	µg/L	5	<5 U	<0.25 U	<1 U	<5 U	4.6	5.74	11.3	106	86.1	49
VINYL CHLORIDE	µg/L	2	NA	<0.24 U	<1 U	<5 U	<2 U	<1 U	<1 U	<0.5 U	<1.25 U	NA

Notes:
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µg/L - micrograms per liter
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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	LHSMW05-960131 1/31/1996		LHSMW05-960812 8/12/1996		LHSMW05-980513 5/13/1998		LHSMW05-040909 9/9/2004		LHSMW06-941201 12/1/1994		LHSMW06-960813 8/13/1996		LHSMW06-980513 5/13/1998		LHSMW06-040908 9/8/2004		LHSMW06-FEB2007 2/21/2007		LHSMW06-111908 11/19/2008	
1,1-DICHLOROETHENE	µg/L	7	<1	U	<0.2	U	<40	U	<5	U	<5	U	2		1.3		<5	U	<2	U	<1	U
CIS-1,2-DICHLOROETHENE	µg/L	70	<1	U	0.21		<40	U	<5	U	NA		0.98		1.4		<5	U	5.1		2.26	
TETRACHLOROETHENE	µg/L	5	4,884		2,700		4,900		5,100	J	<5	U	0.27		0.69		2	J	<2	U	<1	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<1	U	<0.29	U	<40	U	<5	U	NA		<0.29	U	<1	U	<5	U	<2	U	<1	U
TRICHLOROETHENE	µg/L	5	99		39.7		160		230	J	<5	U	0.43		0.53		<5	U	0.77	J	0.486	J
VINYL CHLORIDE	µg/L	2	<1	U	<0.24	U	<40	U	<5	U	NA		0.62		<1	U	<5	U	<2	U	<1	U

Notes:
Blue Highlighting Indicates Analyte Detected Above MCL
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MCL - Maximum Contaminant Level
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U - Analyte was not detected.
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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	LHSMW06-101713 10/17/2013	LHSMW06-013114 1/31/2014	LHSMW06-052814 5/28/2014	LHSMW06-103014 10/30/2014	LHSMW06-012115 1/21/2015	LHSMW06-040715 4/7/2015	LHSMW06-070915 7/9/2015	LHSMW06-100215 10/2/2015	LHSMW06-041316 4/13/2016	LHSMW06-100616 10/6/2016
1,1-DICHLOROETHENE	µg/L	7	1.23 J	0.884 J	1.68 J	4.03	3.28	5.95	8.2	12.1	13.7	19.2
CIS-1,2-DICHLOROETHENE	µg/L	70	4.01	1.85	2.59	5.2	3.25	5.52	7.24	10.4	11.9	19
TETRACHLOROETHENE	µg/L	5	0.663 J	<0.5 U	0.255 J	0.381 J	0.255 J	0.454 J	0.443 J	0.518 J	0.563 J	0.9 J
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.391 J
TRICHLOROETHENE	µg/L	5	1.87	0.751 J	1.41	2.77	1.75	3.02	3.23	5.66	6.5	9.06
VINYL CHLORIDE	µg/L	2	0.627 J	0.5 J	0.597 J	1.15	0.924 J	0.967 J	1.36	2.1	2.38	2.94

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Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	LHSMW06-111717 11/17/2017		LHSMW06-070218 07/02/2018		LHSMW06_121318 12/13/2018		LHSMW06_121318_a 12/13/2018		LHSMW06_060719 6/7/2019		LHSMW06_122019 12/20/2019		LHSMW06_122019_a 12/20/2019		LHSMW06_062520 6/25/2020		LHSMW06_120320 12/3/20		LHSMW06_060321 6/03/21	
1,1-DICHLOROETHENE	µg/L	7	12.0		2.3		19.0		20.0		4.3		19	J	20	J	22		14		11	
CIS-1,2-DICHLOROETHENE	µg/L	70	14		12		55		55		29		68	J	68	J	65		62		71	
TETRACHLOROETHENE	µg/L	5	<0.5	U	1.6		1.5		1.4		<0.5	U	1.9	J	1.9	J	2.1		1.6		2.9	
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	1.4	J	1.5	J	1.4		1.3		1.2	
TRICHLOROETHENE	µg/L	5	5.8		2.8		16.0		16.0		7.5		17	J	17	J	16		14		19	
VINYL CHLORIDE	µg/L	2	2.2		<0.5	U	5.0		5.0		1.2		5.7	J	5.6	J	5.5		4.8		3.2	

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Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	LHSMW06_120221 12/02/21		LHSMW06_120221-a 12/2/21		LHSMW06_060922 6/09/22		LHSMW06_011323 1/13/23		LHSMW06_060723 6/7/23		LHSMW06_060723.a 6/7/23		LHSMW07-941201 12/1/1994		LHSMW07-941201FD 12/1/1994		LHSMW07-960131 1/31/1996		LHSMW07-960812 8/12/1996	
1,1-DICHLOROETHENE	µg/L	7	12		12		9.1		22		21		21		750		660		1,341		311	
CIS-1,2-DICHLOROETHENE	µg/L	70	140		130		81		130		120		120		NA		NA		NA		2.5	
TETRACHLOROETHENE	µg/L	5	3		3.2		1.9		4.3		4.1		3.0		<5	U	<5	U	7		2.7	
TRANS-1,2-DICHLOROETHENE	µg/L	100	1.9		1.9		1.3		2.7		2.2		2.3		NA		NA		NA		<0.29	U
TRICHLOROETHENE	µg/L	5	21		20		13		24		21		20		16		19		24		5.9	
VINYL CHLORIDE	µg/L	2	4.2		4.3		2.3		7.6		6.6		6.7		NA		NA		10		1.1	

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Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	LHSMW07-980513 5/13/1998		LHSMW07-040908 9/8/2004		LHSMW07-FEB2007 2/21/2007		LHSMW07-111908 11/21/2008		LHSMW07-110509 5/9/2011		LHSMW07-101513 10/15/2013		LHSMW07-013014 1/30/2014		LHSMW07-052214 5/22/2014		LHSMW07-102914 10/29/2014		LHSMW07-012815 1/28/2015	
1,1-DICHLOROETHENE	µg/L	7	950		590	J	394		576		669		396		334		558	J	1,140		1,300	
CIS-1,2-DICHLOROETHENE	µg/L	70	11		6		3.6		7.96		10.1		6.1		4.66		7.17		21		19.3	
TETRACHLOROETHENE	µg/L	5	<1	U	<5	U	<2	U	<1	U	0.253	J	<0.5	U	<1	U	<0.5	U	<1	U	<2.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	0.73		<5	U	<2	U	0.421	J	0.384	J	0.282	J	<1	U	0.296	J	1.06	J	<2.5	U
TRICHLOROETHENE	µg/L	5	25		24		15.8		25		41.3		23.9		17.6		23.1		78.1		64.3	
VINYL CHLORIDE	µg/L	2	7.2		9		3		14.4		9.47		15.9		5.43		7.98		35.4		28.8	

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Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	LHSMW07-041515 4/15/2015		LHSMW07-070715 7/7/2015		LHSMW07-100815 10/8/2015		LHSMW07-041416 4/14/2016		LHSMW07-100416 10/4/2016		LHSMW07-111417 11/14/2017		LHSMW07-071718 07/17/2018		LHSMW07_092618 9/26/2018		LHSMW07_121018 12/10/2018		LHSMW07_031919 03/19/2019	
1,1-DICHLOROETHENE	µg/L	7	1,660		2,100		1,210		1,250		701		600		56		3.1		<0.5	U	<0.5	U
CIS-1,2-DICHLOROETHENE	µg/L	70	31.4		32.4		22.5		19.6		22.1		11		5.0		1.1		<0.5	U	<0.5	U
TETRACHLOROETHENE	µg/L	5	<5	U	<2.5	U	<2.5	U	0.397	J	<2.5	U	<0.5	U	<0.5	U	0.397	J	<2.5	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<5	U	1.29	J	<2.5	U	0.681	J	<2.5	U	<0.5	U	<0.5	U	0.681	J	<2.5	U	<0.5	U
TRICHLOROETHENE	µg/L	5	82.1		118		84.9		67.5		71.6		39.0		12		2.4		<0.5	U	1.1	
VINYL CHLORIDE	µg/L	2	34.1		69.4	J	37.1		10.8		21.8		15.0		<0.5	U	<0.5	U	<0.5	U	<0.5	U

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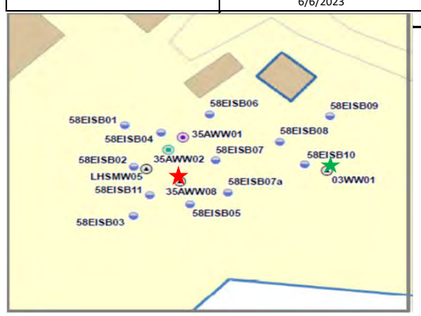
Table 4
Historical Monitoring Well COC Concentrations
LHAAP-58, Longhorn Army Ammunition Plan, Karnack, Texas
Year 9 RA-O Report

Sample Identification: / Sample Date:	Units	MCL	LHSMW07_060319 6/3/2019		LHSMW07_091119 9/11/2019		LHSMW07_121919 12/19/2019		LHSMW07_032420 03/24/2020		LHSMW07_062420 6/24/2020		LHSMW07_120320 12/3/20		LHSMW07_060221 6/02/21		LHSMW07_120121 12/01/21		LHSMW07_060822 6/08/22		LHSMW07_011223 1/12/23		LHSMW07_060523 6/5/23	
1,1-DICHLOROETHENE	µg/L	7	16		46		46	J	94		130		64		12		22		8.8		17		93.0	
CIS-1,2-DICHLOROETHENE	µg/L	70	0.7	J	1.1		1.2	J	1.0		1.0		<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.96	J	1.2	
TETRACHLOROETHENE	µg/L	5	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U	<1.0	U	<1.0	U	<1.0	U	<1.0	U	<0.5	U
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.5	U	<0.5	U	<0.5	UJ	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<1.0	U	<0.5	U
TRICHLOROETHENE	µg/L	5	1.8		3.1		3.1	J	2.8		2.5		2.1		0.91	J	0.97	J	0.71	J	2.0		2.4	
VINYL CHLORIDE	µg/L	2	<0.5	U	49		42	J	46		44		42		<0.5	U	35		<0.5	U	56		54	

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Table 5
Enhanced In-situ Bioremediation Performance Data Summary - Eastern Plume
LHAAP-35A (58), Longhorn Army Ammunition Plant, Karnack, Texas
Year 9 RA-O Report

Monitoring Location	Sample Date	Field Parameters					Electron Donor [1]	cVOCs				Dissolved Gases				Wet Chemistry						Dechlorinating Bacteria [2]	
		pH	DO	ORP	Spec Cond	Turb	TOC	PCE	TCE	cDCE	VC	Ethane	Methane	Ethene	CO_2	Fe^{2+}	NO_3	NO_2	SO_4	Cl^-	Alk	DHC	DHBt
		SU	mg/L	mV	mS/cm	NTU	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	cells/mL	cells/mL
35AWW08	8/20/2013	6.05	NR	NR	8.23	26.9	16.5	1,640	544	9.35 J	< 5 U	< 2 U	10.1	< 2 U	143,000	0.04	< 4 U	< 4 U	1,480	2,510	174	< 0.9 U	< 5.3 U
	10/10/2013	6.7	NR	NR	47.7	4.1	66,400	603 J	149 J	<5	< 5 U	< 2 U	5.38	< 2 U	NA	52.4	12.3 J	<20	703	905	35,600	3.6	1,300
	1/29/2014	6.68	NR	NR	23.4	79.8	43,500	599	895	55.9	< 5 U	< 2 U	345	< 2 U	428,000	144	< 10 U	< 10 U	285	2,190	27,700	< 0.8 U	12,900
	5/20/2014	5.57	NR	NR	18.2	90.4	16,900	204	953	47.2	< 5 U	< 2 U	NA	< 2 U	NA	< 800 U	< 10 U	< 10 U	262	1,590	18,300	4,880	574,000
	10/27/2014	6.86	NR	NR	19.5	213	13,900	112	653	38.6 J	< 25 U	< 2 U	4,420	< 2 U	505,000	478	< 20 U	< 20 U	< 100 U	2,020	11,800 J	70.4	3,050,000 J
	1/21/2015	6.82	NR	NR	18.1	225	6,030	119	491	27.2 J	< 25 U	< 40 U	2,540	< 40 U	152,000 J	10.9 J	< 3 U	< 3 U	< 15 U	1,900	20,400	NA	NA
	4/15/2015	8.06	NR	NR	16.4	448	8,330	110	607	30.7 J	< 25 U	< 20 U	3,380	< 20 U	249,000	< 80 U	< 2 U	< 2 U	< 10 U	2,250	18,800 J	NA	NA
	7/8/2015	8.07	NR	NR	13.9	325	2,540	110	746	73.5 J	< 50 U	< 20 U	5,600	< 20 U	370,000	123	< 2 U	< 2 U	< 10 U	2,250	10,100 J	NA	NA
★	10/8/2015	7.22	NR	NR	11.3	300	2,240	79	581	79.6	< 12.5 U	< 20 U	5,510	< 20 U	374,000	21.1	< 5 U	< 5 U	< 25 U	2,130 J	20,600	448	72,900
	4/13/2016	6.86	NR	-162	13.9	74.6	NA	80.1	234	60.9	14.2 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10/4/2016	6.92	NR	NR	11.8	50.4	918	36.9	235	41.7	7.46 J	< 20 U	7,350	< 20 U	424,000	17.6	< 2 U	< 2 U	< 10 U	2,000	9,160 J	25,600,000	625,000
	11/15/2017	6.58	NR[3]	NR[3]	11.8	63.6	581	12	33	38	< 5 U	< 0.23 U	670	0.56 J	190,000	17.4 J	0.249	< 0.05 U	2.03	2,060	4,360	3,060,000	< 38.5 U
	7/18/2018	7.15	NR[3]	NR[3]	14.9	31.4	484 J	< 2.5 UJ	19 J	12 J	9.0 J	< 0.47 U	920	0.49 J	350,000	13.7 J	< 0.200 UJ	< 0.200 UJ	0.9	2460	3,050 J	1,410,000	47,000
	12/11/2018	7.28	NR[3]	NR[3]	10.9	82.5	392	< 0.5 U	12	8.9 J	< 0.5 U	< 0.47 U	< 1.0 U	< 0.55 U	290,000	21 J	0.147 J	< 0.100 U	4.76	2,240	3,420	1,200,000	173,000
	6/3/2019	8.67	NR[3]	NR[3]	9.93	86.9	306	4.8 J	13	< 2.5 U	< 2.5 U	< 0.47 U	3,000	4.1	260,000	2.03	0.219 J	NA	1.42 J	2,510	NA	3,790,000	139,000
	12/18/2019	6.65	0.04	-161	9.62	60.5	291	<5.0 U	<5.0 U	<5.0 U	<5.0 U	< 0.47 U	760	6.2	240,000	2.55	0.704	NA	<2.5 U	2,290	NA	NA	NA
	6/23/2020	6.77	0.07	-172	8.54	27.3	208	6.7	17	7.3	<2.5 U	< 0.47 U	1,500	12	230,000	NA	< 0.200 U	NA	15.5	2,510	NA	594,000	29,500
	12/1/2020	6.05	0.08	-25	9.67	63.2	165	< 5.0 U	< 5.0 U	18	6.1 J	< 0.47 U	320	5.6	830,000	NA	0.188 J	NA	63.0	2,480	NA	920,000	77,400
	6/2/2021	6.64	0.04	-144	9.29	3.2	119	< 25 U	53	30	24 J	< 0.47 U	1,600	33	430,000	NA	< 0.500 U	NA	148	2430	NA	122,000	4,500
	6/9/2022	6.24	0.05	-74	9.36	18.1	NA	< 5.0 U	< 2.5 U	<2.5 U	<2.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	6/6/2023	6.75	0.03	-111	11.3	0.0	NA	< 2.5 U	5.2	5.2	2.6 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
03WW01	8/20/2013	6.18	NR	NR	3.64	33	10.5	368	94.8	0.978 J	< 1 U	< 2 U	3.22	< 2 U	143,000	0.04	< 1 U	< 1 U	534	892	142	1.2	0.4 J
	10/10/2013	6.55	NR	NR	39.2	10	49,200	172	42.1	< 2.5 U	< 2.5 U	< 2 U	4.35	< 2 U	NA	35.4	< 20 U	< 20 U	487	398	39,700	< 2.1 U	15.7 J
	1/29/2014	6.58	NR	NR	20.2	256	30,200	172	58.4	< 5 U	< 5 U	< 2 U	5.09	< 2 U	337,000	110	< 10 U	< 10 U	457	906	27,500	< 0.9 U	639,000
	5/21/2014	5.52	NR	NR	16	152	29,100	154	71.2	3.3 J	< 5 U	< 2 U	479	< 2 U	564,000	0.0217	< 10 U	< 10 U	376	780	25,700	2,870	2,700,000
	10/28/2014	5.87	NR	NR	14.2	171	8,440	48.6 J	223	< 50 U	< 50 U	< 2 U	910	< 2 U	564,000 J	107	< 1 U	< 1 U	11	940	12,300 J	10.9	192,000
	1/21/2015	6.51	NR	NR	13.6	93.3	7,720	32.8 J	216	< 50 U	< 50 U	< 10 U	393	< 10 U	333,000	40.6	< 2 U	< 2 U	10.2	881	19,000 J	NA	NA
	4/15/2015	7.11	NR	NR	12.8	387	7,800	15.9 J	131	21.4 J	< 25 U	< 20 U	3,170	< 20 U	396,000	27.8 J	< 1 U	< 1 U	18	976	24,100	NA	NA
	7/8/2015	7.62	NR	NR	11.8	847	3,640	31.4 J	65.6 J	< 50 U	< 50 U	< 20 U	16,100	< 20 U	408,000	96.1	< 1 U	< 1 U	3.62 J	1,020	12,400 J	NA	NA
★	10/8/2015	6.65	NR	NR	11.4	525	1,700	36.4 J	51.8 J	< 50 U	< 50 U	< 20 U	5,880	< 20 U	500,000	0.835	< 5 U	< 5 U	< 25 U	1,200	20,300	78	8,800
	4/13/2016	7.19	NR	-127	7.99	127	NA	6.49 J	<12.5U	117	< 12.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10/4/2016	6.81	NR	NR	6.38	70	292	< 5 U	< 5 U	< 5 U	< 5 U	<20	5,950	< 20 U	657,000	8.02	< 1 U	< 1 U	< 5 U	762	5,500 J	9,460,000	53,300
	11/15/2017	7.25	NR[3]	NR[3]	6.59	135	191	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 0.23 U	620	1.2	310,000	18.9 J	< 0.05 U	< 0.05 U	40.8	1,020	3,310	35,300	< 20.8 U
	7/18/2018	6.8	NR[3]	NR[3]	6.23	9.5	118 J	< 0.5 UJ	< 0.5 UJ	5.3 J	4.8 J	< 0.47 U	590	0.89 J	490,000	40 J	< 0.200 UJ	< 0.200 UJ	161	977	2,290	7.5	6
	12/11/2018	6.24	NR[3]	NR[3]	2	54.1	42	15	5.7	22	7.6	< 0.47 U	1,800	2.3	390,000	27.5 J	< 0.100 U	< 0.100 U	42.8	336	862	10,100	599
	6/3/2019	8.1	NR[3]	NR[3]	4.95	14.8	66	3.2 J	2.9 J	41	11	< 0.47 U	2,900	1.6	520,000	0.84	0.196 J	NA	239	809	NA	6,040	292
	12/18/2019	6.41	0.05	-128	5.62	24.8	92	< 5 U	< 5 U	14	5.4 J	< 0.47 U	540	0.61 J	340,000	3.15	<0.500 U	NA	155	940	NA	22,240	2,480
	6/25/2020	6.44	0.04	-139	4.68	6.3	69.8	4.5 J	4.5 J	17	7.2	< 0.47 U	640	0.46	300,000	1.74	< 0.200 U	NA	231	965	NA	6,500	699
	12/1/2020	6.17	0.10	-50	4.89	10.7	99.9	< 5.0 U	24	7.2 J	< 5.0 U	< 0.47 U	1,700	1.1	460,000	NA	0.069 J	NA	82.7	870	NA	26,600	1,610
	6/2/2021	6.25	0.27	-99	5.24	158	103	11	3.0	11	1.6	< 0.47 U	420	< 0.55 U	830,000	NA	< 0.500 U	NA	180	945	NA	196	249
	6/6/2022	5.95	0.03	-50	4.72	18	NA	9.9	10	7.3	< 5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	6/6/2023	6.52	0.07	-89	6.38	0	NA	4.8 J	10	6.1	3.7 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA



Slight decrease in pH noted during May 2014 sampling event, potentially related to excessive substrate fermentation and organic acid production, need to monitor closely. System has continued to self buffer over time.	-Initial spike in TOC indicates effective substrate distribution. -Residual electron donor present to support desired biogeochemical reactions. -Declining TOC concentrations over time indicative of substrate consumption. -Electron donor nearly depleted. -TOC sampling discontinued in June 2022.	PCE is degrading fully to VC. Residual degradation products of TCE, cDCE, and VC continue to degrade.	Reduced methane and ethene indicates slowing of reductive dechlorination due to limited substrate and electron acceptors remaining. Dissolved gas monitoirng discontinued in June 2022.	Increasing sulfate concentration indicates that reductive dechlorination is starting to stall. Wet chemistry parameters analysis discontinued in June 2022.	-Initial spike in dechlorinating bacteria counts suggest effective distribution of the bioaugmentation culture. -Elevated dechlorinating bacteria counts in 2016 indicated rapid proliferation. -Since 2016 generally declining bacteria counts. -Dechlorinating bacteria analysis discontinued in June 2022.

Notes:
1. Electron donor injections completed in Sept. 2013.
2. Bioaugmentation performed in Nov. 2013.
3. Data recorded but not used since bailer was used to collect the sample.
pH = negative log of the hydrogen ion concentration
SU = standard units
DO = dissolved oxygen
mg/L = milligrams per liter
ORP = oxidation-reduction potential
mV = millivolts
Spec Cond = specific conductivity
mS/cm = millisiemens per centimeter
Turb = turbidity
NTU = nephelometric turbidity units
TOC = total organic carbon
cVOCs = chlorinated volatile organic compounds
PCE = tetrachloroethene
TCE = trichloroethene
cDCE = cis-1,2-dichloroethene
VC = vinyl chloride
µg/L = micrograms per liter
CO_2 = carbon dioxide
Fe^{2+} = ferrous iron
NO_3 = nitrate
NO_2 = nitrite
SO_4 = sulfate
Cl^- = chloride
Alk = alkalinity
DHC = dehalococcoides
DHBt = dehalobacter spp.
cells/mL = cells per milliliter
NA = not analyzed
NR = not recorded
U - Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection analyte-specific quality control criteria.
J - Estimated: Between the method detection limit and reporting limit and/or due to discrepancies in meeting certain analyte-specific quality control criteria.

Table 6
Enhanced In-situ Bioremediation Performance Data Summary-Western Plume
LHAAP-35A (58), Longhorn Army Ammunition Plant, Karnack, Texas
Year 9 RA-O Report

Monitoring Location	Sample Date	Field Parameters					Electron Donor	cVOCs				Dissolved Gases				Wet Chemistry						Dechlorinating Bacteria		
		pH	DO	ORP	Spec Cond	Turb	TOC	PCE	TCE	cDCE	VC	Ethane	Methane	Ethene	CO_2	Fe^{2+}	NO_3	NO_2	SO_4	Cl^-	Alk	DHC	DHBt	BAV1 VC
		SU	mg/L	mV	mS/cm	NTU	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	cells/mL	cells/mL	cells/mL
LHSMW07	11/14/2017	5.94	0.09	159	11	40.9	6.81	< 0.5 U	39	11	15	< 0.23 U	18	< 0.22 U	220,000	0.4 J	< 0.0500 U	< 0.100 U	2,940	2,540	750	NA	NA	NA
	3/7/2018	6.1	0.65	180	12.1	5.1	6.67	< 1.0 U	34	11	5	< 0.47 U	3	< 0.55 U	350,000	0.07 J	< 0.0500 U	< 0.0500 U	2,700	2,420	757	11.8	< 4.8 U	NA
	7/17/2018	6.23	0	-389	14.1	13.2	321	< 0.5 U	12	5	< 0.5 U	< 0.47 U	1.4	< 0.55 U	540,000	2.58 J	< 0.200 U	< 0.200 U	1,090	2,270	1,990	17.2	6,570,000	NA
	9/26-27/2018	5.99	0	-222	9.24	20.3	14.2	< 0.50 U	2.4	1.1	< 0.50 U	< 0.47 U	27	4.0	760,000	0.93 J	< 0.200 U	< 0.200 U	1,120	2,180	2,060	11,600	3,540,000	0.8 J
	12/10/2018	6.7	0.02	-324	10.8	10.7	7.53	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.46 J	170	28	460,000	0.43 J	< 0.200 U	< 0.200 U	1,530	2,030	1,640	6,080	166,000	<2.1 U
	3/19/2019	6.57	0.17	-311	11	27.5	4.11	< 0.5 U	1.1	< 0.5 U	< 0.5 U	0.52 J	270	25	440,000	0.67	< 0.500 U	NA	2,390	1,980	NA	10,000	61,400	3
	6/3/2019	6.27	0.07	-96	10.4	17.5	4.13	< 0.5 U	1.8	0.70 J	< 0.5 U	0.20 J	78	3.9	660,000	0.25	< 0.500 U	NA	2,470	1,780	NA	7,580	< 9.5 U	<1.0 U
	9/11/2019	6.65	0.05	-48	9.19	5.8	3.42	< 0.5 U	3.1	1.1	49	0.20 J	240	6.1	340,000	1.72	< 0.100 U	< 0.100 U	2,530	1,820	NA	49.8	1,320	<0.5 U
	12/19/2019	6.43	0.09	-47	9.59	6.6	3.48 J	< 0.5 UJ	3.1 J	1.2 J	42 J	< 0.47 U	100	2.8	250,000	1.85	< 0.500 U	NA	2,560	1,770	NA	949	5,230	3
	3/24/2020	6.65	0.06	-87	10.1	0	3.29 J	< 0.5 U	2.8	1.0	46	< 0.47 U	77	2.3	250,000	1.76	< 0.500 U	NA	2,750	1,960	NA	2,280	10,300	5
	6/24/2020	6.37	0.08	-43	9.24	0	3.00	< 1.0 U	2.5	1.0	44	< 0.47 U	140	2.2	250,000	2.07	< 0.100 U	< 0.100 U	3,000	2,010	NA	1,090	42,100	1
	12/3/2020	6.53	0.14	10	9.87	0	2.33	< 0.5 U	2.1	< 0.5 U	42	0.42 J	810	5.9	260,000 J	NA	< 0.200 U	NA	2,650	1,650	NA	7,580	17,500	1
	6/2/2021	6.52	0.13	-144	9.60	0.8	7.94	< 1.0 U	0.91 J	< 0.5 U	< 0.5 U	0.31 J	680	19	300,000	NA	< 0.500 U	NA	2,720	1,760	NA	4,430	3,640	< 0.60 U
	12/1/2021	5.99	0.04	62	9.19	2.1	10.8	< 1.0 U	0.97 J	< 0.5 U	35	<0.250 U	638	6.33	820,000	NA	0.407 J	NA	2,720	1,560	NA	5,720	35,400	0.30 J
	6/8/2022	6.48	0.03	-90	9.69	13.4	6.23	< 1.0 U	0.71 J	< 0.5 U	< 0.5 U	<0.250 U	1,950	38.9	173,000	NA	0.262 J	NA	2,970	1,960	NA	4,680	2,850	0.400 J
	1/12/2023	6.36	0.09	-23	10.2	12.1	6.78	< 1.0 U	2.0	0.96 J	56	<0.500 U	5,950	49.4	160,000	NA	< 0.100 U	NA	3,170	2,030	NA	7,340	15,400	0.8
	6/5/2023	6.84	0.07	52	11.80	0.0	7.25	< 0.5 U	2.4	1.2	54	<0.500 U	2,860	20.9	130,000	NA	< 0.100 U	NA	3,000	1,930	NA	1,120	16,400	0.50 J
35AWW06	11/14/2017	5.86	0.06	197	5.87	8.7	2.29	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.23 U	0.32 J	< 0.22 U	200,000	0.09 J	2.12	< 0.0500 U	1,560	1,040	666	NA	NA	<1.8 U
	3/8/2018	5.67	0.26	136	5.91	4.4	2.32	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 0.47 U	< 1.0 U	< 0.55 U	500,000 J	0.12 J	< 0.0500 U	< 0.0500 U	1,480	1,000	666	1.5	291	<3.8 U
	7/2/2018	4.9	0	-35	5.86	96.7	4,200 J	< 0.5 UJ	< 0.5 UJ	< 0.5 UJ	< 0.5 UJ	< 0.47 U	< 1.0 U	0.58 J	780,000 J	14 J	< 0.200 UJ	< 0.200 UJ	811	904	386	< 1.8 U	52,900	<0.5 U
	9/26-27/2018	4.75	0	78	4.95	55.5	2,860	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 UJ	3.0 J	< 0.55 UJ	860,000	27.8 J	< 0.200 U	< 0.200 U	508	910	775	3.60	705,000	<2.5 U
	12/11/2018	5.90	0.02	-177	5.2	36.8	685	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	890	0.44 J	790,000	88.1 J	< 0.200 U	< 0.200 U	13.4	858	1,210	2.50	144,000	<0.9 U
	3/19/2019	6.39	0.16	-234	5.09	31.8	407	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	3,100	< 0.55 U	720,000	0.44	< 0.500 U	NA	2.33 J	919	NA	12.3	21,200	<0.8 U
	6/4/2019	6.61	0.06	-99	5.15	46.1	331	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	1,500	< 0.55 U	750,000	0.65	0.180 J	NA	2.08 J	964	NA	26.8	159	0.8 J
	9/11/2019	6.99	0.06	-120	4.92	57.6	84.9	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	3,300	< 0.55 U	350,000	3.3	<0.100 U	<0.100 U	1.28 J	921	NA	28.6	<25.6 U	0.7 J
	12/19/2019	6.81	0.05	-152	4.97	86	13.8	<0.5 UJ	<0.5 UJ	<0.5 UJ	<0.5 UJ	< 0.47 U	1,500	< 0.55 U	270,000	3.3	<0.100 U	NA	0.845	935	NA	80.3	<10.2 U	30
	3/24/2020	6.83	0.07	-179	5.5	34	15.6	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	1,300	< 0.55 U	360,000	2.24	<0.100 U	NA	1.51	968	NA	9.6	1,220	5
	6/24/2020	6.65	0.08	-100	4.93	256	10.2	< 1.0 U	< 0.5 U	< 0.5 U	0.51 J	< 0.47 U	1,400	< 0.55 U	270,000	3.3	< 0.100 U	< 0.100 U	35.1	1,080	NA	3.5	1,990	<0.6 U
	12/1/2020	7.03	0.03	-55	5.33	277	8.67 J	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	3,300	< 0.55 U	270,000	NA	< 0.200 U	NA	45.6	937	NA	1,060	3,700	< 1.4 U
	6/3/2021	6.50	0.03	29	5.19	313	14.4	< 1.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	2,200	< 0.55 U	490,000	NA	< 0.200 U	NA	197	940	NA	15	4,170	1.50 J
	12/1/2021	6.53	0.06	21	5.16	204	12.1	< 1.0 U	< 0.5 U	< 0.5 U	< 0.5 U	<0.25 U	3,070	<0.50 U	423,000	NA	0.402 J	NA	343	934	NA	34	2,840	2
	6/8/2022	6.50	0.02	25	5.22	135	10.6	< 1.0 U	< 0.5 U	< 0.5 U	< 0.5 U	<0.25 U	2,740	<0.50 U	391,000	NA	0.0666 J	NA	457	938	NA	7.2	1,070	0.400 J
	1/12/2023	7.03	0.04	-59	5.40	50.1	6.28	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	<0.500 U	2,570	<0.500 U	67,000	NA	< 0.0500 U	NA	855	905	NA	14.1	2,270	< 0.50 U
	6/5/2023	7.19	0.09	-54	6.29	0.0	7.23	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	<0.500 U	4,790	<0.500 U	110,000	NA	< 0.0500 U	NA	834	918	NA	11.1	1,230	0.50 J
35AWW11	11/14/2017	5.64	0.37	278	8.88	65.2	5.05	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.23 U	< 0.63 U	< 0.22 U	230,000	0.08 J	< 0.0500 U	< 0.0500 U	1,290	2,650	452	NA	NA	NA
	3/7/2018	5.94	0.59	211	9.49	90.8	5.28	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 0.47 U	16	0.38 J	360,000	0.10 J	< 0.0500 U	< 0.0500 U	1,260	2,530	446	0.6	< 5.0 U	NA
	7/16/2018	5.31	0	-56	8.77	15.5	1,650	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	0.80 J	< 0.55 U	450,000	27.6 J	< 0.100 U	< 0.100 U	652	2,440	649	4.60	910,000	0.7 J
	9/26-27/2018	5.64	0	-194	8.40	116	1,120	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	0.63	1,300	2.1	320,000	36.5 J	< 0.200 U	< 0.200 U	285	2,110	1,190	2.10	394,000	<0.7 U
	12/11/2018	6.02	0.05	-247	9.31	14.2	701	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	5.5	< 0.55 U	820,000	20.6 J	< 0.200 U	< 0.200 U	127	2,120	1,430	10.6	220,000	<0.5 U
	3/19/2019	5.92	0.11	-142	9.00	36.2	485	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	450	< 0.55 U	940,000	0.43	< 0.500 U	NA	172	2,150	NA	231	818,000	<0.9 U
	6/3/2019	5.7	0.09	-136	7.81	54.6	94.6	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	590	< 0.55 U	750,000	1.33	< 0.500 U	NA	210	1,920	NA	2,100	2,570,000	<0.5 U
	9/11/2019	6.23	0.07	-100	7.15	39.6	28 J	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	1,300	< 0.55 U	690,000	2.05	< 0.100 U	< 0.100 U	259	1,990	NA	1,240	115,000	<0.9 U
	12/18/2019	6.28	0.09	-95	7.95	22.1	9.94	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	750	< 0.55 U	330,000	3.3	< 0.500 U	NA	192	2,080	NA	900	213,000	<0.6 U
	3/24/2020	6.08	0.08	-100	7.82	7.2	7.86	< 0.5 U	1.4	< 0.5 U	< 0.5 U	< 0.47 U	860	< 0.55 U	510,000	1.41	< 0.500 U	NA	282 J	2,110	NA	940	40,600	20
	6/23/2020	6.10	0.05	-46	6.65	5.4	7.28	< 1.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	1,000	< 0.55 U	390,000	2.45	< 0.100 U	NA	416	2,040	NA	382	41,100	<1.1 U
	12/1/2020	5.99	0.05	4	8.34	21.3	3.81	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	4,400 J	< 0.55 U	610,000	NA	0.284 J	NA	415 J	2,030	NA	368	52,700	< 1.1 U
	6/2/2021	5.96	0.06	-28	6.51	4.3	11	< 1.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	1,000	< 0.55 U	890,000	NA	< 0.500 U	NA	460	1,790	NA	170	5,830	< 1.0 U
	12/1/2021	5.92	0.09	14	7.45	10.5	9.02	< 1.0 U	< 0.5 U	< 0.5 U	< 0.5 U	<0.250 U	986	6.59	778,000	NA	0.814 J	NA	536	1,970	NA	2.3	3,140	<1.1 U
	6/8/2022	5.71	0.04	-8	6.53	21.2	9.72	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	<0.250 U	1,410	<0.50 U	622,000	NA	0.198 J	NA	485	1,880	NA	1,750	137,000	2
	1/12/2023	6.09	1.85	-30	7.50	71.3	6.28	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	<0.500 U	3,220	<0.500 U	430,000 D	NA	< 0.100 U	NA	563	2,090	NA	864	140,000	< 0.60 U
	6/5/2023	7.01	0.09	-36	7.24	0.0	7.35	< 0.5 U	< 0.5 U	< 0.5 U	0.61 J	<0.500 U	6,110	<0.500 U	250,000 M	NA	0.121	NA	1.23	779	NA	416	15,000	0.30 J

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Monitoring Location	Sample Date	Field Parameters					Electron Donor	cVOCs				Dissolved Gases				Wet Chemistry						Dechlorinating Bacteria		
		pH	DO	ORP	Spec Cond	Turb	TOC	PCE	TCE	cDCE	VC	Ethane	Methane	Ethene	CO_2	Fe^{2+}	NO_3	NO_2	SO_4	Cl^-	Alk	DHC	DHBt	BAV1 VC
		SU	mg/L	mV	mS/cm	NTU	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	cells/mL	cells/mL	cells/mL
35AWW19	11/17/2017	5.27	NR[3]	NR[3]	5.97	26.5	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	3/8/2018	5.28	NA	NA	6.08	26.4	2.51	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 0.47 U	< 1.0 U	< 0.55 U	97,000	1.10 J	< 0.0500 U	< 0.0500 U	1,220	1,430	159	0.4 J	< 11.9 U	NA
	7/18/2019	6.08	NR[3]	NR[3]	5.67	12	2.38 J	< 0.5 UJ	< 0.5 UJ	< 0.5 UJ	< 0.5 UJ	< 0.47 U	0.65 J	< 0.55 U	180,000 J	2.78 J	< 0.200 UJ	< 0.200 UJ	983	1,370	199	0.30 J	20,400	<0.5 U
	9/26-27/2018	5.77	0.01	42	5.46	36.1	2.21	< 0.5 U	0.59 J	< 0.5 U	< 0.5 U	< 0.47 U	27	0.32 J	250,000	3.99 J	< 0.200 U	< 0.200 U	989	1,230	213	0.8	148,000	<0.5 U
	12/10/2018	5.94	0.04	-72	5.7	5.2	2.17	< 0.5 U	0.59 J	< 0.5 U	< 0.5 U	< 0.47 U	5.7	< 0.55 U	330,000	4.19 J	< 0.200 U	< 0.200 U	998	1,190	198	0.50 J	99,000	<0.5 U
	3/19/2019	5.37	0.14	70	5.67	80.1	2.20	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	1.3 J	< 0.55 U	790,000	0.38	< 0.500 U	NA	994	1,140	NA	< 0.50 U	91.5	<0.5 U
	6/3/2019	5.69	0.05	93	5.46	16.6	1.88	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	1.4	< 0.55 U	560,000	0	< 0.500 U	NA	966	1,080	NA	3.30	62,700	<0.5 U
	9/11/2019	6.1	0.19	77	4.91	8.8	1.19	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	3.0	<0.55 U	230,000	1.62	< 0.100 U	< 0.100 U	1,010	1,050	NA	18.4	23,600	<0.5 U
	12/18/2019	5.97	0.08	37	4.81	73.5	1.75	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	2.0	<0.55 U	160,000	2.08	< 0.500 U	NA	997	979	NA	14.8	12,200	<0.5 U
	3/24/2020	5.97	0.04	46	4.61	25.5	1.79	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	3.1	<0.55 U	200,000	1.86	< 0.100 U	NA	989	922	NA	9.4	12,200	2
	6/24/2020	5.89	0.04	56	4.14	34	1.75	< 1.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	3.0	<0.55 U	160,000	1.97	< 0.100 U	< 0.100 U	1,020	934	NA	2.0	19,700	<0.5 U
	12/3/2020	5.64	0.11	65	4.00	4.5	1.63	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	4.2	<0.55 U	440,000 J	NA	< 0.100 U	NA	860	786	NA	40.2	30,100	5.5
	6/3/2021	5.32	0.11	122	3.92	10.4	2.38	< 1.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	2.2	<0.55 U	670,000	NA	< 0.200 U	NA	857	746	NA	16.1	24,900	<0.5 U
	12/1/2021	5.26	0.07	181	3.39	6.6	7.05	< 1.0 U	< 0.5 U	< 0.5 U	< 0.5 U	<0.25 U	2.4	0.929 J	744,000	NA	0.162 J	NA	769	625	NA	276	13,400	<0.5 U
	6/8/2022	5.52	0.04	112	3.10	30.4	2.43	< 1.0 U	< 0.5 U	< 0.5 U	< 0.5 U	2.34	2.9	<0.50 U	520,000	NA	0.0352 J	NA	675	529	NA	138.0	2,960	71
	1/12/2023	5.92	0.30	58	2.68	80.1	2.48	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 0.500 U	3.37	3.95	110,000	NA	< 0.0500 U	NA	701	456	NA	6.30	6,740	0.10 J
	6/5/2023	6.21	0.05	137	3.19	90.3	1.72	< 0.5 U	1.1	< 0.5 U	< 0.5 U	< 0.500 U	1.28	< 0.500 U	92,000	NA	< 0.0500 U	NA	567	430	NA	1.90	1,120	< 0.60 U
35AWW20	11/14/2017	5.97	0.04	138	7.71	27.5	13.8	0.80 J	320	53	78	< 0.23 U	18	0.41 J	230,000	0.45 J	< 0.0500 U	< 0.0500 U	2,150	1,730	834	NA	NA	NA
	3/7/2018	6.16	0.6	106	7.97	21.3	14.5	< 5.0 U	330	76	110	< 0.47 U	< 1.3 U	< 0.55 U	370,000	0.69 J	< 0.0500 U	< 0.0500 U	1,840	1,510	848	5.5	1,120	NA
	7/16/2018	6.18	0	-357	7.19	0.0	43	< 0.5 U	270	69	71	< 0.47 U	0.93 J	< 0.55 U	360,000	1.18 J	< 0.100 U	< 0.100 U	882	1,420	1,450	1.50	5,970,000	<0.9 U
	9/26-27/2018	5.95	0	-206	6.34	11.1	53	0.81 J	170	45	< 0.5 U	< 0.47 U	37	0.66 J	770,000	1.41 J	< 0.200 U	< 0.200 U	922	1,220	1,470	< 1.30 U	3,770,000	<1.3 U
	12/10/2018	6.21	0.07	-270	7.14	48.1	19	1.3	570	120	110	< 0.47 U	440	1.3	720,000	5.01 J	< 0.200 U	< 0.200 U	1,010	1,010	1,190	< 1.90 U	283,000	<1.9 U
	3/19/2019	6.26	0.11	-247	6.94	28.1	12	< 0.5 UJ	180	49 J	54 J	< 0.47 UJ	840	1.94 J	890,000	0.17	< 0.500 U	NA	1,120	1,090	NA	< 1.50 U	14,000	<1.5 U
	6/4/2019	6.65	0.1	-56	6.79	47.1	12.9	< 2.5 U	230	79	140	0.19 J	920	1.3	730,000	0.09	0.194 J	NA	1,240	1,180	NA	15,500	< 21.7 U	2,370
	9/11/2019	6.67	0.03	-45	6.03	9.7	15.0	< 0.5 U	350	110	790	0.24 J	640 J	5.9	290,000 J	1.59	< 0.100 U	< 0.100 U	1,200	902	NA	16,000	386	10,300
	12/19/2019	6.4	0.08	-52	5.78	24.2	13.1	< 5.0 UJ	99 J	70 J	2,800 J	< 0.47 U	310	6.3	270,000	1.34	< 0.100 U	NA	1,170	821	NA	27,800	6,070	49,100
	3/24/2020	6.5	0.05	-94	5.45	7.8	18.3	< 2.5 U	120	71	1,500	< 0.47 U	410	6.0 J	260,000	2.29	< 0.100 UJ	NA	1,020 J	718 J	NA	13,000	954	19,800
	6/24/2020	6.33	0.07	-47	5.45	0.0	13.9	0.61 J	94	63	2,000	< 0.47 U	260	5.5	250,000	2.5	0.747	< 0.100 U	1,270	911	NA	115,000	3,830	18,400
	12/3/2020	6.37	0.61	94	5.14	5.1	12 J	< 0.5 U	91	63	1,800	< 0.47 U	1,000	11.0	370,000 J	NA	< 0.100 U	NA	1070	727	NA	7,800	436	6,550
	6/3/2021	6.25	0.11	84	5.00	13.3	20.5	< 1.0 U	190	87	780	< 0.47 U	1,500	11	690,000	NA	< 0.200 U	NA	955	615	NA	72,200	13,400	55,800
	12/1/2021	6.01	0.05	73	4.73	8.1	19.3	0.66 J	100	86	650	<0.25 U	531	7.5	661,000	NA	0.164 J	NA	963	606	NA	177,000	21,400	41,700
	6/8/2022	6.16	0.02	27	4.87	5.1	17.7	< 5.0 U	150	89	840	<0.25 U	714	16.1	458,000	NA	0.030 J	NA	1,040	668	NA	70,400	18,400	67,400
	1/12/2023	6.43	0.18	-37	5.31	5.1	14.5	0.60 J	220	110	990	<0.500 U	2,600	35.8	330,000 D	NA	0.0452 J	NA	1,180	660	NA	91,800	23,100	15,200
	6/5/2023	6.68	0.08	-17	6.25	0.0	15.9	< 0.50 U	180	85	940	<0.500 U	3,350	38.9	200,000	NA	< 0.0500 U	NA	1,090	661	NA	40,800	43,800	8,330

Table 6
Enhanced In-situ Bioremediation Performance Data Summary-Western Plume
LHAAP-35A (58), Longhorn Army Ammunition Plant, Karnack, Texas
Year 9 RA-O Report

Monitoring Location	Sample Date	Field Parameters					Electron Donor	cVOCs				Dissolved Gases				Wet Chemistry						Dechlorinating Bacteria		
		pH	DO	ORP	Spec Cond	Turb	TOC	PCE	TCE	cDCE	VC	Ethane	Methane	Ethene	CO_2	Fe^{2+}	NO_3	NO_2	SO_4	Cl^-	Alk	DHC	DHBt	BAV1 VC
		SU	mg/L	mV	mS/cm	NTU	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	cells/mL	cells/mL	cells/mL
35AWW23	3/8/2018	5.92	0.76	185	3.58	89.5	3.31	< 1.0 U	27	21	3.1	< 0.47 U	< 1.0 U	< 0.55 U	500,000	0.13 J	1.2	< 0.0500 U	761	487	608	< 0.5 U	< 4.8 U	NA
	7/17/2018	5.67	0	-167	3.4	178	856	< 0.5 U	2.6	12	< 0.5 U	< 0.47 U	49	0.38 J	370,000	25.1 J	< 0.100 U	< 0.100 U	< 0.500 U	482	914	45.1	9,530	1.7 J
	9/26-27/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/10/2018	5.6	0.05	-86	3.99	32.5	879	< 0.5 U	5.3	20	< 0.5 U	< 0.47 U	2,200	< 0.55 U	810,000	50 J	< 0.200 U	< 0.200 U	4.19	578	1,110	149	< 25.0 U	5
	3/19/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	6/3/2019	5.74	0.02	-50	4.86	47.7	1,360	< 0.5 U	1.8	4.3	< 0.5 U	< 0.47 U	1,300	< 0.55 U	750,000	0.57	< 0.500 U	NA	14.1	732	NA	652	< 38.5 U	2.5 J
	9/11/2019	6.24	0.02	-44	4.76	26.3	108	< 0.5 U	3.8	7.8	<0.5 U	< 0.47 U	2,700	< 0.55 U	590,000	3.3	< 0.100 U	< 0.100 U	4.63	857	NA	326	< 13.9 U	1.1 J
	12/18/2019	6.17	0.02	-104	4.85	43.2	127	< 0.5 U	2.7	7.6	1.1	< 0.47 U	1,400	< 0.55 U	360,000	1.83	<0.500 U	NA	1.62 J	868	NA	689	< 5.6 U	0.4 J
	3/24/2020	6.23	0.05	-102	4.72	28.6	250	< 0.5 U	1.3	6.5	<0.5 U	< 0.47 U	1,400	< 0.55 U	600,000	2.33	< 0.100 U	NA	1.84	925	NA	136	<5.5 U	1
	6/24/2020	6.17	0.04	-117	4.29	22.6	849	< 1.0 U	< 0.5 U	5.0	<0.5 U	< 0.47 U	1,300	< 0.55 U	310,000	3.01	< 0.100 U	< 0.100 U	1.26	1,160	NA	765	< 5.6 U	13
	12/3/2020	6.32	0.07	-41	4.67	11.5	21.4	< 0.5 U	< 0.5 U	2.7	< 0.5 U	< 0.47 U	3,700	< 0.55 U	540,000 J	NA	< 0.100 U	NA	< 0.500 U	958	NA	557	< 5.3 U	< 0.50 U
	6/3/2021	6.44	0.04	-129	4.95	9.7	19.7	< 1.0 U	< 0.5 U	1.0	< 0.5 U	< 0.47 U	3,700	< 0.55 U	540,000	NA	< 0.200 U	NA	0.401 J	846	NA	3,220	8,200	0.30 J
	12/2/2021	6.14	0.08	-48	4.43	34.1	21.2	< 1.0 U	< 0.5 U	0.63 J	< 0.5 U	<0.25 U	2,270	<0.50 U	779,000	NA	0.0811 J	NA	1.68	849	NA	1,030	208	<0.60 U
	6/8/2022	6.33	0.05	-71	4.46	26.2	14.2	< 1.0 U	< 0.5 U	<0.5 U	< 0.5 U	<0.25 U	3,170	<0.50 U	520,000	NA	0.0720 J	NA	1.47	807	NA	158	12,900	3
	1/12/2023	6.54	0.03	-144	4.61	36.0	14.7	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	<0.500 U	4,590	<0.500 U	360,000 D	NA	< 0.0500 U	NA	1.68	792	NA	180	193	0.10 J
	6/5/2023	6.98	0.08	-107	5.36	0.0	12.6	< 0.5 U	< 0.5 U	<0.5 U	< 0.5 U	<0.500 U	7,440	<0.500 U	220,000 M	NA	< 0.100 U	NA	449.00	1,950	NA	82.1	61.9	< 0.60 U
35AWW24	3/8/2018	5.31	0.66	224	4.87	99.5	1.45	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 0.47 U	< 1.0 U	< 0.55 U	290,000	0.33 J	0.11	< 0.0500 U	85.7	119	66.5	< 2.0 U	79.9	NA
	7/17/2018	4.98	0	71	4.84	449	1.58	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	< 1.0 U	< 0.55 U	430,000	0.16 J	0.0640 J	< 0.100 U	73.6	117	52.4	< 1.90 U	137	<1.9 U
	9/26-27/2018	4.52	0	252	5.84	352	0.87	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	190	< 0.55 U	330,000	0.31 J	< 0.100 U	< 0.100 U	69.9	110	50.8	< 0.50 U	4.6 J	<0.5 U
	12/10/2018	4.41	0.05	38	4.89	514	1.67	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	68	< 0.55 U	660,000	0.54 J	0.157 J	< 0.100 U	69.9	109	45.9	< 1.20 U	1.50 J	<1.2 U
	3/19/2019	4.79	0.08	154	4.85	213	1.68 J	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	7.8	< 0.55 U	680,000	1.17	< 0.100 U	NA	70	115	NA	< 0.80 U	< 8.30 U	<0.8 U
	6/3/2019	4.53	0.06	347	5.74	74	1.55 J	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.47 U	4.2	< 0.55 U	530,000	1.17	< 0.100 U	NA	74.9	106	NA	0.90	24.7	<0.5 U
	12/19/2019	5.62	0.03	147	5.51	55.1	NA	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	6/25/2020	5.55	0.98	143	5.15	25.3	NA	< 1.0 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/3/2020	4.88	0.17	156	4.90	109	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	6/3/2021	5.66	0.31	166	5.37	71.1	NA	< 1.0 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/2/2021	4.68	0.08	292	4.64	322	NA	< 1.0 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	6/8/2022	4.53	0.04	318	5.73	33.3	NA	< 1.0 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/13/2023	5.30	0.82	183	5.27	183	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	6/7/2023	5.79	0.08	168	6.75	58.0	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA



-Slight increase in pH following injection is favorable.
'-pH has remained favorable.

-Initial spike in TOC indicates effective substrate distribution to several of the areas.
'-TOC is generally low after the initial spikes observed after the injections.

-Decreasing concentrations of cVOCs.
-Additional time/monitoring necessary to observe complete dechlorination at 35AWW20.

-Increased carbon dioxide indicates metabolism of the injected substrate is occurring.
'-The presence of ethene indicates that complete dechlorination is occuring.
-Elevatred ethene at 35AWW20 indicates complete reduction continues.

-Decreasing sulfate concentration indicates the onset/development of reducing conditions conducive to reductive dechlorination.

-Initial spike in dechlorinating bacteria counts suggest effective distribution of the bioaugmentation culture.
'-Elevated dechlorinating bacteria still present in the western plume. With the highest levels at 35AWW20.

Notes:

1. Electron donor injections completed in March 2018
2. Bioaugmentation performed in April 2018
3. Data recorded but not used since bailer was used to collect the sample.

pH = negative log of the hydrogen ion concentration
SU = standard units
DO = dissolved oxygen
mg/L = milligrams per liter
ORP = oxidation-reduction potential
M - Manual integrated compound
D - The reported value is from a dilution

mV = millivolts
Spec Cond = specific conductivity
mS/cm = millisiemens per centimeter
Turb = turbidity
NTU = nephelometric turbidity units
TOC = total organic carbon
cVOC = chlorinated volatile organic compounds

PCE = tetrachloroethene
TCE = trichloroethene
cDCE = cis-1,2-dichloroethene
VC = vinyl chloride
µg/L = micrograms per liter
CO_2 = carbon dioxide
Fe^{2+} = ferrous iron

NO_3 = nitrate
NO_2 = nitrite
SO_4 = sulfate
Cl^- = chloride
Alk = alkalinity
DHC = dehalococcoides
DHBt = dehalobacter spp.

cells/mL = cells per milliliter
NA = not analyzed
NR = not recorded
U - Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection analyte-specific quality control criteria.
J - Estimated: Between the method detection limit and reporting limit and/or due to discrepancies in meeting certain analyte-specific quality control criteria.

Table 7
Tenth RA-O Groundwater Monitoring Plan
LHAAP-35A (58), Longhorn Army Ammunition Plant, Karnack, Texas
Year 9 RA-O Report

Well Identification	Well description	Year 6 RA-O				Year 7 RA-O		Year 8 RA-O		Year 9 RA-O		Year 10 RA-O
		Sep-19	Dec-19	Mar-20	Jun-20	Dec-20	Jun-21	Dec-21	Jun-22	Dec-22	Jun-23	Jun-24
LHAAP-35A(58)		Western Plume Quarterly Performance Sampling	Western Plume Quarterly Performance Sampling/Eastern Plume Semi-Annual Sampling	Western Plume Quarterly Performance Sampling	Western Plume Quarterly Performance Sampling/Eastern Plume Semi-Annual Sampling	Eastern and Western Plume Semi-Annual Sampling	Eastern and Western Plume Semi-Annual Sampling	Western Plume Semi-Annual Sampling	Western Plume Semi-Annual/Eastern Plume Annual Sampling	Western Plume Semi-Annual Sampling	Western/Eastern Plume Annual Sampling	Western/Eastern Plume Annual Sampling
35ASW03	Surface Water Sample		Dry		Dry	Dry	VOCs		Dry		VOCs	VOCs
03WW01	Shallow		VOCs, MNA, VFA, DHB/DHC, As		VOCs, MNA, VFA, DHB/DHC, As	VOCs, MNA, VFA, DHB/DHC, As	VOCs, MNA, VFA, DHB/DHC, As		VOCs, As		VOCs, As	VOCs, As
35AWW01	Intermediate		VOCs		VOCs	VOCs, As	VOCs, As		VOCs, As		VOCs, As	VOCs, As
35AWW04	Shallow							Dry	Dry	VOCs, MNA, As	VOCs, As	VOCs, As
35AWW05	Intermediate					VOCs	VOCs	VOCs	VOCs	VOCs	VOCs	VOCs
35AWW06	Shallow	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs	VOCs
35AWW08	Shallow		VOCs, MNA, VFA, As		VOCs, MNA, VFA, DHB/DHC, As	VOCs, MNA, VFA, DHB/DHC, As	VOCs, MNA, VFA, DHB/DHC, As		VOCs, As		VOCs, As	VOCs, As
35AWW09	Shallow		VOCs, MNA, VFA, DHB/DHC, As		VOCs, MNA, VFA, As	VOCs, MNA, VFA, As	VOCs, MNA, VFA, As		VOCs, As		VOCs, As	VOCs, As
35AWW10	Shallow		VOCs, MNA, VFA		VOCs	VOCs	VOCs		VOCs		VOCs	VOCs
35AWW11	Shallow	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs	VOCs
35AWW12	Shallow		VOCs		VOCs	VOCs	VOCs		VOCs		VOCs	VOCs
35AWW13	Shallow		VOCs		VOCs	VOCs	VOCs		VOCs		VOCs	VOCs
35AWW14	Shallow		VOCs		VOCs	VOCs	VOCs		VOCs		VOCs	VOCs
35AWW15	Shallow		VOCs		VOCs	VOCs	VOCs	VOCs	VOCs	VOCs	VOCs	VOCs
35AWW16	Shallow		VOCs		VOCs	VOCs	VOCs		VOCs		VOCs	VOCs
35AWW17	Shallow		VOCs		VOCs	VOCs	VOCs		VOCs		VOCs	VOCs
35AWW18	Shallow		VOCs		VOCs	VOCs	VOCs		VOCs		VOCs	VOCs

Table 7
Tenth RA-O Groundwater Monitoring Plan
LHAAP-35A (58), Longhorn Army Ammunition Plant, Karnack, Texas
Year 9 RA-O Report

Well Identification	Well description	Year 6 RA-O				Year 7 RA-O		Year 8 RA-O		Year 9 RA-O		Year 10 RA-O
		Sep-19	Dec-19	Mar-20	Jun-20	Dec-20	Jun-21	Dec-21	Jun-22	Dec-22	Jun-23	Jun-24
LHAAP-35A(58)		Western Plume Quarterly Performance Sampling	Western Plume Quarterly Performance Sampling/Eastern Plume Semi-Annual Sampling	Western Plume Quarterly Performance Sampling	Western Plume Quarterly Performance Sampling/Eastern Plume Semi-Annual Sampling	Eastern and Western Plume Semi-Annual Sampling	Eastern and Western Plume Semi-Annual Sampling	Western Plume Semi-Annual Sampling	Western Plume Semi-Annual/Eastern Plume Annual Sampling	Western Plume Semi-Annual Sampling	Western/Eastern Plume Annual Sampling	Western/Eastern Plume Annual Sampling
35AWW19	Shallow	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs	VOCs
35AWW20	Shallow	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC, As	VOCs, MNA, VFA, DHB/DHC, As	VOCs, MNA, VFA, DHB/DHC, As	VOCs, MNA, VFA, DHB/DHC, As	VOCs, MNA, VFA, DHB/DHC, As	VOCs, MNA, VFA, DHB/DHC, As	VOCs, As	VOCs, As
35AWW21	Shallow		VOCs		VOCs	VOCs	VOCs		VOCs		VOCs	VOCs
35AWW22	Shallow		VOCs		VOCs	VOCs	VOCs		VOCs		VOCs	VOCs
35AWW23	Shallow, New Wells South of Avenue G in center of Western Plume	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs	VOCs
35AWW24	Shallow, Downgradient Western Plume well		VOCs		VOCs	VOCs	VOCs	VOCs	VOCs	VOCs	VOCs	VOCs
35AWW25	Proposed -Shallow, Downgradient Western Plume Well									VOCs	VOCs	VOCs
35AWW26	Proposed-Shallow, Upgradient Western Plume Well									VOCs	VOCs	VOCs
35AWW27	Proposed -Shallow, Downgradient Western Plume Well										VOCs	VOCs
LHSMW04	Shallow		Dry		Dry	VOCs, MNA, As	VOCs, MNA, As	Dry	Dry	VOCs, MNA, As	VOCs, As	VOCs, As
LHSMW06	Shallow		VOCs, As		VOCs, As	VOCs, As	VOCs, As	VOCs, As	VOCs, As	VOCs, As	VOCs, As	VOCs, As
LHSMW07	Shallow	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs, MNA, VFA, DHB/DHC	VOCs	VOCs

Notes:
VOCs - Volatile Organic Compounds
MNA - Monitored Natural Attenuation (parameters include: total organic carbon, anions [sulfate, chloride, nitrate, and nitrite], and dissolved gases [carbon dioxide, methane, ethane, and ethene])
VFA - Volatile Fatty Acids
DHB - Dehalobacter
DHC - Dehalococcoides
As - Arsenic

APPENDIX A
ANNUAL LAND USE CONTROL COMPLIANCE CERTIFICATION DOCUMENTATION

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Annual Land Use Control Compliance Certification Documentation

In accordance with the Remedial Design dated September 2011, for LHAAP-58, a certification of site was conducted by Bhate Environmental Associates, Inc. on 7/12/23.

A summary of land use control mechanism is as follows:

- Groundwater restriction – restriction of the use of groundwater to environmental monitoring and testing until cleanup levels are met

A Summary of compliance with land use and restriction covenants is as follows:

- No use of groundwater, installation of new groundwater wells, or tampering with existing wells at LHAAP-58.

I, the undersigned, do document that the certification was performed as indicated above, and that the above information is true and correct to the best of my knowledge, information and belief.

Date: 7/12/23

Name/Title: Kenneth Moore Environmental Tech

Signature: Kenneth Moore

APPENDIX B
PHOTOGRAPHIC LOG

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Longhorn Army Ammunition Plant Site LHAAP-35A (58) Photograph Log Nov 2022 - Jun 2023



Photo 1: 03WW01 in good condition.



Photo 2: Surface water sampling location
35ASW03 dry in June 2021.

Longhorn Army Ammunition Plant Site LHAAP-35A (58) Photograph Log June 2023



Photo 3: 35AWW01 in good condition.



Photo 4: 35AWW04 in good condition.

Longhorn Army Ammunition Plant Site LHAAP-35A (58) Photograph Log June 2023



Photo 5: 35AWW05 in good condition.



Photo 6: 35AWW06 in good condition.

Longhorn Army Ammunition Plant Site LHAAP-35A (58) Photograph Log June 2023



Photo 7: 35AWW08 in good condition.



Photo 8: 35AWW09 in good condition.

Longhorn Army Ammunition Plant Site LHAAP-35A (58) Photograph Log June 2023



Photo 9: 35AWW10 in good condition.



Photo 10: 35AWW11 in good condition.

Longhorn Army Ammunition Plant Site LHAAP-35A (58) Photograph Log June 2023



Photo 11: 35AWW12 in good condition.



Photo 12: 35AWW13 in good condition.

Longhorn Army Ammunition Plant Site LHAAP-35A (58) Photograph Log June 2023



Photo 13: 35AWW14 in good condition.



Photo 14: 35AWW15 in good condition.

Longhorn Army Ammunition Plant Site LHAAP-35A (58) Photograph Log June 2023



Photo 15: 35AWW16 in good condition.



Photo 16: 35AWW17 in good condition.

Longhorn Army Ammunition Plant Site LHAAP-35A (58) Photograph Log June 2023



Photo 17: 35AWW18 in good condition.



Photo 18: 35AWW19 in good condition.

Longhorn Army Ammunition Plant Site LHAAP-35A (58) Photograph Log June 2023



Photo 19: 35AWW20 in good condition.



Photo 20: 35AWW21 in good condition.

Longhorn Army Ammunition Plant Site LHAAP-35A (58) Photograph Log June 2023



Photo 21: 35AWW22 in good condition.



Photo 22: 35AWW23 in good condition.

Longhorn Army Ammunition Plant Site LHAAP-35A (58) Photograph Log June 2023



Photo 23: 35AWW24 in good condition.



Photo 24: 35AWW25 in good condition.

Longhorn Army Ammunition Plant Site LHAAP-35A (58) Photograph Log June 2023



Photo 23: 35AWW26 in good condition.



Photo 24: LHSMW04 in good condition.

Longhorn Army Ammunition Plant Site LHAAP-35A (58) Photograph Log June 2023



Photo 25: LHSMW06 in good condition.



Photo 26: LHSMW07 in good condition.

Longhorn Army Ammunition Plant Site LHAAP-35A (58) Photograph Log June 2023



Photo 27: 35AWW25 well installation (November 2022)



Photo 28: 35AWW26 well installation (November 2022)

Longhorn Army Ammunition Plant Site LHAAP-35A (58) Photograph Log June 2023



Photo 29: 35AWW27 well installation

APPENDIX C
WELL INSPECTION FORMS

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01222063

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: NW01312.0150
Client: ARMY
Site Name: 58
Well ID: 35AWW11
Inspection Date: 1/12/23
Well Completion Depth/ Measured Depth: 38.00
Inspector: Scott Beesinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches) 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222064

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: NW01312.0150
Client: Army
Site Name: 58
Well ID: 35AWW20
Inspection Date: 1/12/23
Well Completion Depth/ Measured Depth: 36.05
Inspector: Scott Beesinger

ABOVE GROUND
Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED NA
Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:
Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:
Inner Diameter (inches) 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:
Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222065

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: NWOB12.0150
Client: ARMY
Site Name: 58
Well ID: LHSMW07
Inspection Date: 1/12/23
Well Completion Depth/ Measured Depth: 29.47
Inspector: Scott Beesinger

☒ ABOVE GROUND
Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED
Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:
Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:
Inner Diameter (inches) 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:
Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☐ Yes ☒ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222066

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: NW01312.0150
Client: ARMY
Site Name: 58
Well ID: 35AWW06
Inspection Date: 1/12/23
Well Completion Depth/ Measured Depth: 30.24
Inspector: Scott Beesinbar

ABOVE GROUND
Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED
Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:
Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:
Inner Diameter (inches) 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:
Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☐ Yes ☒ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222067

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: NW01312.0150
Client: ARMY
Site Name: 58
Well ID: 35AWW23
Inspection Date: 1/12/23
Well Completion Depth/ Measured Depth: 43.70
Inspector: Scott Beesinger

ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2(1
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222068

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: NW01312.0150
Client: ARMY
Site Name: 58
Well ID: 35AWW19
Inspection Date: 1/12/23
Well Completion Depth/ Measured Depth: 32.42
Inspector: Scott Baesinger

ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☐ Good ☐ Less than 50% rusted ☒ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches) 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222069

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: NW01312.0150
Client: ARMY
Site Name: 18/24
Well ID: 35AWW04
Inspection Date: 1/12/23
Well Completion Depth/ ~~Measured Depth~~: 25.42
Inspector: Scott Beesinger

☒ ABOVE GROUND
Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED
Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:
Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:
Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:
Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222070

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: NW01312.0150
Client: ARMY
Site Name: 58
Well ID: LHSMW04
Inspection Date: 1/12/23
Well Completion Depth/ Measured Depth: 29.98
Inspector: Scott Beesinger

ABOVE GROUND
Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED NA
Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:
Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:
Inner Diameter (inches) 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:
Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222071

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: NW01312.0150
Client: Army
Site Name: 58
Well ID: 35AMW25
Inspection Date: 1/13/23
Well Completion Depth/ Measured Depth: 24.70
Inspector: Scott Beesinger

ABOVE GROUND
Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED NA
Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:
Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:
Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:
Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222072

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: NW01312.0150
Client: Army
Site Name: 58
Well ID: 35AWW24
Inspection Date: 1/13/23
Well Completion Depth/ Measured Depth: 35.02
Inspector: Scott Beasinger

ABOVE GROUND
Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED NA
Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:
Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:
Inner Diameter (inches) 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:
Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222073

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: NW01312.0150
Client: Army
Site Name: 58
Well ID: 35ANW05
Inspection Date: 1/13/23
Well Completion Depth/ Measured Depth: 73.02
Inspector: Scott Brasington

ABOVE GROUND
Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED
Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:
Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:
Inner Diameter (inches) 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:
Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222074

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: NW01312.0150
Client: ARMY
Site Name: 58
Well ID: LHSMW06
Inspection Date: 1/13/23
Well Completion Depth/ Measured Depth: 23.45
Inspector: Scott Baesinger

ABOVE GROUND
Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED
Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:
Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:
Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:
Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☐ Yes ☒ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: NW01312.0150
Client: Army
Site Name: 58
Well ID: 35AWW26
Inspection Date: 1/13/23
Well Completion Depth/ Measured Depth: 32.02
Inspector: Scott Bassinger

☒ ABOVE GROUND
Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED
Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:
Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:
Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:
Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222076

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: NW01312.0150
Client: ARMY
Site Name: 58
Well ID: 35AWW15
Inspection Date: 1/13/23
Well Completion Depth/ Measured Depth: 40.11
Inspector: Scott Baesinger

ABOVE GROUND
Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ **FLUSH MOUNTED**
Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:
Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:
Inner Diameter (inches) 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:
Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222077

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUBCIBH.0001
Client: ARMY
Site Name: 58
Well ID: 35AWW19
Inspection Date: 6/5/23
Well Completion Depth/ Measured Depth: 32.43
Inspector: Scott Beesinger

ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☐ Good ☐ Less than 50% rusted ☒ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222078

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: Army
Site Name: SS
Well ID: 35AWW20
Inspection Date: 6/5/23
Well Completion Depth/ Measured Depth: 36.02
Inspector: Scott Beesinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222079

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: SVPCIBH.0001
Client: ARMY
Site Name: S8
Well ID: LHSMW07
Inspection Date: 6/5/23
Well Completion Depth/ Measured Depth: 30.42
Inspector: Scott Baggingar

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☐ Yes ☒ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222080

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: Army
Site Name: 58
Well ID: 35AWW06
Inspection Date: 6/5/23
Well Completion Depth/ Measured Depth: 30.32
Inspector: Scott Beasinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222081

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: Army
Site Name: 58
Well ID: 35AWW23
Inspection Date: 6/5/23
Well Completion Depth/ Measured Depth: 43.70
Inspector: Scott Beesinger

ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches) 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222082

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: Army
Site Name: 58
Well ID: 35AWW11
Inspection Date: 6/5/23
Well Completion Depth/ Measured Depth: 37.87
Inspector: Scott Baessinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

NA

Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222083

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIB14.0001
Client: ARMY
Site Name: 58

Well ID: 35AWW22
Inspection Date: 6/5/23
Well Completion Depth/ Measured Depth: 37.70
Inspector: Scott Baesinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222084

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: SVPCIBH.0001
Client: ARMY
Site Name: 58
Well ID: 35AMW12
Inspection Date: 6/23
Well Completion Depth/ Measured Depth: 37.53
Inspector: Scott Bressnar

ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☐ Good ☐ Less than 50% rusted ☒ More than 50% rusted

FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222085

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: ARMY
Site Name: 58
Well ID: 03WW01
Inspection Date: 6/6/23
Well Completion Depth/ Measured Depth: 33.37
Inspector: Scott Beesinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

NA

Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222086

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: Army
Site Name: 58
Well ID: 35AWW08
Inspection Date: 6/6/23
Well Completion Depth/ Measured Depth: 33.30
Inspector: Scott Beesinger

ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222087

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCTBH.0001
Client: ARMY
Site Name: 58
Well ID: 35AWW01
Inspection Date: 6/6/23
Well Completion Depth/ Measured Depth: 73.60
Inspector: Scott Beasinger

ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222088

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: SJPCTBH.0001
Client: Army
Site Name: 58
Well ID: 35AWW09
Inspection Date: 6/6/23
Well Completion Depth/ Measured Depth: 42.12
Inspector: Scott Beasinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222089

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCTBH-0001
Client: ARMY
Site Name: 58
Well ID: 35AWW13
Inspection Date: 6/6/23
Well Completion Depth/ Measured Depth: 40.26
Inspector: Scott Beasinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222090

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 5VPCIBH.0001
Client: Army
Site Name: 58
Well ID: 35AWW10
Inspection Date: 6/6/23
Well Completion Depth/ Measured Depth: 33.64
Inspector: Scott Beasinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222091

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: SUPCIBH.0001
Client: Army
Site Name: 58
Well ID: 35AWW26
Inspection Date: 6/6/23
Well Completion Depth/ Measured Depth: 32.02
Inspector: Scott Bassinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED NA

Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): ~~2~~ 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☐ Yes ☒ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222092

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: SVPCIBH.0001
Client: ARMY
Site Name: 58
Well ID: 35AWW21
Inspection Date: 6/6/23
Well Completion Depth/ Measured Depth: 42.80
Inspector: Scott Beesinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

NA

Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☒ Yes ☐ No
Is well open to completed depth? (complete when gauging)
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCIBH.0001
Client: ARMY
Site Name: 58
Well ID: LHSMW04
Inspection Date: 6/6/23
Well Completion Depth/ Measured Depth: 29.96
Inspector: Scott Bassinger

☑ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☑ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☑ Good ☐ Broken ☒ Cracked
Hinge Condition: ☑ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☑ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222094

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: Army
Site Name: 58
Well ID: 35AWW04
Inspection Date: 6/6/23
Well Completion Depth/ Measured Depth: 25.40
Inspector: Scott Bassinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☐ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222095

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: ARMY
Site Name: 58
Well ID: 35AWW25
Inspection Date: 6/6/23
Well Completion Depth/ Measured Depth: 23.70
Inspector: Scott Bassinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED NA

Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☐ Yes ☒ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222096

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCFBH.0001
Client: Army
Site Name: 58
Well ID: 35AWW14
Inspection Date: 6/7/23
Well Completion Depth/ Measured Depth: 32.26
Inspector: Scott Baysinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

NA

Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222097

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: SUPCIBH.0001
Client: ARMY
Site Name: 58
Well ID: 35AWW05
Inspection Date: 6/7/23
Well Completion Depth/ Measured Depth: 73.03
Inspector: Scott Beesinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☐ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

NA

Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222098

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: ARMY
Site Name: 58
Well ID: 35AWW15
Inspection Date: 6/7/23
Well Completion Depth/ Measured Depth: 40.77
Inspector: Scott Beesinger

☒ ABOVE GROUND
Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☒ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☒ More than 50% rusted

☐ FLUSH MOUNTED
Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:
Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:
Inner Diameter (inches) 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:
Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222099

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: Army
Site Name: 58
Well ID: 35AMW16
Inspection Date: 6/7/23
Well Completion Depth/ Measured Depth: 37.37
Inspector: Scott Bassinger

ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222100

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: Army
Site Name: 58
Well ID: 3JAMW17
Inspection Date: 6/7/23
Well Completion Depth/ Measured Depth: 42, 42
Inspector: Scott Baesinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☐ Good ☐ Less than 50% rusted ☒ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222101

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: SWPCI BA.0001
Client: Army
Site Name: 58
Well ID: 35AWW18
Inspection Date: 6/7/23
Well Completion Depth/ Measured Depth: 42.12
Inspector: Scott Baesinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222102

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: ARMY
Site Name: S8
Well ID: LHSMW06
Inspection Date: 6/7/23
Well Completion Depth/ Measured Depth: 23.45
Inspector: Scott Baesinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

NA

Well cover present? ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 4"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☐ Yes ☒ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

01222103

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCTBH.0001
Client: ARMY
Site Name: 58

Well ID: 35AMW24
Inspection Date: 6/7/23
Well Completion Depth/ Measured Depth: 35.01
Inspector: Scott Beesinger

☒ ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: METAL
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Need Paint
Lid Condition: ☒ Good ☐ Broken ☒ Cracked
Hinge Condition: ☒ Good ☐ Less than 50% rusted ☐ More than 50% rusted

☐ FLUSH MOUNTED

Well cover present? NA ☐ Yes ☐ No
Condition: ☐ Good ☐ Broken ☐ Cracked
Condition of Sump: ☐ Clean ☐ Dry ☐ Standing Water

CONCRETE PAD:

Sloped away from casing? ☒ Yes ☐ No
Pad Area Cleared of Vegetation? ☒ Yes ☐ No
Check any of the following features that apply:
☐ Many Cracks ☐ Gap Around Casing ☐ Few Cracks ☐ Ponded Water ☐ No Pad Present

WELL CONDITION:

Inner Diameter (inches): 2"
Condition: ☒ Good ☐ Broken ☐ Cracked ☐ Other (describe)
Cap present? ☒ Yes ☐ No
Well lock present? ☒ Yes ☐ No
Lock functioning properly? ☒ Yes ☐ No
Are bollards present and stable? ☒ Yes ☐ No
Well ID visible? ☒ Yes ☐ No

WELL INTEGRITY:

Bailer present? ☐ Yes ☒ No
Visual obstruction? ☐ Yes ☒ No
Is well open to completed depth? (complete when gauging) ☒ Yes ☐ No
Is silt present in well? (complete when gauging) ☒ Yes ☐ No
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

APPENDIX D
WELL INSTALLATION DOCUMENTATION

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HTW DRILLING LOG

HOLE NO. 35AWW25		
1.COMPANY NAME: Bhate Environmental Associates	2.DRILLING CONTRACTOR: Walker Hill Environmental	SHEET 1 OF 3 SHEETS
3.PROJECT: Longhorn Site 58, Year 9 RA (O)	4.LOCATION: Site 58, LHAAP, Karnack Texas	
5.NAME OF DRILLER: Blake Sistrunk	6.MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7822 DT	
7.SIZES AND TYPE OF DRILLING EQUIPMENT: Dual Tube; 8.25" OD Augers	8.HOLE LOCATION: Northing 6939291.1 Easting 3304574.7	
	9.SURFACE ELEVATION (FT. NAVD88): 217.4	
	10.DATE STARTED: 15-Nov-22	11.DATE COMPLETED: 15-Nov-22
12.OVERBURDEN THICKNESS: NA	15. DEPTH GROUNDWATER ENCOUNTERED (ft bgs): 17' bgs	
13.DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER (btoc) & TIME ELAPSED AFTER DRILLING COMPLETED: 22.55 btoc- 1 hour	
14.TOTAL DEPTH OF HOLE (ft bgs): 31' bgs	17.OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	

18.GEOTECHNICAL SAMPLES	DISTURBED		UNDISTURBED		19.TOTAL NUMBER OF CORE BOXES
N/A	N/A		N/A		N/A
20.SAMPLES FOR CHEMICAL ANALYSIS None	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	N/A	N/A	N/A	N/A	N/A	N/A
22.DISPOSITION OF HOLE: Monitoring Well	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR: Zachary Beck		
	N/A	2" PVC	NA			

Depth	Description of Materials	Field Screening Results (ppm)	Geotech Sample or Box number	Analytical Sample Number	Blow Counts	Remarks
0	Top soil/ Organic matter					
	10YR 8/2- very pale brown silty sand					
1						
2		PID 2: 0.0				2" PVC Monitoring Well installed Sampled 10-20' bgs
3						
4		PID 4: 0.0				
5						
6		PID 6:0.0				
7						
	Silty clay					
8	10 YR 7/1-1 light gray	PID 8: 0.0				
9						
10		PID 10: 0.0				

	PROJECT: Longhorn Site 58, Year 9 RA (O)	HOLE NO. 35AWW25

HTW DRILLING LOG

HOLE NO. 35AWW25

PROJECT: Longhorn Site 58, Year 9 RA (O)

INSPECTOR: Zachary Beck

SHEET 2 OF 3 SHEETS

Elev.	Depth.	Description of Materials	Field Screening Results (ppm)	Geotech Sample or Box number	Analytical Sample Number	Blow Counts	Remarks
	10						
	11						
	12		PID 12: 0.0				
	13						
	14		PID 14: 0.0				
	15	Sand Wet sample					
	16	7.5 YR 6/6- reddish yellow	PID 16:0.0				
	17						Water at 17' bgs
	18		PID 18:0.0				
	19						
	20	Clay	PID 20: 0.0				
	21	10 YR 5/2- grayish brown					
	22		PID 22: 0.0				
	23						
	24		PID 24: 0.0				
	25						

PROJECT: Longhorn Site 58, Year 9 RA (O)

HOLE NO. 35AWW25

HTW DRILLING LOG

HOLE NO. 35AWW25

PROJECT: Longhorn Site 58, Year 9 RA (O)

INSPECTOR: Zachary Beck

SHEET 3 OF 3 SHEETS

Elev.	Depth.	Description of Materials	Field Screening Results (ppm)	Geotech Sample or Box number	Analytical Sample Number	Blow Counts	Remarks
	25						
	26		PID 26: 0.0				
	27						
	28		PID 28: 0.0				
	29						
	30	Fractured sand lenses 10 YR 3/2- v. Dark grayish brown	PID 30: 0.0				Installed 2" PVC monitoring well
	31	Reddish					
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						

PROJECT: Longhorn Site 58, Year 9 RA (O)

HOLE NO. 35AWW25

HTW DRILLING LOG

HOLE NO. 35AWW26

1.COMPANY NAME: Bhate Environmental Associates	2.DRILLING CONTRACTOR: Walker Hill Environmental
SHEET 1 OF 3 SHEETS	
3.PROJECT: Longhorn Site 58, Year 9 RA (O)	4.LOCATION: Site 58, LHAAP, Karnack, Texas
5.NAME OF DRILLER: Blake Sistrunk	6.MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7822 DT
7.SIZES AND TYPE OF DRILLING EQUIPMENT	8.HOLE LOCATION: Northing 6960127.7 Easting 3304358.9
	9.SURFACE ELEVATION (FT. NAVD88): 220.44
	10.DATE STARTED: 15-Nov-22 / 11.DATE COMPLETED: 15-Nov-22
12.OVERBURDEN THICKNESS: NA	15. DEPTH GROUNDWATER ENCOUNTERED (ft bgs): 28' bgs
13.DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER (btoc) & TIME ELAPSED AFTER DRILLING COMPLETED: 24.24 btoc
14.TOTAL DEPTH OF HOLE (ft bgs): 29' bgs	17.OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18.GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19.TOTAL NUMBER OF CORE BOXES
N/A	N/A	N/A	N/A

20.SAMPLES FOR CHEMICAL ANALYSIS None	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	N/A	N/A	N/A	N/A	N/A	N/A

22.DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Monitoring Well	N/A	2" PVC	NA	Zachary Beck

Depth	Description of Materials	Field Screening Results (ppm)	Geotech Sample or Box number	Analytical Sample Number	Blow Counts	Remarks
0	Asphalt/concrete					
	10 YR 8/2- very pale brown Silty sand					0-4 (25% recovery)
1						
2	5 YR 4//1- Dark green Silty Clay-moist Slight odor					2" PVC Monitoring Well installed Screened 19-29 bgs
3		PID 7.5: 5.9 ppm				
4		PID 5: 0.0 ppm				
5						
6						
7	7.5 YR 5/3 Brown Clay Slightly plastic	PID 7: 0.0 ppm				
8						
9						
10						

PROJECT: Longhorn Site 58, Year 9 RA (O) — HOLE NO. 35AWW26

HTW DRILLING LOG

HOLE NO. 35AWW26

PROJECT: Longhorn Site 58, Year 9 RA (O)

INSPECTOR: Zachary Beck

SHEET 2 OF 3 SHEETS

Elev.	Depth.	Description of Materials	Field Screening Results (ppm)	Geotech Sample or Box number	Analytical Sample Number	Blow Counts	Remarks
	10		PID 10: 0.0 ppm				
	11						
	12						
	13	Sand lense 5Y 6/1-Gray	PID 13.5: 0.9 ppm				
	14	10 YR 5/6- yellowish brown Silty sand					
	15		PID 15.5: 0.0 ppm				
	16						
	17	10 YR 5/6- yellowish brown Sand-moist					
	18	10 YR 6/3- Pale brown Silty clay Dense	PID 18: 0.0 ppm				
	19						
	20		PID 20: 0.0 ppm				
	21						
	22		PID 22: 0.0 ppm				
	23						
	24	10 YR 5/3- brown clay	PID 24: 0.0 ppm				
	25						

PROJECT: Longhorn Site 58, Year 9 RA (O)

HOLE NO. 35AWW26

HTW DRILLING LOG

HOLE NO. 35AWW26

PROJECT: Longhorn Site 58, Year 9 RA (O)

INSPECTOR: Zachary Beck

SHEET 3 OF 3 SHEETS

Elev.	Depth.	Description of Materials	Field Screening Results (ppm)	Geotech Sample or Box number	Analytical Sample Number	Blow Counts	Remarks
	25	Silt 10 YR 3/2- very dark grayish brown					
	26		PID 26: 0.0 ppm				
	27						
	28	Sand- fine grained 10 YR 5/6- yellowish brown	PID 28: 0.0 ppm				
	29		moist at 29' bgs				DPT dual tube refusal at 29' bgs
	30						
	31						
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						

PROJECT: Longhorn Site 58, Year 9 RA (O)

HOLE NO. 35AWW26

HTW DRILLING LOG

HOLE NO. 35AWW27

1.COMPANY NAME: Bhate Environmental Associates	2.DRILLING CONTRACTOR: Walker Hill Environmental
SHEET 1 OF 3 SHEETS	
3.PROJECT: Longhorn Site 58, Year 9 RA (O)	4.LOCATION: Site 58, LHAAP, Karnack Texas
5.NAME OF DRILLER: Blake Sistrunk	6.MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7822 DT
7.SIZES AND TYPE OF DRILLING EQUIPMENT: Dual Tube DPT 8.25" HSA	8.HOLE LOCATION: Northing From fig, survey pending Easting
	9.SURFACE ELEVATION (FT. NAVD88): N/A
	10.DATE STARTED: 20-Jun-23 / 11.DATE COMPLETED: 21-Jun-23
12.OVERBURDEN THICKNESS: NA	15. DEPTH GROUNDWATER ENCOUNTERED (ft bgs): 30-32
13.DEPTH DRILLED INTO ROCK: NA	16. DEPTH TO WATER (btoc) & TIME ELAPSED AFTER DRILLING COMPLETED: 25 ft bgs 0800 6/21/2023
14.TOTAL DEPTH OF HOLE (ft bgs): 40 ft bgs	17.OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18.GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19.TOTAL NUMBER OF CORE BOXES
N/A	N/A	N/A	N/A

20.SAMPLES FOR CHEMICAL ANALYSIS None	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	N/A	N/A	N/A	N/A	N/A	N/A

22.DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Monitoring Well	N/A	2" PVC	NA	J. Dawud

Depth	Description of Materials	Field Screening Results (ppm)	Geotech Sample or Box number	Analytical Sample Number	Blow Counts	Remarks
0	(0-4 ft bgs) 60% recovery fine grained sandy clay dry, brown 10 YR 5/3 into	PID : 0				note DPT to 40 ft bgs, water 25 bgs next day so HSA to 33' to set well
1						
	fine grained sandy clay dry, dark gray 10 YR 4/1					
2						
3						
4	(2-8 ft bgs) 100% recovery clay, dark gray 10 YR 4/1, dry, friable	PID: 0				
5		PID: 0				
6						
7						
8	(8-12 ft bgs) 100% recovery clay, dry, dark gray 10 YR 4/1 with some brownish	PID: 0				
9	yellow 10 YR 6/8					
10						

PROJECT: Longhorn Site 58, Year 9 RA (O) — HOLE NO. 35AWW27

HTW DRILLING LOG

HOLE NO. 35AWW27

PROJECT: Longhorn Site 58, Year 9 RA (O)

INSPECTOR: J. Dawud

SHEET 2 OF 3 SHEETS

Elev.	Depth.	Description of Materials	Field Screening Results (ppm)	Geotech Sample or Box number	Analytical Sample Number	Blow Counts	Remarks
	10						
	11						
	12	(12-16 ft bgs) 100% recovery silty clay, dry, dark gray, 10YR 4/1 mixed with brownish yellow, 10 YR 6/8	PID: 0				
	13						
	14						
	15						
	16	(16-20 ft bgs)90% Recovery Clay, brownish yellow, 10 YR 6/8 dry	PID 0:				
	17						
	18						
	19						
	20	(20-24) 75% recovery silty clay Dry into moist, brownish yellow 10 YR 6/8	PID: 0				
	21						
	22						
	23						
	24	(24-28 ft bgs) 90% recovery Silty clay, moist, brownish yellow 10 YR 6/8 and gray 10 YR 6/1	PID: 0				
	25						

HTW DRILLING LOG

HOLE NO. 35AWW27

PROJECT: Longhorn Site 58, Year 9 RA (O)

INSPECTOR: FALSE

SHEET 3 OF 3 SHEETS

Elev.	Depth.	Description of Materials	Field Screening Results (ppm)	Geotech Sample or Box number	Analytical Sample Number	Blow Counts	Remarks
	25						
	26						
	27						
	28	(28-32 ft bgs) 80% recovery Same as above	PID: 0				
	29						
	30						
	31						
	32	(32-36) 100% Recovery Same as above					Water 30-32
	33						
	34	Into					
	35	Sandy Clay, wet, reddish yellow, 5 YR 6/8					
	36	(36-38 ft bgs)200% recovery clay, dark greyish brown, moist, 10 YR 4/2	PID: 0				Overpacked. Tougher at 2' push. Expansion/ slough.
	37						
	38	(38-40 ft bgs)200% recovery Same as above, with some reddish yellow 5 YR 6/8	PID: 0				Same as above
	39						
	40	Bottom of DPT boring 40					

PROJECT: Longhorn Site 58, Year 9 RA (O)

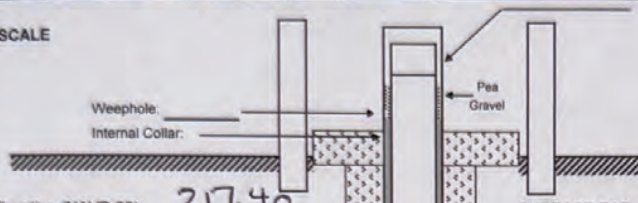
HOLE NO. 35AWW27

01222116

WELL CONSTRUCTION DIAGRAM (Abovegrade)

SITE:	LHAAP-58	WELL/BORING ID:	35AWW25
PROJECT NAME:	Year 9 RA(O)	DRILLING METHOD:	HSA
PROJECT NO./PHASE:	NW01312.0150.012	DATE(S):	11/15/22
DRILLING CONTRACTOR:	Walker Hill Enviro	SURVEYOR:	MTX Surveying
DRILLER:	Blake Sistrunk	NORTHING (NAD 83):	695291.08
GEOLOGIST:	Zachary Beede	EASTING (NAD 83):	3304574.73

NOT TO SCALE



PROTECTIVE CASING
Type: Steel Stickup
Dimensions: 4" x 4" x 5'
Length:
Guard Posts: 4 - bollards

Surface Elevation (NAVD 88): 217.40
Casing Elevation (NAVD 88): 220.54
Casing Stickup (ft): 3.14

Borehole Diameter (in): 8.25"
Well Casing Diameter (in): 2.0"

DEPTH TO WATER
During Drilling: 17
Date: 11/15/22
Pre Development: 22.55 btoc
Date: 11/15/22
Post Development:
Date:

Top of Secondary Filter Pack: 5.0'
Top of Filter Pack: 7.0'
Top of Screen: ~~10~~ 9.75

Bottom of Screen: 19.75
Bottom of Well: 20' bgs (23.68 btoc)
Bottom of Filter Pack: 20' bgs (23.68 btoc)
Borehole Depth: 20' bgs (23.68 btoc)

SURFACE PAD
Dimensions: 3' x 3'
Type:

WELL CASING (RISER)
Manufacturer: Enviro Manufacturing Inc
Type/Material: PVC Sch. 40
Diameter (in): 2.0
Connection: Flush Thread

WELL SCREEN
Manufacturer: Enviro Manufacturing Inc
Type/Material: PVC - Prepack
Slot Size (in): 0.010
Slot Type: Continuous (Factory Slot)
Connection: Flush Thread

ANNULAR SEAL
Type: Grout
Manufacturer: Quikrete Portland Cement
Mud Scale:
Installation: (Gravity) Tremie Pressure
Volume:
Hydration Time:

SECONDARY FILTER PACK
Manufacturer: Del Phy
Product Name: Bentonite Pellets - non coated
Size: 3/8"
Volume (ft3):
Installation: (Tremie) Gravity

PRIMARY FILTER PACK
Manufacturer: Consolidated Aggregates
Product Name: Silica Sand
Size: 10 x 20
Volume (ft3):
Installation: (Tremie) Gravity

SUMP/END CAP
Type: PVC
Length: 3"

BACKFILL MATERIAL
Type: NA
Volume: NA

Comments: Not to Scale

Notes:

bhate

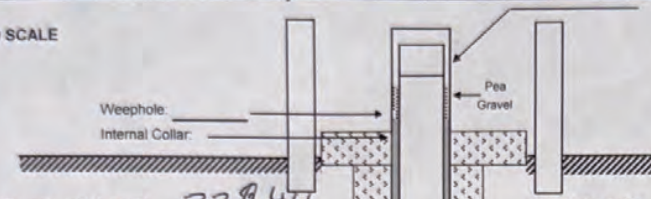
11/11/2022

01222117

WELL CONSTRUCTION DIAGRAM (Abovegrade)

SITE:	LHAAP-58	WELL/BORING ID:	358MW26
PROJECT NAME:	Year 9 RACO	DRILLING METHOD:	HSA
PROJECT NO./PHASE:		DATE(S):	11/15/22
DRILLING CONTRACTOR:	Walker Hill	SURVEYOR:	MTM Surveying
DRILLER:	Blake Sistrunk	NORTHING (NAD 83):	6976012.6469
GEOLOGIST:	Zachary Beck	EASTING (NAD 83):	3304398.88

NOT TO SCALE



PROTECTIVE CASING
Type: Steel Stick up
Dimensions: 4" x 4" x 5'
Length: 4'
Guard Posts: 4 - bollards

Surface Elevation (NAVD 88): 228.44
Casing Elevation (NAVD 88): 223.97
Casing Stickup (ft): 3.53

Borehole Diameter (in): 8.25"
Well Casing Diameter (in): 2.0"

DEPTH TO WATER
During Drilling: 27' bgs
Date: 11/15/22
Pre Development: 24.24 BTOC
Date: 11/15/22
Post Development:
Date:

Top of Secondary Filter Pack: 15.0'
Top of Filter Pack: 17.0'
Top of Screen: 19.5'
Bottom of Screen: 29.5 (30.33 BTOC)
Bottom of Well: 29.0
Bottom of Filter Pack: 29.0
Borehole Depth: 29.0

SURFACE PAD
Dimensions: 3' x 3'
Type: Concrete

WELL CASING (RISER)
Manufacturer: Enviro Manufacturing Inc
Type/Material: Sch 40 PVC
Diameter (in): 2"
Connection: Flush Thread

WELL SCREEN
Manufacturer: Enviro Manufacturing Inc
Type/Material: Prepack
Slot Size (in): 0.010
Slot Type: Continuous (Factory Slot)
Connection: Flush Thread

ANNULAR SEAL
Type: Grout
Manufacturer: Concrete Portland Cement
Mud Scale:
Installation: (Gravity) Tremie Pressure
Volume:
Hydration Time:

SECONDARY FILTER PACK
Manufacturer: Pel Plug
Product Name: Bentonite Pellets - Non coated
Size: 3/8"
Volume (ft3):
Installation: (Tremie) Gravity

PRIMARY FILTER PACK
Manufacturer: Consolidated Aggregates
Product Name: Silica Sand
Size: 10x20
Volume (ft3):
Installation: (Tremie) Gravity

SUMP/END CAP
Type: PVC
Length: 3"

BACKFILL MATERIAL
Type: NA
Volume: NA

Comments: Not to Scale

Notes:

bhate

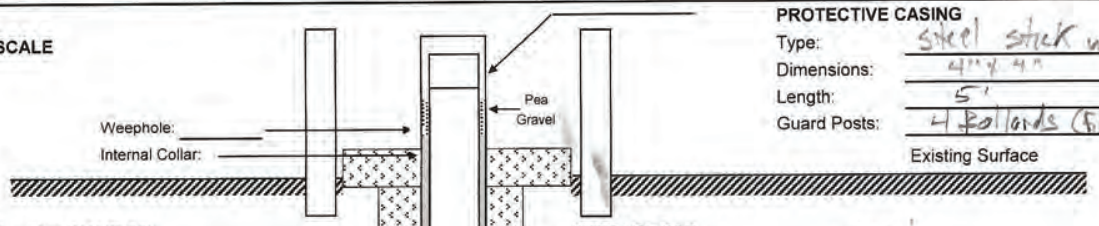
11/11/2022

01222118

WELL CONSTRUCTION DIAGRAM (Abovegrade)

SITE:	LHAAP-35A	WELL/BORING ID:	35AWW27
PROJECT NAME:	LHAAP-35A	DRILLING METHOD:	DPT 3 HSA
PROJECT NO./PHASE:		DATE(S):	6/20 - 6/21
DRILLING CONTRACTOR:	Walter Hill	SURVEYOR:	TBD
DRILLER:	Blake, Sistrunk	NORTHING (NAD 83):	
GEOLOGIST:	Junaid Dawud	EASTING (NAD 83):	

NOT TO SCALE



PROTECTIVE CASING
- Type: steel stick up
- Dimensions: 4" x 4"
- Length: 5'
- Guard Posts: 4 Bollards (filled)

Surface Elevation (NAVD 88):
Casing Elevation (NAVD 88):
Casing Stickup (ft):

Borehole Diameter (in): 8.25
Well Casing Diameter (in): 2.0

DEPTH TO WATER
- During Drilling: 30-32 ft bgs
- Date: 6/20
- ~~Pre Development~~: 25 ft bgs
- Date: 6/21
- Post Development:
- Date:

Top of ~~Secondary Filter Pack~~ Seal: 17.5 ft bgs
Top of Filter Pack: 19.5 ft bgs
Top of Screen: 21'9" ft bgs

Bottom of Screen: 31'9" ft bgs
Bottom of Well: 32 ft bgs
Bottom of Filter Pack: 33 ft bgs
Borehole Depth: 40 (DPT) / 33 (HSA)

SURFACE PAD
- Dimensions: 2'x2'
- Type: concrete

WELL CASING (RISER)
- Manufacturer: Enviro Manufacture Inc.
- Type/Material: PVC
- Diameter (in): 2
- Connection: threaded

WELL SCREEN
- Manufacturer: Enviro manu. Inc.
- Type/Material: PVC w/ Premade filterpack
- Slot Size (in): 0.01
- Slot Type: Continuous / (Factory Slot)
- Connection: threaded

ANNULAR SEAL
- Type: grout
- Manufacturer: Portland cement
- Mud Scale:
- Installation: (Gravity) Tremie Pressure
- Volume:
- Hydration Time:

5 bags of 94# grout

5gal bucket

SECONDARY FILTER PACK
- Manufacturer: Pel plug
- Product Name: Bentonite
- Size: Pellets
- Volume (ft3): 5 gal
- Installation: Tremie (Gravity)

PRIMARY FILTER PACK
- Manufacturer: Consolidated aggregates
- Product Name: "Pool filter"
- Size: 50# bags x 3
- Volume (ft3):
- Installation: (Tremie) Gravity

SUMP/END CAP
- Type: PVC screw cap
- Length: 3"

BACKFILL MATERIAL
- Type: NA
- Volume:

Comments: Not to Scale	Notes:

6/15/2023

EXHIBIT

HARRISON COUNTY, TEXAS



DRAWN	AR	DATE	1/20/23
CHECKED	MHT	AFE:	
APP'D	MHT	GGS:	
PM	BC	SCALE	1"=60'

REV#	DATE	DESC.

PREPARED FOR

BHATE

PLAT FOR EXISTING MONITORING WELL LOCATION # 35AWW25

MTX SURVEYING
4901 E End Blvd South,
Marshall, Tx 75672
www.mtxsurveying.com
903.471.8391
TBPELS Firm No. 10194253
LA Firm No. 801

CLIENT PROJECT NAME	LONGHORN ARMY AMMUNITION PLANT		
JOB NO.	230007	SHEET	REV.
DWG. NO.	230007-35AWW25_EXHIBIT_PLAT	1 OF 1	0

X:\MTX\Projects\2023\230007 (Bhate - Longhorn Army Ammunition Plant, Karnack)\Draw\230007 - 35AWW25 Exhibit Plat.dwg

EXHIBIT

HARRISON COUNTY, TEXAS



DRAWN	AR	DATE	1/20/23
CHECKED	MHT	AFE:	
APP'D	MHT	GGS:	
PM	BC	SCALE	1"=60'

REV#	DATE	DESC.

PREPARED FOR

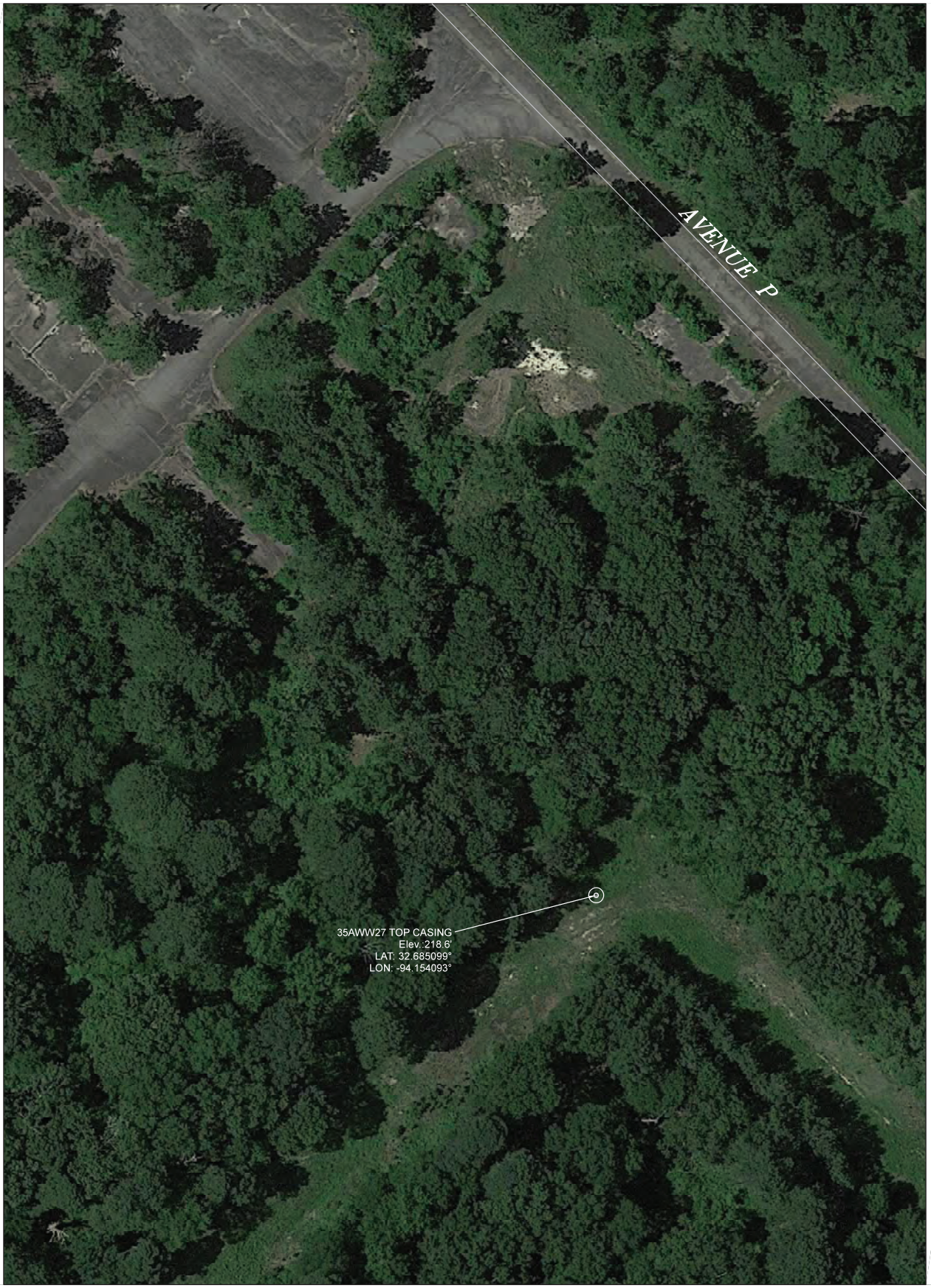
BHATE

PLAT FOR EXISTING MONITORING WELL LOCATION # 35AWW26

MTX SURVEYING
4901 E End Blvd South,
Marshall, Tx 75672
www.mtxsurveying.com
903.471.8391
TBPELS Firm No. 10194253
LA Firm No. 801

CLIENT PROJECT NAME	LONGHORN ARMY AMMUNITION PLANT		
JOB NO.	230007	SHEET	REV.
DWG. NO.	230007-35AWW26_EXHIBIT_PLAT	1 OF 1	0

X:\MTX\Projects\2023\230007 (Bhate - Longhorn Army Ammunition Plant, Karnack)\Draw\230007 - 35AWW26 Exhibit Plat.dwg



MTX a Bowman company
4901 E End Blvd South, Marshall, Tx 75672
www.bowman.com
903.471.8391
TBPELS Firm No. 10120600 I LA Firm No. 846

JOB NO: 230386	REVISION : 0
FW BY: JS	SCALE 1"= 60'
DRAWN BY: AR	SHEET 1 OF 1
CHKD BY: MHT	

EXHIBIT OF WELL 35AWW27 IN THE G.W. LEWIS SURVEY, A-426, HARRISON COUNTY, TEXAS

LEGEND

- Light Pole
- (EM) Electric Meter
- (F) Fire Hydrant
- (MH) Manhole/Sewer/ Stormdrain
- (IV) Irrigation Valve
- (WM) Water Meter
- Fence (Type as Noted)
- Foreign Pipeline
- Overhead Electric Line
- (GM) Gas Meter
- (AC) Air Conditioning Unit

60' 0 60' 120'

GRAPHICAL SCALE: 1"=60'

X:\MTX\Projects\2023\230386 (Bhate – Longhorn Ammunition Plant)\Draw\2-Standard Platting\230386-Exhibit 35AWW27.dwg

Zack Beck

From: Williams, Aaron K CIV USARMY CESWF (USA) <Aaron.K.Williams@usace.army.mil>
Sent: Thursday, March 9, 2023 11:40 AM
To: Zack Beck; Montoya, Chelsea R CIV USARMY CESWF (USA); lena.j.sierocinski.civ@army.mil; 'michael.a.bowlby.civ@army.mil'
Cc: Kim Nemmers; Scott Beesinger; Marcia Olive
Subject: RE: LHAAP-58 Soil IDW analytical results

Zack,

Concur with plan to spread the soil cuttings onsite.

Thanks,

Aaron K. Williams
Environmental Engineer, ARMY Environmental Section Regional Planning and Environmental Center Fort Worth District (located in Tulsa) U.S. Army Corps of Engineers
Office: 918-669-4915
Cell: 918-629-7925
Email: Aaron.k.williams@usace.army.mil

From: Zack Beck <zbeck@bhate.com>
Sent: Thursday, March 9, 2023 9:43 AM
To: Williams, Aaron K CIV USARMY CESWF (USA) <Aaron.K.Williams@usace.army.mil>; Montoya, Chelsea R CIV USARMY CESWF (USA) <Chelsea.R.Montoya@usace.army.mil>; lena.j.sierocinski.civ@army.mil; 'michael.a.bowlby.civ@army.mil' <michael.a.bowlby.civ@army.mil>
Cc: Kim Nemmers <knemmers@bhate.com>; Scott Beesinger <sbeesinger@bhate.com>; molive <molive@bhate.com>
Subject: [URL Verdict: Neutral][Non-DoD Source] LHAAP-58 Soil IDW analytical results

Aaron,
As discussed yesterday we collected an Investigative Derived Waste (IDW) soil sample from soil cuttings generated during the installation of the new monitoring wells at LHAAP-58. The IDW soil sample was analyzed for VOCs. Per the attached laboratory report all VOCs were non-detect. Therefore, we would like to request approval to spread the soil cuttings onsite.

Please let us know if you have any questions or concerns.

Thanks,
Zack

Zachary Beck
bhate | Geologist, PG

D 720.463.3907
C 575.921.1736
E zbeck@bhate.com

APPENDIX E
TECHNICAL MEMORANDUM - MONITORED NATURAL ATTENUATION MONITORING PARAMETERS

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DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

February 26, 2019

DAIM-ODB-LO

Mr. Rich Mayer
U.S. Environmental Protection Agency
Federal Facilities Section R6
1445 Ross Avenue
Dallas, TX 75202-2733

Re: Final Technical Memorandum – Monitored Natural Attenuation Monitoring Parameters, Longhorn Army Ammunition Plant, Karnack, Texas, February 2019

Dear Mr. Mayer,

One hard copy and one compact disc (CD) of the above-referenced document is being transmitted to you for your records. Comments, not requiring revisions, were received on the Draft version of the document from Environmental Protection Agency (EPA) and from Texas Commission on Environmental Quality (TCEQ) on February 15, 2019.

The document was prepared by Bhate Environmental Associates, Inc., (Bhate) team, on behalf of the Army as part of Bhate's Performance Based Remediation contract for the facility. I ask that Kim Nemmers, Bhate's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
A. Palmie, TCEQ, Austin, TX (1 HC and 1 CD)
P. Bruckwicki, Caddo Lake NWR, TX (1 HC and 1 CD)
A. Williams, USACE, Fort Worth District, TX (1 CD)
A. Maly, USAEC, San Antonio, TX (1 CD)
K. Nemmers, Bhate, Lakewood, CO (1 HC and 1 CD)
P. Srivastav, APTIM, Houston, TX (letter)

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

February 26, 2019

DAIM-ODB-LO

Ms. April Palmie
Texas Commission on Environmental Quality
Superfund Section, MC-136
12100 Park 35 Circle, Bldg D
Austin, TX 78753

Re: Final Technical Memorandum – Monitored Natural Attenuation Monitoring Parameters, Longhorn Army Ammunition Plant, Karnack, Texas, February 2019

Dear Ms. Palmie,

One hard copy and one compact disc (CD) of the above-referenced document is being transmitted to you for your records. Comments, not requiring revisions, were received on the Draft version of the document from Environmental Protection Agency (EPA) and from Texas Commission on Environmental Quality (TCEQ) on February 15, 2019.

The document was prepared by Bhate Environmental Associates, Inc., (Bhate) team, on behalf of the Army as part of Bhate's Performance Based Remediation contract for the facility. I ask that Kim Nemmers, Bhate's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
R. Mayer, USEPA Region 6, Dallas, TX (1 HC and 1 CD)
P. Bruckwicki, Caddo Lake NWR, TX (1 HC and 1 CD)
A. Williams, USACE, Fort Worth District, TX (1 CD)
A. Maly, USAEC, San Antonio, TX (1 CD)
K. Nemmers, Bhate, Lakewood, CO (1 HC and 1 CD)
P. Srivastav, APTIM, Houston, TX (letter)

Final

Technical Memorandum – Monitored Natural Attenuation Monitoring Parameters

Longhorn Army Ammunition Plant
Karnack, Texas

Prepared for U.S. Army Corps of Engineers, Tulsa District
Contracting Division
2488 East 81st Street
Tulsa, Oklahoma 74137-4290

Prepared by

bhate ENVIRONMENT & INFRASTRUCTURE

1608 13th Avenue south, Suite 300
Birmingham, Alabama 35205
1-800-806-4001 • www.bhate.com

Prepared by

APTIM

Aptim Federal Services, LLC
2500 CityWest, Suite 1700
Houston, Texas 77042

Contract No. W9128F-13-D-0012
Task Order No. W9128BV17F0150
Project No. 501032
Rev 0
February 2019

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Acronyms and Abbreviations

APTIM	Aptim Federal Services, LLC
LHAAP	Longhorn Army Ammunition Plant
LUC	land use controls
MNA	monitored natural attenuation
RACR	Remedial Action Completion Report
RA-O	Remedial Action Operation
RAWP	Remedial Action Work Plan
TCE	trichloroethene

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Contract No. W9128F-13-D-0012, Task Order No. W9128BV17F0150 • Final • Rev 0 • February 2019

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1.0 INTRODUCTION

The purpose of this Technical Memorandum is to create a standard list of monitored natural attenuation (MNA) parameters across Longhorn Army Ammunition Plant (LHAAP) sites and eliminate analysis that are either redundant or not useful for the evaluation of MNA effectiveness. MNA with land use controls (LUCs) is the selected remedy to remediate trichloroethene (TCE) plumes in the groundwater at sites LHAAP-37, LHAAP-67, LHAAP-50, LHAAP-46, and LHAAP-58. On **Table 1**, each site and the three documents, Remedial Action Work Plan (RAWP), Remedial Action Completion Report (RACR), and Remedial Action Operation (RA-O), are listed and cross-referenced with the MNA parameters cited in each document.

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2.0 CURRENT REMEDIAL ACTION OPERATION (RA-O) MONITORING

Currently the list of MNA analytical parameters inclusive of all the sites includes anions (sulfate, sulfide, nitrate, nitrite, and chloride), methane, ethane, ethene, carbon dioxide, total iron, dissolved iron (ferrous) conducted in the lab and in the field, dissolved manganese, total phosphorus, alkalinity, total organic and inorganic carbon as shown on **Table 1**. Some of these analyses are redundant or are not required for the evaluation of MNA at LHAAP sites.

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Contract No. W9128F-13-D-0012, Task Order No. W9128BV17F0150 • Final • Rev 0 • February 2019

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3.0 PROPOSED PATH FORWARD

The proposed path is to optimize the MNA analytical list so that it is consistent across all sites. The optimization of analytical list will make the sampling and evaluation more accurate and efficient. The optimization includes eliminating MNA parameters that are redundant or nonessential, including alkalinity, nitrite, sulfide, total inorganic carbon, total iron, the lab analysis for dissolved iron and dissolved manganese, and total phosphorous.

Rationale for eliminating these parameters is as follows:

- Alkalinity is used as an indicator of microbial growth, because it is affected by microbial respiration off gases like carbon dioxide. Since alkalinity is affected by carbon dioxide, which is currently being analyzed, it is recommended that alkalinity be removed from the analytical list.
- Nitrate and sulfate concentrations at LHAAP sites are below levels that may inhibit reductive dechlorination, and therefore the reduced states of these chemicals, nitrite and sulfide, are not expected to be observed, and are recommended to be removed from the analytical list. Nitrate and sulfate will remain on analytical list to evaluate increased levels that may inhibit biological reactions in the future.
- Total organic carbon is essential for the MNA analysis; however, total inorganic carbon does not provide useful data and is recommended to be removed from the analytical list.
- The analysis for ferrous iron is being conducted in the field during sample collection and provides the most representative data to determine if iron reducing conditions are present in the groundwater. Total iron analysis for groundwater includes both solid (ferric) and dissolved (ferrous) forms of iron and does not provide useful data in the evaluation of MNA. Therefore, it is recommended that the lab analysis for total iron, and dissolved iron be removed from the analytical list. The field analysis for ferrous iron will remain on the on the analytical list.
- Dissolved manganese is also used to evaluate the reduced state in groundwater, like dissolved iron. The dissolved manganese analysis is redundant, because field analysis for dissolved iron is being retained, and recommended be removed from the analytical list.
- Total phosphorus does not provide essential data the analysis of MNA and is recommended for removal from the analytical list.

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The proposed list of analysis which are consistent across each site include nitrate, sulfate, chloride, methane, ethane, ethene, carbon dioxide, total organic carbon, and field analyzed ferrous iron and is provided on **Table 2**.

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4.0 CONCLUSION

Currently, each of the sites where MNA and LUC are the selected remedy, there is a different list and some of the analyses are redundant or not useful. It is recommended that the following analyses are removed from the MNA parameter list for all sites: alkalinity, nitrite, sulfide, total inorganic carbon, total iron, lab analyzed ferrous iron, dissolved manganese, and total phosphorus. The updated list includes nitrate, sulfate, chloride, methane, ethane, ethene, carbon dioxide, total organic carbon, and field analyzed ferrous iron. The recommended list of parameters will remove redundancy and create more consistent evaluations of the MNA processes in the future.

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Tables

Table 1
MNA Parameter and LHAAP Site Comparison

	LHAAP-37			LHAAP-67			LHAAP-50			LHAAP-46			LHAAP-58		
MNA Parameter	RAWP	RACR	RA-O	RAWP	RACR	RA-O	RAWP	RACR	RA-O	RAWP	RACR	RA-O	RAWP	RACR	RA-O
Alkalinity							x	x	x	x	x	x	x	x	x
Nitrate	x	x		x	x	x	x	x	x	x	x	x	x	x	x
Nitrite		x		x	x	x	x	x	x	x	x	x	x	x	x
Sulfate	x	x		x	x	x	x	x	x	x	x	x	x	x	x
Sulfide		x				x	x	x	x	x	x	x	x	x	x
Chloride	x	x		x	x	x	x	x	x	x	x	x	x	x	x
Methane	x	x		x	x	x	x	x	x	x	x	x	x	x	x
Ethane	x	x		x	x	x	x	x	x	x	x	x	x	x	x
Ethene	x	x		x	x	x	x	x	x	x	x	x	x	x	x
Carbon Dioxide						x	x	x	x	x	x	x	x	x	x
Total Organic Carbon	x	x		x	x	x	x	x	x	x	x	x	x	x	x
Total Inorganic Carbon	x	x		x	x	x									
Iron (dissolved) -field	x	x		x	x	x									x
Iron (dissolved) -lab							x	x	x	x	x	x	x	x	x
Total Iron							x	x	x	x	x	x	x	x	x
Manganese (dissolved)							x	x	x	x	x	x	x	x	x
Total Iron							x	x	x	x	x	x	x	x	x
Total Phosphorous							x	x	x	x	x	x	x	x	x

Notes:

LHAAP-37 RA-O does not list MNA parameters because the Y1Q1 report has not been finalized.

LHAAP - Longhorn Army Ammunition Plant

MNA - monitored natural attenuation

RAWP - Remedial Action Work Plan

RACR - Remedial Action Completion Report

RA-O - Remedial Action Operation

Table 2
Proposed LHAAP MNA Parameters

MNA Parameter	LHAAP-37	LHAAP-67	LHAAP-50	LHAAP-46	LHAAP-58
Nitrate	X	X	X	X	X
Sulfate	X	X	X	X	X
Chloride	X	X	X	X	X
Methane	X	X	X	X	X
Ethane	X	X	X	X	X
Ethene	X	X	X	X	X
Carbon Dioxide	X	X	X	X	X
Total Organic Carbon	X	X	X	X	X
Iron (dissolved) -field	X	X	X	X	X

Notes:

MNA - monitored natural attenuation

LHAAP - Longhorn Army Ammunition Plant

APPENDIX F
MONITORING WELL SAMPLE COLLECTION FORMS

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bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

Page 1 of 1

LOCATION	Site: LHAAP - 58	Location ID: 35AMW04	Date: 1/12/23
	Project Name: LHAAP	Project No./Phase: NWO1312.0150	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): SS 4"	Unit Casing Volume (gal/lin ft) (A): 0.652	Initial Depth to Water (ft) (B): DRY
	Total Well Depth (ft) (C): 25.42	Water Column Thickness (ft) (C-B): NA	2nd Depth to Water(pre-purge): DRY
	Screened Interval: 16.51 - 26.51	Weather: CLEAR	Well Volume (gal) (A*(C-B)): NA
	Pump placement: 21.51	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
		DRY			WELL						

Colorimeter Results				
Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Sample ID:			Sample Time:			

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

Page 1 of 1

LOCATION	Site: LHAAP - 58	Location ID: 35AWW05	Date: 1/13/23
	Project Name: LHAAP	Project No./Phase: NWO1312.0150	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): SS 4"	Unit Casing Volume (gal/lin ft) (A): 0.652	Initial Depth to Water (ft) (B): 47.47
	Total Well Depth (ft) (C): 73.02	Water Column Thickness (ft) (C-B): 25.55	2nd Depth to Water(pre-purge): 47.47
	Screened Interval: 63.40 - 73.40	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 16.66
	Pump placement: 68.40	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
1/13/23	0845	47.53	0.13	100	14.59	6.10	2.61	0.89	151	-18	
	0850	47.58	0.26	100	15.34	6.91	2.64	0.43	139	-39	
	0855	47.61	0.39	100	15.69	7.07	2.68	0.25	125	-56	
	0900	47.63	0.52	100	15.75	7.08	2.68	0.24	123	-57	
	0905	47.65	0.65	100	15.80	7.08	2.69	0.23	121	-57	
↓	0910	47.66	0.78	100	15.84	7.08	2.69	0.23	120	-58	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	6	40ml GLASS	HCL	N		VOC

Sample ID: 35AWW05_011323 Sample Time: 0910

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: 35AMW06	Date: 1/12/23
	Project Name: LHAAP	Project No./Phase: NWO1312.0150	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): SS 4"	Unit Casing Volume (gal/lin ft) (A): 0.652	Initial Depth to Water (ft) (B): 19.15
	Total Well Depth (ft) (C): 30.24	Water Column Thickness (ft) (C-B): 11.09	2nd Depth to Water(pre-purge): 19.15
	Screened Interval: 19.05 - 29.05	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 7.23
	Pump placement: 24.05	Well Condition: GOOD	Ferrous Iron: 1.59 mg/L

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
1/12/23	0930	19.23	0.13	100	14.45	7.03	5.51	0.63	66.2	-60	
	0935	19.29	0.26	100	15.43	7.02	5.45	0.21	57.5	-58	
	0940	19.33	0.39	100	15.59	7.02	5.42	0.05	53.3	-58	
	0945	19.36	0.52	100	15.64	7.03	5.41	0.04	52.5	-59	
	0950	19.38	0.65	100	15.68	7.03	5.41	0.04	50.8	-59	
↓	0955	19.40	0.78	100	15.72	7.03	5.40	0.04	50.1	-59	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40ml GLASS	HCL	N		VOC
	3	40ml GLASS	HCL	N		MEE
	2	40ml AMBER	H2SO4	N		TOC
	2	40ml GLASS	NA	N		CO2
	1	250ml AMBER	H3PO4	N		VFA
	1	250ml PLASTIC	NA	N		ANIONS
	1	1 LITER GLASS	NA	N		DHC/DHB

Sample ID: LHSMW07_011223 Sample Time: 0955

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 58	Location ID: 35AWW11	Date: 1/12/23
	Project Name: LHAAP	Project No./Phase: NWO1312.0150	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 29.42
	Total Well Depth (ft) (C): 38.00	Water Column Thickness (ft) (C-B): 8.58	2nd Depth to Water(pre-purge): 29.42
	Screened Interval: 22.24-36.84	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 1.37
	Pump placement: 30.50	Well Condition: GOOD	Ferrous Iron: 4.07 mg/L

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
1/12/23	0700	29.50	0.13	100	18.53	5.50	6.91	2.21	82.3	-17	
	0705	29.56	0.26	100	17.66	5.97	7.29	2.01	75.1	-29	
	0710	29.60	0.39	100	17.23	6.07	7.47	1.90	73.9	-29	
	0715	29.63	0.52	100	17.18	6.08	7.48	1.88	72.4	-29	
	0720	29.66	0.65	100	17.14	6.09	7.49	1.86	71.6	-30	
	0725	29.68	0.78	100	17.10	6.09	7.50	1.85	71.3	-30	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers	Volume/Type	Preserv.	Filter (Y/N)	Method	Parameter(s)
3	40ml Glass	HCL	N		VOC
3	40ml Glass	HCL	N		MAL
2	40ml Amber	H2SO4	N		TOC
2	40ml Glass	NA	N		CO2
1	250ml Amber	H3PO4	N		VFA
1	250ml Plastic	NA	N		Anions
1	1Liter Glass	NA	N		DHC/DHB

Sample ID: 35AWW11-011223 Sample Time: 0725

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58		Location ID: 35AWW15		Date: 1/13/23
	Project Name: LHAAP		Project No./Phase: NWO1312.0150		Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro		Water Quality Meter/ID#: U-52 Horiba		PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101		Other Equipment/ID#: NA		Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"		Other Equipment/ID#: NA		PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"		Unit Casing Volume (gal/lin ft) (A): 0.160		Initial Depth to Water (ft) (B): 19.50
	Total Well Depth (ft) (C): 40.11		Water Column Thickness (ft) (C-B): 20.61		2nd Depth to Water(pre-purge): 19.50
	Screened Interval: 25.67 - 40.37		Weather: CLEAR		Well Volume (gal) (A*(C-B)): 3.30
	Pump placement: 33.02		Well Condition: BROKEN HINGE		Ferrous Iron: NA

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
1/13/23	1100	19.58	0.13	100	14.89	6.89	12.1	0.79	266	58	
"	1105	19.64	0.26	100	15.68	6.31	12.9	0.31	240	69	
"	1110	19.67	0.39	100	16.59	6.17	14.5	0.19	229	81	
"	1115	19.69	0.52	100	16.63	6.16	14.6	0.19	228	82	
"	1120	19.71	0.65	100	16.68	6.16	14.6	0.18	227	83	
↓	1125	19.72	0.78	100	16.72	6.15	14.7	0.18	226	83	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40 ml GLASS	HCL	N		VOC

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

Sample ID: 35AWW15_011323 Sample Time: 1125

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: 35AWW19	Date: 1/12/23
	Project Name: LHAAP	Project No./Phase: NWO1312.0150	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 25.05
	Total Well Depth (ft) (C): 32.42	Water Column Thickness (ft) (C-B): 7.37	2nd Depth to Water(pre-purge): 25.05
	Screened Interval: 16.89 - 31.39	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 1.18
	Pump placement: 26.00	Well Condition: ~~GOOD~~ BROKEN HINGE	Ferrous Iron: 1.53 mg/L

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
1/12/23	1110	25.13	0.13	100	16.57	7.29	3.23	0.87	108	28	
	1115	25.19	0.26	100	17.71	6.12	2.89	0.45	89.7	52	
	1120	25.23	0.39	100	18.16	5.96	2.70	0.33	83.3	57	
	1125	25.26	0.52	100	18.21	5.94	2.69	0.32	82.4	57	
	1130	25.29	0.65	100	18.26	5.93	2.68	0.31	81.6	58	
↓	1135	25.32	0.78	100	18.30	5.92	2.68	0.30	80.1	58	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40ml GLASS	HCL	N		VOC
	3	40ml GLASS	HCL	N		MEE
	2	40ml AMBER	H2SO4	N		TOC
	2	40ml GLASS	NA	N		CO2
	1	250ml AMBER	H3PO4	N		VFA
	1	250ml PLASTIC	NA	N		ANIONS
	1	1 Liter GLASS	NA	N		DHC/DHB

Sample ID: 35AWW19_011223 Sample Time: 1135

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 58	Location ID: 35AWW20	Date: 1/12/23
	Project Name: LHAAP	Project No./Phase: NWO1312.0150	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 19.42
	Total Well Depth (ft) (C): 36.05	Water Column Thickness (ft) (C-B): 16.63	2nd Depth to Water (pre-purge): 19.42
	Screened Interval: 20.94 - 35.64	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 2.66
	Pump placement: 28.29	Well Condition: GOOD	Ferrous Iron: 2.16 mg/L

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
1/12/23	0750	19.49	0.13	100	15.90	6.56	5.14	0.83	11.9	-38	
	0755	19.55	0.26	100	16.80	6.47	5.28	0.40	9.5	-38	
	0800	19.59	0.39	100	16.88	6.44	5.31	0.20	8.3	-38	
	0805	19.61	0.52	100	16.94	6.43	5.31	0.19	7.2	-37	
	0810	19.63	0.65	100	16.98	6.43	5.31	0.18	6.0	-37	
↓	0815	19.65	0.78	100	17.02	6.43	5.31	0.18	5.1	-37	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40ml GLASS	HCl	N		VOC
	3	40ml GLASS	HCl	N		MEE
	2	40ml AMBER	H_2SO_4	N		TOC
	2	40ml GLASS	NA	N		CO2
	1	250ml AMBER	H_3PO_4	N		VFA
	1	125ml PLASTIC	HNO_3	N		ARSENIC
	1	250ml PLASTIC	NA	N		ANIONS

Sample ID: 35AWW20-011223 Sample Time: 0815

1 1 LITER GLASS NA N DHC/DHB

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: 35AWW23	Date: 1/12/23
	Project Name: LHAAP	Project No./Phase: NWO1312.0150	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 23.41
	Total Well Depth (ft) (C): 43.70	Water Column Thickness (ft) (C-B): 20.29	2nd Depth to Water(pre-purge): 23.41
	Screened Interval: 28.20 - 43.20	Weather: Clear	Well Volume (gal) (A*(C-B)): 3.25
	Pump placement: 35.70	Well Condition: Good	Ferrous Iron: 3.97 mg/L

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
1/12/23	1020	23.48	0.13	100	15.32	6.63	4.70	0.68	47.9	-123	
	1025	23.54	0.26	100	16.44	6.58	4.66	0.22	41.8	-137	
	1030	23.58	0.39	100	16.48	6.54	4.62	0.04	37.7	-142	
	1035	23.60	0.52	100	16.52	6.54	4.61	0.04	37.3	-143	
	1040	23.62	0.65	100	16.57	6.54	4.61	0.03	36.6	-143	
↓	1045	23.64	0.78	100	16.61	6.54	4.61	0.03	36.0	-144	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type		Preserv.	Filter (Y/N)	Method	Parameter(s)
3	40ml Glass	HCl	N		VOC
3	40ml Glass	HCl	N		MEE
2	40ml Amber	H_2SO_4	N		TOC
2	40ml Glass	NA	N		CO2
1	250ml Amber	H_3PO_4	N		VFA
1	250ml Plastic	NA	N		Anions
1	1 Liter Glass	NA	N		DHC/DHB

Sample ID: 35AWW23_011223 Sample Time: 1045

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 58	Location ID: 35AWW24	Date: 1/13/23
	Project Name: LHAAP	Project No./Phase: NWO1312.0150	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 4"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 24.40
	Total Well Depth (ft) (C): 35.02	Water Column Thickness (ft) (C-B): 10.62	2nd Depth to Water(pre-purge): 24.40
	Screened Interval: 25.10 - 35.10	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 1.70
	Pump placement: 30.10	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
1/13/23	0750	24.48	0.13	100	14.98	6.16	0.579	1.15	111	153	
	0755	24.56	0.26	100	15.76	5.31	0.531	0.93	90.5	169	
	0800	24.60	0.39	100	16.47	5.31	0.528	0.85	85.1	180	
	0805	24.63	0.52	100	16.56	5.30	0.527	0.84	84.5	181	
	0810	24.65	0.65	100	16.63	5.30	0.527	0.83	83.8	182	
	0815	24.68	0.78	100	16.69	5.30	0.527	0.82	83.2	183	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	9	40ml GLASS	HCL	N		VOC

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

Sample ID: 35AWW24-011323

Sample Time: 0815

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 58	Location ID: 35AWW25	Date: 1/13/23
	Project Name: LHAAP	Project No./Phase: NWO1312.0150	Recorded By: BEESINGAR
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): DRY
	Total Well Depth (ft) (C): 24.10	Water Column Thickness (ft) (C-B): NA	2nd Depth to Water(pre-purge): DRY
	Screened Interval: 13.00-23.00	Weather: CLEAR	Well Volume (gal) (A*(C-B)): NA
	Pump placement: NA	Well Condition: GOOD	Ferrous Iron: NA

16.14 - 26.14

CASING INFO	Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
	Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)

DRY WELL

Colorimeter Results					No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units							
Conversions	**Stabilization Criteria**										
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%							
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%							
	Cond	+/- 10%	ORP	+/- 10	Sample ID:				Sample Time:		

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 58	Location ID: 35AWW26	Date: 1/13/23
	Project Name: LHAAP	Project No./Phase: NWO1312.0150	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 20.44
	Total Well Depth 23.53 - 33.53	Water Column Thickness (ft) (C-B): 11.58	2nd Depth to Water (pre-purge): 20.44
	Screened Interval: 28.53 0 - 30.00	Weather: Clear	Well Volume (gal) (A*(C-B)): 1.85
	Pump placement: 25.00	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
1/13/23	1015	20.52	0.13	100	15.29	7.13	14.6	0.99	41.1	89	
	1020	20.58	0.26	100	16.60	6.59	14.4	0.75	35.9	50	
	1025	20.62	0.39	100	17.18	6.47	14.4	0.42	34.7	41	
	1030	20.65	0.52	100	17.25	6.46	14.4	0.41	34.2	40	
	1035	20.68	0.65	100	17.30	6.46	14.4	0.40	33.6	40	
	1040	20.70	0.78	100	17.34	6.45	14.4	0.40	33.2	39	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	6	40ml GLASS	HCL	N		VOC

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

Sample ID: 35AWW26.011323 Sample Time: 1040

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 58	Location ID: LHSMW04	Date: 1/12/23
	Project Name: LHAAP	Project No./Phase: NWO1312.0150	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): SS 4"	Unit Casing Volume (gal/lin ft) (A): 0.652	Initial Depth to Water (ft) (B): DRY
	Total Well Depth (ft) (C): 29.98	Water Column Thickness (ft) (C-B): NA	2nd Depth to Water(pre-purge): DRY
	Screened Interval: 21.11-31.11	Weather: CLEAR	Well Volume (gal) (A*(C-B)): NA
	Pump placement: 26.11	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
			DRY			WELL					

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Method	Parameter(s)
Sample ID:		Sample Time:		

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: LHSMW06	Date: 1/13/23
	Project Name: LHAAP	Project No./Phase: NWO1312.0150	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): SS 4"	Unit Casing Volume (gal/lin ft) (A): 0.652	Initial Depth to Water (ft) (B): 19.37
	Total Well Depth (ft) (C): ~~23.45~~ 23.45	Water Column Thickness (ft) (C-B): 4.08	2nd Depth to Water(pre-purge): 19.37
	Screened Interval: 13.32 - 23.32	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 2.66
	Pump placement: 20.25	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
1/13/23	0930	19.45	0.13	100	13.89	7.04	3.06	0.71	14.6	47	
	0935	19.51	0.26	100	14.66	6.40	2.59	0.30	8.2	77	
	0940	19.55	0.39	100	15.03	6.34	2.32	0.15	7.4	93	
	0945	19.58	0.52	100	15.09	6.33	2.31	0.15	6.6	94	
	0950	19.60	0.65	100	15.15	6.33	2.30	0.14	5.8	95	
	0955	19.62	0.78	100	15.21	6.33	2.29	0.14	5.1	95	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
3	40ml GLASS		HCL	N		VOC
1	125ml PLASTIC		HNO3	N		ARSENIC

Sample ID: LHSMW06_011323 Sample Time: 0955

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 58	Location ID: LHSMW07	Date: 1/12/23
	Project Name: LHAAP	Project No./Phase: NWO1312.0150	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 4"	Unit Casing Volume (gal/lin ft) (A): 0.652	Initial Depth to Water (ft) (B): 18.37
	Total Well Depth (ft) (C): 29.47	Water Column Thickness (ft) (C-B): 11.10	2nd Depth to Water(pre-purge): 18.37
	Screened Interval: 19.73 - 29.73	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 7.24
	Pump placement: 24.73	Well Condition: GOOD	Ferrous Iron: 2.56 mg/L

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
1/12/23	0840	18.43	0.13	100	15.31	6.60	10.0	0.69	12.2	-16	
↓	0845	18.48	0.26	100	15.94	6.45	10.2	0.28	14.5	-20	
	0850	18.51	0.39	100	16.16	6.38	10.2	0.10	14.0	-22	
	0855	18.53	0.52	100	16.23	6.37	10.2	0.10	13.5	-22	
	0900	18.54	0.65	100	16.26	6.36	10.2	0.10	12.7	-23	
↓	0905	18.55	0.78	100	16.30	6.36	10.2	0.09	12.1	-23	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
3	40ml GLASS		HCL	N		VOC
3	40ml GLASS		HCL	N		MEE
2	40ml AMBER		H_2SO_4	N		TOC
2	40ml GLASS		NA	N		CO2
1	250ml AMBER		H_3PO_4	N		VFA
1	250ml PLASTIC		NA	N		ANIONS
1	1 LITER GLASS		NA	N		DHC/DHB

Sample ID: LHSMW07_011223 Sample Time: 0905

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: 03WW01	Date: 6/6/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 29.17
	Total Well Depth (ft) (C): 33.37	Water Column Thickness (ft) (C-B): 4.20	2nd Depth to Water(pre-purge): 29.17
	Screened Interval: 22.51 - 32.51	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 0.67
	Pump placement: 30.25	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/6/23	0655	29.25	0.13	100	22.30	6.88	6.37	0.81	5.5	-31	
	0700	29.32	0.26	100	20.41	6.60	6.63	0.28	2.9	-81	
	0705	29.37	0.39	100	20.22	6.53	6.42	0.08	1.0	-87	
	0710	29.40	0.52	100	20.16	6.52	6.41	0.08	0.3	-88	
	0715	29.43	0.65	100	20.11	6.52	6.39	0.07	0.0	-89	
↓	0720	29.46	0.78	100	20.07	6.52	6.38	0.07	0.0	-89	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
3	40ml GLASS		HCl	N		VOC
1	125ml PLASTIC		HNO3	N		ARSENIC

Sample ID: 03WW01-060623 Sample Time: 0720

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: 35AWW01	Date: 6/6/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): SS 4"	Unit Casing Volume (gal/lin ft) (A): 0.652	Initial Depth to Water (ft) (B): 45.00
	Total Well Depth (ft) (C): 73.60	Water Column Thickness (ft) (C-B): 28.60	2nd Depth to Water (pre-purge): 45.00
	Screened Interval: 63.07 - 73.07	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 18.65
	Pump placement: 68.07	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/6/23	0820	45.06	0.13	100	21.88	7.69	1.67	0.70	406	-83	
	0825	45.10	0.26	100	21.65	7.12	0.944	0.24	365	-70	
	0830	45.13	0.39	100	21.59	7.06	0.872	0.07	355	-68	
	0835	45.15	0.52	100	21.55	7.05	0.871	0.07	353	-68	
	0840	45.17	0.65	100	21.52	7.04	0.870	0.07	351	-67	
	0845	45.18	0.78	100	21.48	7.04	0.870	0.06	349	-67	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
3	40ml GLASS		HCl	N		VOC
1	125ml PLASTIC		HNO3	N		ARSENIC

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

Sample ID: 35AWW01_060623 Sample Time: 0845

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 58	Location ID: 35AWW04	Date: 6/6/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): SS 4"	Unit Casing Volume (gal/lin ft) (A): 0.652	Initial Depth to Water (ft) (B): DRY
	Total Well Depth (ft) (C): 25.40	Water Column Thickness (ft) (C-B): NA	2nd Depth to Water(pre-purge): DRY
	Screened Interval: 16.51-26.51	Weather: CLEAR	Well Volume (gal) (A*(C-B)): NA
	Pump placement: NA	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)

DRY WELL

meter Results

me	Analyte	Dilution	Result	Units

ons	Stabilization Criteria			
= 0.26 gals	Temp	+/- 10%	DO	+/- 10%
al = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Sample ID:				Sample Time:		

01222162

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 58		Location ID: 35AWW05		Date: 6/7/23
	Project Name: LHAAP		Project No./Phase: JVPCIBH.0001		Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro		Water Quality Meter/ID#: U-52 Horiba		PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101		Other Equipment/ID#: NA		Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"		Other Equipment/ID#: NA		PPE: Level D
WELL INFO	Casing Type / ID (in): SS 4"		Unit Casing Volume (gal/lin ft) (A): 0.652		Initial Depth to Water (ft) (B): 46.92
	Total Well Depth (ft) (C): 73.03		Water Column Thickness (ft) (C-B): 26.11		2nd Depth to Water (pre-purge): 46.92
	Screened Interval: 63.40 - 73.40		Weather: CLEAR		Well Volume (gal) (A*(C-B)): 17.02
	Pump placement: 68.40		Well Condition: GOOD		Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/7/23	0655	46.97	0.13	100	22.41	7.49	2.90	0.62	4.5	[redacted]-38	
	0700	47.01	0.26	100	21.82	7.31	3.37	0.19	3.1	-58	
	0705	47.04	0.39	100	21.59	7.27	3.42	0.04	1.8	-77	
	0710	47.06	0.52	100	21.55	7.27	3.43	0.04	0.7	-78	
	0715	47.08	0.65	100	21.51	7.26	3.43	0.03	0.0	-79	
	0720	47.09	0.78	100	21.46	7.26	3.43	0.03	0.0	-80	

Colorimeter Results				
Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40ml Glass	HCL	N		VOC

Sample ID: 35AWW05_060723 Sample Time: 0720

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58		Location ID: 35AWW06		Date: 6/5/23
	Project Name: LHAAP		Project No./Phase: JVPCIBH.0001		Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro		Water Quality Meter/ID#: U-52 Horiba		PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101		Other Equipment/ID#: NA		Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"		Other Equipment/ID#: NA		PPE: Level D
WELL INFO	Casing Type / ID (in): SS 4"		Unit Casing Volume (gal/lin ft) (A): 0.652		Initial Depth to Water (ft) (B): 18.90
	Total Well Depth (ft) (C): 30.32		Water Column Thickness (ft) (C-B): 11.42		2nd Depth to Water(pre-purge): 18.90
	Screened Interval: 19.05 - 29.05		Weather: CLEAR		Well Volume (gal) (A*(C-B)): 7.45
	Pump placement: 24.05		Well Condition: GOOD		Ferrous Iron: 3.30 mg/L

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/5/23	0850	18.97	0.13	100	20.86	7.77	6.19	0.69	3.4	-39	
	0855	19.03	0.26	100	20.49	7.25	6.25	0.25	1.1	-58	
	0900	19.04	0.39	100	20.45	7.20	6.28	0.10	0.4	-56	
	0905	19.06	0.52	100	20.42	7.19	6.29	0.13	0.0	-55	
	0910	19.08	0.65	100	20.38	7.19	6.29	0.09	0.0	-54	
↓	0915	19.09	0.78	100	20.35	7.19	6.29	0.09	0.0	-54	

Colorimeter Results					No. Containers/Volume/Type		Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units	3	40ml GLASS	HCL			VOC
					3	40 ml GLASS	HCL			MEE
					2	40 ml AMBER	H2SO4			TOC
					2	40 ml GLASS	NA			CO2
Conversions	Stabilization Criteria				1	250 ml AMBER	H3PO4			VFA
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%	1	250ml PLASTIC	NA			Anions
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%	1	1 L tan GLASS	NA			DHC/DHB
	Cond	+/- 10%	ORP	+/- 10	Sample ID: 35AWW06_060523			Sample Time:		0915

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: 35AWW08	Date: 6/6/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 28.45
	Total Well Depth (ft) (C): 33.30	Water Column Thickness (ft) (C-B): 4.85	2nd Depth to Water(pre-purge): 28.45
	Screened Interval: 21.83-31.83	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 0.78
	Pump placement: 29.25	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/6/23	0735	28.52	0.13	100	20.94	7.20	10.7	0.65	4.4	-65	
	0740	28.58	0.26	100	20.90	6.85	11.0	0.21	2.2	-96	
	0745	28.62	0.39	100	20.85	6.76	11.2	0.04	0.9	-109	
	0750	28.65	0.52	100	20.82	6.76	11.2	0.04	0.3	-110	
	0755	28.67	0.65	100	20.77	6.75	11.3	0.03	0.0	-110	
↓	0800	28.69	0.78	100	20.75	6.75	11.3	0.03	0.0	-111	

Colorimeter Results					No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units		3	40 ml GLASS	HCL	N		VOC
						1	125ml Plastic	HNO3	N		ARSENIC

Conversions	Stabilization Criteria				
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%	
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%	
	Cond	+/- 10%	ORP	+/- 10	Sample ID: 35AWW08-060623 Sample Time: 0800

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 58	Location ID: 35AWW09	Date: 6/6/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 31.41
	Total Well Depth (ft) (C): 42.12	Water Column Thickness (ft) (C-B): 10.71	2nd Depth to Water(pre-purge): 31.41
	Screened Interval: 26.69 - 41.29	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 1.71
	Pump placement: 33.99	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/6/23	0905	31.48	0.13	100	22.63	7.26	6.22	0.63	13.9	29	
	0910	31.54	0.26	100	22.75	6.78	6.50	0.24	9.9	52	
	0915	31.58	0.39	100	22.80	6.60	6.60	0.06	7.6	71	
	0920	31.61	0.52	100	22.84	6.59	6.60	0.06	6.4	73	
	0925	31.64	0.65	100	22.87	6.59	6.61	0.06	5.5	74	
↓	0930	31.66	0.78	100	22.90	6.58	6.61	0.05	4.2	75	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
6	40ml GLASS		HCL	N		VOC
2	125 ml PLASTIC		HNO3	N		ARSENIC

Sample ID: 35AWW09-060623 Sample Time: 0930

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 58		Location ID: 35AWW10		Date: 6/6/23
	Project Name: LHAAP		Project No./Phase: JVPCIBH.0001		Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro		Water Quality Meter/ID#: U-52 Horiba		PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101		Other Equipment/ID#: NA		Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"		Other Equipment/ID#: NA		PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"		Unit Casing Volume (gal/lin ft) (A): 0.160		Initial Depth to Water (ft) (B): 17.30
	Total Well Depth (ft) (C): 33.64		Water Column Thickness (ft) (C-B): 16.34		2nd Depth to Water(pre-purge): 17.30
	Screened Interval: 18.16 - 32.76		Weather: CLEAR		Well Volume (gal) (A*(C-B)): 2.61
	Pump placement: 25.46		Well Condition: GOOD		Ferrous Iron: NA

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/6/23	1030	17.37	0.13	100	26.08	7.08	0.668	0.63	4.3	115	
	1035	17.43	0.26	100	25.58	6.21	0.476	0.20	2.4	132	
	1040	17.47	0.39	100	25.49	5.88	0.352	0.04	1.1	160	
	1045	17.49	0.52	100	25.45	5.87	0.351	0.04	0.4	161	
	1050	17.51	0.65	100	25.40	5.86	0.351	0.03	0.0	162	
↓	1055	17.52	0.78	100	25.36	5.85	0.350	0.03	0.0	163	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40ml GLASS	HCL	N		VOC
Sample ID:	35AWW10_060623			Sample Time:	1055	

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: 35AWW11	Date: 6/5/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 28.80
	Total Well Depth (ft) (C): 37.87	Water Column Thickness (ft) (C-B): 9.07	2nd Depth to Water(pre-purge): 28.80
	Screened Interval: 22.24-36.84	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 1.45
	Pump placement: 29.54	Well Condition: GOOD	Ferrous Iron: 3.82 mg/L

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/5/23	1030	28.88	0.13	100	22.20	7.69	6.23	0.72	4.4	-11	
	1035	28.84	0.26	100	22.20	7.00	6.86	0.75	2.1	-22	
	1040	28.87	0.39	100	22.19	7.00	7.20	0.10	1.0	-34	
	1045	28.90	0.52	100	22.18	7.00	7.22	0.09	0.4	-35	
	1050	28.93	0.65	100	22.17	7.01	7.23	0.09	0.0	-36	
	1055	28.96	0.78	100	22.16	7.01	7.24	0.09	0.0	-36	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40ml GLASS	HCl	N		VOC
	3	40ml GLASS	HCl	N		MAE
	2	40ml AMBER	H_2SO_4	N		TOC
	2	40ml GLASS	NA	N		CO2
	1	250ml AMBER	H_3PO_4	N		VFA
	1	250ml PLASTIC	NA	N		ANIONS
	1	1 LITER GLASS	NA	N		DHC/DHB

Sample ID: 35AWW11_060523 Sample Time: 1055

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 58		Location ID: 35AWW12		Date: 6/5/23
	Project Name: LHAAP		Project No./Phase: JVPCIBH.0001		Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro		Water Quality Meter/ID#: U-52 Horiba		PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101		Other Equipment/ID#: NA		Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"		Other Equipment/ID#: NA		PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"		Unit Casing Volume (gal/lin ft) (A): 0.160		Initial Depth to Water (ft) (B): 29.50
	Total Well Depth (ft) (C): 37.53		Water Column Thickness (ft) (C-B): 8.03		2nd Depth to Water(pre-purge): 29.50
	Screened Interval: 22.17 - 36.77		Weather: CLEAR		Well Volume (gal) (A*(C-B)): 1.28
	Pump placement: [redacted] 30.50		Well Condition: GOOD		Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/5/23	1200	29.58	0.13	100	23.11	7.37	3.06	0.67	3.3	97	
	1205	29.64	0.26	100	22.25	6.68	3.08	0.20	1.7	114	
	1210	29.68	0.39	100	22.29	6.57	3.06	0.03	0.8	120	
	1215	29.71	0.52	100	22.33	6.56	3.05	0.03	0.2	121	
	1220	29.74	0.65	100	22.36	6.55	3.05	0.03	0.0	121	
↓	1225	29.76	0.78	100	22.40	6.55	3.05	0.02	0.0	122	

Colorimeter Results					No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units		6	40 ml GLASS	HCL	N		VOC

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

Sample ID: 35AWW12_060523 Sample Time: 1225

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: 35AWW13	Date: 6/6/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2in	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): ~~23.04~~ 23.45
	Total Well Depth (ft) (C): 40.26	Water Column Thickness (ft) (C-B): 16.81	2nd Depth to Water(pre-purge): 23.45
	Screened Interval: 24.72-39.32	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 2.69
	Pump placement: 32.02	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/6/23	0950	23.52	0.13	100	23.87	7.35	1.44	0.73	17.6	76	
	0955	23.58	0.26	100	~~24.81~~	6.95	1.47	0.28	12.5	77	
	1000	23.62	0.39	100	24.97	6.69	1.47	0.10	8.3	86	
	1005	23.65	0.52	100	25.04	6.65	1.47	0.10	7.4	87	
	1010	23.67	0.65	100	25.09	6.64	1.47	0.09	6.2	87	
↓	1015	23.69	0.78	100	25.14	6.63	1.47	0.09	5.1	88	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40ml GLASS	HCL	N		VOC

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

Sample ID: 35AWW13_060623 Sample Time: 1015

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 58	Location ID: 35AWW14	Date: 6/7/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 29.92
	Total Well Depth (ft) (C): 32.26	Water Column Thickness (ft) (C-B): 2.34	2nd Depth to Water (pre-purge): 29.92
	Screened Interval: 17.06-31.76	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 0.37
	Pump placement: BAILED	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/7/23	0632	29.92	~~0.50~~	NA							BAILING NO well
6/7/23	0637	32.20	0.50	NA							BAILED 0.5 gallons RAN DRY
6/7/23	1140	29.94	NA	NA	22.12	6.87	2.21	8.37	12.7	122	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40ml Glass	HCL	N		VOC

Sample ID: 35AWW14_060723 Sample Time: 1140

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58		Location ID: 35AWW15		Date: 6/7/23
	Project Name: LHAAP		Project No./Phase: JVPCIBH.0001		Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro		Water Quality Meter/ID#: U-52 Horiba		PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101		Other Equipment/ID#: NA		Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"		Other Equipment/ID#: NA		PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"		Unit Casing Volume (gal/lin ft) (A): 0.160		Initial Depth to Water (ft) (B): 18.20
	Total Well Depth (ft) (C): 40.77		Water Column Thickness (ft) (C-B): 22.57		2nd Depth to Water(pre-purge): 18.20
	Screened Interval: 25.67-40.37		Weather: CLEAR		Well Volume (gal) (A*(C-B)): 3.61
	Pump placement: 33.02		Well Condition: NEEDS PAINT & HMP		Ferrous Iron: NA

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/7/23	0735	18.27	0.13	100	22.26	7.41	13.4	0.66	208	-67	
	0740	18.33	0.26	100	22.01	7.30	13.4	0.21	192	-61	
	0745	18.36	0.39	100	21.80	7.23	13.4	0.05	185	-57	
	0750	18.38	0.52	100	21.76	7.21	13.5	0.05	183	-56	
	0755	18.40	0.65	100	21.73	7.21	13.5	0.04	182	-55	
	0800	18.41	0.78	100	21.69	7.21	13.5	0.04	181	-55	

Colorimeter Results					No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units		3	40ml GLASS	HCL	N		VOC

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

Sample ID: 35AWW15-060723 Sample Time: 0800

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: 35AWW16	Date: 6/7/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 17.08
	Total Well Depth (ft) (C): 37.37	Water Column Thickness (ft) (C-B): 20.29	2nd Depth to Water(pre-purge): 17.08
	Screened Interval: 21.75-36.45	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 3.25
	Pump placement: 29.10	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/7/23	0815	17.15	0.13	100	22.96	7.61	11.0	0.70	308	68	
	0820	17.21	0.26	100	23.50	7.25	12.7	0.20	288	73	
	0825	17.25	0.39	100	23.89	6.93	13.1	0.06	277	77	
	0830	17.27	0.52	100	23.95	6.91	13.1	0.06	275	78	
	0835	17.28	0.65	100	24.02	6.90	13.2	0.06	274	79	
	0840	17.29	0.78	100	24.08	6.89	13.2	0.05	273	79	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40ml GLASS	HCL	N		VOC

Sample ID: 35AWW16 Sample Time: 0840

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: 35AWW17	Date: 6/7/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 23.17
	Total Well Depth (ft) (C): 42.42	Water Column Thickness (ft) (C-B): 19.25	2nd Depth to Water(pre-purge): 23.17
	Screened Interval: 26.97 - 41.67	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 3.08
	Pump placement: 34.32	Well Condition: BROKEN HINGE	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/7/23	0855	23.25	0.13	100	24.32	7.32	9.07	0.61	4.0	81	
	0900	23.30	0.26	100	21.93	6.89	11.7	0.18	2.1	55	
	0905	23.33	0.39	100	21.68	6.57	11.2	0.03	1.1	55	
	0910	23.36	0.52	100	21.63	6.56	11.1	0.03	0.5	54	
	0915	23.38	10.65	100	21.57	6.56	11.0	0.03	0.0	54	
↓	0920	23.40	0.78	100	21.50	6.55	11.0	0.02	0.0	54	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40 ml GLASS	HCL	N		VOC

Sample ID: 35AWW17.060723 Sample Time: 0920

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: 35AWW18	Date: 6/7/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 23.59
	Total Well Depth (ft) (C): 42.12	Water Column Thickness (ft) (C-B): 18.53	2nd Depth to Water (pre-purge): 23.59
	Screened Interval: 26.85 - 41.55	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 2.96
	Pump placement: 34.20	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/7/23	0935	23.66	0.13	100	24.20	7.67	9.62	0.66	37.7	80	
	0940	23.72	0.26	100	22.12	7.10	11.2	0.23	32.1	86	
	0945	23.76	0.39	100	21.70	6.91	11.8	0.06	28.8	86	
	0950	23.78	0.52	100	21.66	6.90	11.9	0.06	28.3	85	
	0955	23.80	0.65	100	21.62	6.89	12.0	0.05	27.5	85	
	1000	23.82	0.78	100	21.58	6.89	12.0	0.05	27.0	85	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	9	40ml GLASS	HCl	N		VOC

Sample ID: 35AWW18_060723 Sample Time: 1000

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: 35AWW19	Date: 6/5/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 24.13
	Total Well Depth (ft) (C): ~~32~~.32.43	Water Column Thickness (ft) (C-B): 8.30	2nd Depth to Water(pre-purge): 24.13
	Screened Interval: 16.89 - 31.39	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 1.33
	Pump placement: 25.00	Well Condition: BROKEN HINGE	Ferrous Iron: 1.11 mg/L

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
					22.24						
6/5/23	0630	24.20	0.13	100	~~24~~	7.64	2.95	0.63	102	175	
	0635	24.26	0.26	100	21.48	6.33	3.22	0.22	96.2	154	
	0640	24.30	0.39	100	21.29	6.23	3.20	0.06	92.3	134	
	0645	24.33	0.52	100	21.24	6.22	3.19	0.06	91.5	138	
	0650	24.36	0.65	100	21.19	6.21	3.19	0.05	90.7	138	
↓	0655	24.38	0.78	100	21.14	6.21	3.19	0.05	90.3	137	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers	Volume/Type	Preserv.	Filter (Y/N)	Method	Parameter(s)
3	40ml GLASS	HCL	N		VOC
3	40ml GLASS	HCL	N		MEE
2	40ml AMBER	H_2SO_4	N		TOC
2	40ml GLASS	NA	N		CO2
1	250ml AMBER	H_3PO_4	N		VFA
1	250ml PLASTIC	NA	N		ANIONS
1	1 LITER GLASS	NA	N		DHC/DHB

Sample ID: 35AWW19_060523 Sample Time: 0655

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: 35AWW20	Date: 6/5/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 18.48
	Total Well Depth (ft) (C): 36.02	Water Column Thickness (ft) (C-B): 17.54	2nd Depth to Water(pre-purge): 18.48
	Screened Interval: 20.94 - 35.64	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 2.81
	Pump placement: 28.29	Well Condition: GOOD	Ferrous Iron: 3.07 mg/L

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/5/23	0720	18.55	0.13	100	21.87	6.72	6.04	0.69	3.9	[redacted]9	
	0725	18.61	0.26	100	21.69	6.68	6.18	0.25	1.8	-7	
	0730	18.65	0.39	100	21.66	6.68	6.23	0.09	0.9	-15	
	0735	18.67	0.52	100	21.62	6.69	6.24	0.09	0.3	-16	
	0740	18.69	0.65	100	21.59	6.69	6.24	0.09	0.0	-17	
↓	0745	18.70	0.78	100	21.57	6.68	6.25	0.08	0.0	-17	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
3	40ml GLASS		HCL	N		VOC
3	40ml GLASS		HCL	N		MAA
2	40ml AMBER		H2SO4	N		TOC
2	40ml GLASS		NA	N		CO2
1	250ml AMBER		H3PO4	N		VFA
1	125ml PLASTIC		HNO3	N		ARSENIC
1	250ml PLASTIC		NA	N		ANIONS
Sample ID: 35AWW20_060523			Sample Time: ~~0745~~ 0745			
1	1 Liter GLASS		NA	N		DHC/DHB

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 58	Location ID: 35AWW21	Date: 6/6/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 32.48
	Total Well Depth (ft) (C): 42.80	Water Column Thickness (ft) (C-B): 10.32	2nd Depth to Water (pre-purge): 32.48
	Screened Interval: 27.56 - 42.26	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 1.65
	Pump placement: 34.91	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/6/23	1155	32.55	0.13	100	26.88	6.74	3.99	0.64	6.7	112	
	1200	32.61	0.26	100	24.76	6.00	3.79	0.22	3.2	145	
	1205	32.65	0.39	100	24.10	5.88	3.71	0.05	1.8	157	
	1210	32.68	0.52	100	24.04	5.88	3.70	0.05	0.9	158	
	1215	32.70	0.65	100	23.97	5.88	3.70	0.04	0.4	159	
	1220	32.72	0.78	100	23.94	5.87	3.69	0.04	0.0	160	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40ml GLASS	HCL	N		VOC

Sample ID: 35AWW21-060623 Sample Time: 1220

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58		Location ID: 35AWW22		Date: 6/5/23
	Project Name: LHAAP		Project No./Phase: JVPCIBH.0001		Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro		Water Quality Meter/ID#: U-52 Horiba		PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101		Other Equipment/ID#: NA		Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"		Other Equipment/ID#: NA		PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"		Unit Casing Volume (gal/lin ft) (A): 0.160		Initial Depth to Water (ft) (B): 32.79
	Total Well Depth (ft) (C): 37.70		Water Column Thickness (ft) (C-B): 4.91		2nd Depth to Water(pre-purge): 32.79
	Screened Interval: 22.27-36.77		Weather: CLEAR		Well Volume (gal) (A*(C-B)): 0.79
	Pump placement: 33.50		Well Condition: GOOD		Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/5/23	1120	32.87	0.13	100	22.67	7.58	5.54	0.73	38.7	50	
	1125	32.93	0.26	100	22.23	6.69	9.31	0.28	34.3	85	
	1130	32.94	0.39	100	22.08	6.47	9.50	0.09	30.7	99	
	1135	33.00	0.52	100	22.03	6.46	9.51	0.09	30.3	100	
	1140	33.03	0.65	100	21.99	6.45	9.52	0.08	29.6	100	
	1145	33.06	0.78	100	21.95	6.44	9.53	0.08	29.2	101	

Colorimeter Results					No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units		3	40ml GLASS	HCl	N		VOC

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

Sample ID: 35AWW22-060523 Sample Time: 1145

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: 35A WW23	Date: 6/5/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 22.27
	Total Well Depth (ft) (C): 43.70	Water Column Thickness (ft) (C-B): 21.43	2nd Depth to Water(pre-purge): 22.27
	Screened Interval: 28.20 - 43.20	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 3.43
	Pump placement: 35.70	Well Condition: GOOD	Ferrous Iron: 3.73 mg/L

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/5/23	0940	22.35	0.13	100	20.82	7.86	5.44	0.70	2.9	-56	
	0945	22.41	0.26	100	21.15	7.08	5.21	0.27	1.5	-102	
	0950	22.45	0.39	100	21.29	7.00	5.32	0.09	0.7	-105	
	0955	22.48	0.52	100	21.34	6.99	5.34	0.09	0.0	-106	
	1000	22.50	0.65	100	21.38	6.99	5.36	0.08	0.0	-107	
	1005	22.52	0.78	100	21.43	6.98	5.36	0.08	0.0	-107	

Colorimeter Results				
Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type		Preserv.	Filter (Y/N)	Method	Parameter(s)
3	40ml GLASS	HCL	N		VOC
3	40ml GLASS	HCL	N		M&E
2	40ml AMBER	H2SO4	N		TOC
2	40ml GLASS	NA	N		CO2
1	250ml AMBER	H3PO4	N		VFA
1	250ml PLASTIC	NA	N		ANIONS
1	1 Liter GLASS	NA	N		DHC/DHB

Sample ID: 35AWW23_060523 Sample Time: 1005

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 58		Location ID: 35AWW24		Date: 6/7/23
	Project Name: LHAAP		Project No./Phase: JVPCIBH.0001		Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro		Water Quality Meter/ID#: U-52 Horiba		PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101		Other Equipment/ID#: NA		Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"		Other Equipment/ID#: NA		PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"		Unit Casing Volume (gal/lin ft) (A): 0.160		Initial Depth to Water (ft) (B): 23.27
	Total Well Depth (ft) (C): 35.01		Water Column Thickness (ft) (C-B): 11.74		2nd Depth to Water(pre-purge): 23.27
	Screened Interval: 25.10 - 35.10		Weather: CLEAR		Well Volume (gal) (A*(C-B)): 1.88
	Pump placement: 30.10		Well Condition: GOOD		Ferrous Iron: NA

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/7/23	1105	23.35	0.13	100	23.88	7.68	0.794	0.65	67.5	92	
	1110	23.41	0.26	100	22.94	6.00	0.700	0.25	63.6	151	
	1115	23.45	0.39	100	22.97	5.81	0.676	0.09	60.1	166	
	1120	23.47	0.52	100	23.00	5.80	0.675	0.09	59.4	166	
	1125	23.49	0.65	100	23.03	5.80	0.675	0.08	58.6	167	
	1130	23.50	0.78	100	23.05	5.79	0.675	0.08	58.0	168	

Colorimeter Results					No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units		3	40ml GLASS	HCl	N		VOC

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

Sample ID: 35AWW24-060723 Sample Time: 1130

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 58		Location ID: 35AWW25		Date: 6/6/23
	Project Name: LHAAP		Project No./Phase: JVPCIBH.0001		Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro		Water Quality Meter/ID#: U-52 Horiba		PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101		Other Equipment/ID#: NA		Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"		Other Equipment/ID#: NA		PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"		Unit Casing Volume (gal/lin ft) (A): 0.160		Initial Depth to Water (ft) (B): DRY
	Total Well Depth (ft): 16.14 - 26.14		Water Column Thickness (ft) (C-B): NA		2nd Depth to Water(pre-purge): DRY
	Screened Interval: 13.00-23.00		Weather: CLEAR		Well Volume (gal) (A*(C-B)): NA
	Pump placement: NA		Well Condition: GOOD		Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
				DRY WELL							

Colorimeter Results					No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units							
Conversions	Stabilization Criteria										
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%							
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%							
	Cond	+/- 10%	ORP	+/- 10	Sample ID:				Sample Time:		

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: 35AWW26	Date: 6/6/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 18.79
	Total Well Depth (23.53 - 33.53	Water Column Thickness (ft) (C-B): 13.23	2nd Depth to Water (pre-purge): 18.79
	Screened Interval: 28.53 - 30.00	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 2.12
	Pump placement: 25.00	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/6/23	1110	18.86	0.13	100	27.79	6.72	14.9	0.60	3.9	165	
	1115	18.92	0.26	100	29.08	6.80	15.2	0.17	2.0	121	
	1120	18.96	0.39	100	29.48	6.83	15.2	0.03	0.9	108	
	1125	18.99	0.52	100	29.56	6.83	15.3	0.03	0.3	107	
	1130	19.01	0.65	100	29.63	6.83	15.3	0.03	0.0	107	
	1135	19.03	0.78	100	29.69	6.83	15.3	0.02	0.0	106	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	9	40ml GLASS	HCl	N		VOC

Sample ID: 35AWW26_060623 Sample Time: 1135

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: 35AWW27	Date: 8/2/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 28.50
	Total Well Depth (ft) (C): 36.05	Water Column Thickness (ft) (C-B): 7.55	2nd Depth to Water(pre-purge): 28.50
	Screened Interval: 24.19 - 34.19	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 1.21
	Pump placement: 29.50	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
8/2/23	0640	28.57	0.13	100	24.37	7.28	1.80	0.73	197	-21	
	0645	28.63	0.26	100	22.41	7.19	1.83	0.44	185	-22	
	0650	28.66	0.39	100	21.33	7.14	1.83	0.30	180	-20	
	0655	28.68	0.52	100	21.26	7.13	1.83	0.29	179	-20	
	0700	28.70	0.65	100	21.22	7.13	1.84	0.29	178	-19	
↓	0705	28.71	0.78	100	21.18	7.13	1.84	0.28	178	-19	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40ml GLASS	HCL	N		VOC
Sample ID: 35AWW27_08022023				Sample Time: 0705		

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

Page 1 of 1

LOCATION	Site: LHAAP - 58	Location ID: LHSMW04	Date: 6/6/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): SS 4"	Unit Casing Volume (gal/lin ft) (A): 0.652	Initial Depth to Water (ft) (B): DRY
	Total Well Depth (ft) (C): 29.96	Water Column Thickness (ft) (C-B): NA	2nd Depth to Water (pre-purge): DRY
	Screened Interval: 21.11-31.11	Weather: CLEAR	Well Volume (gal) (A*(C-B)): NA
	Pump placement: NA	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)

DRY WELL

Colorimeter Results				
Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Sample ID:			Sample Time:			

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: LHSMW06	Date: 6/7/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 4"	Unit Casing Volume (gal/lin ft) (A): 0.652	Initial Depth to Water (ft) (B): 17.72
	Total Well Depth (ft) (C): 23.45	Water Column Thickness (ft) (C-B): 5.73	2nd Depth to Water(pre-purge): 17.72
	Screened Interval: 13.32-23.32	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 3.74
	Pump placement: 18.32	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/7/23	1020	17.80	0.13	100	24.40	7.12	3.88	0.60	3.6	99	
	1025	17.86	0.26	100	24.63	6.90	3.84	0.22	2.0	95	
	1030	17.90	0.39	100	24.70	6.82	3.68	0.06	0.8	95	
	1035	17.93	0.52	100	24.75	6.81	3.67	0.06	0.0	95	
	1040	17.95	0.65	100	24.80	6.81	3.67	0.06	0.0	96	
↓	1045	17.97	0.78	100	24.85	6.81	3.66	0.05	0.0	96	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
3	40ml Glass		HCl	N		VOC
2	125ml Plastic		HNO3	N		ARSENIC

Sample ID: LHSMW06-060723 Sample Time: 1045

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 58	Location ID: LHSMW07	Date: 6/5/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 4"	Unit Casing Volume (gal/lin ft) (A): 0.652	Initial Depth to Water (ft) (B): 17.69
	Total Well Depth (ft) (C): ~~30~~ 30.42	Water Column Thickness (ft) (C-B): 12.73	2nd Depth to Water(pre-purge): 17.69
	Screened Interval: 19.73 - 29.73	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 8.30
	Pump placement: 24.73	Well Condition: GOOD	Ferrous Iron: 0.80 mg/L

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
6/5/23	0805	17.76	0.13	100	21.58	7.27	11.4	0.65	2.7	68	
	0810	17.82	0.26	100	20.80	6.95	11.7	0.23	1.1	54	
	0815	17.85	0.39	100	20.60	6.86	11.7	0.08	0.5	53	
	0820	17.87	0.52	100	20.55	6.85	11.7	0.08	0.0	53	
	0825	17.89	0.65	100	20.50	6.85	11.8	0.07	0.0	52	
	0830	17.90	0.78	100	20.46	6.84	11.8	0.07	0.0	52	

Colorimeter Results				
Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type		Preserv.	Filter (Y/N)	Method	Parameter(s)
3	40ml GLASS	HCL			VOC
3	40ml GLASS	HCL			MEE
2	40ml AMBER	H_2SO_4			TOC
2	40ml GLASS	NA			CO2
1	250ml AMBER	H_3PO_4			VFA
1	250ml PLASTIC	NA			ANIONS
1	1 LITER GLASS	NA			DHC/DHB

Sample ID: LHSMW07_060523 Sample Time: 0830

APPENDIX G
LABORATORY ANALYTICAL RESULTS

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HS23010587 LHAAP58 Cover Page

ALS WO# HS23010587

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WorkOrder: HS23010587

LHAAP-58

Bhate Environmental Associates, Inc.

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

13-Feb-2023

HS23010587 LHAAP58 Final

ALS WO# HS23010587

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January 27, 2023

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS23010587**

Laboratory Results for: **LHAAP-58**

Dear Marcia Olive,

ALS Environmental received 7 sample(s) on Jan 13, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: DAYNA.FISHER
Dane J. Wacasey

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Work Order: HS23010587

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23010587-01	35AWW11_011223	Water		12-Jan-2023 07:25	13-Jan-2023 10:35	☐
HS23010587-02	35AWW20_011223	Water		12-Jan-2023 08:15	13-Jan-2023 10:35	☐
HS23010587-03	LHSMW07_011223	Water		12-Jan-2023 09:05	13-Jan-2023 10:35	☐
HS23010587-04	35AWW06_011223	Water		12-Jan-2023 09:55	13-Jan-2023 10:35	☐
HS23010587-05	35AWW23_011223	Water		12-Jan-2023 10:45	13-Jan-2023 10:35	☐
HS23010587-06	35AWW19_011223	Water		12-Jan-2023 11:35	13-Jan-2023 10:35	☐
HS23010587-07	Trip Blank	Water	CG-102122-388	12-Jan-2023 00:00	13-Jan-2023 10:35	☐

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Work Order: HS23010587

CASE NARRATIVE

Work Order Comments

- The analyses for DHC/DHB were subcontracted to Microbial Insights in Knoxville, TN. Final Report attached.
- The analysis for Carbon Dioxide was subcontracted to Eurofins Environmental Testing America l in Lancaster, PA . Final report attached

GC Semivolatiles by Method RSK-175

Batch ID: R426377

Sample ID: HS23010718-37MS

- MS and MSD are for an unrelated sample

GCMS Volatiles by Method SW8260

Batch ID: R426067

Sample ID: VLCSW-230118

- Hexachlorobutadiene exceeded QC limits for LCS. Samples are ND for this compound.

Sample ID: HS23010794-01MS

- MS and MSD are for an unrelated sample

Batch ID: R425904

Sample ID: HS23010472-04MS

- MS and MSD are for an unrelated sample

Batch ID: R425983

Sample ID: HS23010472-04MS

- MS and MSD are for an unrelated sample

Metals by Method SW6020A

Batch ID: 188726

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method E415.1

Batch ID: R426006

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Work Order: HS23010587

CASE NARRATIVE

WetChemistry by Method SW9056

Batch ID: R425916

Sample ID: 35AWW06_011223 (HS23010587-04)

- Closing CCV/CCB was not analyzed due to instrument issues. Samples reported per PM request.

Sample ID: 35AWW20_011223 (HS23010587-02MS)

- The MS and/or MSD recovery was outside of the control limits; however, the result in the parent sample is greater than 4x the spike amount. (Chloride,Sulfate)

Sample ID: 35AWW20_011223 (HS23010587-02MS/MSD)

- The recovery of the Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) associated with this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS/MSD may be due to sample matrix interference. (Nitrogen, Nitrite (As N))

Sample ID: LHSMW07_011223 (HS23010587-03)

- The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Nitrogen, Nitrate (As N))

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW11_011223
Collection Date: 12-Jan-2023 07:25

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,1,1-Trichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,1-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,1-Dichloroethene	**2.5**		**0.20**	**1.0**	**1.0**	**ug/L**	1	16-Jan-2023 17:09
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,2-Dibromoethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:09
2,2-Dichloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	16-Jan-2023 17:09
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	16-Jan-2023 17:09
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:09
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	16-Jan-2023 17:09
Acetone	1.0	U	0.40	1.0	2.0	ug/L	1	16-Jan-2023 17:09
Benzene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Bromochloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Bromodichloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	16-Jan-2023 17:09
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Chloroform	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW11_011223
Collection Date: 12-Jan-2023 07:25

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
cis-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Dibromomethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	16-Jan-2023 17:09
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	16-Jan-2023 17:09
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:09
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Toluene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
trans-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
trans-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:09
Surr: 1,2-Dichloroethane-d4	*97.3*			**0**	*81-118*	*%REC*	*1*	*16-Jan-2023 17:09*
Surr: 4-Bromofluorobenzene	*98.2*			**0**	*85-114*	*%REC*	*1*	*16-Jan-2023 17:09*
Surr: Dibromofluoromethane	*92.9*			**0**	*80-119*	*%REC*	*1*	*16-Jan-2023 17:09*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*16-Jan-2023 17:09*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PPM
Ethane	0.500	U	0.144	0.500	1.00	ug/L	1	19-Jan-2023 12:37
Ethene	0.500	U	0.234	0.500	1.00	ug/L	1	19-Jan-2023 12:37
Methane	**3,220**		**21.4**	**100**	**100**	**ug/L**	200	19-Jan-2023 14:28
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: JAC
Organic Carbon, Total	**6.28**		**0.500**	**1.00**	**1.00**	**mg/L**	1	16-Jan-2023 14:11

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW11_011223
Collection Date: 12-Jan-2023 07:25

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**2,090**		**10.0**	**12.5**	**25.0**	**mg/L**	50	13-Jan-2023 12:52
Nitrogen, Nitrate (As N)	0.100	U	0.0600	0.100	0.200	mg/L	2	13-Jan-2023 12:47
Nitrogen, Nitrite (As N)	0.100	U	0.0600	0.100	0.200	mg/L	2	13-Jan-2023 12:47
Sulfate	**563**		**10.0**	**12.5**	**25.0**	**mg/L**	50	13-Jan-2023 12:52
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Jan-2023 10:58
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	20-Jan-2023 15:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW20_011223
Collection Date: 12-Jan-2023 08:15

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-02
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
1,1,1-Trichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	18-Jan-2023 14:57
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	18-Jan-2023 14:57
1,1,2-Trichloroethane	**63**		**0.30**	**1.0**	**1.0**	**ug/L**	1	18-Jan-2023 14:57
1,1-Dichloroethane	**480**		**5.0**	**25**	**25**	**ug/L**	25	17-Jan-2023 15:34
1,1-Dichloroethene	**2,600**		**5.0**	**25**	**25**	**ug/L**	25	17-Jan-2023 15:34
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	18-Jan-2023 14:57
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	18-Jan-2023 14:57
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	18-Jan-2023 14:57
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	18-Jan-2023 14:57
1,2-Dibromoethane	1.0	U	0.20	1.0	1.0	ug/L	1	18-Jan-2023 14:57
1,2-Dichlorobenzene	**29**		**0.50**	**1.0**	**1.0**	**ug/L**	1	18-Jan-2023 14:57
1,2-Dichloroethane	**14**		**0.20**	**1.0**	**1.0**	**ug/L**	1	18-Jan-2023 14:57
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	18-Jan-2023 14:57
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
1,3-Dichlorobenzene	**1.4**		**0.40**	**1.0**	**1.0**	**ug/L**	1	18-Jan-2023 14:57
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
1,4-Dichlorobenzene	**5.0**		**0.40**	**1.0**	**1.0**	**ug/L**	1	18-Jan-2023 14:57
2,2-Dichloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	18-Jan-2023 14:57
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	18-Jan-2023 14:57
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	18-Jan-2023 14:57
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	18-Jan-2023 14:57
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	18-Jan-2023 14:57
Acetone	1.0	U	0.40	1.0	2.0	ug/L	1	18-Jan-2023 14:57
Benzene	**7.9**		**0.20**	**1.0**	**1.0**	**ug/L**	1	18-Jan-2023 14:57
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Bromochloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Bromodichloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	18-Jan-2023 14:57
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Chloroform	1.0	U	0.20	1.0	1.0	ug/L	1	18-Jan-2023 14:57

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW20_011223
Collection Date: 12-Jan-2023 08:15

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-02
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	18-Jan-2023 14:57
cis-1,2-Dichloroethene	**110**		**0.20**	**1.0**	**1.0**	**ug/L**	1	18-Jan-2023 14:57
cis-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Dibromomethane	1.0	U	0.20	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	18-Jan-2023 14:57
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	18-Jan-2023 14:57
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	18-Jan-2023 14:57
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Tetrachloroethene	**0.60**	J	**0.30**	**1.0**	**1.0**	**ug/L**	1	18-Jan-2023 14:57
Toluene	1.0	U	0.20	1.0	1.0	ug/L	1	18-Jan-2023 14:57
trans-1,2-Dichloroethene	**9.2**		**0.20**	**1.0**	**1.0**	**ug/L**	1	18-Jan-2023 14:57
trans-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Trichloroethene	**220**		**5.0**	**25**	**25**	**ug/L**	25	17-Jan-2023 15:34
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	18-Jan-2023 14:57
Vinyl chloride	**990**		**5.0**	**25**	**25**	**ug/L**	25	17-Jan-2023 15:34
Surr: 1,2-Dichloroethane-d4	*95.0*			**0**	*81-118*	*%REC*	*25*	*17-Jan-2023 15:34*
Surr: 1,2-Dichloroethane-d4	*95.7*			**0**	*81-118*	*%REC*	*1*	*18-Jan-2023 14:57*
Surr: 4-Bromofluorobenzene	*96.1*			**0**	*85-114*	*%REC*	*25*	*17-Jan-2023 15:34*
Surr: 4-Bromofluorobenzene	*98.1*			**0**	*85-114*	*%REC*	*1*	*18-Jan-2023 14:57*
Surr: Dibromofluoromethane	*91.3*			**0**	*80-119*	*%REC*	*25*	*17-Jan-2023 15:34*
Surr: Dibromofluoromethane	*90.6*			**0**	*80-119*	*%REC*	*1*	*18-Jan-2023 14:57*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*25*	*17-Jan-2023 15:34*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*18-Jan-2023 14:57*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PPM
Ethane	0.500	U	0.144	0.500	1.00	ug/L	1	19-Jan-2023 12:50
Ethene	**35.8**		**0.234**	**0.500**	**1.00**	**ug/L**	1	19-Jan-2023 12:50
Methane	**2,600**		**10.7**	**50.0**	**50.0**	**ug/L**	100	19-Jan-2023 13:43
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 23-Jan-2023		Analyst: JC
Arsenic	**0.000920**	J	**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	24-Jan-2023 15:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW20_011223
Collection Date: 12-Jan-2023 08:15

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-02
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: JAC
Organic Carbon, Total	**14.5**		**0.500**	**1.00**	**1.00**	**mg/L**	1	16-Jan-2023 14:25
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**660**		**4.00**	**5.00**	**10.0**	**mg/L**	20	13-Jan-2023 13:13
Nitrogen, Nitrate (As N)	**0.0452**	J	**0.0300**	**0.0500**	**0.100**	**mg/L**	1	13-Jan-2023 12:57
Nitrogen, Nitrite (As N)	0.0500	U	0.0300	0.0500	0.100	mg/L	1	13-Jan-2023 12:57
Sulfate	**1,180**		**4.00**	**5.00**	**10.0**	**mg/L**	20	13-Jan-2023 13:13
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Jan-2023 10:58
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	20-Jan-2023 15:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: LHSMW07_011223
Collection Date: 12-Jan-2023 09:05

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-03
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
1,1,1-Trichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:30
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:30
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
1,1-Dichloroethane	**16**		**0.20**	**1.0**	**1.0**	**ug/L**	1	16-Jan-2023 17:30
1,1-Dichloroethene	**17**		**0.20**	**1.0**	**1.0**	**ug/L**	1	16-Jan-2023 17:30
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:30
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:30
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:30
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:30
1,2-Dibromoethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:30
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:30
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:30
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:30
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:30
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:30
2,2-Dichloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:30
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	16-Jan-2023 17:30
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	16-Jan-2023 17:30
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:30
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	16-Jan-2023 17:30
Acetone	1.0	U	0.40	1.0	2.0	ug/L	1	16-Jan-2023 17:30
Benzene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Bromochloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Bromodichloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	16-Jan-2023 17:30
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Chloroform	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: LHSMW07_011223
Collection Date: 12-Jan-2023 09:05

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-03
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:30
cis-1,2-Dichloroethene	**0.96**	J	**0.20**	**1.0**	**1.0**	**ug/L**	1	16-Jan-2023 17:30
cis-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Dibromomethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	16-Jan-2023 17:30
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	16-Jan-2023 17:30
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:30
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Toluene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:30
trans-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:30
trans-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Trichloroethene	**2.0**		**0.20**	**1.0**	**1.0**	**ug/L**	1	16-Jan-2023 17:30
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:30
Vinyl chloride	**56**		**0.20**	**1.0**	**1.0**	**ug/L**	1	16-Jan-2023 17:30
Surr: 1,2-Dichloroethane-d4	*93.9*			**0**	*81-118*	*%REC*	*1*	*16-Jan-2023 17:30*
Surr: 4-Bromofluorobenzene	*97.5*			**0**	*85-114*	*%REC*	*1*	*16-Jan-2023 17:30*
Surr: Dibromofluoromethane	*89.9*			**0**	*80-119*	*%REC*	*1*	*16-Jan-2023 17:30*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*16-Jan-2023 17:30*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PPM
Ethane	0.500	U	0.144	0.500	1.00	ug/L	1	19-Jan-2023 12:58
Ethene	**49.4**		**0.234**	**0.500**	**1.00**	**ug/L**	1	19-Jan-2023 12:58
Methane	**5,950**		**42.8**	**200**	**200**	**ug/L**	400	19-Jan-2023 13:52
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: JAC
Organic Carbon, Total	**6.78**		**0.500**	**1.00**	**1.00**	**mg/L**	1	16-Jan-2023 14:39

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: LHSMW07_011223
Collection Date: 12-Jan-2023 09:05

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-03
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**2,030**		**10.0**	**12.5**	**25.0**	**mg/L**	50	13-Jan-2023 13:23
Nitrogen, Nitrate (As N)	0.100	U	0.0600	0.100	0.200	mg/L	2	13-Jan-2023 13:18
Nitrogen, Nitrite (As N)	0.100	U	0.0600	0.100	0.200	mg/L	2	13-Jan-2023 13:18
Sulfate	**3,170**		**10.0**	**12.5**	**25.0**	**mg/L**	50	13-Jan-2023 13:23
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Jan-2023 10:58
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	20-Jan-2023 15:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW06_011223
Collection Date: 12-Jan-2023 09:55

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-04
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,1,1-Trichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,1-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,1-Dichloroethene	**1.0**		**0.20**	**1.0**	**1.0**	**ug/L**	1	16-Jan-2023 17:51
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,2-Dibromoethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:51
2,2-Dichloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	16-Jan-2023 17:51
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	16-Jan-2023 17:51
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:51
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	16-Jan-2023 17:51
Acetone	1.0	U	0.40	1.0	2.0	ug/L	1	16-Jan-2023 17:51
Benzene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Bromochloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Bromodichloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	16-Jan-2023 17:51
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Chloroform	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW06_011223
Collection Date: 12-Jan-2023 09:55

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-04
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
cis-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Dibromomethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	16-Jan-2023 17:51
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	16-Jan-2023 17:51
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 17:51
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Toluene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
trans-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
trans-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 17:51
Surr: 1,2-Dichloroethane-d4	*96.6*			**0**	*81-118*	*%REC*	*1*	*16-Jan-2023 17:51*
Surr: 4-Bromofluorobenzene	*99.0*			**0**	*85-114*	*%REC*	*1*	*16-Jan-2023 17:51*
Surr: Dibromofluoromethane	*93.0*			**0**	*80-119*	*%REC*	*1*	*16-Jan-2023 17:51*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*16-Jan-2023 17:51*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PPM
Ethane	0.500	U	0.144	0.500	1.00	ug/L	1	19-Jan-2023 13:06
Ethene	0.500	U	0.234	0.500	1.00	ug/L	1	19-Jan-2023 13:06
Methane	**2,570**		**21.4**	**100**	**100**	**ug/L**	200	19-Jan-2023 14:11
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: JAC
Organic Carbon, Total	**6.28**		**0.500**	**1.00**	**1.00**	**mg/L**	1	16-Jan-2023 15:20

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.

ANALYTICAL REPORT

Project: LHAAP-58

WorkOrder:HS23010587

Sample ID: 35AWW06_011223

Lab ID:HS23010587-04

Collection Date: 12-Jan-2023 09:55

Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**905**		**4.00**	**5.00**	**10.0**	**mg/L**	20	13-Jan-2023 14:00
Nitrogen, Nitrate (As N)	0.0500	U	0.0300	0.0500	0.100	mg/L	1	13-Jan-2023 13:55
Nitrogen, Nitrite (As N)	0.0500	U	0.0300	0.0500	0.100	mg/L	1	13-Jan-2023 13:55
Sulfate	**855**		**4.00**	**5.00**	**10.0**	**mg/L**	20	13-Jan-2023 14:00
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Jan-2023 10:58
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	20-Jan-2023 15:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW23_011223
Collection Date: 12-Jan-2023 10:45

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-05
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,1,1-Trichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,1-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,2-Dibromoethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 18:12
2,2-Dichloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	16-Jan-2023 18:12
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	16-Jan-2023 18:12
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 18:12
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	16-Jan-2023 18:12
Acetone	**13**		**0.40**	**1.0**	**2.0**	**ug/L**	1	16-Jan-2023 18:12
Benzene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Bromochloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Bromodichloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	16-Jan-2023 18:12
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Chloroform	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW23_011223
Collection Date: 12-Jan-2023 10:45

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-05
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
cis-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Dibromomethane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	16-Jan-2023 18:12
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	16-Jan-2023 18:12
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Jan-2023 18:12
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Toluene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
trans-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
trans-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	16-Jan-2023 18:12
Surr: 1,2-Dichloroethane-d4	*95.8*			**0**	*81-118*	*%REC*	*1*	*16-Jan-2023 18:12*
Surr: 4-Bromofluorobenzene	*96.9*			**0**	*85-114*	*%REC*	*1*	*16-Jan-2023 18:12*
Surr: Dibromofluoromethane	*92.3*			**0**	*80-119*	*%REC*	*1*	*16-Jan-2023 18:12*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*1*	*16-Jan-2023 18:12*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PPM
Ethane	0.500	U	0.144	0.500	1.00	ug/L	1	19-Jan-2023 13:15
Ethene	0.500	U	0.234	0.500	1.00	ug/L	1	19-Jan-2023 13:15
Methane	**4,590**		**21.4**	**100**	**100**	**ug/L**	200	19-Jan-2023 14:20
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: JAC
Organic Carbon, Total	**14.7**		**0.500**	**1.00**	**1.00**	**mg/L**	1	16-Jan-2023 15:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.

ANALYTICAL REPORT

Project: LHAAP-58

WorkOrder:HS23010587

Sample ID: 35AWW23_011223

Lab ID:HS23010587-05

Collection Date: 12-Jan-2023 10:45

Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**792**		**4.00**	**5.00**	**10.0**	**mg/L**	20	13-Jan-2023 14:11
Nitrogen, Nitrate (As N)	0.0500	U	0.0300	0.0500	0.100	mg/L	1	13-Jan-2023 14:05
Nitrogen, Nitrite (As N)	0.0500	U	0.0300	0.0500	0.100	mg/L	1	13-Jan-2023 14:05
Sulfate	**1.68**		**0.200**	**0.250**	**0.500**	**mg/L**	1	13-Jan-2023 14:05
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Jan-2023 10:58
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	20-Jan-2023 15:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW19_011223
Collection Date: 12-Jan-2023 11:35

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-06
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
1,1,1-Trichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 14:10
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	17-Jan-2023 14:10
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
1,1-Dichloroethane	**0.81**	J	**0.20**	**1.0**	**1.0**	**ug/L**	1	17-Jan-2023 14:10
1,1-Dichloroethene	**5.0**		**0.20**	**1.0**	**1.0**	**ug/L**	1	17-Jan-2023 14:10
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Jan-2023 14:10
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	17-Jan-2023 14:10
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	17-Jan-2023 14:10
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 14:10
1,2-Dibromoethane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 14:10
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	17-Jan-2023 14:10
1,2-Dichloroethane	**1.3**		**0.20**	**1.0**	**1.0**	**ug/L**	1	17-Jan-2023 14:10
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	17-Jan-2023 14:10
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Jan-2023 14:10
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Jan-2023 14:10
2,2-Dichloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 14:10
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	17-Jan-2023 14:10
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	17-Jan-2023 14:10
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Jan-2023 14:10
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	17-Jan-2023 14:10
Acetone	1.0	U	0.40	1.0	2.0	ug/L	1	17-Jan-2023 14:10
Benzene	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Bromochloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Bromodichloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	17-Jan-2023 14:10
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Chloroform	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 14:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW19_011223
Collection Date: 12-Jan-2023 11:35

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-06
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 14:10
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 14:10
cis-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Dibromomethane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	17-Jan-2023 14:10
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	17-Jan-2023 14:10
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Jan-2023 14:10
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Toluene	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 14:10
trans-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 14:10
trans-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 14:10
Surr: 1,2-Dichloroethane-d4	*95.2*			**0**	*81-118*	*%REC*	*1*	*17-Jan-2023 14:10*
Surr: 4-Bromofluorobenzene	*96.1*			**0**	*85-114*	*%REC*	*1*	*17-Jan-2023 14:10*
Surr: Dibromofluoromethane	*91.0*			**0**	*80-119*	*%REC*	*1*	*17-Jan-2023 14:10*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*17-Jan-2023 14:10*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PPM
Ethane	0.500	U	0.144	0.500	1.00	ug/L	1	19-Jan-2023 13:23
Ethene	**3.95**		**0.234**	**0.500**	**1.00**	**ug/L**	1	19-Jan-2023 13:23
Methane	**3.37**		**0.107**	**0.500**	**0.500**	**ug/L**	1	19-Jan-2023 13:23
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: JAC
Organic Carbon, Total	**2.48**		**0.500**	**1.00**	**1.00**	**mg/L**	1	16-Jan-2023 15:48

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW19_011223
Collection Date: 12-Jan-2023 11:35

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-06
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**456**		**4.00**	**5.00**	**10.0**	**mg/L**	20	13-Jan-2023 14:21
Nitrogen, Nitrate (As N)	0.0500	U	0.0300	0.0500	0.100	mg/L	1	13-Jan-2023 14:16
Nitrogen, Nitrite (As N)	0.0500	U	0.0300	0.0500	0.100	mg/L	1	13-Jan-2023 14:16
Sulfate	**701**		**4.00**	**5.00**	**10.0**	**mg/L**	20	13-Jan-2023 14:21
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Jan-2023 10:58
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	20-Jan-2023 15:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: Trip Blank
Collection Date: 12-Jan-2023 00:00

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-07
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,1,1-Trichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,1-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,2-Dibromoethane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Jan-2023 13:49
2,2-Dichloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	17-Jan-2023 13:49
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	17-Jan-2023 13:49
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Jan-2023 13:49
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	17-Jan-2023 13:49
Acetone	1.0	U	0.40	1.0	2.0	ug/L	1	17-Jan-2023 13:49
Benzene	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Bromochloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Bromodichloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	17-Jan-2023 13:49
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Chloroform	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: Trip Blank
Collection Date: 12-Jan-2023 00:00

ANALYTICAL REPORT
WorkOrder:HS23010587
Lab ID:HS23010587-07
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
cis-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Dibromomethane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	17-Jan-2023 13:49
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	17-Jan-2023 13:49
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Jan-2023 13:49
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Toluene	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
trans-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
trans-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	17-Jan-2023 13:49
Surr: 1,2-Dichloroethane-d4	*93.8*			**0**	*81-118*	*%REC*	*1*	*17-Jan-2023 13:49*
Surr: 4-Bromofluorobenzene	*96.1*			**0**	*85-114*	*%REC*	*1*	*17-Jan-2023 13:49*
Surr: Dibromofluoromethane	*90.6*			**0**	*80-119*	*%REC*	*1*	*17-Jan-2023 13:49*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*17-Jan-2023 13:49*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 27-Jan-23

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

Batch ID: 188726 **Start Date:** 23 Jan 2023 13:00 **End Date:** 23 Jan 2023 17:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23010587-02		10 (mL)	10 (mL)	1	120 plastic HNO3

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 188726 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Water	
HS23010587-02	35AWW20_011223	12 Jan 2023 08:15		23 Jan 2023 13:00	24 Jan 2023 15:23	1
Batch ID: R425904 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS23010587-01	35AWW11_011223	12 Jan 2023 07:25			16 Jan 2023 17:09	1
HS23010587-03	LHSMW07_011223	12 Jan 2023 09:05			16 Jan 2023 17:30	1
HS23010587-04	35AWW06_011223	12 Jan 2023 09:55			16 Jan 2023 17:51	1
HS23010587-05	35AWW23_011223	12 Jan 2023 10:45			16 Jan 2023 18:12	1
Batch ID: R425916 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS23010587-01	35AWW11_011223	12 Jan 2023 07:25			13 Jan 2023 12:52	50
HS23010587-01	35AWW11_011223	12 Jan 2023 07:25			13 Jan 2023 12:47	2
HS23010587-02	35AWW20_011223	12 Jan 2023 08:15			13 Jan 2023 13:13	20
HS23010587-02	35AWW20_011223	12 Jan 2023 08:15			13 Jan 2023 12:57	1
HS23010587-03	LHSMW07_011223	12 Jan 2023 09:05			13 Jan 2023 13:23	50
HS23010587-03	LHSMW07_011223	12 Jan 2023 09:05			13 Jan 2023 13:18	2
HS23010587-04	35AWW06_011223	12 Jan 2023 09:55			13 Jan 2023 14:00	20
HS23010587-04	35AWW06_011223	12 Jan 2023 09:55			13 Jan 2023 13:55	1
HS23010587-05	35AWW23_011223	12 Jan 2023 10:45			13 Jan 2023 14:11	20
HS23010587-05	35AWW23_011223	12 Jan 2023 10:45			13 Jan 2023 14:05	1
HS23010587-06	35AWW19_011223	12 Jan 2023 11:35			13 Jan 2023 14:21	20
HS23010587-06	35AWW19_011223	12 Jan 2023 11:35			13 Jan 2023 14:16	1
Batch ID: R425983 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS23010587-02	35AWW20_011223	12 Jan 2023 08:15			17 Jan 2023 15:34	25
HS23010587-06	35AWW19_011223	12 Jan 2023 11:35			17 Jan 2023 14:10	1
HS23010587-07	Trip Blank	12 Jan 2023 00:00			17 Jan 2023 13:49	1
Batch ID: R426006 (0)	**Test Name :** TOTAL ORGANIC CARBON BY E415.1				**Matrix:** Water	
HS23010587-01	35AWW11_011223	12 Jan 2023 07:25			16 Jan 2023 14:11	1
HS23010587-02	35AWW20_011223	12 Jan 2023 08:15			16 Jan 2023 14:25	1
HS23010587-03	LHSMW07_011223	12 Jan 2023 09:05			16 Jan 2023 14:39	1
HS23010587-04	35AWW06_011223	12 Jan 2023 09:55			16 Jan 2023 15:20	1
HS23010587-05	35AWW23_011223	12 Jan 2023 10:45			16 Jan 2023 15:35	1
HS23010587-06	35AWW19_011223	12 Jan 2023 11:35			16 Jan 2023 15:48	1
Batch ID: R426067 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS23010587-02	35AWW20_011223	12 Jan 2023 08:15			18 Jan 2023 14:57	1

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R426205 (0)	**Test Name :** SUBCONTRACT ANALYSIS - RSK				**Matrix:** Water	
HS23010587-01	35AWW11_011223	12 Jan 2023 07:25			20 Jan 2023 15:46	1
HS23010587-02	35AWW20_011223	12 Jan 2023 08:15			20 Jan 2023 15:46	1
HS23010587-03	LHSMW07_011223	12 Jan 2023 09:05			20 Jan 2023 15:46	1
HS23010587-04	35AWW06_011223	12 Jan 2023 09:55			20 Jan 2023 15:46	1
HS23010587-05	35AWW23_011223	12 Jan 2023 10:45			20 Jan 2023 15:46	1
HS23010587-06	35AWW19_011223	12 Jan 2023 11:35			20 Jan 2023 15:46	1
Batch ID: R426364 (0)	**Test Name :** SUBCONTRACT ANALYSIS - DHC/DHB				**Matrix:** Water	
HS23010587-01	35AWW11_011223	12 Jan 2023 07:25			24 Jan 2023 10:58	1
HS23010587-02	35AWW20_011223	12 Jan 2023 08:15			24 Jan 2023 10:58	1
HS23010587-03	LHSMW07_011223	12 Jan 2023 09:05			24 Jan 2023 10:58	1
HS23010587-04	35AWW06_011223	12 Jan 2023 09:55			24 Jan 2023 10:58	1
HS23010587-05	35AWW23_011223	12 Jan 2023 10:45			24 Jan 2023 10:58	1
HS23010587-06	35AWW19_011223	12 Jan 2023 11:35			24 Jan 2023 10:58	1
Batch ID: R426377 (1)	**Test Name :** DISSOLVED GASES BY RSK-175				**Matrix:** Water	
HS23010587-01	35AWW11_011223	12 Jan 2023 07:25			19 Jan 2023 14:28	200
HS23010587-01	35AWW11_011223	12 Jan 2023 07:25			19 Jan 2023 12:37	1
HS23010587-02	35AWW20_011223	12 Jan 2023 08:15			19 Jan 2023 13:43	100
HS23010587-02	35AWW20_011223	12 Jan 2023 08:15			19 Jan 2023 12:50	1
HS23010587-03	LHSMW07_011223	12 Jan 2023 09:05			19 Jan 2023 13:52	400
HS23010587-03	LHSMW07_011223	12 Jan 2023 09:05			19 Jan 2023 12:58	1
HS23010587-04	35AWW06_011223	12 Jan 2023 09:55			19 Jan 2023 14:11	200
HS23010587-04	35AWW06_011223	12 Jan 2023 09:55			19 Jan 2023 13:06	1
HS23010587-05	35AWW23_011223	12 Jan 2023 10:45			19 Jan 2023 14:20	200
HS23010587-05	35AWW23_011223	12 Jan 2023 10:45			19 Jan 2023 13:15	1
HS23010587-06	35AWW19_011223	12 Jan 2023 11:35			19 Jan 2023 13:23	1

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R426377 (1) **Instrument: FID-4** **Method: DISSOLVED GASES BY RSK-175**

MBLK Sample ID: **MBLK-230119** Units: **ug/L** Analysis Date: **19-Jan-2023 08:57**
Client ID: Run ID: **FID-4_426377** SeqNo: **7085147** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.500	1.00								U
Ethene	0.500	1.00								U
Methane	0.500	0.500								U

LCS Sample ID: **LCS-230119** Units: **ug/L** Analysis Date: **19-Jan-2023 09:07**
Client ID: Run ID: **FID-4_426377** SeqNo: **7085148** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	19.88	1.00	18.04	0	110	74 - 131				
Ethene	16.05	1.00	16.8	0	95.5	72 - 133				
Methane	9.729	0.500	9.647	0	101	73 - 125				

MS Sample ID: **HS23010718-37MS** Units: **ug/L** Analysis Date: **19-Jan-2023 10:49**
Client ID: Run ID: **FID-4_426377** SeqNo: **7085151** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	52.46	1.00	18.04	24.58	155	74 - 131				S
Ethene	66.87	1.00	16.8	0	398	72 - 133				S
Methane	8019	0.500	9.647	7369	6740	73 - 125				SEO

MSD Sample ID: **HS23010718-37MSD** Units: **ug/L** Analysis Date: **19-Jan-2023 10:57**
Client ID: Run ID: **FID-4_426377** SeqNo: **7085152** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	45.73	1.00	18.04	24.58	117	74 - 131	52.46	13.7	30	
Ethene	57.33	1.00	16.8	0	341	72 - 133	66.87	15.4	30	S
Methane	8036	0.500	9.647	7369	6920	73 - 125	8019	0.219	30	SEO

The following samples were analyzed in this batch: HS23010587-01 HS23010587-02 HS23010587-03 HS23010587-04 HS23010587-05 HS23010587-06

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: 188726 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-188726** Units: **mg/L** Analysis Date: **24-Jan-2023 14:45**
Client ID: Run ID: **ICPMS07_426363** SeqNo: **7085724** PrepDate: **23-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.00125	0.00500								U

LCS Sample ID: **LCS-188726** Units: **mg/L** Analysis Date: **24-Jan-2023 14:47**
Client ID: Run ID: **ICPMS07_426363** SeqNo: **7085725** PrepDate: **23-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.04972	0.00500	0.05	0	99.4	84 - 116				

MS Sample ID: **HS23010489-02MS** Units: **mg/L** Analysis Date: **24-Jan-2023 14:53**
Client ID: Run ID: **ICPMS07_426363** SeqNo: **7085728** PrepDate: **23-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.0541	0.00500	0.05	0.00062	107	84 - 116				

MSD Sample ID: **HS23010489-02MSD** Units: **mg/L** Analysis Date: **24-Jan-2023 14:55**
Client ID: Run ID: **ICPMS07_426363** SeqNo: **7085729** PrepDate: **23-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.05371	0.00500	0.05	0.00062	106	84 - 116	0.0541	0.716	20	

PDS Sample ID: **HS23010489-02PDS** Units: **mg/L** Analysis Date: **24-Jan-2023 14:57**
Client ID: Run ID: **ICPMS07_426363** SeqNo: **7085730** PrepDate: **23-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.106	0.00500	0.1	0.00062	105	80 - 120				

SD Sample ID: **HS23010489-02SD** Units: **mg/L** Analysis Date: **24-Jan-2023 14:51**
Client ID: Run ID: **ICPMS07_426363** SeqNo: **7085727** PrepDate: **23-Jan-2023** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Arsenic	0.00625	0.0250					0.00062	0	10	U

The following samples were analyzed in this batch: HS23010587-02

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425904 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-230116** Units: **ug/L** Analysis Date: **16-Jan-2023 12:36**
Client ID: Run ID: **VOA6_425904** SeqNo: **7075336** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	1.0	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	1.0	1.0								U
1,1-Dichloroethene	1.0	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	1.0	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	1.0	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	1.0	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	1.0	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	1.0	1.0								U
Bromodichloromethane	1.0	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425904 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-230116** Units: **ug/L** Analysis Date: **16-Jan-2023 12:36**
Client ID: Run ID: **VOA6_425904** SeqNo: **7075336** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	1.0	1.0								U
Chloromethane	1.0	1.0								U
cis-1,2-Dichloroethene	1.0	1.0								U
cis-1,3-Dichloropropene	1.0	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	1.0	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	1.0	1.0								U
trans-1,2-Dichloroethene	1.0	1.0								U
trans-1,3-Dichloropropene	1.0	1.0								U
Trichloroethene	1.0	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	1.0	1.0								U
Surr: 1,2-Dichloroethane-d4	*47.72*	*1.0*	*50*	*0*	*95.4*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.87*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*46.01*	*1.0*	*50*	*0*	*92.0*	*80 - 119*				
Surr: Toluene-d8	*52.02*	*1.0*	*50*	*0*	*104*	*89 - 112*				

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425904 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-230116** Units: **ug/L** Analysis Date: **16-Jan-2023 11:53**
Client ID: Run ID: **VOA6_425904** SeqNo: **7075335** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.01	1.0	20	0	95.1	78 - 124				
1,1,1-Trichloroethane	18.69	1.0	20	0	93.4	74 - 131				
1,1,2,2-Tetrachloroethane	20.06	1.0	20	0	100	71 - 121				
1,1,2-Trichloroethane	18.99	1.0	20	0	95.0	80 - 119				
1,1-Dichloroethane	18.89	1.0	20	0	94.5	77 - 125				
1,1-Dichloroethene	18.22	1.0	20	0	91.1	71 - 131				
1,1-Dichloropropene	19.73	1.0	20	0	98.6	78 - 125				
1,2,3-Trichlorobenzene	22.41	1.0	20	0	112	69 - 129				
1,2,3-Trichloropropane	20.77	1.0	20	0	104	73 - 122				
1,2,4-Trichlorobenzene	23.42	1.0	20	0	117	69 - 130				
1,2,4-Trimethylbenzene	20.6	1.0	20	0	103	76 - 124				
1,2-Dibromo-3-chloropropane	20.64	1.0	20	0	103	62 - 128				
1,2-Dibromoethane	19.62	1.0	20	0	98.1	77 - 121				
1,2-Dichlorobenzene	19.74	1.0	20	0	98.7	80 - 119				
1,2-Dichloroethane	20.49	1.0	20	0	102	73 - 128				
1,2-Dichloropropane	19.24	1.0	20	0	96.2	78 - 122				
1,3,5-Trimethylbenzene	21.2	1.0	20	0	106	75 - 124				
1,3-Dichlorobenzene	20.4	1.0	20	0	102	80 - 119				
1,3-Dichloropropane	19.43	1.0	20	0	97.2	80 - 119				
1,4-Dichlorobenzene	19.93	1.0	20	0	99.7	79 - 118				
2,2-Dichloropropane	19.26	1.0	20	0	96.3	60 - 139				
2-Butanone	42.09	2.0	40	0	105	56 - 143				
2-Chlorotoluene	20.33	1.0	20	0	102	79 - 122				
2-Hexanone	45.95	2.0	40	0	115	57 - 139				
4-Chlorotoluene	20.89	1.0	20	0	104	78 - 122				
4-Isopropyltoluene	22.12	1.0	20	0	111	77 - 127				
4-Methyl-2-pentanone	43.94	2.0	40	0	110	67 - 130				
Acetone	47.17	2.0	40	0	118	39 - 160				
Benzene	19.02	1.0	20	0	95.1	79 - 120				
Bromobenzene	18.59	1.0	20	0	92.9	80 - 120				
Bromochloromethane	17.58	1.0	20	0	87.9	78 - 123				
Bromodichloromethane	18.61	1.0	20	0	93.1	79 - 125				
Bromoform	19.36	1.0	20	0	96.8	66 - 130				
Bromomethane	20.2	1.0	20	0	101	53 - 141				

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425904 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-230116** Units: **ug/L** Analysis Date: **16-Jan-2023 11:53**
Client ID: Run ID: **VOA6_425904** SeqNo: **7075335** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	37.07	2.0	40	0	92.7	64 - 133				
Carbon tetrachloride	18.33	1.0	20	0	91.6	72 - 136				
Chlorobenzene	18.56	1.0	20	0	92.8	82 - 118				
Chloroethane	18.08	1.0	20	0	90.4	60 - 138				
Chloroform	18.54	1.0	20	0	92.7	79 - 124				
Chloromethane	19.73	1.0	20	0	98.6	50 - 139				
cis-1,2-Dichloroethene	17.88	1.0	20	0	89.4	78 - 123				
cis-1,3-Dichloropropene	19.81	1.0	20	0	99.0	75 - 124				
Dibromochloromethane	18.73	1.0	20	0	93.6	74 - 126				
Dibromomethane	19.17	1.0	20	0	95.8	79 - 123				
Dichlorodifluoromethane	15.71	1.0	20	0	78.6	32 - 152				
Ethylbenzene	19.66	1.0	20	0	98.3	79 - 121				
Hexachlorobutadiene	22.05	1.0	20	0	110	66 - 134				
Isopropylbenzene	20.45	1.0	20	0	102	72 - 131				
m,p-Xylene	38.72	2.0	40	0	96.8	80 - 121				
Methylene chloride	18.22	2.0	20	0	91.1	74 - 124				
Naphthalene	22.91	1.0	20	0	115	61 - 128				
n-Butylbenzene	21.66	1.0	20	0	108	75 - 128				
n-Propylbenzene	21.32	1.0	20	0	107	76 - 126				
o-Xylene	19.1	1.0	20	0	95.5	78 - 122				
sec-Butylbenzene	21.62	1.0	20	0	108	77 - 126				
Styrene	19.83	1.0	20	0	99.2	78 - 123				
tert-Butylbenzene	20.78	1.0	20	0	104	78 - 124				
Tetrachloroethene	18.84	1.0	20	0	94.2	74 - 129				
Toluene	18.85	1.0	20	0	94.2	80 - 121				
trans-1,2-Dichloroethene	18.35	1.0	20	0	91.7	75 - 124				
trans-1,3-Dichloropropene	20.31	1.0	20	0	102	73 - 127				
Trichloroethene	18.91	1.0	20	0	94.5	79 - 123				
Trichlorofluoromethane	18.61	1.0	20	0	93.1	65 - 141				
Vinyl chloride	18.31	1.0	20	0	91.5	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.5*	*1.0*	*50*	*0*	*105*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.42*	*1.0*	*50*	*0*	*98.8*	*85 - 114*				
Surr: Dibromofluoromethane	*47.8*	*1.0*	*50*	*0*	*95.6*	*80 - 119*				
Surr: Toluene-d8	*49.38*	*1.0*	*50*	*0*	*98.8*	*89 - 112*				

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425904 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS23010472-04MS** Units: **ug/L** Analysis Date: **16-Jan-2023 15:45**
Client ID: Run ID: **VOA6_425904** SeqNo: **7075345** PrepDate: DF: **1000**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20120	1000	20000	0	101	78 - 124				
1,1,1-Trichloroethane	21040	1000	20000	0	105	74 - 131				
1,1,2,2-Tetrachloroethane	20320	1000	20000	0	102	71 - 121				
1,1,2-Trichloroethane	19870	1000	20000	0	99.3	80 - 119				
1,1-Dichloroethane	19110	1000	20000	0	95.6	77 - 125				
1,1-Dichloroethene	21200	1000	20000	0	106	71 - 131				
1,1-Dichloropropene	24480	1000	20000	0	122	78 - 125				
1,2,3-Trichlorobenzene	22470	1000	20000	0	112	69 - 129				
1,2,3-Trichloropropane	22630	1000	20000	0	113	73 - 122				
1,2,4-Trichlorobenzene	23970	1000	20000	0	120	69 - 130				
1,2,4-Trimethylbenzene	23490	1000	20000	0	117	76 - 124				
1,2-Dibromo-3-chloropropane	20800	1000	20000	0	104	62 - 128				
1,2-Dibromoethane	20540	1000	20000	0	103	77 - 121				
1,2-Dichlorobenzene	21380	1000	20000	0	107	80 - 119				
1,2-Dichloroethane	20480	1000	20000	0	102	73 - 128				
1,2-Dichloropropane	18950	1000	20000	0	94.8	78 - 122				
1,3,5-Trimethylbenzene	24940	1000	20000	0	125	75 - 124				S
1,3-Dichlorobenzene	22530	1000	20000	0	113	80 - 119				
1,3-Dichloropropane	20210	1000	20000	0	101	80 - 119				
1,4-Dichlorobenzene	21780	1000	20000	0	109	79 - 118				
2,2-Dichloropropane	20970	1000	20000	0	105	60 - 139				
2-Butanone	35700	2000	40000	0	89.3	56 - 143				
2-Chlorotoluene	23110	1000	20000	0	116	79 - 122				
2-Hexanone	42640	2000	40000	0	107	57 - 139				
4-Chlorotoluene	23370	1000	20000	0	117	78 - 122				
4-Isopropyltoluene	27250	1000	20000	0	136	77 - 127				S
4-Methyl-2-pentanone	43170	2000	40000	0	108	67 - 130				
Acetone	31430	2000	40000	0	78.6	39 - 160				
Benzene	20640	1000	20000	0	103	79 - 120				
Bromobenzene	21020	1000	20000	0	105	80 - 120				
Bromochloromethane	17050	1000	20000	0	85.3	78 - 123				
Bromodichloromethane	19030	1000	20000	0	95.1	79 - 125				
Bromoform	19580	1000	20000	0	97.9	66 - 130				
Bromomethane	21460	1000	20000	0	107	53 - 141				

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425904 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS23010472-04MS** Units: **ug/L** Analysis Date: **16-Jan-2023 15:45**
Client ID: Run ID: **VOA6_425904** SeqNo: **7075345** PrepDate: DF: **1000**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	41600	2000	40000	0	104	64 - 133				
Carbon tetrachloride	22960	1000	20000	0	115	72 - 136				
Chlorobenzene	20440	1000	20000	0	102	82 - 118				
Chloroethane	18820	1000	20000	0	94.1	60 - 138				
Chloroform	18610	1000	20000	0	93.1	79 - 124				
Chloromethane	20090	1000	20000	0	100	50 - 139				
cis-1,2-Dichloroethene	18160	1000	20000	0	90.8	78 - 123				
cis-1,3-Dichloropropene	19720	1000	20000	0	98.6	75 - 124				
Dibromochloromethane	19800	1000	20000	0	99.0	74 - 126				
Dibromomethane	18760	1000	20000	0	93.8	79 - 123				
Dichlorodifluoromethane	19510	1000	20000	0	97.5	32 - 152				
Ethylbenzene	22670	1000	20000	0	113	79 - 121				
Hexachlorobutadiene	26610	1000	20000	0	133	66 - 134				
Isopropylbenzene	24780	1000	20000	0	124	72 - 131				
m,p-Xylene	45010	2000	40000	0	113	80 - 121				
Methylene chloride	17780	2000	20000	0	88.9	74 - 124				
Naphthalene	22580	1000	20000	0	113	61 - 128				
n-Butylbenzene	26120	1000	20000	0	131	75 - 128				S
n-Propylbenzene	25860	1000	20000	0	129	76 - 126				S
o-Xylene	21340	1000	20000	0	107	78 - 122				
sec-Butylbenzene	27870	1000	20000	0	139	77 - 126				S
Styrene	21600	1000	20000	0	108	78 - 123				
tert-Butylbenzene	26130	1000	20000	0	131	78 - 124				S
Tetrachloroethene	24360	1000	20000	0	122	74 - 129				
Toluene	21830	1000	20000	0	109	80 - 121				
trans-1,2-Dichloroethene	19160	1000	20000	0	95.8	75 - 124				
trans-1,3-Dichloropropene	19840	1000	20000	0	99.2	73 - 127				
Trichloroethene	41020	1000	20000	19050	110	79 - 123				
Trichlorofluoromethane	23420	1000	20000	0	117	65 - 141				
Vinyl chloride	21090	1000	20000	0	105	58 - 137				
Surr: 1,2-Dichloroethane-d4	*47690*	*1000*	*50000*	*0*	*95.4*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50110*	*1000*	*50000*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*45100*	*1000*	*50000*	*0*	*90.2*	*80 - 119*				
Surr: Toluene-d8	*52560*	*1000*	*50000*	*0*	*105*	*89 - 112*				

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425904 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS23010472-04MSD** Units: **ug/L** Analysis Date: **16-Jan-2023 16:06**
Client ID: Run ID: **VOA6_425904** SeqNo: **7075346** PrepDate: DF: **1000**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19600	1000	20000	0	98.0	78 - 124	20120	2.63	20	
1,1,1-Trichloroethane	20430	1000	20000	0	102	74 - 131	21040	2.94	20	
1,1,2,2-Tetrachloroethane	19690	1000	20000	0	98.4	71 - 121	20320	3.13	20	
1,1,2-Trichloroethane	19440	1000	20000	0	97.2	80 - 119	19870	2.2	20	
1,1-Dichloroethane	18690	1000	20000	0	93.5	77 - 125	19110	2.22	20	
1,1-Dichloroethene	20300	1000	20000	0	101	71 - 131	21200	4.36	20	
1,1-Dichloropropene	22960	1000	20000	0	115	78 - 125	24480	6.41	20	
1,2,3-Trichlorobenzene	21440	1000	20000	0	107	69 - 129	22470	4.69	20	
1,2,3-Trichloropropane	20350	1000	20000	0	102	73 - 122	22630	10.6	20	
1,2,4-Trichlorobenzene	22440	1000	20000	0	112	69 - 130	23970	6.6	20	
1,2,4-Trimethylbenzene	22290	1000	20000	0	111	76 - 124	23490	5.22	20	
1,2-Dibromo-3-chloropropane	19450	1000	20000	0	97.3	62 - 128	20800	6.68	20	
1,2-Dibromoethane	20310	1000	20000	0	102	77 - 121	20540	1.15	20	
1,2-Dichlorobenzene	20340	1000	20000	0	102	80 - 119	21380	5	20	
1,2-Dichloroethane	20010	1000	20000	0	100	73 - 128	20480	2.34	20	
1,2-Dichloropropane	18960	1000	20000	0	94.8	78 - 122	18950	0.0389	20	
1,3,5-Trimethylbenzene	23310	1000	20000	0	117	75 - 124	24940	6.76	20	
1,3-Dichlorobenzene	21340	1000	20000	0	107	80 - 119	22530	5.41	20	
1,3-Dichloropropane	19990	1000	20000	0	99.9	80 - 119	20210	1.1	20	
1,4-Dichlorobenzene	20480	1000	20000	0	102	79 - 118	21780	6.19	20	
2,2-Dichloropropane	20370	1000	20000	0	102	60 - 139	20970	2.93	20	
2-Butanone	35030	2000	40000	0	87.6	56 - 143	35700	1.9	20	
2-Chlorotoluene	21330	1000	20000	0	107	79 - 122	23110	8.02	20	
2-Hexanone	41950	2000	40000	0	105	57 - 139	42640	1.63	20	
4-Chlorotoluene	21970	1000	20000	0	110	78 - 122	23370	6.16	20	
4-Isopropyltoluene	25370	1000	20000	0	127	77 - 127	27250	7.14	20	
4-Methyl-2-pentanone	43810	2000	40000	0	110	67 - 130	43170	1.49	20	
Acetone	30800	2000	40000	0	77.0	39 - 160	31430	2.02	20	
Benzene	19810	1000	20000	0	99.1	79 - 120	20640	4.07	20	
Bromobenzene	20180	1000	20000	0	101	80 - 120	21020	4.06	20	
Bromochloromethane	16610	1000	20000	0	83.0	78 - 123	17050	2.66	20	
Bromodichloromethane	18820	1000	20000	0	94.1	79 - 125	19030	1.11	20	
Bromoform	18950	1000	20000	0	94.8	66 - 130	19580	3.26	20	
Bromomethane	20590	1000	20000	0	103	53 - 141	21460	4.13	20	

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425904 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS23010472-04MSD** Units: **ug/L** Analysis Date: **16-Jan-2023 16:06**
Client ID: Run ID: **VOA6_425904** SeqNo: **7075346** PrepDate: DF: **1000**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	39550	2000	40000	0	98.9	64 - 133	41600	5.05	20	
Carbon tetrachloride	22160	1000	20000	0	111	72 - 136	22960	3.53	20	
Chlorobenzene	19930	1000	20000	0	99.7	82 - 118	20440	2.53	20	
Chloroethane	18540	1000	20000	0	92.7	60 - 138	18820	1.51	20	
Chloroform	18180	1000	20000	0	90.9	79 - 124	18610	2.35	20	
Chloromethane	19800	1000	20000	0	99.0	50 - 139	20090	1.45	20	
cis-1,2-Dichloroethene	17820	1000	20000	0	89.1	78 - 123	18160	1.89	20	
cis-1,3-Dichloropropene	19450	1000	20000	0	97.3	75 - 124	19720	1.37	20	
Dibromochloromethane	19040	1000	20000	0	95.2	74 - 126	19800	3.89	20	
Dibromomethane	18850	1000	20000	0	94.2	79 - 123	18760	0.476	20	
Dichlorodifluoromethane	18430	1000	20000	0	92.2	32 - 152	19510	5.67	20	
Ethylbenzene	21910	1000	20000	0	110	79 - 121	22670	3.41	20	
Hexachlorobutadiene	24420	1000	20000	0	122	66 - 134	26610	8.56	20	
Isopropylbenzene	23620	1000	20000	0	118	72 - 131	24780	4.79	20	
m,p-Xylene	42740	2000	40000	0	107	80 - 121	45010	5.16	20	
Methylene chloride	17530	2000	20000	0	87.7	74 - 124	17780	1.43	20	
Naphthalene	22160	1000	20000	0	111	61 - 128	22580	1.87	20	
n-Butylbenzene	24500	1000	20000	0	123	75 - 128	26120	6.39	20	
n-Propylbenzene	24480	1000	20000	0	122	76 - 126	25860	5.51	20	
o-Xylene	20950	1000	20000	0	105	78 - 122	21340	1.88	20	
sec-Butylbenzene	25860	1000	20000	0	129	77 - 126	27870	7.48	20	S
Styrene	21020	1000	20000	0	105	78 - 123	21600	2.74	20	
tert-Butylbenzene	24610	1000	20000	0	123	78 - 124	26130	6	20	
Tetrachloroethene	22910	1000	20000	0	115	74 - 129	24360	6.13	20	
Toluene	20990	1000	20000	0	105	80 - 121	21830	3.95	20	
trans-1,2-Dichloroethene	18870	1000	20000	0	94.4	75 - 124	19160	1.49	20	
trans-1,3-Dichloropropene	19530	1000	20000	0	97.6	73 - 127	19840	1.57	20	
Trichloroethene	38370	1000	20000	19050	96.6	79 - 123	41020	6.68	20	
Trichlorofluoromethane	22640	1000	20000	0	113	65 - 141	23420	3.39	20	
Vinyl chloride	20210	1000	20000	0	101	58 - 137	21090	4.22	20	
Surr: 1,2-Dichloroethane-d4	*47760*	*1000*	*50000*	*0*	*95.5*	*81 - 118*	*47690*	*0.137*	*20*	
Surr: 4-Bromofluorobenzene	*50630*	*1000*	*50000*	*0*	*101*	*85 - 114*	*50110*	*1.02*	*20*	
Surr: Dibromofluoromethane	*45380*	*1000*	*50000*	*0*	*90.8*	*80 - 119*	*45100*	*0.632*	*20*	
Surr: Toluene-d8	*52210*	*1000*	*50000*	*0*	*104*	*89 - 112*	*52560*	*0.659*	*20*	

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425904 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:	HS23010587-01	HS23010587-03	HS23010587-04	HS23010587-05

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425983 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-230117** Units: **ug/L** Analysis Date: **17-Jan-2023 12:25**
Client ID: Run ID: **VOA6_425983** SeqNo: **7076752** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	1.0	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	1.0	1.0								U
1,1-Dichloroethene	1.0	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	1.0	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	1.0	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	1.0	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	1.0	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	1.0	1.0								U
Bromodichloromethane	1.0	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425983 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-230117** Units: **ug/L** Analysis Date: **17-Jan-2023 12:25**
Client ID: Run ID: **VOA6_425983** SeqNo: **7076752** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	1.0	1.0								U
Chloromethane	1.0	1.0								U
cis-1,2-Dichloroethene	1.0	1.0								U
cis-1,3-Dichloropropene	1.0	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	1.0	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	1.0	1.0								U
trans-1,2-Dichloroethene	1.0	1.0								U
trans-1,3-Dichloropropene	1.0	1.0								U
Trichloroethene	1.0	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	1.0	1.0								U
Surr: 1,2-Dichloroethane-d4	*48.07*	*1.0*	*50*	*0*	*96.1*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.61*	*1.0*	*50*	*0*	*97.2*	*85 - 114*				
Surr: Dibromofluoromethane	*45.72*	*1.0*	*50*	*0*	*91.4*	*80 - 119*				
Surr: Toluene-d8	*53.53*	*1.0*	*50*	*0*	*107*	*89 - 112*				

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425983 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-230117** Units: **ug/L** Analysis Date: **17-Jan-2023 12:46**
Client ID: Run ID: **VOA6_425983** SeqNo: **7076753** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.47	1.0	20	0	102	78 - 124				
1,1,1-Trichloroethane	21.87	1.0	20	0	109	74 - 131				
1,1,2,2-Tetrachloroethane	21.47	1.0	20	0	107	71 - 121				
1,1,2-Trichloroethane	21.26	1.0	20	0	106	80 - 119				
1,1-Dichloroethane	20.5	1.0	20	0	103	77 - 125				
1,1-Dichloroethene	22	1.0	20	0	110	71 - 131				
1,1-Dichloropropene	23.46	1.0	20	0	117	78 - 125				
1,2,3-Trichlorobenzene	23.91	1.0	20	0	120	69 - 129				
1,2,3-Trichloropropane	22.64	1.0	20	0	113	73 - 122				
1,2,4-Trichlorobenzene	23.94	1.0	20	0	120	69 - 130				
1,2,4-Trimethylbenzene	22.04	1.0	20	0	110	76 - 124				
1,2-Dibromo-3-chloropropane	23.47	1.0	20	0	117	62 - 128				
1,2-Dibromoethane	21.91	1.0	20	0	110	77 - 121				
1,2-Dichlorobenzene	21.25	1.0	20	0	106	80 - 119				
1,2-Dichloroethane	22.37	1.0	20	0	112	73 - 128				
1,2-Dichloropropane	20.69	1.0	20	0	103	78 - 122				
1,3,5-Trimethylbenzene	22.78	1.0	20	0	114	75 - 124				
1,3-Dichlorobenzene	21.6	1.0	20	0	108	80 - 119				
1,3-Dichloropropane	21.3	1.0	20	0	106	80 - 119				
1,4-Dichlorobenzene	21.22	1.0	20	0	106	79 - 118				
2,2-Dichloropropane	22.14	1.0	20	0	111	60 - 139				
2-Butanone	49.02	2.0	40	0	123	56 - 143				
2-Chlorotoluene	21.68	1.0	20	0	108	79 - 122				
2-Hexanone	52.68	2.0	40	0	132	57 - 139				
4-Chlorotoluene	21.96	1.0	20	0	110	78 - 122				
4-Isopropyltoluene	24.42	1.0	20	0	122	77 - 127				
4-Methyl-2-pentanone	50.81	2.0	40	0	127	67 - 130				
Acetone	51.8	2.0	40	0	130	39 - 160				
Benzene	21.39	1.0	20	0	107	79 - 120				
Bromobenzene	20.25	1.0	20	0	101	80 - 120				
Bromochloromethane	19.22	1.0	20	0	96.1	78 - 123				
Bromodichloromethane	20.2	1.0	20	0	101	79 - 125				
Bromoform	20.62	1.0	20	0	103	66 - 130				
Bromomethane	22.56	1.0	20	0	113	53 - 141				

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425983 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-230117** Units: **ug/L** Analysis Date: **17-Jan-2023 12:46**
Client ID: Run ID: **VOA6_425983** SeqNo: **7076753** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	42.97	2.0	40	0	107	64 - 133				
Carbon tetrachloride	21.74	1.0	20	0	109	72 - 136				
Chlorobenzene	20.84	1.0	20	0	104	82 - 118				
Chloroethane	20.55	1.0	20	0	103	60 - 138				
Chloroform	20.35	1.0	20	0	102	79 - 124				
Chloromethane	23.51	1.0	20	0	118	50 - 139				
cis-1,2-Dichloroethene	19.66	1.0	20	0	98.3	78 - 123				
cis-1,3-Dichloropropene	20.94	1.0	20	0	105	75 - 124				
Dibromochloromethane	20.68	1.0	20	0	103	74 - 126				
Dibromomethane	20.79	1.0	20	0	104	79 - 123				
Dichlorodifluoromethane	24.52	1.0	20	0	123	32 - 152				
Ethylbenzene	22.17	1.0	20	0	111	79 - 121				
Hexachlorobutadiene	25.59	1.0	20	0	128	66 - 134				
Isopropylbenzene	23.05	1.0	20	0	115	72 - 131				
m,p-Xylene	43.25	2.0	40	0	108	80 - 121				
Methylene chloride	20.35	2.0	20	0	102	74 - 124				
Naphthalene	24.46	1.0	20	0	122	61 - 128				
n-Butylbenzene	23.73	1.0	20	0	119	75 - 128				
n-Propylbenzene	23.29	1.0	20	0	116	76 - 126				
o-Xylene	20.99	1.0	20	0	105	78 - 122				
sec-Butylbenzene	24.36	1.0	20	0	122	77 - 126				
Styrene	21.75	1.0	20	0	109	78 - 123				
tert-Butylbenzene	23.47	1.0	20	0	117	78 - 124				
Tetrachloroethene	22.38	1.0	20	0	112	74 - 129				
Toluene	21.55	1.0	20	0	108	80 - 121				
trans-1,2-Dichloroethene	21.25	1.0	20	0	106	75 - 124				
trans-1,3-Dichloropropene	21.82	1.0	20	0	109	73 - 127				
Trichloroethene	21.71	1.0	20	0	109	79 - 123				
Trichlorofluoromethane	23.55	1.0	20	0	118	65 - 141				
Vinyl chloride	22.71	1.0	20	0	114	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.54*	*1.0*	*50*	*0*	*105*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.55*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*47.97*	*1.0*	*50*	*0*	*95.9*	*80 - 119*				
Surr: Toluene-d8	*50.01*	*1.0*	*50*	*0*	*100*	*89 - 112*				

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425983 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS23010472-04MS** Units: **ug/L** Analysis Date: **17-Jan-2023 16:37**
Client ID: Run ID: **VOA6_425983** SeqNo: **7076762** PrepDate: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1076	50	1000	0	108	78 - 124				
1,1,1-Trichloroethane	1110	50	1000	0	111	74 - 131				
1,1,2,2-Tetrachloroethane	1068	50	1000	0	107	71 - 121				
1,1,2-Trichloroethane	1040	50	1000	0	104	80 - 119				
1,1-Dichloroethane	995.5	50	1000	0	99.5	77 - 125				
1,1-Dichloroethene	1148	50	1000	0	115	71 - 131				
1,1-Dichloropropene	1282	50	1000	0	128	78 - 125				S
1,2,3-Trichlorobenzene	1179	50	1000	0	118	69 - 129				
1,2,3-Trichloropropane	1191	50	1000	0	119	73 - 122				
1,2,4-Trichlorobenzene	1232	50	1000	0	123	69 - 130				
1,2,4-Trimethylbenzene	1249	50	1000	0	125	76 - 124				S
1,2-Dibromo-3-chloropropane	1117	50	1000	0	112	62 - 128				
1,2-Dibromoethane	1065	50	1000	0	107	77 - 121				
1,2-Dichlorobenzene	1141	50	1000	0	114	80 - 119				
1,2-Dichloroethane	1056	50	1000	0	106	73 - 128				
1,2-Dichloropropane	1024	50	1000	0	102	78 - 122				
1,3,5-Trimethylbenzene	1322	50	1000	0	132	75 - 124				S
1,3-Dichlorobenzene	1204	50	1000	0	120	80 - 119				S
1,3-Dichloropropane	1062	50	1000	0	106	80 - 119				
1,4-Dichlorobenzene	1157	50	1000	0	116	79 - 118				
2,2-Dichloropropane	1083	50	1000	0	108	60 - 139				
2-Butanone	1799	100	2000	0	89.9	56 - 143				
2-Chlorotoluene	1236	50	1000	0	124	79 - 122				S
2-Hexanone	2197	100	2000	0	110	57 - 139				
4-Chlorotoluene	1241	50	1000	0	124	78 - 122				S
4-Isopropyltoluene	1451	50	1000	0	145	77 - 127				S
4-Methyl-2-pentanone	2243	100	2000	0	112	67 - 130				
Acetone	1626	100	2000	0	81.3	39 - 160				
Benzene	1087	50	1000	0	109	79 - 120				
Bromobenzene	1116	50	1000	0	112	80 - 120				
Bromochloromethane	892.4	50	1000	0	89.2	78 - 123				
Bromodichloromethane	1001	50	1000	0	100	79 - 125				
Bromoform	1007	50	1000	0	101	66 - 130				
Bromomethane	1115	50	1000	0	111	53 - 141				

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425983 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS23010472-04MS** Units: **ug/L** Analysis Date: **17-Jan-2023 16:37**
Client ID: Run ID: **VOA6_425983** SeqNo: **7076762** PrepDate: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	2196	100	2000	0	110	64 - 133				
Carbon tetrachloride	1203	50	1000	0	120	72 - 136				
Chlorobenzene	1079	50	1000	0	108	82 - 118				
Chloroethane	1003	50	1000	0	100	60 - 138				
Chloroform	985.1	50	1000	0	98.5	79 - 124				
Chloromethane	1065	50	1000	0	106	50 - 139				
cis-1,2-Dichloroethene	991.1	50	1000	0	99.1	78 - 123				
cis-1,3-Dichloropropene	1016	50	1000	0	102	75 - 124				
Dibromochloromethane	1022	50	1000	0	102	74 - 126				
Dibromomethane	987.5	50	1000	0	98.8	79 - 123				
Dichlorodifluoromethane	976.9	50	1000	0	97.7	32 - 152				
Ethylbenzene	1227	50	1000	0	123	79 - 121				S
Hexachlorobutadiene	1385	50	1000	0	138	66 - 134				S
Isopropylbenzene	1312	50	1000	0	131	72 - 131				S
m,p-Xylene	2354	100	2000	0	118	80 - 121				
Methylene chloride	939.5	100	1000	0	93.9	74 - 124				
Naphthalene	1180	50	1000	0	118	61 - 128				
n-Butylbenzene	1353	50	1000	0	135	75 - 128				S
n-Propylbenzene	1369	50	1000	0	137	76 - 126				S
o-Xylene	1143	50	1000	0	114	78 - 122				
sec-Butylbenzene	1472	50	1000	0	147	77 - 126				S
Styrene	1150	50	1000	0	115	78 - 123				
tert-Butylbenzene	1406	50	1000	0	141	78 - 124				S
Tetrachloroethene	1364	50	1000	96.51	127	74 - 129				
Toluene	1148	50	1000	0	115	80 - 121				
trans-1,2-Dichloroethene	1032	50	1000	0	103	75 - 124				
trans-1,3-Dichloropropene	1025	50	1000	0	103	73 - 127				
Trichloroethene	20380	50	1000	18710	167	79 - 123				SEO
Trichlorofluoromethane	1247	50	1000	0	125	65 - 141				
Vinyl chloride	1103	50	1000	0	110	58 - 137				
Surr: 1,2-Dichloroethane-d4	*2280*	*50*	*2500*	*0*	*91.2*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*2474*	*50*	*2500*	*0*	*98.9*	*85 - 114*				
Surr: Dibromofluoromethane	*2260*	*50*	*2500*	*0*	*90.4*	*80 - 119*				
Surr: Toluene-d8	*2625*	*50*	*2500*	*0*	*105*	*89 - 112*				

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425983 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS23010472-04MSD** Units: **ug/L** Analysis Date: **17-Jan-2023 16:58**
Client ID: Run ID: **VOA6_425983** SeqNo: **7076763** PrepDate: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	950.9	50	1000	0	95.1	78 - 124	1076	12.3	20	
1,1,1-Trichloroethane	978.4	50	1000	0	97.8	74 - 131	1110	12.6	20	
1,1,2,2-Tetrachloroethane	969.6	50	1000	0	97.0	71 - 121	1068	9.62	20	
1,1,2-Trichloroethane	932.4	50	1000	0	93.2	80 - 119	1040	10.9	20	
1,1-Dichloroethane	860.4	50	1000	0	86.0	77 - 125	995.5	14.6	20	
1,1-Dichloroethene	962.5	50	1000	0	96.3	71 - 131	1148	17.6	20	
1,1-Dichloropropene	1133	50	1000	0	113	78 - 125	1282	12.3	20	
1,2,3-Trichlorobenzene	1089	50	1000	0	109	69 - 129	1179	7.87	20	
1,2,3-Trichloropropane	1012	50	1000	0	101	73 - 122	1191	16.3	20	
1,2,4-Trichlorobenzene	1134	50	1000	0	113	69 - 130	1232	8.29	20	
1,2,4-Trimethylbenzene	1106	50	1000	0	111	76 - 124	1249	12.1	20	
1,2-Dibromo-3-chloropropane	977.4	50	1000	0	97.7	62 - 128	1117	13.3	20	
1,2-Dibromoethane	970.1	50	1000	0	97.0	77 - 121	1065	9.33	20	
1,2-Dichlorobenzene	1023	50	1000	0	102	80 - 119	1141	10.9	20	
1,2-Dichloroethane	941.6	50	1000	0	94.2	73 - 128	1056	11.5	20	
1,2-Dichloropropane	922	50	1000	0	92.2	78 - 122	1024	10.5	20	
1,3,5-Trimethylbenzene	1159	50	1000	0	116	75 - 124	1322	13.1	20	
1,3-Dichlorobenzene	1055	50	1000	0	105	80 - 119	1204	13.2	20	
1,3-Dichloropropane	974.5	50	1000	0	97.4	80 - 119	1062	8.6	20	
1,4-Dichlorobenzene	1024	50	1000	0	102	79 - 118	1157	12.3	20	
2,2-Dichloropropane	916.1	50	1000	0	91.6	60 - 139	1083	16.7	20	
2-Butanone	1671	100	2000	0	83.5	56 - 143	1799	7.36	20	
2-Chlorotoluene	1082	50	1000	0	108	79 - 122	1236	13.3	20	
2-Hexanone	2034	100	2000	0	102	57 - 139	2197	7.71	20	
4-Chlorotoluene	1091	50	1000	0	109	78 - 122	1241	12.9	20	
4-Isopropyltoluene	1259	50	1000	0	126	77 - 127	1451	14.1	20	
4-Methyl-2-pentanone	2039	100	2000	0	102	67 - 130	2243	9.52	20	
Acetone	1533	100	2000	0	76.6	39 - 160	1626	5.92	20	
Benzene	953.2	50	1000	0	95.3	79 - 120	1087	13.1	20	
Bromobenzene	1006	50	1000	0	101	80 - 120	1116	10.3	20	
Bromochloromethane	803.1	50	1000	0	80.3	78 - 123	892.4	10.5	20	
Bromodichloromethane	892.6	50	1000	0	89.3	79 - 125	1001	11.4	20	
Bromoform	924	50	1000	0	92.4	66 - 130	1007	8.59	20	
Bromomethane	953.4	50	1000	0	95.3	53 - 141	1115	15.6	20	

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425983 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS23010472-04MSD** Units: **ug/L** Analysis Date: **17-Jan-2023 16:58**
Client ID: Run ID: **VOA6_425983** SeqNo: **7076763** PrepDate: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	1865	100	2000	0	93.2	64 - 133	2196	16.3	20	
Carbon tetrachloride	1054	50	1000	0	105	72 - 136	1203	13.2	20	
Chlorobenzene	962.8	50	1000	0	96.3	82 - 118	1079	11.4	20	
Chloroethane	888	50	1000	0	88.8	60 - 138	1003	12.2	20	
Chloroform	854.6	50	1000	0	85.5	79 - 124	985.1	14.2	20	
Chloromethane	926.1	50	1000	0	92.6	50 - 139	1065	13.9	20	
cis-1,2-Dichloroethene	860.7	50	1000	0	86.1	78 - 123	991.1	14.1	20	
cis-1,3-Dichloropropene	907.5	50	1000	0	90.8	75 - 124	1016	11.3	20	
Dibromochloromethane	949.3	50	1000	0	94.9	74 - 126	1022	7.37	20	
Dibromomethane	905.4	50	1000	0	90.5	79 - 123	987.5	8.67	20	
Dichlorodifluoromethane	857.6	50	1000	0	85.8	32 - 152	976.9	13	20	
Ethylbenzene	1060	50	1000	0	106	79 - 121	1227	14.5	20	
Hexachlorobutadiene	1246	50	1000	0	125	66 - 134	1385	10.6	20	
Isopropylbenzene	1154	50	1000	0	115	72 - 131	1312	12.8	20	
m,p-Xylene	2091	100	2000	0	105	80 - 121	2354	11.8	20	
Methylene chloride	835.9	100	1000	0	83.6	74 - 124	939.5	11.7	20	
Naphthalene	1106	50	1000	0	111	61 - 128	1180	6.48	20	
n-Butylbenzene	1213	50	1000	0	121	75 - 128	1353	10.9	20	
n-Propylbenzene	1190	50	1000	0	119	76 - 126	1369	14	20	
o-Xylene	1023	50	1000	0	102	78 - 122	1143	11	20	
sec-Butylbenzene	1290	50	1000	0	129	77 - 126	1472	13.2	20	S
Styrene	1018	50	1000	0	102	78 - 123	1150	12.2	20	
tert-Butylbenzene	1223	50	1000	0	122	78 - 124	1406	14	20	
Tetrachloroethene	1201	50	1000	96.51	110	74 - 129	1364	12.7	20	
Toluene	1009	50	1000	0	101	80 - 121	1148	12.9	20	
trans-1,2-Dichloroethene	864.2	50	1000	0	86.4	75 - 124	1032	17.7	20	
trans-1,3-Dichloropropene	934.5	50	1000	0	93.4	73 - 127	1025	9.25	20	
Trichloroethene	19360	50	1000	18710	65.3	79 - 123	20380	5.1	20	SEO
Trichlorofluoromethane	1074	50	1000	0	107	65 - 141	1247	14.9	20	
Vinyl chloride	952.3	50	1000	0	95.2	58 - 137	1103	14.7	20	
Surr: 1,2-Dichloroethane-d4	*2340*	*50*	*2500*	*0*	*93.6*	*81 - 118*	*2280*	*2.61*	*20*	
Surr: 4-Bromofluorobenzene	*2483*	*50*	*2500*	*0*	*99.3*	*85 - 114*	*2474*	*0.369*	*20*	
Surr: Dibromofluoromethane	*2205*	*50*	*2500*	*0*	*88.2*	*80 - 119*	*2260*	*2.45*	*20*	
Surr: Toluene-d8	*2621*	*50*	*2500*	*0*	*105*	*89 - 112*	*2625*	*0.181*	*20*	

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID:	R425983 (0)	Instrument:	VOA6	Method:	VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch: HS23010587-02 HS23010587-06 HS23010587-07

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R426067 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-230118** Units: **ug/L** Analysis Date: **18-Jan-2023 13:12**
Client ID: Run ID: **VOA6_426067** SeqNo: **7078506** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	1.0	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	1.0	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	1.0	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	1.0	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	1.0	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	1.0	1.0								U
Bromodichloromethane	1.0	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	1.0	1.0								U

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R426067 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-230118** Units: **ug/L** Analysis Date: **18-Jan-2023 13:12**
Client ID: Run ID: **VOA6_426067** SeqNo: **7078506** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	1.0	1.0								U
Chloromethane	1.0	1.0								U
cis-1,2-Dichloroethene	1.0	1.0								U
cis-1,3-Dichloropropene	1.0	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	1.0	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	1.0	1.0								U
trans-1,2-Dichloroethene	1.0	1.0								U
trans-1,3-Dichloropropene	1.0	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Surr: 1,2-Dichloroethane-d4	*48.48*	*1.0*	*50*	*0*	*97.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.28*	*1.0*	*50*	*0*	*98.6*	*85 - 114*				
Surr: Dibromofluoromethane	*45.75*	*1.0*	*50*	*0*	*91.5*	*80 - 119*				
Surr: Toluene-d8	*52.8*	*1.0*	*50*	*0*	*106*	*89 - 112*				

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R426067 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-230118** Units: **ug/L** Analysis Date: **18-Jan-2023 12:30**
Client ID: Run ID: **VOA6_426067** SeqNo: **7078505** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.77	1.0	20	0	104	78 - 124				
1,1,1-Trichloroethane	21.01	1.0	20	0	105	74 - 131				
1,1,2,2-Tetrachloroethane	21.43	1.0	20	0	107	71 - 121				
1,1,2-Trichloroethane	21.15	1.0	20	0	106	80 - 119				
1,1-Dichloropropene	22.47	1.0	20	0	112	78 - 125				
1,2,3-Trichlorobenzene	25.36	1.0	20	0	127	69 - 129				
1,2,3-Trichloropropane	23.58	1.0	20	0	118	73 - 122				
1,2,4-Trichlorobenzene	25.83	1.0	20	0	129	69 - 130				
1,2,4-Trimethylbenzene	22.74	1.0	20	0	114	76 - 124				
1,2-Dibromo-3-chloropropane	21.78	1.0	20	0	109	62 - 128				
1,2-Dibromoethane	22.22	1.0	20	0	111	77 - 121				
1,2-Dichlorobenzene	21.68	1.0	20	0	108	80 - 119				
1,2-Dichloroethane	22.87	1.0	20	0	114	73 - 128				
1,2-Dichloropropane	20.92	1.0	20	0	105	78 - 122				
1,3,5-Trimethylbenzene	23.36	1.0	20	0	117	75 - 124				
1,3-Dichlorobenzene	22.35	1.0	20	0	112	80 - 119				
1,3-Dichloropropane	21.46	1.0	20	0	107	80 - 119				
1,4-Dichlorobenzene	21.88	1.0	20	0	109	79 - 118				
2,2-Dichloropropane	21.63	1.0	20	0	108	60 - 139				
2-Butanone	46.88	2.0	40	0	117	56 - 143				
2-Chlorotoluene	22.04	1.0	20	0	110	79 - 122				
2-Hexanone	50.84	2.0	40	0	127	57 - 139				
4-Chlorotoluene	22.69	1.0	20	0	113	78 - 122				
4-Isopropyltoluene	24.71	1.0	20	0	124	77 - 127				
4-Methyl-2-pentanone	47.52	2.0	40	0	119	67 - 130				
Acetone	52.35	2.0	40	0	131	39 - 160				
Benzene	20.98	1.0	20	0	105	79 - 120				
Bromobenzene	20.53	1.0	20	0	103	80 - 120				
Bromochloromethane	19.55	1.0	20	0	97.8	78 - 123				
Bromodichloromethane	20.35	1.0	20	0	102	79 - 125				
Bromoform	20.55	1.0	20	0	103	66 - 130				
Bromomethane	20.63	1.0	20	0	103	53 - 141				
Carbon disulfide	41.25	2.0	40	0	103	64 - 133				
Carbon tetrachloride	20.27	1.0	20	0	101	72 - 136				

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R426067 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-230118** Units: **ug/L** Analysis Date: **18-Jan-2023 12:30**
Client ID: Run ID: **VOA6_426067** SeqNo: **7078505** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chlorobenzene	20.44	1.0	20	0	102	82 - 118				
Chloroethane	19.12	1.0	20	0	95.6	60 - 138				
Chloroform	20.54	1.0	20	0	103	79 - 124				
Chloromethane	20.73	1.0	20	0	104	50 - 139				
cis-1,2-Dichloroethene	19.69	1.0	20	0	98.4	78 - 123				
cis-1,3-Dichloropropene	21.19	1.0	20	0	106	75 - 124				
Dibromochloromethane	20.88	1.0	20	0	104	74 - 126				
Dibromomethane	21.16	1.0	20	0	106	79 - 123				
Dichlorodifluoromethane	17.91	1.0	20	0	89.5	32 - 152				
Ethylbenzene	21.73	1.0	20	0	109	79 - 121				
Hexachlorobutadiene	26.81	1.0	20	0	134	66 - 134				S
Isopropylbenzene	22.96	1.0	20	0	115	72 - 131				
m,p-Xylene	43.1	2.0	40	0	108	80 - 121				
Methylene chloride	20.62	2.0	20	0	103	74 - 124				
Naphthalene	25.56	1.0	20	0	128	61 - 128				
n-Butylbenzene	24.2	1.0	20	0	121	75 - 128				
n-Propylbenzene	23.44	1.0	20	0	117	76 - 126				
o-Xylene	21.28	1.0	20	0	106	78 - 122				
sec-Butylbenzene	24.35	1.0	20	0	122	77 - 126				
Styrene	21.81	1.0	20	0	109	78 - 123				
tert-Butylbenzene	23.28	1.0	20	0	116	78 - 124				
Tetrachloroethene	21.64	1.0	20	0	108	74 - 129				
Toluene	21.06	1.0	20	0	105	80 - 121				
trans-1,2-Dichloroethene	20.02	1.0	20	0	100	75 - 124				
trans-1,3-Dichloropropene	21.62	1.0	20	0	108	73 - 127				
Trichlorofluoromethane	20.91	1.0	20	0	105	65 - 141				
Surr: 1,2-Dichloroethane-d4	*54.17*	*1.0*	*50*	*0*	*108*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.94*	*1.0*	*50*	*0*	*99.9*	*85 - 114*				
Surr: Dibromofluoromethane	*48.9*	*1.0*	*50*	*0*	*97.8*	*80 - 119*				
Surr: Toluene-d8	*49.77*	*1.0*	*50*	*0*	*99.5*	*89 - 112*				

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R426067 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS23010794-01MS** Units: **ug/L** Analysis Date: **18-Jan-2023 15:18**
Client ID: Run ID: **VOA6_426067** SeqNo: **7078512** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.74	1.0	20	0	104	78 - 124				
1,1,1-Trichloroethane	21.71	1.0	20	0	109	74 - 131				
1,1,2,2-Tetrachloroethane	20.76	1.0	20	0	104	71 - 121				
1,1,2-Trichloroethane	20.13	1.0	20	0	101	80 - 119				
1,1-Dichloropropene	24.95	1.0	20	0	125	78 - 125				
1,2,3-Trichlorobenzene	23.45	1.0	20	0	117	69 - 129				
1,2,3-Trichloropropane	20.98	1.0	20	0	105	73 - 122				
1,2,4-Trichlorobenzene	23.93	1.0	20	0	120	69 - 130				
1,2,4-Trimethylbenzene	24.37	1.0	20	0	122	76 - 124				
1,2-Dibromo-3-chloropropane	20.19	1.0	20	0	101	62 - 128				
1,2-Dibromoethane	20.49	1.0	20	0	102	77 - 121				
1,2-Dichlorobenzene	22.35	1.0	20	0	112	80 - 119				
1,2-Dichloroethane	20.91	1.0	20	0	105	73 - 128				
1,2-Dichloropropane	19.83	1.0	20	0	99.2	78 - 122				
1,3,5-Trimethylbenzene	25.65	1.0	20	0	128	75 - 124				S
1,3-Dichlorobenzene	23.53	1.0	20	0	118	80 - 119				
1,3-Dichloropropane	20.69	1.0	20	0	103	80 - 119				
1,4-Dichlorobenzene	22.59	1.0	20	0	113	79 - 118				
2,2-Dichloropropane	21.64	1.0	20	0	108	60 - 139				
2-Butanone	34.38	2.0	40	0	85.9	56 - 143				
2-Chlorotoluene	23.9	1.0	20	0	120	79 - 122				
2-Hexanone	42.18	2.0	40	0	105	57 - 139				
4-Chlorotoluene	24.17	1.0	20	0	121	78 - 122				
4-Isopropyltoluene	28.2	1.0	20	0	141	77 - 127				S
4-Methyl-2-pentanone	41.93	2.0	40	0	105	67 - 130				
Acetone	30.42	2.0	40	0	76.1	39 - 160				
Benzene	21.19	1.0	20	0	106	79 - 120				
Bromobenzene	21.37	1.0	20	0	107	80 - 120				
Bromochloromethane	17.31	1.0	20	0	86.6	78 - 123				
Bromodichloromethane	19.35	1.0	20	0	96.7	79 - 125				
Bromoform	19.25	1.0	20	0	96.2	66 - 130				
Bromomethane	20.41	1.0	20	0	102	53 - 141				
Carbon disulfide	42.92	2.0	40	0	107	64 - 133				
Carbon tetrachloride	23.62	1.0	20	0	118	72 - 136				

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R426067 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS23010794-01MS** Units: **ug/L** Analysis Date: **18-Jan-2023 15:18**
Client ID: Run ID: **VOA6_426067** SeqNo: **7078512** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chlorobenzene	21.22	1.0	20	0	106	82 - 118				
Chloroethane	19.62	1.0	20	0	98.1	60 - 138				
Chloroform	19.17	1.0	20	0	95.9	79 - 124				
Chloromethane	20.63	1.0	20	0	103	50 - 139				
cis-1,2-Dichloroethene	18.98	1.0	20	0	94.9	78 - 123				
cis-1,3-Dichloropropene	19.85	1.0	20	0	99.2	75 - 124				
Dibromochloromethane	19.87	1.0	20	0	99.4	74 - 126				
Dibromomethane	19.04	1.0	20	0	95.2	79 - 123				
Dichlorodifluoromethane	19.61	1.0	20	0	98.0	32 - 152				
Ethylbenzene	23.49	1.0	20	0	117	79 - 121				
Hexachlorobutadiene	26.98	1.0	20	0	135	66 - 134				S
Isopropylbenzene	25.46	1.0	20	0	127	72 - 131				
m,p-Xylene	46.04	2.0	40	0	115	80 - 121				
Methylene chloride	17.86	2.0	20	0	89.3	74 - 124				
Naphthalene	22.81	1.0	20	0	114	61 - 128				
n-Butylbenzene	26.78	1.0	20	0	134	75 - 128				S
n-Propylbenzene	26.69	1.0	20	0	133	76 - 126				S
o-Xylene	22.48	1.0	20	0	112	78 - 122				
sec-Butylbenzene	28.6	1.0	20	0	143	77 - 126				S
Styrene	22.51	1.0	20	0	113	78 - 123				
tert-Butylbenzene	26.92	1.0	20	0	135	78 - 124				S
Tetrachloroethene	25.05	1.0	20	0	125	74 - 129				
Toluene	22.31	1.0	20	0	112	80 - 121				
trans-1,2-Dichloroethene	20.03	1.0	20	0	100	75 - 124				
trans-1,3-Dichloropropene	19.8	1.0	20	0	99.0	73 - 127				
Trichlorofluoromethane	24.37	1.0	20	0	122	65 - 141				
Surr: 1,2-Dichloroethane-d4	*46.79*	*1.0*	*50*	*0*	*93.6*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.15*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*45.54*	*1.0*	*50*	*0*	*91.1*	*80 - 119*				
Surr: Toluene-d8	*52.54*	*1.0*	*50*	*0*	*105*	*89 - 112*				

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R426067 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS23010794-01MSD** Units: **ug/L** Analysis Date: **18-Jan-2023 15:39**
Client ID: Run ID: **VOA6_426067** SeqNo: **7078513** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.63	1.0	20	0	98.2	78 - 124	20.74	5.47	20	
1,1,1-Trichloroethane	20.45	1.0	20	0	102	74 - 131	21.71	5.95	20	
1,1,2,2-Tetrachloroethane	19.4	1.0	20	0	97.0	71 - 121	20.76	6.76	20	
1,1,2-Trichloroethane	19.5	1.0	20	0	97.5	80 - 119	20.13	3.17	20	
1,1-Dichloropropene	22.87	1.0	20	0	114	78 - 125	24.95	8.69	20	
1,2,3-Trichlorobenzene	21.66	1.0	20	0	108	69 - 129	23.45	7.95	20	
1,2,3-Trichloropropane	20.24	1.0	20	0	101	73 - 122	20.98	3.57	20	
1,2,4-Trichlorobenzene	22.54	1.0	20	0	113	69 - 130	23.93	6.01	20	
1,2,4-Trimethylbenzene	22.59	1.0	20	0	113	76 - 124	24.37	7.58	20	
1,2-Dibromo-3-chloropropane	19.44	1.0	20	0	97.2	62 - 128	20.19	3.77	20	
1,2-Dibromoethane	20.11	1.0	20	0	101	77 - 121	20.49	1.86	20	
1,2-Dichlorobenzene	20.77	1.0	20	0	104	80 - 119	22.35	7.34	20	
1,2-Dichloroethane	20.5	1.0	20	0	102	73 - 128	20.91	2.01	20	
1,2-Dichloropropane	19.32	1.0	20	0	96.6	78 - 122	19.83	2.63	20	
1,3,5-Trimethylbenzene	23.65	1.0	20	0	118	75 - 124	25.65	8.14	20	
1,3-Dichlorobenzene	21.38	1.0	20	0	107	80 - 119	23.53	9.57	20	
1,3-Dichloropropane	19.7	1.0	20	0	98.5	80 - 119	20.69	4.88	20	
1,4-Dichlorobenzene	21.06	1.0	20	0	105	79 - 118	22.59	7.01	20	
2,2-Dichloropropane	20.39	1.0	20	0	102	60 - 139	21.64	5.97	20	
2-Butanone	34.34	2.0	40	0	85.9	56 - 143	34.38	0.0934	20	
2-Chlorotoluene	22.04	1.0	20	0	110	79 - 122	23.9	8.08	20	
2-Hexanone	41.31	2.0	40	0	103	57 - 139	42.18	2.09	20	
4-Chlorotoluene	22.37	1.0	20	0	112	78 - 122	24.17	7.75	20	
4-Isopropyltoluene	25.57	1.0	20	0	128	77 - 127	28.2	9.79	20	S
4-Methyl-2-pentanone	41.85	2.0	40	0	105	67 - 130	41.93	0.194	20	
Acetone	30.42	2.0	40	0	76.0	39 - 160	30.42	0.0147	20	
Benzene	19.84	1.0	20	0	99.2	79 - 120	21.19	6.59	20	
Bromobenzene	20.12	1.0	20	0	101	80 - 120	21.37	6.03	20	
Bromochloromethane	16.7	1.0	20	0	83.5	78 - 123	17.31	3.61	20	
Bromodichloromethane	18.93	1.0	20	0	94.7	79 - 125	19.35	2.16	20	
Bromoform	18.51	1.0	20	0	92.5	66 - 130	19.25	3.91	20	
Bromomethane	19.8	1.0	20	0	99.0	53 - 141	20.41	3.02	20	
Carbon disulfide	40.07	2.0	40	0	100	64 - 133	42.92	6.87	20	
Carbon tetrachloride	21.96	1.0	20	0	110	72 - 136	23.62	7.31	20	

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R426067 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS23010794-01MSD** Units: **ug/L** Analysis Date: **18-Jan-2023 15:39**
Client ID: Run ID: **VOA6_426067** SeqNo: **7078513** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Chlorobenzene	19.79	1.0	20	0	98.9	82 - 118	21.22	6.98	20	
Chloroethane	18.35	1.0	20	0	91.7	60 - 138	19.62	6.71	20	
Chloroform	18.25	1.0	20	0	91.2	79 - 124	19.17	4.94	20	
Chloromethane	18.98	1.0	20	0	94.9	50 - 139	20.63	8.32	20	
cis-1,2-Dichloroethene	17.81	1.0	20	0	89.0	78 - 123	18.98	6.37	20	
cis-1,3-Dichloropropene	19.1	1.0	20	0	95.5	75 - 124	19.85	3.84	20	
Dibromochloromethane	19.23	1.0	20	0	96.1	74 - 126	19.87	3.3	20	
Dibromomethane	18.73	1.0	20	0	93.6	79 - 123	19.04	1.65	20	
Dichlorodifluoromethane	17.82	1.0	20	0	89.1	32 - 152	19.61	9.56	20	
Ethylbenzene	22.15	1.0	20	0	111	79 - 121	23.49	5.88	20	
Hexachlorobutadiene	24.69	1.0	20	0	123	66 - 134	26.98	8.88	20	
Isopropylbenzene	23.64	1.0	20	0	118	72 - 131	25.46	7.4	20	
m,p-Xylene	43.36	2.0	40	0	108	80 - 121	46.04	5.99	20	
Methylene chloride	16.88	2.0	20	0	84.4	74 - 124	17.86	5.67	20	
Naphthalene	21.6	1.0	20	0	108	61 - 128	22.81	5.47	20	
n-Butylbenzene	25.01	1.0	20	0	125	75 - 128	26.78	6.83	20	
n-Propylbenzene	24.51	1.0	20	0	123	76 - 126	26.69	8.49	20	
o-Xylene	20.71	1.0	20	0	104	78 - 122	22.48	8.24	20	
sec-Butylbenzene	26.26	1.0	20	0	131	77 - 126	28.6	8.53	20	S
Styrene	20.99	1.0	20	0	105	78 - 123	22.51	7	20	
tert-Butylbenzene	24.76	1.0	20	0	124	78 - 124	26.92	8.36	20	
Tetrachloroethene	23.15	1.0	20	0	116	74 - 129	25.05	7.9	20	
Toluene	20.83	1.0	20	0	104	80 - 121	22.31	6.87	20	
trans-1,2-Dichloroethene	18.86	1.0	20	0	94.3	75 - 124	20.03	6.04	20	
trans-1,3-Dichloropropene	19.43	1.0	20	0	97.1	73 - 127	19.8	1.9	20	
Trichlorofluoromethane	22.28	1.0	20	0	111	65 - 141	24.37	8.95	20	
Surr: 1,2-Dichloroethane-d4	*46.98*	*1.0*	*50*	*0*	*94.0*	*81 - 118*	*46.79*	*0.417*	*20*	
Surr: 4-Bromofluorobenzene	*49.74*	*1.0*	*50*	*0*	*99.5*	*85 - 114*	*50.15*	*0.818*	*20*	
Surr: Dibromofluoromethane	*45.41*	*1.0*	*50*	*0*	*90.8*	*80 - 119*	*45.54*	*0.292*	*20*	
Surr: Toluene-d8	*52.12*	*1.0*	*50*	*0*	*104*	*89 - 112*	*52.54*	*0.811*	*20*	

The following samples were analyzed in this batch: HS23010587-02

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R425916 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **13-Jan-2023 12:31**
Client ID: Run ID: **ICS-Integrion_425916** SeqNo: **7075567** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.250	0.500								U
Nitrogen, Nitrate (As N)	0.0500	0.100								U
Nitrogen, Nitrite (As N)	0.0500	0.100								U
Sulfate	0.250	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **13-Jan-2023 12:41**
Client ID: Run ID: **ICS-Integrion_425916** SeqNo: **7075568** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.18	0.500	20	0	101	80 - 120				
Nitrogen, Nitrate (As N)	3.924	0.100	4	0	98.1	80 - 120				
Nitrogen, Nitrite (As N)	4.079	0.100	4	0	102	80 - 120				
Sulfate	20.19	0.500	20	0	101	80 - 120				

MS Sample ID: **HS23010587-02MS** Units: **mg/L** Analysis Date: **13-Jan-2023 13:02**
Client ID: **35AWW20_011223** Run ID: **ICS-Integrion_425916** SeqNo: **7075572** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	620.8	0.500	10	621.4	-5.71	80 - 120				SEO
Nitrogen, Nitrate (As N)	2.042	0.100	2	0.0452	99.9	80 - 120				
Nitrogen, Nitrite (As N)	0.5669	0.100	2	0	28.3	80 - 120				S
Sulfate	1022	0.500	10	1029	-70.0	80 - 120				SEO

MSD Sample ID: **HS23010587-02MSD** Units: **mg/L** Analysis Date: **13-Jan-2023 13:08**
Client ID: **35AWW20_011223** Run ID: **ICS-Integrion_425916** SeqNo: **7075573** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	616.2	0.500	10	621.4	-51.4	80 - 120	620.8	0.738	20	SEO
Nitrogen, Nitrate (As N)	2.015	0.100	2	0.0452	98.5	80 - 120	2.042	1.33	20	
Nitrogen, Nitrite (As N)	0.6321	0.100	2	0	31.6	80 - 120	0.5669	10.9	20	S
Sulfate	997.3	0.500	10	1029	-317	80 - 120	1022	2.45	20	SEO

The following samples were analyzed in this batch: HS23010587-01 HS23010587-02 HS23010587-03 HS23010587-04 HS23010587-05 HS23010587-06

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS23010587

QC BATCH REPORT

Batch ID: R426006 (0) **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON BY E415.1**

MBLK Sample ID: **MBLK-01162023** Units: **mg/L** Analysis Date: **16-Jan-2023 12:36**
Client ID: Run ID: **TOC_04_426006** SeqNo: **7077323** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	1.00	1.00								U

LCS Sample ID: **LCS-01162023** Units: **mg/L** Analysis Date: **16-Jan-2023 12:50**
Client ID: Run ID: **TOC_04_426006** SeqNo: **7077324** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.708	1.00	10	0	97.1	85 - 115				

LCSD Sample ID: **LCSD-01162023** Units: **mg/L** Analysis Date: **16-Jan-2023 13:04**
Client ID: Run ID: **TOC_04_426006** SeqNo: **7077325** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.23	1.00	10	0	102	85 - 115	9.708	5.24	20	

MS Sample ID: **HS23010509-01MS** Units: **mg/L** Analysis Date: **16-Jan-2023 13:32**
Client ID: Run ID: **TOC_04_426006** SeqNo: **7077327** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	20.33	1.00	10	9.391	109	80 - 120				

The following samples were analyzed in this batch: HS23010587-01 HS23010587-02 HS23010587-03 HS23010587-04 HS23010587-05 HS23010587-06

ALS Houston, US Date: 27-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: **HS23010587**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

ALS Houston, US Date: 27-Jan-23

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2023	31-Dec-2023
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

ALS Houston, US Date: 27-Jan-23

Sample Receipt Checklist

Work Order ID: HS23010587 **Date/Time Received:** 13-Jan-2023 10:35

Client Name: Bhate Environmental **Received by:** Corey Grandits

Completed By: /S/ Corey Grandits (eSignature) 13-Jan-2023 11:40 (Date/Time) **Reviewed by:** (eSignature) (Date/Time)

Matrices: W Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	1 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Temperature(s)/Thermometer(s):	3.8UC/3.3C	IR31
Cooler(s)/Kit(s):	49523	
Date/Time sample(s) sent to storage:	1/13/23	

Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

bhate

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Page: ____ of ____

Project/Phase No: NWO1312.0150

COC Number(1): ____

LIMS Number: ____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 58

Client Name:

Collected by: Scott Beesinger

HS23010587

Bhate Environmental Associates, Inc.
LHAAP-58

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Number of containers	VOC	MEE	TOC	Carbon Dioxide	Anions	Arsenic							
							Sample Analysis Requested (5)							Quality Assurance Samples (6)						
35AMW11-011223	12 JAN 2023	0725	-	N		WG	11	X	X	X	X	X								
35AMW20-011223	12 JAN 2023	0815	-	N		WG	12	X	X	X	X	X	X							
LHSMW07-011223	12 JAN 2023	0905	-	N		WG	11	X	X	X	X	X								
35AMW06-011223	12 JAN 2023	0955		N		WG	11	X	X	X	X	X								
35AMW23-011223	12 JAN 2023	1045		N		WG	11	X	X	X	X	X								
35AMW19-011223	12 JAN 2023	1135	-	N		WG	11	X	X	X	X	X								
TRIP BLANK	12 JAN 2023		-	TB		W	2	X												
			-																	
			-																	
			-																	
			-																	

COMMENTS: STANDARD TAT

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	1/12/23	1330	1.		
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: ____ Shipped ____ No.:

Method of Shipment: ____

Fed ____ Ex ____ Airbill ____ Number:

Analytical Lab: ALS 10450 Stancliff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: Dane Wacasey Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

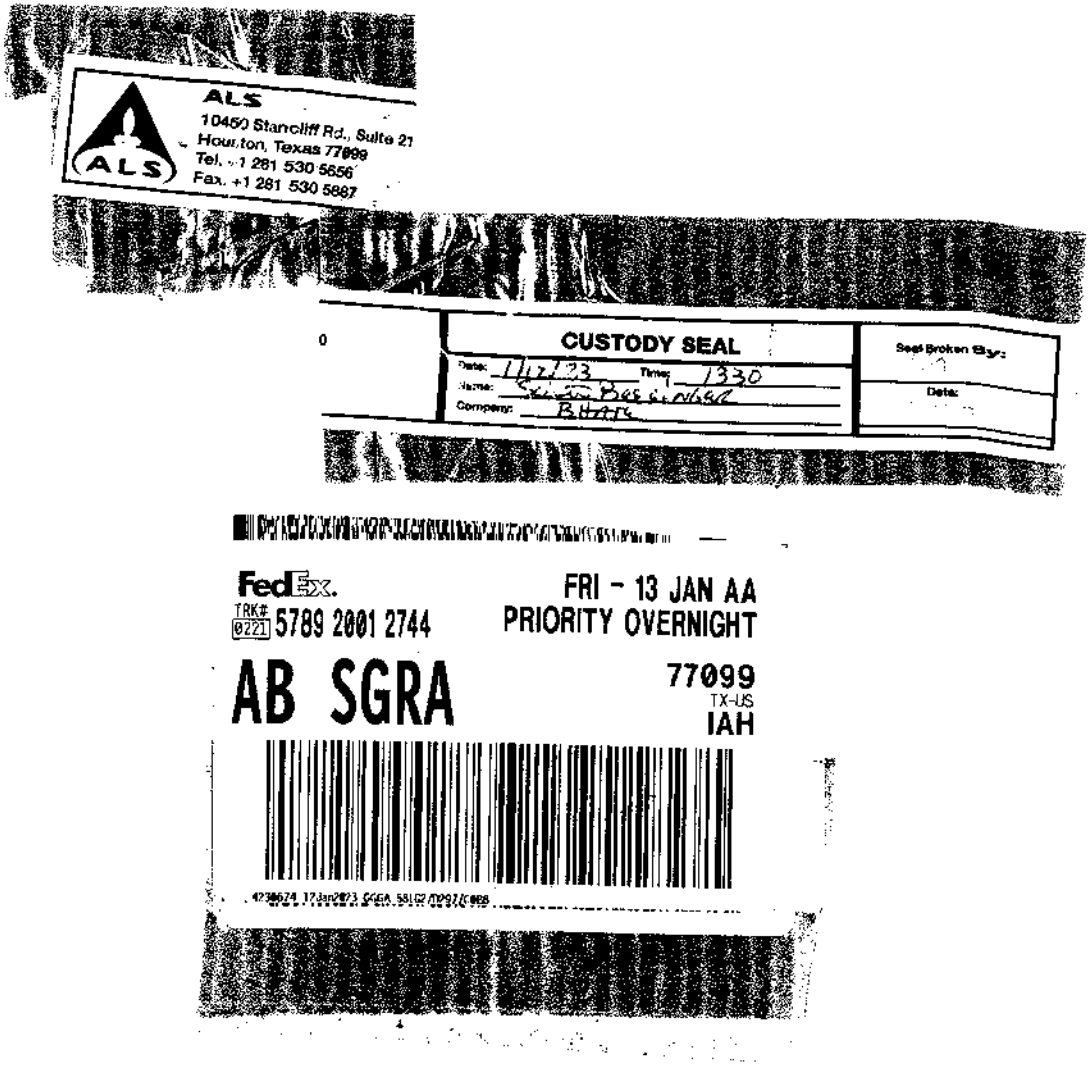
2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control



ALS
10450 Stancliff Rd., Suite 21
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL
Date: 1/12/23 Time: 1330
Name:
Company: BHate

Seal Broken By:
Date:

FedEx.
TRK# 0221 5789 2001 2744

FRI - 13 JAN AA
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Dane Wacasey
ALS Group USA, Corp
10450 Stancliff Rd.
Suite 210
Houston, Texas 77099

Generated 1/20/2023 12:08:23 PM

JOB DESCRIPTION

HS23010587

JOB NUMBER

410-112785-1

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster PA 17601

See page two for job notes and contact information.

my EOL

Eurofins Lancaster Laboratories Environment Testing, LLC

Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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1/20/2023 12:08:23 PM

Authorized for release by
Kelly Bauer, Project Manager
Kelly.Bauer@et.eurofinsus.com
(717)556-7262

Eurofins Lancaster Laboratories Environment Testing, LLC

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



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Definitions/Glossary

Client: ALS Group USA, Corp
Job ID: 410-112785-1
Project/Site: HS23010587

Qualifiers

GC VOA

Qualifier	Qualifier Description
D	The reported value is from a dilution.
M	Manual integrated compound.
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: ALS Group USA, Corp
Project/Site: HS23010587

Job ID: 410-112785-1

Job ID: 410-112785-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative
410-112785-1

Receipt

The samples were received on 1/19/2023 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.3°C

GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: ALS Group USA, Corp
Project/Site: HS23010587

Job ID: 410-112785-1

Client Sample ID: HS23010587-01 — Lab Sample ID: 410-112785-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	430000	D	60000	13000	ug/L	5		RSK-175	Total/NA

Client Sample ID: HS23010587-02 — Lab Sample ID: 410-112785-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	330000	D	60000	13000	ug/L	5		RSK-175	Total/NA

Client Sample ID: HS23010587-03 — Lab Sample ID: 410-112785-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	160000	M	12000	2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: HS23010587-04 — Lab Sample ID: 410-112785-4

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	67000		12000	2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: HS23010587-05 — Lab Sample ID: 410-112785-5

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	360000	D	60000	13000	ug/L	5		RSK-175	Total/NA

Client Sample ID: HS23010587-06 — Lab Sample ID: 410-112785-6

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	110000		12000	2600	ug/L	1		RSK-175	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: ALS Group USA, Corp
Project/Site: HS23010587

Job ID: 410-112785-1

Client Sample ID: HS23010587-01
Lab Sample ID: 410-112785-1
Date Collected: 01/12/23 07:25
Matrix: Water
Date Received: 01/19/23 09:50

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	430000	D	60000	13000	ug/L		01/20/23 12:37	01/20/23 13:17	5

Client Sample ID: HS23010587-02
Lab Sample ID: 410-112785-2
Date Collected: 01/12/23 08:15
Matrix: Water
Date Received: 01/19/23 09:50

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	330000	D	60000	13000	ug/L		01/20/23 12:37	01/20/23 13:24	5

Client Sample ID: HS23010587-03
Lab Sample ID: 410-112785-3
Date Collected: 01/12/23 09:05
Matrix: Water
Date Received: 01/19/23 09:50

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	160000	M	12000	2600	ug/L		01/20/23 08:38	01/20/23 10:56	1

Client Sample ID: HS23010587-04
Lab Sample ID: 410-112785-4
Date Collected: 01/12/23 09:55
Matrix: Water
Date Received: 01/19/23 09:50

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	67000		12000	2600	ug/L		01/20/23 08:38	01/20/23 11:03	1

Client Sample ID: HS23010587-05
Lab Sample ID: 410-112785-5
Date Collected: 01/12/23 10:45
Matrix: Water
Date Received: 01/19/23 09:50

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	360000	D	60000	13000	ug/L		01/20/23 12:37	01/20/23 13:32	5

Client Sample ID: HS23010587-06
Lab Sample ID: 410-112785-6
Date Collected: 01/12/23 11:35
Matrix: Water
Date Received: 01/19/23 09:50

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	110000		12000	2600	ug/L		01/20/23 08:38	01/20/23 11:19	1

QC Sample Results

Client: ALS Group USA, Corp
Project/Site: HS23010587

Job ID: 410-112785-1

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-337244/1-A
Matrix: Water
Analysis Batch: 337247

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 337244

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	2600	U	12000	2600	ug/L		01/20/23 08:38	01/20/23 09:00	1

Lab Sample ID: LCS 410-337244/2-A
Matrix: Water
Analysis Batch: 337247

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 337244

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon dioxide	35800	35200		ug/L		98	80 - 122

Lab Sample ID: LCSD 410-337244/3-A
Matrix: Water
Analysis Batch: 337247

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 337244

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon dioxide	35800	35400		ug/L		99	80 - 122	0	20

Lab Sample ID: MB 410-337359/1-A
Matrix: Water
Analysis Batch: 337247

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 337359

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	2600	U	12000	2600	ug/L		01/20/23 12:37	01/20/23 12:46	1

Lab Sample ID: LCS 410-337359/2-A
Matrix: Water
Analysis Batch: 337247

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 337359

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon dioxide	35800	35800		ug/L		100	80 - 122

Lab Sample ID: LCSD 410-337359/3-A
Matrix: Water
Analysis Batch: 337247

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 337359

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon dioxide	35800	33000		ug/L		92	80 - 122	8	20

QC Association Summary

Client: ALS Group USA, Corp
Project/Site: HS23010587

Job ID: 410-112785-1

GC VOA

Prep Batch: 337244

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-112785-3	HS23010587-03	Total/NA	Water	RSK-175	
410-112785-4	HS23010587-04	Total/NA	Water	RSK-175	
410-112785-6	HS23010587-06	Total/NA	Water	RSK-175	
MB 410-337244/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-337244/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-337244/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 337247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-112785-1	HS23010587-01	Total/NA	Water	RSK-175	337359
410-112785-2	HS23010587-02	Total/NA	Water	RSK-175	337359
410-112785-3	HS23010587-03	Total/NA	Water	RSK-175	337244
410-112785-4	HS23010587-04	Total/NA	Water	RSK-175	337244
410-112785-5	HS23010587-05	Total/NA	Water	RSK-175	337359
410-112785-6	HS23010587-06	Total/NA	Water	RSK-175	337244
MB 410-337244/1-A	Method Blank	Total/NA	Water	RSK-175	337244
MB 410-337359/1-A	Method Blank	Total/NA	Water	RSK-175	337359
LCS 410-337244/2-A	Lab Control Sample	Total/NA	Water	RSK-175	337244
LCS 410-337359/2-A	Lab Control Sample	Total/NA	Water	RSK-175	337359
LCSD 410-337244/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	337244
LCSD 410-337359/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	337359

Prep Batch: 337359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-112785-1	HS23010587-01	Total/NA	Water	RSK-175	
410-112785-2	HS23010587-02	Total/NA	Water	RSK-175	
410-112785-5	HS23010587-05	Total/NA	Water	RSK-175	
MB 410-337359/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-337359/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-337359/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Lab Chronicle

Client: ALS Group USA, Corp
Project/Site: HS23010587

Job ID: 410-112785-1

Client Sample ID: HS23010587-01
Lab Sample ID: 410-112785-1

Date Collected: 01/12/23 07:25
Matrix: Water
Date Received: 01/19/23 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			337359	MB4Z	ELLE	01/20/23 12:37
Total/NA	Analysis	RSK-175		5	337247	MB4Z	ELLE	01/20/23 13:17

Client Sample ID: HS23010587-02
Lab Sample ID: 410-112785-2

Date Collected: 01/12/23 08:15
Matrix: Water
Date Received: 01/19/23 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			337359	MB4Z	ELLE	01/20/23 12:37
Total/NA	Analysis	RSK-175		5	337247	MB4Z	ELLE	01/20/23 13:24

Client Sample ID: HS23010587-03
Lab Sample ID: 410-112785-3

Date Collected: 01/12/23 09:05
Matrix: Water
Date Received: 01/19/23 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			337244	MB4Z	ELLE	01/20/23 08:38
Total/NA	Analysis	RSK-175		1	337247	MB4Z	ELLE	01/20/23 10:56

Client Sample ID: HS23010587-04
Lab Sample ID: 410-112785-4

Date Collected: 01/12/23 09:55
Matrix: Water
Date Received: 01/19/23 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			337244	MB4Z	ELLE	01/20/23 08:38
Total/NA	Analysis	RSK-175		1	337247	MB4Z	ELLE	01/20/23 11:03

Client Sample ID: HS23010587-05
Lab Sample ID: 410-112785-5

Date Collected: 01/12/23 10:45
Matrix: Water
Date Received: 01/19/23 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			337359	MB4Z	ELLE	01/20/23 12:37
Total/NA	Analysis	RSK-175		5	337247	MB4Z	ELLE	01/20/23 13:32

Client Sample ID: HS23010587-06
Lab Sample ID: 410-112785-6

Date Collected: 01/12/23 11:35
Matrix: Water
Date Received: 01/19/23 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			337244	MB4Z	ELLE	01/20/23 08:38
Total/NA	Analysis	RSK-175		1	337247	MB4Z	ELLE	01/20/23 11:19

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: ALS Group USA, Corp
Job ID: 410-112785-1
Project/Site: HS23010587

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24

Method Summary

Client: ALS Group USA, Corp
Project/Site: HS23010587

Job ID: 410-112785-1

Method	Method Description	Protocol	Laboratory
RSK-175	Dissolved Gases (GC)	RSK	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique , RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: ALS Group USA, Corp
Project/Site: HS23010587

Job ID: 410-112785-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-112785-1	HS23010587-01	Water	01/12/23 07:25	01/19/23 09:50
410-112785-2	HS23010587-02	Water	01/12/23 08:15	01/19/23 09:50
410-112785-3	HS23010587-03	Water	01/12/23 09:05	01/19/23 09:50
410-112785-4	HS23010587-04	Water	01/12/23 09:55	01/19/23 09:50
410-112785-5	HS23010587-05	Water	01/12/23 10:45	01/19/23 09:50
410-112785-6	HS23010587-06	Water	01/12/23 11:35	01/19/23 09:50

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

410-112785 Chain of Custody

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **20738**

SUBCONTRACT TO:

Pace Analytical
7979 Innovation Park Drive
Baton Rouge, LA 70820
Phone: +1 225 769 4900

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@alsglobal.com
Alternate Contact:	Jumoke M. Lawal
Email:	jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS23010587
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS23010587-01**	**35AWW11_011223**	**Water**	**12 Jan 2023 07:25**
	RSK-175 CO2; Level II & Level IV PDF; Basic Excel EDD			27 Jan 2023
2.	**HS23010587-02**	**35AWW20_011223**	**Water**	**12 Jan 2023 08:15**
	RSK-175 CO2; Level II & Level IV PDF; Basic Excel EDD			27 Jan 2023
3.	**HS23010587-03**	**LHSMW07_011223**	**Water**	**12 Jan 2023 09:05**
	RSK-175 CO2; Level II & Level IV PDF; Basic Excel EDD			27 Jan 2023
4.	**HS23010587-04**	**35AWW06_011223**	**Water**	**12 Jan 2023 09:55**
	RSK-175 CO2; Level II & Level IV PDF; Basic Excel EDD			27 Jan 2023
5.	**HS23010587-05**	**35AWW23_011223**	**Water**	**12 Jan 2023 10:45**
	RSK-175 CO2; Level II & Level IV PDF; Basic Excel EDD			27 Jan 2023
6.	**HS23010587-06**	**35AWW19_011223**	**Water**	**12 Jan 2023 11:35**
	RSK-175 CO2; Level II & Level IV PDF; Basic Excel EDD			27 Jan 2023

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

F

Subcontract Chain of Custody

SAMPLING STATE: Texas

COC ID: 20738

Relinquished By: _____ Date/Time: 1/18/23 1800

Received By: _____ Date/Time: _____

Cooler ID(s): _____ Temperature(s): _____

Fed Ex 1/17/23 857

Brennan Test 1/17/23 857 E 38 3.6

5 789 2003 2685

Relinq: _____ 1/18/23 17:00

Rec: FedEx

Recd by: _____ 1/19/23 0950

Login Sample Receipt Checklist

Client: ALS Group USA, Corp

Job Number: 410-112785-1

Login Number: 112785
List Number: 1
Creator: McCaskey, Jonathan

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Client: Ragen Giga
ALS Laboratory Group
10450 Stancliff Rd
Suite 210
Houston, TX 77040

Phone:

Fax:

Identifier: 035UA **Date Rec:** 01/13/2023 **Report Date:** 01/20/2023

Client Project #: NW01312.0150 **Client Project Name:** LHAAP / Site 58

Purchase Order #:

Test results provided for: CENSUS

Reviewed By:

Charles Slater

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Results relate only to the items tested and the sample(s) as received by the laboratory.

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **ALS Laboratory Group**
Project: LHAAP / Site 58

MI Project Number: **035UA**
Date Received: 01/13/2023

Sample Information

Client Sample ID:		35AWW11_011223	35AWW20_011223	LHSMW07_011223	35AWW06_011223	35AWW23_011223
Sample Date:		01/12/2023	01/12/2023	01/12/2023	01/12/2023	01/12/2023
Units:		cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Analyst/Reviewer:		OR/CS	OR/CS	OR/CS	OR/CS	OR/CS
Dechlorinating Bacteria						
Dehalococcoides	*DHC*	**8.64E+02**	**9.18E+04**	**7.34E+03**	**1.41E+01**	**1.80E+02**
tceA Reductase	TCE	<6.00E-01	<5.00E-01	**1.50E+00**	<5.00E-01	**8.10E+00**
BAV1 Vinyl Chloride Reductase	BVC	<6.00E-01	**1.52E+04**	**8.00E-01**	<5.00E-01	**1.00E-01 (J)**
Vinyl Chloride Reductase	VCR	**1.89E+02**	**7.00E-01**	**4.34E+03**	<5.00E-01	**4.55E+01**
Dehalobacter spp.	*DHBt*	**1.40E+05**	**2.31E+04**	**1.54E+04**	**2.27E+03**	**1.93E+02**

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **ALS Laboratory Group**
Project: LHAAP / Site 58

MI Project Number: **035UA**
Date Received: 01/13/2023

Sample Information

Client Sample ID:	**35AWW19_011223**
Sample Date:	01/12/2023
Units:	cells/mL
Analyst/Reviewer:	OR/CS

Dechlorinating Bacteria

Dehalococcoides	*DHC*	**6.30E+00**
tceA Reductase	TCE	<6.00E-01
BAV1 Vinyl Chloride Reductase	BVC	**1.00E-01 (J)**
Vinyl Chloride Reductase	VCR	**7.00E-01**
Dehalobacter spp.	*DHBt*	**6.74E+03**

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

Quality Assurance/Quality Control Data

Samples Received **1/13/2023**

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
BVC	01/13/2023	01/17/2023	0 °C	96%	non-detect	non-detect
DHBt	01/13/2023	01/17/2023	0 °C	108%	non-detect	non-detect
TCE	01/13/2023	01/17/2023	0 °C	103%	non-detect	non-detect
VCR	01/13/2023	01/17/2023	0 °C	108%	non-detect	non-detect
DHC	01/13/2023	01/17/2023	0 °C	108%	non-detect	non-detect

HS23010587-MSVOA-SW8260

ALS WO# HS23010587

01222278

right solutions.
right partner.

Form 1

Organic Analysis Data Sheet

Volatiles by by EPA 8260

Workorder

HS23010587

Client

Bhate Environmental Associates, Inc.

Project

LHAAP-58

01/27/2023

ALS Environmental–Houston Laboratory

10450 Stancliff Road, Suite 210, Houston, TX 77099

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Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

HS23010587-01		Collected	Received	Matrix	Basis
35AWW11_011223		01/12/23 07:25	01/13/23 10:35	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,1-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,1-Dichloroethene	ug/L	2.5		0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	01/16/23 17:09	VOA6_425904	X011620
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	01/16/23 17:09	VOA6_425904	X011620
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	01/16/23 17:09	VOA6_425904	X011620
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	01/16/23 17:09	VOA6_425904	X011620
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

HS23010587-01				Collected		Received		Matrix	Basis
35AWW11_011223				01/12/23 07:25		01/13/23 10:35		Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	01/16/23 17:09	VOA6_425904	X011620
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	01/16/23 17:09	VOA6_425904	X011620
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	01/16/23 17:09	VOA6_425904	X011620
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:09	VOA6_425904	X011620

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

HS23010587-02	Collected	Received	Matrix	Basis
35AWW20_011223	01/12/23 08:15	01/13/23 10:35	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
1,1,2-Trichloroethane	ug/L	63		0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
1,1-Dichloroethane	ug/L	480		5.0	25	25	25	01/17/23 15:34	VOA6_425983	X011716
1,1-Dichloroethene	ug/L	2,600		5.0	25	25	25	01/17/23 15:34	VOA6_425983	X011716
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
1,2-Dichlorobenzene	ug/L	29		0.50	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
1,2-Dichloroethane	ug/L	14		0.20	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
1,3-Dichlorobenzene	ug/L	1.4		0.40	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
1,4-Dichlorobenzene	ug/L	5.0		0.40	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	01/18/23 14:57	VOA6_426067	X011812
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	01/18/23 14:57	VOA6_426067	X011812
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	01/18/23 14:57	VOA6_426067	X011812
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	01/18/23 14:57	VOA6_426067	X011812
Benzene	ug/L	7.9		0.20	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

HS23010587-02	Collected	Received	Matrix	Basis
35AWW20_011223	01/12/23 08:15	01/13/23 10:35	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	01/18/23 14:57	VOA6_426067	X011812
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
cis-1,2-Dichloroethene	ug/L	110		0.20	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	01/18/23 14:57	VOA6_426067	X011812
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	01/18/23 14:57	VOA6_426067	X011812
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Tetrachloroethene	ug/L	0.60	J	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
trans-1,2-Dichloroethene	ug/L	9.2		0.20	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Trichloroethene	ug/L	220		5.0	25	25	25	01/17/23 15:34	VOA6_425983	X011716
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 14:57	VOA6_426067	X011812
Vinyl chloride	ug/L	990		5.0	25	25	25	01/17/23 15:34	VOA6_425983	X011716

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

HS23010587-03		Collected	Received	Matrix	Basis
LHSMW07_011223		01/12/23 09:05	01/13/23 10:35	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,1-Dichloroethane	ug/L	16		0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,1-Dichloroethene	ug/L	17		0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	01/16/23 17:30	VOA6_425904	X011621
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	01/16/23 17:30	VOA6_425904	X011621
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	01/16/23 17:30	VOA6_425904	X011621
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	01/16/23 17:30	VOA6_425904	X011621
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

HS23010587-03				Collected		Received		Matrix	Basis
LHSMW07_011223				01/12/23 09:05		01/13/23 10:35		Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	01/16/23 17:30	VOA6_425904	X011621
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
cis-1,2-Dichloroethene	ug/L	0.96	J	0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	01/16/23 17:30	VOA6_425904	X011621
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	01/16/23 17:30	VOA6_425904	X011621
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Trichloroethene	ug/L	2.0		0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621
Vinyl chloride	ug/L	56		0.20	1.0	1.0	1	01/16/23 17:30	VOA6_425904	X011621

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

HS23010587-04	Collected	Received	Matrix	Basis
35AWW06_011223	01/12/23 09:55	01/13/23 10:35	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,1-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,1-Dichloroethene	ug/L	1.0		0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	01/16/23 17:51	VOA6_425904	X011622
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	01/16/23 17:51	VOA6_425904	X011622
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	01/16/23 17:51	VOA6_425904	X011622
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	01/16/23 17:51	VOA6_425904	X011622
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

HS23010587-04		Collected	Received	Matrix	Basis
35AWW06_011223		01/12/23 09:55	01/13/23 10:35	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	01/16/23 17:51	VOA6_425904	X011622
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	01/16/23 17:51	VOA6_425904	X011622
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	01/16/23 17:51	VOA6_425904	X011622
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 17:51	VOA6_425904	X011622

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

HS23010587-05		Collected	Received	Matrix	Basis
35AWW23_011223		01/12/23 10:45	01/13/23 10:35	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,1-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	01/16/23 18:12	VOA6_425904	X011623
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	01/16/23 18:12	VOA6_425904	X011623
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	01/16/23 18:12	VOA6_425904	X011623
Acetone	ug/L	13		0.40	2.0	2.0	1	01/16/23 18:12	VOA6_425904	X011623
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

HS23010587-05		Collected	Received	Matrix	Basis
35AWW23_011223		01/12/23 10:45	01/13/23 10:35	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	01/16/23 18:12	VOA6_425904	X011623
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	01/16/23 18:12	VOA6_425904	X011623
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	01/16/23 18:12	VOA6_425904	X011623
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 18:12	VOA6_425904	X011623

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

HS23010587-06	Collected	Received	Matrix	Basis
35AWW19_011223	01/12/23 11:35	01/13/23 10:35	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,1-Dichloroethane	ug/L	0.81	J	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,1-Dichloroethene	ug/L	5.0		0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,2-Dichloroethane	ug/L	1.3		0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	01/17/23 14:10	VOA6_425983	X011712
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	01/17/23 14:10	VOA6_425983	X011712
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	01/17/23 14:10	VOA6_425983	X011712
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	01/17/23 14:10	VOA6_425983	X011712
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

HS23010587-06		Collected	Received	Matrix	Basis
35AWW19_011223		01/12/23 11:35	01/13/23 10:35	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	01/17/23 14:10	VOA6_425983	X011712
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	01/17/23 14:10	VOA6_425983	X011712
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	01/17/23 14:10	VOA6_425983	X011712
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 14:10	VOA6_425983	X011712

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

HS23010587-07	Collected	Received	Matrix	Basis
Trip Blank	01/12/23 00:00	01/13/23 10:35	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,1-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	01/17/23 13:49	VOA6_425983	X011711
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	01/17/23 13:49	VOA6_425983	X011711
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	01/17/23 13:49	VOA6_425983	X011711
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	01/17/23 13:49	VOA6_425983	X011711
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

HS23010587-07

Trip Blank

Collected	Received	Matrix	Basis
01/12/23 00:00	01/13/23 10:35	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	01/17/23 13:49	VOA6_425983	X011711
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	01/17/23 13:49	VOA6_425983	X011711
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	01/17/23 13:49	VOA6_425983	X011711
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 13:49	VOA6_425983	X011711

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

VBLKW-230116	Collected	Received	Matrix	Basis
VBLKW-230116	NA	NA	Aqueous	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,1-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	01/16/23 12:36	VOA6_425904	X011607
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	01/16/23 12:36	VOA6_425904	X011607
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	01/16/23 12:36	VOA6_425904	X011607
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	01/16/23 12:36	VOA6_425904	X011607
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

VBLKW-230116	Collected	Received	Matrix	Basis
VBLKW-230116	NA	NA	Aqueous	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	01/16/23 12:36	VOA6_425904	X011607
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	01/16/23 12:36	VOA6_425904	X011607
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	01/16/23 12:36	VOA6_425904	X011607
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	01/16/23 12:36	VOA6_425904	X011607

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

VBLKW-230117	Collected	Received	Matrix	Basis
VBLKW-230117	NA	NA	Aqueous	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,1-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	01/17/23 12:25	VOA6_425983	X011707
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	01/17/23 12:25	VOA6_425983	X011707
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	01/17/23 12:25	VOA6_425983	X011707
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	01/17/23 12:25	VOA6_425983	X011707
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

VBLKW-230117	Collected	Received	Matrix	Basis
VBLKW-230117	NA	NA	Aqueous	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	01/17/23 12:25	VOA6_425983	X011707
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	01/17/23 12:25	VOA6_425983	X011707
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	01/17/23 12:25	VOA6_425983	X011707
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	01/17/23 12:25	VOA6_425983	X011707

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

VBLKW-230118	Collected	Received	Matrix	Basis
VBLKW-230118	NA	NA	Aqueous	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	01/18/23 13:12	VOA6_426067	X011807
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	01/18/23 13:12	VOA6_426067	X011807
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	01/18/23 13:12	VOA6_426067	X011807
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	01/18/23 13:12	VOA6_426067	X011807
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	01/18/23 13:12	VOA6_426067	X011807

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

VBLKW-230118	Collected	Received	Matrix	Basis
VBLKW-230118	NA	NA	Aqueous	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	01/18/23 13:12	VOA6_426067	X011807
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	01/18/23 13:12	VOA6_426067	X011807
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	01/18/23 13:12	VOA6_426067	X011807

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Form 2

System Monitoring Compound Recovery

Volatiles by by EPA 8260

Workorder

HS23010587

Client

Bhate Environmental Associates, Inc.

Project

LHAAP-58

01/27/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425904

Volatiles by by EPA 8260

CCV	Analyzed 01/16/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	51.05	50	102	80-120	
4-Bromofluorobenzene	51.22	50	102	80-120	
Dibromofluoromethane	48.12	50	96.2	80-120	
Toluene-d8	49.41	50	98.8	80-120	

CCB	Analyzed 01/16/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	47.75	50	95.5	80-120	
4-Bromofluorobenzene	49.92	50	99.8	80-120	
Dibromofluoromethane	45.92	50	91.8	80-120	
Toluene-d8	52.23	50	104	80-120	

VLCSW-230116	Analyzed 01/16/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	52.5	50	105	81-118	
4-Bromofluorobenzene	49.42	50	98.8	85-114	
Dibromofluoromethane	47.8	50	95.6	80-119	
Toluene-d8	49.38	50	98.8	89-112	

VBLKW-230116	Analyzed 01/16/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	47.72	50	95.4	81-118	
4-Bromofluorobenzene	50.87	50	102	85-114	
Dibromofluoromethane	46.01	50	92.0	80-119	
Toluene-d8	52.02	50	104	89-112	

Q - Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425904

Volatiles by by EPA 8260

HS23010472-04MS	Analyzed 01/16/23		Conc Units µg/L		DF 1000
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	47690	50000	95.4	81-118	
4-Bromofluorobenzene	50110	50000	100	85-114	
Dibromofluoromethane	45100	50000	90.2	80-119	
Toluene-d8	52560	50000	105	89-112	

HS23010472-04MSD	Analyzed 01/16/23		Conc Units µg/L		DF 1000
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	47760	50000	95.5	81-118	
4-Bromofluorobenzene	50630	50000	101	85-114	
Dibromofluoromethane	45380	50000	90.8	80-119	
Toluene-d8	52210	50000	104	89-112	

HS23010587-01	Analyzed 01/16/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	49	50	97.3	81-118	
4-Bromofluorobenzene	49	50	98.2	85-114	
Dibromofluoromethane	46	50	92.9	80-119	
Toluene-d8	54	50	107	89-112	

HS23010587-03	Analyzed 01/16/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	47	50	93.9	81-118	
4-Bromofluorobenzene	49	50	97.5	85-114	
Dibromofluoromethane	45	50	89.9	80-119	
Toluene-d8	54	50	107	89-112	

Q - Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425904

Volatiles by by EPA 8260

HS23010587-04	Analyzed 01/16/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	48	50	96.6	81-118	
4-Bromofluorobenzene	49	50	99.0	85-114	
Dibromofluoromethane	47	50	93.0	80-119	
Toluene-d8	54	50	107	89-112	

HS23010587-05	Analyzed 01/16/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	48	50	95.8	81-118	
4-Bromofluorobenzene	48	50	96.9	85-114	
Dibromofluoromethane	46	50	92.3	80-119	
Toluene-d8	52	50	104	89-112	

Q - Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425983

Volatiles by by EPA 8260

CCV	Analyzed 01/17/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	50.81	50	102	80-120	
4-Bromofluorobenzene	50.52	50	101	80-120	
Dibromofluoromethane	48.69	50	97.4	80-120	
Toluene-d8	48.86	50	97.7	80-120	

CCB	Analyzed 01/17/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	47.53	50	95.1	80-120	
4-Bromofluorobenzene	48.24	50	96.5	80-120	
Dibromofluoromethane	44.88	50	89.8	80-120	
Toluene-d8	52.72	50	105	80-120	

VBLKW-230117	Analyzed 01/17/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	48.07	50	96.1	81-118	
4-Bromofluorobenzene	48.61	50	97.2	85-114	
Dibromofluoromethane	45.72	50	91.4	80-119	
Toluene-d8	53.53	50	107	89-112	

VLCSW-230117	Analyzed 01/17/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	52.54	50	105	81-118	
4-Bromofluorobenzene	50.55	50	101	85-114	
Dibromofluoromethane	47.97	50	95.9	80-119	
Toluene-d8	50.01	50	100	89-112	

Q - Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425983

Volatiles by by EPA 8260

HS23010587-07	Analyzed 01/17/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	47	50	93.8	81-118	
4-Bromofluorobenzene	48	50	96.1	85-114	
Dibromofluoromethane	45	50	90.6	80-119	
Toluene-d8	53	50	106	89-112	

HS23010587-06	Analyzed 01/17/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	48	50	95.2	81-118	
4-Bromofluorobenzene	48	50	96.1	85-114	
Dibromofluoromethane	45	50	91.0	80-119	
Toluene-d8	54	50	107	89-112	

HS23010587-02	Analyzed 01/17/23		Conc Units µg/L		DF 25
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	1,200	1250	95.0	81-118	
4-Bromofluorobenzene	1,200	1250	96.1	85-114	
Dibromofluoromethane	1,100	1250	91.3	80-119	
Toluene-d8	1,300	1250	107	89-112	

HS23010472-04MS	Analyzed 01/17/23		Conc Units µg/L		DF 50
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	2280	2500	91.2	81-118	
4-Bromofluorobenzene	2474	2500	98.9	85-114	
Dibromofluoromethane	2260	2500	90.4	80-119	
Toluene-d8	2625	2500	105	89-112	

Q - Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425983

Volatiles by by EPA 8260

HS23010472-04MSD	Analyzed 01/17/23		Conc Units µg/L		DF 50
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	2340	2500	93.6	81-118	
4-Bromofluorobenzene	2483	2500	99.3	85-114	
Dibromofluoromethane	2205	2500	88.2	80-119	
Toluene-d8	2621	2500	105	89-112	

Q - Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_426067

Volatiles by by EPA 8260

CCV	Analyzed 01/18/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	50.45	50	101	80-120	
4-Bromofluorobenzene	51.64	50	103	80-120	
Dibromofluoromethane	47.4	50	94.8	80-120	
Toluene-d8	49.29	50	98.6	80-120	

CCB	Analyzed 01/18/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	48.42	50	96.8	80-120	
4-Bromofluorobenzene	48.68	50	97.4	80-120	
Dibromofluoromethane	45.56	50	91.1	80-120	
Toluene-d8	53.84	50	108	80-120	

VLCSW-230118	Analyzed 01/18/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	54.17	50	108	81-118	
4-Bromofluorobenzene	49.94	50	99.9	85-114	
Dibromofluoromethane	48.9	50	97.8	80-119	
Toluene-d8	49.77	50	99.5	89-112	

VBLKW-230118	Analyzed 01/18/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	48.48	50	97.0	81-118	
4-Bromofluorobenzene	49.28	50	98.6	85-114	
Dibromofluoromethane	45.75	50	91.5	80-119	
Toluene-d8	52.8	50	106	89-112	

Q - Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_426067

Volatiles by by EPA 8260

HS23010587-02	Analyzed 01/18/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	48	50	95.7	81-118	
4-Bromofluorobenzene	49	50	98.1	85-114	
Dibromofluoromethane	45	50	90.6	80-119	
Toluene-d8	53	50	106	89-112	

HS23010794-01MS	Analyzed 01/18/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	46.79	50	93.6	81-118	
4-Bromofluorobenzene	50.15	50	100	85-114	
Dibromofluoromethane	45.54	50	91.1	80-119	
Toluene-d8	52.54	50	105	89-112	

HS23010794-01MSD	Analyzed 01/18/23		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	46.98	50	94.0	81-118	
4-Bromofluorobenzene	49.74	50	99.5	85-114	
Dibromofluoromethane	45.41	50	90.8	80-119	
Toluene-d8	52.12	50	104	89-112	

Q - Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

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Form 3A

Matrix Spike/Spike Duplicate Recovery

Workorder

HS23010587

Client

Bhate Environmental Associates, Inc.

Project

LHAAP-58

01/27/2023

ALS Environmental–Houston Laboratory

10450 Stancliff Road, Suite 210, Houston, TX 77099

Phone (281) 530-5656 Fax (281) 530-5887

www.alsglobal.com

Form 3A - Matrix Spike/Spike Duplicate Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

		HS23010472-04		HS23010472-04MS				HS23010472-04MSD						
Sample Matrix Aqueous **Units** µg/L		**Run Date** 01/16/23 **Run Time** 14:42 **Data File** X011613.D		01/16/23 15:45 X011616.D				01/16/23 16:06 X011617.D						
Analyte	%R Limits	DF	Result	MS Result	Spike Added	%R	Q	MSD Result	Spike Added	%R	Q	RPD Limit	RPD	Q
1,1,1,2-Tetrachloroethane	78-124	1000	0	20120	20000	101		19600	20000	98		20	2.60	
1,1,1-Trichloroethane	74-131	1000	0	21040	20000	105		20430	20000	102		20	2.90	
1,1,2,2-Tetrachloroethane	71-121	1000	0	20320	20000	102		19690	20000	98		20	3.10	
1,1,2-Trichloroethane	80-119	1000	0	19870	20000	99		19440	20000	97		20	2.20	
1,1-Dichloroethane	77-125	1000	0	19110	20000	96		18690	20000	94		20	2.20	
1,1-Dichloroethene	71-131	1000	0	21200	20000	106		20300	20000	101		20	4.40	
1,1-Dichloropropene	78-125	1000	0	24480	20000	122		22960	20000	115		20	6.40	
1,2,3-Trichlorobenzene	69-129	1000	0	22470	20000	112		21440	20000	107		20	4.70	
1,2,3-Trichloropropane	73-122	1000	0	22630	20000	113		20350	20000	102		20	10.6	
1,2,4-Trichlorobenzene	69-130	1000	0	23970	20000	120		22440	20000	112		20	6.60	
1,2,4-Trimethylbenzene	76-124	1000	0	23490	20000	117		22290	20000	111		20	5.20	
1,2-Dibromo-3-	62-128	1000	0	20800	20000	104		19450	20000	97		20	6.70	
1,2-Dibromoethane	77-121	1000	0	20540	20000	103		20310	20000	102		20	1.10	
1,2-Dichlorobenzene	80-119	1000	0	21380	20000	107		20340	20000	102		20	5.00	
1,2-Dichloroethane	73-128	1000	0	20480	20000	102		20010	20000	100		20	2.30	
1,2-Dichloropropane	78-122	1000	0	18950	20000	95		18960	20000	95		20	0	
1,3,5-Trimethylbenzene	75-124	1000	0	24940	20000	125	*	23310	20000	117		20	6.80	
1,3-Dichlorobenzene	80-119	1000	0	22530	20000	113		21340	20000	107		20	5.40	
1,3-Dichloropropane	80-119	1000	0	20210	20000	101		19990	20000	100		20	1.10	
1,4-Dichlorobenzene	79-118	1000	0	21780	20000	109		20480	20000	102		20	6.20	
2,2-Dichloropropane	60-139	1000	0	20970	20000	105		20370	20000	102		20	2.90	
2-Butanone	56-143	1000	0	35700	40000	89		35030	40000	88		20	1.90	
2-Chlorotoluene	79-122	1000	0	23110	20000	116		21330	20000	107		20	8.00	
2-Hexanone	57-139	1000	0	42640	40000	107		41950	40000	105		20	1.60	
4-Chlorotoluene	78-122	1000	0	23370	20000	117		21970	20000	110		20	6.20	
4-Isopropyltoluene	77-127	1000	0	27250	20000	136	*	25370	20000	127		20	7.10	
4-Methyl-2-pentanone	67-130	1000	0	43170	40000	108		43810	40000	110		20	1.50	
Acetone	39-160	1000	0	31430	40000	79		30800	40000	77		20	2.00	
Benzene	79-120	1000	0	20640	20000	103		19810	20000	99		20	4.10	
Bromobenzene	80-120	1000	0	21020	20000	105		20180	20000	101		20	4.10	
Bromochloromethane	78-123	1000	0	17050	20000	85		16610	20000	83		20	2.70	
Bromodichloromethane	79-125	1000	0	19030	20000	95		18820	20000	94		20	1.10	
Bromoform	66-130	1000	0	19580	20000	98		18950	20000	95		20	3.30	
Bromomethane	53-141	1000	0	21460	20000	107		20590	20000	103		20	4.10	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits OL - Outside Limits

Form 3A - Matrix Spike/Spike Duplicate Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

		HS23010472-04		HS23010472-04MS				HS23010472-04MSD						
Sample Matrix	Aqueous	**Run Date**	01/16/23	01/16/23				01/16/23						
Units	µg/L	**Run Time**	14:42	15:45				16:06						
		Data File	X011613.D	X011616.D				X011617.D						
Analyte	%R Limits	DF	Result	MS Result	Spike Added	%R	Q	MSD Result	Spike Added	%R	Q	RPD Limit	RPD	Q
Carbon disulfide	64-133	1000	0	41600	40000	104		39550	40000	99		20	5.10	
Carbon tetrachloride	72-136	1000	0	22960	20000	115		22160	20000	111		20	3.50	
Chlorobenzene	82-118	1000	0	20440	20000	102		19930	20000	100		20	2.50	
Chloroethane	60-138	1000	0	18820	20000	94		18540	20000	93		20	1.50	
Chloroform	79-124	1000	0	18610	20000	93		18180	20000	91		20	2.30	
Chloromethane	50-139	1000	0	20090	20000	100		19800	20000	99		20	1.50	
cis-1,2-Dichloroethene	78-123	1000	0	18160	20000	91		17820	20000	89		20	1.90	
cis-1,3-Dichloropropene	75-124	1000	0	19720	20000	99		19450	20000	97		20	1.40	
Dibromochloromethane	74-126	1000	0	19800	20000	99		19040	20000	95		20	3.90	
Dibromomethane	79-123	1000	0	18760	20000	94		18850	20000	94		20	0.500	
Dichlorodifluoromethane	32-152	1000	0	19510	20000	98		18430	20000	92		20	5.70	
Ethylbenzene	79-121	1000	0	22670	20000	113		21910	20000	110		20	3.40	
Hexachlorobutadiene	66-134	1000	0	26610	20000	133		24420	20000	122		20	8.60	
Isopropylbenzene	72-131	1000	0	24780	20000	124		23620	20000	118		20	4.80	
m,p-Xylene	80-121	1000	0	45010	40000	113		42740	40000	107		20	5.20	
Methylene chloride	74-124	1000	0	17780	20000	89		17530	20000	88		20	1.40	
n-Butylbenzene	75-128	1000	0	26120	20000	131	*	24500	20000	123		20	6.40	
n-Propylbenzene	76-126	1000	0	25860	20000	129	*	24480	20000	122		20	5.50	
Naphthalene	61-128	1000	0	22580	20000	113		22160	20000	111		20	1.90	
o-Xylene	78-122	1000	0	21340	20000	107		20950	20000	105		20	1.90	
sec-Butylbenzene	77-126	1000	0	27870	20000	139	*	25860	20000	129	*	20	7.50	
Styrene	78-123	1000	0	21600	20000	108		21020	20000	105		20	2.70	
tert-Butylbenzene	78-124	1000	0	26130	20000	131	*	24610	20000	123		20	6.00	
Tetrachloroethene	74-129	1000	0	24360	20000	122		22910	20000	115		20	6.10	
Toluene	80-121	1000	0	21830	20000	109		20990	20000	105		20	3.90	
trans-1,2-Dichloroethene	75-124	1000	0	19160	20000	96		18870	20000	94		20	1.50	
trans-1,3-Dichloropropene	73-127	1000	0	19840	20000	99		19530	20000	98		20	1.60	
Trichloroethene	79-123	1000	19050	41020	20000	110		38370	20000	97		20	6.70	
Trichlorofluoromethane	65-141	1000	0	23420	20000	117		22640	20000	113		20	3.40	
Vinyl chloride	58-137	1000	0	21090	20000	105		20210	20000	101		20	4.20	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits OL - Outside Limits

Form 3A - Matrix Spike/Spike Duplicate Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

		HS23010472-04		HS23010472-04MS				HS23010472-04MSD						
Sample Matrix Aqueous **Units** µg/L		**Run Date** 01/17/23 **Run Time** 16:16 **Data File** X011718.D		01/17/23 16:37 X011719.D				01/17/23 16:58 X011720.D						
Analyte	%R Limits	DF	Result	MS Result	Spike Added	%R	Q	MSD Result	Spike Added	%R	Q	RPD Limit	RPD	Q
1,1,1,2-Tetrachloroethane	78-124	50	0	1076	1000	108		950.9	1000	95		20	12.3	
1,1,1-Trichloroethane	74-131	50	0	1110	1000	111		978.4	1000	98		20	12.6	
1,1,2,2-Tetrachloroethane	71-121	50	0	1068	1000	107		969.6	1000	97		20	9.60	
1,1,2-Trichloroethane	80-119	50	0	1040	1000	104		932.4	1000	93		20	10.9	
1,1-Dichloroethane	77-125	50	0	995.5	1000	100		860.4	1000	86		20	14.6	
1,1-Dichloroethene	71-131	50	0	1148	1000	115		962.5	1000	96		20	17.6	
1,1-Dichloropropene	78-125	50	0	1282	1000	128	*	1133	1000	113		20	12.3	
1,2,3-Trichlorobenzene	69-129	50	0	1179	1000	118		1089	1000	109		20	7.90	
1,2,3-Trichloropropane	73-122	50	0	1191	1000	119		1012	1000	101		20	16.3	
1,2,4-Trichlorobenzene	69-130	50	0	1232	1000	123		1134	1000	113		20	8.30	
1,2,4-Trimethylbenzene	76-124	50	0	1249	1000	125	*	1106	1000	111		20	12.1	
1,2-Dibromo-3-	62-128	50	0	1117	1000	112		977.4	1000	98		20	13.3	
1,2-Dibromoethane	77-121	50	0	1065	1000	107		970.1	1000	97		20	9.30	
1,2-Dichlorobenzene	80-119	50	0	1141	1000	114		1023	1000	102		20	10.9	
1,2-Dichloroethane	73-128	50	0	1056	1000	106		941.6	1000	94		20	11.5	
1,2-Dichloropropane	78-122	50	0	1024	1000	102		922	1000	92		20	10.5	
1,3,5-Trimethylbenzene	75-124	50	0	1322	1000	132	*	1159	1000	116		20	13.1	
1,3-Dichlorobenzene	80-119	50	0	1204	1000	120	*	1055	1000	105		20	13.2	
1,3-Dichloropropane	80-119	50	0	1062	1000	106		974.5	1000	97		20	8.60	
1,4-Dichlorobenzene	79-118	50	0	1157	1000	116		1024	1000	102		20	12.3	
2,2-Dichloropropane	60-139	50	0	1083	1000	108		916.1	1000	92		20	16.7	
2-Butanone	56-143	50	0	1799	2000	90		1671	2000	84		20	7.40	
2-Chlorotoluene	79-122	50	0	1236	1000	124	*	1082	1000	108		20	13.3	
2-Hexanone	57-139	50	0	2197	2000	110		2034	2000	102		20	7.70	
4-Chlorotoluene	78-122	50	0	1241	1000	124	*	1091	1000	109		20	12.9	
4-Isopropyltoluene	77-127	50	0	1451	1000	145	*	1259	1000	126		20	14.1	
4-Methyl-2-pentanone	67-130	50	0	2243	2000	112		2039	2000	102		20	9.50	
Acetone	39-160	50	0	1626	2000	81		1533	2000	77		20	5.90	
Benzene	79-120	50	0	1087	1000	109		953.2	1000	95		20	13.1	
Bromobenzene	80-120	50	0	1116	1000	112		1006	1000	101		20	10.3	
Bromochloromethane	78-123	50	0	892.4	1000	89		803.1	1000	80		20	10.5	
Bromodichloromethane	79-125	50	0	1001	1000	100		892.6	1000	89		20	11.4	
Bromoform	66-130	50	0	1007	1000	101		924	1000	92		20	8.60	
Bromomethane	53-141	50	0	1115	1000	111		953.4	1000	95		20	15.6	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits OL - Outside Limits

Form 3A - Matrix Spike/Spike Duplicate Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

		HS23010472-04		HS23010472-04MS				HS23010472-04MSD						
Sample Matrix	Aqueous	**Run Date**	01/17/23	01/17/23				01/17/23						
Units	µg/L	**Run Time**	16:16	16:37				16:58						
		Data File	X011718.D	X011719.D				X011720.D						
Analyte	%R Limits	DF	Result	MS Result	Spike Added	%R	Q	MSD Result	Spike Added	%R	Q	RPD Limit	RPD	Q
Carbon disulfide	64-133	50	0	2196	2000	110		1865	2000	93		20	16.3	
Carbon tetrachloride	72-136	50	0	1203	1000	120		1054	1000	105		20	13.2	
Chlorobenzene	82-118	50	0	1079	1000	108		962.8	1000	96		20	11.4	
Chloroethane	60-138	50	0	1003	1000	100		888	1000	89		20	12.2	
Chloroform	79-124	50	0	985.1	1000	99		854.6	1000	86		20	14.2	
Chloromethane	50-139	50	0	1065	1000	106		926.1	1000	93		20	13.9	
cis-1,2-Dichloroethene	78-123	50	0	991.1	1000	99		860.7	1000	86		20	14.1	
cis-1,3-Dichloropropene	75-124	50	0	1016	1000	102		907.5	1000	91		20	11.3	
Dibromochloromethane	74-126	50	0	1022	1000	102		949.3	1000	95		20	7.40	
Dibromomethane	79-123	50	0	987.5	1000	99		905.4	1000	91		20	8.70	
Dichlorodifluoromethane	32-152	50	0	976.9	1000	98		857.6	1000	86		20	13.0	
Ethylbenzene	79-121	50	0	1227	1000	123	*	1060	1000	106		20	14.5	
Hexachlorobutadiene	66-134	50	0	1385	1000	138	*	1246	1000	125		20	10.6	
Isopropylbenzene	72-131	50	0	1312	1000	131	*	1154	1000	115		20	12.8	
m,p-Xylene	80-121	50	0	2354	2000	118		2091	2000	105		20	11.8	
Methylene chloride	74-124	50	0	939.5	1000	94		835.9	1000	84		20	11.7	
n-Butylbenzene	75-128	50	0	1353	1000	135	*	1213	1000	121		20	10.9	
n-Propylbenzene	76-126	50	0	1369	1000	137	*	1190	1000	119		20	14.0	
Naphthalene	61-128	50	0	1180	1000	118		1106	1000	111		20	6.50	
o-Xylene	78-122	50	0	1143	1000	114		1023	1000	102		20	11.0	
sec-Butylbenzene	77-126	50	0	1472	1000	147	*	1290	1000	129	*	20	13.2	
Styrene	78-123	50	0	1150	1000	115		1018	1000	102		20	12.2	
tert-Butylbenzene	78-124	50	0	1406	1000	141	*	1223	1000	122		20	14.0	
Tetrachloroethene	74-129	50	96.51	1364	1000	127		1201	1000	110		20	12.7	
Toluene	80-121	50	0	1148	1000	115		1009	1000	101		20	12.9	
trans-1,2-Dichloroethene	75-124	50	0	1032	1000	103		864.2	1000	86		20	17.7	
trans-1,3-Dichloropropene	73-127	50	0	1025	1000	103		934.5	1000	93		20	9.20	
Trichloroethene	79-123	50	18710	20380	1000	167	*	19360	1000	65	*	20	5.10	
Trichlorofluoromethane	65-141	50	0	1247	1000	125		1074	1000	107		20	14.9	
Vinyl chloride	58-137	50	0	1103	1000	110		952.3	1000	95		20	14.7	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits OL - Outside Limits

Form 3A - Matrix Spike/Spike Duplicate Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

		HS23010794-01		HS23010794-01MS				HS23010794-01MSD						
Sample Matrix	Aqueous	**Run Date**	01/18/23	01/18/23				01/18/23						
Units	µg/L	**Run Time**	14:36	15:18				15:39						
		Data File	X011811.D	X011813.D				X011814.D						
Analyte	%R Limits	DF	Result	MS Result	Spike Added	%R	Q	MSD Result	Spike Added	%R	Q	RPD Limit	RPD	Q
1,1,1,2-Tetrachloroethane	78-124	1	0	20.74	20.00	104		19.63	20.00	98		20	5.50	
1,1,1-Trichloroethane	74-131	1	0	21.71	20.00	109		20.45	20.00	102		20	5.90	
1,1,2,2-Tetrachloroethane	71-121	1	0	20.76	20.00	104		19.4	20.00	97		20	6.80	
1,1,2-Trichloroethane	80-119	1	0	20.13	20.00	101		19.5	20.00	98		20	3.20	
1,1-Dichloropropene	78-125	1	0	24.95	20.00	125		22.87	20.00	114		20	8.70	
1,2,3-Trichlorobenzene	69-129	1	0	23.45	20.00	117		21.66	20.00	108		20	7.90	
1,2,3-Trichloropropane	73-122	1	0	20.98	20.00	105		20.24	20.00	101		20	3.60	
1,2,4-Trichlorobenzene	69-130	1	0	23.93	20.00	120		22.54	20.00	113		20	6.00	
1,2,4-Trimethylbenzene	76-124	1	0	24.37	20.00	122		22.59	20.00	113		20	7.60	
1,2-Dibromo-3-	62-128	1	0	20.19	20.00	101		19.44	20.00	97		20	3.80	
1,2-Dibromoethane	77-121	1	0	20.49	20.00	102		20.11	20.00	101		20	1.90	
1,2-Dichlorobenzene	80-119	1	0	22.35	20.00	112		20.77	20.00	104		20	7.30	
1,2-Dichloroethane	73-128	1	0	20.91	20.00	105		20.5	20.00	102		20	2.00	
1,2-Dichloropropane	78-122	1	0	19.83	20.00	99		19.32	20.00	97		20	2.60	
1,3,5-Trimethylbenzene	75-124	1	0	25.65	20.00	128	*	23.65	20.00	118		20	8.10	
1,3-Dichlorobenzene	80-119	1	0	23.53	20.00	118		21.38	20.00	107		20	9.60	
1,3-Dichloropropane	80-119	1	0	20.69	20.00	103		19.7	20.00	99		20	4.90	
1,4-Dichlorobenzene	79-118	1	0	22.59	20.00	113		21.06	20.00	105		20	7.00	
2,2-Dichloropropane	60-139	1	0	21.64	20.00	108		20.39	20.00	102		20	6.00	
2-Butanone	56-143	1	0	34.38	40.00	86		34.34	40.00	86		20	0.100	
2-Chlorotoluene	79-122	1	0	23.90	20.00	120		22.04	20.00	110		20	8.10	
2-Hexanone	57-139	1	0	42.18	40.00	105		41.31	40.00	103		20	2.10	
4-Chlorotoluene	78-122	1	0	24.17	20.00	121		22.37	20.00	112		20	7.70	
4-Isopropyltoluene	77-127	1	0	28.20	20.00	141	*	25.57	20.00	128	*	20	9.80	
4-Methyl-2-pentanone	67-130	1	0	41.93	40.00	105		41.85	40.00	105		20	0.200	
Acetone	39-160	1	0	30.42	40.00	76		30.42	40.00	76		20	0	
Benzene	79-120	1	0	21.19	20.00	106		19.84	20.00	99		20	6.60	
Bromobenzene	80-120	1	0	21.37	20.00	107		20.12	20.00	101		20	6.00	
Bromochloromethane	78-123	1	0	17.31	20.00	87		16.7	20.00	84		20	3.60	
Bromodichloromethane	79-125	1	0	19.35	20.00	97		18.93	20.00	95		20	2.20	
Bromoform	66-130	1	0	19.25	20.00	96		18.51	20.00	93		20	3.90	
Bromomethane	53-141	1	0	20.41	20.00	102		19.8	20.00	99		20	3.00	
Carbon disulfide	64-133	1	0	42.92	40.00	107		40.07	40.00	100		20	6.90	
Carbon tetrachloride	72-136	1	0	23.62	20.00	118		21.96	20.00	110		20	7.30	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits OL - Outside Limits

Form 3A - Matrix Spike/Spike Duplicate Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

		HS23010794-01		HS23010794-01MS				HS23010794-01MSD						
Sample Matrix	Aqueous	**Run Date**	01/18/23	01/18/23				01/18/23						
Units	µg/L	**Run Time**	14:36	15:18				15:39						
		Data File	X011811.D	X011813.D				X011814.D						
Analyte	%R Limits	DF	Result	MS Result	Spike Added	%R	Q	MSD Result	Spike Added	%R	Q	RPD Limit	RPD	Q
Chlorobenzene	82-118	1	0	21.22	20.00	106		19.79	20.00	99		20	7.00	
Chloroethane	60-138	1	0	19.62	20.00	98		18.35	20.00	92		20	6.70	
Chloroform	79-124	1	0	19.17	20.00	96		18.25	20.00	91		20	4.90	
Chloromethane	50-139	1	0	20.63	20.00	103		18.98	20.00	95		20	8.30	
cis-1,2-Dichloroethene	78-123	1	0	18.98	20.00	95		17.81	20.00	89		20	6.40	
cis-1,3-Dichloropropene	75-124	1	0	19.85	20.00	99		19.1	20.00	96		20	3.80	
Dibromochloromethane	74-126	1	0	19.87	20.00	99		19.23	20.00	96		20	3.30	
Dibromomethane	79-123	1	0	19.04	20.00	95		18.73	20.00	94		20	1.60	
Dichlorodifluoromethane	32-152	1	0	19.61	20.00	98		17.82	20.00	89		20	9.60	
Ethylbenzene	79-121	1	0	23.49	20.00	117		22.15	20.00	111		20	5.90	
Hexachlorobutadiene	66-134	1	0	26.98	20.00	135	*	24.69	20.00	123		20	8.90	
Isopropylbenzene	72-131	1	0	25.46	20.00	127		23.64	20.00	118		20	7.40	
m,p-Xylene	80-121	1	0	46.04	40.00	115		43.36	40.00	108		20	6.00	
Methylene chloride	74-124	1	0	17.86	20.00	89		16.88	20.00	84		20	5.70	
n-Butylbenzene	75-128	1	0	26.78	20.00	134	*	25.01	20.00	125		20	6.80	
n-Propylbenzene	76-126	1	0	26.69	20.00	133	*	24.51	20.00	123		20	8.50	
Naphthalene	61-128	1	0	22.81	20.00	114		21.6	20.00	108		20	5.50	
o-Xylene	78-122	1	0	22.48	20.00	112		20.71	20.00	104		20	8.20	
sec-Butylbenzene	77-126	1	0	28.60	20.00	143	*	26.26	20.00	131	*	20	8.50	
Styrene	78-123	1	0	22.51	20.00	113		20.99	20.00	105		20	7.00	
tert-Butylbenzene	78-124	1	0	26.92	20.00	135	*	24.76	20.00	124		20	8.40	
Tetrachloroethene	74-129	1	0	25.05	20.00	125		23.15	20.00	116		20	7.90	
Toluene	80-121	1	0	22.31	20.00	112		20.83	20.00	104		20	6.90	
trans-1,2-Dichloroethene	75-124	1	0	20.03	20.00	100		18.86	20.00	94		20	6.00	
trans-1,3-Dichloropropene	73-127	1	0	19.80	20.00	99		19.43	20.00	97		20	1.90	
Trichlorofluoromethane	65-141	1	0	24.37	20.00	122		22.28	20.00	111		20	8.90	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits OL - Outside Limits

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Form 3B

Laboratory Control Sample Recovery

Volatiles by by EPA 8260

Workorder

HS23010587

Client

Bhate Environmental Associates, Inc.

Project

LHAAP-58

01/27/2023

ALS Environmental–Houston Laboratory

10450 Stancliff Road, Suite 210, Houston, TX 77099

Phone (281) 530-5656 Fax (281) 530-5887

www.alsglobal.com

Form 3B - Laboratory Control Sample Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

VOA6_425904		QC ID	VLCSW-230116			
QC Matrix Aqueous	Units	Run Date	01/16/23			
	ug/L	Run Time	11:53			
Analyte	%R Limits	Spike Added	LCS Result	%R	Q	
1,1,1,2-Tetrachloroethane	78-124	20	19.01	95		
1,1,1-Trichloroethane	74-131	20	18.69	93		
1,1,2,2-Tetrachloroethane	71-121	20	20.06	100		
1,1,2-Trichloroethane	80-119	20	18.99	95		
1,1-Dichloroethane	77-125	20	18.89	94		
1,1-Dichloroethene	71-131	20	18.22	91		
1,1-Dichloropropene	78-125	20	19.73	99		
1,2,3-Trichlorobenzene	69-129	20	22.41	112		
1,2,3-Trichloropropane	73-122	20	20.77	104		
1,2,4-Trichlorobenzene	69-130	20	23.42	117		
1,2,4-Trimethylbenzene	76-124	20	20.6	103		
1,2-Dibromo-3-chloropropane	62-128	20	20.64	103		
1,2-Dibromoethane	77-121	20	19.62	98		
1,2-Dichlorobenzene	80-119	20	19.74	99		
1,2-Dichloroethane	73-128	20	20.49	102		
1,2-Dichloroethane-d4	81-118	50	52.5	105		
1,2-Dichloropropane	78-122	20	19.24	96		
1,3,5-Trimethylbenzene	75-124	20	21.2	106		
1,3-Dichlorobenzene	80-119	20	20.4	102		
1,3-Dichloropropane	80-119	20	19.43	97		
1,4-Dichlorobenzene	79-118	20	19.93	100		
2,2-Dichloropropane	60-139	20	19.26	96		
2-Butanone	56-143	40	42.09	105		
2-Chlorotoluene	79-122	20	20.33	102		
2-Hexanone	57-139	40	45.95	115		
4-Bromofluorobenzene	85-114	50	49.42	99		
4-Chlorotoluene	78-122	20	20.89	104		
4-Isopropyltoluene	77-127	20	22.12	111		
4-Methyl-2-pentanone	67-130	40	43.94	110		
Acetone	39-160	40	47.17	118		
Benzene	79-120	20	19.02	95		
Bromobenzene	80-120	20	18.59	93		
Bromochloromethane	78-123	20	17.58	88		
Bromodichloromethane	79-125	20	18.61	93		
Bromoform	66-130	20	19.36	97		
Bromomethane	53-141	20	20.2	101		

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits

Form 3B - Laboratory Control Sample Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

VOA6_425904		QC ID	VLCSW-230116			
QC Matrix Aqueous	Units	Run Date	01/16/23			
	ug/L	Run Time	11:53			
Analyte	%R Limits	Spike Added	LCS Result	%R	Q	
Carbon disulfide	64-133	40	37.07	93		
Carbon tetrachloride	72-136	20	18.33	92		
Chlorobenzene	82-118	20	18.56	93		
Chloroethane	60-138	20	18.08	90		
Chloroform	79-124	20	18.54	93		
Chloromethane	50-139	20	19.73	99		
cis-1,2-Dichloroethene	78-123	20	17.88	89		
cis-1,3-Dichloropropene	75-124	20	19.81	99		
Dibromochloromethane	74-126	20	18.73	94		
Dibromofluoromethane	80-119	50	47.8	96		
Dibromomethane	79-123	20	19.17	96		
Dichlorodifluoromethane	32-152	20	15.71	79		
Ethylbenzene	79-121	20	19.66	98		
Hexachlorobutadiene	66-134	20	22.05	110		
Isopropylbenzene	72-131	20	20.45	102		
m,p-Xylene	80-121	40	38.72	97		
Methylene chloride	74-124	20	18.22	91		
Naphthalene	61-128	20	22.91	115		
n-Butylbenzene	75-128	20	21.66	108		
n-Propylbenzene	76-126	20	21.32	107		
o-Xylene	78-122	20	19.1	96		
sec-Butylbenzene	77-126	20	21.62	108		
Styrene	78-123	20	19.83	99		
tert-Butylbenzene	78-124	20	20.78	104		
Tetrachloroethene	74-129	20	18.84	94		
Toluene	80-121	20	18.85	94		
Toluene-d8	89-112	50	49.38	99		
trans-1,2-Dichloroethene	75-124	20	18.35	92		
trans-1,3-Dichloropropene	73-127	20	20.31	102		
Trichloroethene	79-123	20	18.91	94		
Trichlorofluoromethane	65-141	20	18.61	93		
Vinyl chloride	58-137	20	18.31	92		

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits

Form 3B - Laboratory Control Sample Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

VOA6_425983		QC ID	VLCSW-230117			
QC Matrix Aqueous	Units	Run Date	01/17/23			
	ug/L	Run Time	12:46			
Analyte	%R Limits	Spike Added	LCS Result	%R	Q	
1,1,1,2-Tetrachloroethane	78-124	20	20.47	102		
1,1,1-Trichloroethane	74-131	20	21.87	109		
1,1,2,2-Tetrachloroethane	71-121	20	21.47	107		
1,1,2-Trichloroethane	80-119	20	21.26	106		
1,1-Dichloroethane	77-125	20	20.5	103		
1,1-Dichloroethene	71-131	20	22	110		
1,1-Dichloropropene	78-125	20	23.46	117		
1,2,3-Trichlorobenzene	69-129	20	23.91	120		
1,2,3-Trichloropropane	73-122	20	22.64	113		
1,2,4-Trichlorobenzene	69-130	20	23.94	120		
1,2,4-Trimethylbenzene	76-124	20	22.04	110		
1,2-Dibromo-3-chloropropane	62-128	20	23.47	117		
1,2-Dibromoethane	77-121	20	21.91	110		
1,2-Dichlorobenzene	80-119	20	21.25	106		
1,2-Dichloroethane	73-128	20	22.37	112		
1,2-Dichloroethane-d4	81-118	50	52.54	105		
1,2-Dichloropropane	78-122	20	20.69	103		
1,3,5-Trimethylbenzene	75-124	20	22.78	114		
1,3-Dichlorobenzene	80-119	20	21.6	108		
1,3-Dichloropropane	80-119	20	21.3	106		
1,4-Dichlorobenzene	79-118	20	21.22	106		
2,2-Dichloropropane	60-139	20	22.14	111		
2-Butanone	56-143	40	49.02	123		
2-Chlorotoluene	79-122	20	21.68	108		
2-Hexanone	57-139	40	52.68	132		
4-Bromofluorobenzene	85-114	50	50.55	101		
4-Chlorotoluene	78-122	20	21.96	110		
4-Isopropyltoluene	77-127	20	24.42	122		
4-Methyl-2-pentanone	67-130	40	50.81	127		
Acetone	39-160	40	51.8	130		
Benzene	79-120	20	21.39	107		
Bromobenzene	80-120	20	20.25	101		
Bromochloromethane	78-123	20	19.22	96		
Bromodichloromethane	79-125	20	20.2	101		
Bromoform	66-130	20	20.62	103		
Bromomethane	53-141	20	22.56	113		

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits

Form 3B - Laboratory Control Sample Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

VOA6_425983		QC ID	VLCSW-230117			
QC Matrix Aqueous	Units	Run Date	01/17/23			
	ug/L	Run Time	12:46			
Analyte	%R Limits	Spike Added	LCS Result	%R	Q	
Carbon disulfide	64-133	40	42.97	107		
Carbon tetrachloride	72-136	20	21.74	109		
Chlorobenzene	82-118	20	20.84	104		
Chloroethane	60-138	20	20.55	103		
Chloroform	79-124	20	20.35	102		
Chloromethane	50-139	20	23.51	118		
cis-1,2-Dichloroethene	78-123	20	19.66	98		
cis-1,3-Dichloropropene	75-124	20	20.94	105		
Dibromochloromethane	74-126	20	20.68	103		
Dibromofluoromethane	80-119	50	47.97	96		
Dibromomethane	79-123	20	20.79	104		
Dichlorodifluoromethane	32-152	20	24.52	123		
Ethylbenzene	79-121	20	22.17	111		
Hexachlorobutadiene	66-134	20	25.59	128		
Isopropylbenzene	72-131	20	23.05	115		
m,p-Xylene	80-121	40	43.25	108		
Methylene chloride	74-124	20	20.35	102		
Naphthalene	61-128	20	24.46	122		
n-Butylbenzene	75-128	20	23.73	119		
n-Propylbenzene	76-126	20	23.29	116		
o-Xylene	78-122	20	20.99	105		
sec-Butylbenzene	77-126	20	24.36	122		
Styrene	78-123	20	21.75	109		
tert-Butylbenzene	78-124	20	23.47	117		
Tetrachloroethene	74-129	20	22.38	112		
Toluene	80-121	20	21.55	108		
Toluene-d8	89-112	50	50.01	100		
trans-1,2-Dichloroethene	75-124	20	21.25	106		
trans-1,3-Dichloropropene	73-127	20	21.82	109		
Trichloroethene	79-123	20	21.71	109		
Trichlorofluoromethane	65-141	20	23.55	118		
Vinyl chloride	58-137	20	22.71	114		

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits

Form 3B - Laboratory Control Sample Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

VOA6_426067		QC ID	VLCSW-230118			
QC Matrix Aqueous	Units ug/L	Run Date Run Time	01/18/23 12:30			
Analyte	%R Limits	Spike Added	LCS Result	%R	Q	
1,1,1,2-Tetrachloroethane	78-124	20	20.77	104		
1,1,1-Trichloroethane	74-131	20	21.01	105		
1,1,2,2-Tetrachloroethane	71-121	20	21.43	107		
1,1,2-Trichloroethane	80-119	20	21.15	106		
1,1-Dichloropropene	78-125	20	22.47	112		
1,2,3-Trichlorobenzene	69-129	20	25.36	127		
1,2,3-Trichloropropane	73-122	20	23.58	118		
1,2,4-Trichlorobenzene	69-130	20	25.83	129		
1,2,4-Trimethylbenzene	76-124	20	22.74	114		
1,2-Dibromo-3-chloropropane	62-128	20	21.78	109		
1,2-Dibromoethane	77-121	20	22.22	111		
1,2-Dichlorobenzene	80-119	20	21.68	108		
1,2-Dichloroethane	73-128	20	22.87	114		
1,2-Dichloroethane-d4	81-118	50	54.17	108		
1,2-Dichloropropane	78-122	20	20.92	105		
1,3,5-Trimethylbenzene	75-124	20	23.36	117		
1,3-Dichlorobenzene	80-119	20	22.35	112		
1,3-Dichloropropane	80-119	20	21.46	107		
1,4-Dichlorobenzene	79-118	20	21.88	109		
2,2-Dichloropropane	60-139	20	21.63	108		
2-Butanone	56-143	40	46.88	117		
2-Chlorotoluene	79-122	20	22.04	110		
2-Hexanone	57-139	40	50.84	127		
4-Bromofluorobenzene	85-114	50	49.94	100		
4-Chlorotoluene	78-122	20	22.69	113		
4-Isopropyltoluene	77-127	20	24.71	124		
4-Methyl-2-pentanone	67-130	40	47.52	119		
Acetone	39-160	40	52.35	131		
Benzene	79-120	20	20.98	105		
Bromobenzene	80-120	20	20.53	103		
Bromochloromethane	78-123	20	19.55	98		
Bromodichloromethane	79-125	20	20.35	102		
Bromoform	66-130	20	20.55	103		
Bromomethane	53-141	20	20.63	103		
Carbon disulfide	64-133	40	41.25	103		
Carbon tetrachloride	72-136	20	20.27	101		

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits

Form 3B - Laboratory Control Sample Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

VOA6_426067		QC ID	VLCSW-230118			
QC Matrix Aqueous	Units	Run Date	01/18/23			
	ug/L	Run Time	12:30			
Analyte	%R Limits	Spike Added	LCS Result	%R	Q	
Chlorobenzene	82-118	20	20.44	102		
Chloroethane	60-138	20	19.12	96		
Chloroform	79-124	20	20.54	103		
Chloromethane	50-139	20	20.73	104		
cis-1,2-Dichloroethene	78-123	20	19.69	98		
cis-1,3-Dichloropropene	75-124	20	21.19	106		
Dibromochloromethane	74-126	20	20.88	104		
Dibromofluoromethane	80-119	50	48.9	98		
Dibromomethane	79-123	20	21.16	106		
Dichlorodifluoromethane	32-152	20	17.91	90		
Ethylbenzene	79-121	20	21.73	109		
Hexachlorobutadiene	66-134	20	26.81	134		
Isopropylbenzene	72-131	20	22.96	115		
m,p-Xylene	80-121	40	43.1	108		
Methylene chloride	74-124	20	20.62	103		
Naphthalene	61-128	20	25.56	128		
n-Butylbenzene	75-128	20	24.2	121		
n-Propylbenzene	76-126	20	23.44	117		
o-Xylene	78-122	20	21.28	106		
sec-Butylbenzene	77-126	20	24.35	122		
Styrene	78-123	20	21.81	109		
tert-Butylbenzene	78-124	20	23.28	116		
Tetrachloroethene	74-129	20	21.64	108		
Toluene	80-121	20	21.06	105		
Toluene-d8	89-112	50	49.77	100		
trans-1,2-Dichloroethene	75-124	20	20.02	100		
trans-1,3-Dichloropropene	73-127	20	21.62	108		
Trichlorofluoromethane	65-141	20	20.91	105		

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits

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Form 4

Method Blank Summary

Volatiles by by EPA 8260

Workorder

HS23010587

Client

Bhate Environmental Associates, Inc.

Project

LHAAP-58

01/27/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 4 - Method Blank Summary

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

Client Sample ID	Type	Lab Sample ID	File ID	Date Analyzed	Run ID
METHOD BLANK	MBLK	VBLKW-230116	X011607.D	01/16/23 12:36	VOA6_425904
VLCSW-230116	LCS	VLCSW-230116	X011605.D	01/16/23 11:53	VOA6_425904
BatchQC	MS	HS23010472-04MS	X011616.D	01/16/23 15:45	VOA6_425904
BatchQC	MSD	HS23010472-04MSD	X011617.D	01/16/23 16:06	VOA6_425904
35AWW11_011223	SAMP	HS23010587-01	X011620.D	01/16/23 17:09	VOA6_425904
LHSMW07_011223	SAMP	HS23010587-03	X011621.D	01/16/23 17:30	VOA6_425904
35AWW06_011223	SAMP	HS23010587-04	X011622.D	01/16/23 17:51	VOA6_425904
35AWW23_011223	SAMP	HS23010587-05	X011623.D	01/16/23 18:12	VOA6_425904

Form 4 - Method Blank Summary

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

Client Sample ID	Type	Lab Sample ID	File ID	Date Analyzed	Run ID
METHOD BLANK	MBLK	VBLKW-230117	X011707.D	01/17/23 12:25	VOA6_425983
VLCSW-230117	LCS	VLCSW-230117	X011708.D	01/17/23 12:46	VOA6_425983
Trip Blank	SAMP	HS23010587-07	X011711.D	01/17/23 13:49	VOA6_425983
35AWW19_011223	SAMP	HS23010587-06	X011712.D	01/17/23 14:10	VOA6_425983
35AWW20_011223	SAMP	HS23010587-02	X011716.D	01/17/23 15:34	VOA6_425983
BatchQC	MS	HS23010472-04MS	X011719.D	01/17/23 16:37	VOA6_425983
BatchQC	MSD	HS23010472-04MSD	X011720.D	01/17/23 16:58	VOA6_425983

Form 4 - Method Blank Summary

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

Client Sample ID	Type	Lab Sample ID	File ID	Date Analyzed	Run ID
METHOD BLANK	MBLK	VBLKW-230118	X011807.D	01/18/23 13:12	VOA6_426067
VLCSW-230118	LCS	VLCSW-230118	X011805.D	01/18/23 12:30	VOA6_426067
35AWW20_011223	SAMP	HS23010587-02	X011812.D	01/18/23 14:57	VOA6_426067
BatchQC	MS	HS23010794-01MS	X011813.D	01/18/23 15:18	VOA6_426067
BatchQC	MSD	HS23010794-01MSD	X011814.D	01/18/23 15:39	VOA6_426067

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Form 5

Instrument Performance Check

Workorder

HS23010587

Client

Bhate Environmental Associates, Inc.

Project

LHAAP-58

01/27/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 5 - Instrument Performance Check

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_424237

Tune File X121601.D 12/16/22 11:17

m / e	Ion Abundance Criterion	%RA
50	15.0 - 40.0% of mass 95	18.3 (18.4)
75	30.0 - 60.0% of mass 95	46.1 (46.1)
95	Base peak, 100% RA	100 (100)
96	5.0 - 9.0% of mass 95	7.2 (7.16)
173	Less than 2.0% of mass 174	0.8 (0.897) 1
174	50.0 - 120.0% of mass 95	89 (89)
175	4.0 - 9.0% of mass 174	7 (7.82) 1
176	93.0 - 101.0% of mass 174	87.4 (98.2) 1
177	5.0 - 9.0% of mass 176	5.8 (6.59) 2

Value is % of mass 1) 174 2) 176 RA - Relative Abundance

This check applies to the following analyses

	Type	Date Analyzed	Lab File ID	Sample ID
1	ICAL1	12/16/22 11:38	X121602	VSTD000.25
2	ICAL2	12/16/22 12:20	X121603	VSTD000.5
3	ICAL3	12/16/22 12:41	X121604	VSTD001
4	ICAL4	12/16/22 13:02	X121605	VSTD002
5	ICAL5	12/16/22 13:23	X121606	VSTD005
6	ICAL6	12/16/22 13:43	X121607	VSTD020
7	ICAL7	12/16/22 14:04	X121608	VSTD050
8	ICAL8	12/16/22 14:25	X121609	VSTD100
9	ICAL9	12/16/22 14:46	X121610	VSTD150
10	ICAL	12/16/22 15:07	X121611	VSTD200
11	ICV	12/16/22 15:49	X121613	CCV

Form 5 - Instrument Performance Check

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425904

Tune File X011601.D 01/16/23 10:30

m / e	Ion Abundance Criterion	%RA
50	15.0 - 40.0% of mass 95	20.2 (20.2)
75	30.0 - 60.0% of mass 95	46.8 (46.8)
95	Base peak, 100% RA	100 (99.7)
96	5.0 - 9.0% of mass 95	6.6 (6.59)
173	Less than 2.0% of mass 174	0.8 (0.806) 1
174	50.0 - 120.0% of mass 95	100.3 (100)
175	4.0 - 9.0% of mass 174	6.6 (6.59) 1
176	93.0 - 101.0% of mass 174	100.3 (100) 1
177	5.0 - 9.0% of mass 176	6.3 (6.25) 2

Value is % of mass 1) 174 2) 176 RA - Relative Abundance

This check applies to the following analyses

	Type	Date Analyzed	Lab File ID	Sample ID
1	CCV	01/16/23 10:50	X011602	CCV
2	CCB	01/16/23 11:33	X011604	CCB
3	LCS	01/16/23 11:53	X011605	VLCSW-230116
4	MBLK	01/16/23 12:36	X011607	VBLKW-230116
5	MS	01/16/23 15:45	X011616	ZZZZZZMS
6	MSD	01/16/23 16:06	X011617	ZZZZZZMSD
7	SAMP	01/16/23 17:09	X011620	35AWW11_011223
8	SAMP	01/16/23 17:30	X011621	LHSMW07_011223
9	SAMP	01/16/23 17:51	X011622	35AWW06_011223
10	SAMP	01/16/23 18:12	X011623	35AWW23_011223
11	CCV_EN	01/16/23 21:01	X011631	CCV-END

Form 5 - Instrument Performance Check

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425983

Tune File X011701.D 01/17/23 10:19

m / e	Ion Abundance Criterion	%RA
50	15.0 - 40.0% of mass 95	19.3 (19.3)
75	30.0 - 60.0% of mass 95	48.9 (48.9)
95	Base peak, 100% RA	100 (100)
96	5.0 - 9.0% of mass 95	6.5 (6.49)
173	Less than 2.0% of mass 174	0.7 (0.812) 1
174	50.0 - 120.0% of mass 95	88.7 (88.7)
175	4.0 - 9.0% of mass 174	6.7 (7.5) 1
176	93.0 - 101.0% of mass 174	86.4 (97.4) 1
177	5.0 - 9.0% of mass 176	6.1 (7.08) 2

Value is % of mass 1) 174 2) 176 RA - Relative Abundance

This check applies to the following analyses

	Type	Date Analyzed	Lab File ID	Sample ID
1	CCV	01/17/23 10:40	X011702	CCV
2	CCB	01/17/23 11:22	X011704	CCB
3	MBLK	01/17/23 12:25	X011707	VBLKW-230117
4	LCS	01/17/23 12:46	X011708	VLCSW-230117
5	SAMP	01/17/23 13:49	X011711	Trip Blank
6	SAMP	01/17/23 14:10	X011712	35AWW19_011223
7	SAMP	01/17/23 15:34	X011716	35AWW20_011223
8	MS	01/17/23 16:37	X011719	ZZZZZZMS
9	MSD	01/17/23 16:58	X011720	ZZZZZZMSD
10	CCV_EN	01/17/23 18:01	X011723	CCV-END

Form 5 - Instrument Performance Check

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_426067

Tune File X011801.D 01/18/23 11:06

m / e	Ion Abundance Criterion	%RA
50	15.0 - 40.0% of mass 95	20.2 (20.2)
75	30.0 - 60.0% of mass 95	50.2 (50.2)
95	Base peak, 100% RA	100 (100)
96	5.0 - 9.0% of mass 95	6 (5.96)
173	Less than 2.0% of mass 174	0.5 (0.551) 1
174	50.0 - 120.0% of mass 95	89.3 (89.3)
175	4.0 - 9.0% of mass 174	7.3 (8.18) 1
176	93.0 - 101.0% of mass 174	84.9 (95) 1
177	5.0 - 9.0% of mass 176	6.3 (7.42) 2

Value is % of mass 1) 174 2) 176 RA - Relative Abundance

This check applies to the following analyses

	Type	Date Analyzed	Lab File ID	Sample ID
1	CCV	01/18/23 11:48	X011803	CCV
2	CCB	01/18/23 12:09	X011804	CCB
3	LCS	01/18/23 12:30	X011805	VLCSW-230118
4	MBLK	01/18/23 13:12	X011807	VBLKW-230118
5	SAMP	01/18/23 14:57	X011812	35AWW20_011223
6	MS	01/18/23 15:18	X011813	ZZZZZZMS
7	MSD	01/18/23 15:39	X011814	ZZZZZZMSD
8	CCV_EN	01/18/23 21:16	X011830	CCV-END

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Form 6

Initial Calibration Data

Workorder

HS23010587

Client

Bhate Environmental Associates, Inc.

Project

LHAAP-58

01/27/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder HS23010587

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138
ICAL End Date 16-DEC-2022 1507

Calibration Files

Level 1 ..voa6.i\X221216.b\X121602.D
Level 2 ..voa6.i\X221216.b\X121603.D
Level 3 ..voa6.i\X221216.b\X121604.D
Level 4 ..voa6.i\X221216.b\X121605.D
Level 5 ..voa6.i\X221216.b\X121606.D
Level 6 ..voa6.i\X221216.b\X121607.D
Level 7 ..voa6.i\X221216.b\X121608.D
Level 8 ..voa6.i\X221216.b\X121609.D
Level 9 ..voa6.i\X221216.b\X121610.D
Level 10 ..voa6.i\X221216.b\X121611.D

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Dichlorodifluoromethane	NE 160392	1990 309019	2911 476130	6239 635808	15008	63382	LINR	0.00786	0.35247		0.99971	
Chloromethane	NE 192710	2466 388163	3670 621048	8057 865151	19623	72324	LINR	0.04423	0.47332		0.99747	
Propionitrile	NE 0.04851	0.06018 0.04917	0.05265 0.05178	0.04739 0.05178	0.05114	0.04656	AVRG		0.05102		7.91502	
Vinyl Chloride	NE 0.44103	0.52268 0.42953	0.40472 0.44923	0.39786 0.45909	0.42164	0.40520	AVRG		0.43678		8.81916	
Bromomethane	NE 139689	1893 284165	3293 470318	5996 NE	15112	52034	LINR	0.03529	0.34244		0.99519	
Chloroethane	NE 0.29447	0.35820 0.28714	0.27936 0.30494	0.31044 0.30410	0.31436	0.28309	AVRG		0.30401		7.80750	
Trichlorofluoromethane	NE 0.60756	0.71207 0.59817	0.54474 0.64605	0.57316 0.65074	0.59068	0.57785	AVRG		0.61122		8.28859	
Acrolein	NE 27445	440 60756	761 96139	1317 125874	2699	12279	LINR	0.05644	0.03519		0.99833	
Acetone	NE 124798	2669 243517	4787 373504	7041 514105	17632	50987	LINR	-0.00069	0.14025		0.99910	
1,1-Dichloroethene	NE 0.36912	0.44142 0.36226	0.35953 0.38517	0.37590 0.39076	0.37389	0.35725	AVRG		0.37948		6.80558	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder HS23010587

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Isobutyl Alcohol	NE 0.05462	0.05610 0.05559	0.05239 0.05946	0.05650 0.05952	0.05728	0.05469	AVRG		0.05624		4.10209	
Acetonitrile	NE 0.04430	0.04776 0.04552	0.04645 0.04791	0.04253 0.04736	0.04357	0.04417	AVRG		0.04551		4.32823	
Allyl Chloride	NE 0.81324	0.99118 0.83169	0.95202 0.86799	0.81682 0.86396	0.84304	0.82034	AVRG		0.86670		7.30464	
Iodomethane	NE 455792	2397 958603	3865 1554547	8702 2193685	26708	143457	QUAD	0.06641	2.01333	-0.08031	0.99956	
Acrylonitrile	NE 0.12970	0.12113 0.12956	0.12536 0.13857	0.12482 0.13997	0.12256	0.12666	AVRG		0.12870		5.15060	
Methylene Chloride	NE 0.49311	0.63666 0.46611	0.59459 0.48892	0.50364 0.47907	0.50885	0.51372	AVRG		0.52052		10.92514	
Methyl tert-butyl ether	NE 1.16844	1.26574 1.18584	1.39027 1.23813	1.27259 1.24075	1.24993	1.16729	AVRG		1.24211		5.52745	
Carbon Disulfide	NE 0.97542	1.07494 0.97088	1.00609 1.02392	0.95722 1.06178	0.94769	0.91773	AVRG		0.99285		5.32584	
trans-1,2-Dichloroethene	NE 0.41851	0.48064 0.41454	0.42427 0.43221	0.38965 0.43554	0.42173	0.40526	AVRG		0.42470		5.92187	
Vinyl Acetate	NE 1.07506	1.09845 1.07519	0.99054 1.16529	1.06368 1.16741	1.12321	1.05445	AVRG		1.09037		5.13969	
1,1-Dichloroethane	NE 0.72125	0.83949 0.70504	0.80145 0.74074	0.69997 0.74459	0.75023	0.70550	AVRG		0.74536		6.34771	
Chloroprene	NE 0.16145	0.19503 0.16116	0.18721 0.16823	0.17124 0.17481	0.15874	0.15219	AVRG		0.17001		8.17551	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder HS23010587

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
2-Butanone	NE 130179	1292 264221	2498 407629	5418 555896	11771	47830	LINR	0.06050	0.15346		0.99924	
Methacrylonitrile	NE 0.32328	0.44770 0.32565	0.36475 0.34081	0.34993 0.34351	0.34840	0.34235	AVRG		0.35404		10.52608	
2,2-Dichloropropane	NE 0.62063	0.70167 0.61027	0.65466 0.64008	0.60521 0.65162	0.61866	0.59289	AVRG		0.63286		5.25207	
cis-1,2-Dichloroethene	NE 0.49985	0.61803 0.48778	0.49622 0.51710	0.52999 0.51455	0.50446	0.48374	AVRG		0.51686		7.86616	
Chloroform	NE 0.81023	0.87547 0.78725	0.86252 0.84612	0.85352 0.84457	0.84666	0.79238	AVRG		0.83541		3.73708	
Bromochloromethane	NE 0.26364	0.32093 0.26287	0.29857 0.28290	0.28124 0.28282	0.29319	0.26077	AVRG		0.28299		6.91423	
1,1,1-Trichloroethane	NE 0.65703	0.76105 0.64156	0.65666 0.67604	0.60049 0.69720	0.64387	0.63152	AVRG		0.66283		6.90392	
1,1-Dichloropropene	NE 0.37084	0.35889 0.35979	0.34245 0.36734	0.33027 0.37324	0.34789	0.34406	AVRG		0.35497		4.12237	
1,2-Dichloroethane	NE 0.39909	0.45501 0.40154	0.40587 0.41082	0.39492 0.41030	0.41104	0.39842	AVRG		0.40967		4.39762	
Carbon Tetrachloride	NE 0.36348	0.40179 0.35355	0.45347 0.36349	0.40515 0.37429	0.35265	0.34370	AVRG		0.37906		9.25223	
Benzene	NE 1.17241	1.34410 1.15323	1.19304 1.17461	1.18322 1.18197	1.19608	1.14722	AVRG		1.19399		4.90945	
Trichloroethene	NE 0.33750	0.37562 0.33140	0.31723 0.33891	0.33885 0.34649	0.33109	0.33079	AVRG		0.33865		4.73809	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder HS23010587

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Bromodichloromethane	NE 0.42913	0.53078 0.42602	0.45893 0.44706	0.43689 0.45009	0.42833	0.42563	AVRG		0.44810		7.41292	
Methyl Methacrylate	NE 0.32238	0.38746 0.32465	0.34921 0.34726	0.33881 0.35704	0.33548	0.30606	AVRG		0.34093		6.87301	
2-Chloroethylvinyl ether	NE 0.13057	0.13531 0.12541	0.11670 0.12799	0.12141 0.12973	0.12912	0.13108	AVRG		0.12748		4.37734	
1,2-Dichloropropane	NE 0.31044	0.35613 0.30521	0.33560 0.31542	0.29692 0.31856	0.31629	0.30391	AVRG		0.31761		5.71516	
2-Nitropropane	NE 0.73644	1.05598 0.73807	0.76159 0.78445	0.80915 0.80253	0.77468	0.75211	AVRG		0.80167		12.32619	
Dibromomethane	NE 0.20672	0.25085 0.20317	0.21183 0.21324	0.22317 0.21357	0.21081	0.20954	AVRG		0.21588		6.58330	
4-Methyl-2-Pentanone	NE 0.25814	0.28987 0.25156	0.26418 0.26114	0.28502 0.26166	0.26684	0.26684	AVRG		0.26725		4.64865	
cis-1,3-Dichloropropene	NE 0.52860	0.53732 0.53368	0.47650 0.55605	0.50179 0.56353	0.51804	0.52075	AVRG		0.52625		5.04185	
Ethyl Methacrylate	NE 0.20804	0.28138 0.22619	0.24077 0.24786	0.23910 0.26163	0.20135	0.21276	AVRG		0.23545		11.14205	
Toluene	NE 1.36202	1.60765 1.32088	1.37997 1.35198	1.37463 1.35870	1.36957	1.31273	AVRG		1.38201		6.34459	
trans-1,3-Dichloropropene	NE 0.44682	0.44236 0.44877	0.39493 0.47075	0.40065 0.48573	0.41433	0.42619	AVRG		0.43673		7.01005	
2-Hexanone	NE 0.17839	0.19991 0.17192	0.17409 0.18312	0.17972 0.18566	0.18386	0.17978	AVRG		0.18183		4.45920	

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder HS23010587

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
1,1,2-Trichloroethane	NE 0.26479	0.32419 0.25654	0.26954 0.26825	0.29087 0.26649	0.28491	0.26973	AVRG		0.27726		7.37510	
1,3-Dichloropropane	NE 0.53007	0.62065 0.51166	0.55587 0.53587	0.54217 0.53590	0.54663	0.53274	AVRG		0.54573		5.60982	
Dibromochloromethane	NE 0.39906	0.43810 0.39075	0.38701 0.40792	0.39402 0.40793	0.38762	0.38903	AVRG		0.40016		4.08851	
Tetrachloroethene	NE 0.29836	0.33024 0.28012	0.25660 0.28506	0.28292 0.28889	0.26322	0.28810	AVRG		0.28594		7.36821	
1,2-Dibromoethane	NE 0.35151	0.36263 0.33998	0.33509 0.35512	0.32714 0.35096	0.35422	0.34322	AVRG		0.34665		3.22017	
1-Chlorohexane	NE 0.24556	0.26597 0.23682	0.22998 0.25047	0.21386 0.26558	0.22191	0.24457	AVRG		0.24163		7.44215	
Chlorobenzene	NE 0.95622	1.20054 0.92158	0.96715 0.96470	0.94773 0.97511	0.95913	0.93014	AVRG		0.98026		8.61127	
1,1,1,2-Tetrachloroethane	NE 0.36060	0.42477 0.35457	0.34549 0.36940	0.36191 0.37188	0.34596	0.34861	AVRG		0.36480		6.70616	
Ethylbenzene	NE 0.47797	0.47482 0.45902	0.43893 0.46986	0.45503 0.47447	0.45171	0.45394	AVRG		0.46175		2.86128	
m,p-Xylenes	NE 0.60205	0.69860 0.58346	0.55710 0.60071	0.56286 0.61493	0.56012	0.57743	AVRG		0.59525		7.35638	
o-Xylene	NE 0.59049	0.68372 0.57562	0.51381 0.60058	0.56977 0.61516	0.56849	0.56994	AVRG		0.58751		7.79066	
Styrene	NE 1.03116	1.02806 1.01266	0.79991 1.07651	0.88633 1.09594	0.95404	0.97800	AVRG		0.98473		9.52837	

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Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Bromoform	NE 0.27805	0.31195 0.27584	0.25221 0.29222	0.26817 0.29278	0.25683	0.26696	AVRG		0.27722		6.87336	
Isopropylbenzene	NE 1.41077	1.35706 1.36357	1.16805 1.42773	1.25967 1.45784	1.30607	1.32939	AVRG		1.34224		6.69875	
1,1,2,2-Tetrachloroethane	NE 0.74007	0.91828 0.71754	0.84470 0.75363	0.83187 0.73962	0.83648	0.79018	AVRG		0.79693		8.24435	
1,2,3-Trichloropropane	NE 0.53505	0.58047 0.52761	0.56626 0.60583	0.53238 0.53897	0.58048	0.54015	AVRG		0.55636		4.97536	
trans-1,4-Dichloro-2-butene	NE 0.10800	0.12274 0.10845	0.09213 0.11623	0.10381 0.11751	0.10162	0.10094	AVRG		0.10794		8.88299	
n-Propylbenzene	NE 2.90611	3.20938 2.78733	2.13608 2.90643	2.47845 2.92515	2.73904	2.83806	AVRG		2.76956		11.03336	
Bromobenzene	NE 0.80056	0.90477 0.78064	0.79060 0.82147	0.83045 0.81857	0.81066	0.82521	AVRG		0.82033		4.35370	
1,3,5-Trimethylbenzene	NE 2.12398	2.06484 2.07652	1.68256 2.18148	1.97796 2.20122	2.03460	2.07048	AVRG		2.04596		7.47801	
2-Chlorotoluene	NE 1.79455	1.93144 1.71779	1.77508 1.79669	1.90257 1.78644	1.85141	1.80074	AVRG		1.81741		3.65582	
4-Chlorotoluene	NE 2.09570	2.19766 2.05624	1.72811 2.19099	1.99610 2.20989	2.10678	2.06499	AVRG		2.07183		7.13984	
tert-Butylbenzene	NE 1.74647	1.83685 1.66742	1.33195 1.77236	1.56610 1.78580	1.66625	1.69957	AVRG		1.67475		9.03914	
1,2,4-Trimethylbenzene	NE 2.18278	2.44261 2.12445	1.84882 2.25368	2.01055 2.24326	2.12502	2.14371	AVRG		2.15277		7.66012	

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Project LHAAP-58

Workorder HS23010587

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
sec-Butylbenzene	NE 2.38144	2.28219 2.30322	1.76441 2.43114	1.95855 2.46321	2.17705	2.29365	AVRG		2.22832		10.32115	
p-Isopropyltoluene	NE 2.16946	2.11113 2.07989	1.42476 2.19272	1.76888 2.20460	1.95504	2.06459	AVRG		1.99679		12.72950	
1,3-Dichlorobenzene	NE 1.39279	1.34465 1.34586	1.21323 1.42324	1.32549 1.42237	1.40186	1.38449	AVRG		1.36155		4.82043	
1,4-Dichlorobenzene	NE 1.45712	1.63128 1.44362	1.40441 1.52301	1.45614 1.52190	1.47766	1.45673	AVRG		1.48576		4.44368	
Benzyl Chloride	NE 472387	3642 1009234	4632 1650494	12783 2286488	35254	163895	LINR	0.05387	0.82700		0.99832	
n-Butylbenzene	NE 696355	5149 1425779	8459 2293126	19853 3216534	54831	248190	LINR	0.03551	1.99525		0.99890	
1,2-Dichlorobenzene	NE 1.39065	1.58241 1.36532	1.22790 1.44207	1.34058 1.43128	1.42827	1.41177	AVRG		1.40225		6.73504	
1,2-Dibromo-3-Chloropropane	NE 48660	441 94321	778 149691	1619 205063	4911	18635	LINR	0.00184	0.12764		0.99948	
1,2,4-Trichlorobenzene	NE 0.95146	0.91627 0.90293	0.65608 0.94400	0.83350 0.95022	0.89445	0.91558	AVRG		0.88494		10.53488	
Hexachlorobutadiene	NE 155390	1477 299042	1928 466452	3970 654615	13454	55912	QUAD	-0.00107	2.58308	-0.07816	0.99966	
Naphthalene	NE 2.14094	2.01970 2.06230	1.60683 2.15450	1.85985 2.12714	2.04153	2.10842	AVRG		2.01347		8.78393	
1,2,3-Trichlorobenzene	NE 0.85880	1.02696 0.83163	0.68341 0.85478	0.79977 0.84995	0.84958	0.87304	AVRG		0.84755		10.42886	

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Workorder HS23010587

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Ethyl Acetate	NE 0.37280	0.44748 0.34980	0.34909 0.38488	0.40657 0.39192	0.39985	0.40902	AVRG		0.39016		7.92750	
Methyl Acrylate	NE 0.33014	0.38247 0.33914	0.34243 0.35741	0.29817 0.35867	0.33173	0.31494	AVRG		0.33946		7.36740	
n-Butanol	NE 54418	622 124057	1171 210842	2004 297334	4891	15012	QUAD	0.80435	158	-58.97368	0.99813	*
Ethyl Acrylate	NE 420886	NE 862071	NE 1358300	9825 1836030	26414	172044	LINR	0.05859	1.02468		0.99901	*
Cyclohexanone	NE 0.01934	0.07093 0.01945	0.03374 0.01993	0.02556 0.01966	0.01884	0.01912	AVRG		0.02740		62.21369	*
1,4-Dioxane	0.00463 0.00443	0.00501 0.00442	0.00455 0.00480	0.00386 0.00497	0.00466	0.00438	AVRG		0.00457		7.29408	
n-Hexane	NE 0.39852	0.41368 0.36338	0.26016 0.39788	0.32309 0.40267	0.32437	0.35631	AVRG		0.36001		13.97418	
Freon TF	NE 0.37622	0.40111 0.36030	0.37263 0.38547	0.33005 0.39624	0.32940	0.35185	AVRG		0.36703		7.16337	
Methyl Acetate	NE 0.21071	0.27499 0.21615	0.23617 0.22455	0.22728 0.22667	0.19900	0.20937	AVRG		0.22499		9.73149	
Methylcyclohexane	NE 0.60749	0.69525 0.62521	0.49917 0.65111	0.58500 0.65095	0.56389	0.63030	AVRG		0.61204		9.36456	
Isopropyl alcohol	NE 0.01716	0.02240 0.01767	0.01652 0.01919	0.01536 0.01934	0.01833	0.01677	AVRG		0.01808		11.41496	
Amyl alcohol	NE 0.00433	NE 0.00498	NE 0.00582	NE 0.00605	0.00196	0.00315	AVRG		0.00438		36.19033	*

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Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Allyl alcohol	NE 0.01993	0.03347 0.01817	0.01301 0.01989	0.01615 0.02013	0.01622	0.01782	AVRG		0.01942		29.60962	*
4-Methyl-2-pentanol	NE 0.04191	0.13977 0.04448	0.06768 0.05120	0.05740 0.05444	0.04467	0.04137	AVRG		0.06032		51.38639	*
Tert-butyl alcohol	NE 0.03307	0.04145 0.03257	0.03359 0.03586	0.03291 0.03628	0.03387	0.03199	AVRG		0.03462		8.48705	
Diethyl ether	NE 0.30968	0.40393 0.31674	0.33122 0.33062	0.34807 0.33029	0.33548	0.30080	AVRG		0.33409		8.92652	
1,3-Butadiene	NE 0.33288	0.38854 0.32994	0.38107 0.34951	0.31405 0.35836	0.31693	0.31715	AVRG		0.34316		8.15203	
Cyclohexane	NE 237699	2803 432198	4003 682728	7375 943314	19859	84355	LINR	0.02522	0.51703		0.99847	
Tetrahydrofuran	NE 58181	900 109518	1361 162133	2867 219995	7598	28221	LINR	-0.06333	0.06025		0.99942	
alpha-Methylstyrene	NE 1.13399	1.35155 1.10993	0.85865 1.16502	1.02359 1.17184	1.06165	1.09458	AVRG		1.10787		11.89593	
Diisopropyl ether	NE 1.21127	1.41201 1.25239	1.35074 1.32366	1.30436 1.33324	1.25459	1.23114	AVRG		1.29704		5.00179	
Dichlorofluoromethane	NE 0.05734	NE 0.05842	NE 0.06234	NE 0.06214	0.06484	0.06089	AVRG		0.06099		4.51209	*
Propylene oxide	NE 0.03071	NE 0.03174	0.05613 0.03407	0.03062 0.03228	0.03687	0.02961	AVRG		0.03525		24.79698	*
3-Methyl-1-butanol	NE 0.00489	NE 0.00483	NE 0.00601	NE 0.00612	0.00211	0.00438	AVRG		0.00472		30.80128	*

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Butyl acrylate	NE 0.63698	0.73114 0.67566	0.58907 0.72950	0.57945 0.74630	0.58578	0.60437	AVRG		0.65314		10.52624	
1,2,3-Trimethylbenzene	NE 2.21302	2.76749 2.29498	2.61167 2.36627	2.52848 2.30685	2.25428	2.32678	AVRG		2.40776		7.74526	
Ethanol	NE 29714	458 56794	787 87890	1703 117751	3072	12594	LINR	-0.06594	0.00325		0.99956	
1-Propanol	NE 0.00727	0.00862 0.00784	0.00964 0.00802	0.00852 0.00816	0.00825	0.00721	AVRG		0.00817		9.04495	
tert-Butyl formate	NE 0.24908	NE 0.25521	NE 0.29218	0.25634 0.29283	0.33766	0.24706	AVRG		0.27577		12.14219	*
3,3-Dimethyl-1-butanol	NE 0.02235	NE 0.02388	NE 0.02628	NE 0.02679	0.01912	0.02169	AVRG		0.02335		12.46791	*
tert-Amyl methyl ether	NE 1.32775	2.53777 1.35994	1.82297 1.44272	1.67155 1.43312	1.55575	1.35887	AVRG		1.61227		23.79383	*
tert-Butyl ethyl ether	NE 1.27589	1.81984 1.30743	1.44501 1.37993	1.35004 1.39745	1.35223	1.28319	AVRG		1.40122		11.86386	
tert-Amyl alcohol	NE 0.02491	0.03129 0.02552	0.02457 0.02922	0.02972 0.02928	0.03377	0.02471	AVRG		0.02811		11.82574	
Epichlorohydrin	NE 58515	926 126478	1242 183469	2483 257397	5941	23842	LINR	0.04999	0.02268		0.99921	
Isoprene	NE 0.13550	0.20890 0.13652	0.10782 0.14294	0.12769 0.14612	0.14811	0.13210	AVRG		0.14286		19.27805	*
n-Amyl acetate	NE 0.52035	NE 0.54240	NE 0.59479	NE 0.61078	NE	0.53118	AVRG		0.55990		7.20069	*

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Isopropyl acetate	NE 0.72227	1.34716 0.73275	0.78367 0.76494	0.79130 0.76466	0.77391	0.74796	AVRG		0.82540		23.86221	*
n-Butyl acetate	NE 0.19856	0.47947 0.20815	0.28533 0.21762	0.15799 0.22438	0.22627	0.22783	AVRG		0.24729		37.68114	*
Acetaldehyde	NE 67188	NE 107798	3384 161053	5661 205547	6161	32393	LINR	-0.46573	0.02837		0.99553	
Methyl Amyl Ketone	NE 0.62641	1.24254 0.65992	0.68451 0.69377	0.63815 0.71197	0.57607	0.60726	AVRG		0.71562		28.26825	*
Dimethyl Disulfide	NE 0.67210	0.79855 0.68414	0.63899 0.70500	0.61608 0.69777	0.61366	0.66406	AVRG		0.67671		8.32695	
1,2-Dichloroethylene (total)	NE 0.45918	0.54933 0.45116	0.46024 0.47466	0.45982 0.47504	0.46309	0.44450	AVRG		0.47078		6.59168	
Xylenes (total)	NE 0.56357	0.65089 0.56191	0.51351 0.58028	0.53491 0.60523	0.53725	0.54549	AVRG		0.56589		7.37687	
Dibromofluoromethane	NE 211939	2321 438954	4769 652724	9050 856027	24255	90108	LINR	-0.00333	0.47851		0.99972	
1,2-Dichloroethane-d4	NE 222293	2849 455890	5559 686218	9783 919752	24938	92990	LINR	0.00543	0.50950		0.99982	
Toluene-d8	NE 1.18347	1.47608 1.20166	1.31472 1.16429	1.20749 1.10711	1.24798	1.21701	AVRG		1.23554		8.62469	
4-Bromofluorobenzene	NE 292753	3870 615584	7790 936681	13631 1277239	32501	116878	LINR	0.00128	0.46242		0.99992	

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Form 6I

Initial Calibration Verification (ICV)

Workorder

HS23010587

Client

Bhate Environmental Associates, Inc.

Project

LHAAP-58

01/27/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Initial Calibration Verification (ICV)

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RunID VOA6_424237

Volatiles Organics by Method 8260C

Instrument ID voa6.i ICAL Date 16-DEC-2022
Lab File ID X121613.D ICAL Time 1404
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

Compound	Amount Added	Amount Recovered	% Recovered	Limits	Q
1,1,1,2-Tetrachlor	50.00	48.61	97.24	80-120	
1,1,1-Trichloroeth	50.00	50.16	100.33	80-120	
1,1,2,2-Tetrachlor	50.00	46.75	93.50	80-120	
Freon TF	50.00	52.90	105.81	80-120	
Methyl Acetate	50.00	48.17	96.35	80-120	
Cyclohexane	50.00	51.73	103.47	80-120	
Methylcyclohexane	50.00	50.89	101.79	80-120	
Carbon Disulfide	100.00	98.50	98.50	80-120	
2-Hexanone	100.00	96.73	96.74	80-120	
1,1,2-Trichloroeth	50.00	47.91	95.83	80-120	
1,1-Dichloroethane	50.00	48.19	96.39	80-120	
1,1-Dichloroethene	50.00	49.34	98.68	80-120	
1,1-Dichloropropen	50.00	52.11	104.24	80-120	
1,2,3-Trichloroben	50.00	52.79	105.58	80-120	
1,2,3-Trichloropro	50.00	48.07	96.16	80-120	
1,2,4-Trichloroben	50.00	54.66	109.32	80-120	
1,2,4-Trimethylben	50.00	51.32	102.65	80-120	
1,2-Dibromo-3-Chlo	50.00	50.53	101.07	80-120	
1,2-Dibromoethane	50.00	50.24	100.49	80-120	
Acrolein	100.00	95.06	95.07	80-120	
Acrylonitrile	100.00	101.42	101.43	80-120	
1,2-Dichlorobenzen	50.00	49.52	99.05	80-120	
1,2-Dichloroethane	50.00	49.52	99.05	80-120	
1,2-Dichloropropan	50.00	49.60	99.22	80-120	
1,3,5-Trimethylben	50.00	52.30	104.61	80-120	
1,3-Dichlorobenzen	50.00	51.21	102.43	80-120	
1,3-Dichloropropan	50.00	47.82	95.66	80-120	
1,4-Dichlorobenzen	50.00	49.71	99.44	80-120	
1-Chlorohexane	50.00	51.98	103.97	80-120	
2,2-Dichloropropan	50.00	50.98	101.98	80-120	
2-Butanone	100.00	97.74	97.74	80-120	
2-Chlorotoluene	50.00	49.94	99.89	80-120	
4-Chlorotoluene	50.00	51.25	102.51	80-120	
p-Isopropyltoluene	50.00	54.75	109.51	80-120	

Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder HS23010587

RunID VOA6_424237

Volatiles Organics by Method 8260C

Instrument ID voa6.i ICAL Date 16-DEC-2022
Lab File ID X121613.D ICAL Time 1404
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

Compound	Amount Added	Amount Recovered	% Recovered	Limits	Q
4-Methyl-2-Pentano	100.00	94.03	94.03	80-120	
Acetone	100.00	101.89	101.90	80-120	
Benzene	50.00	50.29	100.58	80-120	
Bromobenzene	50.00	49.62	99.25	80-120	
Bromochloromethane	50.00	47.25	94.51	80-120	
Bromodichlorometha	50.00	49.22	98.45	80-120	
Bromoform	50.00	49.33	98.66	80-120	
Bromomethane	50.00	50.78	101.58	80-120	
Carbon Tetrachlori	50.00	49.06	98.12	80-120	
Chlorobenzene	50.00	48.34	96.68	80-120	
Chloroethane	50.00	48.32	96.64	80-120	
Chloroform	50.00	48.45	96.91	80-120	
Chloromethane	50.00	50.17	100.35	80-120	
cis-1,2-Dichloroet	50.00	48.25	96.51	80-120	
cis-1,3-Dichloropr	50.00	52.11	104.22	80-120	
Dibromochlorometha	50.00	49.50	99.02	80-120	
Dibromomethane	50.00	49.19	98.38	80-120	
Dichlorodifluorome	50.00	52.19	104.38	80-120	
Ethylbenzene	50.00	51.31	102.63	80-120	
Hexachlorobutadien	50.00	57.73	115.48	80-120	
Isopropylbenzene	50.00	52.09	104.19	80-120	
m,p-Xylenes	100.00	100.17	100.17	80-120	
Methyl tert-butyl	50.00	48.12	96.25	80-120	
Methylene Chloride	50.00	47.56	95.14	80-120	
n-Butylbenzene	50.00	50.66	101.33	80-120	
n-Propylbenzene	50.00	52.67	105.35	80-120	
Naphthalene	50.00	52.67	105.35	80-120	
o-Xylene	50.00	49.75	99.51	80-120	
sec-Butylbenzene	50.00	54.16	108.34	80-120	
Styrene	50.00	52.09	104.20	80-120	
tert-Butylbenzene	50.00	52.83	105.67	80-120	
Tetrachloroethene	50.00	50.99	101.99	80-120	
Toluene	50.00	49.20	98.42	80-120	
trans-1,2-Dichloro	50.00	49.99	99.98	80-120	

Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder HS23010587

RunID VOA6_424237

Volatiles Organics by Method 8260C

Instrument ID voa6.i ICAL Date 16-DEC-2022
Lab File ID X121613.D ICAL Time 1404
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

Compound	Amount Added	Amount Recovered	% Recovered	Limits	Q
trans-1,3-Dichloro	50.00	52.50	105.01	80-120	
Trichloroethene	50.00	51.28	102.56	80-120	
Trichlorofluoromet	50.00	51.00	102.02	80-120	
Vinyl Chloride	50.00	50.57	101.15	80-120	
1,2-Dichloroethyle	100.00	98.24	98.25	80-120	
Xylenes (total)	150.00	149.92	99.95	80-120	
1,4-Dioxane	1000.00	1021.76	102.18	80-120	
Dibromofluorometha	50.00	50.91	101.84	71-125	
1,2-Dichloroethane	50.00	50.36	100.73	70-125	
Toluene-d8	50.00	49.50	99.00	75-125	
4-Bromofluorobenze	50.00	49.98	99.97	72-125	

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Form 7

Continuing Calibration Verification (CCV)

Workorder

HS23010587

Client

Bhate Environmental Associates, Inc.

Project

LHAAP-58

01/27/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425904

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 16-JAN-2023 1050
Lab File ID X011602.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
1,4-Dioxane	0.00457	0.00486	0.00486	0.001	-6.25883	20.0	Averaged	
1,3-Butadiene	0.34316	0.33918	0.33918	0.100	1.15831	20.0	Averaged	
Methacrylonitrile	0.35404	0.37949	0.37949	0.100	-7.18684	20.0	Averaged	
Isobutyl Alcohol	0.05624	0.06429	0.06429	0.005	-14.32411	20.0	Averaged	
Acetonitrile	0.04551	0.04922	0.04922	0.005	-8.17157	20.0	Averaged	
Allyl Chloride	0.86670	0.90384	0.90384	0.100	-4.28585	20.0	Averaged	
Propionitrile	0.05102	0.05362	0.05362	0.010	-5.10968	20.0	Averaged	
trans-1,4-Dichloro-2-butene	0.10794	0.12373	0.12373	0.050	-14.63125	20.0	Averaged	
Acetaldehyde	200	261	0.04038	0.001	-30.69717	20.0	Linear	<-
Chloroprene	0.17001	0.17103	0.17103	0.100	-0.60045	20.0	Averaged	
Ethyl Acetate	0.39016	0.45223	0.45223	0.100	-15.90901	20.0	Averaged	
Methyl Methacrylate	0.34093	0.39049	0.39049	0.100	-14.53649	20.0	Averaged	
Ethyl Methacrylate	0.23545	0.25524	0.25524	0.100	-8.40479	20.0	Averaged	
Methyl Acrylate	0.33946	0.46223	0.46223	0.100	-36.16778	20.0	Averaged	<-
Dichlorodifluoromethane	50.0	45.58648	0.31859	0.100	8.82703	20.0	Linear	
Chloromethane	50.0	48.63483	0.43946	0.100	2.73034	20.0	Linear	
Vinyl Chloride	0.43678	0.44731	0.44731	0.100	-2.41158	20.0	Averaged	
Bromomethane	50.0	49.65439	0.32799	0.100	0.69123	20.0	Linear	
Chloroethane	0.30401	0.29033	0.29033	0.100	4.50015	20.0	Averaged	
Trichlorofluoromethane	0.61122	0.64446	0.64446	0.100	-5.43668	20.0	Averaged	
Acrolein	100	100	0.03434	0.010	-0.42374	20.0	Linear	
Acetone	100	118	0.16492	0.100	-17.55440	20.0	Linear	
1,1-Dichloroethene	0.37948	0.38312	0.38312	0.100	-0.95987	20.0	Averaged	
Iodomethane	100	100	0.50000	0.100	0.02853	20.0	Quadratic	
Acrylonitrile	0.12870	0.14316	0.14316	0.050	-11.23259	20.0	Averaged	
Methylene Chloride	0.52052	0.47017	0.47017	0.100	9.67304	20.0	Averaged	
Methyl tert-butyl ether	1.24211	1.25068	1.25068	0.100	-0.69030	20.0	Averaged	
Carbon Disulfide	0.99285	1.01080	1.01080	0.100	-1.80750	20.0	Averaged	
trans-1,2-Dichloroethene	0.42470	0.42052	0.42052	0.100	0.98432	20.0	Averaged	
Vinyl Acetate	1.09037	1.24510	1.24510	0.010	-14.19110	20.0	Averaged	
1,1-Dichloroethane	0.74536	0.73989	0.73989	0.200	0.73453	20.0	Averaged	
2-Butanone	100	112	0.16754	0.100	-12.20436	20.0	Linear	
2,2-Dichloropropane	0.63286	0.68300	0.68300	0.100	-7.92313	20.0	Averaged	
cis-1,2-Dichloroethene	0.51686	0.48750	0.48750	0.100	5.68039	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425904

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 16-JAN-2023 1050
Lab File ID X011602.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Chloroform	0.83541	0.81530	0.81530	0.200	2.40807	20.0	Averaged	
Bromochloromethane	0.28299	0.25627	0.25627	0.100	9.44423	20.0	Averaged	
Dibromofluoromethane	50.0	48.12423	0.46215	0.100	3.75154	20.0	Linear	
1,1,1-Trichloroethane	0.66283	0.68757	0.68757	0.100	-3.73362	20.0	Averaged	
1,1-Dichloropropene	0.35497	0.39128	0.39128	0.100	-10.22896	20.0	Averaged	
1,2-Dichloroethane	0.40967	0.43032	0.43032	0.100	-5.04143	20.0	Averaged	
Carbon Tetrachloride	0.37906	0.38504	0.38504	0.100	-1.57611	20.0	Averaged	
1,2-Dichloroethane-d4	50.0	51.05340	0.51747	0.100	-2.10680	20.0	Linear	
Benzene	1.19399	1.18738	1.18738	0.500	0.55324	20.0	Averaged	
Trichloroethene	0.33865	0.33487	0.33487	0.200	1.11708	20.0	Averaged	
Bromodichloromethane	0.44810	0.43896	0.43896	0.200	2.03790	20.0	Averaged	
2-Chloroethylvinyl ether	0.12748	0.15376	0.15376	0.001	-20.61479	20.0	Averaged	<-
1,2-Dichloropropane	0.31761	0.31369	0.31369	0.100	1.23205	20.0	Averaged	
Dibromomethane	0.21588	0.20619	0.20619	0.100	4.48583	20.0	Averaged	
4-Methyl-2-Pentanone	0.26725	0.30141	0.30141	0.100	-12.78097	20.0	Averaged	
cis-1,3-Dichloropropene	0.52625	0.55565	0.55565	0.200	-5.58610	20.0	Averaged	
Toluene-d8	1.23554	1.22103	1.22103	0.100	1.17370	20.0	Averaged	
Toluene	1.38201	1.38930	1.38930	0.400	-0.52733	20.0	Averaged	
trans-1,3-Dichloropropene	0.43673	0.48000	0.48000	0.100	-9.90852	20.0	Averaged	
2-Hexanone	0.18183	0.21467	0.21467	0.100	-18.06330	20.0	Averaged	
1,1,2-Trichloroethane	0.27726	0.26687	0.26687	0.100	3.74478	20.0	Averaged	
1,3-Dichloropropane	0.54573	0.54873	0.54873	0.100	-0.54968	20.0	Averaged	
Dibromochloromethane	0.40016	0.39723	0.39723	0.100	0.73220	20.0	Averaged	
Tetrachloroethene	0.28594	0.29669	0.29669	0.200	-3.75725	20.0	Averaged	
1,2-Dibromoethane	0.34665	0.35171	0.35171	0.100	-1.45923	20.0	Averaged	
1-Chlorohexane	0.24163	0.27708	0.27708	0.100	-14.66861	20.0	Averaged	
Chlorobenzene	0.98026	0.95243	0.95243	0.500	2.83892	20.0	Averaged	
1,1,1,2-Tetrachloroethane	0.36480	0.36610	0.36610	0.100	-0.35551	20.0	Averaged	
Ethylbenzene	0.46175	0.48347	0.48347	0.100	-4.70395	20.0	Averaged	
m,p-Xylenes	0.59525	0.61767	0.61767	0.100	-3.76559	20.0	Averaged	
o-Xylene	0.58751	0.59656	0.59656	0.300	-1.54053	20.0	Averaged	
Styrene	0.98473	1.05127	1.05127	0.300	-6.75726	20.0	Averaged	
Bromoform	0.27722	0.28766	0.28766	0.100	-3.76514	20.0	Averaged	
Isopropylbenzene	1.34224	1.49139	1.49139	0.100	-11.11189	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425904

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 16-JAN-2023 1050
Lab File ID X011602.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
1,1,2,2-Tetrachloroethane	0.79693	0.78072	0.78072	0.300	2.03442	20.0	Averaged	
4-Bromofluorobenzene	50.0	51.21604	0.47307	0.100	-2.43207	20.0	Linear	
1,2,3-Trichloropropane	0.55636	0.59042	0.59042	0.100	-6.12199	20.0	Averaged	
n-Propylbenzene	2.76956	3.11006	3.11006	0.100	-12.29440	20.0	Averaged	
Bromobenzene	0.82033	0.78978	0.78978	0.100	3.72369	20.0	Averaged	
1,3,5-Trimethylbenzene	2.04596	2.26181	2.26181	0.100	-10.54987	20.0	Averaged	
2-Chlorotoluene	1.81741	1.89698	1.89698	0.100	-4.37788	20.0	Averaged	
4-Chlorotoluene	2.07183	2.23852	2.23852	0.100	-8.04565	20.0	Averaged	
tert-Butylbenzene	1.67475	1.85267	1.85267	0.100	-10.62364	20.0	Averaged	
1,2,4-Trimethylbenzene	2.15277	2.33642	2.33642	0.100	-8.53126	20.0	Averaged	
sec-Butylbenzene	2.22832	2.62002	2.62002	0.100	-17.57860	20.0	Averaged	
p-Isopropyltoluene	1.99679	2.34993	2.34993	0.100	-17.68575	20.0	Averaged	
1,3-Dichlorobenzene	1.36155	1.41963	1.41963	0.600	-4.26547	20.0	Averaged	
1,4-Dichlorobenzene	1.48576	1.52770	1.52770	0.400	-2.82281	20.0	Averaged	
n-Butylbenzene	50.0	54.72552	2.11297	0.500	-9.45104	20.0	Linear	
1,2-Dichlorobenzene	1.40225	1.42447	1.42447	0.400	-1.58429	20.0	Averaged	
1,2-Dibromo-3-Chloropropane	50.0	51.74525	0.13186	0.040	-3.49049	20.0	Linear	
1,2,4-Trichlorobenzene	0.88494	0.95841	0.95841	0.100	-8.30173	20.0	Averaged	
Hexachlorobutadiene	50.0	52.66432	0.41335	0.100	-5.32864	20.0	Quadratic	
Naphthalene	2.01347	2.18200	2.18200	0.200	-8.37011	20.0	Averaged	
1,2,3-Trichlorobenzene	0.84755	0.88225	0.88225	0.010	-4.09483	20.0	Averaged	
1,2-Dichloroethylene (total	0.47078	0.45401	0.45401	0.200	3.56217	20.0	Averaged	
Xylenes (total)	0.56589	0.57888	0.57888	0.100	-2.29501	20.0	Averaged	
Cyclohexane	50.0	57.20636	0.57851	0.100	-14.41273	20.0	Linear	
Freon TF	0.36703	0.39881	0.39881	0.100	-8.65720	20.0	Averaged	
Methylcyclohexane	0.61204	0.70715	0.70715	0.100	-15.53991	20.0	Averaged	
Methyl Acetate	0.22499	0.25313	0.25313	0.100	-12.50880	20.0	Averaged	
Tert-butyl alcohol	0.03462	0.04004	0.04004	0.005	-15.65119	20.0	Averaged	
Isopropyl alcohol	0.01808	0.02214	0.02214	0.005	-22.43351	20.0	Averaged	<-

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425904

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 16-JAN-2023 2101
Lab File ID X011631.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
1,4-Dioxane	0.00457	0.00501	0.00501	0.001	-9.70940	50.0	Averaged	
1,3-Butadiene	0.34316	0.31562	0.31562	0.100	8.02652	50.0	Averaged	
Methacrylonitrile	0.35404	0.37812	0.37812	0.100	-6.80075	50.0	Averaged	
Isobutyl Alcohol	0.05624	0.06333	0.06333	0.005	-12.59999	50.0	Averaged	
Acetonitrile	0.04551	0.04608	0.04608	0.005	-1.26834	50.0	Averaged	
Allyl Chloride	0.86670	0.86587	0.86587	0.100	0.09560	50.0	Averaged	
Propionitrile	0.05102	0.05421	0.05421	0.010	-6.25729	50.0	Averaged	
trans-1,4-Dichloro-2-butene	0.10794	0.11349	0.11349	0.050	-5.14410	50.0	Averaged	
Acetaldehyde	200	309	0.04718	0.001	-54.64933	50.0	Linear	
Chloroprene	0.17001	0.15314	0.15314	0.100	9.91889	50.0	Averaged	
Ethyl Acetate	0.39016	0.45061	0.45061	0.100	-15.49271	50.0	Averaged	
Methyl Methacrylate	0.34093	0.37310	0.37310	0.100	-9.43650	50.0	Averaged	
Ethyl Methacrylate	0.23545	0.25613	0.25613	0.100	-8.78198	50.0	Averaged	
Methyl Acrylate	0.33946	0.45843	0.45843	0.100	-35.04791	50.0	Averaged	
Dichlorodifluoromethane	50.0	41.96216	0.29304	0.100	16.07567	50.0	Linear	
Chloromethane	50.0	46.57754	0.41998	0.100	6.84492	50.0	Linear	
Vinyl Chloride	0.43678	0.42782	0.42782	0.100	2.05174	50.0	Averaged	
Bromomethane	50.0	48.55469	0.32046	0.100	2.89061	50.0	Linear	
Chloroethane	0.30401	0.28524	0.28524	0.100	6.17487	50.0	Averaged	
Trichlorofluoromethane	0.61122	0.60915	0.60915	0.100	0.33882	50.0	Averaged	
Acrolein	100	81.54508	0.02770	0.010	18.45492	50.0	Linear	
Acetone	100	110	0.15432	0.100	-9.99648	50.0	Linear	
1,1-Dichloroethene	0.37948	0.37637	0.37637	0.100	0.81995	50.0	Averaged	
Iodomethane	100	95.99698	0.47859	0.100	4.00302	50.0	Quadratic	
Acrylonitrile	0.12870	0.14104	0.14104	0.050	-9.58492	50.0	Averaged	
Methylene Chloride	0.52052	0.48451	0.48451	0.100	6.91782	50.0	Averaged	
Methyl tert-butyl ether	1.24211	1.23793	1.23793	0.100	0.33613	50.0	Averaged	
Carbon Disulfide	0.99285	0.96372	0.96372	0.100	2.93423	50.0	Averaged	
trans-1,2-Dichloroethene	0.42470	0.41366	0.41366	0.100	2.59943	50.0	Averaged	
Vinyl Acetate	1.09037	0.91281	0.91281	0.010	16.28401	50.0	Averaged	
1,1-Dichloroethane	0.74536	0.72727	0.72727	0.200	2.42761	50.0	Averaged	
2-Butanone	100	108	0.16142	0.100	-8.21737	50.0	Linear	
2,2-Dichloropropane	0.63286	0.56969	0.56969	0.100	9.98116	50.0	Averaged	
cis-1,2-Dichloroethene	0.51686	0.49409	0.49409	0.100	4.40472	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425904

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 16-JAN-2023 2101
Lab File ID X011631.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Chloroform	0.83541	0.82467	0.82467	0.200	1.28585	50.0	Averaged	
Bromochloromethane	0.28299	0.26346	0.26346	0.100	6.90248	50.0	Averaged	
Dibromofluoromethane	50.0	49.88046	0.47895	0.100	0.23909	50.0	Linear	
1,1,1-Trichloroethane	0.66283	0.66257	0.66257	0.100	0.03920	50.0	Averaged	
1,1-Dichloropropene	0.35497	0.36533	0.36533	0.100	-2.91849	50.0	Averaged	
1,2-Dichloroethane	0.40967	0.42149	0.42149	0.100	-2.88585	50.0	Averaged	
Carbon Tetrachloride	0.37906	0.35439	0.35439	0.100	6.50753	50.0	Averaged	
1,2-Dichloroethane-d4	50.0	52.74713	0.53473	0.100	-5.49426	50.0	Linear	
Benzene	1.19399	1.17590	1.17590	0.500	1.51514	50.0	Averaged	
Trichloroethene	0.33865	0.35235	0.35235	0.200	-4.04566	50.0	Averaged	
Bromodichloromethane	0.44810	0.43029	0.43029	0.200	3.97450	50.0	Averaged	
2-Chloroethylvinyl ether	0.12748	0.15067	0.15067	0.001	-18.19082	50.0	Averaged	
1,2-Dichloropropane	0.31761	0.30868	0.30868	0.100	2.81156	50.0	Averaged	
Dibromomethane	0.21588	0.21028	0.21028	0.100	2.59307	50.0	Averaged	
4-Methyl-2-Pentanone	0.26725	0.29381	0.29381	0.100	-9.93717	50.0	Averaged	
cis-1,3-Dichloropropene	0.52625	0.52210	0.52210	0.200	0.78876	50.0	Averaged	
Toluene-d8	1.23554	1.23060	1.23060	0.100	0.39931	50.0	Averaged	
Toluene	1.38201	1.34425	1.34425	0.400	2.73239	50.0	Averaged	
trans-1,3-Dichloropropene	0.43673	0.44702	0.44702	0.100	-2.35630	50.0	Averaged	
2-Hexanone	0.18183	0.20570	0.20570	0.100	-13.12869	50.0	Averaged	
1,1,2-Trichloroethane	0.27726	0.27236	0.27236	0.100	1.76750	50.0	Averaged	
1,3-Dichloropropane	0.54573	0.54143	0.54143	0.100	0.78822	50.0	Averaged	
Dibromochloromethane	0.40016	0.39557	0.39557	0.100	1.14584	50.0	Averaged	
Tetrachloroethene	0.28594	0.27190	0.27190	0.200	4.91086	50.0	Averaged	
1,2-Dibromoethane	0.34665	0.35319	0.35319	0.100	-1.88470	50.0	Averaged	
1-Chlorohexane	0.24163	0.22107	0.22107	0.100	8.51203	50.0	Averaged	
Chlorobenzene	0.98026	0.92939	0.92939	0.500	5.18904	50.0	Averaged	
1,1,1,2-Tetrachloroethane	0.36480	0.36045	0.36045	0.100	1.19146	50.0	Averaged	
Ethylbenzene	0.46175	0.44925	0.44925	0.100	2.70825	50.0	Averaged	
m,p-Xylenes	0.59525	0.57521	0.57521	0.100	3.36668	50.0	Averaged	
o-Xylene	0.58751	0.56505	0.56505	0.300	3.82314	50.0	Averaged	
Styrene	0.98473	0.99998	0.99998	0.300	-1.54840	50.0	Averaged	
Bromoform	0.27722	0.28052	0.28052	0.100	-1.18823	50.0	Averaged	
Isopropylbenzene	1.34224	1.32529	1.32529	0.100	1.26271	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425904

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 16-JAN-2023 2101
Lab File ID X011631.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
1,1,2,2-Tetrachloroethane	0.79693	0.73354	0.73354	0.300	7.95408	50.0	Averaged	
4-Bromofluorobenzene	50.0	50.88233	0.46999	0.100	-1.76465	50.0	Linear	
1,2,3-Trichloropropane	0.55636	0.62026	0.62026	0.100	-11.48625	50.0	Averaged	
n-Propylbenzene	2.76956	2.70081	2.70081	0.100	2.48242	50.0	Averaged	
Bromobenzene	0.82033	0.77644	0.77644	0.100	5.34941	50.0	Averaged	
1,3,5-Trimethylbenzene	2.04596	2.03216	2.03216	0.100	0.67441	50.0	Averaged	
2-Chlorotoluene	1.81741	1.73963	1.73963	0.100	4.27983	50.0	Averaged	
4-Chlorotoluene	2.07183	2.05187	2.05187	0.100	0.96316	50.0	Averaged	
tert-Butylbenzene	1.67475	1.62144	1.62144	0.100	3.18320	50.0	Averaged	
1,2,4-Trimethylbenzene	2.15277	2.08969	2.08969	0.100	2.93016	50.0	Averaged	
sec-Butylbenzene	2.22832	2.19866	2.19866	0.100	1.33072	50.0	Averaged	
p-Isopropyltoluene	1.99679	1.99783	1.99783	0.100	-0.05241	50.0	Averaged	
1,3-Dichlorobenzene	1.36155	1.32329	1.32329	0.600	2.81039	50.0	Averaged	
1,4-Dichlorobenzene	1.48576	1.42736	1.42736	0.400	3.93070	50.0	Averaged	
n-Butylbenzene	50.0	45.49238	1.74452	0.500	9.01525	50.0	Linear	
1,2-Dichlorobenzene	1.40225	1.35286	1.35286	0.400	3.52262	50.0	Averaged	
1,2-Dibromo-3-Chloropropane	50.0	51.21105	0.13050	0.040	-2.42210	50.0	Linear	
1,2,4-Trichlorobenzene	0.88494	0.90063	0.90063	0.100	-1.77265	50.0	Averaged	
Hexachlorobutadiene	50.0	42.56278	0.33333	0.100	14.87444	50.0	Quadratic	
Naphthalene	2.01347	2.13999	2.13999	0.200	-6.28365	50.0	Averaged	
1,2,3-Trichlorobenzene	0.84755	0.86015	0.86015	0.010	-1.48697	50.0	Averaged	
1,2-Dichloroethylene (total	0.47078	0.45388	0.45388	0.200	3.59042	50.0	Averaged	
Xylenes (total)	0.56589	0.54363	0.54363	0.100	3.93523	50.0	Averaged	
Cyclohexane	50.0	46.95708	0.47253	0.100	6.08585	50.0	Linear	
Freon TF	0.36703	0.33452	0.33452	0.100	8.85738	50.0	Averaged	
Methylcyclohexane	0.61204	0.64840	0.64840	0.100	-5.94005	50.0	Averaged	
Methyl Acetate	0.22499	0.25003	0.25003	0.100	-11.13155	50.0	Averaged	
Tert-butyl alcohol	0.03462	0.03908	0.03908	0.005	-12.87673	50.0	Averaged	
Isopropyl alcohol	0.01808	0.02087	0.02087	0.005	-15.42621	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425983

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 17-JAN-2023 1040
Lab File ID X011702.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
1,4-Dioxane	0.00457	0.00481	0.00481	0.001	-5.24070	20.0	Averaged	
1,3-Butadiene	0.34316	0.32338	0.32338	0.100	5.76520	20.0	Averaged	
Methacrylonitrile	0.35404	0.36410	0.36410	0.100	-2.84149	20.0	Averaged	
Isobutyl Alcohol	0.05624	0.06160	0.06160	0.005	-9.53939	20.0	Averaged	
Acetonitrile	0.04551	0.04888	0.04888	0.005	-7.41505	20.0	Averaged	
Allyl Chloride	0.86670	0.88702	0.88702	0.100	-2.34492	20.0	Averaged	
Propionitrile	0.05102	0.05301	0.05301	0.010	-3.90622	20.0	Averaged	
trans-1,4-Dichloro-2-butene	0.10794	0.11664	0.11664	0.050	-8.06632	20.0	Averaged	
Acetaldehyde	200	230	0.03595	0.001	-15.06993	20.0	Linear	
Chloroprene	0.17001	0.15464	0.15464	0.100	9.04081	20.0	Averaged	
Ethyl Acetate	0.39016	0.41284	0.41284	0.100	-5.81230	20.0	Averaged	
Methyl Methacrylate	0.34093	0.36988	0.36988	0.100	-8.49252	20.0	Averaged	
Ethyl Methacrylate	0.23545	0.24407	0.24407	0.100	-3.65966	20.0	Averaged	
Methyl Acrylate	0.33946	0.45339	0.45339	0.100	-33.56464	20.0	Averaged	<-
Dichlorodifluoromethane	50.0	43.59044	0.30452	0.100	12.81911	20.0	Linear	
Chloromethane	50.0	44.83860	0.40352	0.100	10.32281	20.0	Linear	
Vinyl Chloride	0.43678	0.41704	0.41704	0.100	4.51826	20.0	Averaged	
Bromomethane	50.0	47.03352	0.31004	0.100	5.93296	20.0	Linear	
Chloroethane	0.30401	0.27661	0.27661	0.100	9.01470	20.0	Averaged	
Trichlorofluoromethane	0.61122	0.61735	0.61735	0.100	-1.00264	20.0	Averaged	
Acrolein	100	100	0.03408	0.010	0.31435	20.0	Linear	
Acetone	100	106	0.14923	0.100	-6.36905	20.0	Linear	
1,1-Dichloroethene	0.37948	0.36588	0.36588	0.100	3.58460	20.0	Averaged	
Iodomethane	100	92.78131	0.46132	0.100	7.21869	20.0	Quadratic	
Acrylonitrile	0.12870	0.14111	0.14111	0.050	-9.63686	20.0	Averaged	
Methylene Chloride	0.52052	0.47062	0.47062	0.100	9.58684	20.0	Averaged	
Methyl tert-butyl ether	1.24211	1.24140	1.24140	0.100	0.05730	20.0	Averaged	
Carbon Disulfide	0.99285	0.95612	0.95612	0.100	3.69946	20.0	Averaged	
trans-1,2-Dichloroethene	0.42470	0.40041	0.40041	0.100	5.72023	20.0	Averaged	
Vinyl Acetate	1.09037	1.19858	1.19858	0.010	-9.92415	20.0	Averaged	
1,1-Dichloroethane	0.74536	0.70848	0.70848	0.200	4.94809	20.0	Averaged	
2-Butanone	100	108	0.16116	0.100	-8.04413	20.0	Linear	
2,2-Dichloropropane	0.63286	0.64014	0.64014	0.100	-1.15152	20.0	Averaged	
cis-1,2-Dichloroethene	0.51686	0.47941	0.47941	0.100	7.24564	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425983

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 17-JAN-2023 1040
Lab File ID X011702.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Chloroform	0.83541	0.80162	0.80162	0.200	4.04454	20.0	Averaged	
Bromochloromethane	0.28299	0.25330	0.25330	0.100	10.49373	20.0	Averaged	
Dibromofluoromethane	50.0	48.69399	0.46760	0.100	2.61201	20.0	Linear	
1,1,1-Trichloroethane	0.66283	0.65263	0.65263	0.100	1.53820	20.0	Averaged	
1,1-Dichloropropene	0.35497	0.36645	0.36645	0.100	-3.23409	20.0	Averaged	
1,2-Dichloroethane	0.40967	0.42468	0.42468	0.100	-3.66400	20.0	Averaged	
Carbon Tetrachloride	0.37906	0.36065	0.36065	0.100	4.85634	20.0	Averaged	
1,2-Dichloroethane-d4	50.0	50.80519	0.51494	0.100	-1.61037	20.0	Linear	
Benzene	1.19399	1.16744	1.16744	0.500	2.22372	20.0	Averaged	
Trichloroethene	0.33865	0.32790	0.32790	0.200	3.17457	20.0	Averaged	
Bromodichloromethane	0.44810	0.43009	0.43009	0.200	4.01889	20.0	Averaged	
2-Chloroethylvinyl ether	0.12748	0.14740	0.14740	0.001	-15.62442	20.0	Averaged	
1,2-Dichloropropane	0.31761	0.30874	0.30874	0.100	2.79361	20.0	Averaged	
Dibromomethane	0.21588	0.20738	0.20738	0.100	3.93517	20.0	Averaged	
4-Methyl-2-Pentanone	0.26725	0.28048	0.28048	0.100	-4.95090	20.0	Averaged	
cis-1,3-Dichloropropene	0.52625	0.53594	0.53594	0.200	-1.84161	20.0	Averaged	
Toluene-d8	1.23554	1.20746	1.20746	0.100	2.27246	20.0	Averaged	
Toluene	1.38201	1.33258	1.33258	0.400	3.57710	20.0	Averaged	
trans-1,3-Dichloropropene	0.43673	0.45801	0.45801	0.100	-4.87242	20.0	Averaged	
2-Hexanone	0.18183	0.19825	0.19825	0.100	-9.03157	20.0	Averaged	
1,1,2-Trichloroethane	0.27726	0.26247	0.26247	0.100	5.33218	20.0	Averaged	
1,3-Dichloropropane	0.54573	0.53026	0.53026	0.100	2.83413	20.0	Averaged	
Dibromochloromethane	0.40016	0.38808	0.38808	0.100	3.01951	20.0	Averaged	
Tetrachloroethene	0.28594	0.27071	0.27071	0.200	5.32832	20.0	Averaged	
1,2-Dibromoethane	0.34665	0.34513	0.34513	0.100	0.43926	20.0	Averaged	
1-Chlorohexane	0.24163	0.23587	0.23587	0.100	2.38686	20.0	Averaged	
Chlorobenzene	0.98026	0.92224	0.92224	0.500	5.91878	20.0	Averaged	
1,1,1,2-Tetrachloroethane	0.36480	0.35220	0.35220	0.100	3.45337	20.0	Averaged	
Ethylbenzene	0.46175	0.44661	0.44661	0.100	3.27888	20.0	Averaged	
m,p-Xylenes	0.59525	0.57276	0.57276	0.100	3.77880	20.0	Averaged	
o-Xylene	0.58751	0.56378	0.56378	0.300	4.03865	20.0	Averaged	
Styrene	0.98473	0.99705	0.99705	0.300	-1.25023	20.0	Averaged	
Bromoform	0.27722	0.27496	0.27496	0.100	0.81506	20.0	Averaged	
Isopropylbenzene	1.34224	1.31277	1.31277	0.100	2.19528	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425983

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 17-JAN-2023 1040
Lab File ID X011702.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
1,1,2,2-Tetrachloroethane	0.79693	0.74551	0.74551	0.300	6.45211	20.0	Averaged	
4-Bromofluorobenzene	50.0	50.51661	0.46660	0.100	-1.03322	20.0	Linear	
1,2,3-Trichloropropane	0.55636	0.55528	0.55528	0.100	0.19333	20.0	Averaged	
n-Propylbenzene	2.76956	2.64401	2.64401	0.100	4.53306	20.0	Averaged	
Bromobenzene	0.82033	0.76101	0.76101	0.100	7.23129	20.0	Averaged	
1,3,5-Trimethylbenzene	2.04596	1.97019	1.97019	0.100	3.70361	20.0	Averaged	
2-Chlorotoluene	1.81741	1.71807	1.71807	0.100	5.46602	20.0	Averaged	
4-Chlorotoluene	2.07183	2.01441	2.01441	0.100	2.77161	20.0	Averaged	
tert-Butylbenzene	1.67475	1.58141	1.58141	0.100	5.57332	20.0	Averaged	
1,2,4-Trimethylbenzene	2.15277	2.06828	2.06828	0.100	3.92432	20.0	Averaged	
sec-Butylbenzene	2.22832	2.15604	2.15604	0.100	3.24374	20.0	Averaged	
p-Isopropyltoluene	1.99679	1.96693	1.96693	0.100	1.49507	20.0	Averaged	
1,3-Dichlorobenzene	1.36155	1.30054	1.30054	0.600	4.48131	20.0	Averaged	
1,4-Dichlorobenzene	1.48576	1.40441	1.40441	0.400	5.47550	20.0	Averaged	
n-Butylbenzene	50.0	46.48112	1.78398	0.500	7.03777	20.0	Linear	
1,2-Dichlorobenzene	1.40225	1.32484	1.32484	0.400	5.52029	20.0	Averaged	
1,2-Dibromo-3-Chloropropane	50.0	48.31034	0.12310	0.040	3.37932	20.0	Linear	
1,2,4-Trichlorobenzene	0.88494	0.87162	0.87162	0.100	1.50576	20.0	Averaged	
Hexachlorobutadiene	50.0	45.72455	0.35833	0.100	8.55090	20.0	Quadratic	
Naphthalene	2.01347	1.98866	1.98866	0.200	1.23186	20.0	Averaged	
1,2,3-Trichlorobenzene	0.84755	0.79599	0.79599	0.010	6.08344	20.0	Averaged	
1,2-Dichloroethylene (total	0.47078	0.43991	0.43991	0.200	6.55758	20.0	Averaged	
Xylenes (total)	0.56589	0.54884	0.54884	0.100	3.01437	20.0	Averaged	
Cyclohexane	50.0	47.34439	0.47653	0.100	5.31122	20.0	Linear	
Freon TF	0.36703	0.35110	0.35110	0.100	4.33980	20.0	Averaged	
Methylcyclohexane	0.61204	0.71782	0.71782	0.100	-17.28292	20.0	Averaged	
Methyl Acetate	0.22499	0.23906	0.23906	0.100	-6.25637	20.0	Averaged	
Tert-butyl alcohol	0.03462	0.03637	0.03637	0.005	-5.06180	20.0	Averaged	
Isopropyl alcohol	0.01808	0.02007	0.02007	0.005	-10.98412	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425983

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 17-JAN-2023 1801
Lab File ID X011723.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
1,4-Dioxane	0.00457	0.00523	0.00523	0.001	-14.38690	50.0	Averaged	
1,3-Butadiene	0.34316	0.31136	0.31136	0.100	9.26798	50.0	Averaged	
Methacrylonitrile	0.35404	0.37864	0.37864	0.100	-6.94902	50.0	Averaged	
Isobutyl Alcohol	0.05624	0.06255	0.06255	0.005	-11.22172	50.0	Averaged	
Acetonitrile	0.04551	0.04726	0.04726	0.005	-3.85411	50.0	Averaged	
Allyl Chloride	0.86670	0.86617	0.86617	0.100	0.06099	50.0	Averaged	
Propionitrile	0.05102	0.05545	0.05545	0.010	-8.69136	50.0	Averaged	
trans-1,4-Dichloro-2-butene	0.10794	0.11472	0.11472	0.050	-6.28748	50.0	Averaged	
Acetaldehyde	200	323	0.04913	0.001	-61.54552	50.0	Linear	
Chloroprene	0.17001	0.14300	0.14300	0.100	15.88328	50.0	Averaged	
Ethyl Acetate	0.39016	0.44774	0.44774	0.100	-14.75955	50.0	Averaged	
Methyl Methacrylate	0.34093	0.37579	0.37579	0.100	-10.22507	50.0	Averaged	
Ethyl Methacrylate	0.23545	0.26635	0.26635	0.100	-13.12089	50.0	Averaged	
Methyl Acrylate	0.33946	0.46097	0.46097	0.100	-35.79784	50.0	Averaged	
Dichlorodifluoromethane	50.0	41.36008	0.28880	0.100	17.27984	50.0	Linear	
Chloromethane	50.0	45.37265	0.40858	0.100	9.25469	50.0	Linear	
Vinyl Chloride	0.43678	0.40523	0.40523	0.100	7.22377	50.0	Averaged	
Bromomethane	50.0	45.79508	0.30156	0.100	8.40984	50.0	Linear	
Chloroethane	0.30401	0.27242	0.27242	0.100	10.39066	50.0	Averaged	
Trichlorofluoromethane	0.61122	0.60156	0.60156	0.100	1.58085	50.0	Averaged	
Acrolein	100	87.76816	0.02989	0.010	12.23184	50.0	Linear	
Acetone	100	116	0.16300	0.100	-16.19074	50.0	Linear	
1,1-Dichloroethene	0.37948	0.36037	0.36037	0.100	5.03487	50.0	Averaged	
Iodomethane	100	95.92077	0.47818	0.100	4.07923	50.0	Quadratic	
Acrylonitrile	0.12870	0.14175	0.14175	0.050	-10.13584	50.0	Averaged	
Methylene Chloride	0.52052	0.46217	0.46217	0.100	11.21070	50.0	Averaged	
Methyl tert-butyl ether	1.24211	1.21797	1.21797	0.100	1.94327	50.0	Averaged	
Carbon Disulfide	0.99285	0.93051	0.93051	0.100	6.27907	50.0	Averaged	
trans-1,2-Dichloroethene	0.42470	0.39964	0.39964	0.100	5.90078	50.0	Averaged	
Vinyl Acetate	1.09037	1.05608	1.05608	0.010	3.14462	50.0	Averaged	
1,1-Dichloroethane	0.74536	0.69328	0.69328	0.200	6.98734	50.0	Averaged	
2-Butanone	100	113	0.16858	0.100	-12.87834	50.0	Linear	
2,2-Dichloropropane	0.63286	0.57056	0.57056	0.100	9.84327	50.0	Averaged	
cis-1,2-Dichloroethene	0.51686	0.46380	0.46380	0.100	10.26548	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425983

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 17-JAN-2023 1801
Lab File ID X011723.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Chloroform	0.83541	0.77944	0.77944	0.200	6.69999	50.0	Averaged	
Bromochloromethane	0.28299	0.25268	0.25268	0.100	10.71190	50.0	Averaged	
Dibromofluoromethane	50.0	49.13867	0.47186	0.100	1.72267	50.0	Linear	
1,1,1-Trichloroethane	0.66283	0.64456	0.64456	0.100	2.75629	50.0	Averaged	
1,1-Dichloropropene	0.35497	0.36159	0.36159	0.100	-1.86336	50.0	Averaged	
1,2-Dichloroethane	0.40967	0.41365	0.41365	0.100	-0.97126	50.0	Averaged	
Carbon Tetrachloride	0.37906	0.35531	0.35531	0.100	6.26732	50.0	Averaged	
1,2-Dichloroethane-d4	50.0	51.55062	0.52254	0.100	-3.10123	50.0	Linear	
Benzene	1.19399	1.14884	1.14884	0.500	3.78093	50.0	Averaged	
Trichloroethene	0.33865	0.33339	0.33339	0.200	1.55414	50.0	Averaged	
Bromodichloromethane	0.44810	0.41773	0.41773	0.200	6.77667	50.0	Averaged	
2-Chloroethylvinyl ether	0.12748	0.15105	0.15105	0.001	-18.48931	50.0	Averaged	
1,2-Dichloropropane	0.31761	0.30134	0.30134	0.100	5.12218	50.0	Averaged	
Dibromomethane	0.21588	0.20607	0.20607	0.100	4.54440	50.0	Averaged	
4-Methyl-2-Pentanone	0.26725	0.29607	0.29607	0.100	-10.78544	50.0	Averaged	
cis-1,3-Dichloropropene	0.52625	0.51186	0.51186	0.200	2.73467	50.0	Averaged	
Toluene-d8	1.23554	1.22415	1.22415	0.100	0.92175	50.0	Averaged	
Toluene	1.38201	1.31299	1.31299	0.400	4.99456	50.0	Averaged	
trans-1,3-Dichloropropene	0.43673	0.44162	0.44162	0.100	-1.12139	50.0	Averaged	
2-Hexanone	0.18183	0.21189	0.21189	0.100	-16.53575	50.0	Averaged	
1,1,2-Trichloroethane	0.27726	0.26622	0.26622	0.100	3.97966	50.0	Averaged	
1,3-Dichloropropane	0.54573	0.53308	0.53308	0.100	2.31718	50.0	Averaged	
Dibromochloromethane	0.40016	0.38694	0.38694	0.100	3.30333	50.0	Averaged	
Tetrachloroethene	0.28594	0.27006	0.27006	0.200	5.55479	50.0	Averaged	
1,2-Dibromoethane	0.34665	0.35145	0.35145	0.100	-1.38413	50.0	Averaged	
1-Chlorohexane	0.24163	0.23241	0.23241	0.100	3.81856	50.0	Averaged	
Chlorobenzene	0.98026	0.90742	0.90742	0.500	7.43077	50.0	Averaged	
1,1,1,2-Tetrachloroethane	0.36480	0.34652	0.34652	0.100	5.01165	50.0	Averaged	
Ethylbenzene	0.46175	0.44384	0.44384	0.100	3.87888	50.0	Averaged	
m,p-Xylenes	0.59525	0.56419	0.56419	0.100	5.21830	50.0	Averaged	
o-Xylene	0.58751	0.55625	0.55625	0.300	5.31978	50.0	Averaged	
Styrene	0.98473	0.98626	0.98626	0.300	-0.15496	50.0	Averaged	
Bromoform	0.27722	0.27956	0.27956	0.100	-0.84253	50.0	Averaged	
Isopropylbenzene	1.34224	1.34277	1.34277	0.100	-0.03979	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425983

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 17-JAN-2023 1801
Lab File ID X011723.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
1,1,2,2-Tetrachloroethane	0.79693	0.74455	0.74455	0.300	6.57291	50.0	Averaged	
4-Bromofluorobenzene	50.0	51.06400	0.47167	0.100	-2.12799	50.0	Linear	
1,2,3-Trichloropropane	0.55636	0.57623	0.57623	0.100	-3.57298	50.0	Averaged	
n-Propylbenzene	2.76956	2.70770	2.70770	0.100	2.23342	50.0	Averaged	
Bromobenzene	0.82033	0.73844	0.73844	0.100	9.98157	50.0	Averaged	
1,3,5-Trimethylbenzene	2.04596	2.00552	2.00552	0.100	1.97634	50.0	Averaged	
2-Chlorotoluene	1.81741	1.69628	1.69628	0.100	6.66500	50.0	Averaged	
4-Chlorotoluene	2.07183	1.99407	1.99407	0.100	3.75326	50.0	Averaged	
tert-Butylbenzene	1.67475	1.63522	1.63522	0.100	2.36055	50.0	Averaged	
1,2,4-Trimethylbenzene	2.15277	2.06110	2.06110	0.100	4.25817	50.0	Averaged	
sec-Butylbenzene	2.22832	2.25879	2.25879	0.100	-1.36745	50.0	Averaged	
p-Isopropyltoluene	1.99679	2.04732	2.04732	0.100	-2.53070	50.0	Averaged	
1,3-Dichlorobenzene	1.36155	1.29321	1.29321	0.600	5.01970	50.0	Averaged	
1,4-Dichlorobenzene	1.48576	1.38356	1.38356	0.400	6.87859	50.0	Averaged	
n-Butylbenzene	50.0	47.04600	1.80652	0.500	5.90800	50.0	Linear	
1,2-Dichlorobenzene	1.40225	1.32649	1.32649	0.400	5.40313	50.0	Averaged	
1,2-Dibromo-3-Chloropropane	50.0	51.63183	0.13158	0.040	-3.26366	50.0	Linear	
1,2,4-Trichlorobenzene	0.88494	0.90799	0.90799	0.100	-2.60380	50.0	Averaged	
Hexachlorobutadiene	50.0	45.36718	0.35550	0.100	9.26564	50.0	Quadratic	
Naphthalene	2.01347	2.12894	2.12894	0.200	-5.73512	50.0	Averaged	
1,2,3-Trichlorobenzene	0.84755	0.86276	0.86276	0.010	-1.79530	50.0	Averaged	
1,2-Dichloroethylene (total	0.47078	0.43172	0.43172	0.200	8.29673	50.0	Averaged	
Xylenes (total)	0.56589	0.54091	0.54091	0.100	4.41543	50.0	Averaged	
Cyclohexane	50.0	47.40578	0.47717	0.100	5.18845	50.0	Linear	
Freon TF	0.36703	0.33726	0.33726	0.100	8.11101	50.0	Averaged	
Methylcyclohexane	0.61204	0.68308	0.68308	0.100	-11.60643	50.0	Averaged	
Methyl Acetate	0.22499	0.24934	0.24934	0.100	-10.82367	50.0	Averaged	
Tert-butyl alcohol	0.03462	0.04126	0.04126	0.005	-19.16443	50.0	Averaged	
Isopropyl alcohol	0.01808	0.02246	0.02246	0.005	-24.20748	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_426067

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 18-JAN-2023 1148
Lab File ID X011803.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
1,4-Dioxane	0.00457	0.00480	0.00480	0.001	-4.92538	20.0	Averaged	
1,3-Butadiene	0.34316	0.29894	0.29894	0.100	12.88553	20.0	Averaged	
Methacrylonitrile	0.35404	0.35660	0.35660	0.100	-0.72384	20.0	Averaged	
Isobutyl Alcohol	0.05624	0.05996	0.05996	0.005	-6.62239	20.0	Averaged	
Acetonitrile	0.04551	0.04427	0.04427	0.005	2.72659	20.0	Averaged	
Allyl Chloride	0.86670	0.83614	0.83614	0.100	3.52527	20.0	Averaged	
Propionitrile	0.05102	0.05016	0.05016	0.010	1.68292	20.0	Averaged	
trans-1,4-Dichloro-2-butene	0.10794	0.11481	0.11481	0.050	-6.36658	20.0	Averaged	
Acetaldehyde	200	220	0.03452	0.001	-10.04947	20.0	Linear	
Chloroprene	0.17001	0.14418	0.14418	0.100	15.18926	20.0	Averaged	
Ethyl Acetate	0.39016	0.42518	0.42518	0.100	-8.97493	20.0	Averaged	
Methyl Methacrylate	0.34093	0.35725	0.35725	0.100	-4.78673	20.0	Averaged	
Ethyl Methacrylate	0.23545	0.24506	0.24506	0.100	-4.07973	20.0	Averaged	
Diethyl ether	0.33409	0.30173	0.30173	0.100	9.68726	20.0	Averaged	
Tetrahydrofuran	100	106	0.06585	0.001	-6.13202	20.0	Linear	
Diisopropyl ether	1.29704	1.23079	1.23079	0.100	5.10796	20.0	Averaged	
1,2,3-Trimethylbenzene	2.40776	2.09859	2.09859	0.100	12.84037	20.0	Averaged	
Dichlorodifluoromethane	50.0	47.02438	0.32873	0.100	5.95124	20.0	Linear	
Chloromethane	50.0	44.87103	0.40383	0.100	10.25793	20.0	Linear	
Vinyl Chloride	0.43678	0.39270	0.39270	0.100	10.09199	20.0	Averaged	
Bromomethane	50.0	42.48284	0.27888	0.100	15.03433	20.0	Linear	
Chloroethane	0.30401	0.26139	0.26139	0.100	14.01927	20.0	Averaged	
Trichlorofluoromethane	0.61122	0.54486	0.54486	0.100	10.85786	20.0	Averaged	
Acrolein	100	81.48062	0.02768	0.010	18.51938	20.0	Linear	
Acetone	100	108	0.15171	0.100	-8.13585	20.0	Linear	
1,1-Dichloroethene	0.37948	0.33579	0.33579	0.100	11.51351	20.0	Averaged	
Iodomethane	100	88.48844	0.43835	0.100	11.51156	20.0	Quadratic	
Acrylonitrile	0.12870	0.13484	0.13484	0.050	-4.77102	20.0	Averaged	
Methylene Chloride	0.52052	0.44873	0.44873	0.100	13.79125	20.0	Averaged	
Methyl tert-butyl ether	1.24211	1.18617	1.18617	0.100	4.50332	20.0	Averaged	
Carbon Disulfide	0.99285	0.87941	0.87941	0.100	11.42621	20.0	Averaged	
trans-1,2-Dichloroethene	0.42470	0.37716	0.37716	0.100	11.19422	20.0	Averaged	
Vinyl Acetate	1.09037	1.18464	1.18464	0.010	-8.64646	20.0	Averaged	
1,1-Dichloroethane	0.74536	0.67028	0.67028	0.200	10.07282	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_426067

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 18-JAN-2023 1148
Lab File ID X011803.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
2-Butanone	100	107	0.15911	0.100	-6.70833	20.0	Linear	
2,2-Dichloropropane	0.63286	0.58500	0.58500	0.100	7.56246	20.0	Averaged	
cis-1,2-Dichloroethene	0.51686	0.45315	0.45315	0.100	12.32586	20.0	Averaged	
Chloroform	0.83541	0.76218	0.76218	0.200	8.76638	20.0	Averaged	
Bromochloromethane	0.28299	0.24554	0.24554	0.100	13.23567	20.0	Averaged	
Dibromofluoromethane	50.0	47.39555	0.45517	0.100	5.20890	20.0	Linear	
1,1,1-Trichloroethane	0.66283	0.59244	0.59244	0.100	10.61969	20.0	Averaged	
1,1-Dichloropropene	0.35497	0.33669	0.33669	0.100	5.15079	20.0	Averaged	
1,2-Dichloroethane	0.40967	0.42054	0.42054	0.100	-2.65310	20.0	Averaged	
Carbon Tetrachloride	0.37906	0.32582	0.32582	0.100	14.04691	20.0	Averaged	
1,2-Dichloroethane-d4	50.0	50.45276	0.51135	0.100	-0.90553	20.0	Linear	
Benzene	1.19399	1.11537	1.11537	0.500	6.58458	20.0	Averaged	
Trichloroethene	0.33865	0.30647	0.30647	0.200	9.50429	20.0	Averaged	
Bromodichloromethane	0.44810	0.41843	0.41843	0.200	6.61966	20.0	Averaged	
2-Chloroethylvinyl ether	0.12748	0.16394	0.16394	0.001	-28.59817	20.0	Averaged	<-
1,2-Dichloropropane	0.31761	0.30002	0.30002	0.100	5.53643	20.0	Averaged	
Dibromomethane	0.21588	0.20259	0.20259	0.100	6.15540	20.0	Averaged	
4-Methyl-2-Pentanone	0.26725	0.29046	0.29046	0.100	-8.68639	20.0	Averaged	
cis-1,3-Dichloropropene	0.52625	0.51845	0.51845	0.200	1.48322	20.0	Averaged	
Toluene-d8	1.23554	1.21800	1.21800	0.100	1.41955	20.0	Averaged	
Toluene	1.38201	1.27564	1.27564	0.400	7.69740	20.0	Averaged	
trans-1,3-Dichloropropene	0.43673	0.45224	0.45224	0.100	-3.55274	20.0	Averaged	
2-Hexanone	0.18183	0.20811	0.20811	0.100	-14.45460	20.0	Averaged	
1,1,2-Trichloroethane	0.27726	0.26182	0.26182	0.100	5.56580	20.0	Averaged	
1,3-Dichloropropane	0.54573	0.52813	0.52813	0.100	3.22543	20.0	Averaged	
Dibromochloromethane	0.40016	0.38469	0.38469	0.100	3.86685	20.0	Averaged	
Tetrachloroethene	0.28594	0.25106	0.25106	0.200	12.20108	20.0	Averaged	
1,2-Dibromoethane	0.34665	0.34569	0.34569	0.100	0.27695	20.0	Averaged	
1-Chlorohexane	0.24163	0.22265	0.22265	0.100	7.85785	20.0	Averaged	
Chlorobenzene	0.98026	0.89506	0.89506	0.500	8.69116	20.0	Averaged	
1,1,1,2-Tetrachloroethane	0.36480	0.34310	0.34310	0.100	5.94747	20.0	Averaged	
Ethylbenzene	0.46175	0.43497	0.43497	0.100	5.79985	20.0	Averaged	
m,p-Xylenes	0.59525	0.55658	0.55658	0.100	6.49645	20.0	Averaged	
o-Xylene	0.58751	0.54879	0.54879	0.300	6.59068	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
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Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 18-JAN-2023 1148
Lab File ID X011803.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Styrene	0.98473	0.98537	0.98537	0.300	-0.06485	20.0	Averaged	
Bromoform	0.27722	0.27924	0.27924	0.100	-0.72810	20.0	Averaged	
Isopropylbenzene	1.34224	1.28292	1.28292	0.100	4.41924	20.0	Averaged	
1,1,2,2-Tetrachloroethane	0.79693	0.75949	0.75949	0.300	4.69724	20.0	Averaged	
4-Bromofluorobenzene	50.0	51.64185	0.47701	0.100	-3.28370	20.0	Linear	
1,2,3-Trichloropropane	0.55636	0.56047	0.56047	0.100	-0.73990	20.0	Averaged	
n-Propylbenzene	2.76956	2.57707	2.57707	0.100	6.95017	20.0	Averaged	
Bromobenzene	0.82033	0.75260	0.75260	0.100	8.25572	20.0	Averaged	
1,3,5-Trimethylbenzene	2.04596	1.94957	1.94957	0.100	4.71134	20.0	Averaged	
2-Chlorotoluene	1.81741	1.69282	1.69282	0.100	6.85565	20.0	Averaged	
4-Chlorotoluene	2.07183	1.99560	1.99560	0.100	3.67950	20.0	Averaged	
tert-Butylbenzene	1.67475	1.52808	1.52808	0.100	8.75795	20.0	Averaged	
1,2,4-Trimethylbenzene	2.15277	2.03314	2.03314	0.100	5.55691	20.0	Averaged	
sec-Butylbenzene	2.22832	2.06534	2.06534	0.100	7.31375	20.0	Averaged	
p-Isopropyltoluene	1.99679	1.91374	1.91374	0.100	4.15893	20.0	Averaged	
1,3-Dichlorobenzene	1.36155	1.30089	1.30089	0.600	4.45531	20.0	Averaged	
1,4-Dichlorobenzene	1.48576	1.40929	1.40929	0.400	5.14702	20.0	Averaged	
n-Butylbenzene	50.0	44.07477	1.68795	0.500	11.85047	20.0	Linear	
1,2-Dichlorobenzene	1.40225	1.32756	1.32756	0.400	5.32673	20.0	Averaged	
1,2-Dibromo-3-Chloropropane	50.0	51.09587	0.13021	0.040	-2.19175	20.0	Linear	
1,2,4-Trichlorobenzene	0.88494	0.88943	0.88943	0.100	-0.50637	20.0	Averaged	
Hexachlorobutadiene	50.0	41.46842	0.32468	0.100	17.06316	20.0	Quadratic	
Naphthalene	2.01347	2.15246	2.15246	0.200	-6.90310	20.0	Averaged	
1,2,3-Trichlorobenzene	0.84755	0.83411	0.83411	0.010	1.58589	20.0	Averaged	
1,2-Dichloroethylene (total	0.47078	0.41516	0.41516	0.200	11.81542	20.0	Averaged	
Xylenes (total)	0.56589	0.53321	0.53321	0.100	5.77632	20.0	Averaged	
Cyclohexane	50.0	41.62793	0.41742	0.100	16.74414	20.0	Linear	
Freon TF	0.36703	0.30044	0.30044	0.100	18.14352	20.0	Averaged	
Methylcyclohexane	0.61204	0.62474	0.62474	0.100	-2.07432	20.0	Averaged	
Methyl Acetate	0.22499	0.22491	0.22491	0.100	0.03617	20.0	Averaged	
Tert-butyl alcohol	0.03462	0.03872	0.03872	0.005	-11.82466	20.0	Averaged	
Isopropyl alcohol	0.01808	0.02114	0.02114	0.005	-16.93504	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_426067

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 18-JAN-2023 2116
Lab File ID X011830.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
1,4-Dioxane	0.00457	0.00510	0.00510	0.001	-11.63691	50.0	Averaged	
1,3-Butadiene	0.34316	0.30582	0.30582	0.100	10.88044	50.0	Averaged	
Methacrylonitrile	0.35404	0.36823	0.36823	0.100	-4.00770	50.0	Averaged	
Isobutyl Alcohol	0.05624	0.06221	0.06221	0.005	-10.61808	50.0	Averaged	
Acetonitrile	0.04551	0.04212	0.04212	0.005	7.44263	50.0	Averaged	
Allyl Chloride	0.86670	0.81254	0.81254	0.100	6.24822	50.0	Averaged	
Propionitrile	0.05102	0.05373	0.05373	0.010	-5.31296	50.0	Averaged	
trans-1,4-Dichloro-2-butene	0.10794	0.11403	0.11403	0.050	-5.64360	50.0	Averaged	
Acetaldehyde	200	327	0.04974	0.001	-63.69743	50.0	Linear	
Chloroprene	0.17001	0.14931	0.14931	0.100	12.17218	50.0	Averaged	
Ethyl Acetate	0.39016	0.43204	0.43204	0.100	-10.73390	50.0	Averaged	
Methyl Methacrylate	0.34093	0.37887	0.37887	0.100	-11.13053	50.0	Averaged	
Ethyl Methacrylate	0.23545	0.26206	0.26206	0.100	-11.30114	50.0	Averaged	
Diethyl ether	0.33409	0.30537	0.30537	0.100	8.59565	50.0	Averaged	
Tetrahydrofuran	100	106	0.06605	0.001	-6.45667	50.0	Linear	
Diisopropyl ether	1.29704	1.22219	1.22219	0.100	5.77139	50.0	Averaged	
1,2,3-Trimethylbenzene	2.40776	2.26215	2.26215	0.100	6.04741	50.0	Averaged	
Dichlorodifluoromethane	50.0	40.71949	0.28428	0.100	18.56102	50.0	Linear	
Chloromethane	50.0	43.73856	0.39311	0.100	12.52289	50.0	Linear	
Vinyl Chloride	0.43678	0.40687	0.40687	0.100	6.84804	50.0	Averaged	
Bromomethane	50.0	47.04556	0.31013	0.100	5.90888	50.0	Linear	
Chloroethane	0.30401	0.27507	0.27507	0.100	9.51850	50.0	Averaged	
Trichlorofluoromethane	0.61122	0.60469	0.60469	0.100	1.06966	50.0	Averaged	
Acrolein	100	73.54233	0.02489	0.010	26.45767	50.0	Linear	
Acetone	100	110	0.15440	0.100	-10.05371	50.0	Linear	
1,1-Dichloroethene	0.37948	0.36935	0.36935	0.100	2.66777	50.0	Averaged	
Iodomethane	100	90.89758	0.45123	0.100	9.10242	50.0	Quadratic	
Acrylonitrile	0.12870	0.14037	0.14037	0.050	-9.06626	50.0	Averaged	
Methylene Chloride	0.52052	0.48085	0.48085	0.100	7.62108	50.0	Averaged	
Methyl tert-butyl ether	1.24211	1.19556	1.19556	0.100	3.74713	50.0	Averaged	
Carbon Disulfide	0.99285	0.94208	0.94208	0.100	5.11387	50.0	Averaged	
trans-1,2-Dichloroethene	0.42470	0.40977	0.40977	0.100	3.51538	50.0	Averaged	
Vinyl Acetate	1.09037	0.99969	0.99969	0.010	8.31618	50.0	Averaged	
1,1-Dichloroethane	0.74536	0.72026	0.72026	0.200	3.36818	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_426067

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 18-JAN-2023 2116
Lab File ID X011830.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
2-Butanone	100	108	0.16136	0.100	-8.17576	50.0	Linear	
2,2-Dichloropropane	0.63286	0.54869	0.54869	0.100	13.30005	50.0	Averaged	
cis-1,2-Dichloroethene	0.51686	0.48907	0.48907	0.100	5.37616	50.0	Averaged	
Chloroform	0.83541	0.81945	0.81945	0.200	1.91081	50.0	Averaged	
Bromochloromethane	0.28299	0.26438	0.26438	0.100	6.57529	50.0	Averaged	
Dibromofluoromethane	50.0	49.38614	0.47422	0.100	1.22772	50.0	Linear	
1,1,1-Trichloroethane	0.66283	0.65788	0.65788	0.100	0.74680	50.0	Averaged	
1,1-Dichloropropene	0.35497	0.36908	0.36908	0.100	-3.97479	50.0	Averaged	
1,2-Dichloroethane	0.40967	0.42830	0.42830	0.100	-4.54743	50.0	Averaged	
Carbon Tetrachloride	0.37906	0.36177	0.36177	0.100	4.56137	50.0	Averaged	
1,2-Dichloroethane-d4	50.0	52.15021	0.52865	0.100	-4.30042	50.0	Linear	
Benzene	1.19399	1.18155	1.18155	0.500	1.04144	50.0	Averaged	
Trichloroethene	0.33865	0.34808	0.34808	0.200	-2.78212	50.0	Averaged	
Bromodichloromethane	0.44810	0.42897	0.42897	0.200	4.26882	50.0	Averaged	
2-Chloroethylvinyl ether	0.12748	0.14839	0.14839	0.001	-16.40446	50.0	Averaged	
1,2-Dichloropropane	0.31761	0.31301	0.31301	0.100	1.44898	50.0	Averaged	
Dibromomethane	0.21588	0.21153	0.21153	0.100	2.01313	50.0	Averaged	
4-Methyl-2-Pentanone	0.26725	0.29278	0.29278	0.100	-9.55390	50.0	Averaged	
cis-1,3-Dichloropropene	0.52625	0.51756	0.51756	0.200	1.65068	50.0	Averaged	
Toluene-d8	1.23554	1.22409	1.22409	0.100	0.92608	50.0	Averaged	
Toluene	1.38201	1.36267	1.36267	0.400	1.39940	50.0	Averaged	
trans-1,3-Dichloropropene	0.43673	0.44581	0.44581	0.100	-2.07971	50.0	Averaged	
2-Hexanone	0.18183	0.20524	0.20524	0.100	-12.87789	50.0	Averaged	
1,1,2-Trichloroethane	0.27726	0.26816	0.26816	0.100	3.28039	50.0	Averaged	
1,3-Dichloropropane	0.54573	0.54091	0.54091	0.100	0.88215	50.0	Averaged	
Dibromochloromethane	0.40016	0.39168	0.39168	0.100	2.11943	50.0	Averaged	
Tetrachloroethene	0.28594	0.28308	0.28308	0.200	1.00195	50.0	Averaged	
1,2-Dibromoethane	0.34665	0.35331	0.35331	0.100	-1.92168	50.0	Averaged	
1-Chlorohexane	0.24163	0.24998	0.24998	0.100	-3.45430	50.0	Averaged	
Chlorobenzene	0.98026	0.94316	0.94316	0.500	3.78417	50.0	Averaged	
1,1,1,2-Tetrachloroethane	0.36480	0.35957	0.35957	0.100	1.43354	50.0	Averaged	
Ethylbenzene	0.46175	0.46685	0.46685	0.100	-1.10432	50.0	Averaged	
m,p-Xylenes	0.59525	0.60422	0.60422	0.100	-1.50683	50.0	Averaged	
o-Xylene	0.58751	0.58933	0.58933	0.300	-0.31014	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_426067

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 18-JAN-2023 2116
Lab File ID X011830.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Styrene	0.98473	1.04179	1.04179	0.300	-5.79431	50.0	Averaged	
Bromoform	0.27722	0.27900	0.27900	0.100	-0.64095	50.0	Averaged	
Isopropylbenzene	1.34224	1.43457	1.43457	0.100	-6.87911	50.0	Averaged	
1,1,2,2-Tetrachloroethane	0.79693	0.73852	0.73852	0.300	7.32960	50.0	Averaged	
4-Bromofluorobenzene	50.0	50.97472	0.47084	0.100	-1.94944	50.0	Linear	
1,2,3-Trichloropropane	0.55636	0.56792	0.56792	0.100	-2.07909	50.0	Averaged	
n-Propylbenzene	2.76956	2.87488	2.87488	0.100	-3.80269	50.0	Averaged	
Bromobenzene	0.82033	0.78238	0.78238	0.100	4.62516	50.0	Averaged	
1,3,5-Trimethylbenzene	2.04596	2.15787	2.15787	0.100	-5.46988	50.0	Averaged	
2-Chlorotoluene	1.81741	1.80778	1.80778	0.100	0.53005	50.0	Averaged	
4-Chlorotoluene	2.07183	2.14113	2.14113	0.100	-3.34476	50.0	Averaged	
tert-Butylbenzene	1.67475	1.77010	1.77010	0.100	-5.69312	50.0	Averaged	
1,2,4-Trimethylbenzene	2.15277	2.23466	2.23466	0.100	-3.80430	50.0	Averaged	
sec-Butylbenzene	2.22832	2.41576	2.41576	0.100	-8.41173	50.0	Averaged	
p-Isopropyltoluene	1.99679	2.19488	2.19488	0.100	-9.92071	50.0	Averaged	
1,3-Dichlorobenzene	1.36155	1.37489	1.37489	0.600	-0.97990	50.0	Averaged	
1,4-Dichlorobenzene	1.48576	1.47595	1.47595	0.400	0.66053	50.0	Averaged	
n-Butylbenzene	50.0	50.05695	1.92667	0.500	-0.11390	50.0	Linear	
1,2-Dichlorobenzene	1.40225	1.40566	1.40566	0.400	-0.24318	50.0	Averaged	
1,2-Dibromo-3-Chloropropane	50.0	50.99448	0.12995	0.040	-1.98896	50.0	Linear	
1,2,4-Trichlorobenzene	0.88494	0.95696	0.95696	0.100	-8.13810	50.0	Averaged	
Hexachlorobutadiene	50.0	47.19157	0.36994	0.100	5.61687	50.0	Quadratic	
Naphthalene	2.01347	2.19622	2.19622	0.200	-9.07660	50.0	Averaged	
1,2,3-Trichlorobenzene	0.84755	0.89220	0.89220	0.010	-5.26813	50.0	Averaged	
1,2-Dichloroethylene (total	0.47078	0.44942	0.44942	0.200	4.53683	50.0	Averaged	
Xylenes (total)	0.56589	0.57695	0.57695	0.100	-1.95354	50.0	Averaged	
Cyclohexane	50.0	50.56614	0.50985	0.100	-1.13229	50.0	Linear	
Freon TF	0.36703	0.35173	0.35173	0.100	4.16781	50.0	Averaged	
Methylcyclohexane	0.61204	0.62061	0.62061	0.100	-1.40067	50.0	Averaged	
Methyl Acetate	0.22499	0.24949	0.24949	0.100	-10.89098	50.0	Averaged	
Tert-butyl alcohol	0.03462	0.03881	0.03881	0.005	-12.08551	50.0	Averaged	
Isopropyl alcohol	0.01808	0.02101	0.02101	0.005	-16.19093	50.0	Averaged	

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Form 8

Internal Standard Area and RT Summary

Workorder

HS23010587

Client

Bhate Environmental Associates, Inc.

Project

LHAAP-58

01/27/2023

ALS Environmental–Houston Laboratory

10450 Stancliff Road, Suite 210, Houston, TX 77099

Phone (281) 530-5656 Fax (281) 530-5887

www.alsglobal.com

Form 8 - Internal Standard Area and RT Summary

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425904

		IS1				IS2				IS3				IS4			
Sample ID	File ID	Area		RT		Area		RT		Area		RT		Area		RT	
12-HOUR STD (CCV)	X011602	487390	#	4.17	#	735132	#	4.97	#	696911	#	7.67	#	402481	#	9.66	#
CCB	X011604	567791		4.18		803617		4.96		722076		7.67		387650		9.66	
VLCSW-230116	X011605	491041		4.18		721391		4.96		681591		7.67		378990		9.66	
VBLKW-230116	X011607	549601		4.18		784303		4.96		701018		7.67		381411		9.66	
ZZZZZZMS	X011616	539813		4.18		761647		4.96		686274		7.67		375441		9.66	
ZZZZZZMSD	X011617	538200		4.18		764232		4.96		690575		7.67		384710		9.66	
HS23010587-01	X011620	527869		4.18		750823		4.97		661126		7.67		344700		9.66	
HS23010587-03	X011621	541883		4.17		762070		4.97		669118		7.67		348714		9.66	
HS23010587-04	X011622	522542		4.18		748281		4.96		656085		7.67		343676		9.66	
HS23010587-05	X011623	537619		4.18		767501		4.97		683936		7.67		355282		9.66	
CCV-END	X011631	442545		4.18		681652		4.96		648039		7.67		375009		9.66	

IS1 - Pentafluorobenzene IS2 - 1,4-Difluorobenzene IS3 - Chlorobenzene-d5 IS4 - 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of 12H STD IS Area
AREA LOWER LIMIT = - 50% of 12H STD IS Area
RT - Retention Time IS - Internal Standard

RT UPPER LIMIT = + 0.50 of 12H STD IS RT
RT LOWER LIMIT = - 0.50 of 12H STD IS RT
CCV - Continuing Calibration Verification

- Area or RT Limit Flag
* - Value Outside Area or RT limits
H - Hour STD - Standard

Form 8 - Internal Standard Area and RT Summary

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_425983

		IS1		IS2		IS3		IS4	
Sample ID	File ID	Area	RT	Area	RT	Area	RT	Area	RT
12-HOUR STD (CCV)	X011702	476097 #	4.18 #	710415 #	4.97 #	684320 #	7.67 #	401720 #	9.66 #
CCB	X011704	558855	4.18	779396	4.97	696003	7.67	352793	9.66
VBLKW-230117	X011707	540552	4.18	765436	4.97	667545	7.67	339871	9.66
VLCSW-230117	X011708	469497	4.17	691761	4.96	654137	7.67	373059	9.66
HS23010587-07	X011711	547701	4.18	762905	4.96	678412	7.67	348991	9.66
HS23010587-06	X011712	539432	4.17	752879	4.96	657592	7.67	325181	9.66
HS23010587-02	X011716	545718	4.18	765126	4.97	671902	7.67	344390	9.66
ZZZZZZMS	X011719	540134	4.18	760168	4.96	686043	7.67	372856	9.66
ZZZZZZMSD	X011720	544635	4.17	763020	4.96	687695	7.67	377231	9.66
CCV-END	X011723	454603	4.18	684003	4.96	658867	7.67	387695	9.66

IS1 - Pentafluorobenzene IS2 - 1,4-Difluorobenzene IS3 - Chlorobenzene-d5 IS4 - 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of 12H STD IS Area
AREA LOWER LIMIT = - 50% of 12H STD IS Area
RT - Retention Time IS - Internal Standard

RT UPPER LIMIT = + 0.50 of 12H STD IS RT
RT LOWER LIMIT = - 0.50 of 12H STD IS RT
CCV - Continuing Calibration Verification

- Area or RT Limit Flag
* - Value Outside Area or RT limits
H - Hour STD - Standard

Form 8 - Internal Standard Area and RT Summary

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

RunID
VOA6_426067

		IS1		IS2		IS3		IS4	
Sample ID	File ID	Area	RT	Area	RT	Area	RT	Area	RT
12-HOUR STD (CCV)	X011803	489424 #	4.18 #	723703 #	4.97 #	696562 #	7.67 #	413903 #	9.66 #
CCB	X011804	547114	4.17	768486	4.97	671866	7.67	341638	9.66
VLCSW-230118	X011805	473146	4.18	702531	4.97	668637	7.67	382174	9.66
VBLKW-230118	X011807	535465	4.18	749587	4.97	673748	7.67	355069	9.66
HS23010587-02	X011812	535486	4.18	756545	4.96	669922	7.67	357627	9.66
ZZZZZZMS	X011813	531106	4.18	747876	4.96	677318	7.67	370137	9.66
ZZZZZZMSD	X011814	554704	4.18	787144	4.96	721168	7.67	400970	9.66
CCV-END	X011830	447898	4.18	681617	4.97	656244	7.67	387986	9.66

IS1 - Pentafluorobenzene IS2 - 1,4-Difluorobenzene IS3 - Chlorobenzene-d5 IS4 - 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of 12H STD IS Area
AREA LOWER LIMIT = - 50% of 12H STD IS Area
RT - Retention Time IS - Internal Standard

RT UPPER LIMIT = + 0.50 of 12H STD IS RT
RT LOWER LIMIT = - 0.50 of 12H STD IS RT
CCV - Continuing Calibration Verification

- Area or RT Limit Flag
* - Value Outside Area or RT limits
H - Hour STD - Standard

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Analysis Run Log

Volatiles by by EPA 8260

Workorder

HS23010587

Client

Bhate Environmental Associates, Inc.

Project

LHAAP-58

01/27/2023

ALS Environmental–Houston Laboratory

10450 Stancliff Road, Suite 210, Houston, TX 77099

Phone (281) 530-5656 Fax (281) 530-5887

www.alsglobal.com

MSVOA06 -Logbook

Batch: 52417 **Analyst:** Presenta Cabascango

Date: 12-16-2022 **Reviewer:**

Method: 8260 **Laboratory:** Houston

Comments:

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	12-16-2022 11:17 am	1.00	50 mL	50 mL	X121601.D	Liquid	Y	NA
2	VSTD000.25	ICAL1	12-16-2022 11:38 am	1.00	50 mL	50 mL	X121602.D	Liquid	Y	NA
3	VSTD000.5	ICAL2	12-16-2022 12:20 pm	1.00	50 mL	50 mL	X121603.D	Liquid	Y	NA
4	VSTD001	ICAL3	12-16-2022 12:41 pm	1.00	50 mL	50 mL	X121604.D	Liquid	Y	NA
5	VSTD002	ICAL4	12-16-2022 01:02 pm	1.00	50 mL	50 mL	X121605.D	Liquid	Y	NA
6	VSTD005	ICAL5	12-16-2022 01:23 pm	1.00	50 mL	50 mL	X121606.D	Liquid	Y	NA
7	VSTD020	ICAL6	12-16-2022 01:43 pm	1.00	50 mL	50 mL	X121607.D	Liquid	Y	NA
8	VSTD050	ICAL7	12-16-2022 02:04 pm	1.00	50 mL	50 mL	X121608.D	Liquid	Y	NA
9	VSTD100	ICAL8	12-16-2022 02:25 pm	1.00	50 mL	50 mL	X121609.D	Liquid	Y	NA
10	VSTD150	ICAL9	12-16-2022 02:46 pm	1.00	50 mL	50 mL	X121610.D	Liquid	Y	NA
11	VSTD200	ICAL	12-16-2022 03:07 pm	1.00	50 mL	50 mL	X121611.D	Liquid	Y	NA
12	BLANK	SAMP	12-16-2022 03:28 pm	1.00	50 mL	50 mL	X121612.D	Liquid	Y	NA
13	CCV	CCV	12-16-2022 03:49 pm	1.00	50 mL	50 mL	X121613.D	Liquid	Y	NA
14	BLANK	SAMP	12-16-2022 04:10 pm	1.00	50 mL	50 mL	X121614.D	Liquid	Y	NA
15	CCB	SAMP	12-16-2022 04:31 pm	1.00	50 mL	50 mL	X121615.D	Liquid	Y	NA
16	VLCSW-221216	LCS	12-16-2022 04:52 pm	1.00	50 mL	50 mL	X121616.D	Liquid	Y	NA
17	BLANK	SAMP	12-16-2022 05:13 pm	1.00	50 mL	50 mL	X121617.D	Liquid	Y	NA
18	VBLKW-221216	MBLK	12-16-2022 05:34 pm	1.00	50 mL	50 mL	X121618.D	Liquid	Y	NA
19	HS22120648-05	SAMP	12-16-2022 05:55 pm	1.00	50 mL	50 mL	X121619.D	Liquid	Y	NA
20	HS22120648-09	SAMP	12-16-2022 06:16 pm	1.00	50 mL	50 mL	X121620.D	Liquid	Y	NA
21	HS22120648-01	SAMP	12-16-2022 06:37 pm	1.00	50 mL	50 mL	X121621.D	Liquid	Y	NA
22	HS22120648-02	SAMP	12-16-2022 06:58 pm	1.00	50 mL	50 mL	X121622.D	Liquid	Y	NA
23	HS22120648-03	SAMP	12-16-2022 07:19 pm	1.00	50 mL	50 mL	X121623.D	Liquid	Y	NA
24	HS22120648-04	SAMP	12-16-2022 07:40 pm	1.00	50 mL	50 mL	X121624.D	Liquid	Y	NA
25	HS22120648-06	SAMP	12-16-2022 08:01 pm	1.00	50 mL	50 mL	X121625.D	Liquid	Y	NA
26	HS22120648-07	SAMP	12-16-2022 08:22 pm	1.00	50 mL	50 mL	X121626.D	Liquid	Y	NA
27	HS22120648-08	SAMP	12-16-2022 08:43 pm	1.00	50 mL	50 mL	X121627.D	Liquid	Y	NA
28	HS22120648-06MS	MS	12-16-2022 09:04 pm	1.00	50 mL	50 mL	X121628.D	Liquid	Y	NA
29	HS22120648-06MSD	MSD	12-16-2022 09:25 pm	1.00	50 mL	50 mL	X121629.D	Liquid	Y	NA
30	CCV-END	CCV	12-16-2022 09:46 pm	1.00	50 mL	50 mL	X121630.D	Liquid	Y	NA
31	BFB	TUNE	12-16-2022 10:07 pm	1.00	50 mL	50 mL	Y121601.D	Liquid	Y	NA
32	CCV	CCV	12-16-2022 10:28 pm	1.00	50 mL	50 mL	Y121602a.D	Liquid	Y	NA
33	CCV	CCV	12-16-2022 10:49 pm	1.00	50 mL	50 mL	Y121603.D	Liquid	Y	NA
34	CCB	SAMP	12-16-2022 11:10 pm	1.00	50 mL	50 mL	Y121604.D	Liquid	Y	NA
35	VLCSW-221215	LCS	12-16-2022 11:31 pm	1.00	50 mL	50 mL	Y121605.D	Liquid	Y	NA
36	BLANK	SAMP	12-16-2022 11:52 pm	1.00	50 mL	50 mL	Y121606.D	Liquid	Y	NA
37	VBLKW-221215	MBLK	12-17-2022 12:13 am	1.00	50 mL	50 mL	Y121607.D	Liquid	Y	NA
38	HS22120974-13	SAMP	12-17-2022 12:34 am	1.00	50 mL	50 mL	Y121608.D	Liquid	Y	NA
39	HS22120974-01	SAMP	12-17-2022 12:55 am	1.00	50 mL	50 mL	Y121609.D	Liquid	Y	NA
40	HS22120974-01MS	MS	12-17-2022 01:16 am	1.00	50 mL	50 mL	Y121610.D	Liquid	Y	NA
41	HS22120974-01MSD	MSD	12-17-2022 01:38 am	1.00	50 mL	50 mL	Y121611.D	Liquid	Y	NA

MSVOA06 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
42	BLANK	SAMP	12-17-2022 01:59 am	1.00	50 mL	50 mL	Y121612.D	Liquid	Y	NA
43	HS22120974-02	SAMP	12-17-2022 02:20 am	1.00	50 mL	50 mL	Y121613.D	Liquid	Y	NA
44	HS22120974-03	SAMP	12-17-2022 02:41 am	1.00	50 mL	50 mL	Y121614.D	Liquid	Y	NA
45	HS22120974-04	SAMP	12-17-2022 03:02 am	1.00	50 mL	50 mL	Y121615.D	Liquid	Y	NA
46	HS22120974-05	SAMP	12-17-2022 03:23 am	1.00	50 mL	50 mL	Y121616.D	Liquid	Y	NA
47	HS22120974-06	SAMP	12-17-2022 03:44 am	1.00	50 mL	50 mL	Y121617.D	Liquid	Y	NA
48	HS22120974-07	SAMP	12-17-2022 04:05 am	1.00	50 mL	50 mL	Y121618.D	Liquid	Y	NA
49	HS22120974-08	SAMP	12-17-2022 04:26 am	1.00	50 mL	50 mL	Y121619.D	Liquid	Y	NA
50	HS22120974-09	SAMP	12-17-2022 04:47 am	1.00	50 mL	50 mL	Y121620.D	Liquid	Y	NA
51	HS22120974-10	SAMP	12-17-2022 05:08 am	1.00	50 mL	50 mL	Y121621.D	Liquid	Y	NA
52	HS22120974-11	SAMP	12-17-2022 05:29 am	1.00	50 mL	50 mL	Y121622.D	Liquid	Y	NA
53	HS22120974-12	SAMP	12-17-2022 05:50 am	1.00	50 mL	50 mL	Y121623.D	Liquid	Y	NA
54	HS22120974-14	SAMP	12-17-2022 06:11 am	1.00	50 mL	50 mL	Y121624.D	Liquid	Y	NA
55	HS22120974-15	SAMP	12-17-2022 06:32 am	1.00	50 mL	50 mL	Y121625.D	Liquid	Y	NA
56	HS22120574-15	SAMP	12-17-2022 06:53 am	5.00	10 mL	50 mL	Y121626.D	Liquid	Y	NA
57	HS22120574-17	SAMP	12-17-2022 07:14 am	5.00	10 mL	50 mL	Y121627.D	Liquid	Y	NA
58	HS22120770-07	SAMP	12-17-2022 07:36 am	10.00	5 mL	50 mL	Y121628.D	Liquid	Y	NA
59	HS22120770-07	SAMP	12-17-2022 07:57 am	100.0(	500 µL	50 mL	Y121629.D	Liquid	Y	NA
60	HS22120770-10	SAMP	12-17-2022 08:18 am	5.00	10 mL	50 mL	Y121630.D	Liquid	Y	NA
61	BLANK	SAMP	12-17-2022 08:39 am	1.00	50 mL	50 mL	Y121631.D	Liquid	Y	NA

Form 13 - Analysis Run Log

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

RUNID
VOA6_425904

Run ID VOA6_425904 **Start Date** 01/16/23 **EndDate** 01/16/23 **Matrix** Aqueous

Client Sample ID	Type	Lab Sample ID	File ID	Analysis Date	DF
CCV	CCV	CCV	X011602.D	01/16/23 10:50	1
CCB	CCB	CCB	X011604.D	01/16/23 11:33	1
VLCSW-230116	LCS	VLCSW-230116	X011605.D	01/16/23 11:53	1
VBLKW-230116	MBLK	VBLKW-230116	X011607.D	01/16/23 12:36	1
BatchQC	MS	HS23010472-04MS	X011616.D	01/16/23 15:45	1000
BatchQC	MSD	HS23010472-04MSD	X011617.D	01/16/23 16:06	1000
35AWW11_011223	SAMP	HS23010587-01	X011620.D	01/16/23 17:09	1
LHSMW07_011223	SAMP	HS23010587-03	X011621.D	01/16/23 17:30	1
35AWW06_011223	SAMP	HS23010587-04	X011622.D	01/16/23 17:51	1
35AWW23_011223	SAMP	HS23010587-05	X011623.D	01/16/23 18:12	1

Form 13 - Analysis Run Log

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

RUNID
VOA6_425983

Run ID VOA6_425983 **Start Date** 01/17/23 **EndDate** 01/17/23 **Matrix** Aqueous

Client Sample ID	Type	Lab Sample ID	File ID	Analysis Date	DF
CCV	CCV	CCV	X011702.D	01/17/23 10:40	1
CCB	CCB	CCB	X011704.D	01/17/23 11:22	1
VBLKW-230117	MBLK	VBLKW-230117	X011707.D	01/17/23 12:25	1
VLCSW-230117	LCS	VLCSW-230117	X011708.D	01/17/23 12:46	1
Trip Blank	SAMP	HS23010587-07	X011711.D	01/17/23 13:49	1
35AWW19_011223	SAMP	HS23010587-06	X011712.D	01/17/23 14:10	1
35AWW20_011223	SAMP	HS23010587-02	X011716.D	01/17/23 15:34	25
BatchQC	MS	HS23010472-04MS	X011719.D	01/17/23 16:37	50
BatchQC	MSD	HS23010472-04MSD	X011720.D	01/17/23 16:58	50

Form 13 - Analysis Run Log

Client Bhate Environmental Associates, Inc.

Project LHAAP-58

Workorder
HS23010587

Volatiles by by EPA 8260

RUNID
VOA6_426067

Run ID VOA6_426067 **Start Date** 01/18/23 **EndDate** 01/18/23 **Matrix** Aqueous

Client Sample ID	Type	Lab Sample ID	File ID	Analysis Date	DF
CCV	CCV	CCV	X011803.D	01/18/23 11:48	1
CCB	CCB	CCB	X011804.D	01/18/23 12:09	1
VLCSW-230118	LCS	VLCSW-230118	X011805.D	01/18/23 12:30	1
VBLKW-230118	MBLK	VBLKW-230118	X011807.D	01/18/23 13:12	1
35AWW20_011223	SAMP	HS23010587-02	X011812.D	01/18/23 14:57	1
BatchQC	MS	HS23010794-01MS	X011813.D	01/18/23 15:18	1
BatchQC	MSD	HS23010794-01MSD	X011814.D	01/18/23 15:39	1

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Raw Data VOA6 424237

Volatiles by by EPA 8260

Workorder

HS23010587

Client

Bhate Environmental Associates, Inc.

Project

LHAAP-58

01/27/2023

ALS Environmental–Houston Laboratory

10450 Stancliff Road, Suite 210, Houston, TX 77099

Phone (281) 530-5656 Fax (281) 530-5887

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Data File: \\NAHSTWS005\Target\chem\voa6.i\x221216.b\X121601.D Page 1
Report Date: 16-Dec-2022 12:08

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\x221216.b\X121601.D
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 16-DEC-2022 11:17
Operator : PC Inst ID: voa6.i
Smp Info : BFB;BFB;3;;BFB
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\x221216.b\bfb.m
Meth Date : 01-Dec-2022 12:59 Linh.Pham Quant Type: ISTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: WATER
Processing Host: NAHSTW7051

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vf	1.000	Volumetric correction factor
Vi	2.000	Injection Volume
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/l)	TARGET RANGE	RATIO
1 bfb							CAS #: 460-00-4	
8.691	8.889	(0.000)	95	72328			0.00- 100.00	100.00
8.691	8.889	(0.000)	50	13272			15.00- 40.00	18.35
8.691	8.889	(0.000)	75	33368			30.00- 60.00	46.13
8.691	8.889	(0.000)	96	5178			5.00- 9.00	7.16
8.691	8.889	(0.000)	173	577			0.00- 2.00	0.90
8.691	8.889	(0.000)	174	64360			50.00- 0.00	88.98
8.691	8.889	(0.000)	175	5033			5.00- 9.00	7.82
8.691	8.889	(0.000)	176	63184			95.00- 101.00	98.17
8.691	8.889	(0.000)	177	4164			5.00- 9.00	6.59

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.35
75	30.00 - 60.00% of mass 95	46.13
96	5.00 - 9.00% of mass 95	7.16
173	Less than 2.00% of mass 174	0.80 (0.90)
174	Greater than 50.00% of mass 95	88.98
175	5.00 - 9.00% of mass 174	6.96 (7.82)
176	95.00 - 101.00% of mass 174	87.36 (98.17)
177	5.00 - 9.00% of mass 176	5.76 (6.59)

Data File: X121601.D
Spectrum: Scan 2160 (8.68)
Location of Maximum: 95.00
Number of points: 84

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.90	686	63.00	2521	93.00	2705	136.90	215
37.00	3051	64.10	316	94.00	9587	140.90	735
38.00	2957	66.90	155	95.00	72328	141.70	91
39.00	1321	67.90	6274	96.00	5178	142.80	683
39.90	1146	69.00	6990	96.90	213	145.60	119
42.00	114	69.90	604	103.00	58	148.00	107
42.90	301	71.80	385	104.00	313	149.80	105
44.00	1509	72.90	2986	104.70	125	153.80	54
45.00	716	74.00	11163	105.10	132	154.80	169
46.80	723	75.00	33368	105.90	451	156.80	155
48.00	503	76.00	3228	110.60	54	160.80	71
49.00	3278	76.90	395	113.00	74	171.60	83
50.00	13272	77.80	187	114.80	159	172.80	577
51.00	3648	78.90	2224	115.80	342	173.90	64360
52.10	365	79.80	718	116.90	386	174.90	5033
54.00	52	80.90	2158	117.90	425	175.90	63184
54.90	278	81.80	420	118.80	260	176.90	4164
56.00	1513	83.00	51	127.90	191	178.00	133
57.00	1763	86.90	2878	128.90	172		
59.90	665	87.80	2342	129.80	237		
61.00	3173	91.00	516	130.80	156		
62.00	3572	92.00	2006	134.70	222		

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121601.D Page 1

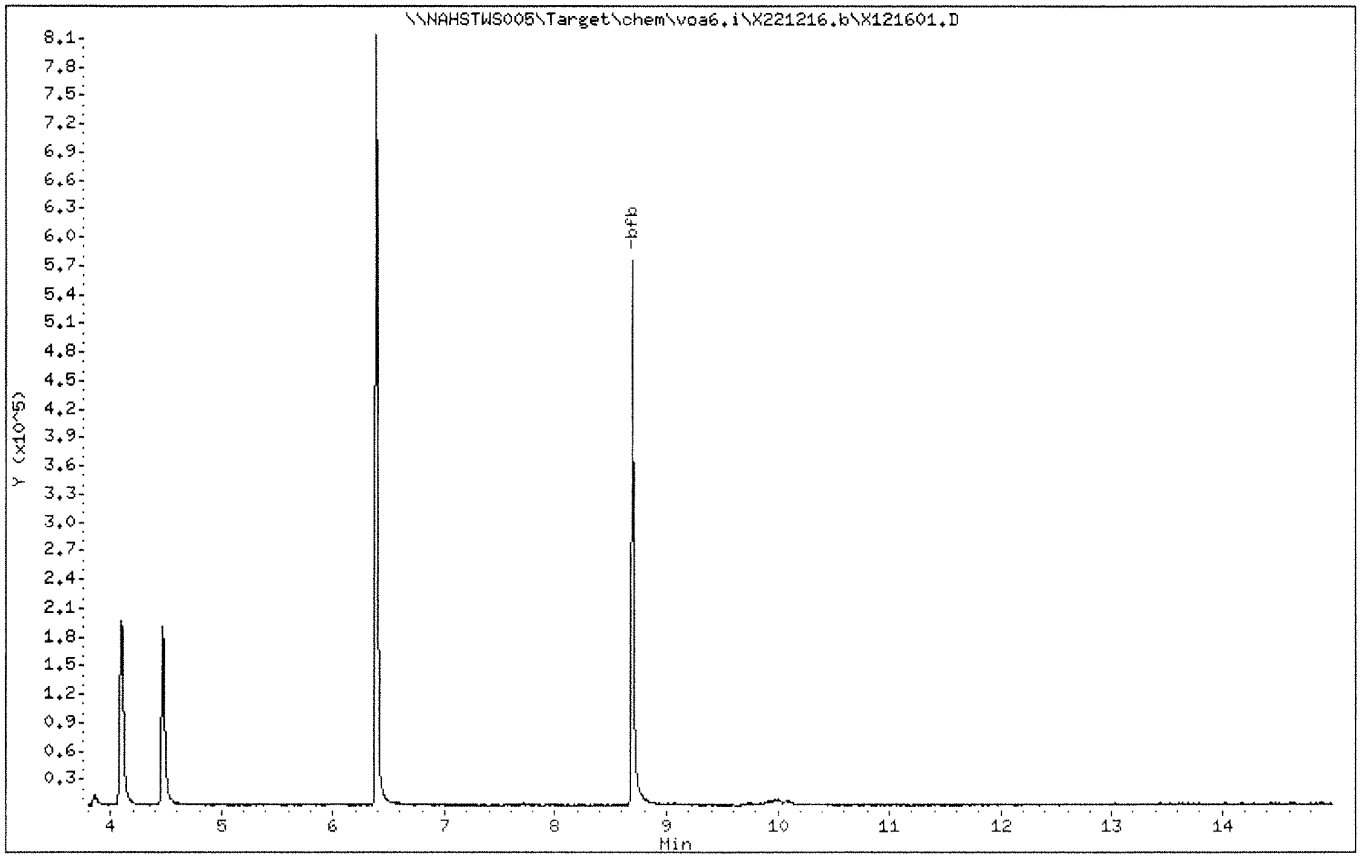
Date : 16-DEC-2022 11:17

Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121601.D

Date : 16-DEC-2022 11:17

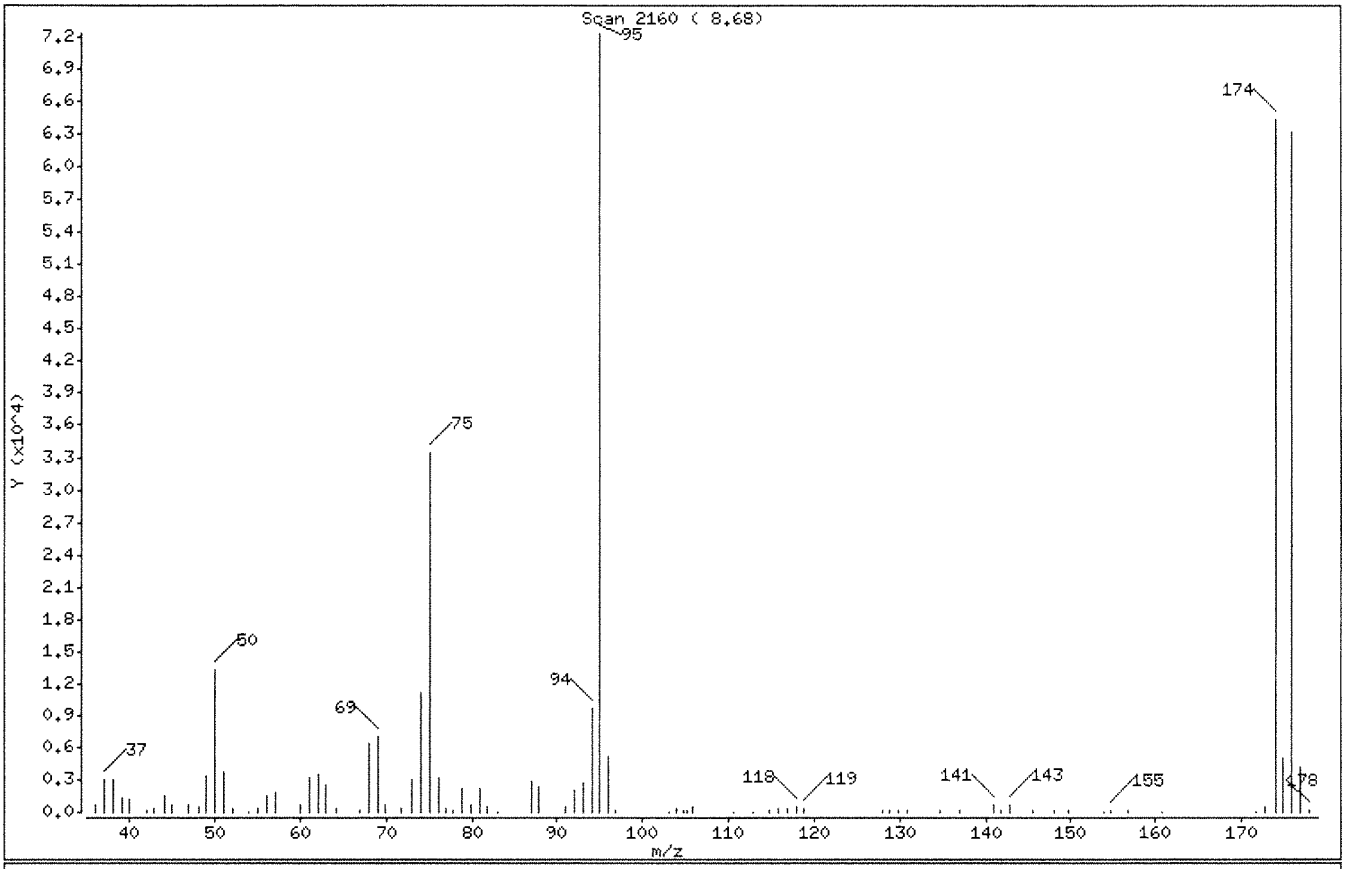
Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.35
75	30.00 - 60.00% of mass 95	46.13
96	5.00 - 9.00% of mass 95	7.16
173	Less than 2.00% of mass 174	0.80 (0.90)
174	Greater than 50.00% of mass 95	88.98
175	5.00 - 9.00% of mass 174	6.96 (7.82)
176	95.00 - 101.00% of mass 174	87.36 (98.17)
177	5.00 - 9.00% of mass 176	5.76 (6.59)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121601.D

Date : 16-DEC-2022 11:17

Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25

Data File: X121601.D
Spectrum: Scan 2160 (8.68)
Location of Maximum: 95.00
Number of points: 84

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.90	686	63.00	2521	93.00	2705	136.90	215
37.00	3051	64.10	316	94.00	9587	140.90	735
38.00	2957	66.90	155	95.00	72328	141.70	91
39.00	1321	67.90	6274	96.00	5178	142.80	683
39.90	1146	69.00	6990	96.90	213	145.60	119
42.00	114	69.90	604	103.00	58	148.00	107
42.90	301	71.80	385	104.00	313	149.80	105
44.00	1509	72.90	2986	104.70	125	153.80	54
45.00	716	74.00	11163	105.10	132	154.80	169
46.80	723	75.00	33368	105.90	451	156.80	155
48.00	503	76.00	3228	110.60	54	160.80	71
49.00	3278	76.90	395	113.00	74	171.60	83
50.00	13272	77.80	187	114.80	159	172.80	577
51.00	3648	78.90	2224	115.80	342	173.90	64360
52.10	365	79.80	718	116.90	386	174.90	5033
54.00	52	80.90	2158	117.90	425	175.90	63184
54.90	278	81.80	420	118.80	260	176.90	4164
56.00	1513	83.00	51	127.90	191	178.00	133
57.00	1763	86.90	2878	128.90	172		
59.90	665	87.80	2342	129.80	237		
61.00	3173	91.00	516	130.80	156		
62.00	3572	92.00	2006	134.70	222		

Data File : \\NAHSTWS005\Target\chem\voa6.i\x221216.b\X121601.D
Inj Date : 16-DEC-2022 11:17
InstruID : voa6.i
LabSampID : BFB

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Lab Smp Id: VSTD000.25 Client Smp ID: VSTD000.25
Inj Date : 16-DEC-2022 11:38
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.25;VSTD000.25;1;1;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 2 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1	Pentafluorobenzene	168	4.178	4.178	(1.000)	461807	50.0000	
135	1,4-Dioxane	88	5.625	5.625	(1.346)	214	5.00000	5.06(M)
140	1,3-Butadiene	54	1.164	1.164	(0.279)	1172	0.25000	0.36
25	Methacrylonitrile	41	3.855	3.855	(0.923)	5876	0.25000	1.79
12	Isobutyl Alcohol	43	4.687	4.687	(1.122)	2537	5.00000	4.88(TM)
13	Acetonitrile	39	2.202	2.202	(0.527)	730	2.50000	1.73
14	Allyl Chloride	41	2.206	2.206	(0.528)	1591	0.25000	0.19
4	Propionitrile	54	3.702	3.702	(0.886)	1165	2.50000	2.47(M)
72	trans-1,4-Dichloro-2-butene	53	8.931	8.931	(1.164)	280	0.25000	0.19(M)
145	alpha-Methylstyrene	118	9.268	9.268	(0.959)	2322	0.25000	0.30
200	Dimethyl Disulfide	94	6.213	6.213	(0.810)	1870	0.25000	0.21
139	Diethyl ether	59	1.760	1.760	(0.421)	687	0.25000	0.22
49	Ethyl Methacrylate	69	6.738	6.738	(1.357)	625	0.25000	0.19
142	Tetrahydrofuran	42	3.836	3.836	(0.918)	358	0.50000	(M)
166	1,2,3-Trimethylbenzene	105	9.737	9.737	(1.008)	4360	0.25000	0.25
2	Dichlorodifluoromethane	85	0.969	0.969	(0.232)	801	0.25000	0.63(M)
3	Chloromethane	50	1.077	1.077	(0.258)	1420	0.25000	2.53
5	Vinyl Chloride	62	1.141	1.141	(0.273)	1134	0.25000	0.28(M)
6	Bromomethane	94	1.340	1.340	(0.321)	1009	0.25000	2.08(M)
8	Trichlorofluoromethane	101	1.561	1.561	(0.374)	1468	0.25000	0.26

10 Acetone	43	1.977	1.977 (0.473)	2727	0.50000	2.07
11 1,1-Dichloroethene	96	1.910	1.910 (0.457)	1010	0.25000	0.28(M)

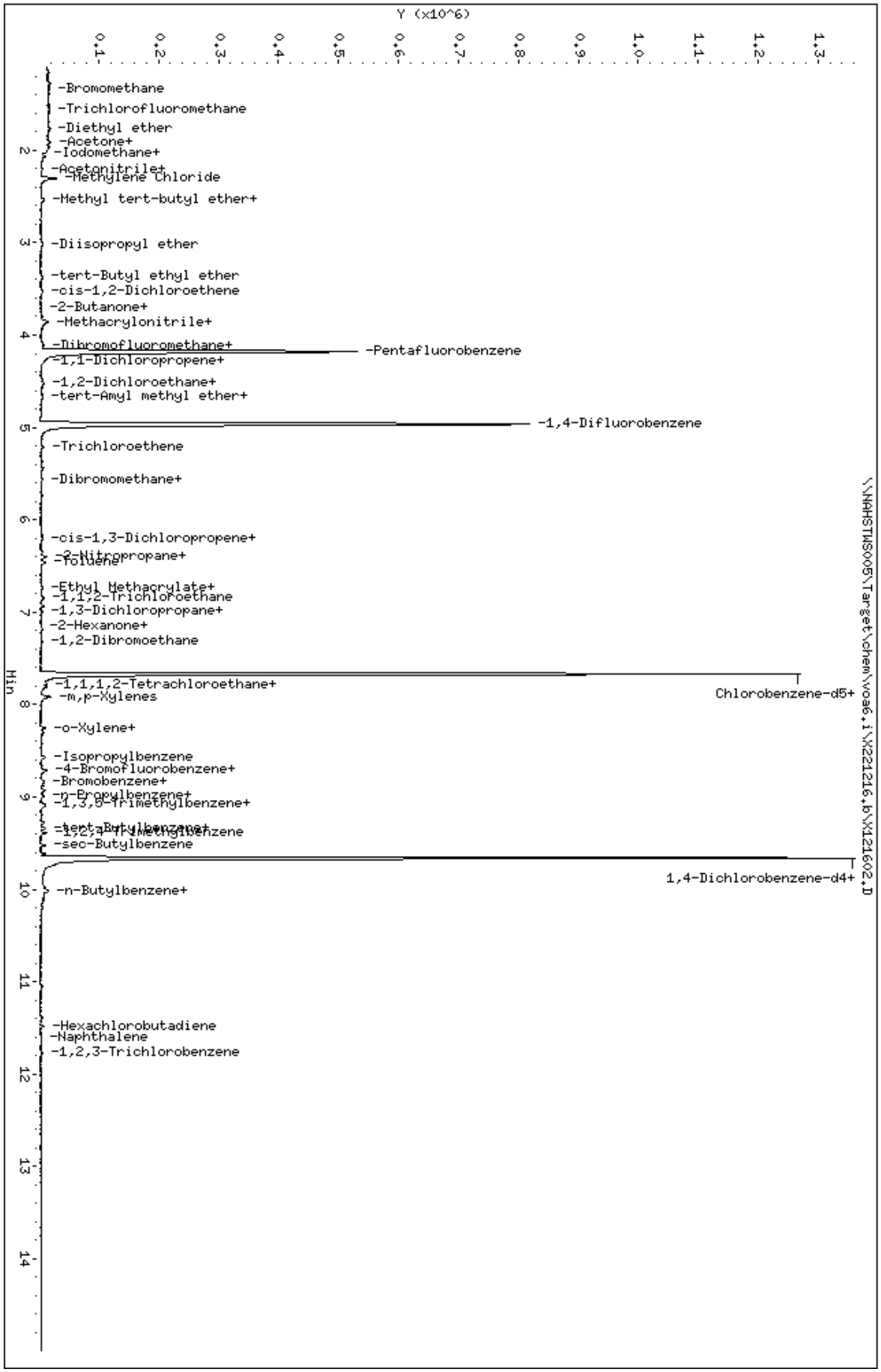
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	15 Iodomethane	142	2.026	2.026	(0.485)	1106	0.50000	3.56(T)
	17 Methylene Chloride	84	2.292	2.292	(0.549)	1436	0.25000	0.29(M)
	18 Methyl tert-butyl ether	73	2.536	2.536	(0.607)	2787	0.25000	0.24
	19 Carbon Disulfide	76	2.071	2.071	(0.496)	5999	0.50000	0.65
	20 trans-1,2-Dichloroethene	96	2.539	2.539	(0.608)	1302	0.25000	0.33
	24 2-Butanone	43	3.698	3.698	(0.885)	1014	0.50000	3.74
	27 cis-1,2-Dichloroethene	96	3.533	3.533	(0.846)	1402	0.25000	0.29
	28 Chloroform	83	3.908	3.908	(0.935)	2553	0.25000	0.33
	29 Bromochloromethane	128	3.799	3.799	(0.909)	802	0.25000	0.30(M)
$	30 Dibromofluoromethane	113	4.103	4.103	(0.982)	1706	0.25000	0.21
	31 1,1,1-Trichloroethane	97	4.076	4.076	(0.976)	1648	0.25000	0.26
	32 1,1-Dichloropropene	75	4.286	4.286	(0.863)	2114	0.25000	0.43
	33 1,2-Dichloroethane	62	4.571	4.571	(0.921)	2167	0.25000	0.38
	34 Carbon Tetrachloride	117	4.256	4.256	(0.857)	1685	0.25000	0.32(M)
$	35 1,2-Dichloroethane-d4	65	4.481	4.481	(1.073)	2260	0.25000	0.75(T)
*	36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	690224	50.0000	
	37 Benzene	78	4.522	4.522	(0.911)	5768	0.25000	0.34
	38 Trichloroethene	130	5.212	5.212	(1.050)	1544	0.25000	0.33
	44 Dibromomethane	93	5.565	5.565	(1.121)	1046	0.25000	0.35
	45 4-Methyl-2-Pentanone	43	6.352	6.352	(0.828)	2297	0.50000	0.65
	46 cis-1,3-Dichloropropene	75	6.168	6.168	(1.242)	1839	0.25000	0.25
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	653787	50.0000	
$	48 Toluene-d8	98	6.401	6.401	(0.834)	6828	0.25000	0.42(T)
	50 Toluene	91	6.457	6.457	(0.842)	6778	0.25000	0.37
	52 2-Hexanone	43	7.150	7.150	(0.932)	974	0.50000	0.40(T)
	53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	1098	0.25000	0.30
	54 1,3-Dichloropropane	76	6.993	6.993	(0.912)	2278	0.25000	0.31
	55 Dibromochloromethane	129	7.184	7.184	(0.936)	1732	0.25000	0.33
	56 Tetrachloroethene	164	6.933	6.933	(0.904)	1051	0.25000	0.28
	57 1,2-Dibromoethane	107	7.278	7.278	(0.949)	1100	0.25000	0.24
	58 1-Chlorohexane	55	7.668	7.668	(1.544)	6570	0.25000	1.96
	59 Chlorobenzene	112	7.694	7.694	(1.003)	3981	0.25000	0.31
	60 1,1,1,2-Tetrachloroethane	131	7.780	7.780	(1.014)	1245	0.25000	0.26
	61 Ethylbenzene	106	7.810	7.810	(1.018)	1854	0.25000	0.30
	62 m,p-Xylenes	106	7.915	7.915	(1.032)	5083	0.50000	0.65
	63 o-Xylene	106	8.252	8.252	(1.076)	2471	0.25000	0.32
	64 Styrene	104	8.297	8.297	(1.082)	3214	0.25000	0.24
	67 Isopropylbenzene	105	8.575	8.575	(1.118)	5495	0.25000	0.31
$	69 4-Bromofluorobenzene	95	8.706	8.706	(1.135)	4271	0.25000	0.77
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	348702	50.0000	
	71 1,2,3-Trichloropropane	75	8.875	8.875	(0.919)	766	0.25000	0.19(M)
	73 n-Propylbenzene	91	8.931	8.931	(0.924)	5570	0.25000	0.28
	74 Bromobenzene	156	8.826	8.826	(0.913)	1517	0.25000	0.26
	75 1,3,5-Trimethylbenzene	105	9.081	9.081	(0.940)	4893	0.25000	0.34
	76 2-Chlorotoluene	91	8.991	8.991	(0.931)	4890	0.25000	0.38
	77 4-Chlorotoluene	91	9.107	9.107	(0.943)	3881	0.25000	0.26
	78 tert-Butylbenzene	119	9.343	9.343	(0.967)	4059	0.25000	0.34
	79 1,2,4-Trimethylbenzene	105	9.392	9.392	(0.972)	5202	0.25000	0.34
	81 sec-Butylbenzene	105	9.523	9.523	(0.986)	4818	0.25000	0.31
	82 p-Isopropyltoluene	119	9.662	9.662	(1.000)	4406	0.25000	0.31
	83 1,3-Dichlorobenzene	146	9.621	9.621	(0.996)	3005	0.25000	0.31
	84 1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	3674	0.25000	0.35

87	n-Butylbenzene	91	10.033	10.033 (1.038)	1595	0.25000	1.89
88	1,2-Dichlorobenzene	146	10.010	10.010 (1.036)	2937	0.25000	0.30

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	91 Hexachlorobutadiene	225	11.484	11.484	(1.189)	726	0.25000	0.21(M)
	92 Naphthalene	128	11.607	11.607	(1.201)	1969	0.25000	0.14
	93 1,2,3-Trichlorobenzene	180	11.769	11.769	(1.218)	1816	0.25000	0.30(M)
M	94 1,2-Dichloroethylene (total)	96				2704	0.50000	
M	95 Xylenes (total)	106				7554	0.75000	
	141 Cyclohexane	56	4.125	4.125	(0.987)	1235	0.25000	1.51(M)
	138 Freon TF	101	1.917	1.917	(0.459)	765	0.25000	0.22(M)

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.



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Sample Info: VSTD000,25;VSTD000,25;1;1;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

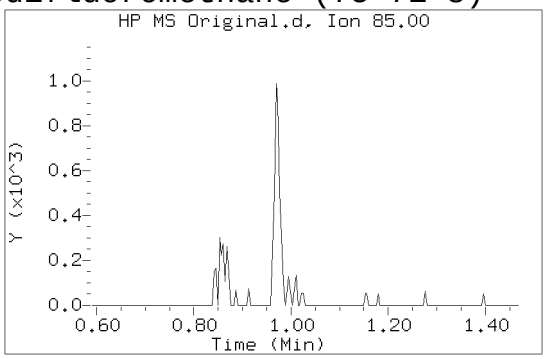
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InstruID : voa6.i
LabSampID : VSTD000.25

Dichlorodifluoromethane (75-71-8)

Reason Code:

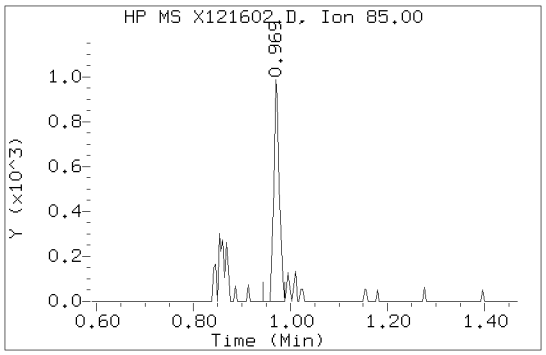
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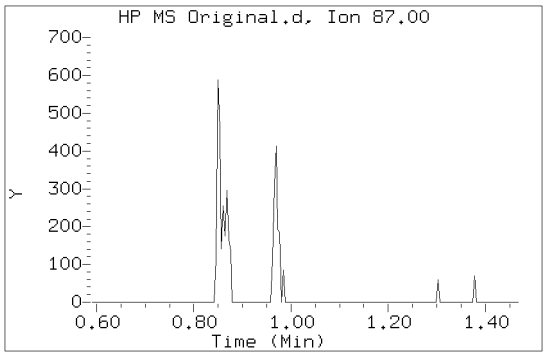
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ALSHS
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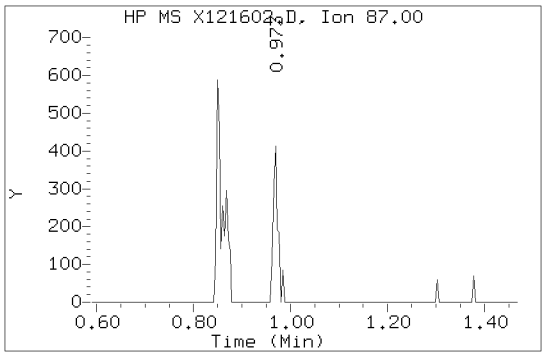
BEFORE

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AFTER

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HEIGHT
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16:07
ALSHS
Ser

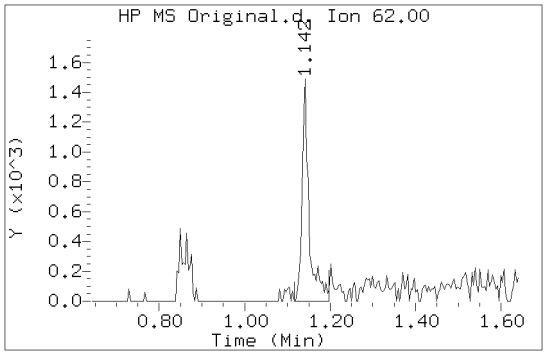


Vinyl Chloride (75-01-4)

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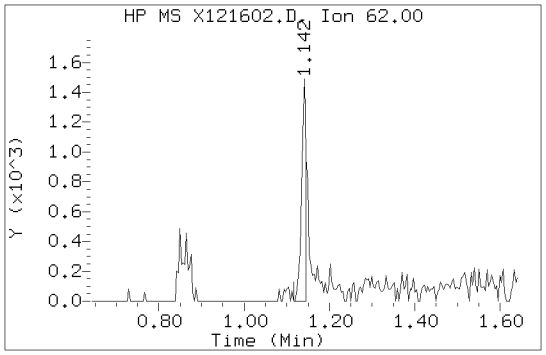
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11:54
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Server



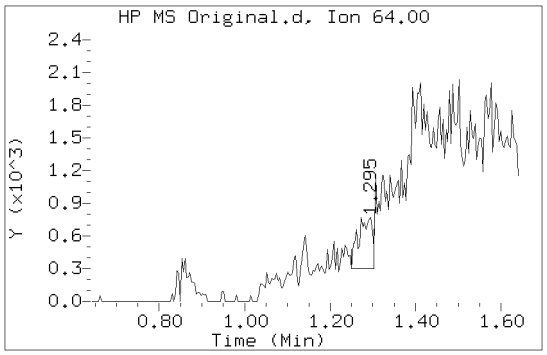
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16:07
ALSHS
Ser



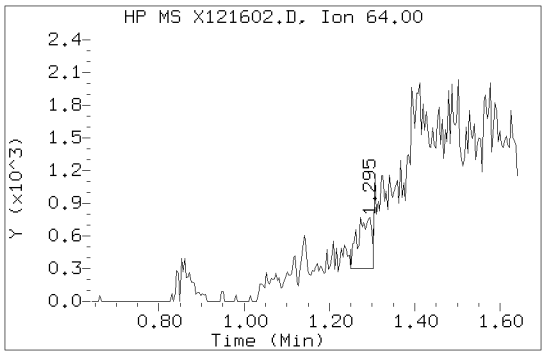
BEFORE

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AREA
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HEIGHT
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16-Dec-2022
11:54
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AFTER

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AREA
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HEIGHT
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27-Dec-2022
16:07
ALSHS
Ser

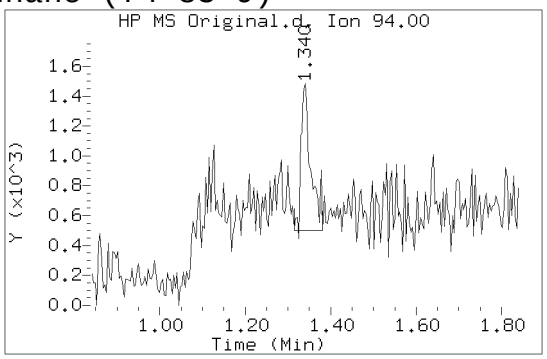


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LabSampID : VSTD000.25

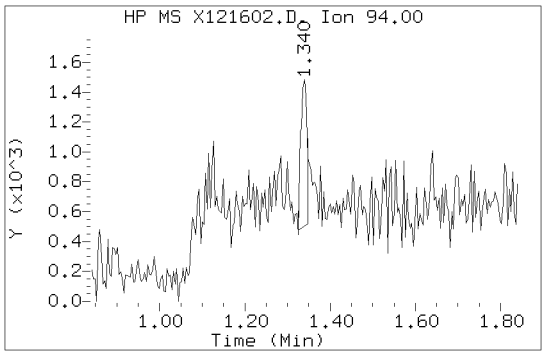
Bromomethane (74-83-9)

Reason Code:

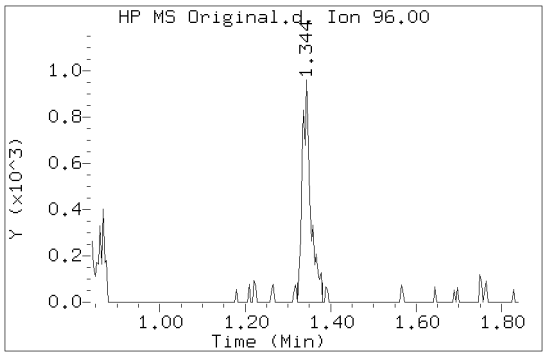
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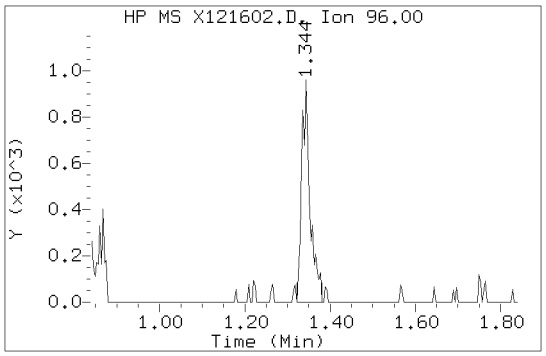
AFTER
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27-Dec-2022
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Ser



BEFORE
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ALSHS
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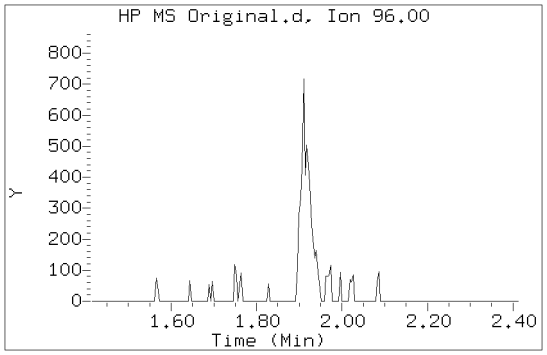
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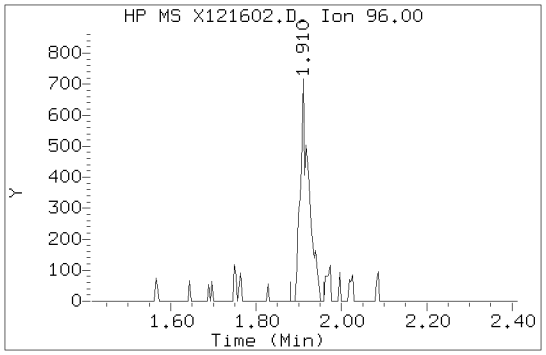
1,1-Dichloroethene (75-35-4)

Reason Code:

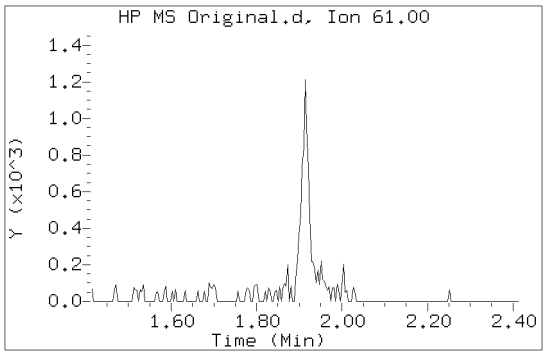
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11:54
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Server



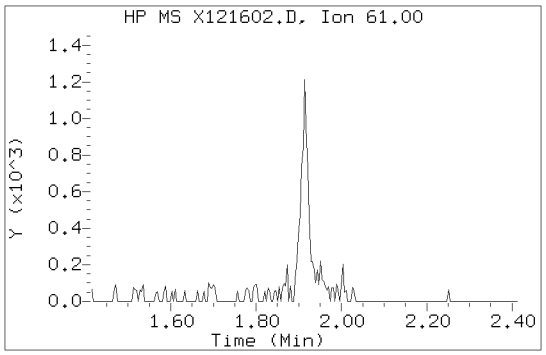
AFTER
MASS
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AREA
1010
HEIGHT
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27-Dec-2022
16:07
ALSHS
Ser



BEFORE
MASS
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AREA
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HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER
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61
AREA
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HEIGHT
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27-Dec-2022
16:07
ALSHS
Ser



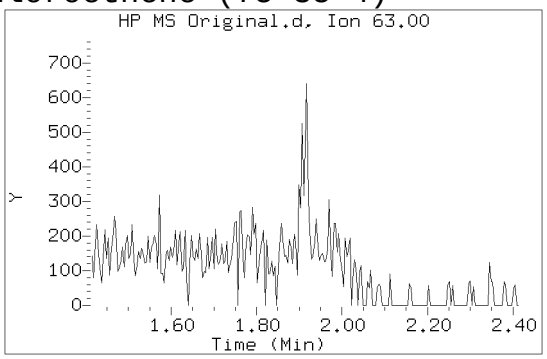
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Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

1,1-Dichloroethene (75-35-4)

Reason Code:

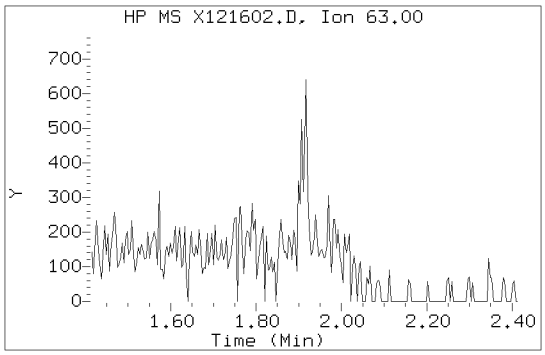
BEFORE

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HEIGHT
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11:54
ALSHS
Server



AFTER

MASS
63
AREA
0
HEIGHT
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27-Dec-2022
16:07
ALSHS
Ser

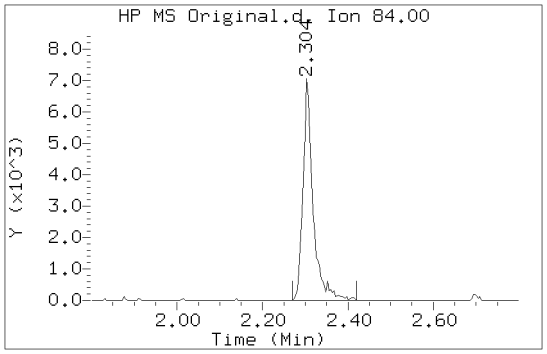


Methylene Chloride (75-09-2)

Reason Code:

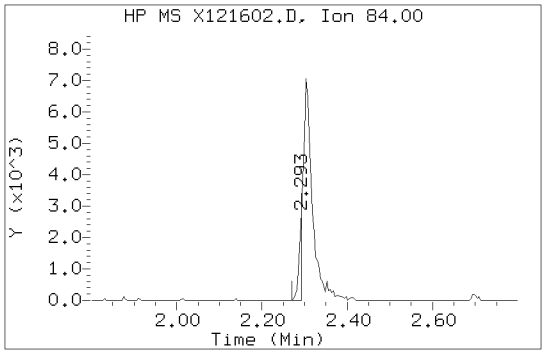
BEFORE

MASS
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HEIGHT
7057
16-Dec-2022
11:54
ALSHS
Server



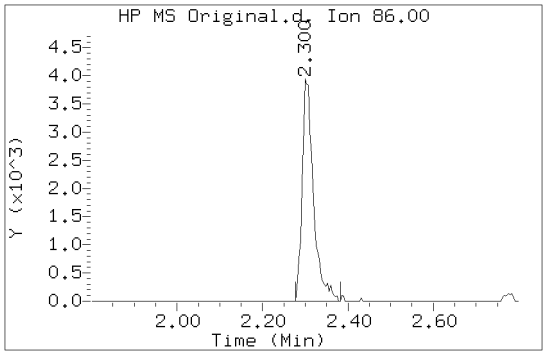
AFTER

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HEIGHT
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Ser



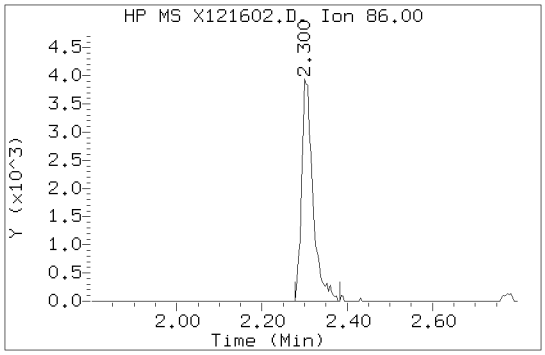
BEFORE

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HEIGHT
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11:54
ALSHS
Server



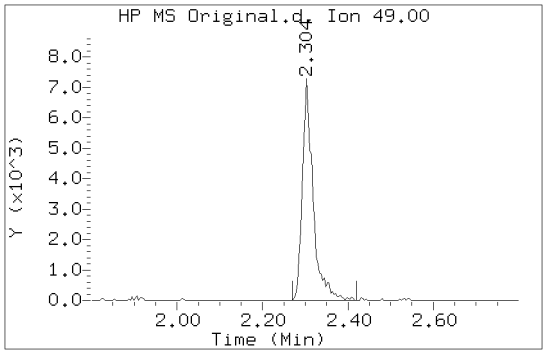
AFTER

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HEIGHT
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27-Dec-2022
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ALSHS
Ser



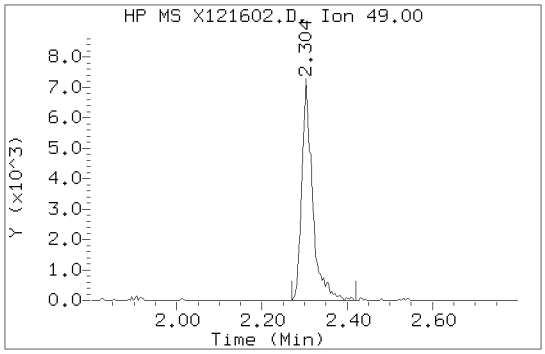
BEFORE

MASS
49
AREA
12974
HEIGHT
7289
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
49
AREA
12974
HEIGHT
7289
27-Dec-2022
16:07
ALSHS
Ser



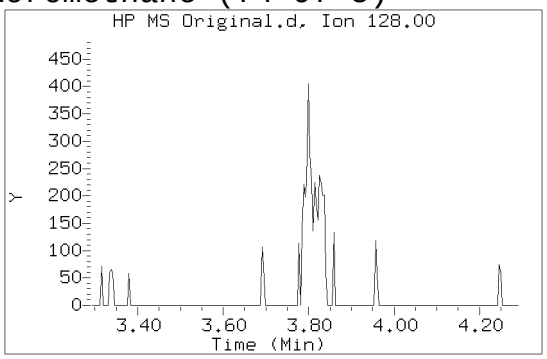
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

Bromochloromethane (74-97-5)

Reason Code:

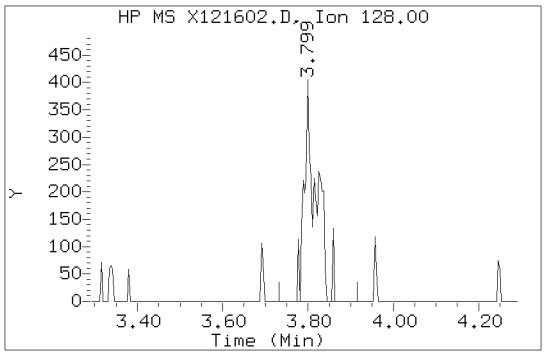
BEFORE

MASS
96
AREA
1402
HEIGHT
854
16-Dec-2022
11:54
ALSHS
Server



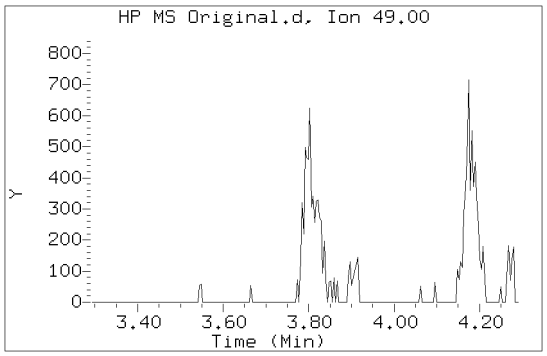
AFTER

MASS
128
AREA
802
HEIGHT
405
27-Dec-2022
16:07
ALSHS
Ser



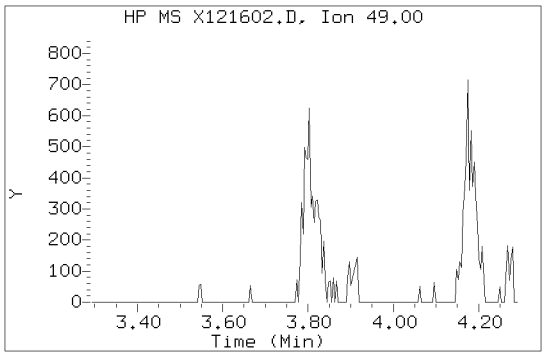
BEFORE

MASS
61
AREA
1975
HEIGHT
828
16-Dec-2022
11:54
ALSHS
Server



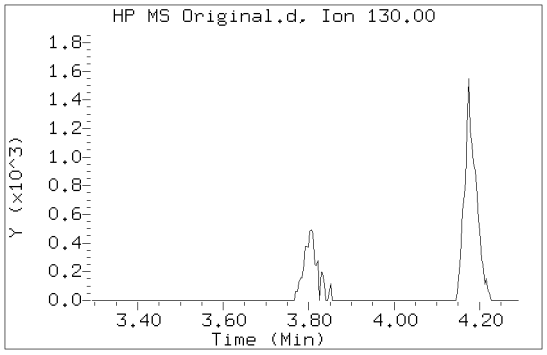
AFTER

MASS
49
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



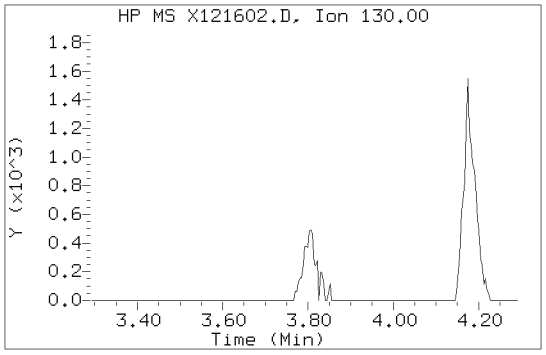
BEFORE

MASS
98
AREA
1027
HEIGHT
608
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
130
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

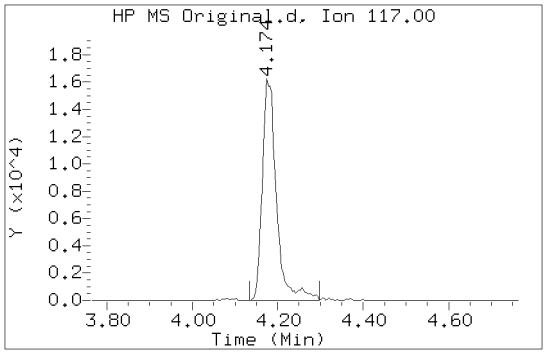


Carbon Tetrachloride (56-23-5)

Reason Code:

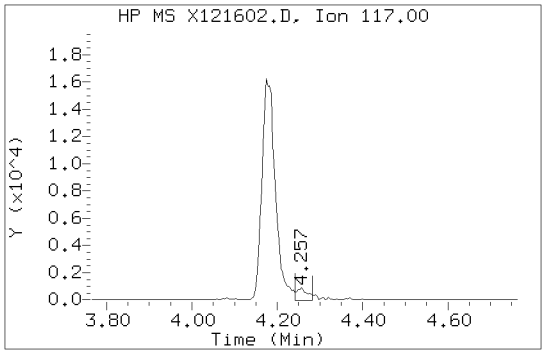
BEFORE

MASS
97
AREA
1700
HEIGHT
1016
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
117
AREA
1685
HEIGHT
944
27-Dec-2022
16:07
ALSHS
Ser



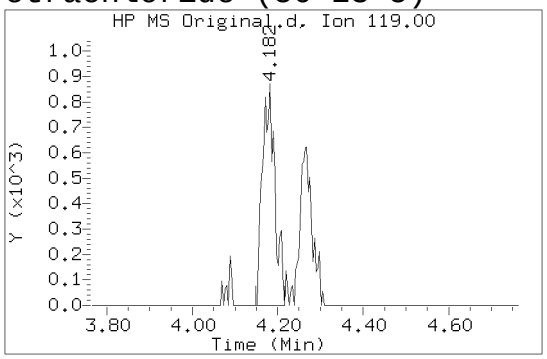
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

Carbon Tetrachloride (56-23-5)

Reason Code:

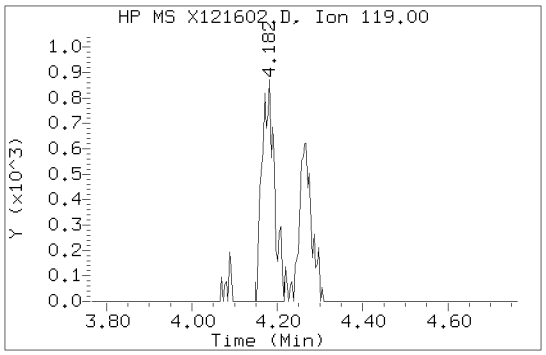
BEFORE

MASS
99
AREA
207130
HEIGHT
91368
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
119
AREA
1748
HEIGHT
872
27-Dec-2022
16:07
ALSHS
Ser

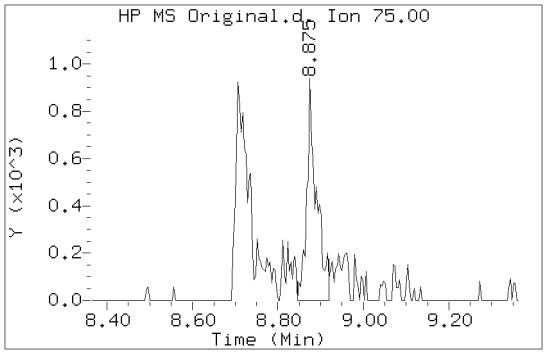


1,2,3-Trichloropropane (96-18-4)

Reason Code:

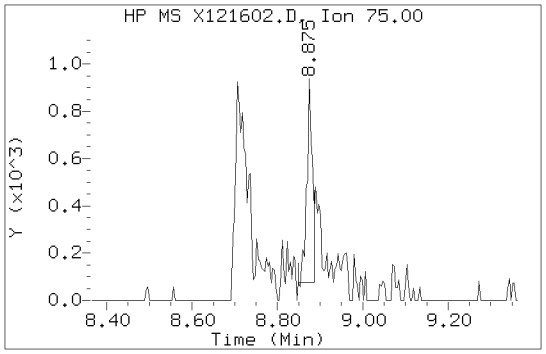
BEFORE

MASS
152
AREA
348702
HEIGHT
242350
16-Dec-2022
11:54
ALSHS
Server



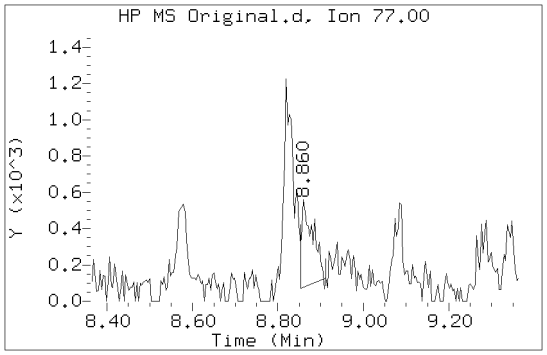
AFTER

MASS
75
AREA
766
HEIGHT
862
27-Dec-2022
16:07
ALSHS
Ser



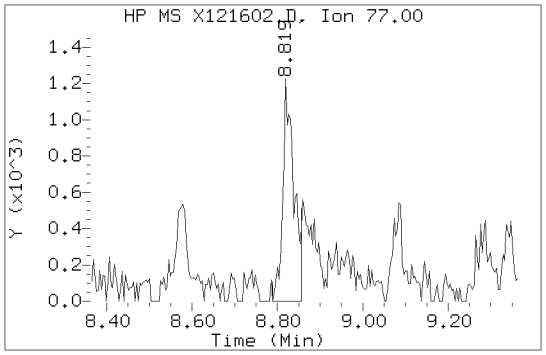
BEFORE

MASS
115
AREA
184413
HEIGHT
133835
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
77
AREA
2223
HEIGHT
1225
27-Dec-2022
16:07
ALSHS
Ser

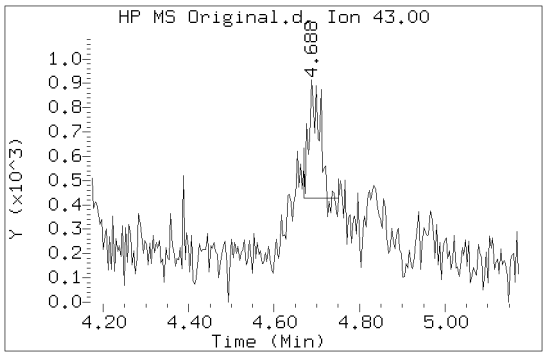


Isobutyl Alcohol (78-83-1)

Reason Code:

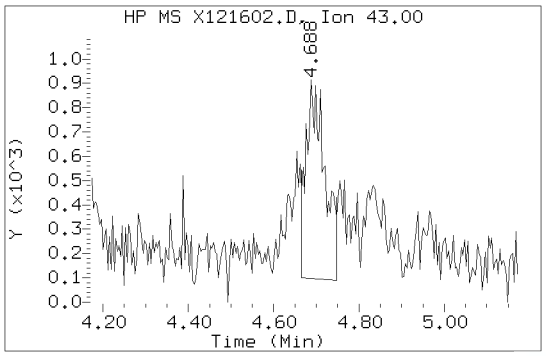
BEFORE

MASS
75
AREA
1475
HEIGHT
938
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
43
AREA
2537
HEIGHT
816
27-Dec-2022
16:07
ALSHS
Ser

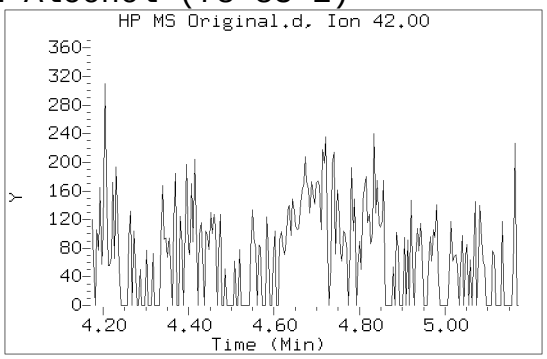


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

Isobutyl Alcohol (78-83-1)

BEFORE

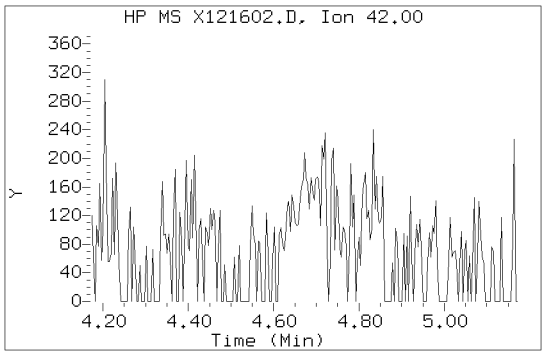
MASS
77
AREA
888
HEIGHT
483
16-Dec-2022
11:54
ALSHS
Server



Reason Code:

AFTER

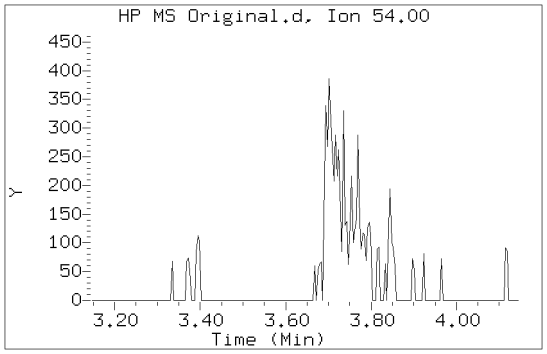
MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



Propionitrile (107-12-0)

BEFORE

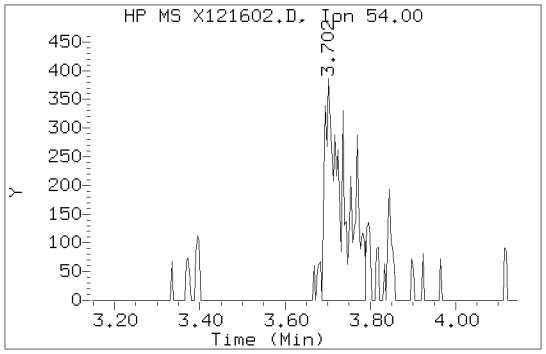
MASS
91
AREA
3881
HEIGHT
1822
16-Dec-2022
11:54
ALSHS
Server



Reason Code:

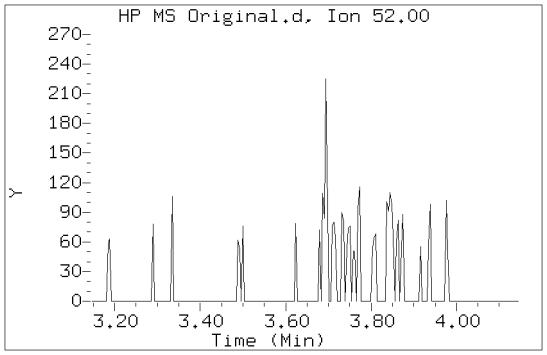
AFTER

MASS
54
AREA
1165
HEIGHT
386
27-Dec-2022
16:07
ALSHS
Ser



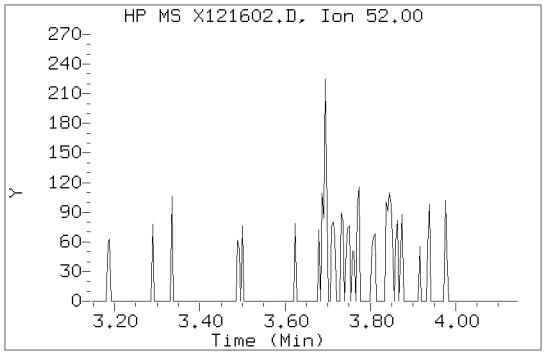
BEFORE

MASS
126
AREA
1511
HEIGHT
914
16-Dec-2022
11:54
ALSHS
Server



AFTER

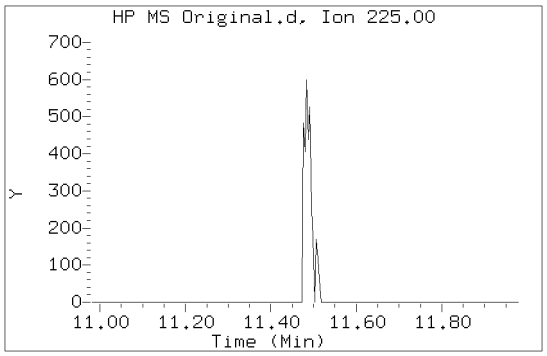
MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



Hexachlorobutadiene (87-68-3)

BEFORE

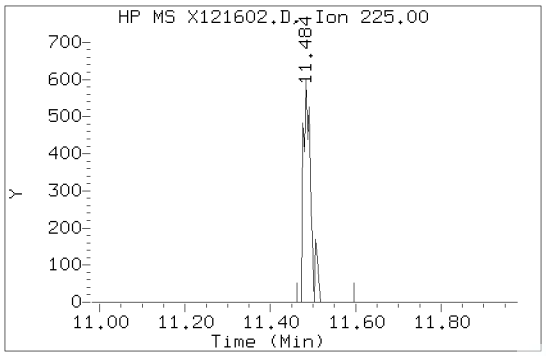
MASS
155
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



Reason Code:

AFTER

MASS
225
AREA
726
HEIGHT
599
27-Dec-2022
16:07
ALSHS
Ser

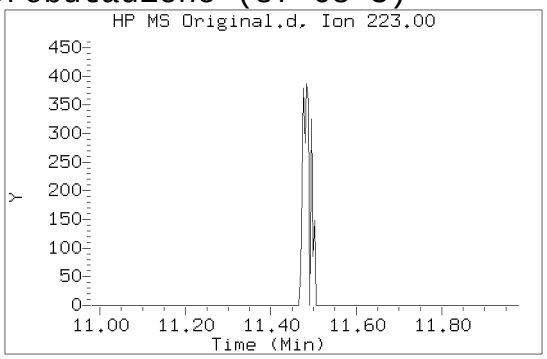


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

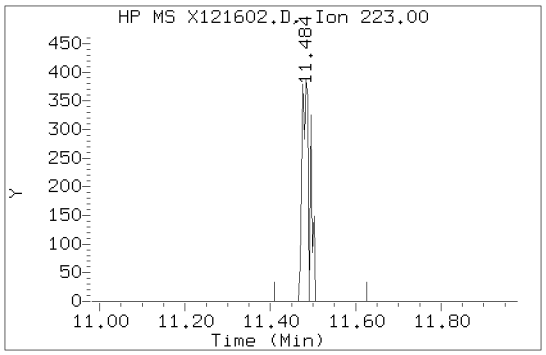
Hexachlorobutadiene (87-68-3)

Reason Code:

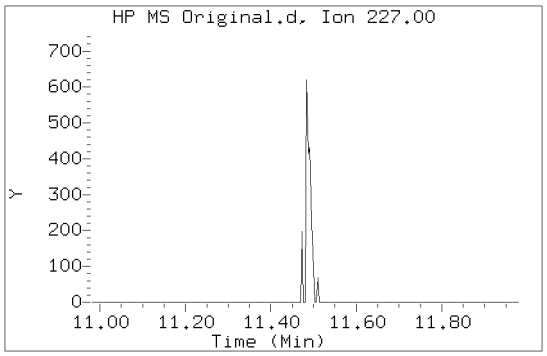
BEFORE
MASS
157
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



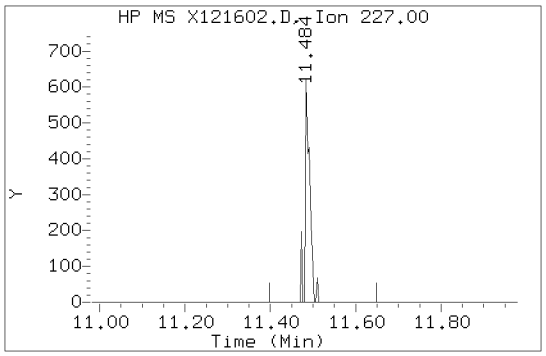
AFTER
MASS
223
AREA
502
HEIGHT
387
27-Dec-2022
16:07
ALSHS
Ser



BEFORE
MASS
75
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



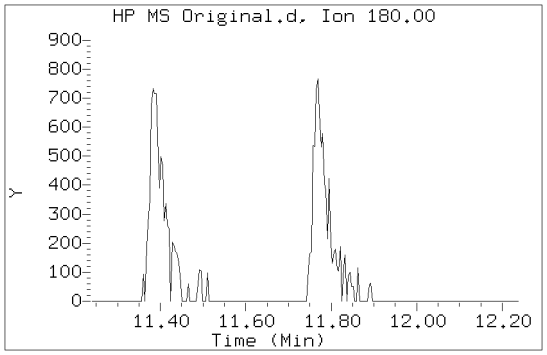
AFTER
MASS
227
AREA
469
HEIGHT
620
27-Dec-2022
16:07
ALSHS
Ser



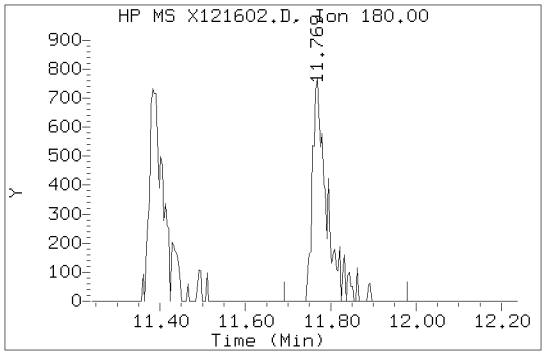
1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

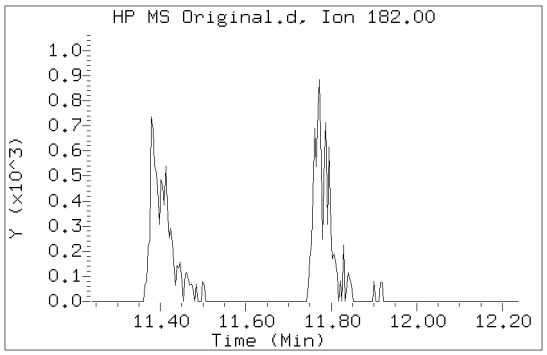
BEFORE
MASS
225
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



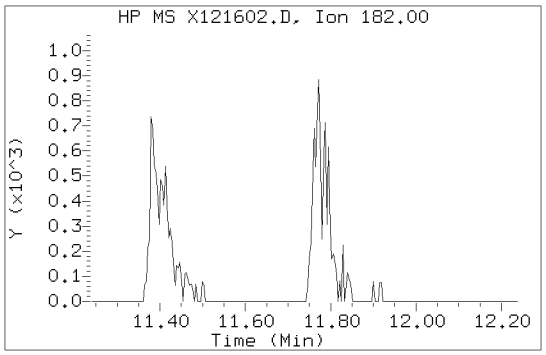
AFTER
MASS
180
AREA
1816
HEIGHT
766
27-Dec-2022
16:07
ALSHS
Ser



BEFORE
MASS
223
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER
MASS
182
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



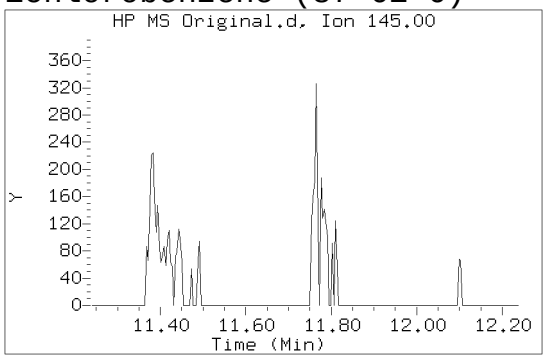
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Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

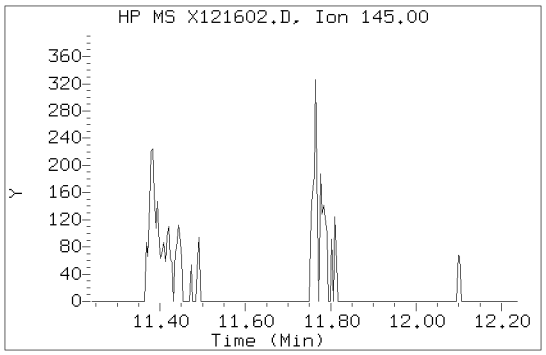
BEFORE

MASS
227
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
145
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

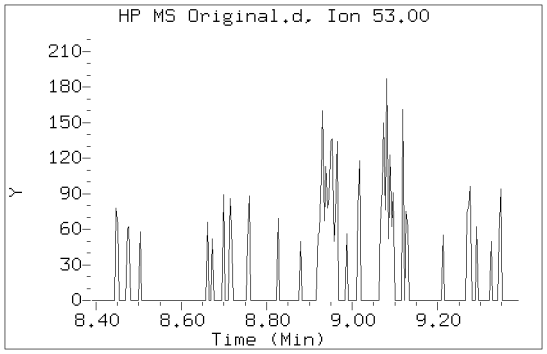


trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

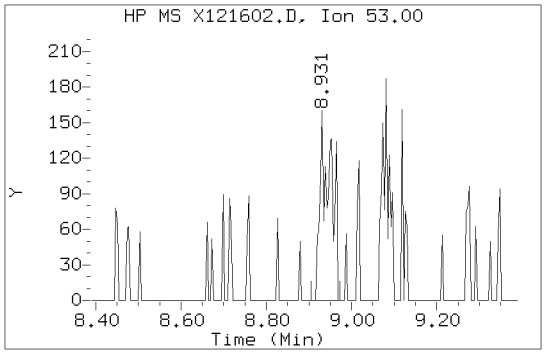
BEFORE

MASS
53
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



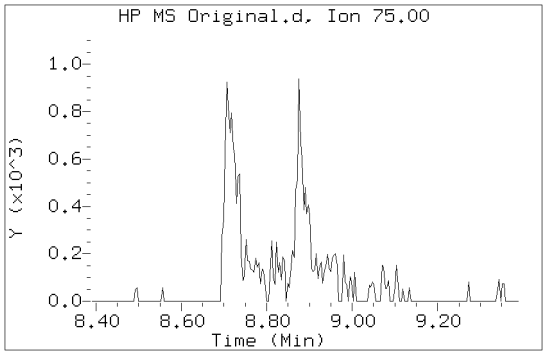
AFTER

MASS
53
AREA
280
HEIGHT
160
27-Dec-2022
16:07
ALSHS
Ser



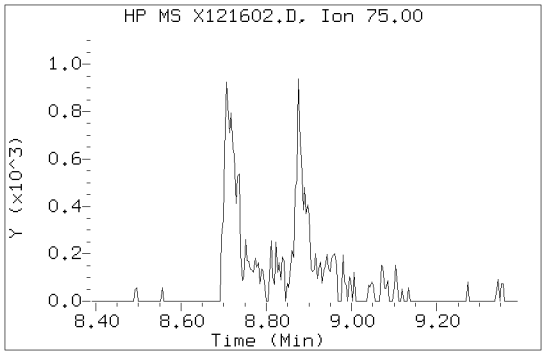
BEFORE

MASS
88
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

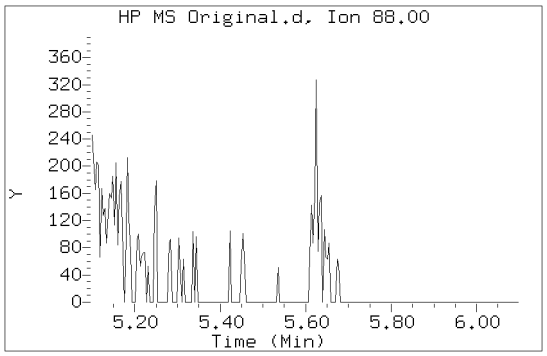


1,4-Dioxane ()

Reason Code:

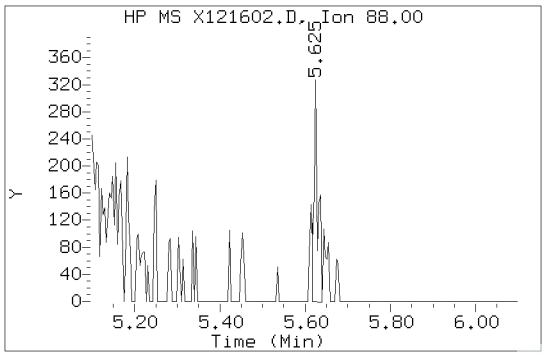
BEFORE

MASS
57
AREA
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HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
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AREA
214
HEIGHT
327
27-Dec-2022
16:07
ALSHS
Ser



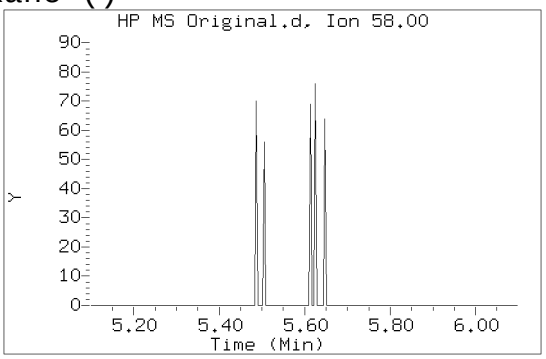
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Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

1,4-Dioxane ()

Reason Code:

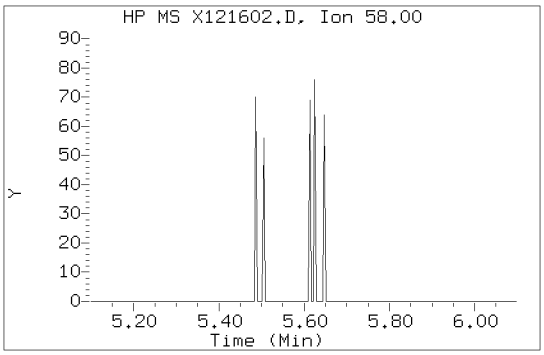
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16-Dec-2022
11:54
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Server



AFTER

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HEIGHT
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27-Dec-2022
16:07
ALSHS
Ser

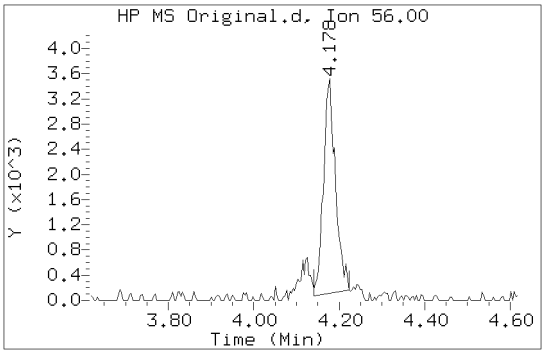


Cyclohexane (110-82-7)

Reason Code:

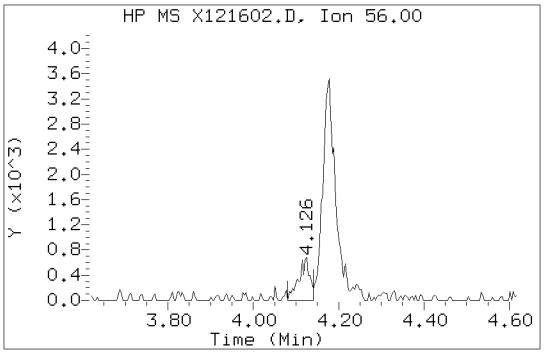
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HEIGHT
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16-Dec-2022
11:54
ALSHS
Server



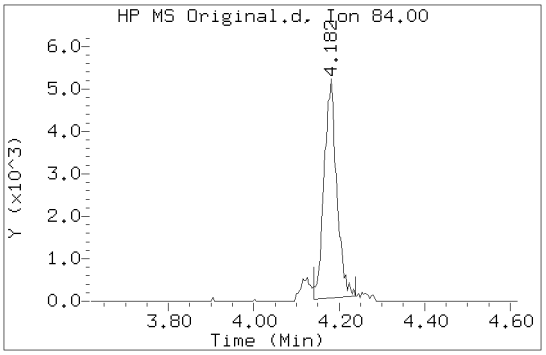
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16:07
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Ser



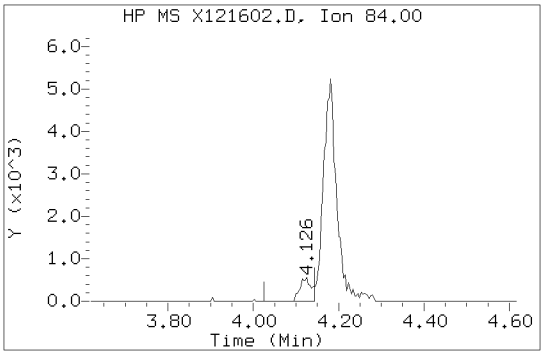
BEFORE

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AREA
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HEIGHT
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16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
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AREA
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HEIGHT
557
27-Dec-2022
16:07
ALSHS
Ser

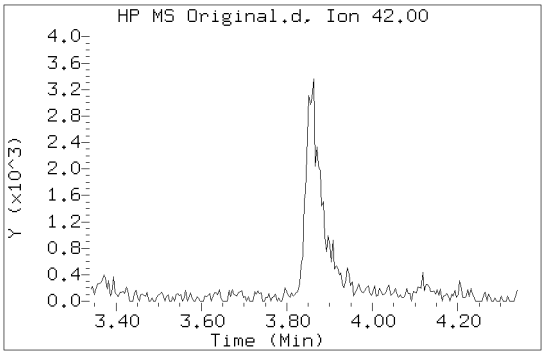


Tetrahydrofuran (109-99-9)

Reason Code:

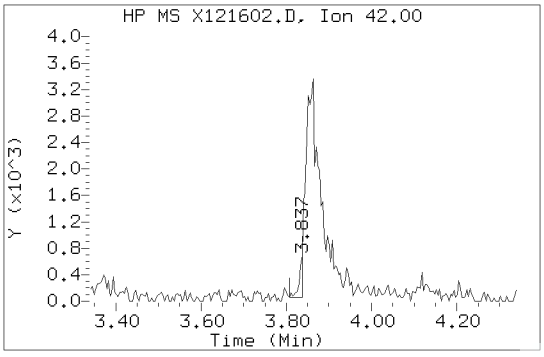
BEFORE

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AREA
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HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
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AREA
358
HEIGHT
628
27-Dec-2022
16:07
ALSHS
Ser



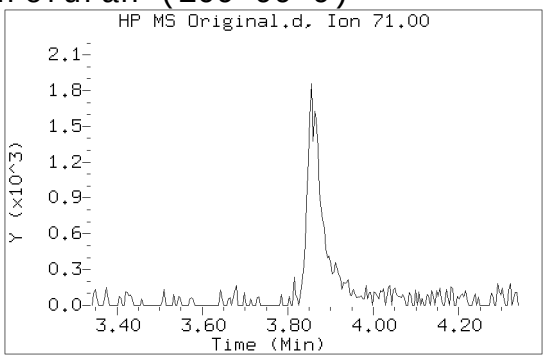
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Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

Tetrahydrofuran (109-99-9)

Reason Code:

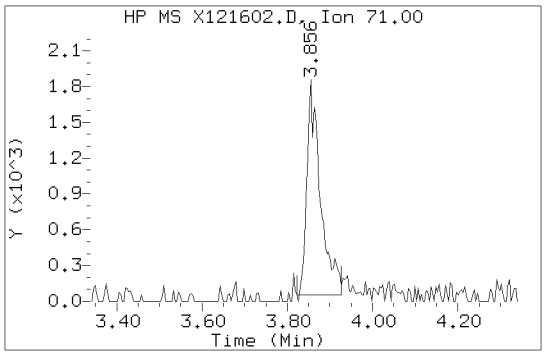
BEFORE

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AREA
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HEIGHT
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16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
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HEIGHT
1803
27-Dec-2022
16:07
ALSHS
Ser

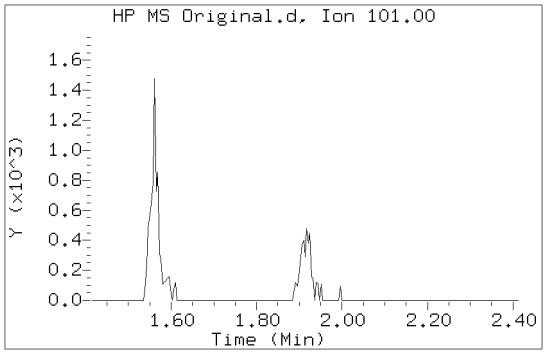


Freon TF (76-13-1)

Reason Code:

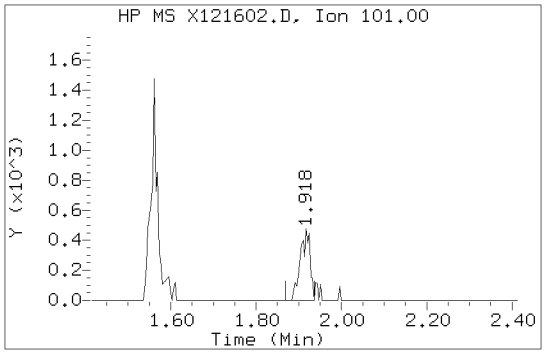
BEFORE

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AREA
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HEIGHT
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16-Dec-2022
11:54
ALSHS
Server



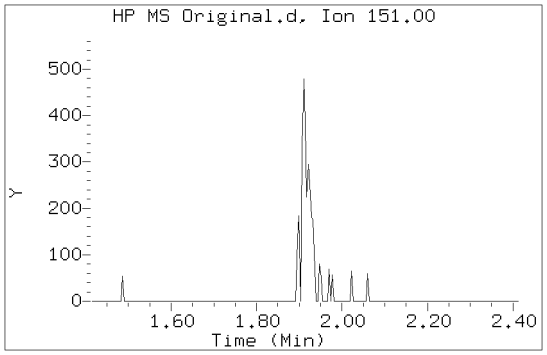
AFTER

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HEIGHT
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27-Dec-2022
16:07
ALSHS
Ser



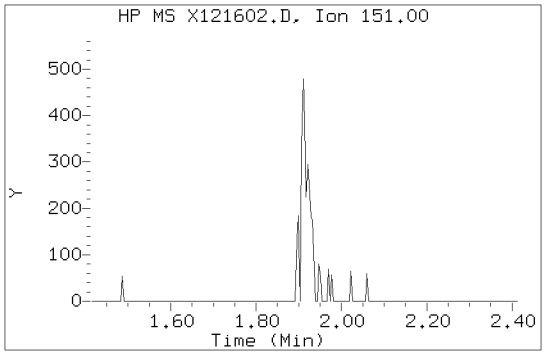
BEFORE

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103
AREA
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HEIGHT
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16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
151
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
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Inj Date : 16-DEC-2022 12:20
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.5;VSTD000.5;1;2;
Misc Info : V6;WATER;0;1;
Comment   :
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Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 11:38 Cal File: X121602.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	461469	50.0000	
135 1,4-Dioxane	88	5.625	5.625	(1.346)	462	10.0000	10.95(M)
140 1,3-Butadiene	54	1.164	1.164	(0.279)	1793	0.50000	0.56(M)
25 Methacrylonitrile	41	3.848	3.848	(0.921)	2066	0.50000	0.63(M)
12 Isobutyl Alcohol	43	4.695	4.695	(1.124)	5178	10.0000	9.97(M)
13 Acetonitrile	39	2.210	2.210	(0.529)	2204	5.00000	5.24(M)
14 Allyl Chloride	41	2.206	2.206	(0.528)	4574	0.50000	0.57(M)
4 Propionitrile	54	3.686	3.686	(0.882)	2777	5.00000	5.89(M)
136 n-Hexane	57	2.772	2.772	(0.664)	1909	0.50000	0.57(M)
72 trans-1,4-Dichloro-2-butene	53	8.931	8.931	(1.165)	792	0.50000	0.56(M)
23 Chloroprene	53	1.771	1.771	(0.424)	900	0.50000	0.57(M)
145 alpha-Methylstyrene	118	9.272	9.272	(0.960)	4701	0.50000	0.60
200 Dimethyl Disulfide	94	6.202	6.202	(0.809)	5153	0.50000	0.59(M)
139 Diethyl ether	59	1.760	1.760	(0.421)	1864	0.50000	0.60
130 Ethyl Acetate	43	3.679	3.679	(0.881)	2065	0.50000	0.57(M)
40 Methyl Methacrylate	41	5.628	5.628	(1.347)	1788	0.50000	0.56(M)
49 Ethyl Methacrylate	69	6.727	6.727	(1.355)	1935	0.50000	0.59(M)
132 n-Butanol	56	5.291	5.291	(1.266)	622	10.0000	50.83(M)
142 Tetrahydrofuran	42	3.840	3.840	(0.919)	900	1.00000	(M)
150 Allyl alcohol	57	2.772	2.772	(0.664)	3089	10.0000	17.23

166	1,2,3-Trimethylbenzene	105	9.733	9.733 (1.007)	9626	0.50000	0.57(M)
131	Methyl Acrylate	55	3.743	3.743 (0.896)	1765	0.50000	0.56(M)

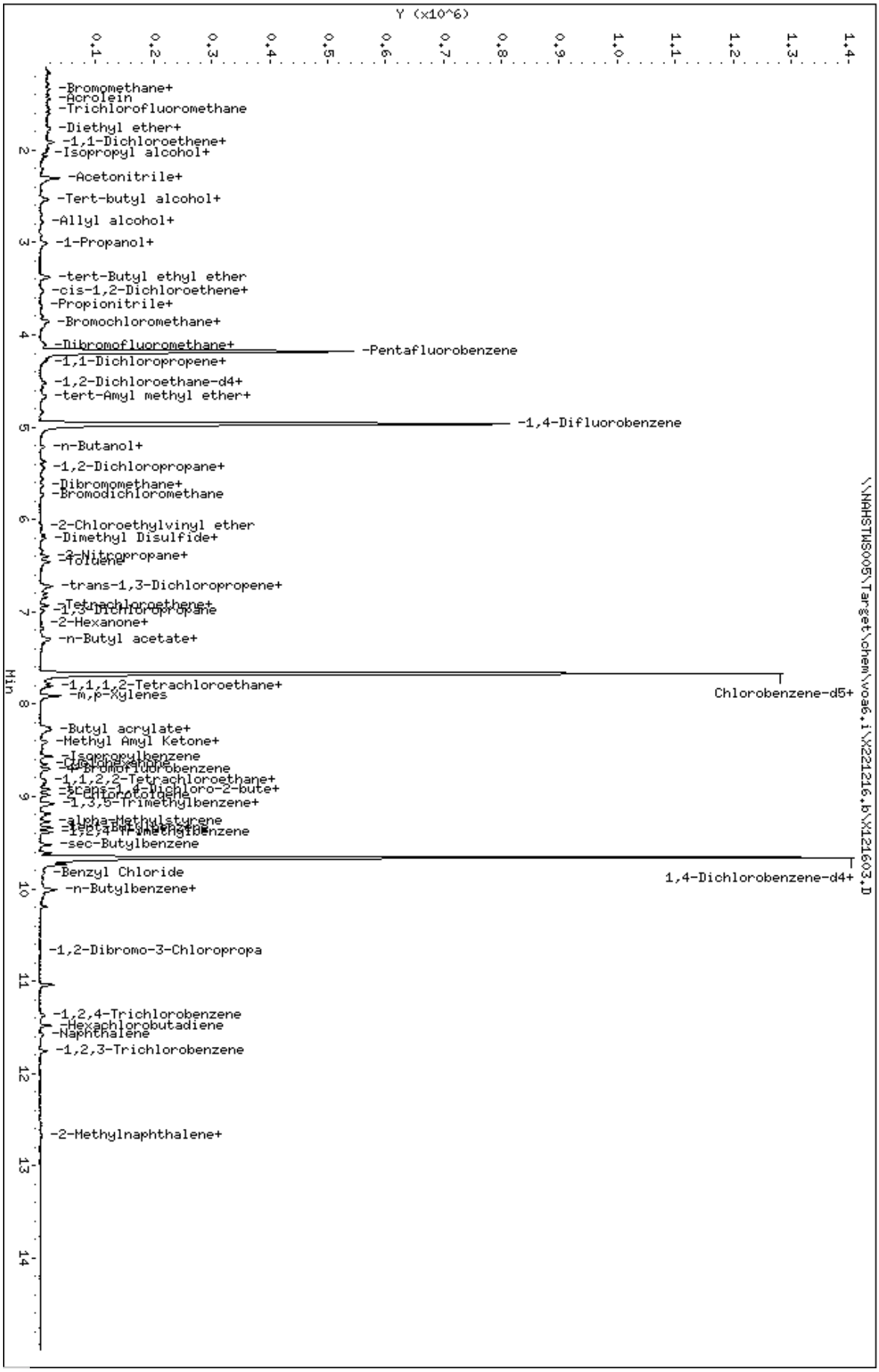
			QUANT SIG					AMOUNTS	
								CAL-AMT	ON-COL
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
	162	Butyl acrylate	55	8.271	8.271	(1.079)	4718	0.50000	0.55(M)
	2	Dichlorodifluoromethane	85	0.972	0.972	(0.233)	1990	0.50000	1.00(M)
	3	Chloromethane	50	1.077	1.077	(0.258)	2466	0.50000	2.77(M)
	5	Vinyl Chloride	62	1.141	1.141	(0.273)	2412	0.50000	0.59(M)
	6	Bromomethane	94	1.336	1.336	(0.320)	1893	0.50000	2.36(M)
	7	Chloroethane	64	1.407	1.407	(0.337)	1653	0.50000	0.58(M)
	8	Trichlorofluoromethane	101	1.561	1.561	(0.374)	3286	0.50000	0.58(M)
	9	Acrolein	56	1.441	1.441	(0.345)	440	1.00000	4.17(M)
	10	Acetone	43	1.977	1.977	(0.473)	2669	1.00000	2.02(M)
	11	1,1-Dichloroethene	96	1.913	1.913	(0.458)	2037	0.50000	0.58(M)
	15	Iodomethane	142	2.026	2.026	(0.485)	2397	1.00000	3.84(TM)
	16	Acrylonitrile	53	2.566	2.566	(0.614)	1118	1.00000	0.94(M)
	17	Methylene Chloride	84	2.296	2.296	(0.550)	2938	0.50000	0.61(M)
	18	Methyl tert-butyl ether	73	2.536	2.536	(0.607)	5841	0.50000	0.50(M)
	19	Carbon Disulfide	76	2.067	2.067	(0.495)	9921	1.00000	1.08(M)
	20	trans-1,2-Dichloroethene	96	2.543	2.543	(0.609)	2218	0.50000	0.56(M)
	21	Vinyl Acetate	43	3.023	3.023	(0.724)	10138	1.00000	1.00(M)
	22	1,1-Dichloroethane	63	2.926	2.926	(0.700)	3874	0.50000	0.56(M)
	24	2-Butanone	43	3.649	3.649	(0.873)	1292	1.00000	3.93(M)
	26	2,2-Dichloropropane	77	3.514	3.514	(0.841)	3238	0.50000	0.55(M)
	27	cis-1,2-Dichloroethene	96	3.544	3.544	(0.848)	2852	0.50000	0.59
	28	Chloroform	83	3.908	3.908	(0.935)	4040	0.50000	0.52(M)
	29	Bromochloromethane	128	3.799	3.799	(0.909)	1481	0.50000	0.56
$	30	Dibromofluoromethane	113	4.110	4.110	(0.984)	2321	0.50000	0.35
	31	1,1,1-Trichloroethane	97	4.084	4.084	(0.978)	3512	0.50000	0.57(M)
	32	1,1-Dichloropropene	75	4.290	4.290	(0.864)	2468	0.50000	0.50(M)
	33	1,2-Dichloroethane	62	4.567	4.567	(0.920)	3129	0.50000	0.55(M)
	34	Carbon Tetrachloride	117	4.264	4.264	(0.859)	2763	0.50000	0.52(MH)
$	35	1,2-Dichloroethane-d4	65	4.481	4.481	(1.073)	2849	0.50000	0.87(T)
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	687671	50.0000	
	37	Benzene	78	4.519	4.519	(0.910)	9243	0.50000	0.56
	38	Trichloroethene	130	5.216	5.216	(1.051)	2583	0.50000	0.55(M)
	39	Bromodichloromethane	83	5.730	5.730	(1.154)	3650	0.50000	0.59(M)
	41	2-Chloroethylvinyl ether	63	6.071	6.071	(1.223)	1861	1.00000	1.06(M)
	42	1,2-Dichloropropane	63	5.441	5.441	(1.096)	2449	0.50000	0.56(M)
	44	Dibromomethane	93	5.557	5.557	(1.119)	1725	0.50000	0.58
	45	4-Methyl-2-Pentanone	43	6.337	6.337	(0.826)	3741	1.00000	1.08(M)
	46	cis-1,3-Dichloropropene	75	6.168	6.168	(1.242)	3695	0.50000	0.51(M)
*	47	Chlorobenzene-d5	117	7.668	7.668	(1.000)	645291	50.0000	
$	48	Toluene-d8	98	6.401	6.401	(0.835)	9525	0.50000	0.59
	50	Toluene	91	6.460	6.460	(0.843)	10374	0.50000	0.58(M)
	51	trans-1,3-Dichloropropene	75	6.697	6.697	(1.349)	3042	0.50000	0.50
	52	2-Hexanone	43	7.117	7.117	(0.928)	2580	1.00000	1.09
	53	1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	2092	0.50000	0.58(M)
	54	1,3-Dichloropropane	76	6.993	6.993	(0.912)	4005	0.50000	0.56(M)
	55	Dibromochloromethane	129	7.180	7.180	(0.936)	2827	0.50000	0.54
	56	Tetrachloroethene	164	6.933	6.933	(0.904)	2131	0.50000	0.57(M)
	57	1,2-Dibromoethane	107	7.270	7.270	(0.948)	2340	0.50000	0.52(M)
	58	1-Chlorohexane	55	7.705	7.705	(1.552)	1829	0.50000	0.55(MH)
	59	Chlorobenzene	112	7.694	7.694	(1.003)	7747	0.50000	0.61
	60	1,1,1,2-Tetrachloroethane	131	7.784	7.784	(1.015)	2741	0.50000	0.58(M)
	61	Ethylbenzene	106	7.806	7.806	(1.018)	3064	0.50000	0.51(M)

62 m,p-Xylenes	106	7.911	7.911 (1.032)	9016	1.00000	1.17(M)
63 o-Xylene	106	8.252	8.252 (1.076)	4412	0.50000	0.58(M)

			QUANT SIG					AMOUNTS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)
	64	Styrene	104	8.286	8.286	(1.081)	6634	0.50000	0.52(M)
	66	Bromoform	173	8.421	8.421	(1.098)	2013	0.50000	0.56(TM)
	67	Isopropylbenzene	105	8.567	8.567	(1.117)	8757	0.50000	0.50(M)
	68	1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	3194	0.50000	0.57(M)
$	69	4-Bromofluorobenzene	95	8.706	8.706	(1.135)	3870	0.50000	0.71(M)
*	70	1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	347824	50.0000	
	71	1,2,3-Trichloropropane	75	8.871	8.871	(0.918)	2019	0.50000	0.52(M)
	73	n-Propylbenzene	91	8.923	8.923	(0.924)	11163	0.50000	0.57(M)
	74	Bromobenzene	156	8.818	8.818	(0.913)	3147	0.50000	0.55(M)
	75	1,3,5-Trimethylbenzene	105	9.073	9.073	(0.939)	7182	0.50000	0.50(M)
	76	2-Chlorotoluene	91	8.983	8.983	(0.930)	6718	0.50000	0.53(M)
	77	4-Chlorotoluene	91	9.088	9.088	(0.941)	7644	0.50000	0.53(M)
	78	tert-Butylbenzene	119	9.339	9.339	(0.967)	6389	0.50000	0.54(M)
	79	1,2,4-Trimethylbenzene	105	9.384	9.384	(0.971)	8496	0.50000	0.56(M)
	81	sec-Butylbenzene	105	9.523	9.523	(0.986)	7938	0.50000	0.51(M)
	82	p-Isopropyltoluene	119	9.651	9.651	(0.999)	7343	0.50000	0.52(M)
	83	1,3-Dichlorobenzene	146	9.613	9.613	(0.995)	4677	0.50000	0.49(M)
	84	1,4-Dichlorobenzene	146	9.681	9.681	(1.002)	5674	0.50000	0.54(M)
	86	Benzyl Chloride	91	9.831	9.831	(1.282)	3642	0.50000	3.03
	87	n-Butylbenzene	91	10.014	10.014	(1.036)	5149	0.50000	2.14(M)
	88	1,2-Dichlorobenzene	146	10.010	10.010	(1.036)	5504	0.50000	0.56(M)
	89	1,2-Dibromo-3-Chloropropane	155	10.678	10.678	(1.105)	441	0.50000	0.58(M)
	90	1,2,4-Trichlorobenzene	180	11.364	11.364	(1.176)	3187	0.50000	0.51(M)
	91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	1477	0.50000	0.49(M)
	92	Naphthalene	128	11.581	11.581	(1.199)	7025	0.50000	0.50
	93	1,2,3-Trichlorobenzene	180	11.765	11.765	(1.218)	3572	0.50000	0.60(M)
M	94	1,2-Dichloroethylene (total)	96				5070	1.00000	
M	95	Xylenes (total)	106				13428	1.50000	
	141	Cyclohexane	56	4.114	4.114	(0.985)	2803	0.50000	1.84(M)
	138	Freon TF	101	1.917	1.917	(0.459)	1851	0.50000	0.54(M)
	147	Methylcyclohexane	55	5.415	5.415	(1.091)	4781	0.50000	0.56(M)
	146	Methyl Acetate	43	2.240	2.240	(0.536)	1269	0.50000	0.61(M)

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Date : 16-DEC-2022 12:20
Client ID: VSTD000.5
Sample Info: VSTD000.5;VSTD000.5;1;2;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

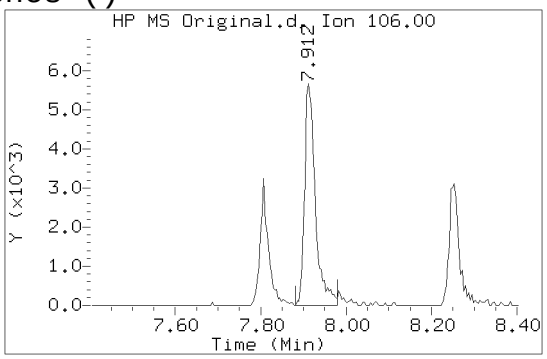
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

m,p-Xylenes ()

Reason Code:

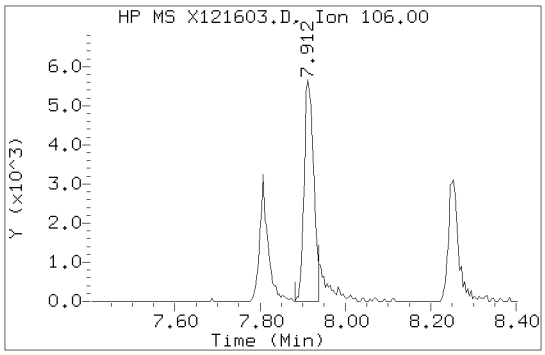
BEFORE

MASS
106
AREA
10070
HEIGHT
5666
27-Dec-2022
16:03
linh
pham



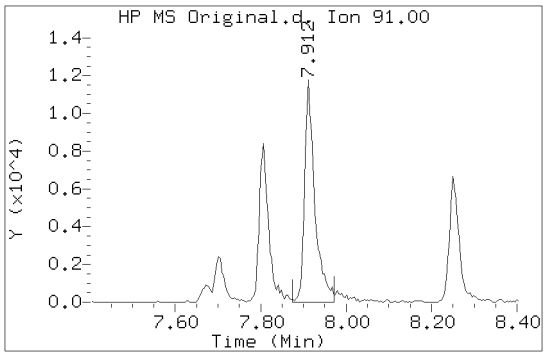
AFTER

MASS
106
AREA
9016
HEIGHT
5666
27-Dec-2022
16:07
linh
pham



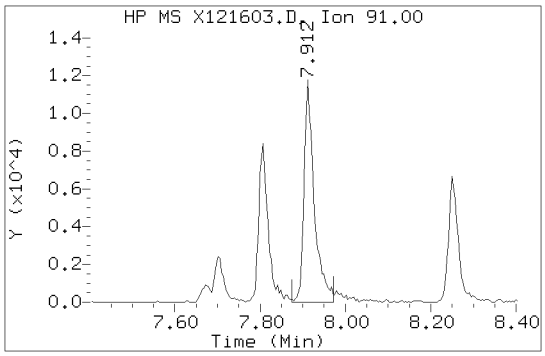
BEFORE

MASS
91
AREA
19887
HEIGHT
11768
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
19887
HEIGHT
11768
27-Dec-2022
16:07
linh
pham

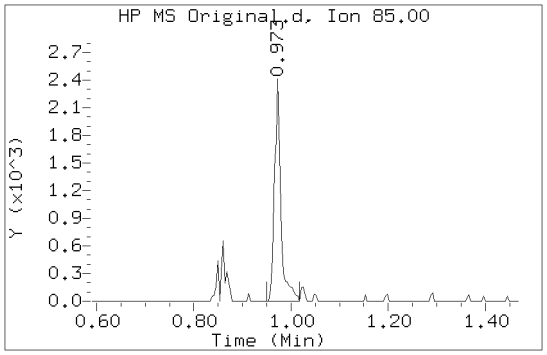


Dichlorodifluoromethane (75-71-8)

Reason Code:

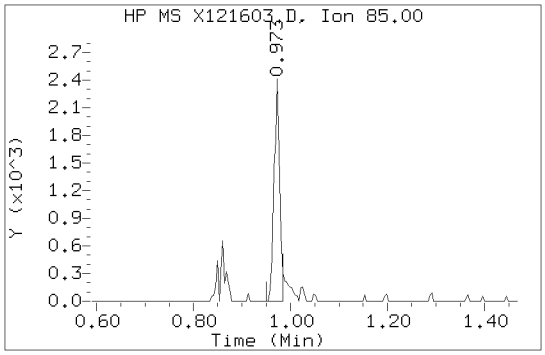
BEFORE

MASS
85
AREA
2242
HEIGHT
2413
27-Dec-2022
16:03
linh
pham



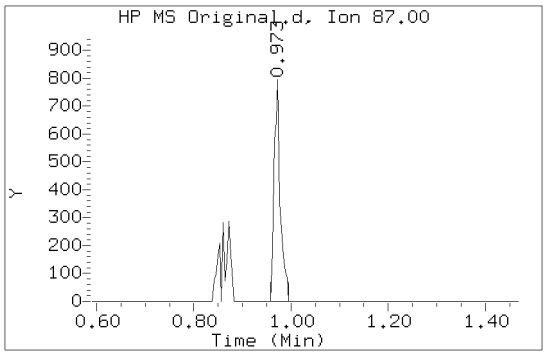
AFTER

MASS
85
AREA
1990
HEIGHT
2413
27-Dec-2022
16:07
linh
pham



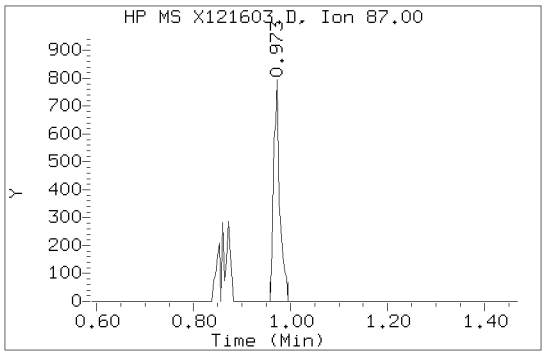
BEFORE

MASS
87
AREA
713
HEIGHT
795
27-Dec-2022
16:03
linh
pham



AFTER

MASS
87
AREA
713
HEIGHT
795
27-Dec-2022
16:07
linh
pham



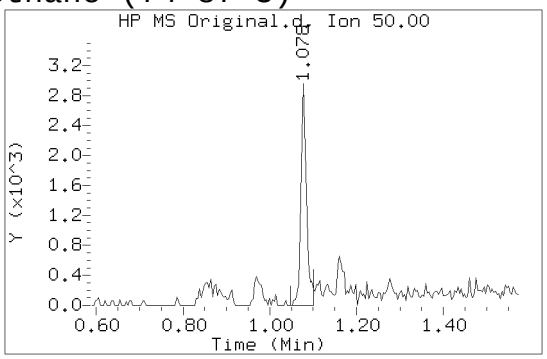
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Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Chloromethane (74-87-3)

Reason Code:

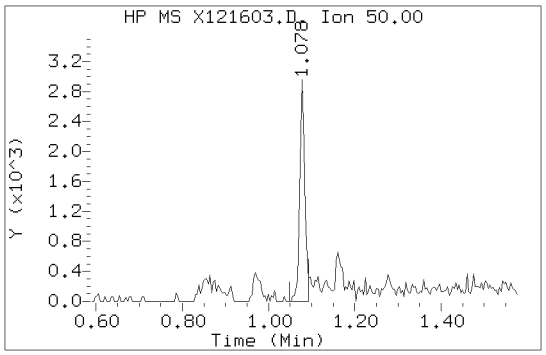
BEFORE

MASS
50
AREA
2589
HEIGHT
2959
27-Dec-2022
16:03
linh
pham



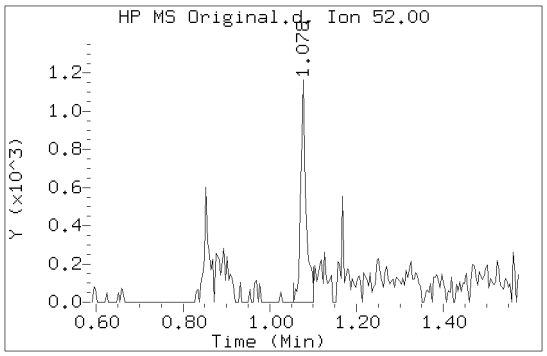
AFTER

MASS
50
AREA
2466
HEIGHT
2959
27-Dec-2022
16:07
linh
pham



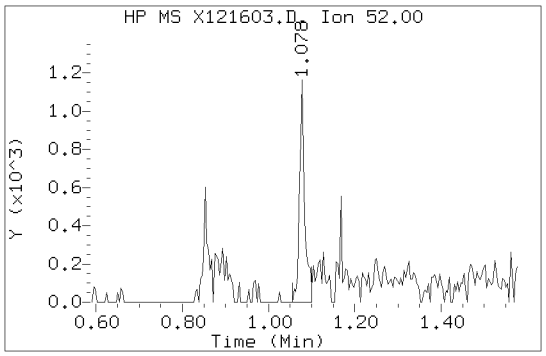
BEFORE

MASS
52
AREA
985
HEIGHT
1164
27-Dec-2022
16:03
linh
pham



AFTER

MASS
52
AREA
985
HEIGHT
1164
27-Dec-2022
16:07
linh
pham

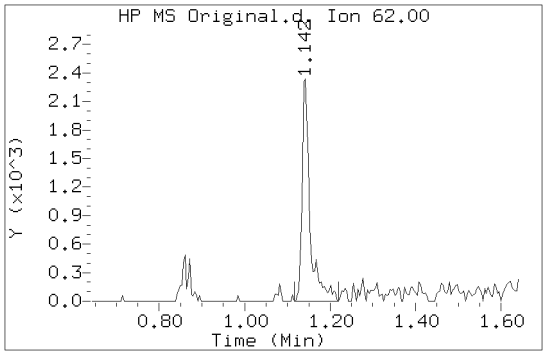


Vinyl Chloride (75-01-4)

Reason Code:

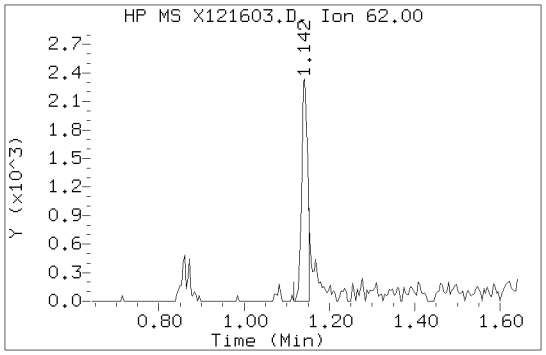
BEFORE

MASS
62
AREA
3132
HEIGHT
2337
27-Dec-2022
16:03
linh
pham



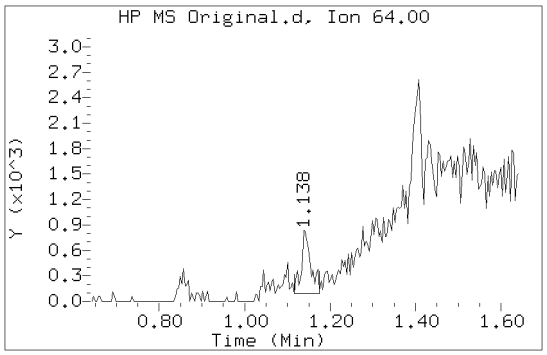
AFTER

MASS
62
AREA
2412
HEIGHT
2337
27-Dec-2022
16:07
linh
pham



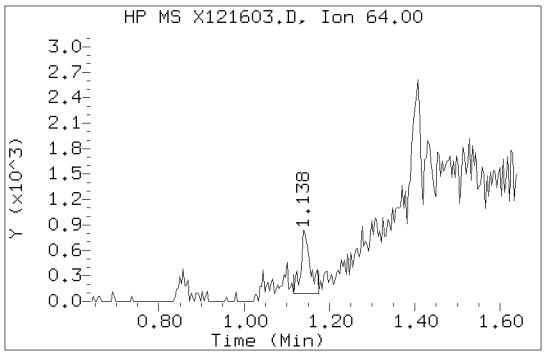
BEFORE

MASS
64
AREA
1174
HEIGHT
750
27-Dec-2022
16:03
linh
pham



AFTER

MASS
64
AREA
1174
HEIGHT
750
27-Dec-2022
16:07
linh
pham



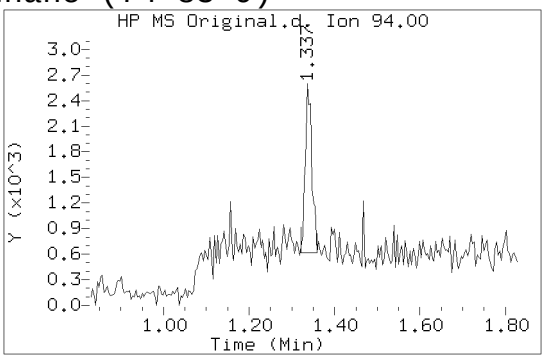
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Bromomethane (74-83-9)

Reason Code:

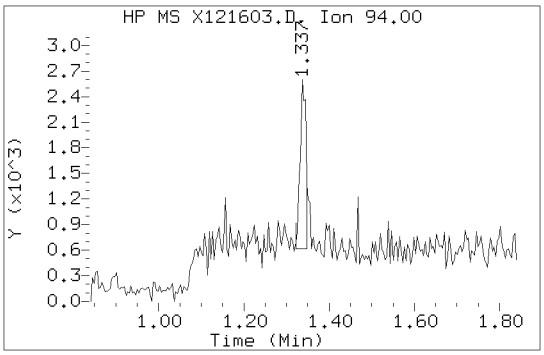
BEFORE

MASS
94
AREA
2146
HEIGHT
1983
27-Dec-2022
16:03
linh
pham



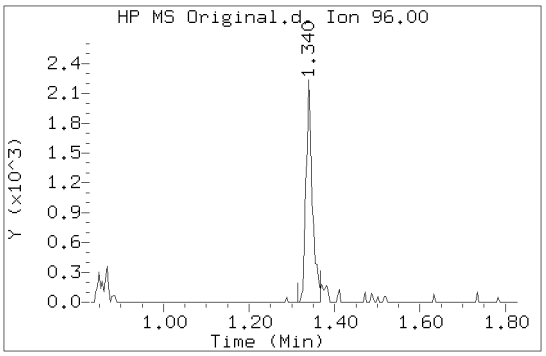
AFTER

MASS
94
AREA
1893
HEIGHT
1983
27-Dec-2022
16:07
linh
pham



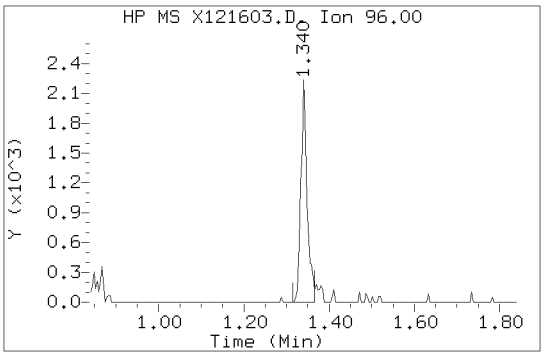
BEFORE

MASS
96
AREA
2304
HEIGHT
2236
27-Dec-2022
16:03
linh
pham



AFTER

MASS
96
AREA
2304
HEIGHT
2236
27-Dec-2022
16:07
linh
pham

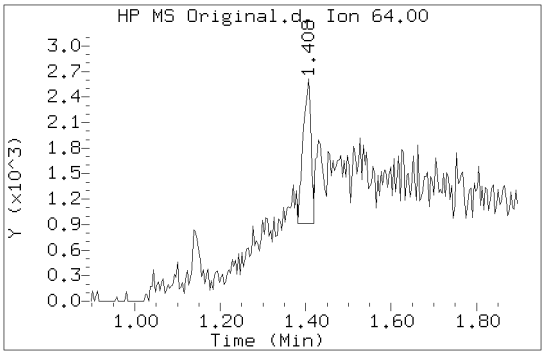


Chloroethane (75-00-3)

Reason Code:

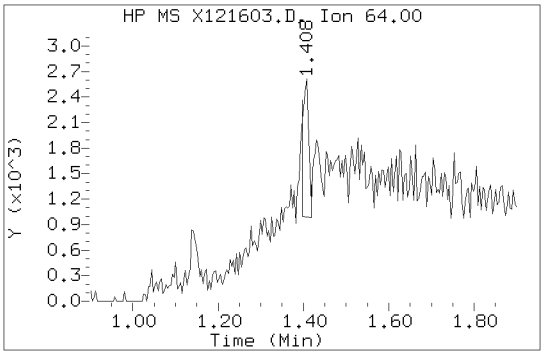
BEFORE

MASS
64
AREA
2196
HEIGHT
1702
27-Dec-2022
16:03
linh
pham



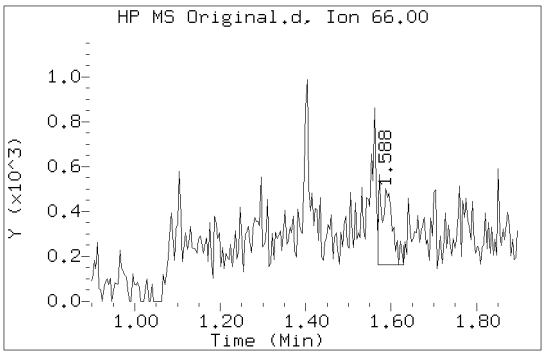
AFTER

MASS
64
AREA
1653
HEIGHT
1624
27-Dec-2022
16:07
linh
pham



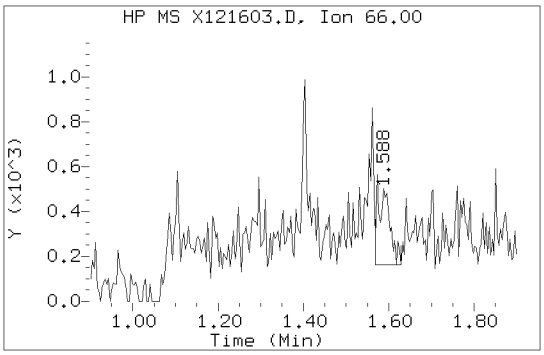
BEFORE

MASS
66
AREA
677
HEIGHT
340
27-Dec-2022
16:03
linh
pham



AFTER

MASS
66
AREA
677
HEIGHT
340
27-Dec-2022
16:07
linh
pham

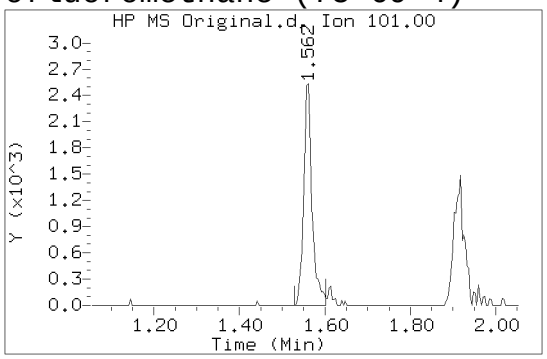


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Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

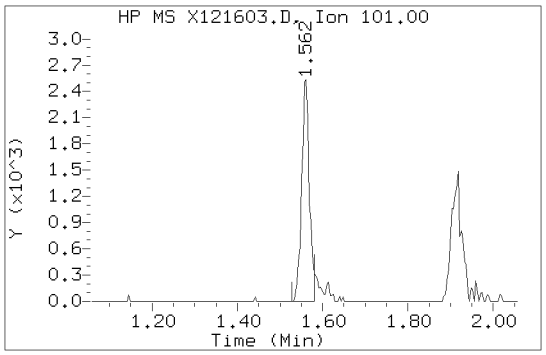
Trichlorofluoromethane (75-69-4)

Reason Code:

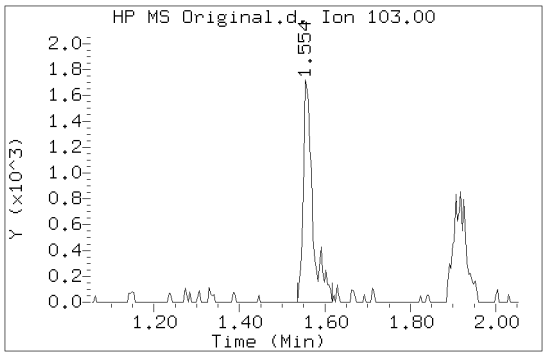
BEFORE
MASS
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AREA
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HEIGHT
2534
27-Dec-2022
16:03
linh
pham



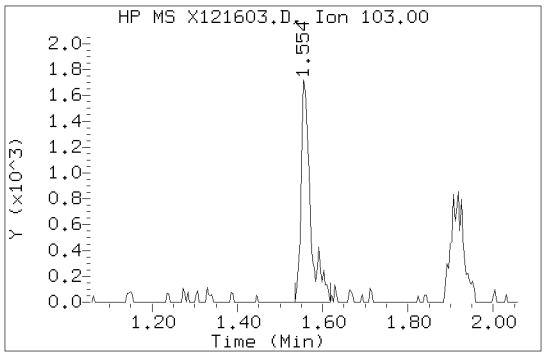
AFTER
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AREA
3286
HEIGHT
2534
27-Dec-2022
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pham



BEFORE
MASS
103
AREA
2708
HEIGHT
1720
27-Dec-2022
16:03
linh
pham



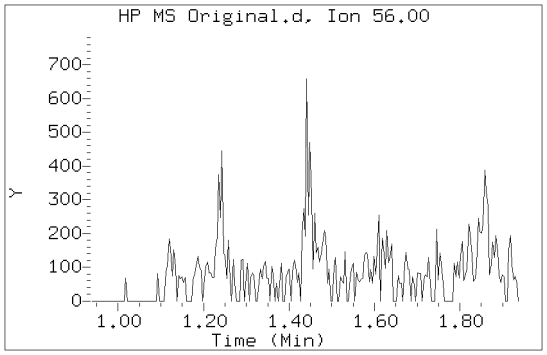
AFTER
MASS
103
AREA
2708
HEIGHT
1720
27-Dec-2022
16:07
linh
pham



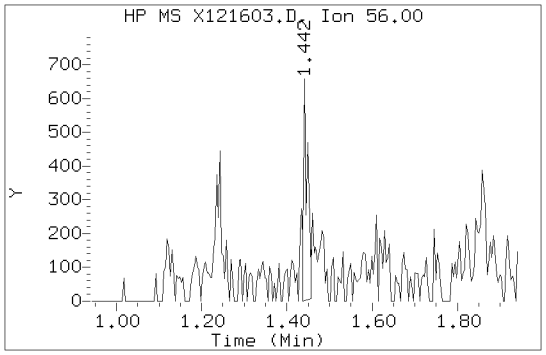
Acrolein (107-02-8)

Reason Code:

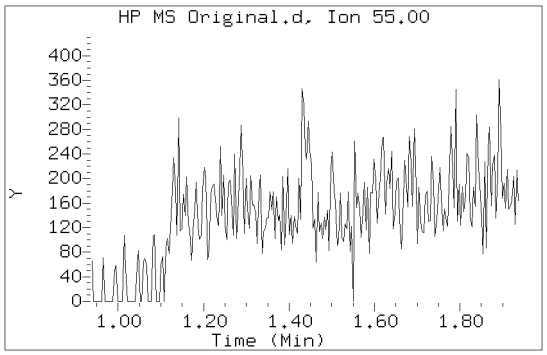
BEFORE
MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



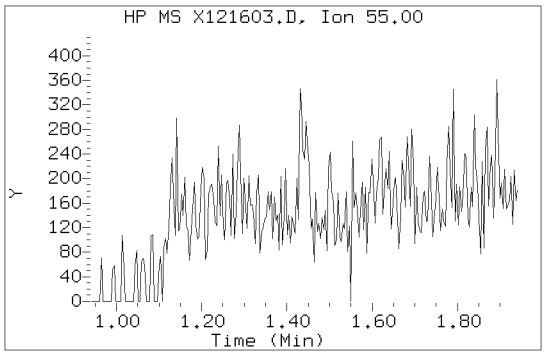
AFTER
MASS
56
AREA
440
HEIGHT
656
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER
MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



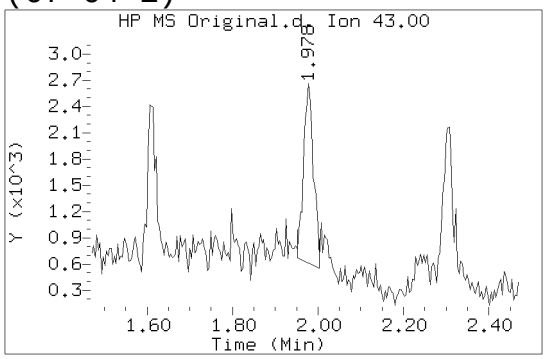
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Acetone (67-64-1)

Reason Code:

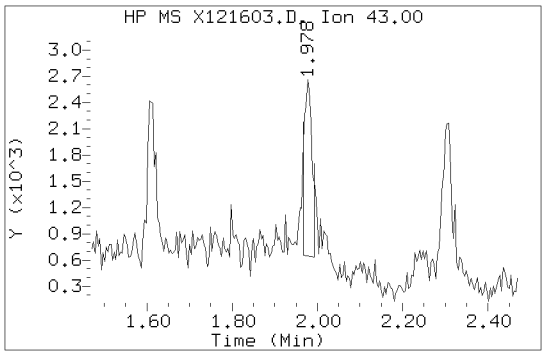
BEFORE

MASS
43
AREA
3388
HEIGHT
2046
27-Dec-2022
16:03
linh
pham



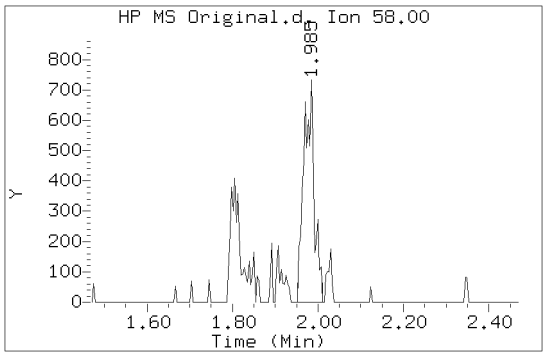
AFTER

MASS
43
AREA
2669
HEIGHT
2015
27-Dec-2022
16:07
linh
pham



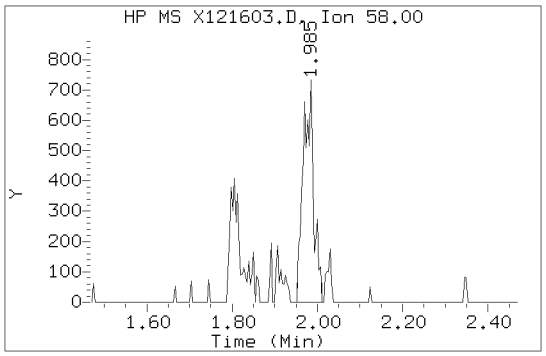
BEFORE

MASS
58
AREA
1264
HEIGHT
733
27-Dec-2022
16:03
linh
pham



AFTER

MASS
58
AREA
1264
HEIGHT
733
27-Dec-2022
16:07
linh
pham

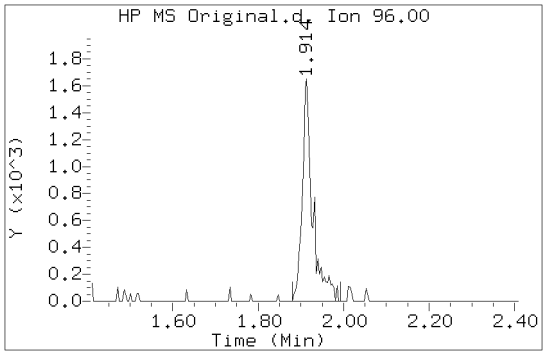


1,1-Dichloroethene (75-35-4)

Reason Code:

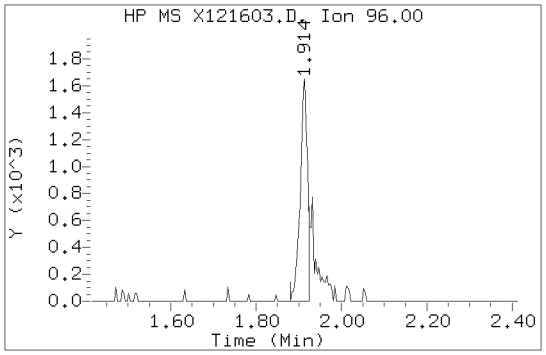
BEFORE

MASS
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AREA
2836
HEIGHT
1651
27-Dec-2022
16:03
linh
pham



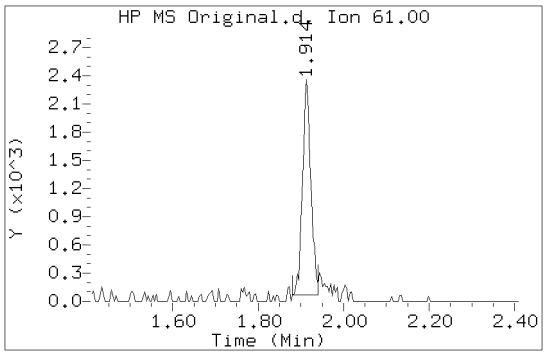
AFTER

MASS
96
AREA
2037
HEIGHT
1651
27-Dec-2022
16:07
linh
pham



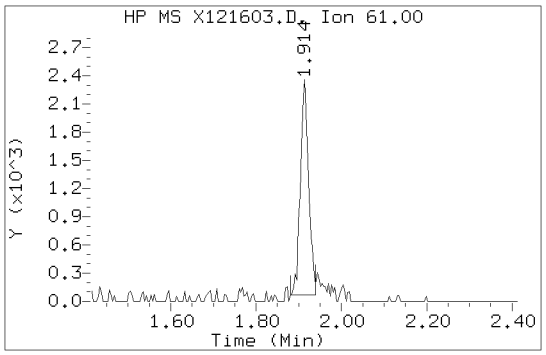
BEFORE

MASS
61
AREA
3197
HEIGHT
2293
27-Dec-2022
16:03
linh
pham



AFTER

MASS
61
AREA
3197
HEIGHT
2293
27-Dec-2022
16:07
linh
pham



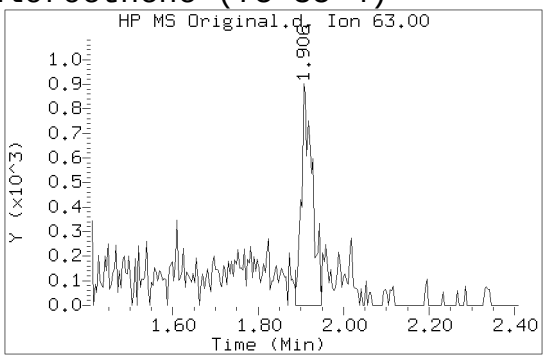
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,1-Dichloroethene (75-35-4)

Reason Code:

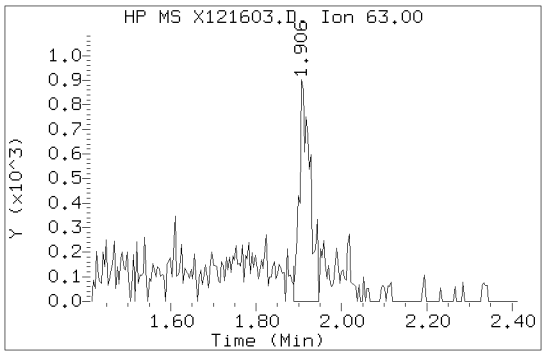
BEFORE

MASS
63
AREA
1607
HEIGHT
902
27-Dec-2022
16:03
linh
pham



AFTER

MASS
63
AREA
1607
HEIGHT
902
27-Dec-2022
16:07
linh
pham

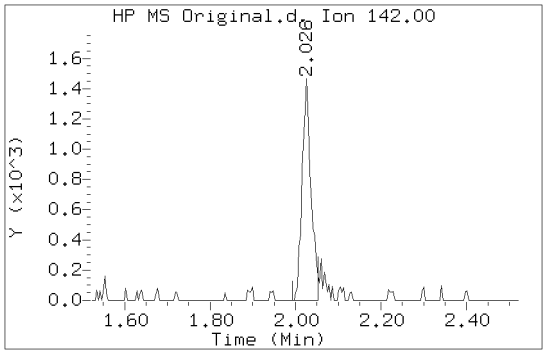


Iodomethane (74-88-4)

Reason Code:

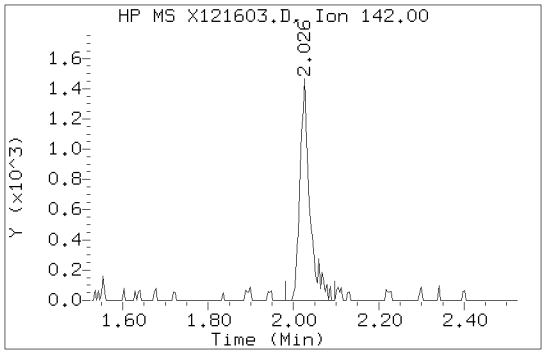
BEFORE

MASS
142
AREA
2166
HEIGHT
1466
27-Dec-2022
16:03
linh
pham



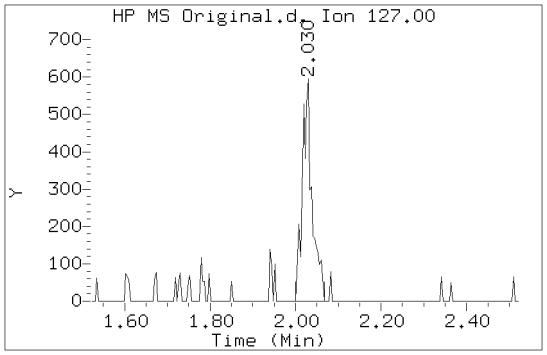
AFTER

MASS
142
AREA
2397
HEIGHT
1466
27-Dec-2022
16:07
linh
pham



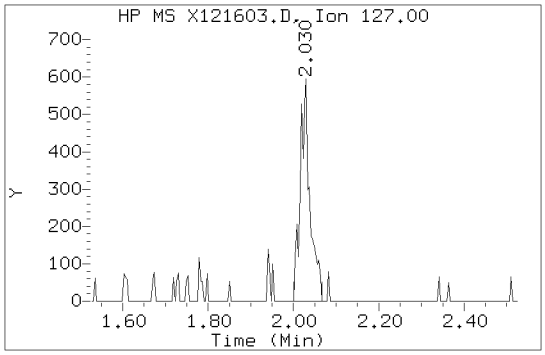
BEFORE

MASS
127
AREA
958
HEIGHT
595
27-Dec-2022
16:03
linh
pham



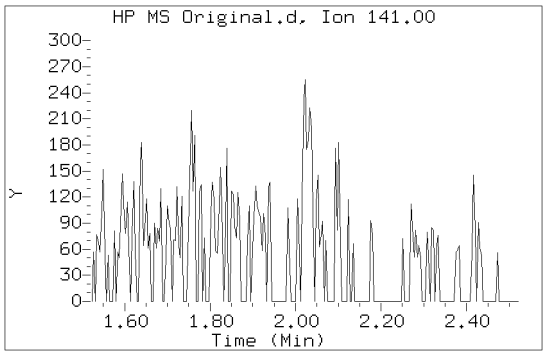
AFTER

MASS
127
AREA
958
HEIGHT
595
27-Dec-2022
16:07
linh
pham



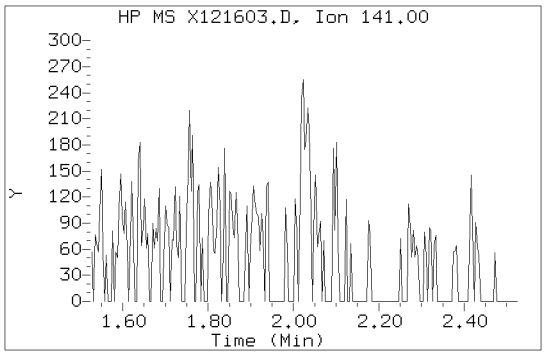
BEFORE

MASS
141
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
141
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

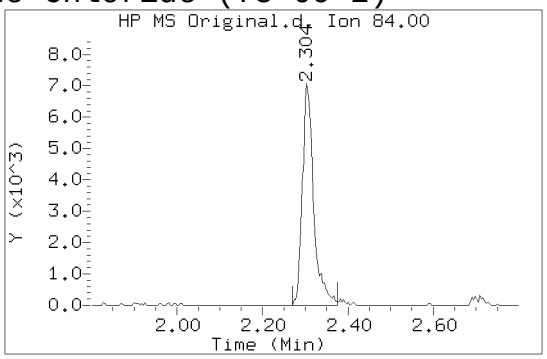


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

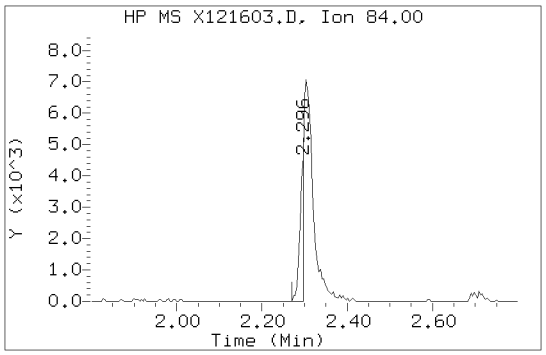
Methylene Chloride (75-09-2)

Reason Code:

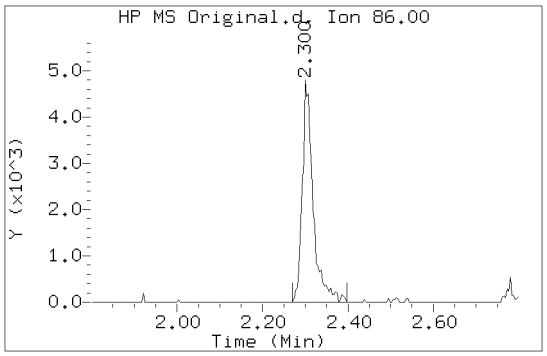
BEFORE
MASS
84
AREA
13307
HEIGHT
7067
27-Dec-2022
16:03
linh
pham



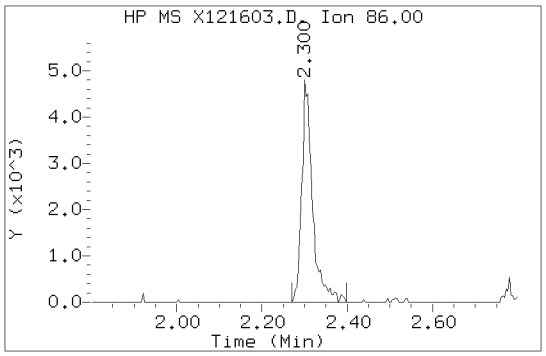
AFTER
MASS
84
AREA
2938
HEIGHT
4595
27-Dec-2022
16:07
linh
pham



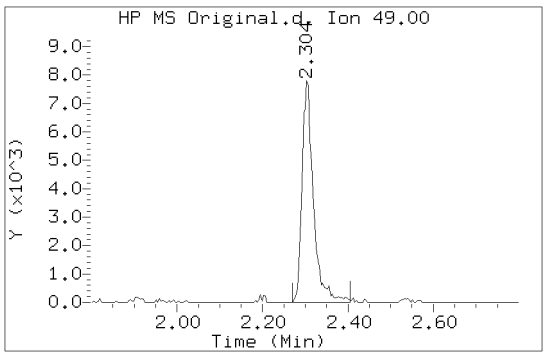
BEFORE
MASS
86
AREA
8692
HEIGHT
4802
27-Dec-2022
16:03
linh
pham



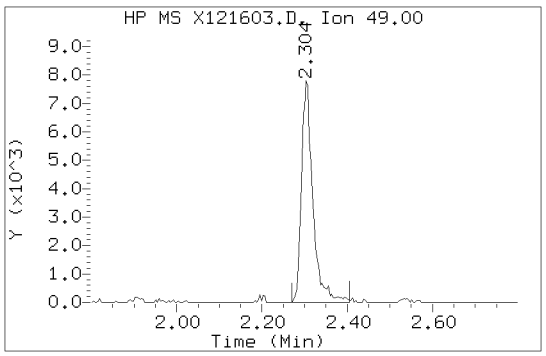
AFTER
MASS
86
AREA
8692
HEIGHT
4802
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
49
AREA
14733
HEIGHT
7803
27-Dec-2022
16:03
linh
pham



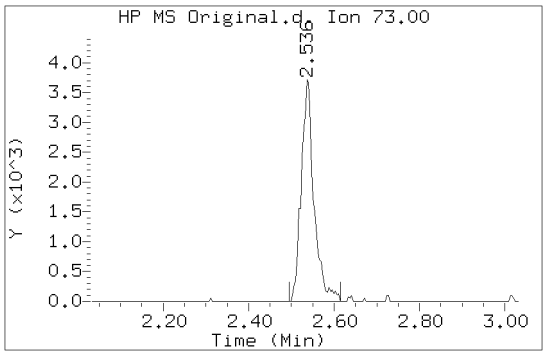
AFTER
MASS
49
AREA
14733
HEIGHT
7803
27-Dec-2022
16:07
linh
pham



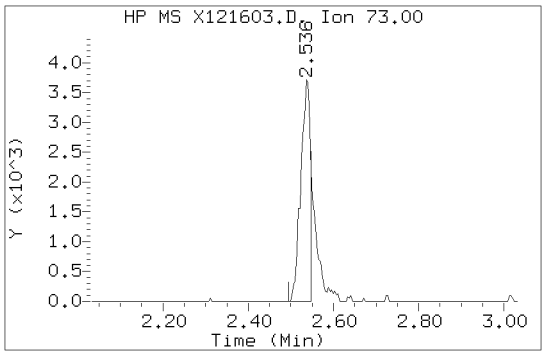
Methyl tert-butyl ether (1634-04-4)

Reason Code:

BEFORE
MASS
73
AREA
7826
HEIGHT
3716
27-Dec-2022
16:03
linh
pham



AFTER
MASS
73
AREA
5841
HEIGHT
3716
27-Dec-2022
16:07
linh
pham

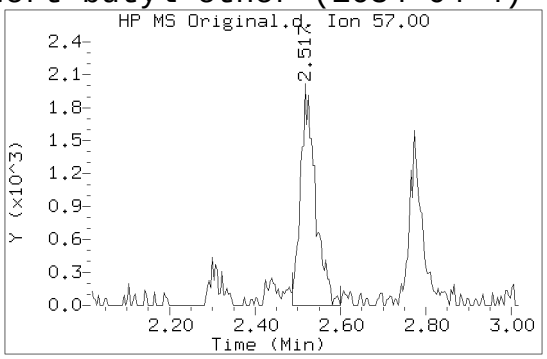


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Methyl tert-butyl ether (1634-04-4)

BEFORE

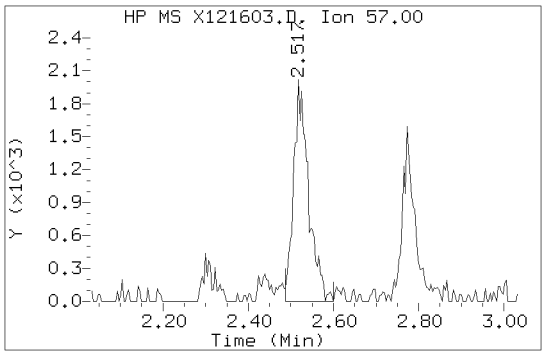
MASS
57
AREA
4915
HEIGHT
2019
27-Dec-2022
16:03
linh
pham



AFTER

MASS
57
AREA
4915
HEIGHT
2019
27-Dec-2022
16:07
linh
pham

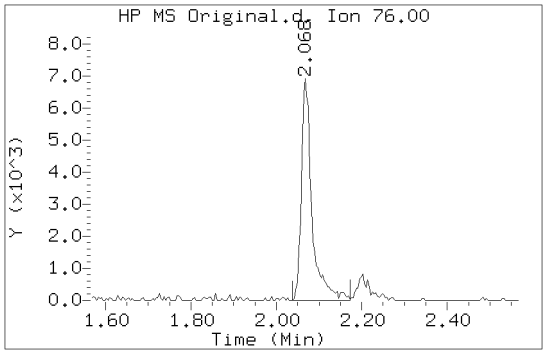
Reason Code:



Carbon Disulfide (75-15-0)

BEFORE

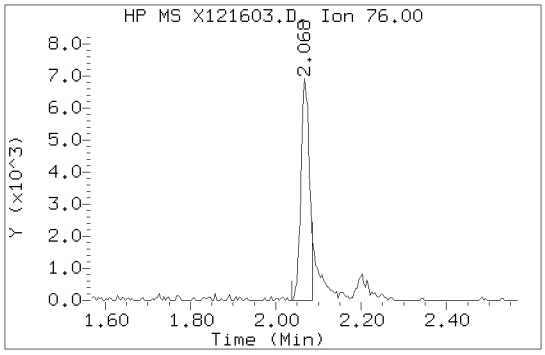
MASS
76
AREA
12313
HEIGHT
6923
27-Dec-2022
16:03
linh
pham



AFTER

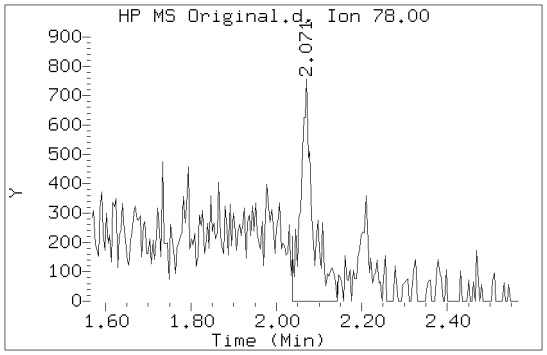
MASS
76
AREA
9921
HEIGHT
6923
27-Dec-2022
16:07
linh
pham

Reason Code:



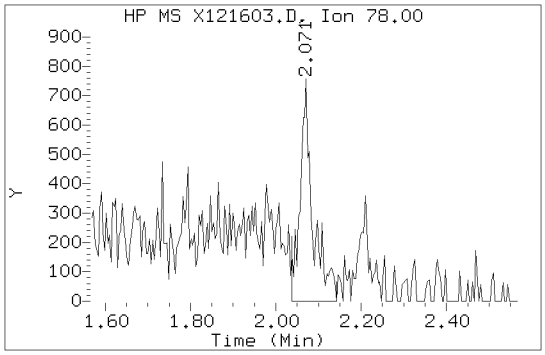
BEFORE

MASS
78
AREA
1586
HEIGHT
757
27-Dec-2022
16:03
linh
pham



AFTER

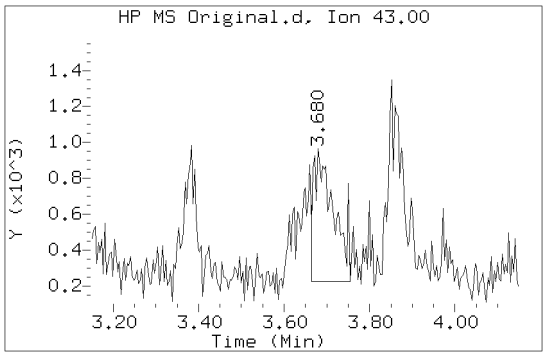
MASS
78
AREA
1586
HEIGHT
757
27-Dec-2022
16:07
linh
pham



2-Butanone (78-93-3)

BEFORE

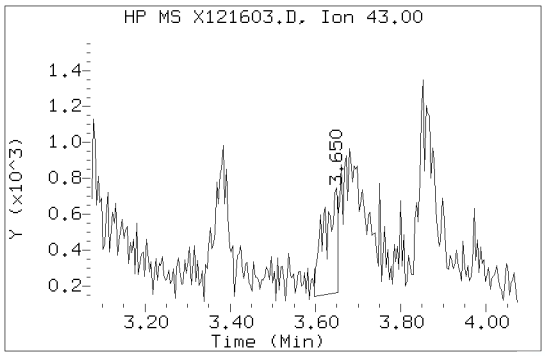
MASS
43
AREA
2415
HEIGHT
742
27-Dec-2022
16:03
linh
pham



AFTER

MASS
43
AREA
1292
HEIGHT
587
27-Dec-2022
16:07
linh
pham

Reason Code:



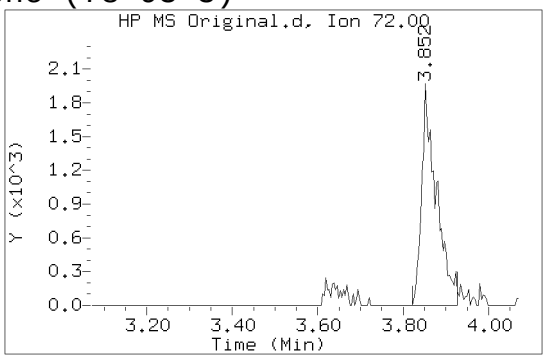
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Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

2-Butanone (78-93-3)

Reason Code:

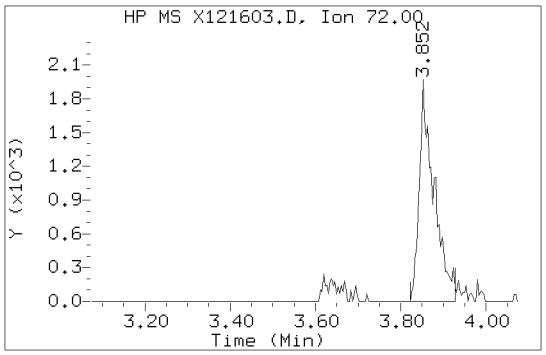
BEFORE

MASS
72
AREA
4698
HEIGHT
1970
27-Dec-2022
16:03
linh
pham



AFTER

MASS
72
AREA
4698
HEIGHT
1970
27-Dec-2022
16:07
linh
pham

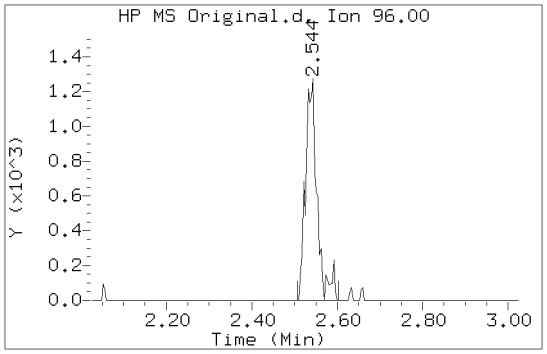


trans-1,2-Dichloroethene (156-60-5)

Reason Code:

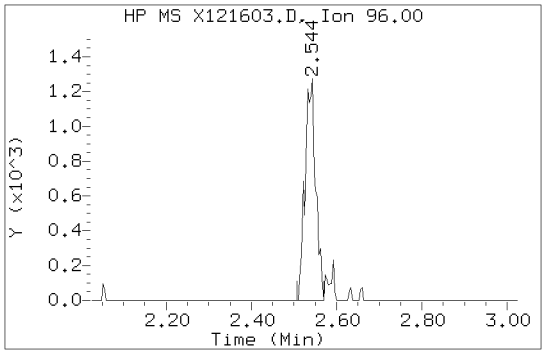
BEFORE

MASS
96
AREA
2404
HEIGHT
1274
27-Dec-2022
16:03
linh
pham



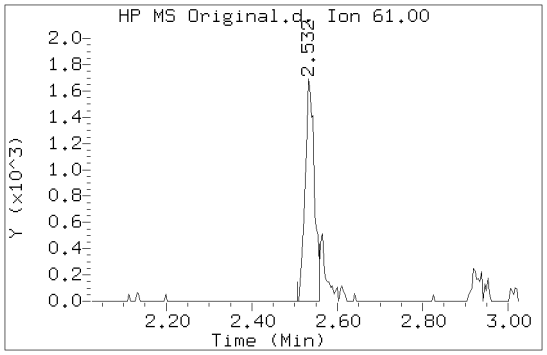
AFTER

MASS
96
AREA
2218
HEIGHT
1274
27-Dec-2022
16:07
linh
pham



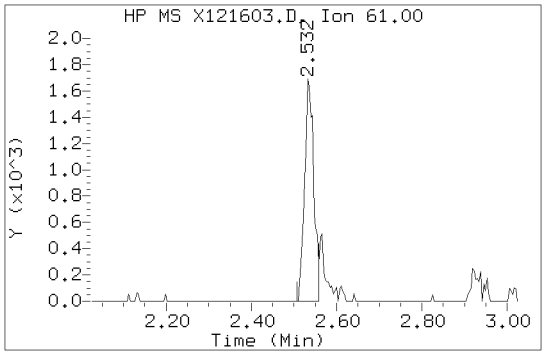
BEFORE

MASS
61
AREA
2571
HEIGHT
1692
27-Dec-2022
16:03
linh
pham



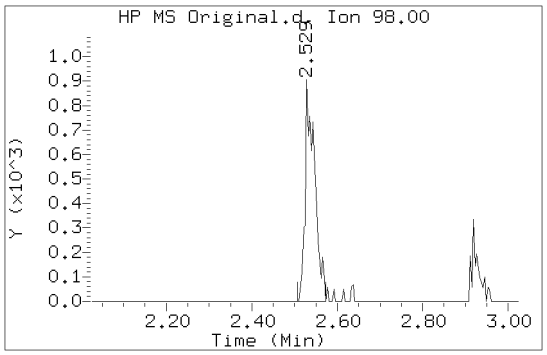
AFTER

MASS
61
AREA
2571
HEIGHT
1692
27-Dec-2022
16:07
linh
pham



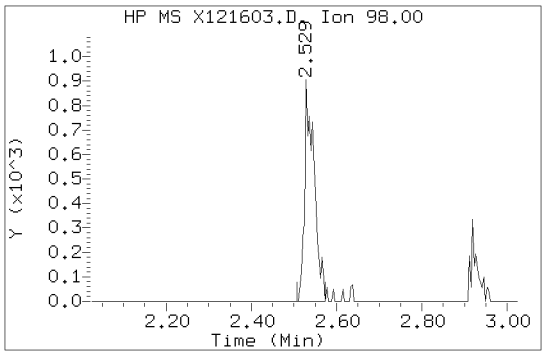
BEFORE

MASS
98
AREA
1412
HEIGHT
906
27-Dec-2022
16:03
linh
pham



AFTER

MASS
98
AREA
1412
HEIGHT
906
27-Dec-2022
16:07
linh
pham



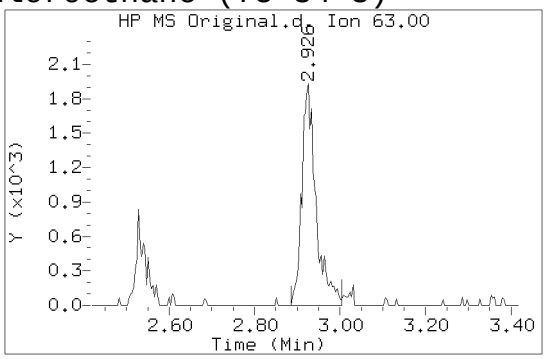
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,1-Dichloroethane (75-34-3)

Reason Code:

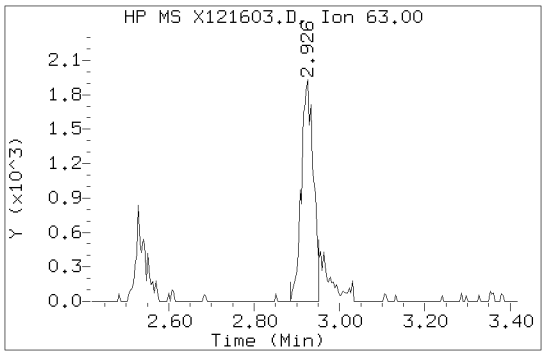
BEFORE

MASS
63
AREA
4504
HEIGHT
1931
27-Dec-2022
16:03
linh
pham



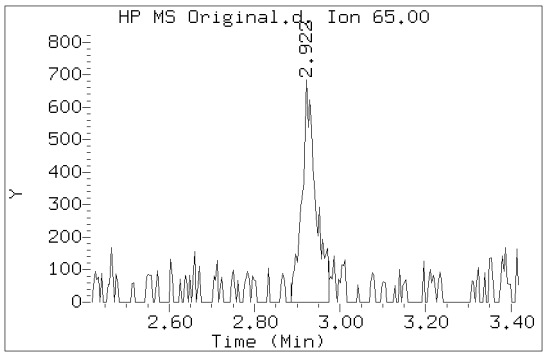
AFTER

MASS
63
AREA
3874
HEIGHT
1931
27-Dec-2022
16:07
linh
pham



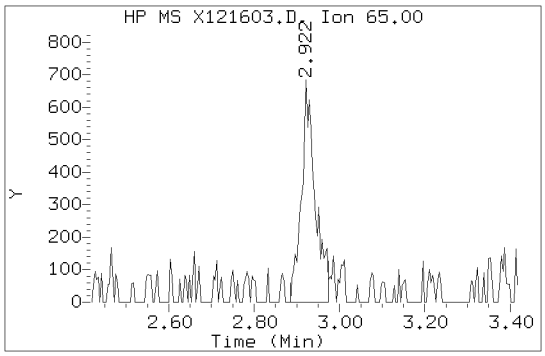
BEFORE

MASS
65
AREA
1548
HEIGHT
684
27-Dec-2022
16:03
linh
pham



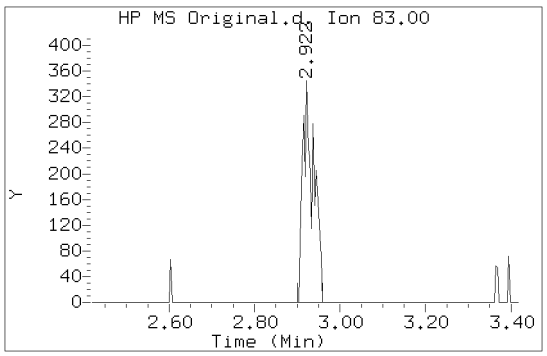
AFTER

MASS
65
AREA
1548
HEIGHT
684
27-Dec-2022
16:07
linh
pham



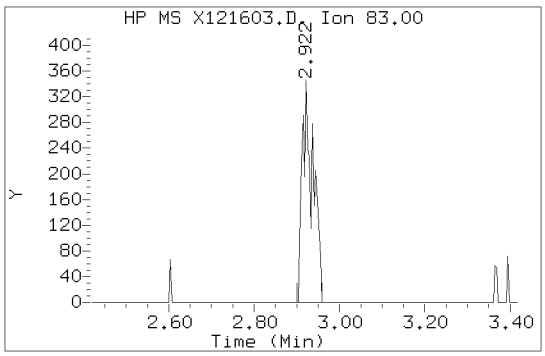
BEFORE

MASS
83
AREA
618
HEIGHT
345
27-Dec-2022
16:03
linh
pham



AFTER

MASS
83
AREA
618
HEIGHT
345
27-Dec-2022
16:07
linh
pham

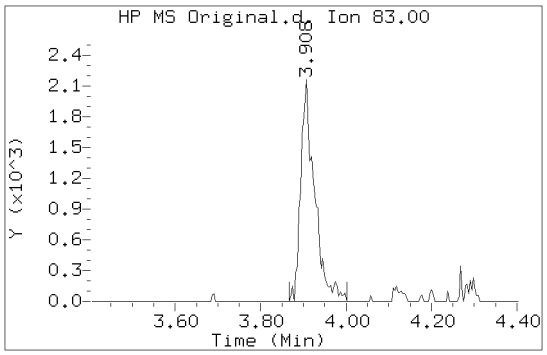


Chloroform (67-66-3)

Reason Code:

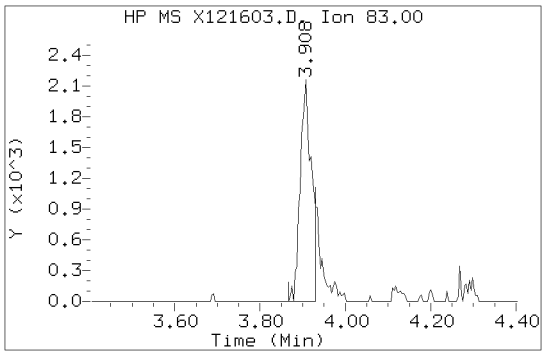
BEFORE

MASS
83
AREA
4949
HEIGHT
2160
27-Dec-2022
16:03
linh
pham



AFTER

MASS
83
AREA
4040
HEIGHT
2160
27-Dec-2022
16:07
linh
pham



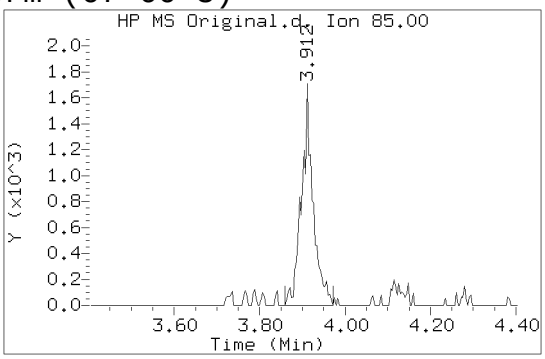
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Chloroform (67-66-3)

Reason Code:

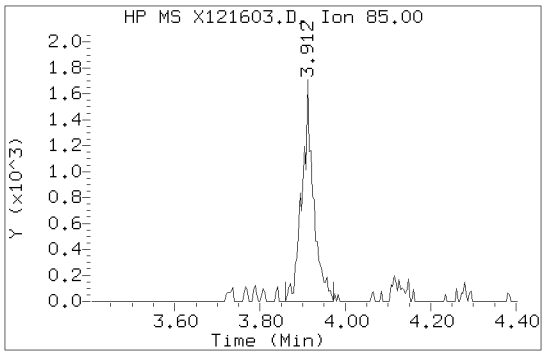
BEFORE

MASS
85
AREA
3222
HEIGHT
1709
27-Dec-2022
16:03
linh
pham



AFTER

MASS
85
AREA
3222
HEIGHT
1709
27-Dec-2022
16:07
linh
pham

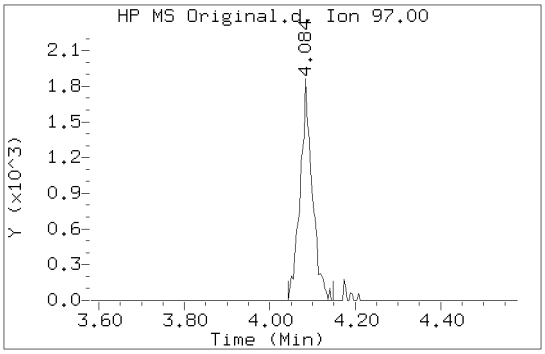


1,1,1-Trichloroethane (71-55-6)

Reason Code:

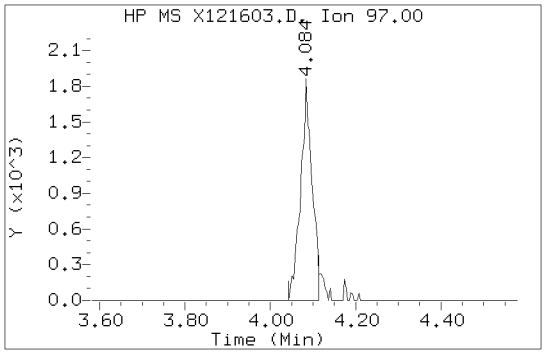
BEFORE

MASS
97
AREA
3710
HEIGHT
1863
27-Dec-2022
16:03
linh
pham



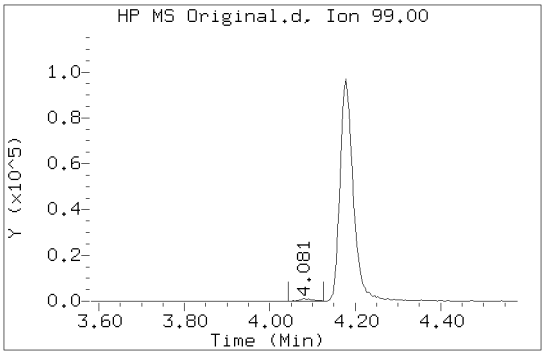
AFTER

MASS
97
AREA
3512
HEIGHT
1863
27-Dec-2022
16:07
linh
pham



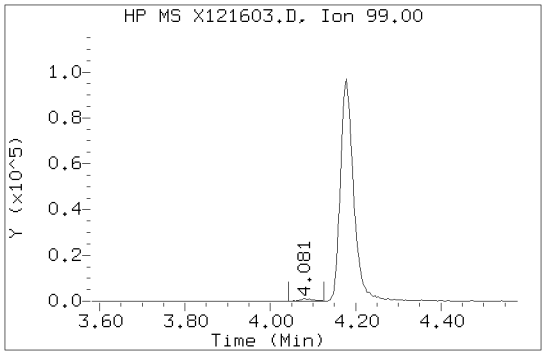
BEFORE

MASS
99
AREA
2299
HEIGHT
1029
27-Dec-2022
16:03
linh
pham



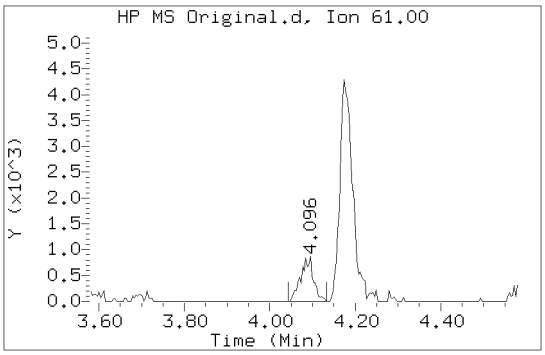
AFTER

MASS
99
AREA
2299
HEIGHT
1029
27-Dec-2022
16:07
linh
pham



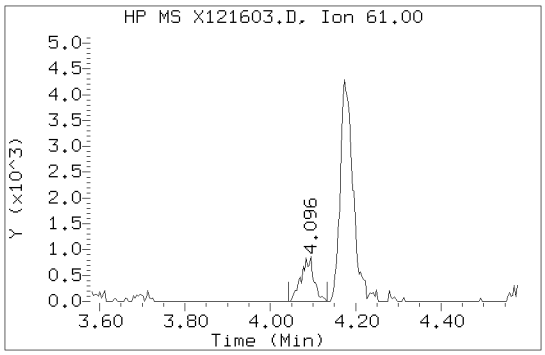
BEFORE

MASS
61
AREA
1801
HEIGHT
872
27-Dec-2022
16:03
linh
pham



AFTER

MASS
61
AREA
1801
HEIGHT
872
27-Dec-2022
16:07
linh
pham



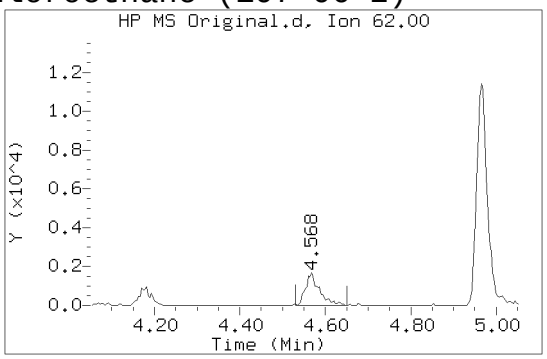
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,2-Dichloroethane (107-06-2)

Reason Code:

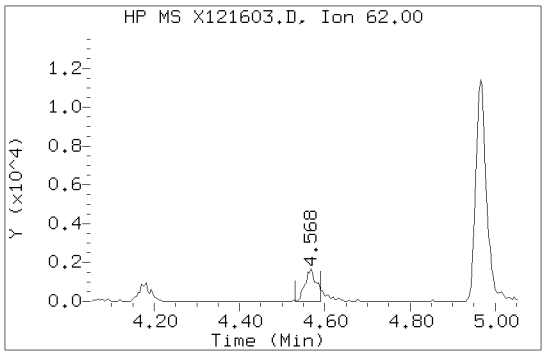
BEFORE

MASS
62
AREA
3822
HEIGHT
1678
27-Dec-2022
16:03
linh
pham



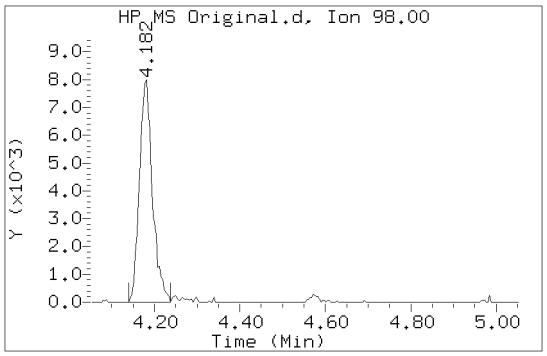
AFTER

MASS
62
AREA
3129
HEIGHT
1678
27-Dec-2022
16:07
linh
pham



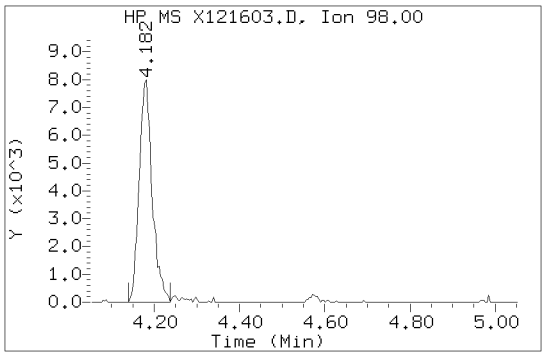
BEFORE

MASS
98
AREA
16918
HEIGHT
7987
27-Dec-2022
16:03
linh
pham



AFTER

MASS
98
AREA
16918
HEIGHT
7987
27-Dec-2022
16:07
linh
pham

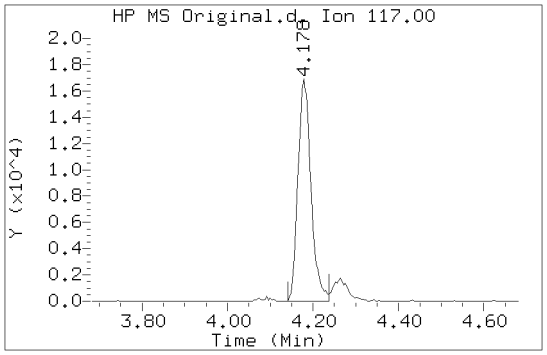


Carbon Tetrachloride (56-23-5)

Reason Code:

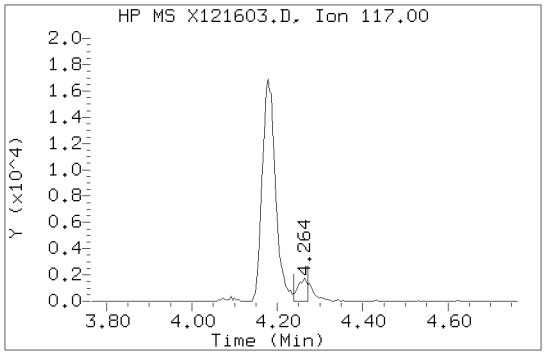
BEFORE

MASS
117
AREA
36559
HEIGHT
16920
27-Dec-2022
16:03
linh
pham



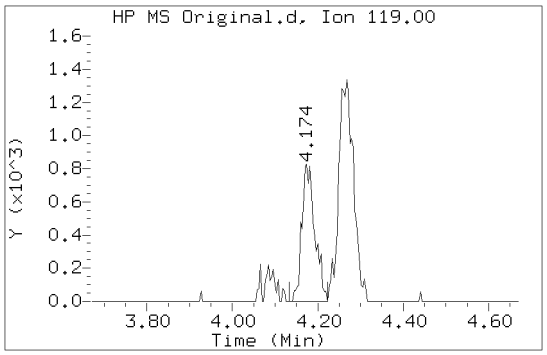
AFTER

MASS
117
AREA
2763
HEIGHT
1744
27-Dec-2022
16:07
linh
pham



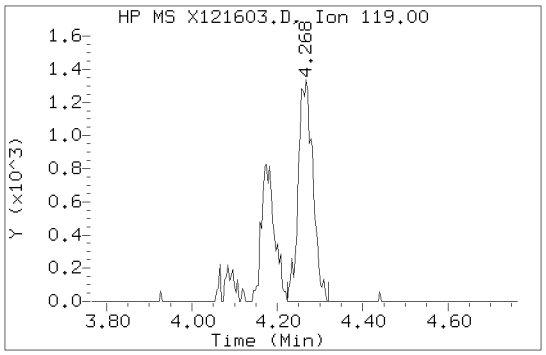
BEFORE

MASS
119
AREA
1780
HEIGHT
826
27-Dec-2022
16:03
linh
pham



AFTER

MASS
119
AREA
3227
HEIGHT
1337
27-Dec-2022
16:07
linh
pham



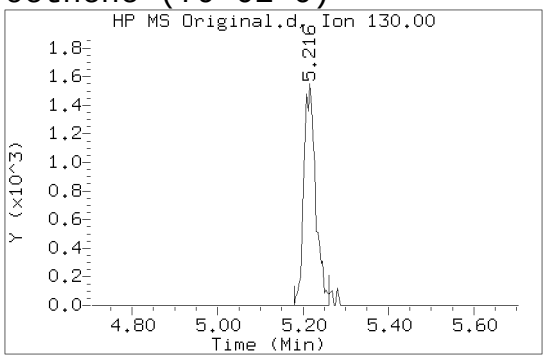
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Trichloroethene (79-01-6)

Reason Code:

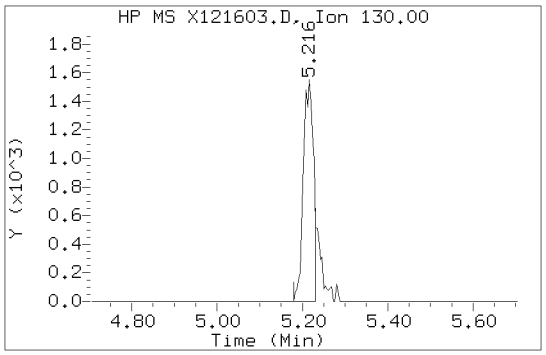
BEFORE

MASS
130
AREA
3011
HEIGHT
1551
27-Dec-2022
16:03
linh
pham



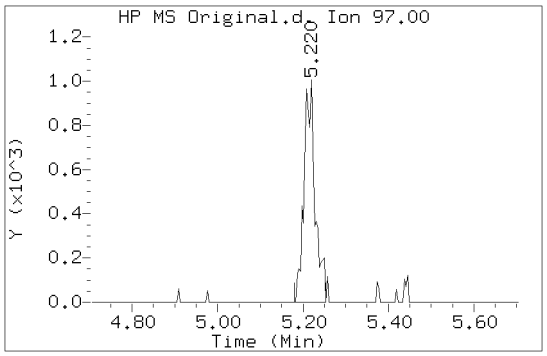
AFTER

MASS
130
AREA
2583
HEIGHT
1551
27-Dec-2022
16:07
linh
pham



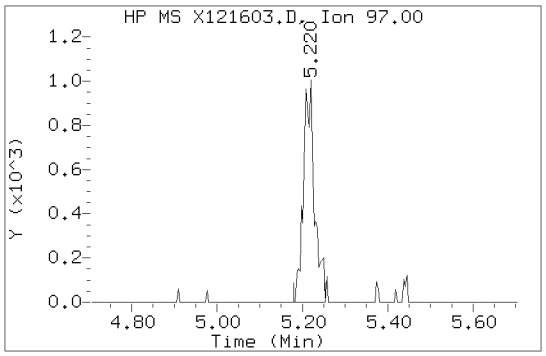
BEFORE

MASS
97
AREA
1808
HEIGHT
1006
27-Dec-2022
16:03
linh
pham



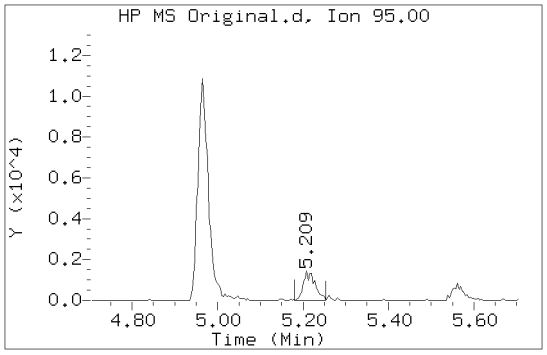
AFTER

MASS
97
AREA
1808
HEIGHT
1006
27-Dec-2022
16:07
linh
pham



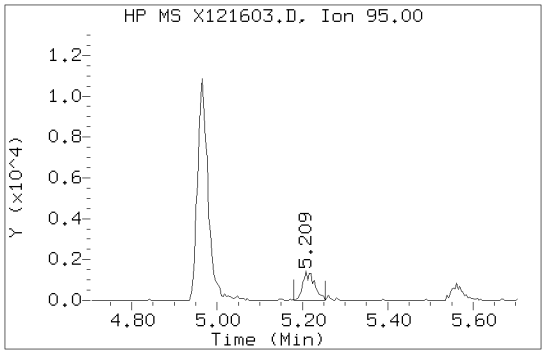
BEFORE

MASS
95
AREA
2693
HEIGHT
1431
27-Dec-2022
16:03
linh
pham



AFTER

MASS
95
AREA
2693
HEIGHT
1431
27-Dec-2022
16:07
linh
pham

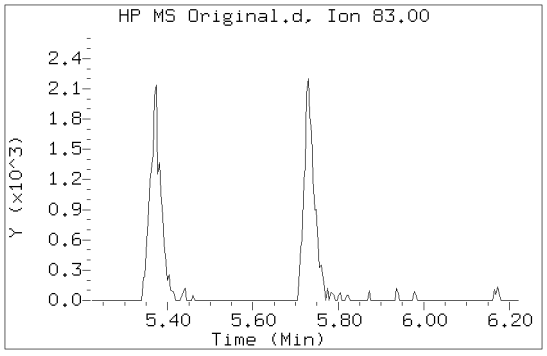


Bromodichloromethane (75-27-4)

Reason Code:

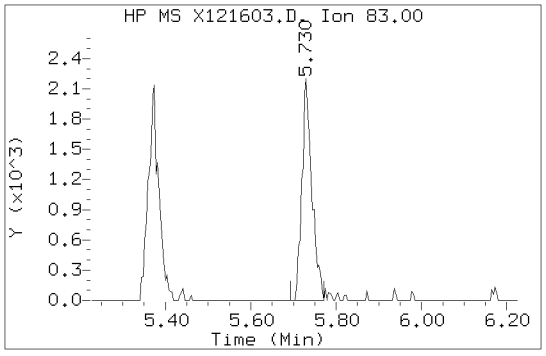
BEFORE

MASS
83
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
83
AREA
3650
HEIGHT
2201
27-Dec-2022
16:07
linh
pham

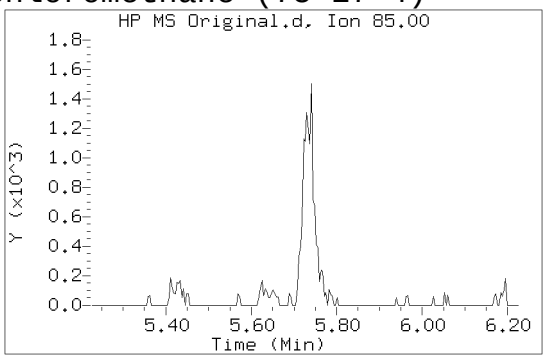


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

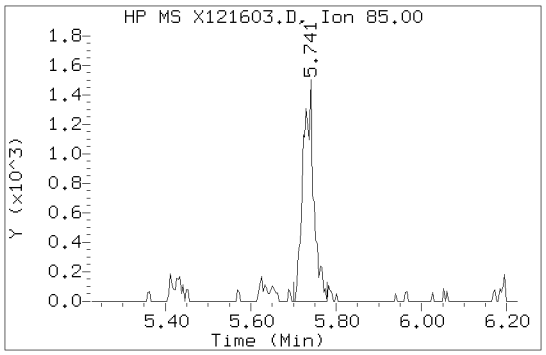
Bromodichloromethane (75-27-4)

Reason Code:

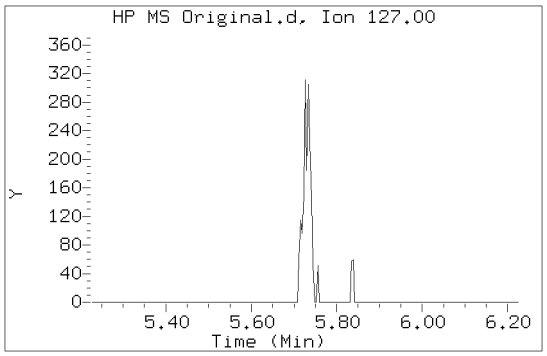
BEFORE
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



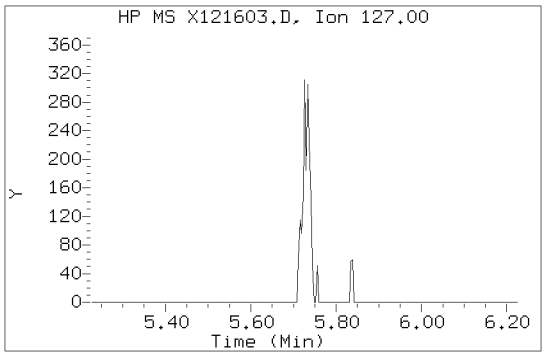
AFTER
MASS
85
AREA
2639
HEIGHT
1503
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
127
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



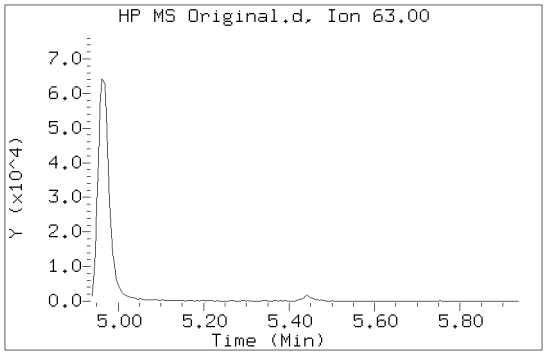
AFTER
MASS
127
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



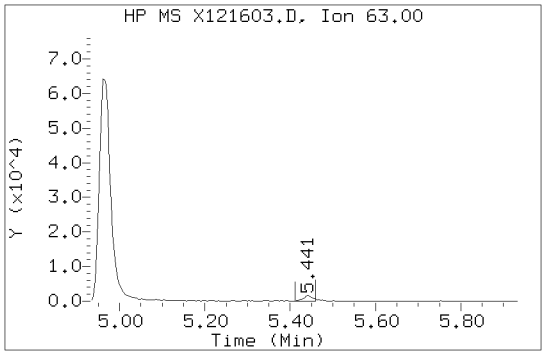
1,2-Dichloropropane (78-87-5)

Reason Code:

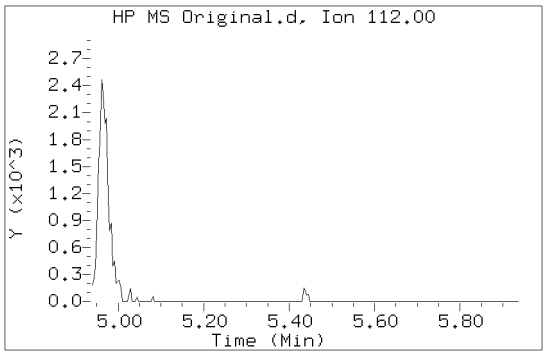
BEFORE
MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



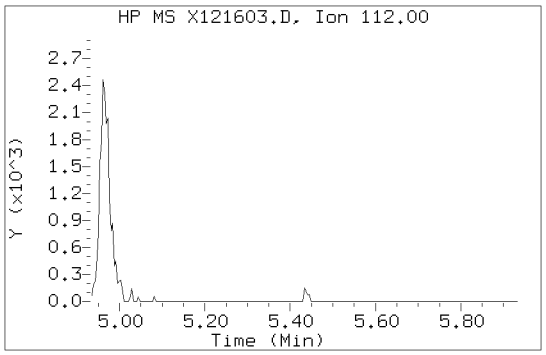
AFTER
MASS
63
AREA
2449
HEIGHT
1587
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER
MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



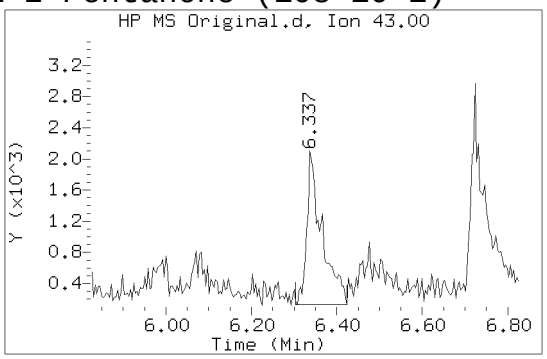
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

4-Methyl-2-Pentanone (108-10-1)

Reason Code:

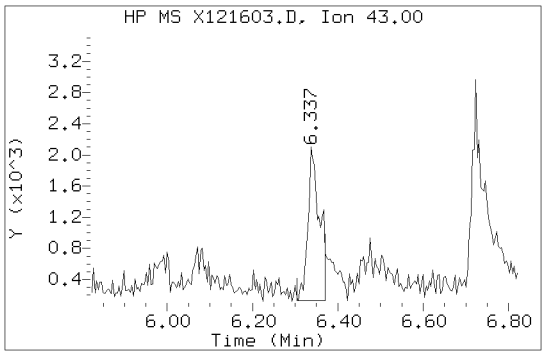
BEFORE

MASS
43
AREA
4873
HEIGHT
1970
27-Dec-2022
16:03
linh
pham



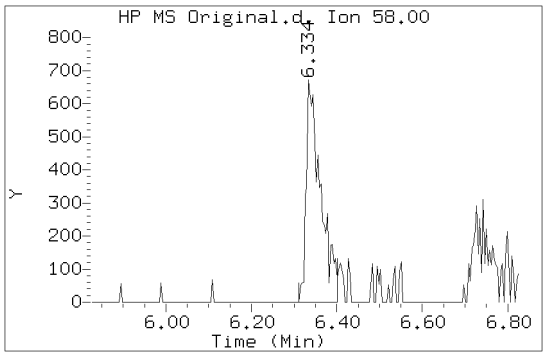
AFTER

MASS
43
AREA
3741
HEIGHT
1970
27-Dec-2022
16:07
linh
pham



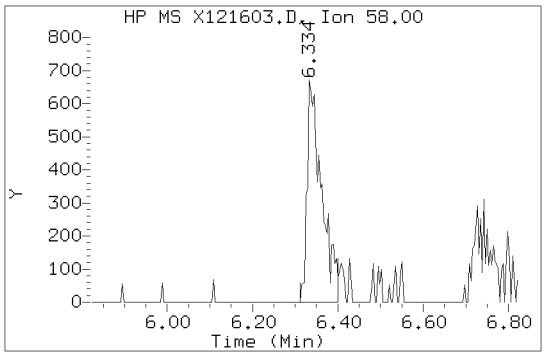
BEFORE

MASS
58
AREA
1585
HEIGHT
672
27-Dec-2022
16:03
linh
pham



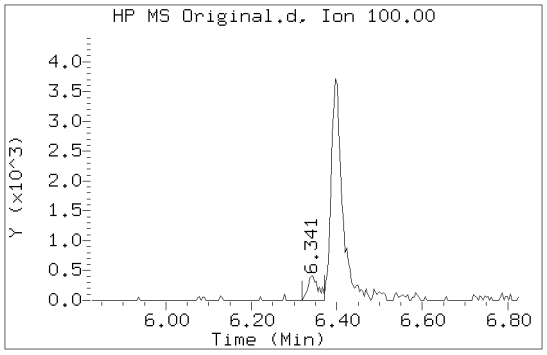
AFTER

MASS
58
AREA
1585
HEIGHT
672
27-Dec-2022
16:07
linh
pham



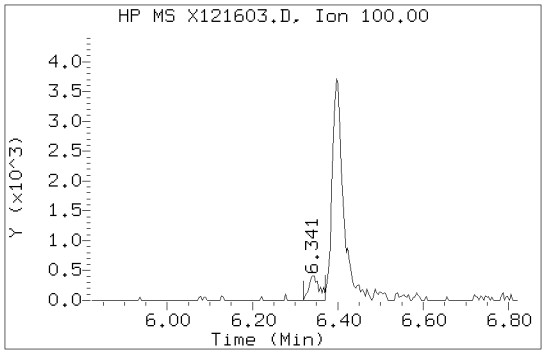
BEFORE

MASS
100
AREA
714
HEIGHT
412
27-Dec-2022
16:03
linh
pham



AFTER

MASS
100
AREA
714
HEIGHT
412
27-Dec-2022
16:07
linh
pham

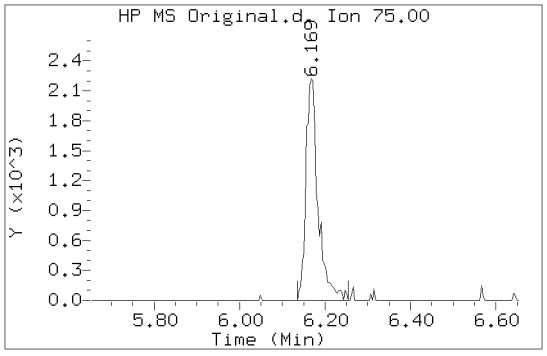


cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

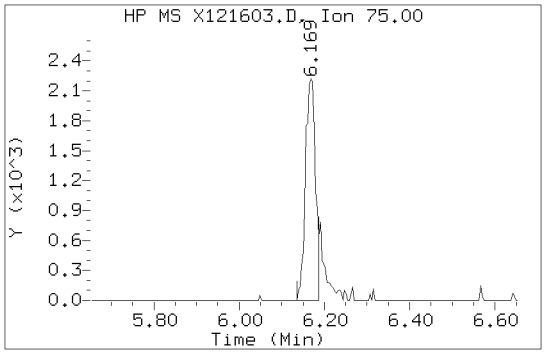
BEFORE

MASS
75
AREA
4432
HEIGHT
2222
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
3695
HEIGHT
2222
27-Dec-2022
16:07
linh
pham

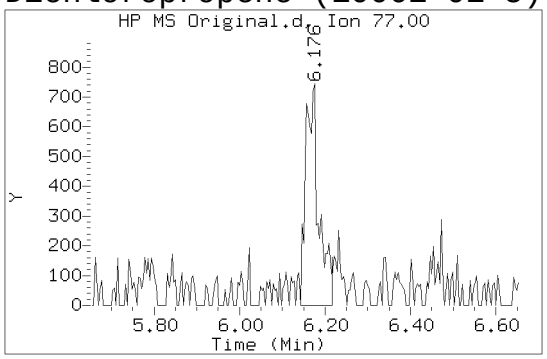


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

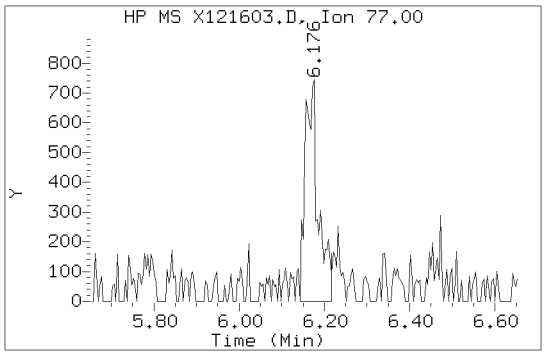
cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

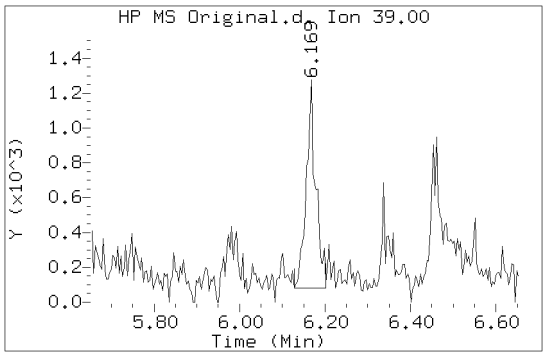
BEFORE
MASS
77
AREA
1607
HEIGHT
745
27-Dec-2022
16:03
linh
pham



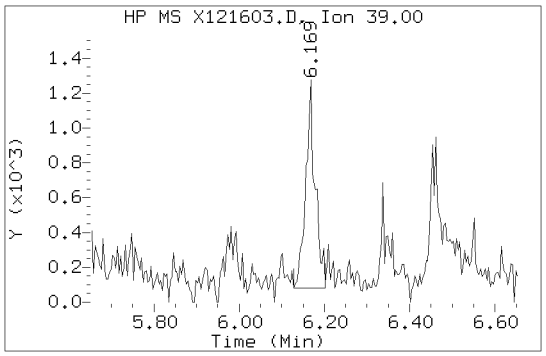
AFTER
MASS
77
AREA
1607
HEIGHT
745
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
39
AREA
1836
HEIGHT
1193
27-Dec-2022
16:03
linh
pham



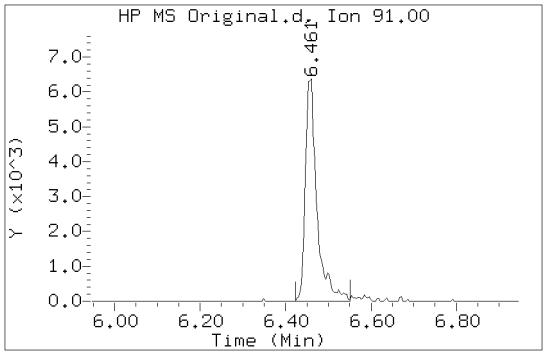
AFTER
MASS
39
AREA
1836
HEIGHT
1193
27-Dec-2022
16:07
linh
pham



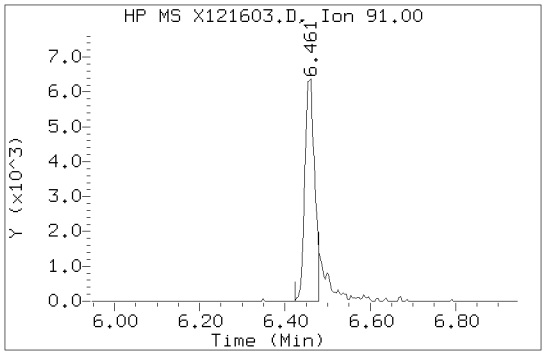
Toluene (108-88-3)

Reason Code:

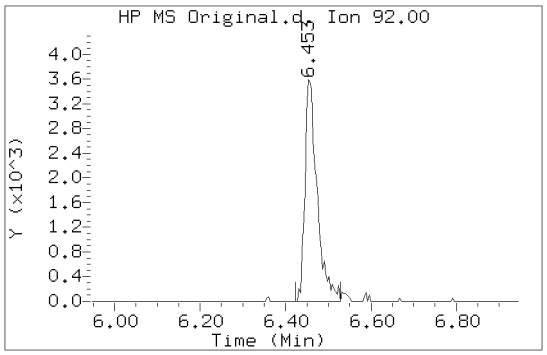
BEFORE
MASS
91
AREA
12225
HEIGHT
6374
27-Dec-2022
16:03
linh
pham



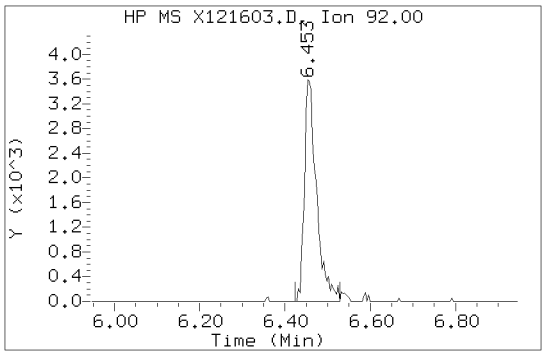
AFTER
MASS
91
AREA
10374
HEIGHT
6374
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
92
AREA
7180
HEIGHT
3591
27-Dec-2022
16:03
linh
pham



AFTER
MASS
92
AREA
7180
HEIGHT
3591
27-Dec-2022
16:07
linh
pham



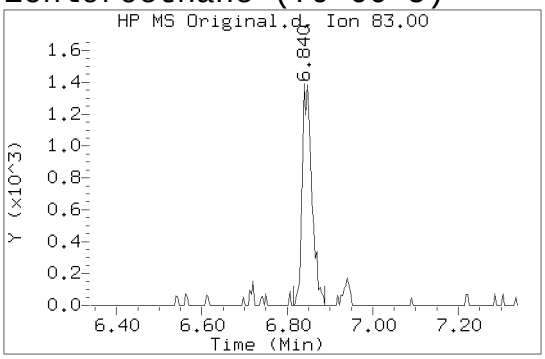
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,1,2-Trichloroethane (79-00-5)

Reason Code:

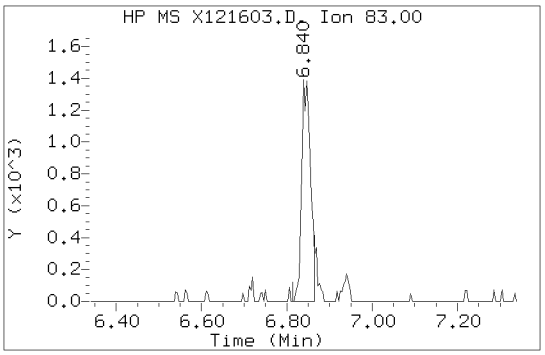
BEFORE

MASS
83
AREA
2247
HEIGHT
1391
27-Dec-2022
16:03
linh
pham



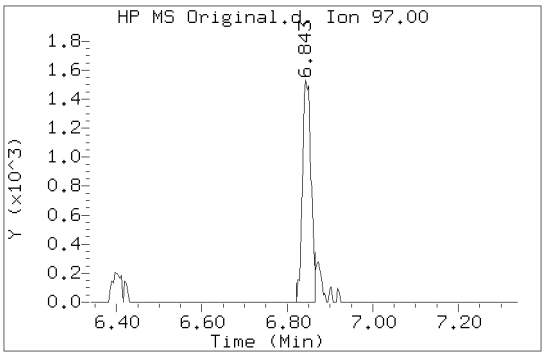
AFTER

MASS
83
AREA
2092
HEIGHT
1391
27-Dec-2022
16:07
linh
pham



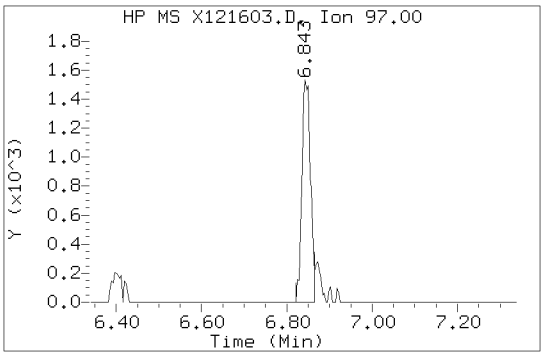
BEFORE

MASS
97
AREA
2224
HEIGHT
1532
27-Dec-2022
16:03
linh
pham



AFTER

MASS
97
AREA
2224
HEIGHT
1532
27-Dec-2022
16:07
linh
pham

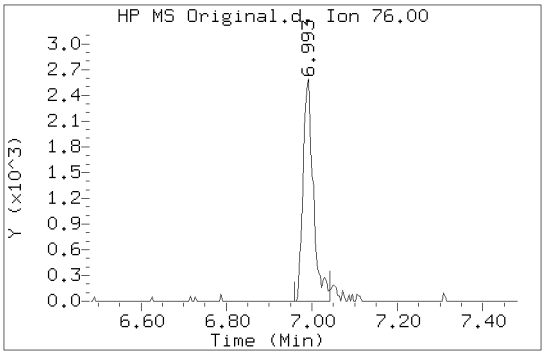


1,3-Dichloropropane (142-28-9)

Reason Code:

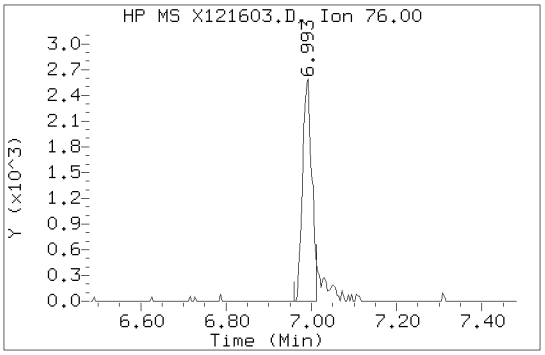
BEFORE

MASS
76
AREA
4415
HEIGHT
2592
27-Dec-2022
16:03
linh
pham



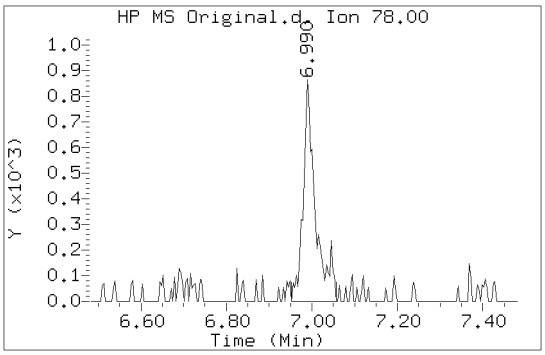
AFTER

MASS
76
AREA
4005
HEIGHT
2592
27-Dec-2022
16:07
linh
pham



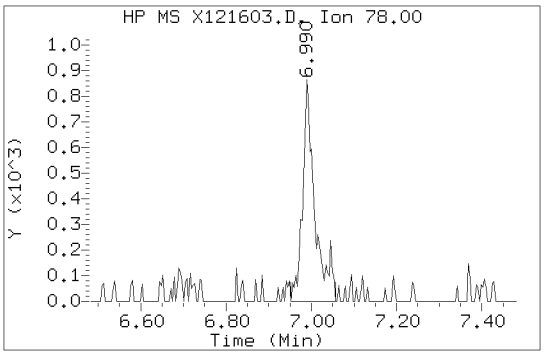
BEFORE

MASS
78
AREA
1727
HEIGHT
864
27-Dec-2022
16:03
linh
pham



AFTER

MASS
78
AREA
1727
HEIGHT
864
27-Dec-2022
16:07
linh
pham



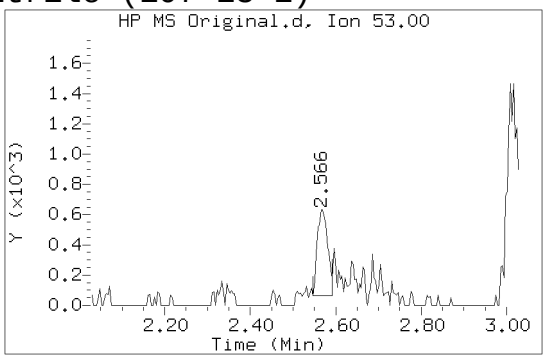
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Acrylonitrile (107-13-1)

Reason Code:

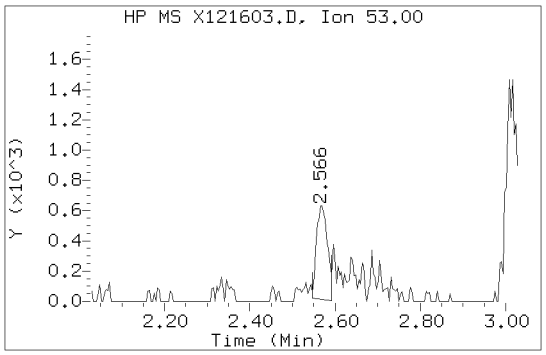
BEFORE

MASS
53
AREA
975
HEIGHT
571
27-Dec-2022
16:03
linh
pham



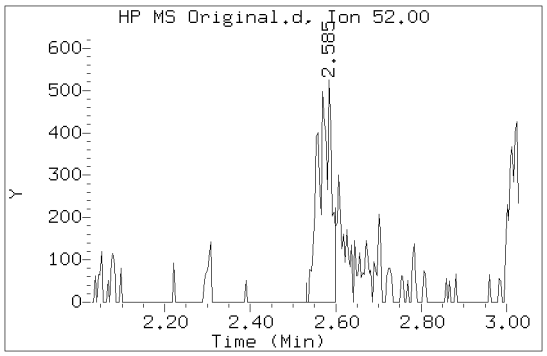
AFTER

MASS
53
AREA
1118
HEIGHT
618
27-Dec-2022
16:07
linh
pham



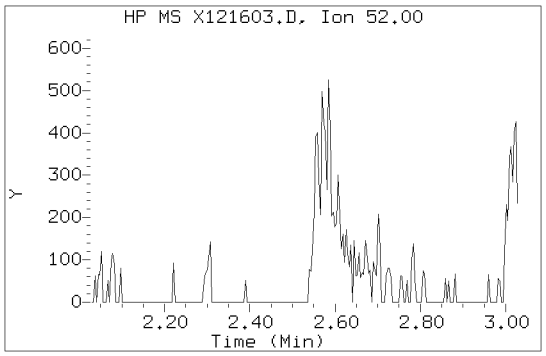
BEFORE

MASS
52
AREA
1100
HEIGHT
525
27-Dec-2022
16:03
linh
pham



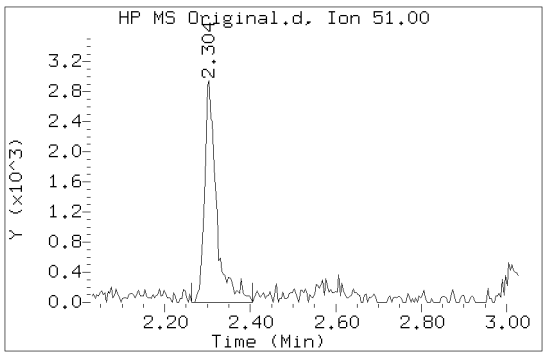
AFTER

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



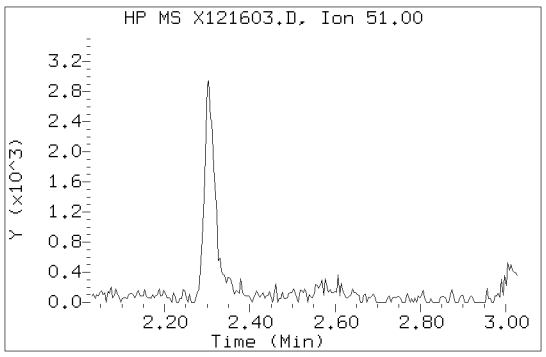
BEFORE

MASS
51
AREA
5708
HEIGHT
2946
27-Dec-2022
16:03
linh
pham



AFTER

MASS
51
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

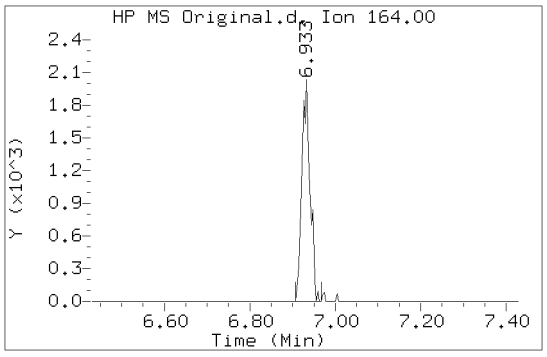


Tetrachloroethene (127-18-4)

Reason Code:

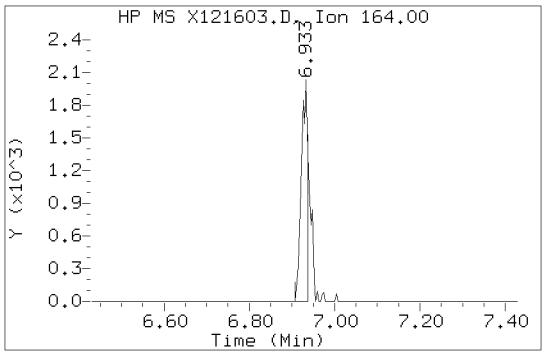
BEFORE

MASS
164
AREA
2777
HEIGHT
2036
27-Dec-2022
16:03
linh
pham



AFTER

MASS
164
AREA
2131
HEIGHT
2036
27-Dec-2022
16:07
linh
pham



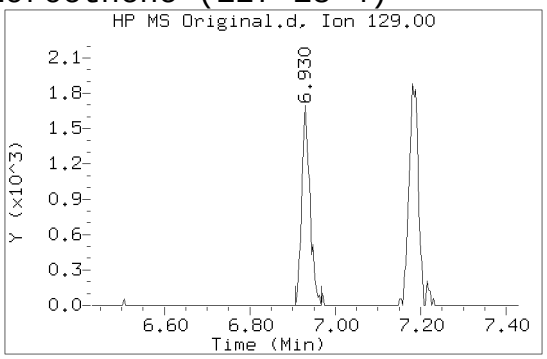
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Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Tetrachloroethene (127-18-4)

Reason Code:

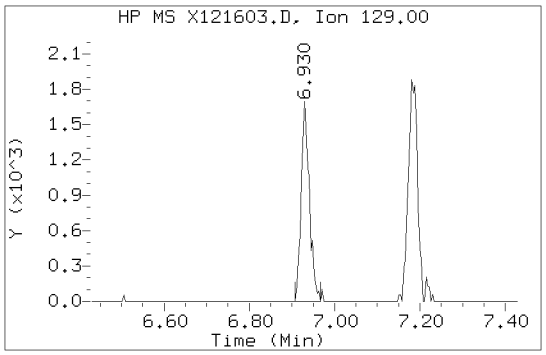
BEFORE

MASS
129
AREA
2342
HEIGHT
1697
27-Dec-2022
16:03
linh
pham



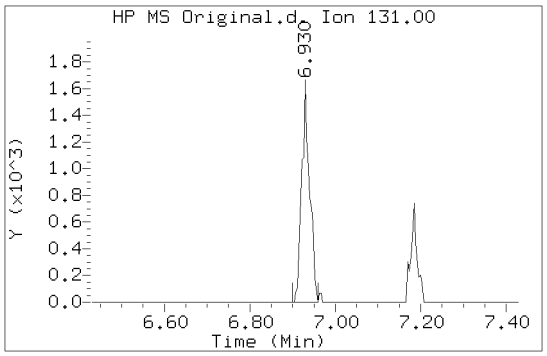
AFTER

MASS
129
AREA
2342
HEIGHT
1697
27-Dec-2022
16:07
linh
pham



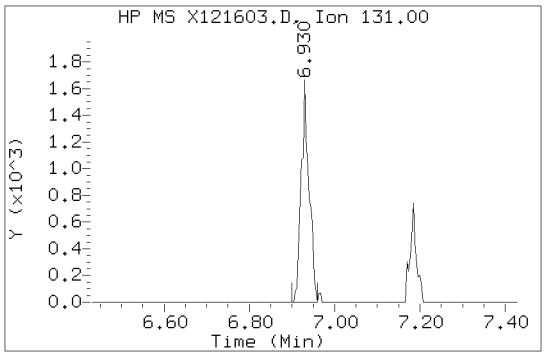
BEFORE

MASS
131
AREA
2193
HEIGHT
1665
27-Dec-2022
16:03
linh
pham



AFTER

MASS
131
AREA
2193
HEIGHT
1665
27-Dec-2022
16:07
linh
pham

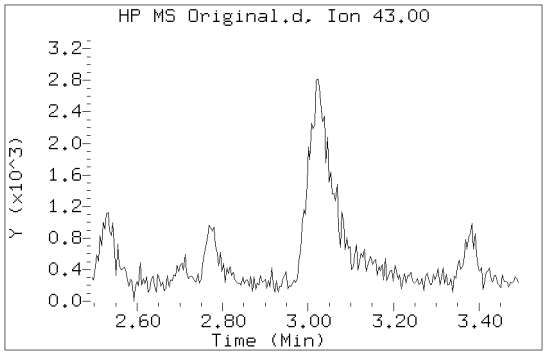


Vinyl Acetate (108-05-4)

Reason Code:

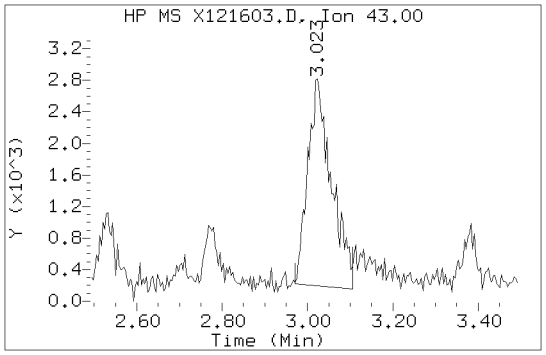
BEFORE

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



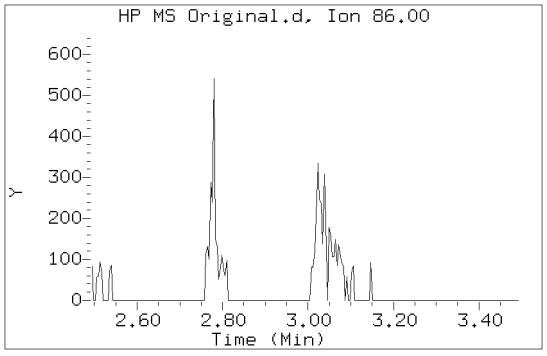
AFTER

MASS
43
AREA
10138
HEIGHT
2622
27-Dec-2022
16:07
linh
pham



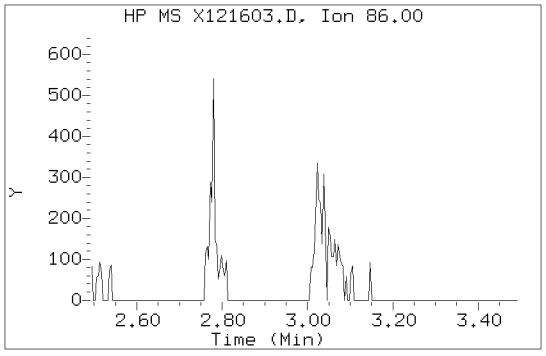
BEFORE

MASS
86
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
86
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

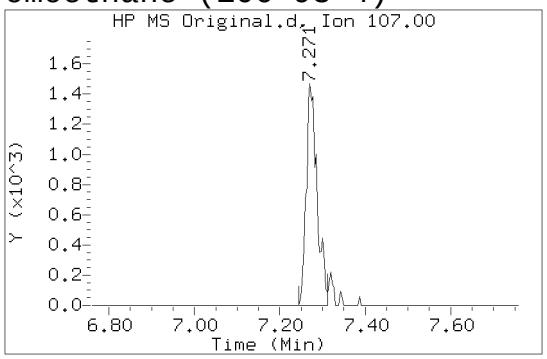


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

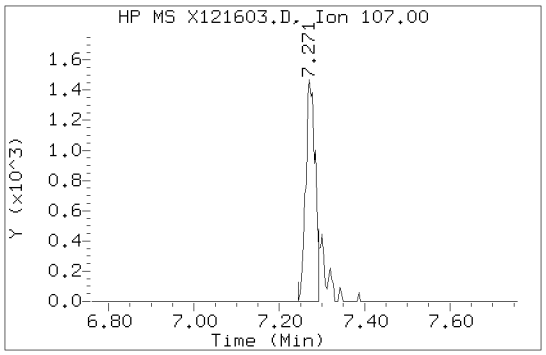
1,2-Dibromoethane (106-93-4)

Reason Code:

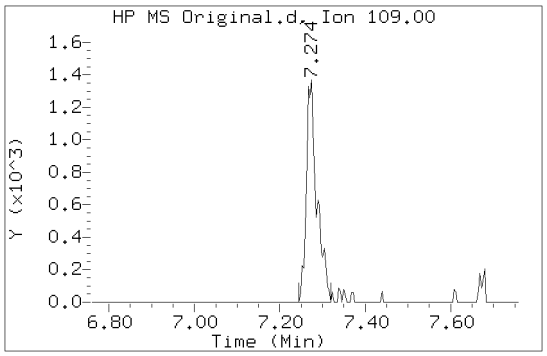
BEFORE
MASS
107
AREA
2627
HEIGHT
1469
27-Dec-2022
16:03
linh
pham



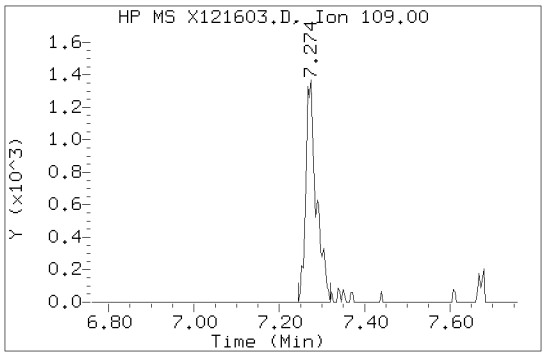
AFTER
MASS
107
AREA
2340
HEIGHT
1469
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
109
AREA
2396
HEIGHT
1369
27-Dec-2022
16:03
linh
pham



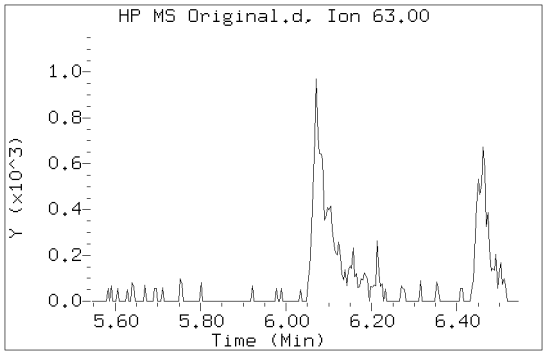
AFTER
MASS
109
AREA
2396
HEIGHT
1369
27-Dec-2022
16:07
linh
pham



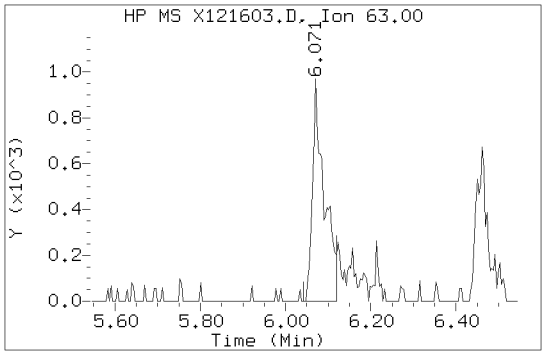
2-Chloroethylvinyl ether (110-75-8)

Reason Code:

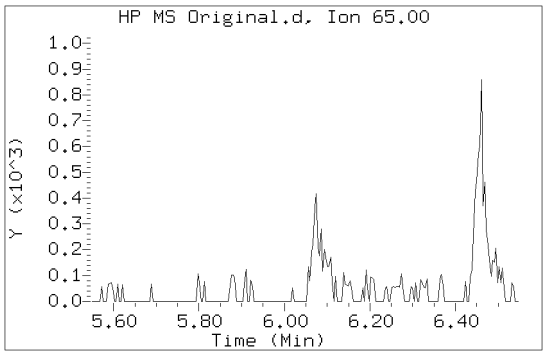
BEFORE
MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



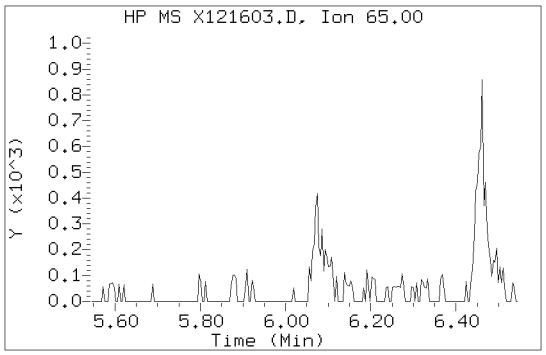
AFTER
MASS
63
AREA
1861
HEIGHT
970
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
65
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER
MASS
65
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



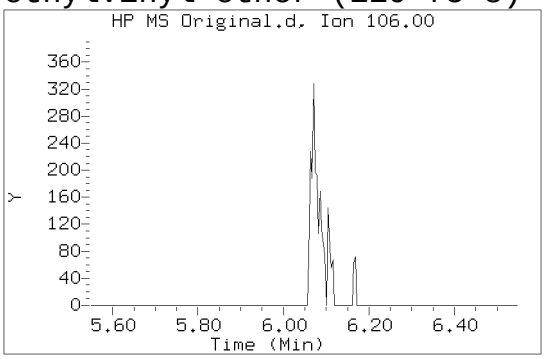
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Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

2-Chloroethylvinyl ether (110-75-8)

Reason Code:

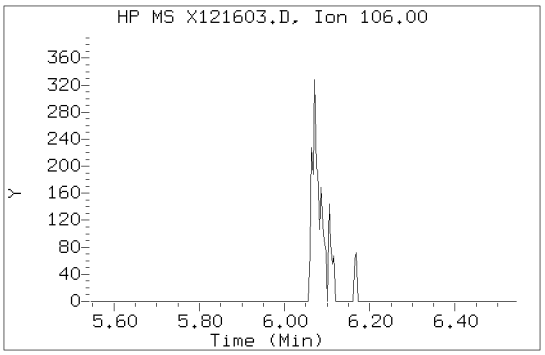
BEFORE

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27-Dec-2022
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AFTER

MASS
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HEIGHT
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27-Dec-2022
16:07
linh
pham

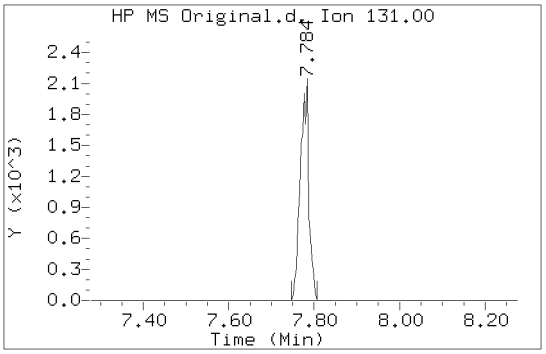


1,1,1,2-Tetrachloroethane (630-20-6)

Reason Code:

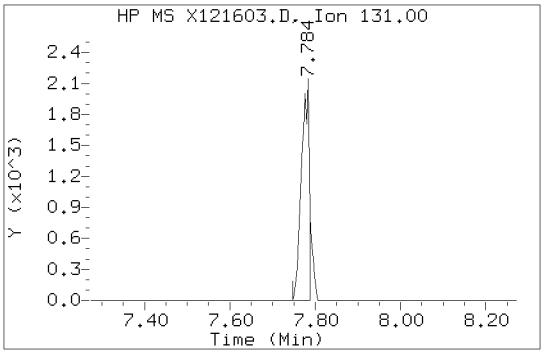
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MASS
131
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3036
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2146
27-Dec-2022
16:03
linh
pham



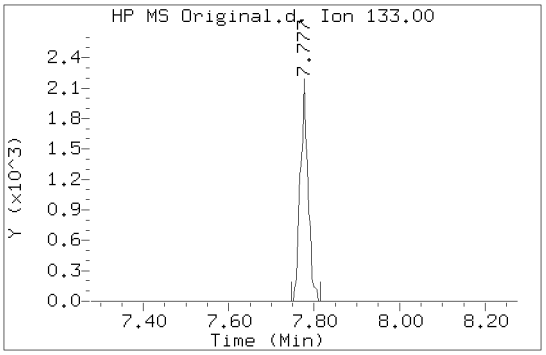
AFTER

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2146
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16:07
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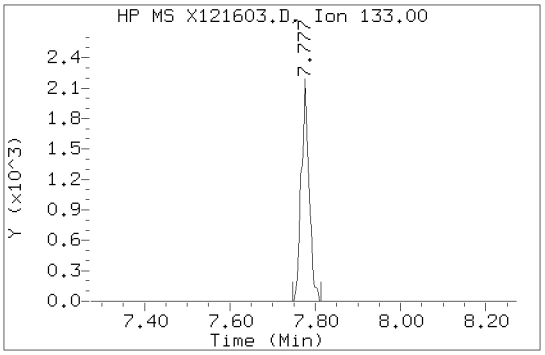
BEFORE

MASS
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AREA
2829
HEIGHT
2191
27-Dec-2022
16:03
linh
pham



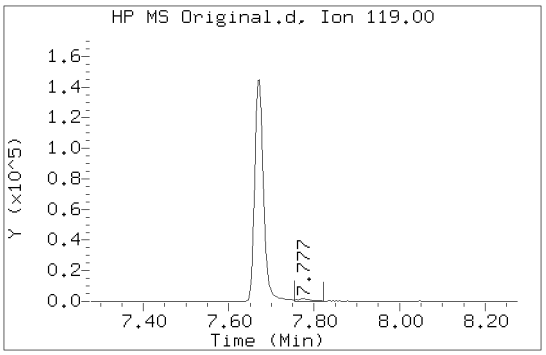
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2829
HEIGHT
2191
27-Dec-2022
16:07
linh
pham



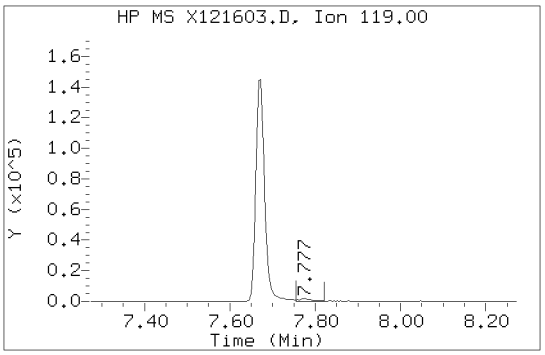
BEFORE

MASS
119
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2971
HEIGHT
1971
27-Dec-2022
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AFTER

MASS
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AREA
2971
HEIGHT
1971
27-Dec-2022
16:07
linh
pham

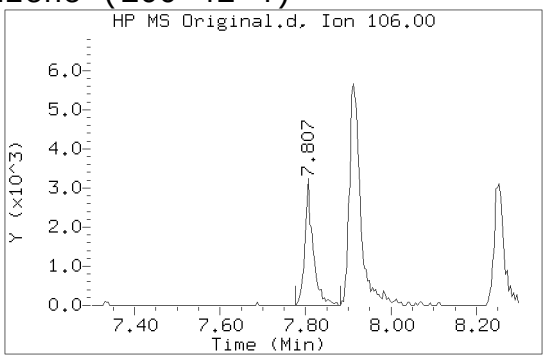


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Ethylbenzene (100-41-4)

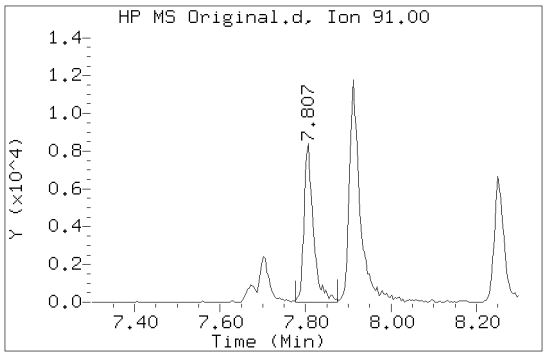
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AREA
4331
HEIGHT
3242
27-Dec-2022
16:03
linh
pham



BEFORE

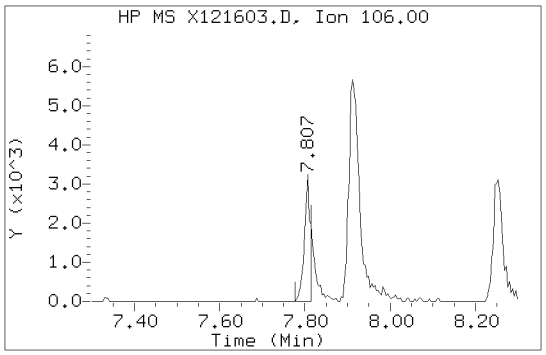
MASS
91
AREA
13136
HEIGHT
8410
27-Dec-2022
16:03
linh
pham



Reason Code:

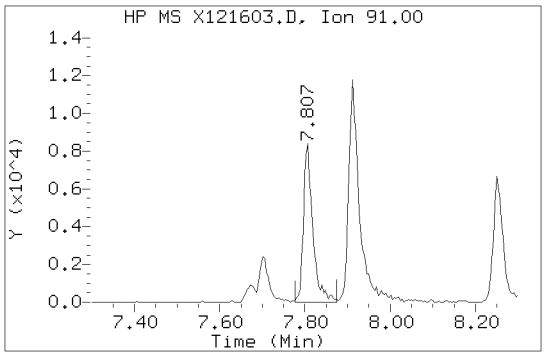
AFTER

MASS
106
AREA
3064
HEIGHT
3242
27-Dec-2022
16:07
linh
pham



AFTER

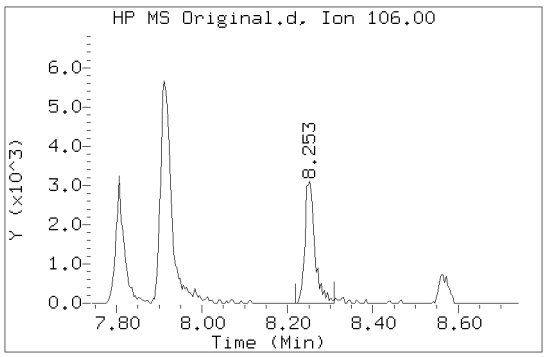
MASS
91
AREA
13136
HEIGHT
8410
27-Dec-2022
16:07
linh
pham



o-Xylene (95-47-6)

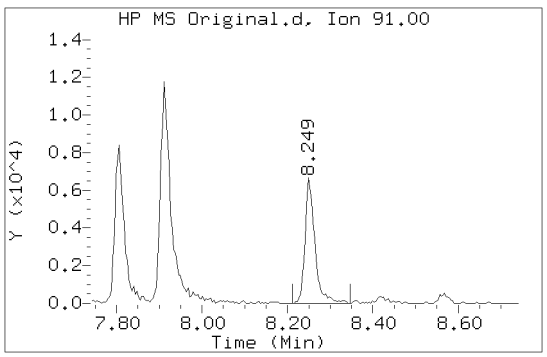
BEFORE

MASS
106
AREA
5100
HEIGHT
3111
27-Dec-2022
16:03
linh
pham



BEFORE

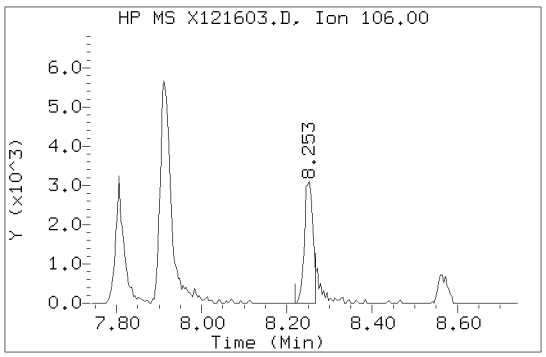
MASS
91
AREA
10808
HEIGHT
6665
27-Dec-2022
16:03
linh
pham



Reason Code:

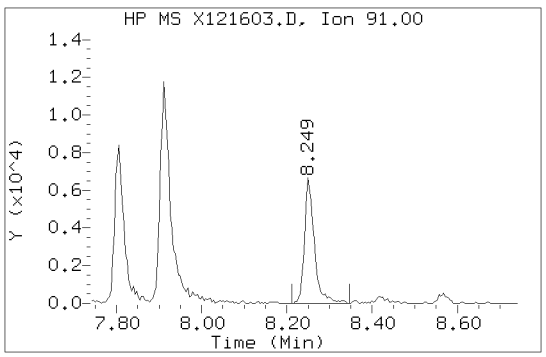
AFTER

MASS
106
AREA
4412
HEIGHT
3111
27-Dec-2022
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linh
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AFTER

MASS
91
AREA
10808
HEIGHT
6665
27-Dec-2022
16:07
linh
pham

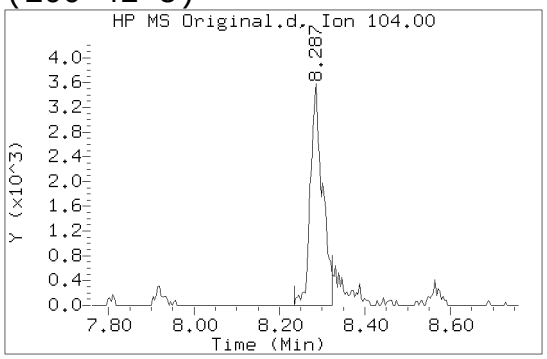


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Styrene (100-42-5)

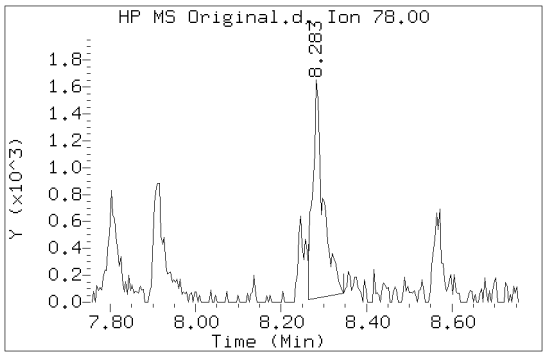
BEFORE

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7074
HEIGHT
3581
27-Dec-2022
16:03
linh
pham



BEFORE

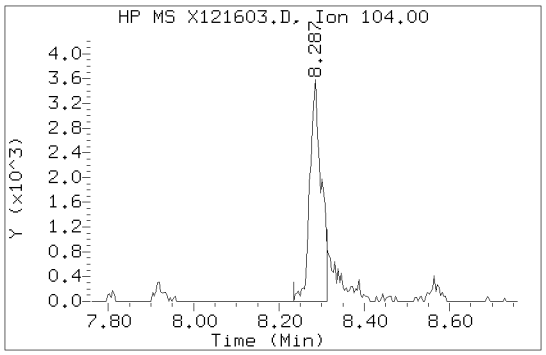
MASS
78
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2827
HEIGHT
1622
27-Dec-2022
16:03
linh
pham



Reason Code:

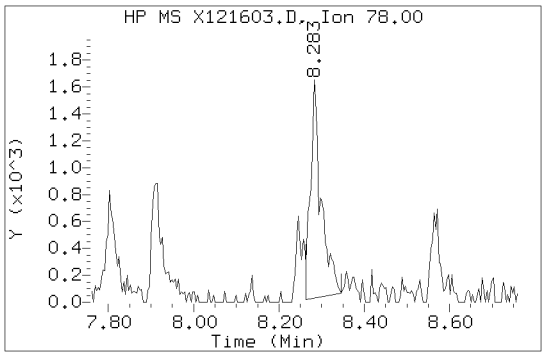
AFTER

MASS
104
AREA
6634
HEIGHT
3581
27-Dec-2022
16:07
linh
pham



AFTER

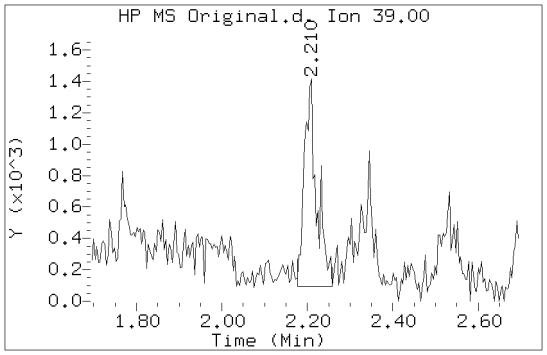
MASS
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AREA
2827
HEIGHT
1622
27-Dec-2022
16:07
linh
pham



Acetonitrile (75-05-8)

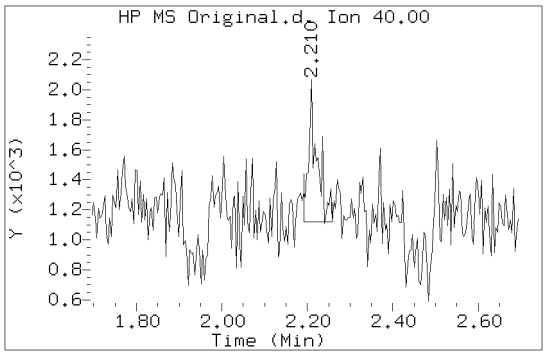
BEFORE

MASS
39
AREA
2674
HEIGHT
1321
27-Dec-2022
16:03
linh
pham



BEFORE

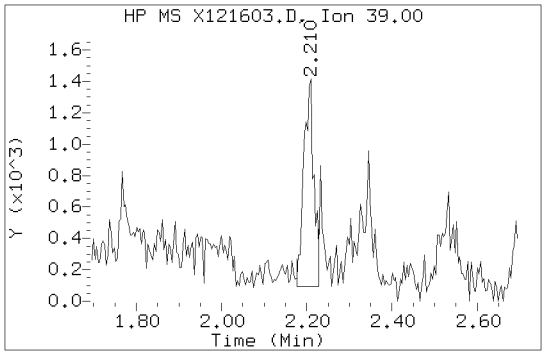
MASS
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1296
HEIGHT
946
27-Dec-2022
16:03
linh
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Reason Code:

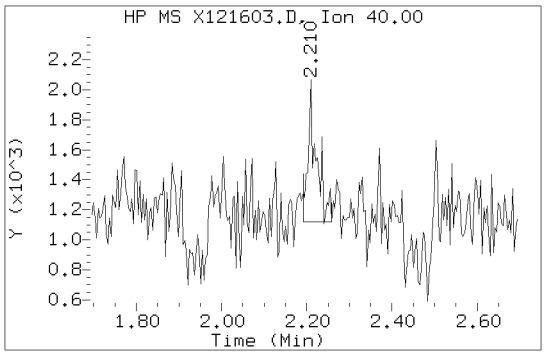
AFTER

MASS
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AREA
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HEIGHT
1321
27-Dec-2022
16:07
linh
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AFTER

MASS
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1296
HEIGHT
946
27-Dec-2022
16:07
linh
pham



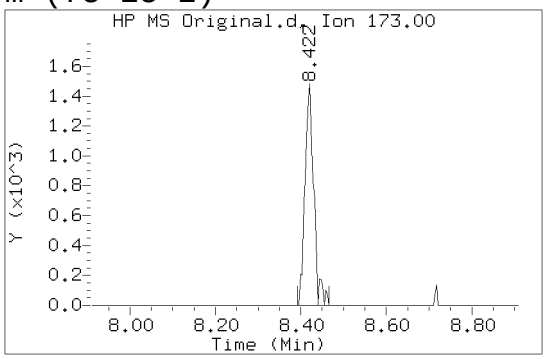
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Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Bromoform (75-25-2)

Reason Code:

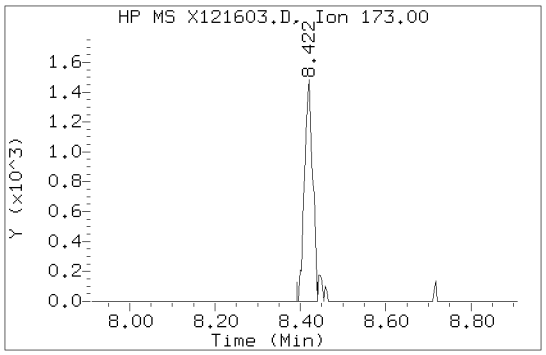
BEFORE

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1483
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16:03
linh
pham



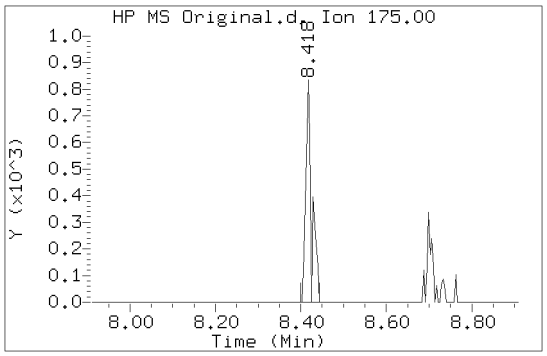
AFTER

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1483
27-Dec-2022
16:07
linh
pham



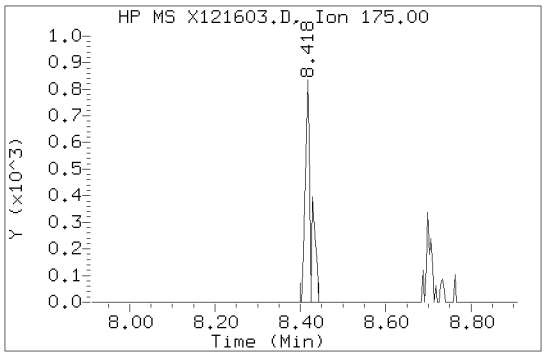
BEFORE

MASS
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AREA
807
HEIGHT
835
27-Dec-2022
16:03
linh
pham



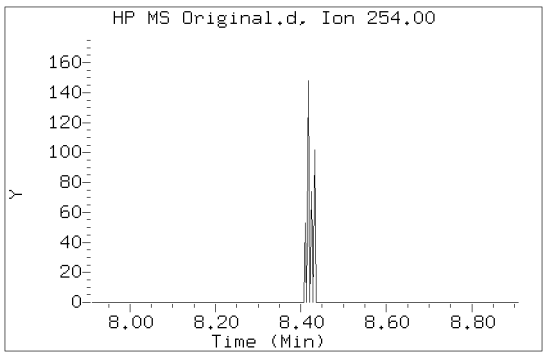
AFTER

MASS
175
AREA
807
HEIGHT
835
27-Dec-2022
16:07
linh
pham



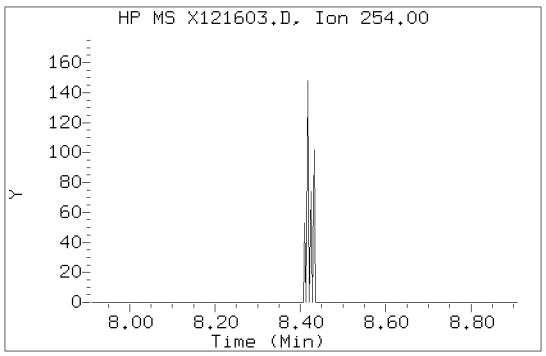
BEFORE

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0
27-Dec-2022
16:03
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pham



AFTER

MASS
254
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

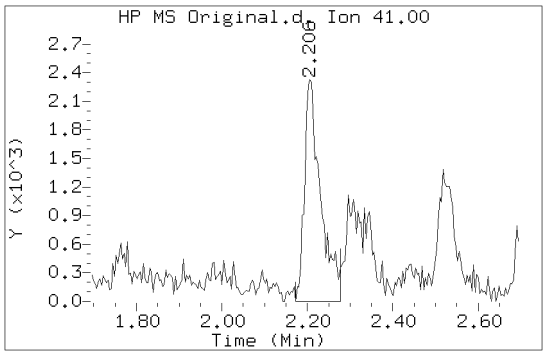


Allyl Chloride (107-05-1)

Reason Code:

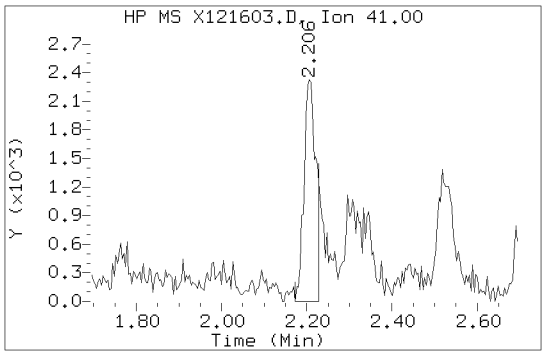
BEFORE

MASS
41
AREA
6169
HEIGHT
2326
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
4574
HEIGHT
2326
27-Dec-2022
16:07
linh
pham



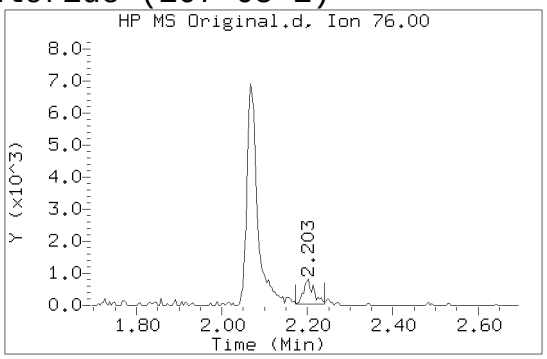
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Allyl Chloride (107-05-1)

Reason Code:

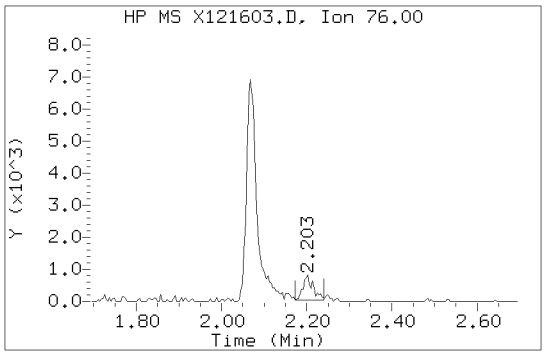
BEFORE

MASS
76
AREA
1254
HEIGHT
763
27-Dec-2022
16:03
linh
pham



AFTER

MASS
76
AREA
1254
HEIGHT
763
27-Dec-2022
16:07
linh
pham

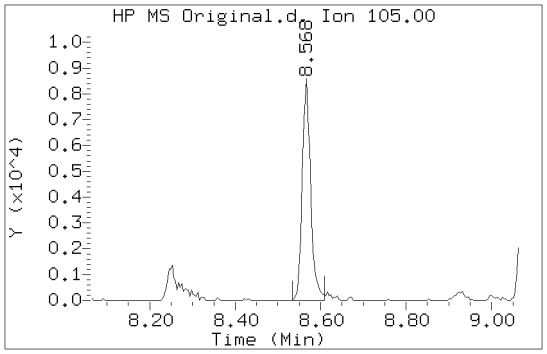


Isopropylbenzene (98-82-8)

Reason Code:

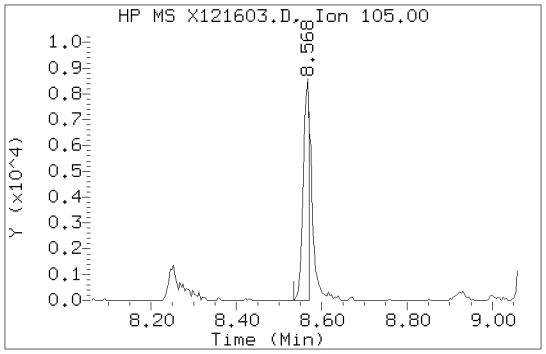
BEFORE

MASS
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AREA
12091
HEIGHT
8588
27-Dec-2022
16:03
linh
pham



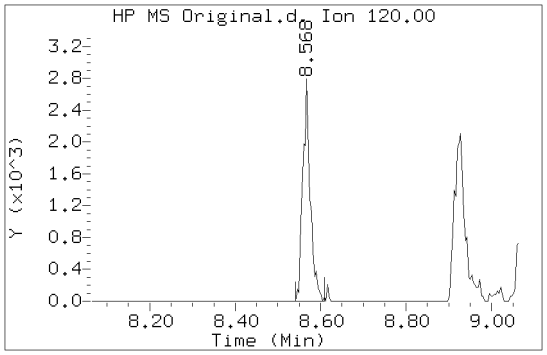
AFTER

MASS
105
AREA
8757
HEIGHT
8588
27-Dec-2022
16:07
linh
pham



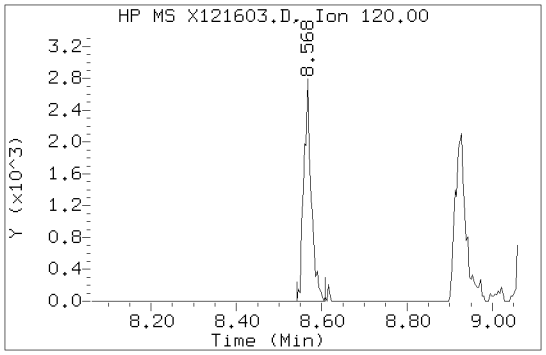
BEFORE

MASS
120
AREA
3462
HEIGHT
2793
27-Dec-2022
16:03
linh
pham



AFTER

MASS
120
AREA
3462
HEIGHT
2793
27-Dec-2022
16:07
linh
pham

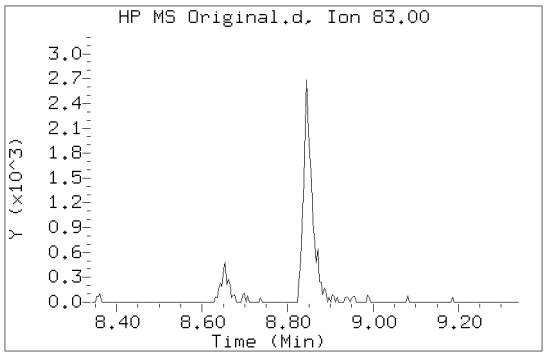


1,1,2,2-Tetrachloroethane (79-34-5)

Reason Code:

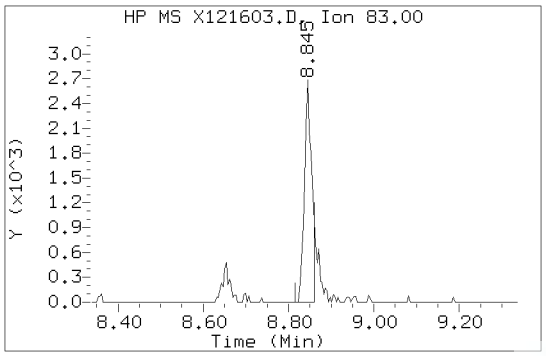
BEFORE

MASS
83
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
83
AREA
3194
HEIGHT
2685
27-Dec-2022
16:07
linh
pham



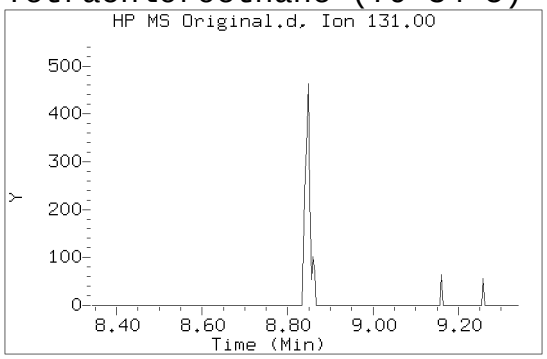
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,1,2,2-Tetrachloroethane (79-34-5)

Reason Code:

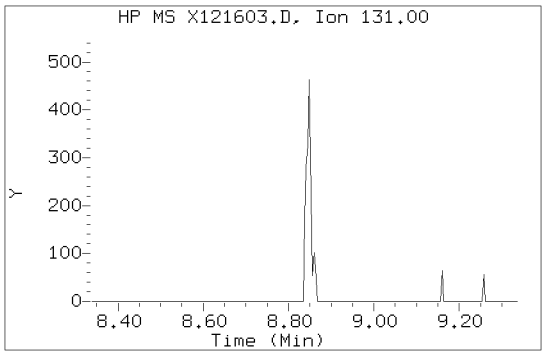
BEFORE

MASS
131
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



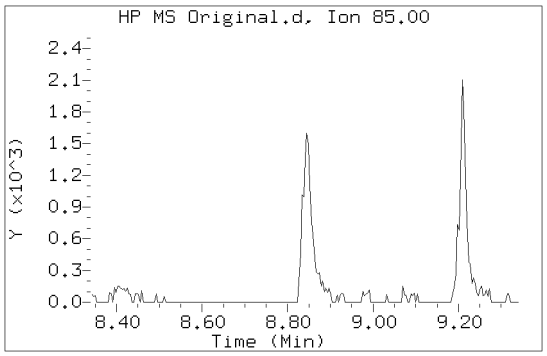
AFTER

MASS
131
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



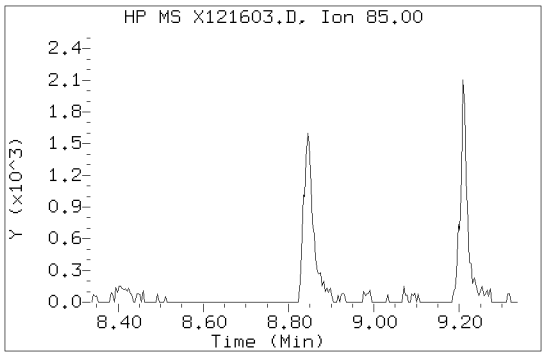
BEFORE

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

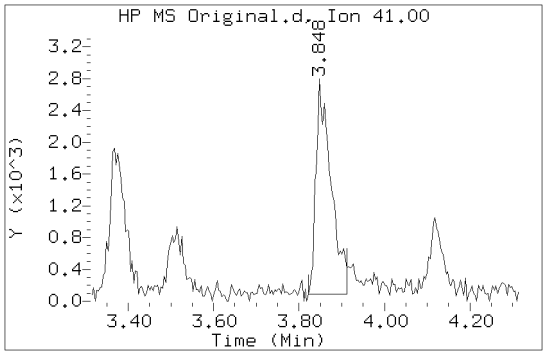


Methacrylonitrile (126-98-7)

Reason Code:

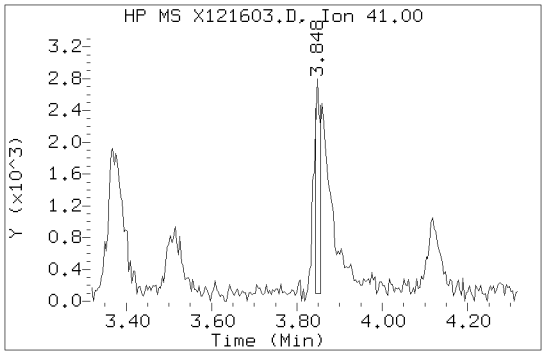
BEFORE

MASS
41
AREA
6587
HEIGHT
2708
27-Dec-2022
16:03
linh
pham



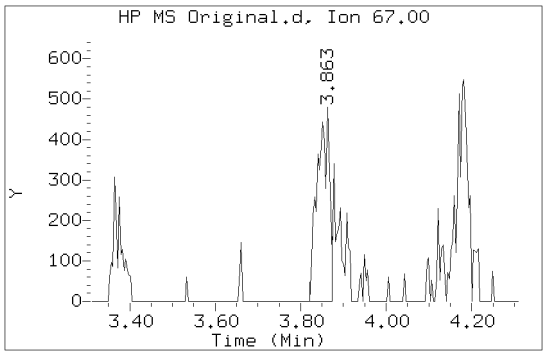
AFTER

MASS
41
AREA
2066
HEIGHT
2701
27-Dec-2022
16:07
linh
pham



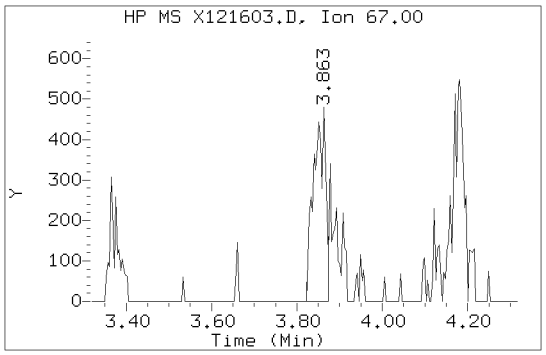
BEFORE

MASS
67
AREA
937
HEIGHT
480
27-Dec-2022
16:03
linh
pham



AFTER

MASS
67
AREA
937
HEIGHT
480
27-Dec-2022
16:07
linh
pham



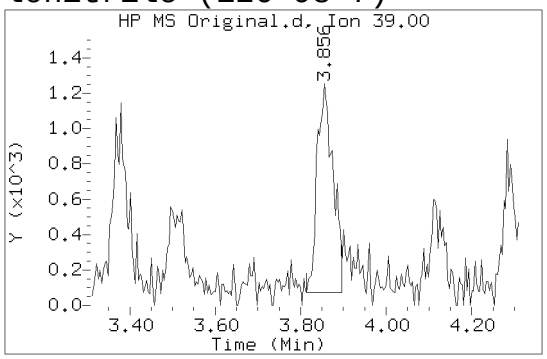
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Methacrylonitrile (126-98-7)

Reason Code:

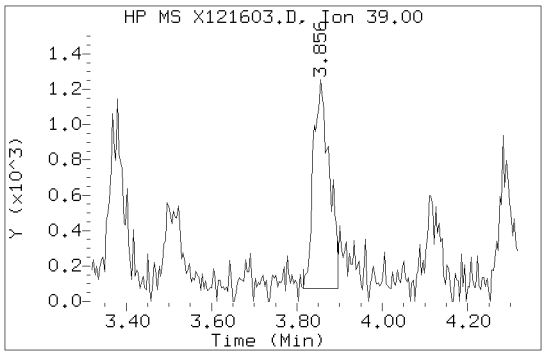
BEFORE

MASS
39
AREA
3048
HEIGHT
1181
27-Dec-2022
16:03
linh
pham



AFTER

MASS
39
AREA
3048
HEIGHT
1181
27-Dec-2022
16:07
linh
pham

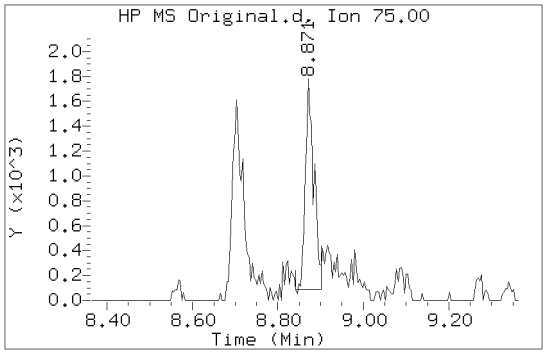


1,2,3-Trichloropropane (96-18-4)

Reason Code:

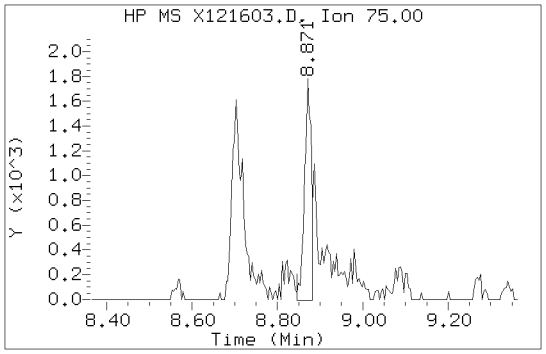
BEFORE

MASS
75
AREA
2351
HEIGHT
1693
27-Dec-2022
16:03
linh
pham



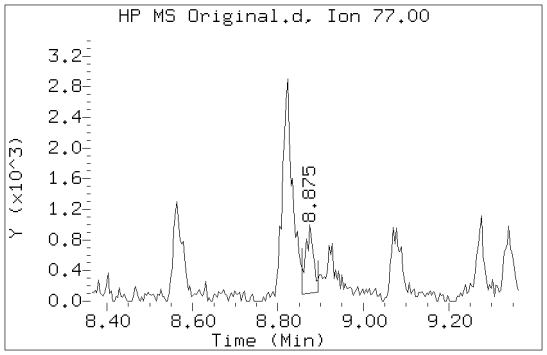
AFTER

MASS
75
AREA
2019
HEIGHT
1788
27-Dec-2022
16:07
linh
pham



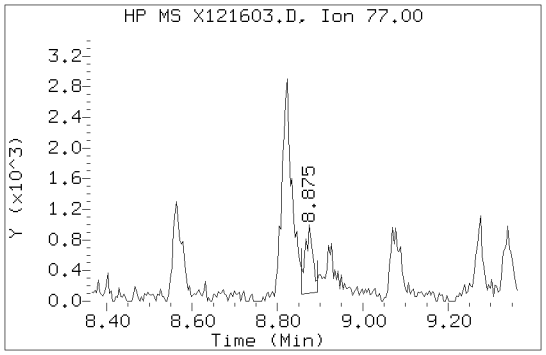
BEFORE

MASS
77
AREA
1161
HEIGHT
895
27-Dec-2022
16:03
linh
pham



AFTER

MASS
77
AREA
1161
HEIGHT
895
27-Dec-2022
16:07
linh
pham

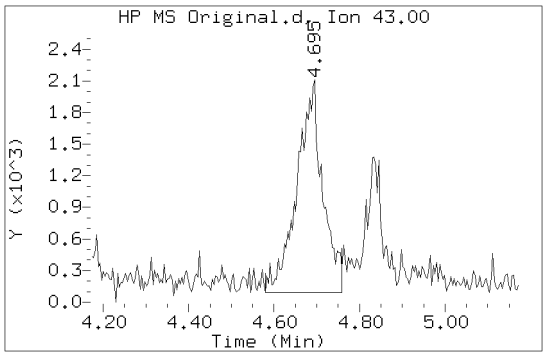


Isobutyl Alcohol (78-83-1)

Reason Code:

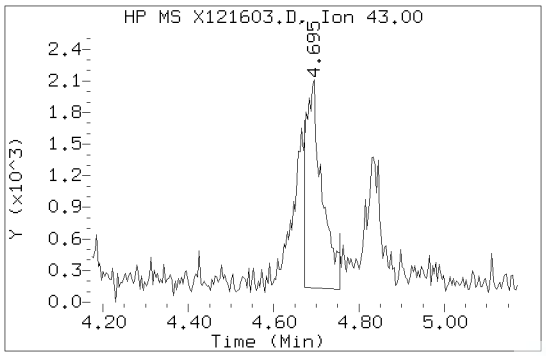
BEFORE

MASS
43
AREA
8478
HEIGHT
2018
27-Dec-2022
16:03
linh
pham



AFTER

MASS
43
AREA
5178
HEIGHT
1973
27-Dec-2022
16:07
linh
pham



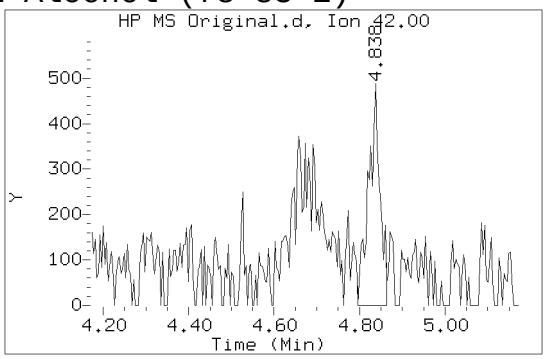
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Isobutyl Alcohol (78-83-1)

Reason Code:

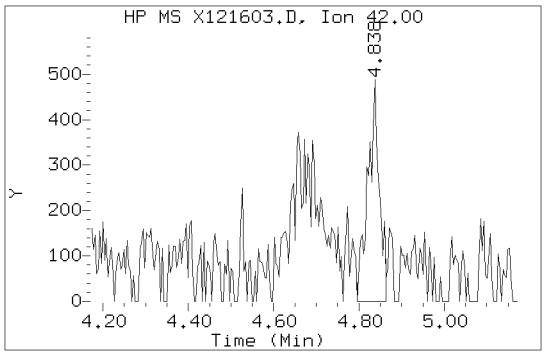
BEFORE

MASS
42
AREA
904
HEIGHT
488
27-Dec-2022
16:03
linh
pham



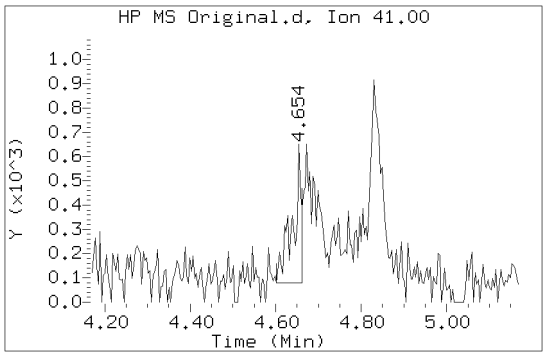
AFTER

MASS
42
AREA
904
HEIGHT
488
27-Dec-2022
16:07
linh
pham



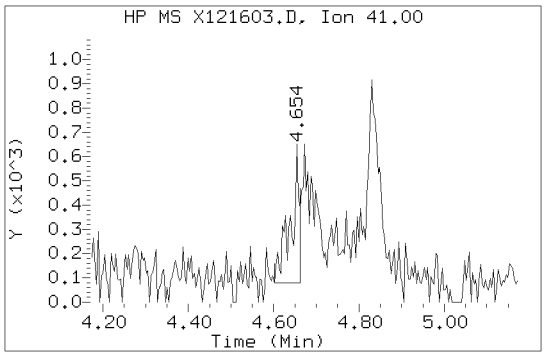
BEFORE

MASS
41
AREA
776
HEIGHT
572
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
776
HEIGHT
572
27-Dec-2022
16:07
linh
pham

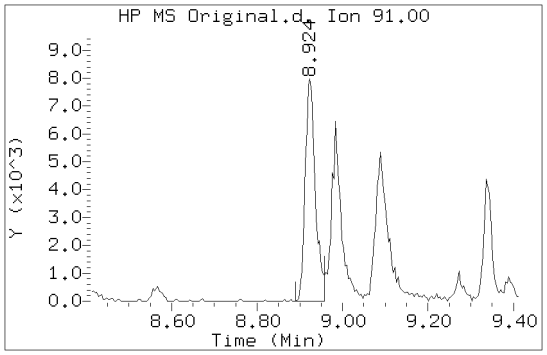


n-Propylbenzene (106-65-1)

Reason Code:

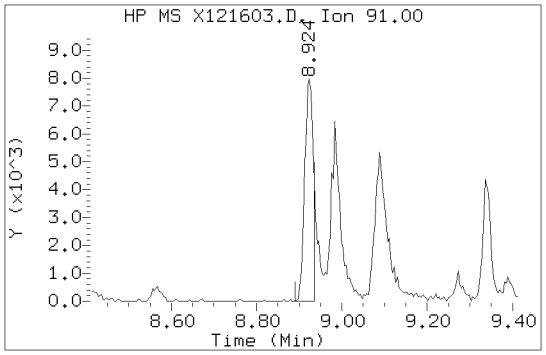
BEFORE

MASS
91
AREA
13496
HEIGHT
7972
27-Dec-2022
16:03
linh
pham



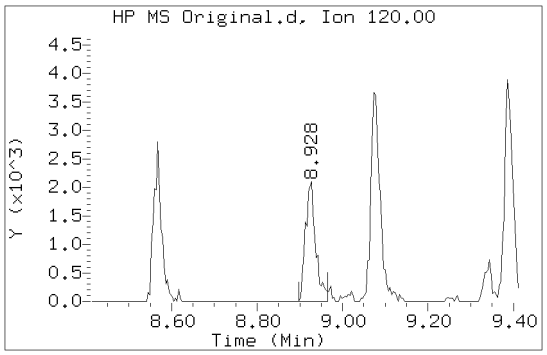
AFTER

MASS
91
AREA
11163
HEIGHT
7972
27-Dec-2022
16:07
linh
pham



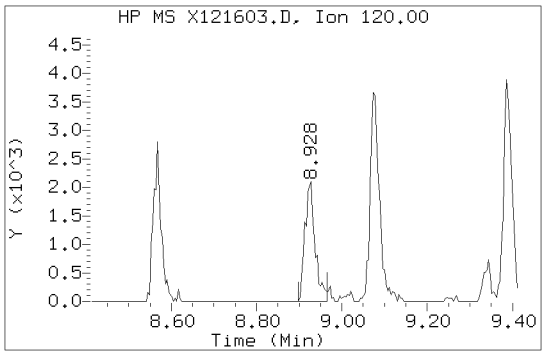
BEFORE

MASS
120
AREA
3559
HEIGHT
2104
27-Dec-2022
16:03
linh
pham



AFTER

MASS
120
AREA
3559
HEIGHT
2104
27-Dec-2022
16:07
linh
pham

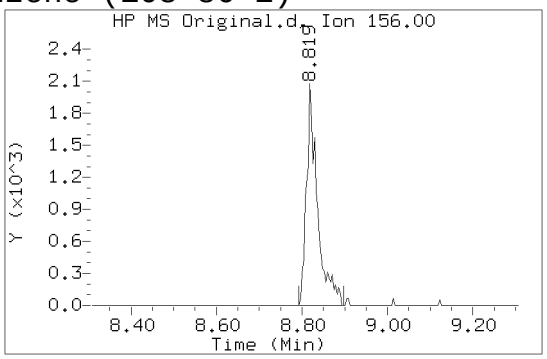


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

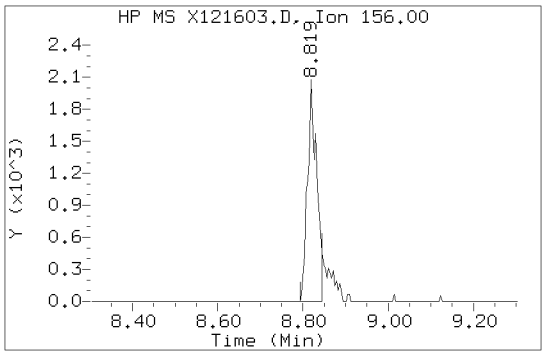
Bromobenzene (108-86-1)

Reason Code:

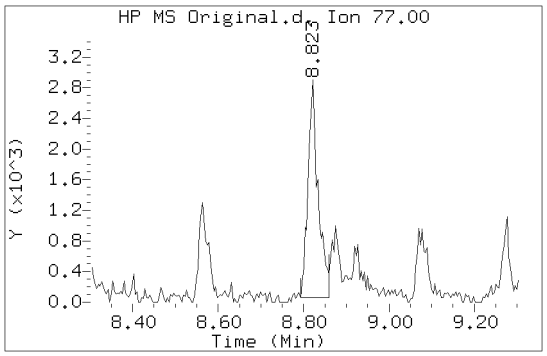
BEFORE
MASS
156
AREA
3747
HEIGHT
2077
27-Dec-2022
16:03
linh
pham



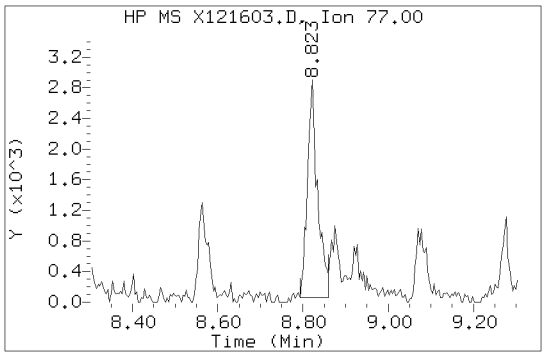
AFTER
MASS
156
AREA
3147
HEIGHT
2077
27-Dec-2022
16:07
linh
pham



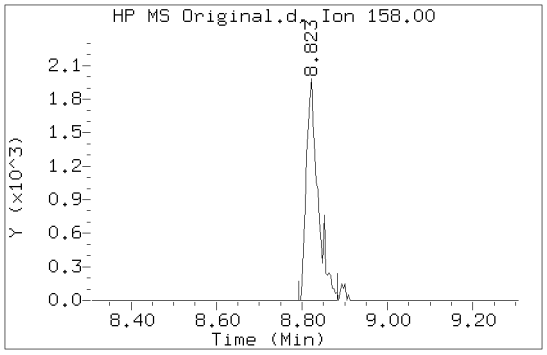
BEFORE
MASS
77
AREA
4719
HEIGHT
2841
27-Dec-2022
16:03
linh
pham



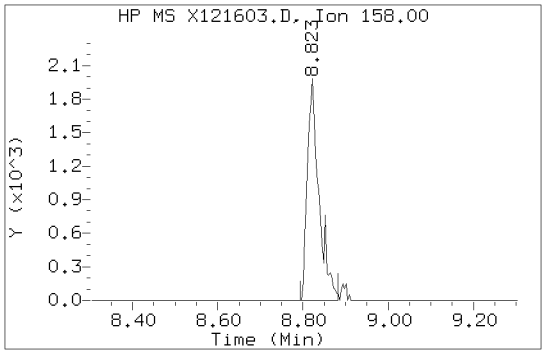
AFTER
MASS
77
AREA
4719
HEIGHT
2841
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
158
AREA
3772
HEIGHT
1983
27-Dec-2022
16:03
linh
pham



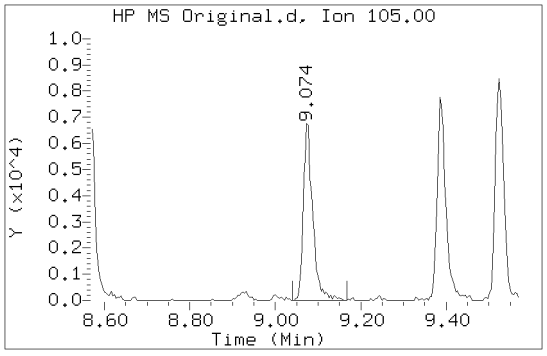
AFTER
MASS
158
AREA
3772
HEIGHT
1983
27-Dec-2022
16:07
linh
pham



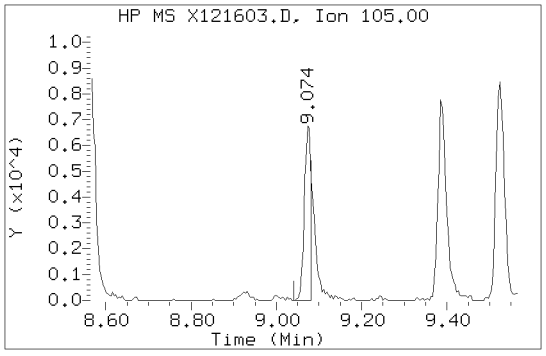
1,3,5-Trimethylbenzene (108-67-8)

Reason Code:

BEFORE
MASS
105
AREA
10555
HEIGHT
6758
27-Dec-2022
16:03
linh
pham



AFTER
MASS
105
AREA
7182
HEIGHT
6758
27-Dec-2022
16:07
linh
pham



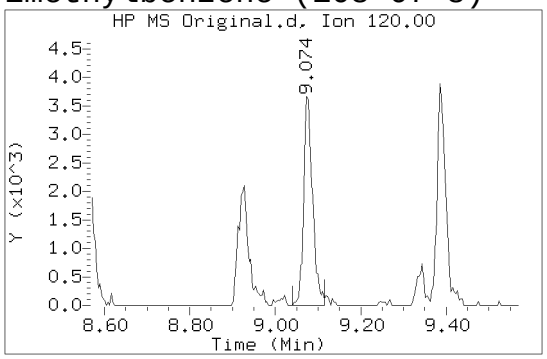
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,3,5-Trimethylbenzene (108-67-8)

Reason Code:

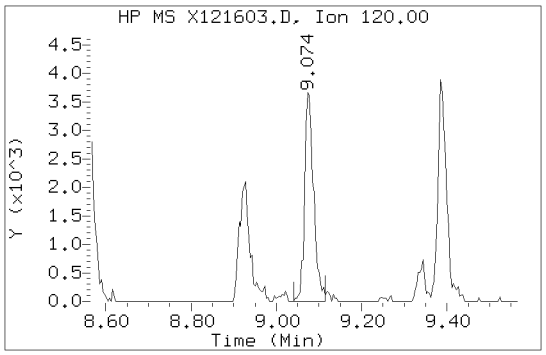
BEFORE

MASS
120
AREA
5450
HEIGHT
3663
27-Dec-2022
16:03
linh
pham



AFTER

MASS
120
AREA
5450
HEIGHT
3663
27-Dec-2022
16:07
linh
pham

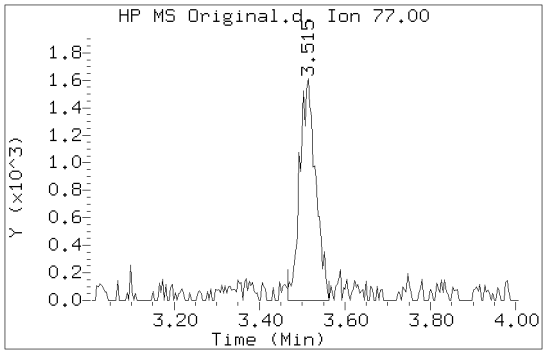


2,2-Dichloropropane (594-20-7)

Reason Code:

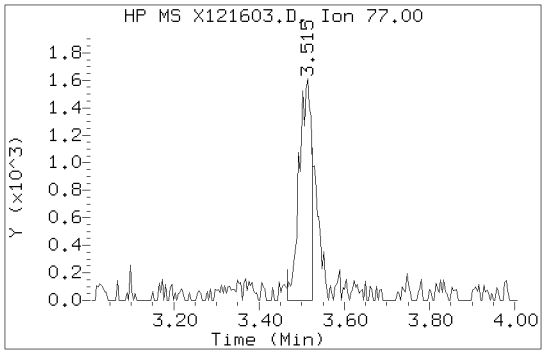
BEFORE

MASS
77
AREA
4217
HEIGHT
1612
27-Dec-2022
16:03
linh
pham



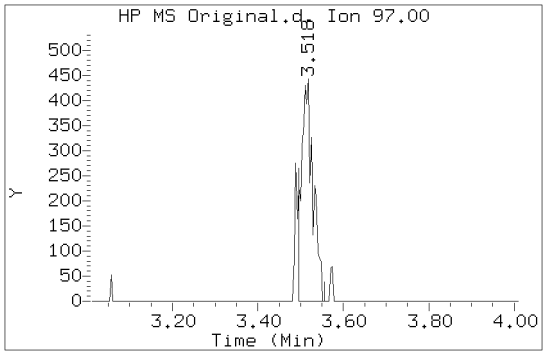
AFTER

MASS
77
AREA
3238
HEIGHT
1612
27-Dec-2022
16:07
linh
pham



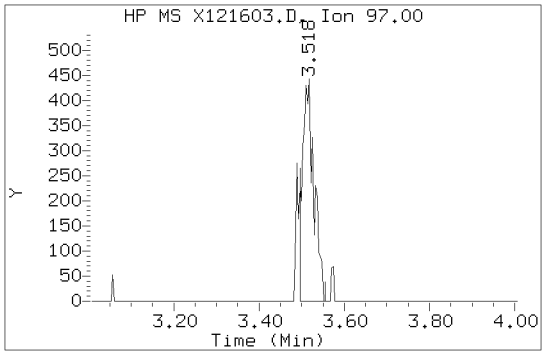
BEFORE

MASS
97
AREA
843
HEIGHT
443
27-Dec-2022
16:03
linh
pham



AFTER

MASS
97
AREA
843
HEIGHT
443
27-Dec-2022
16:07
linh
pham

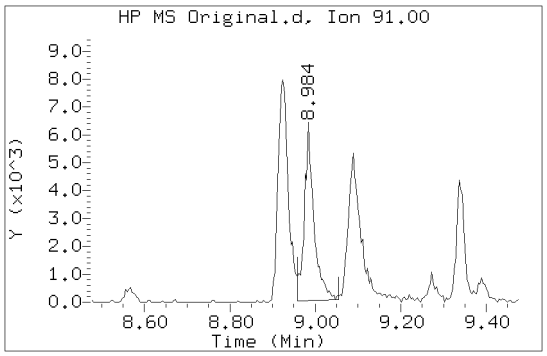


2-Chlorotoluene (95-49-8)

Reason Code:

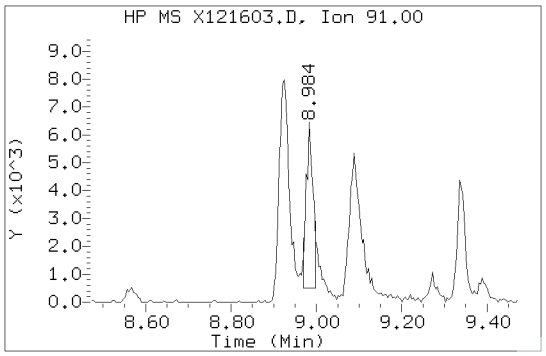
BEFORE

MASS
91
AREA
10128
HEIGHT
6401
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
6718
HEIGHT
5942
27-Dec-2022
16:07
linh
pham



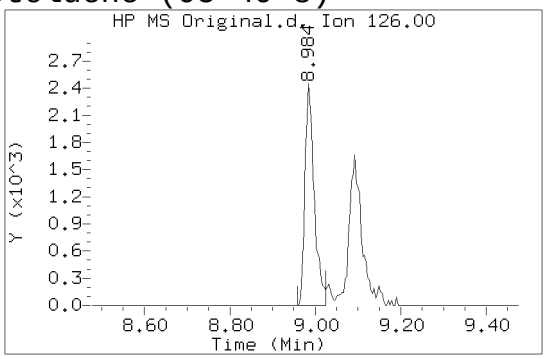
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

2-Chlorotoluene (95-49-8)

Reason Code:

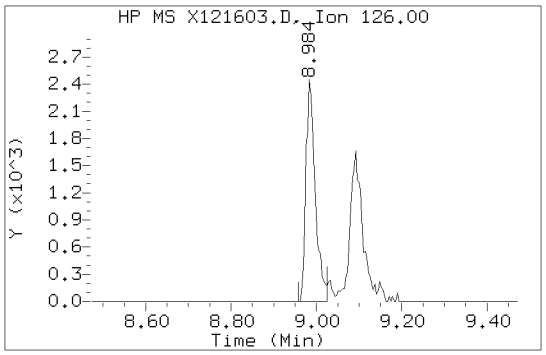
BEFORE

MASS
126
AREA
3761
HEIGHT
2450
27-Dec-2022
16:03
linh
pham



AFTER

MASS
126
AREA
3761
HEIGHT
2450
27-Dec-2022
16:07
linh
pham

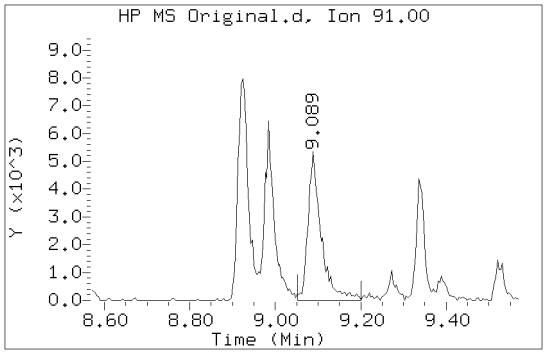


4-Chlorotoluene (106-43-4)

Reason Code:

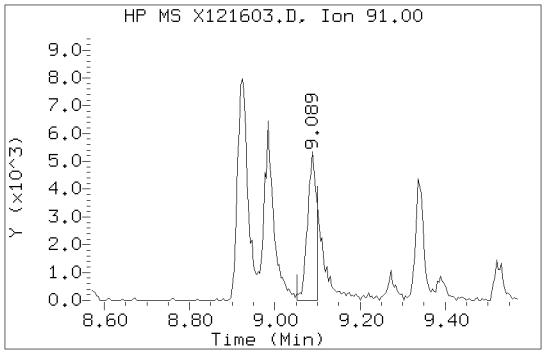
BEFORE

MASS
91
AREA
11481
HEIGHT
5337
27-Dec-2022
16:03
linh
pham



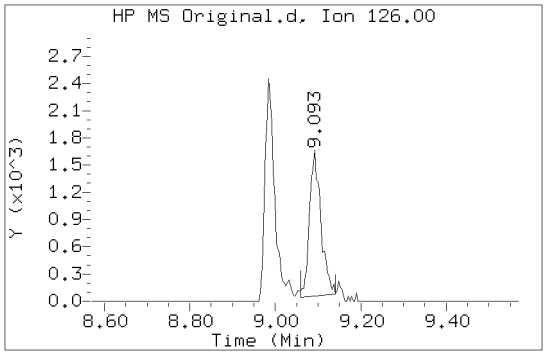
AFTER

MASS
91
AREA
7644
HEIGHT
5337
27-Dec-2022
16:07
linh
pham



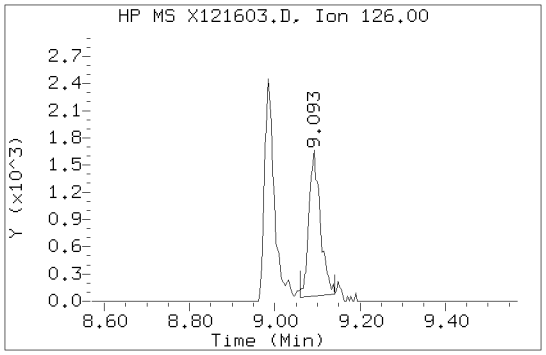
BEFORE

MASS
126
AREA
3008
HEIGHT
1612
27-Dec-2022
16:03
linh
pham



AFTER

MASS
126
AREA
3008
HEIGHT
1612
27-Dec-2022
16:07
linh
pham

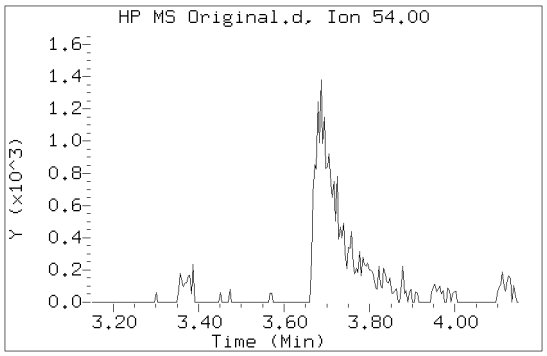


Propionitrile (107-12-0)

Reason Code:

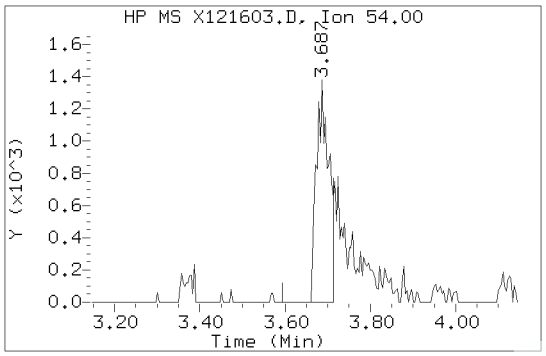
BEFORE

MASS
54
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
54
AREA
2777
HEIGHT
1380
27-Dec-2022
16:07
linh
pham



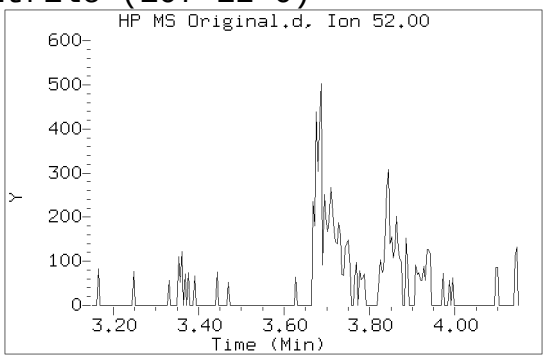
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Propionitrile (107-12-0)

Reason Code:

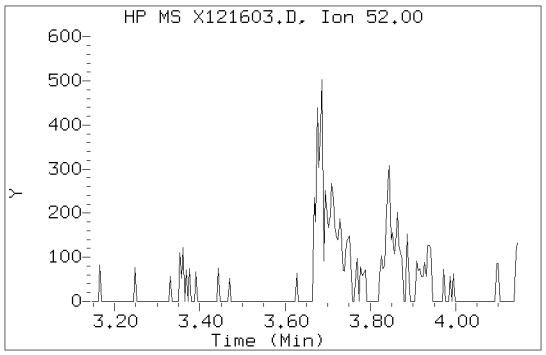
BEFORE

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



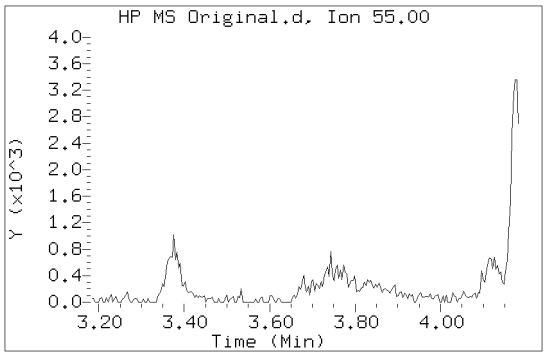
AFTER

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



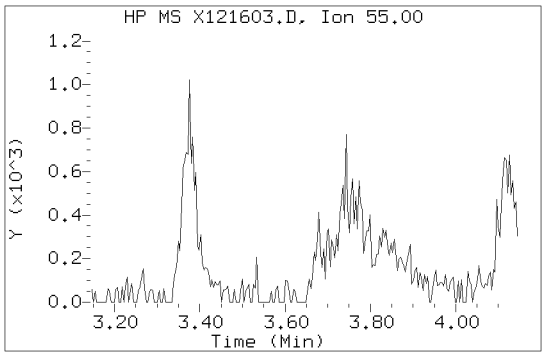
BEFORE

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

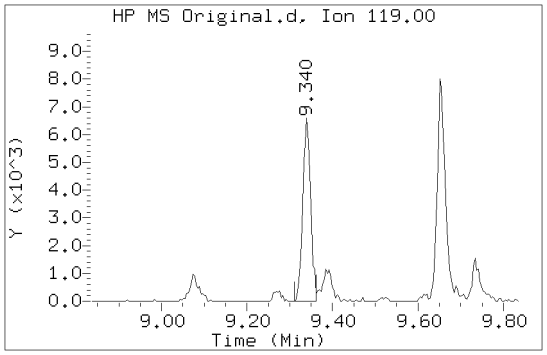


tert-Butylbenzene (98-06-6)

Reason Code:

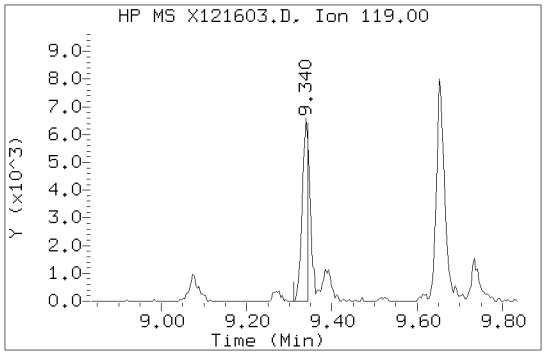
BEFORE

MASS
119
AREA
8660
HEIGHT
6598
27-Dec-2022
16:03
linh
pham



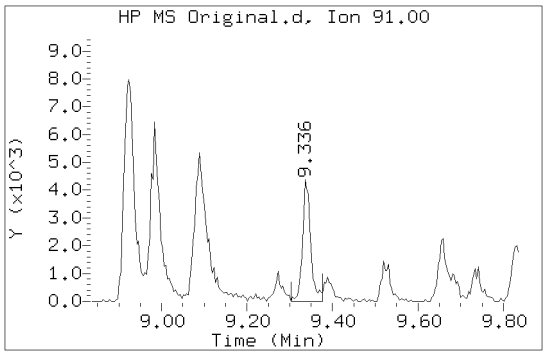
AFTER

MASS
119
AREA
6389
HEIGHT
6598
27-Dec-2022
16:07
linh
pham



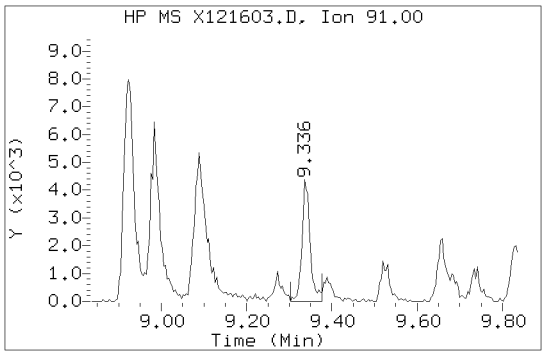
BEFORE

MASS
91
AREA
6013
HEIGHT
4378
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
6013
HEIGHT
4378
27-Dec-2022
16:07
linh
pham



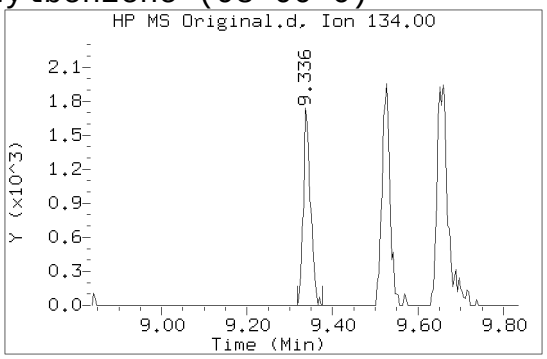
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

tert-Butylbenzene (98-06-6)

Reason Code:

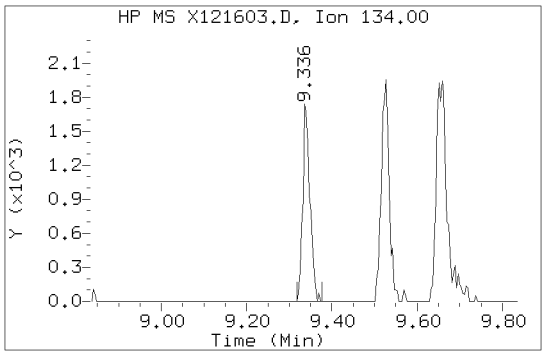
BEFORE

MASS
134
AREA
2112
HEIGHT
1740
27-Dec-2022
16:03
linh
pham



AFTER

MASS
134
AREA
2112
HEIGHT
1740
27-Dec-2022
16:07
linh
pham

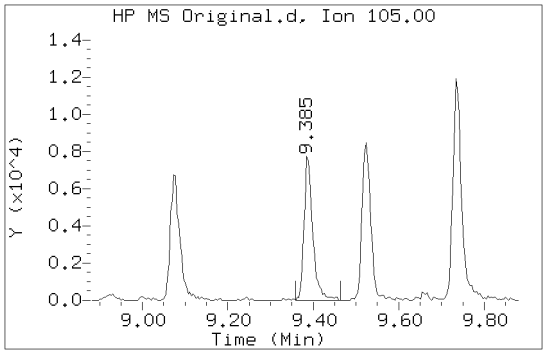


1,2,4-Trimethylbenzene (95-63-6)

Reason Code:

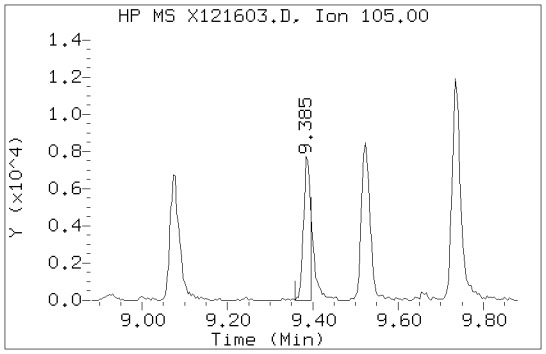
BEFORE

MASS
105
AREA
11065
HEIGHT
7775
27-Dec-2022
16:03
linh
pham



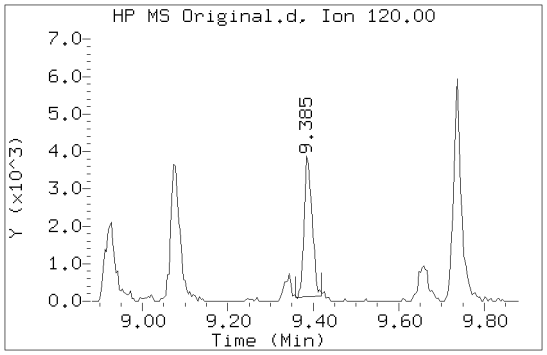
AFTER

MASS
105
AREA
8496
HEIGHT
7775
27-Dec-2022
16:07
linh
pham



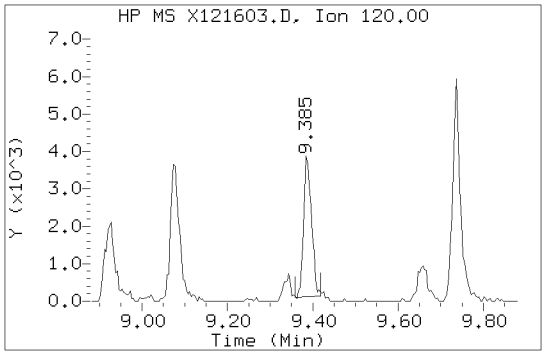
BEFORE

MASS
120
AREA
4898
HEIGHT
3773
27-Dec-2022
16:03
linh
pham



AFTER

MASS
120
AREA
4898
HEIGHT
3773
27-Dec-2022
16:07
linh
pham

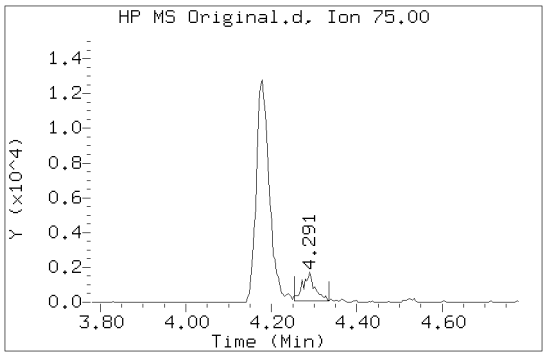


1,1-Dichloropropene (563-58-6)

Reason Code:

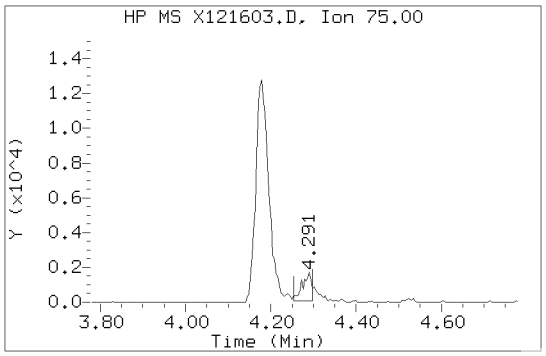
BEFORE

MASS
75
AREA
3235
HEIGHT
1674
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
2468
HEIGHT
1674
27-Dec-2022
16:07
linh
pham



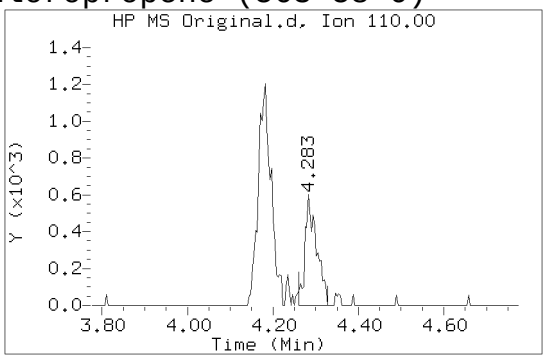
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,1-Dichloropropene (563-58-6)

Reason Code:

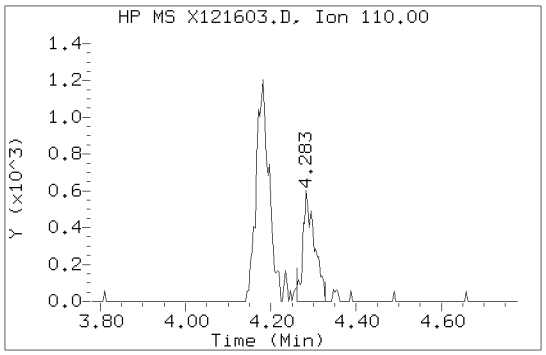
BEFORE

MASS
110
AREA
1143
HEIGHT
603
27-Dec-2022
16:03
linh
pham



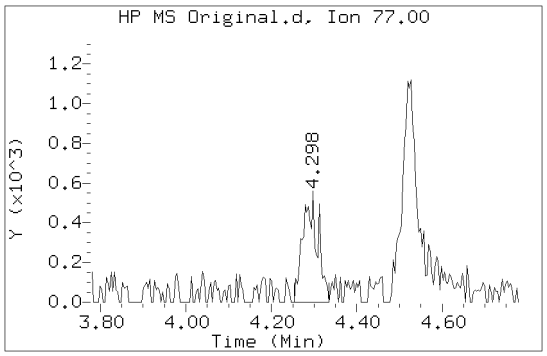
AFTER

MASS
110
AREA
1143
HEIGHT
603
27-Dec-2022
16:07
linh
pham



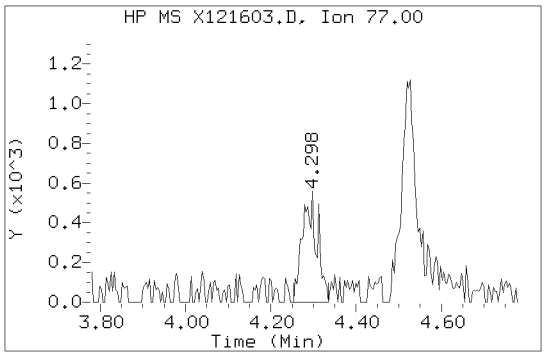
BEFORE

MASS
77
AREA
1342
HEIGHT
559
27-Dec-2022
16:03
linh
pham



AFTER

MASS
77
AREA
1342
HEIGHT
559
27-Dec-2022
16:07
linh
pham

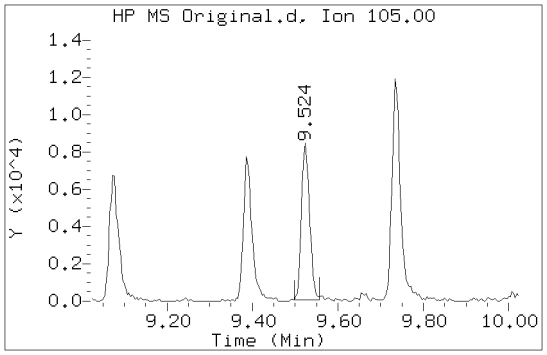


sec-Butylbenzene (135-98-8)

Reason Code:

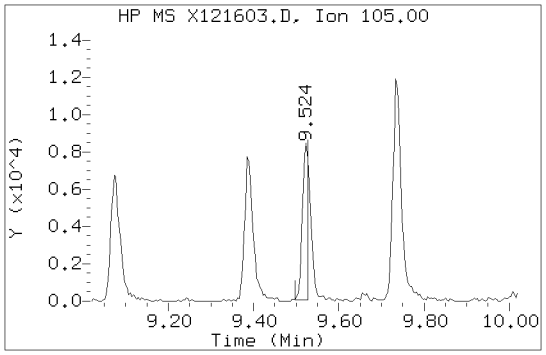
BEFORE

MASS
105
AREA
11512
HEIGHT
8394
27-Dec-2022
16:03
linh
pham



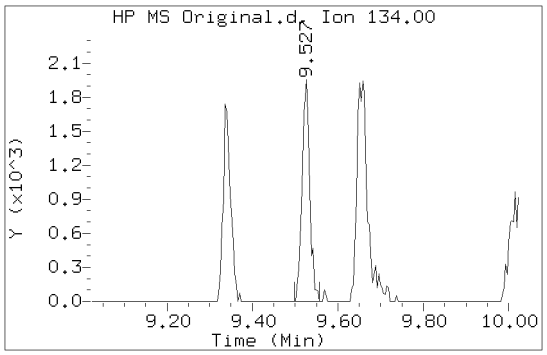
AFTER

MASS
105
AREA
7938
HEIGHT
8394
27-Dec-2022
16:07
linh
pham



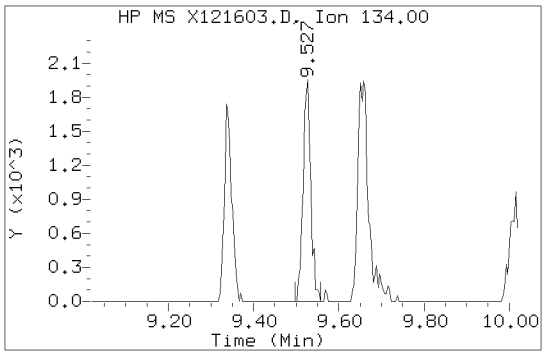
BEFORE

MASS
134
AREA
2519
HEIGHT
1955
27-Dec-2022
16:03
linh
pham



AFTER

MASS
134
AREA
2519
HEIGHT
1955
27-Dec-2022
16:07
linh
pham



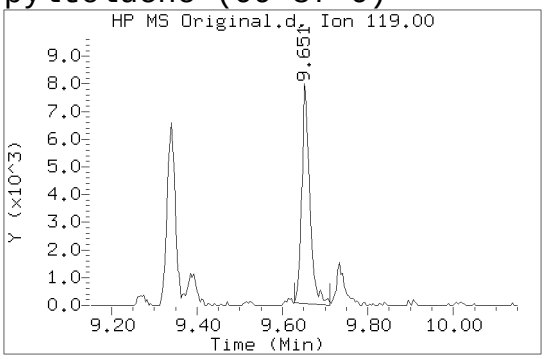
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

p-Isopropyltoluene (99-87-6)

Reason Code:

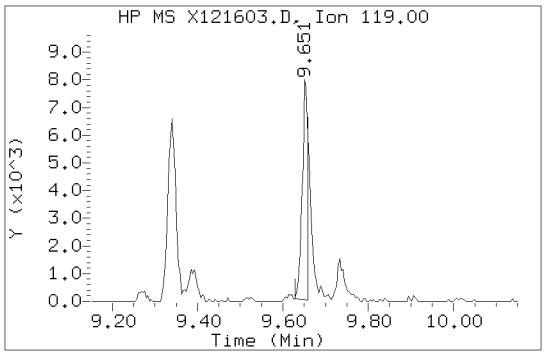
BEFORE

MASS
119
AREA
10660
HEIGHT
7944
27-Dec-2022
16:03
linh
pham



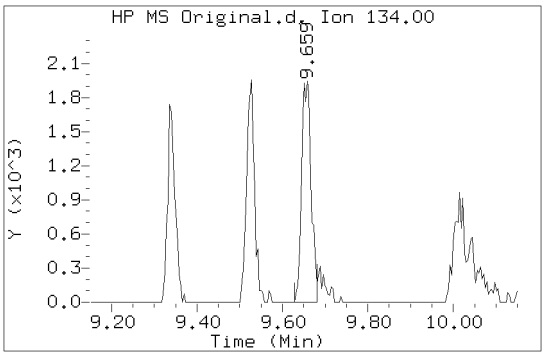
AFTER

MASS
119
AREA
7343
HEIGHT
7944
27-Dec-2022
16:07
linh
pham



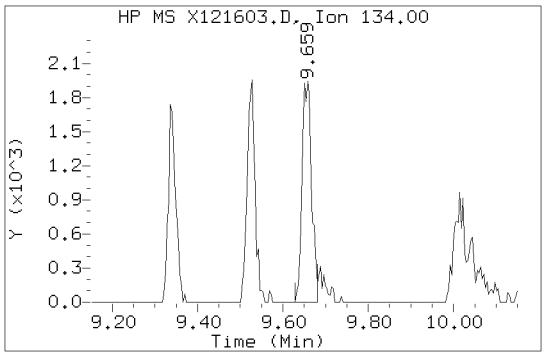
BEFORE

MASS
134
AREA
3102
HEIGHT
1946
27-Dec-2022
16:03
linh
pham



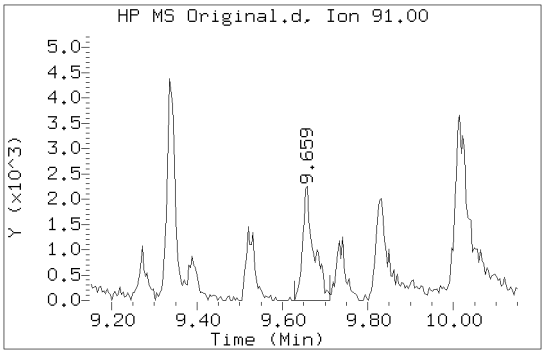
AFTER

MASS
134
AREA
3102
HEIGHT
1946
27-Dec-2022
16:07
linh
pham



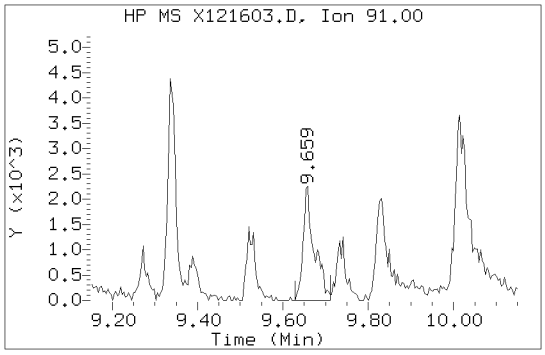
BEFORE

MASS
91
AREA
4191
HEIGHT
2256
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
4191
HEIGHT
2256
27-Dec-2022
16:07
linh
pham

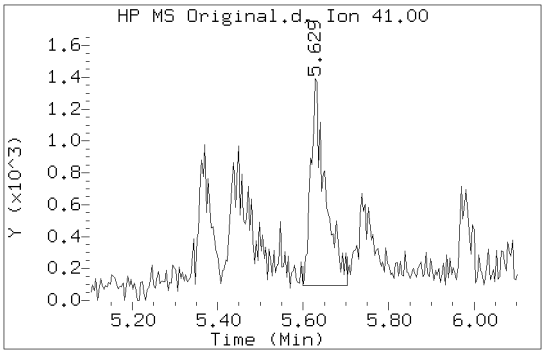


Methyl Methacrylate (80-62-6)

Reason Code:

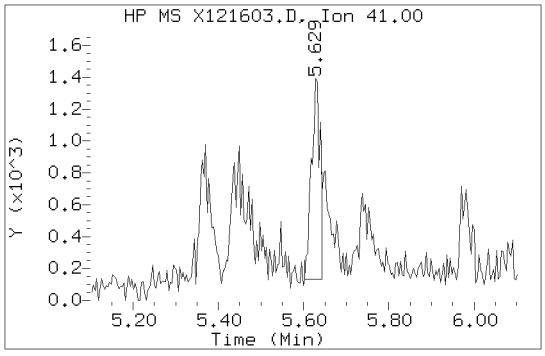
BEFORE

MASS
41
AREA
3067
HEIGHT
1299
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
1788
HEIGHT
1257
27-Dec-2022
16:07
linh
pham

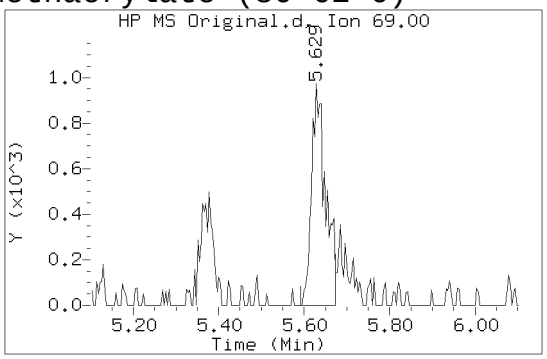


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Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Methyl Methacrylate (80-62-6)

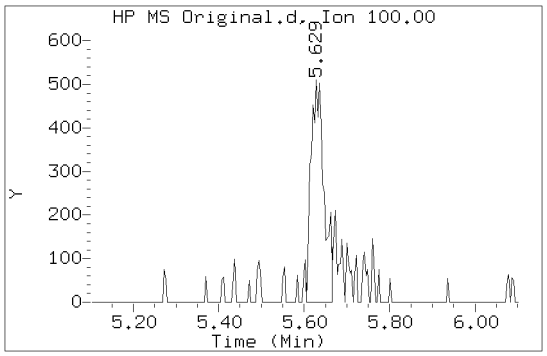
BEFORE

MASS
69
AREA
2216
HEIGHT
973
27-Dec-2022
16:03
linh
pham



BEFORE

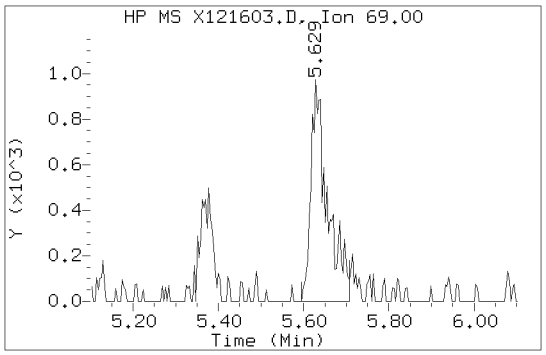
MASS
100
AREA
1074
HEIGHT
510
27-Dec-2022
16:03
linh
pham



Reason Code:

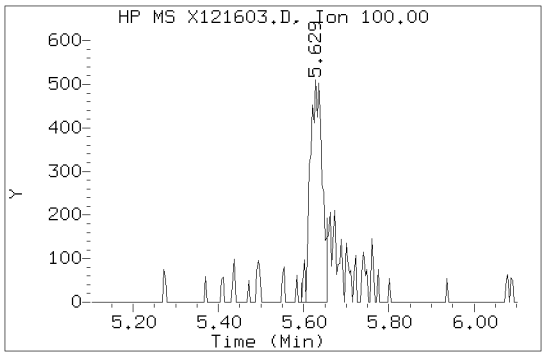
AFTER

MASS
69
AREA
2595
HEIGHT
973
27-Dec-2022
16:07
linh
pham



AFTER

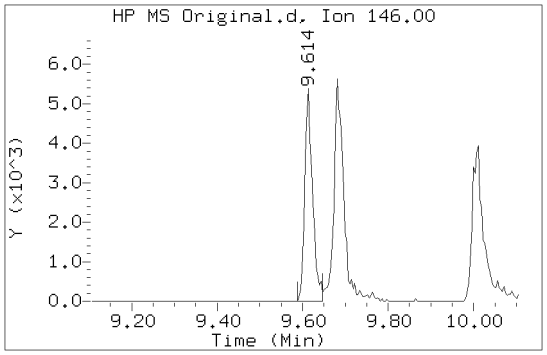
MASS
100
AREA
1011
HEIGHT
510
27-Dec-2022
16:07
linh
pham



1,3-Dichlorobenzene (541-73-1)

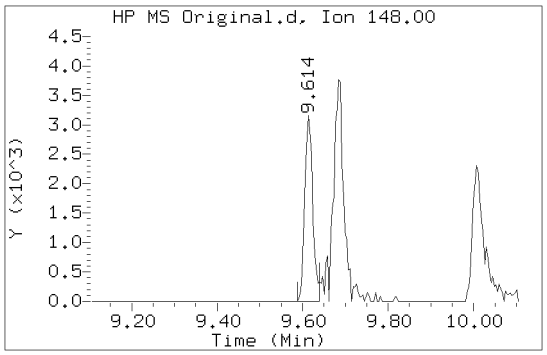
BEFORE

MASS
146
AREA
6964
HEIGHT
5387
27-Dec-2022
16:03
linh
pham



BEFORE

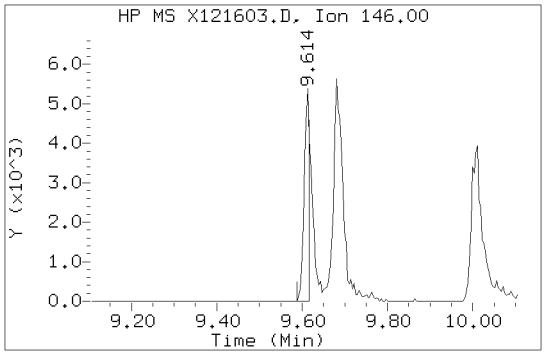
MASS
148
AREA
4216
HEIGHT
3157
27-Dec-2022
16:03
linh
pham



Reason Code:

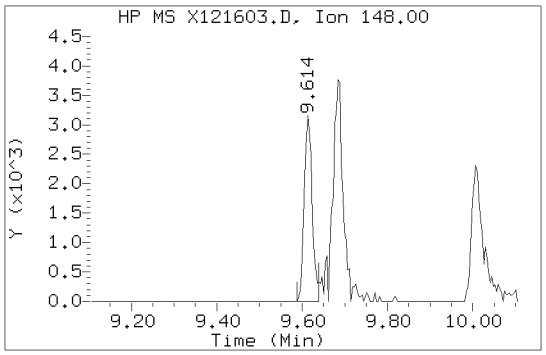
AFTER

MASS
146
AREA
4677
HEIGHT
5387
27-Dec-2022
16:07
linh
pham



AFTER

MASS
148
AREA
4216
HEIGHT
3157
27-Dec-2022
16:07
linh
pham



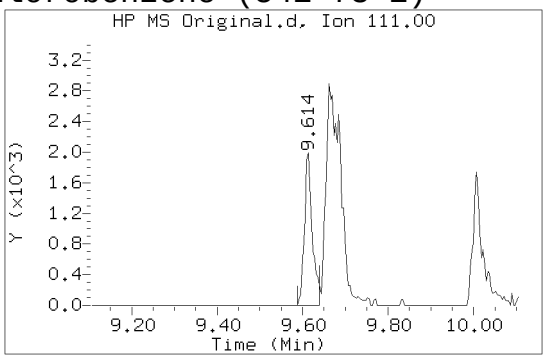
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Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,3-Dichlorobenzene (541-73-1)

Reason Code:

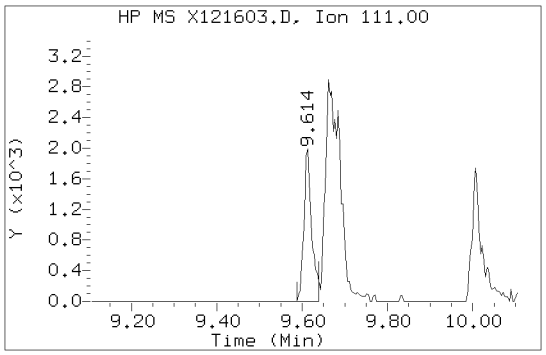
BEFORE

MASS
111
AREA
2596
HEIGHT
1995
27-Dec-2022
16:03
linh
pham



AFTER

MASS
111
AREA
2596
HEIGHT
1995
27-Dec-2022
16:07
linh
pham

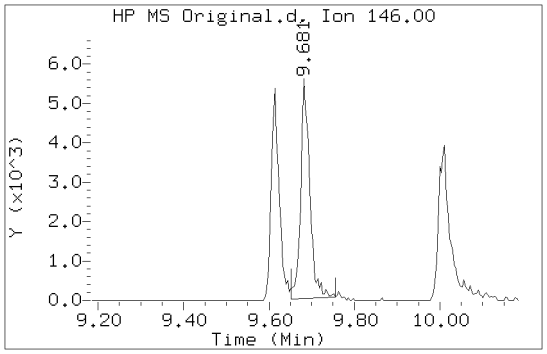


1,4-Dichlorobenzene (106-46-7)

Reason Code:

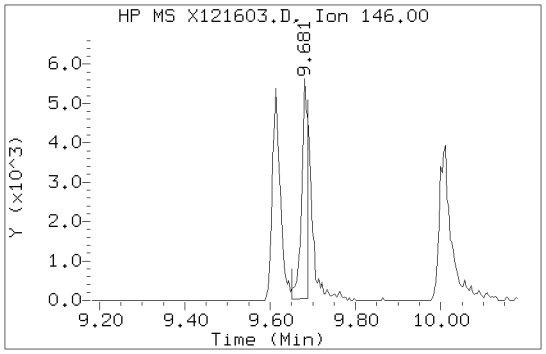
BEFORE

MASS
146
AREA
8510
HEIGHT
5586
27-Dec-2022
16:03
linh
pham



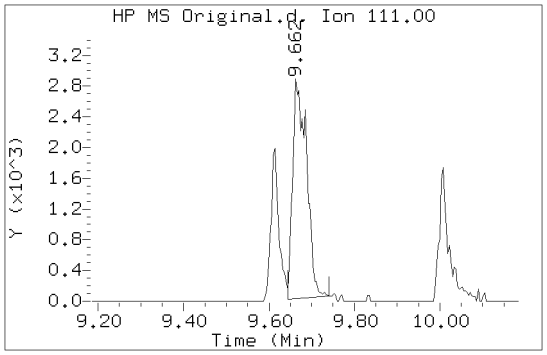
AFTER

MASS
146
AREA
5674
HEIGHT
5587
27-Dec-2022
16:07
linh
pham



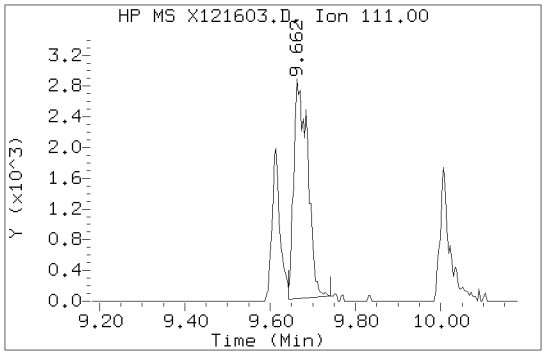
BEFORE

MASS
111
AREA
6571
HEIGHT
2862
27-Dec-2022
16:03
linh
pham



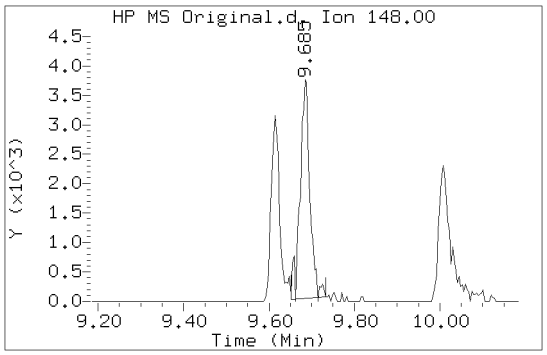
AFTER

MASS
111
AREA
6571
HEIGHT
2862
27-Dec-2022
16:07
linh
pham



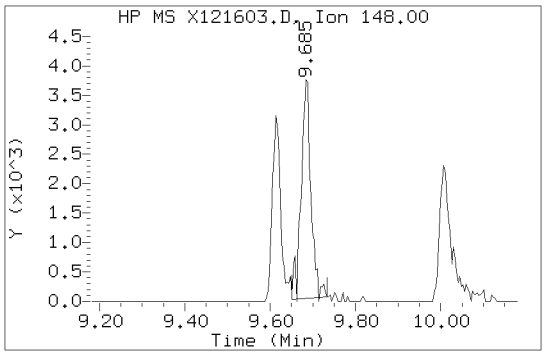
BEFORE

MASS
148
AREA
6083
HEIGHT
3714
27-Dec-2022
16:03
linh
pham



AFTER

MASS
148
AREA
6083
HEIGHT
3714
27-Dec-2022
16:07
linh
pham

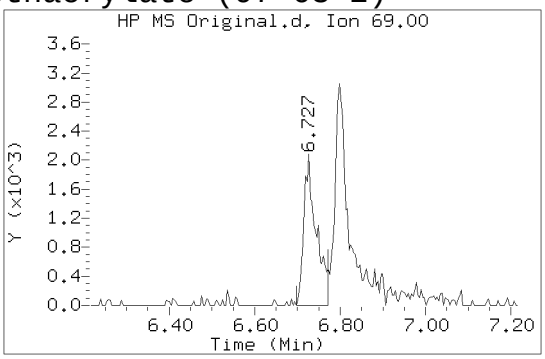


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Ethyl Methacrylate (97-63-2)

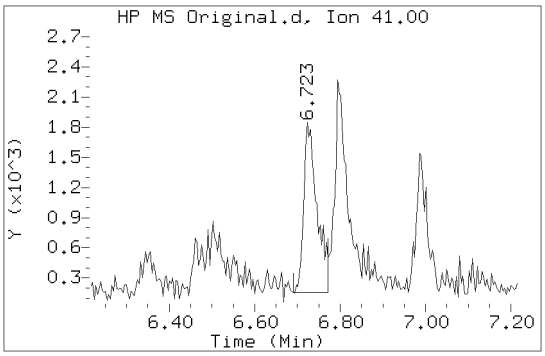
BEFORE

MASS
69
AREA
4283
HEIGHT
2083
27-Dec-2022
16:03
linh
pham



BEFORE

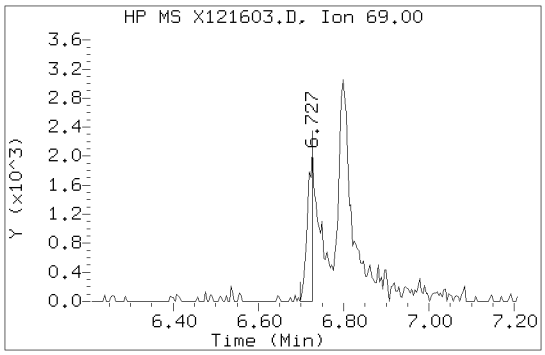
MASS
41
AREA
3701
HEIGHT
1688
27-Dec-2022
16:03
linh
pham



Reason Code:

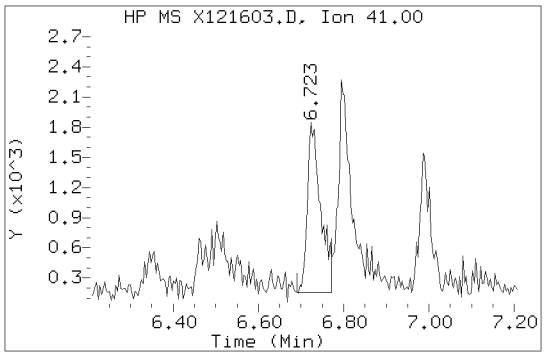
AFTER

MASS
69
AREA
1935
HEIGHT
2083
27-Dec-2022
16:07
linh
pham



AFTER

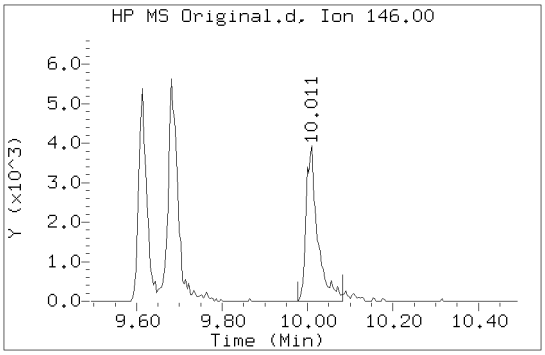
MASS
41
AREA
3701
HEIGHT
1688
27-Dec-2022
16:07
linh
pham



1,2-Dichlorobenzene (95-50-1)

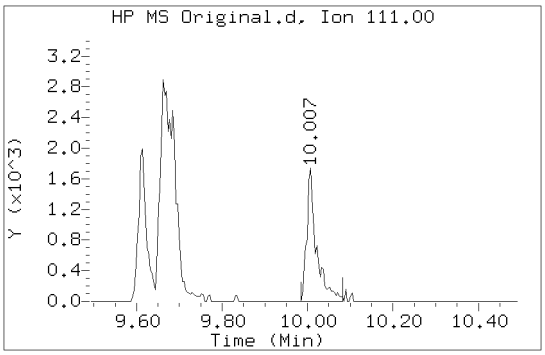
BEFORE

MASS
146
AREA
7400
HEIGHT
3934
27-Dec-2022
16:03
linh
pham



BEFORE

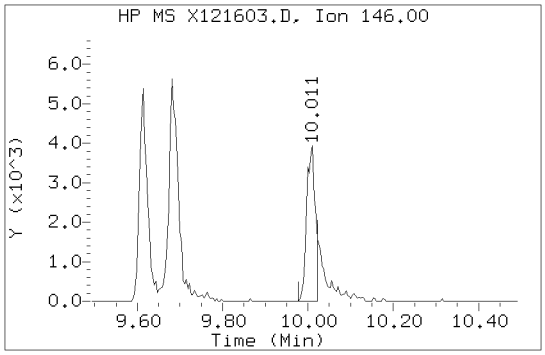
MASS
111
AREA
2768
HEIGHT
1741
27-Dec-2022
16:03
linh
pham



Reason Code:

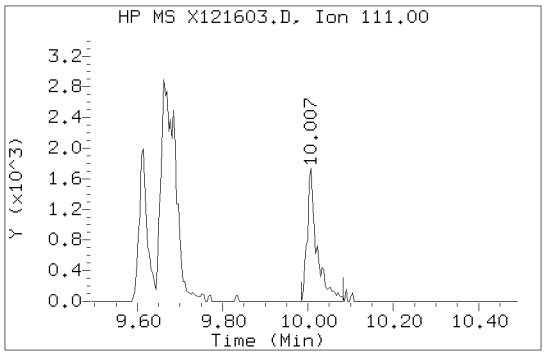
AFTER

MASS
146
AREA
5504
HEIGHT
3934
27-Dec-2022
16:07
linh
pham



AFTER

MASS
111
AREA
2768
HEIGHT
1741
27-Dec-2022
16:07
linh
pham



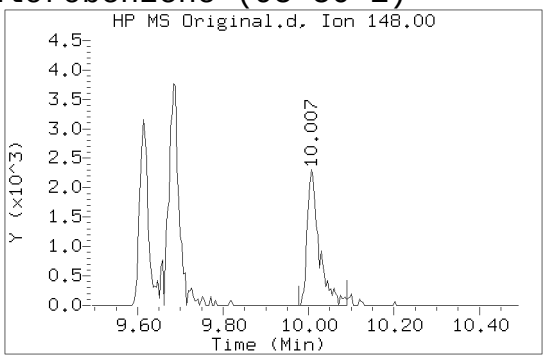
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,2-Dichlorobenzene (95-50-1)

Reason Code:

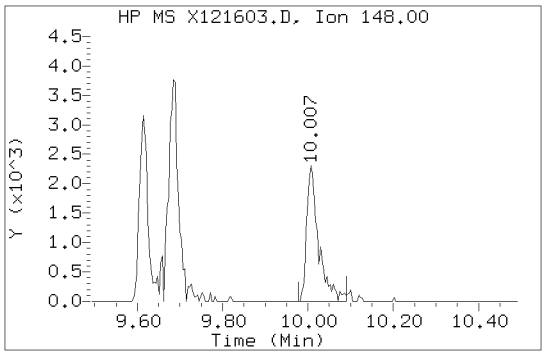
BEFORE

MASS
148
AREA
4515
HEIGHT
2306
27-Dec-2022
16:03
linh
pham



AFTER

MASS
148
AREA
4515
HEIGHT
2306
27-Dec-2022
16:07
linh
pham

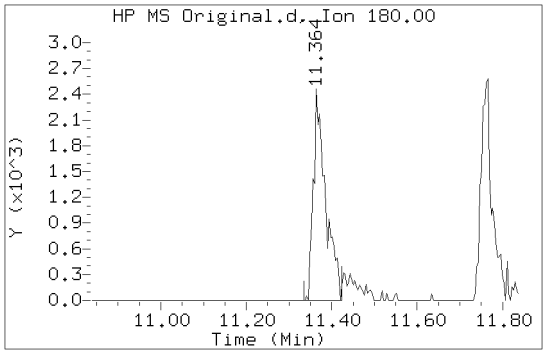


1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

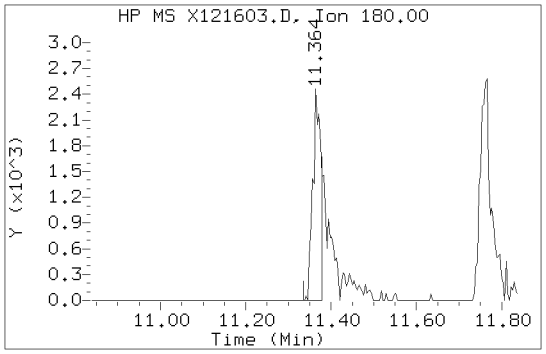
BEFORE

MASS
180
AREA
4912
HEIGHT
2459
27-Dec-2022
16:03
linh
pham



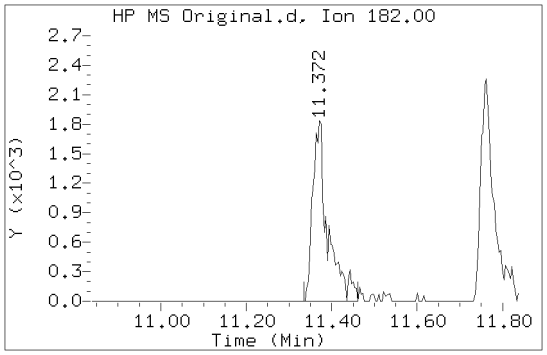
AFTER

MASS
180
AREA
3187
HEIGHT
2459
27-Dec-2022
16:07
linh
pham



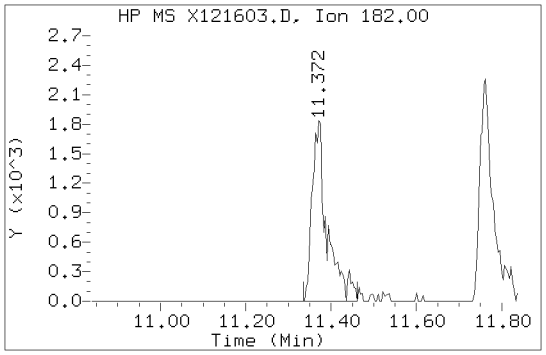
BEFORE

MASS
182
AREA
4514
HEIGHT
1835
27-Dec-2022
16:03
linh
pham



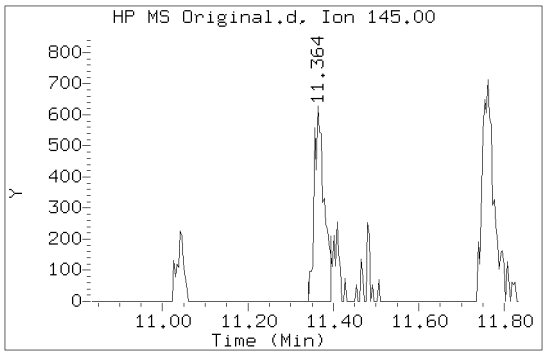
AFTER

MASS
182
AREA
4514
HEIGHT
1835
27-Dec-2022
16:07
linh
pham



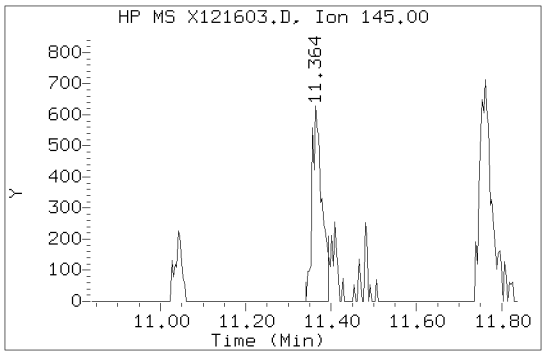
BEFORE

MASS
145
AREA
1003
HEIGHT
629
27-Dec-2022
16:03
linh
pham



AFTER

MASS
145
AREA
1003
HEIGHT
629
27-Dec-2022
16:07
linh
pham

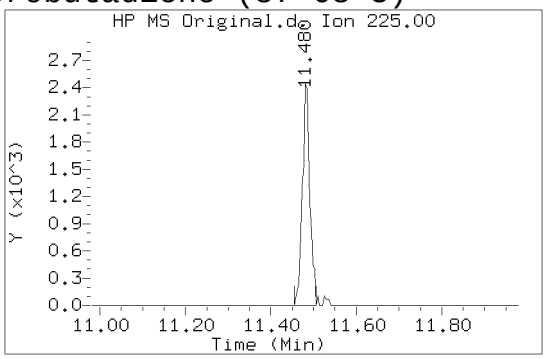


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Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

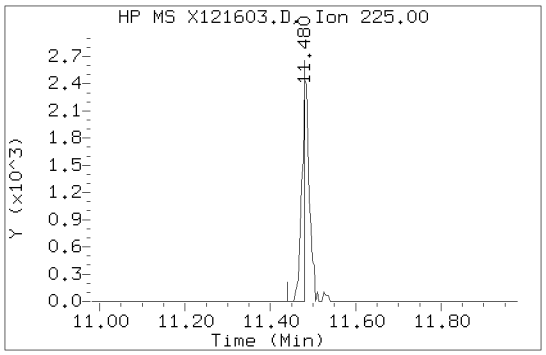
Hexachlorobutadiene (87-68-3)

Reason Code:

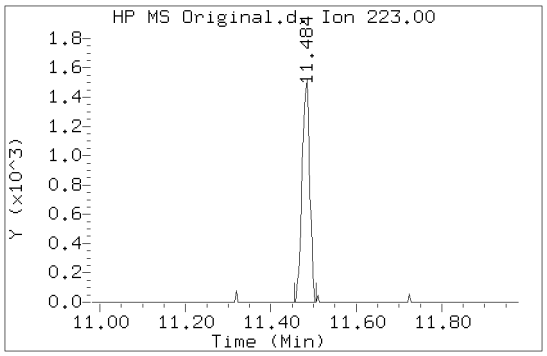
BEFORE
MASS
225
AREA
3038
HEIGHT
2444
27-Dec-2022
16:03
linh
pham



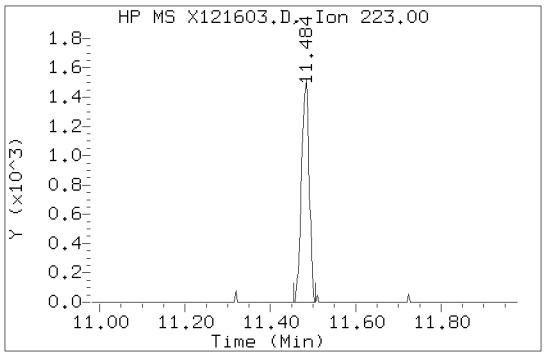
AFTER
MASS
225
AREA
1477
HEIGHT
2444
27-Dec-2022
16:07
linh
pham



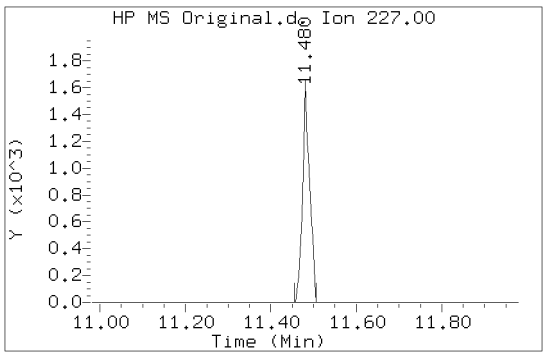
BEFORE
MASS
223
AREA
1952
HEIGHT
1518
27-Dec-2022
16:03
linh
pham



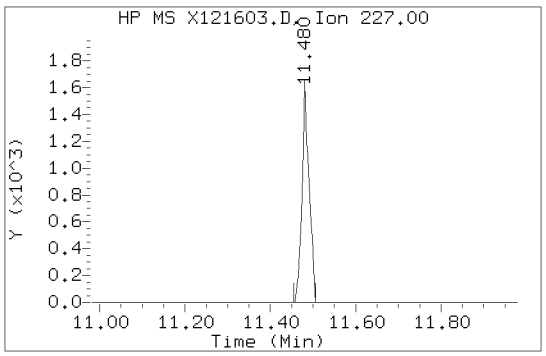
AFTER
MASS
223
AREA
1952
HEIGHT
1518
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
227
AREA
1938
HEIGHT
1652
27-Dec-2022
16:03
linh
pham



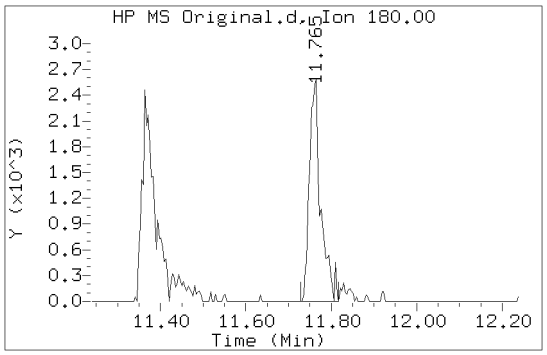
AFTER
MASS
227
AREA
1938
HEIGHT
1652
27-Dec-2022
16:07
linh
pham



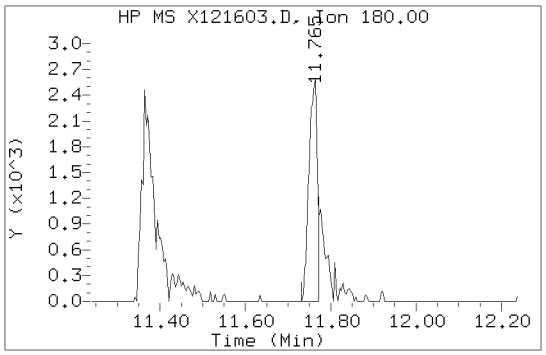
1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

BEFORE
MASS
180
AREA
4741
HEIGHT
2580
27-Dec-2022
16:03
linh
pham



AFTER
MASS
180
AREA
3572
HEIGHT
2580
27-Dec-2022
16:07
linh
pham

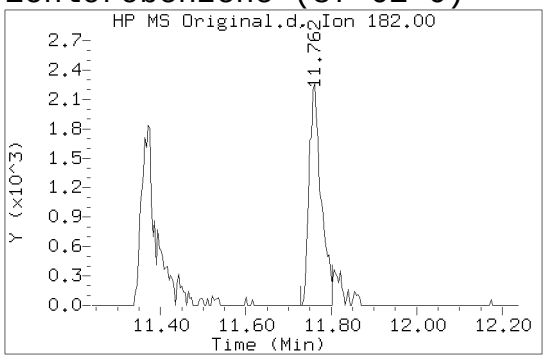


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Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

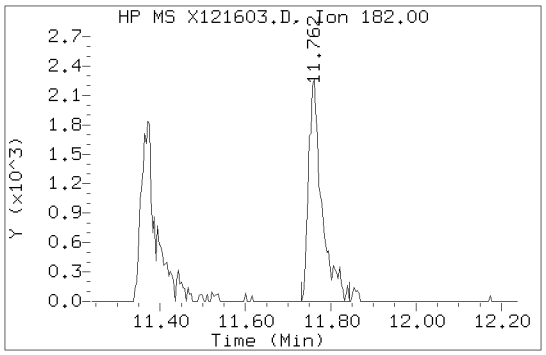
1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

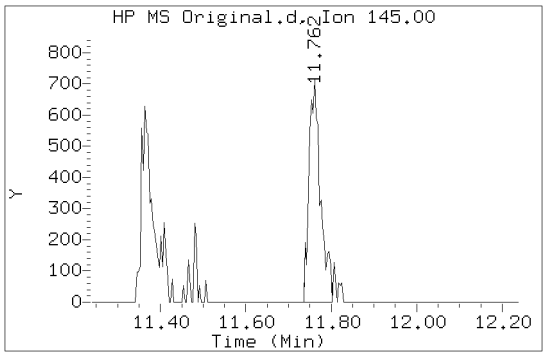
BEFORE
MASS
182
AREA
4404
HEIGHT
2261
27-Dec-2022
16:03
linh
pham



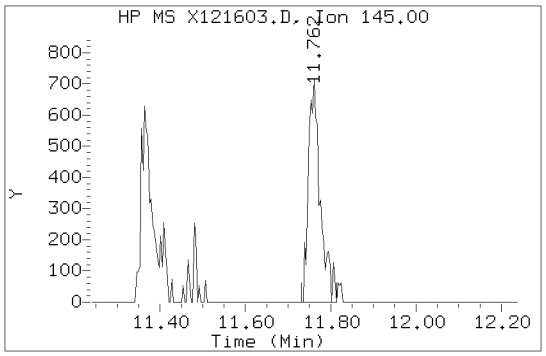
AFTER
MASS
182
AREA
4881
HEIGHT
2261
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
145
AREA
1338
HEIGHT
713
27-Dec-2022
16:03
linh
pham



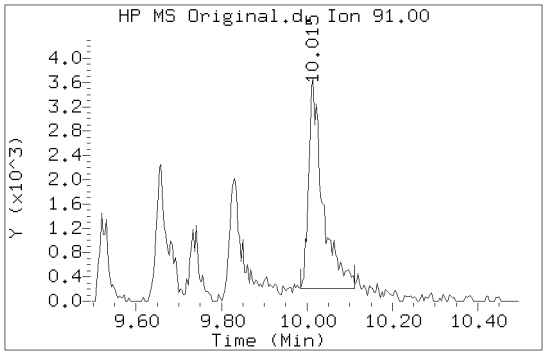
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MASS
145
AREA
1384
HEIGHT
713
27-Dec-2022
16:07
linh
pham



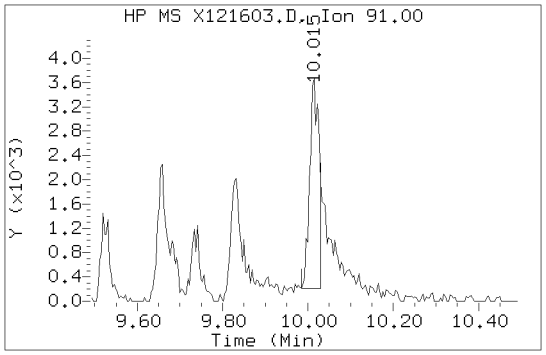
n-Butylbenzene (104-51-8)

Reason Code:

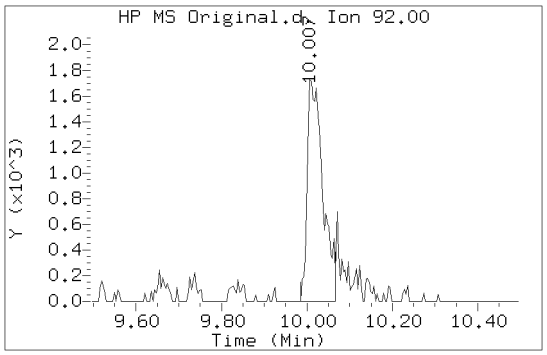
BEFORE
MASS
91
AREA
8005
HEIGHT
3451
27-Dec-2022
16:03
linh
pham



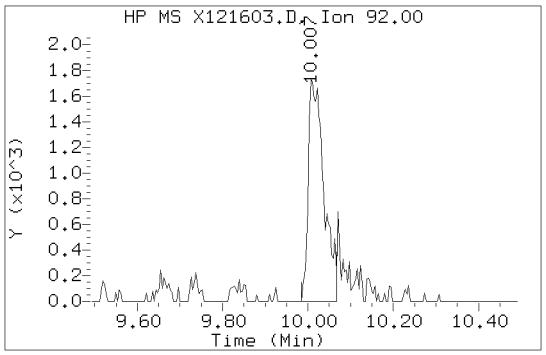
AFTER
MASS
91
AREA
5149
HEIGHT
3451
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
92
AREA
4404
HEIGHT
1727
27-Dec-2022
16:03
linh
pham



AFTER
MASS
92
AREA
4404
HEIGHT
1727
27-Dec-2022
16:07
linh
pham



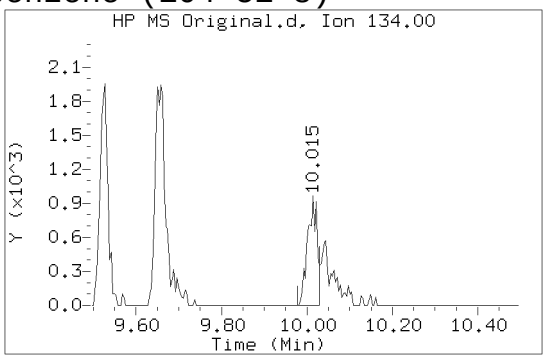
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

n-Butylbenzene (104-51-8)

Reason Code:

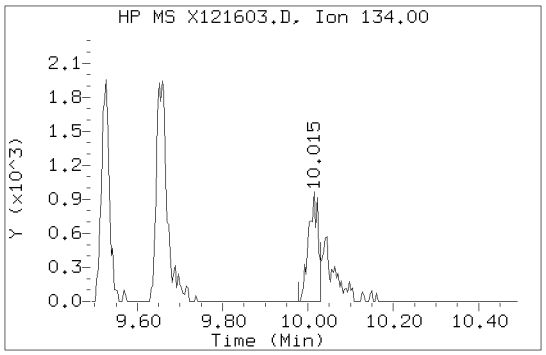
BEFORE

MASS
134
AREA
1502
HEIGHT
969
27-Dec-2022
16:03
linh
pham



AFTER

MASS
134
AREA
1502
HEIGHT
969
27-Dec-2022
16:07
linh
pham

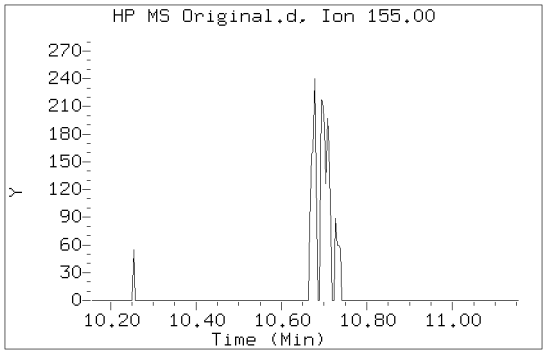


1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

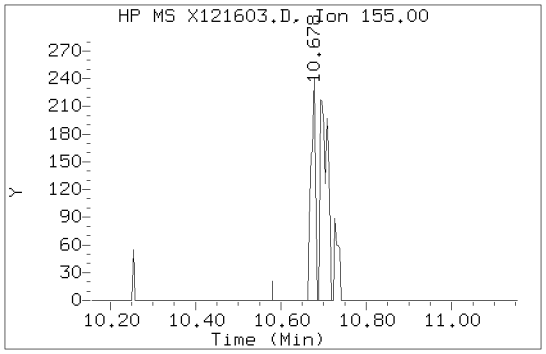
BEFORE

MASS
155
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



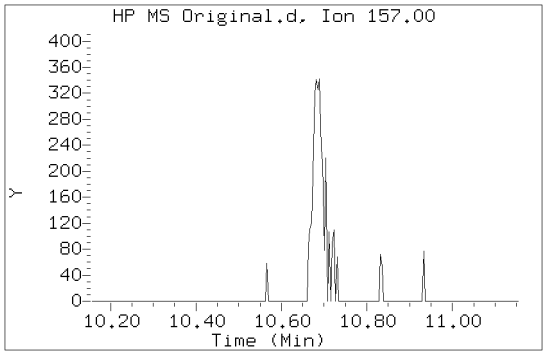
AFTER

MASS
155
AREA
441
HEIGHT
240
27-Dec-2022
16:07
linh
pham



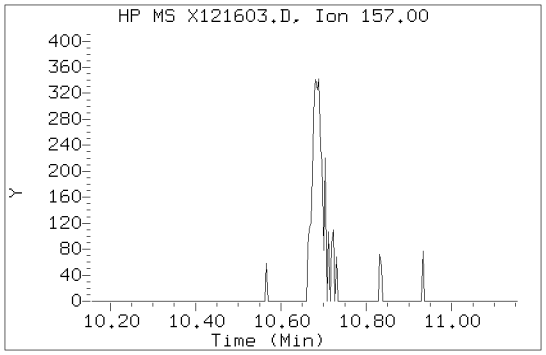
BEFORE

MASS
157
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



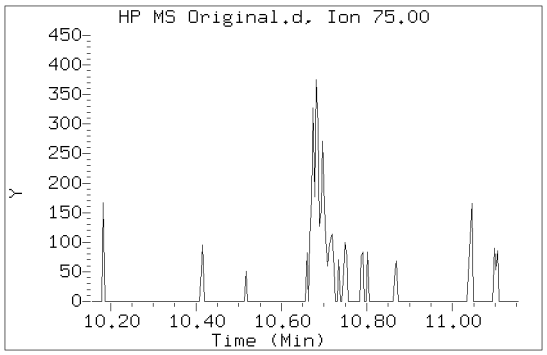
AFTER

MASS
157
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



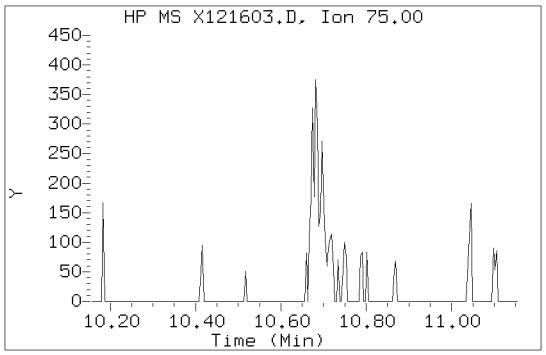
BEFORE

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



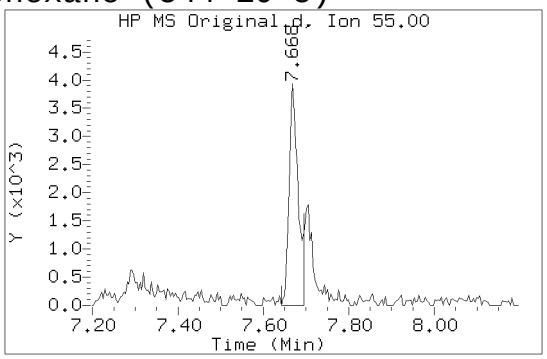
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1-Chlorohexane (544-10-5)

Reason Code:

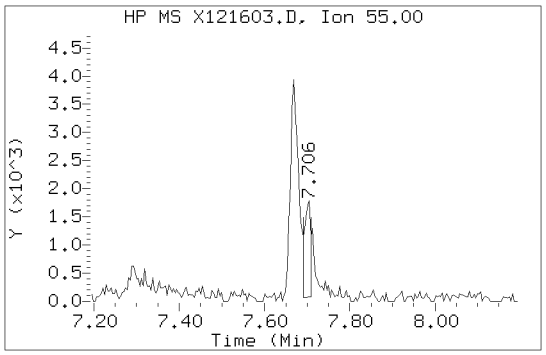
BEFORE

MASS
55
AREA
5785
HEIGHT
3936
27-Dec-2022
16:03
linh
pham



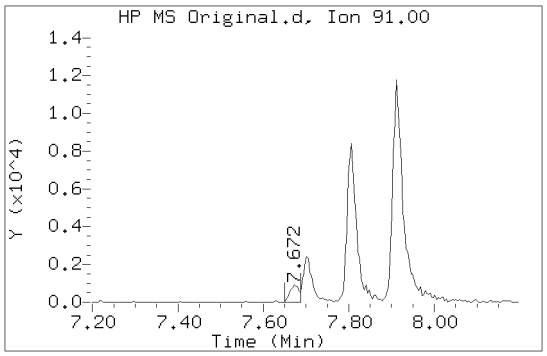
AFTER

MASS
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AREA
1829
HEIGHT
1707
27-Dec-2022
16:07
linh
pham



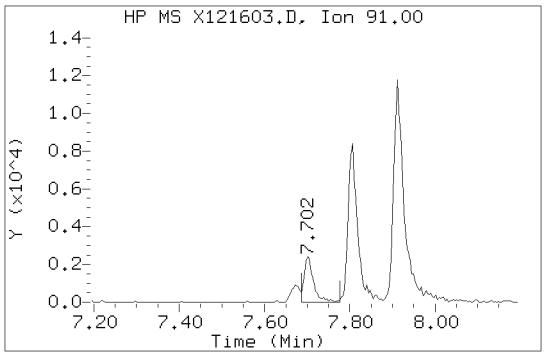
BEFORE

MASS
91
AREA
1355
HEIGHT
933
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
3802
HEIGHT
2430
27-Dec-2022
16:07
linh
pham

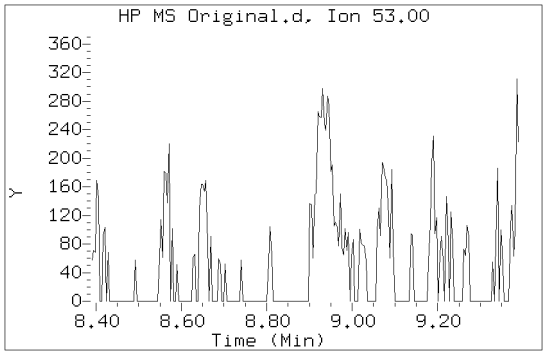


trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

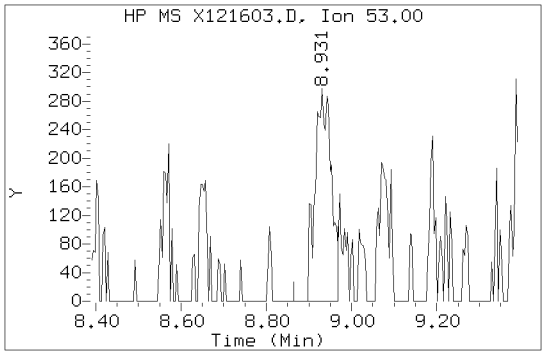
BEFORE

MASS
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AREA
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HEIGHT
0
27-Dec-2022
16:03
linh
pham



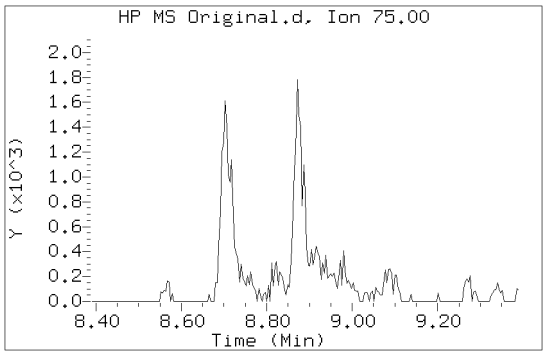
AFTER

MASS
53
AREA
792
HEIGHT
298
27-Dec-2022
16:07
linh
pham



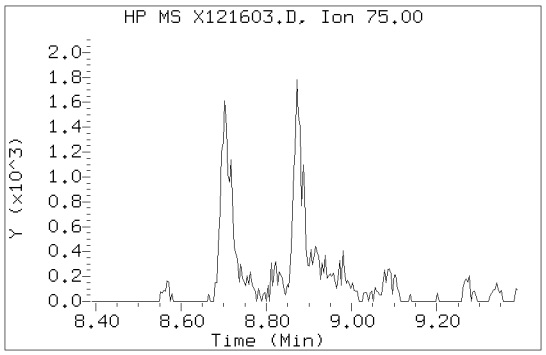
BEFORE

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



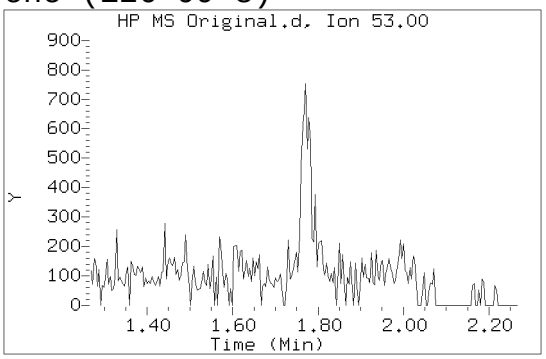
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Chloroprene (126-99-8)

Reason Code:

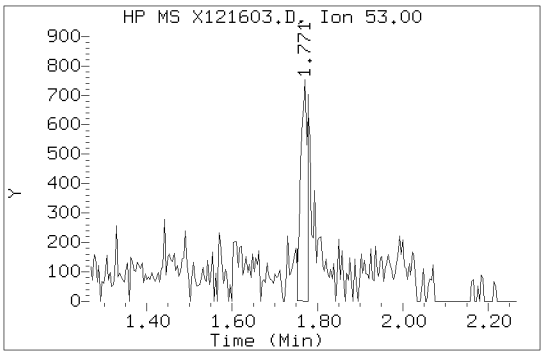
BEFORE

MASS
53
AREA
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HEIGHT
0
27-Dec-2022
16:03
linh
pham



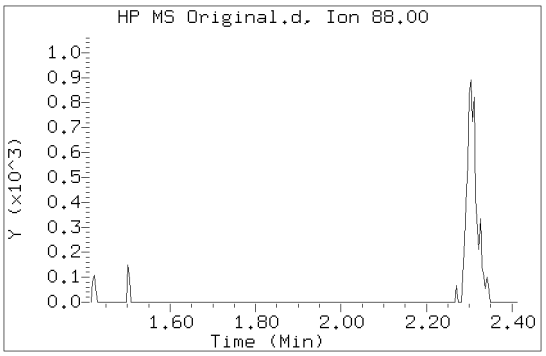
AFTER

MASS
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AREA
900
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751
27-Dec-2022
16:07
linh
pham



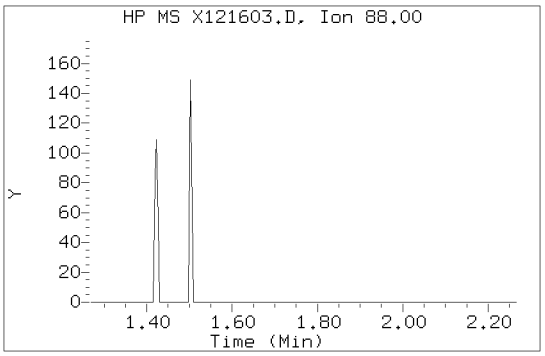
BEFORE

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

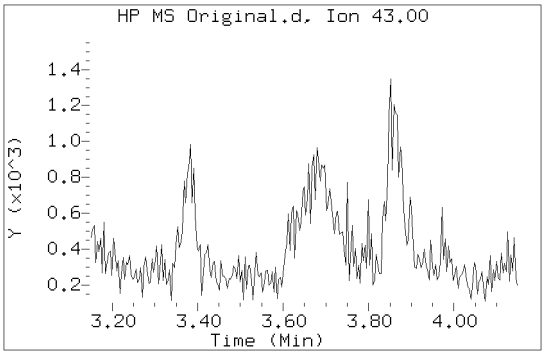


Ethyl Acetate (141-78-6)

Reason Code:

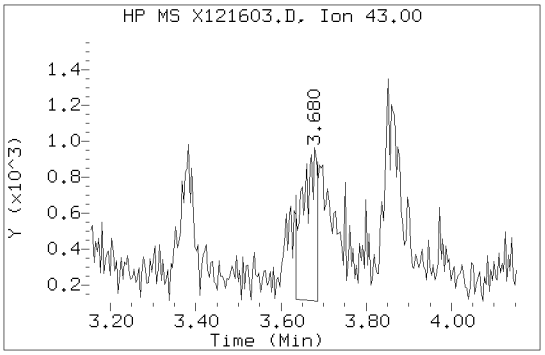
BEFORE

MASS
43
AREA
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HEIGHT
0
27-Dec-2022
16:03
linh
pham



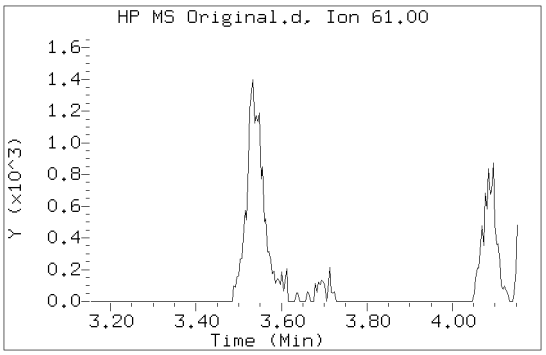
AFTER

MASS
43
AREA
2065
HEIGHT
853
27-Dec-2022
16:07
linh
pham



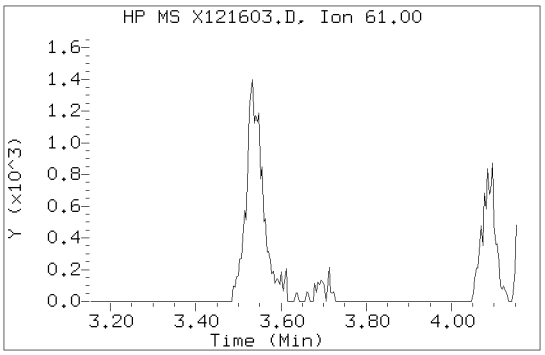
BEFORE

MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



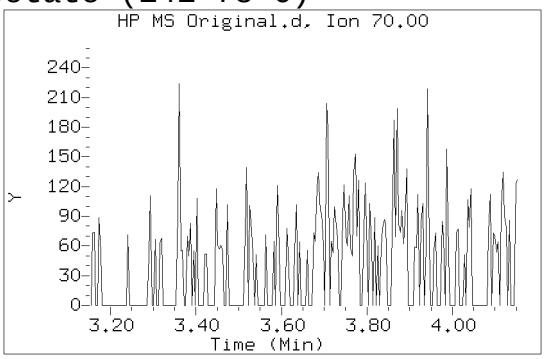
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Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Ethyl Acetate (141-78-6)

Reason Code:

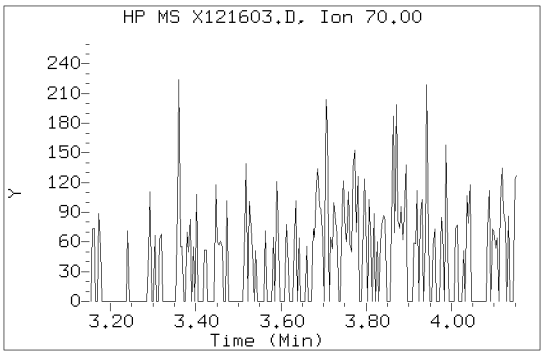
BEFORE

MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

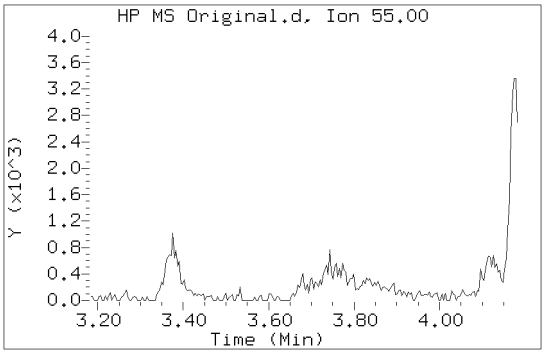


Methyl Acrylate (96-33-3)

Reason Code:

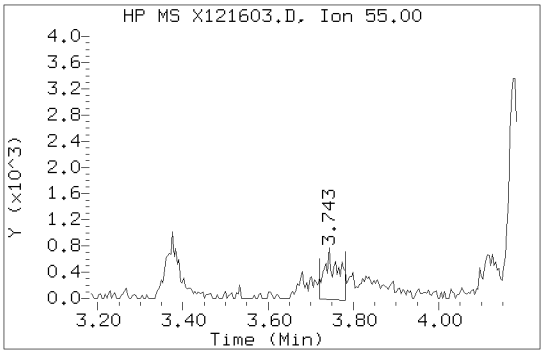
BEFORE

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



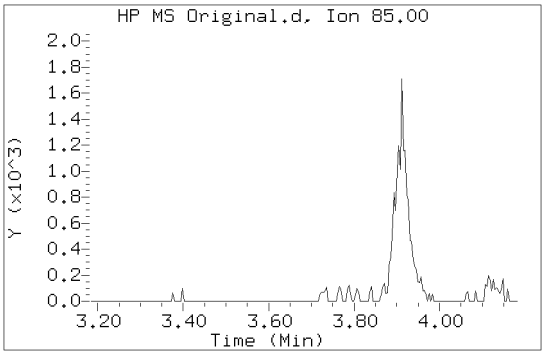
AFTER

MASS
55
AREA
1765
HEIGHT
787
27-Dec-2022
16:07
linh
pham



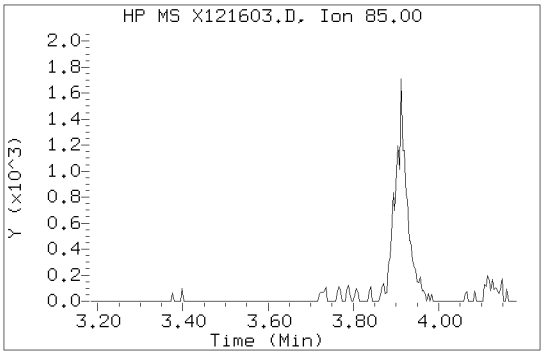
BEFORE

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

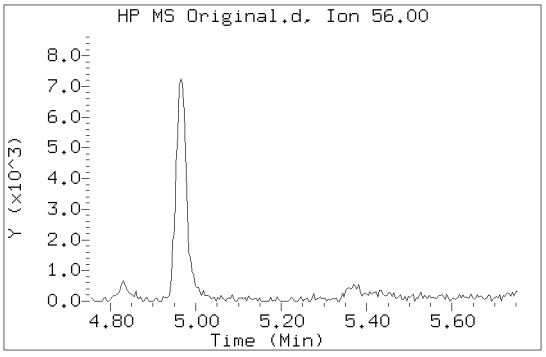


n-Butanol (71-36-3)

Reason Code:

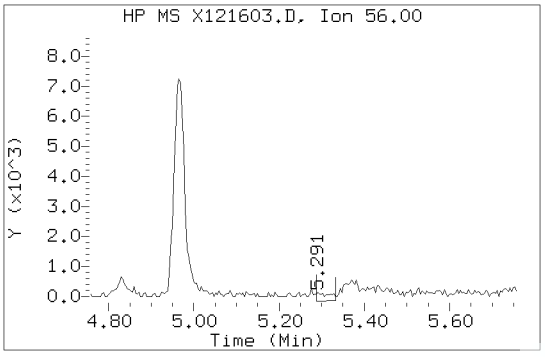
BEFORE

MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
56
AREA
622
HEIGHT
300
27-Dec-2022
16:07
linh
pham



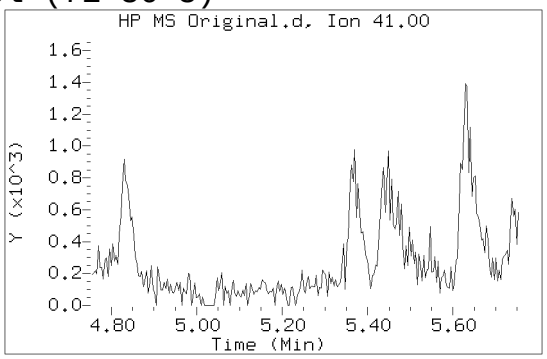
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

n-Butanol (71-36-3)

Reason Code:

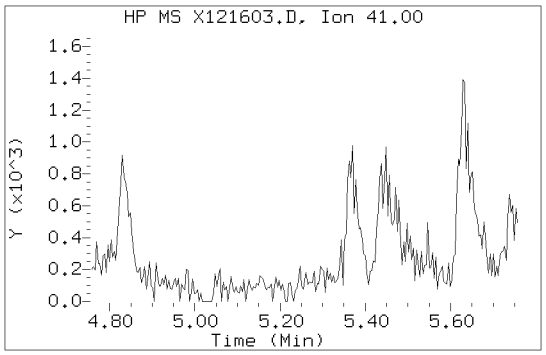
BEFORE

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

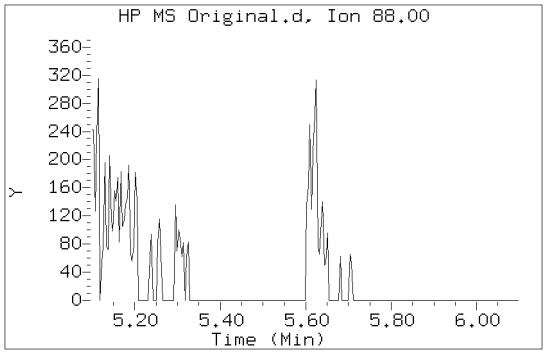


1,4-Dioxane ()

Reason Code:

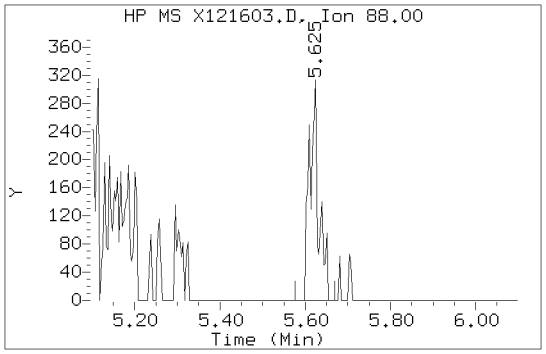
BEFORE

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



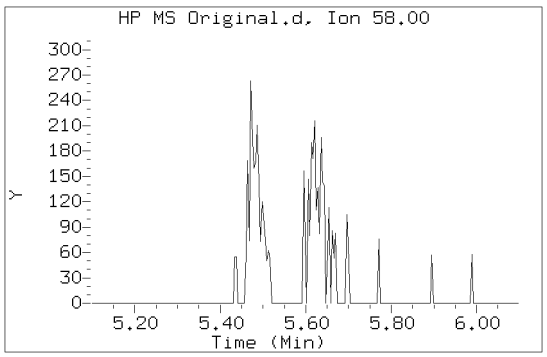
AFTER

MASS
88
AREA
462
HEIGHT
313
27-Dec-2022
16:07
linh
pham



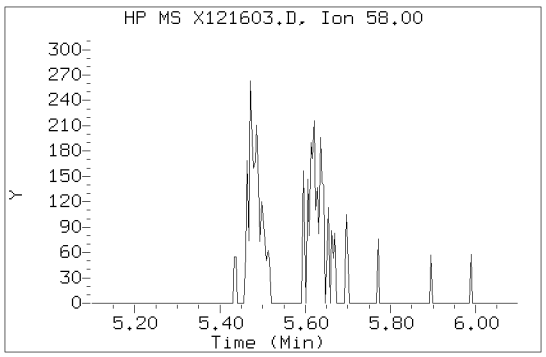
BEFORE

MASS
58
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
58
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

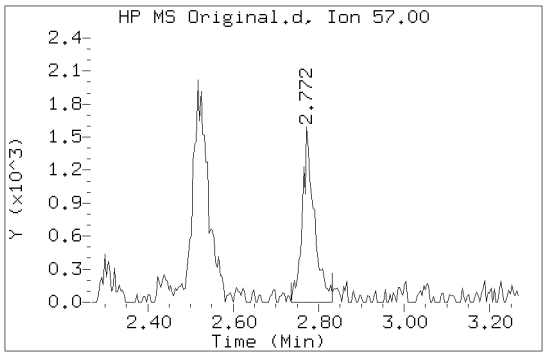


n-Hexane (110-54-3)

Reason Code:

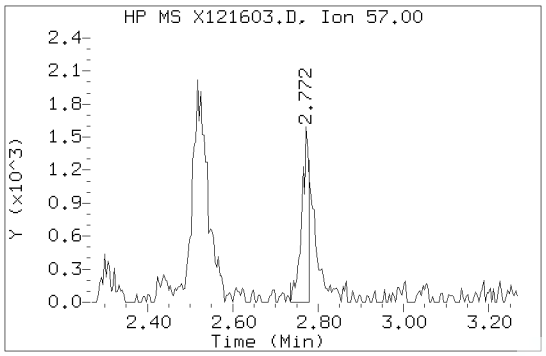
BEFORE

MASS
57
AREA
3089
HEIGHT
1591
27-Dec-2022
16:03
linh
pham



AFTER

MASS
57
AREA
1909
HEIGHT
1591
27-Dec-2022
16:07
linh
pham



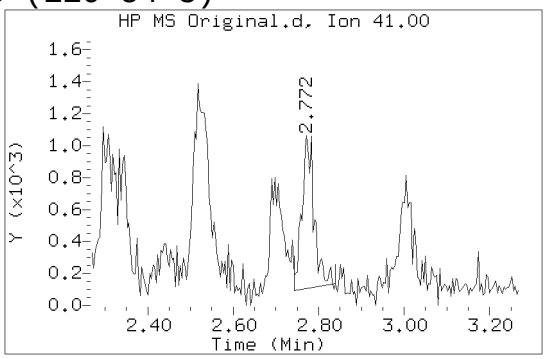
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

n-Hexane (110-54-3)

Reason Code:

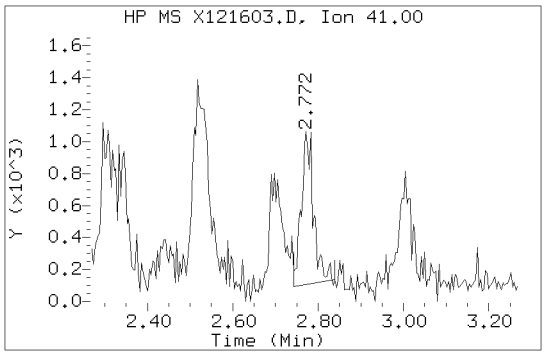
BEFORE

MASS
41
AREA
1918
HEIGHT
958
27-Dec-2022
16:03
linh
pham



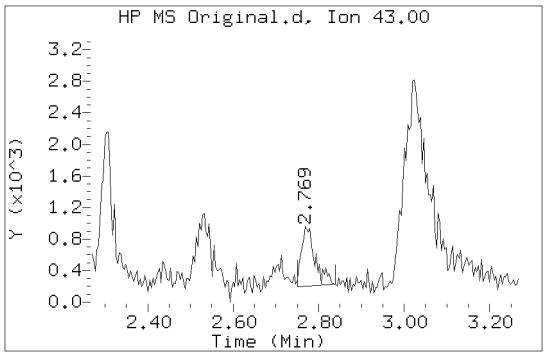
AFTER

MASS
41
AREA
1918
HEIGHT
958
27-Dec-2022
16:07
linh
pham



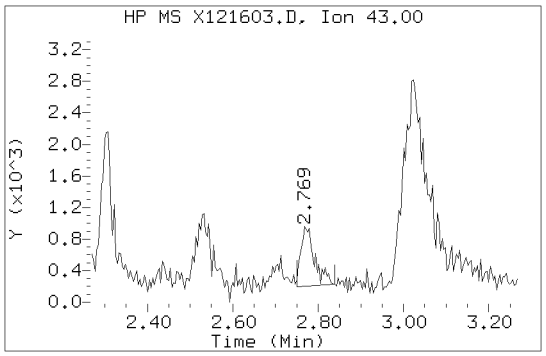
BEFORE

MASS
43
AREA
1726
HEIGHT
759
27-Dec-2022
16:03
linh
pham



AFTER

MASS
43
AREA
1726
HEIGHT
759
27-Dec-2022
16:07
linh
pham

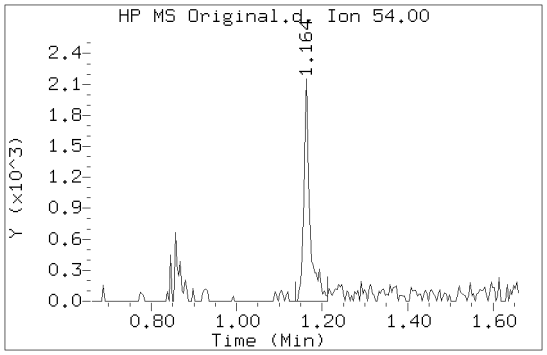


1,3-Butadiene (106-99-0)

Reason Code:

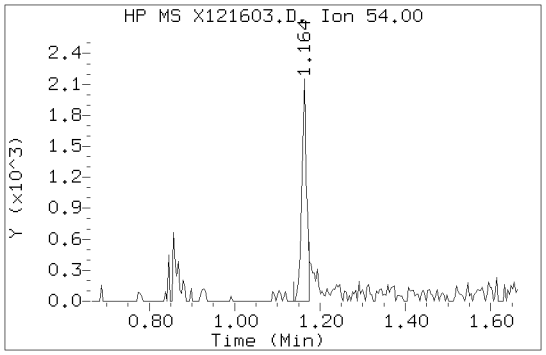
BEFORE

MASS
54
AREA
2206
HEIGHT
2153
27-Dec-2022
16:03
linh
pham



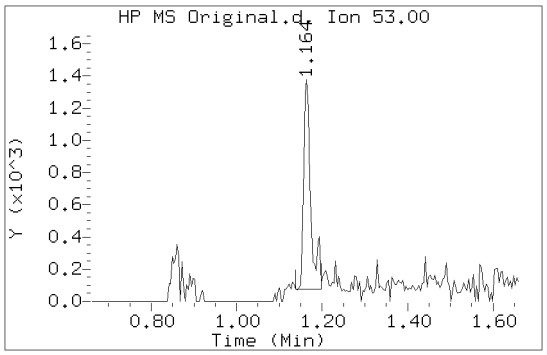
AFTER

MASS
54
AREA
1793
HEIGHT
2153
27-Dec-2022
16:07
linh
pham



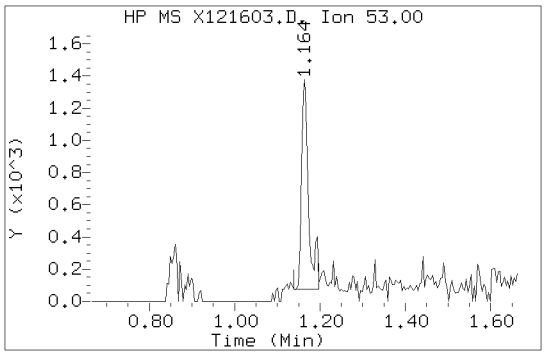
BEFORE

MASS
53
AREA
1535
HEIGHT
1301
27-Dec-2022
16:03
linh
pham



AFTER

MASS
53
AREA
1535
HEIGHT
1301
27-Dec-2022
16:07
linh
pham

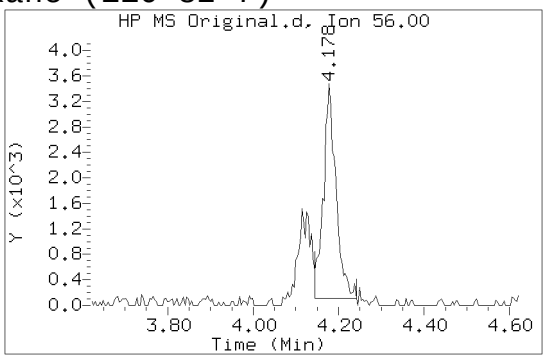


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

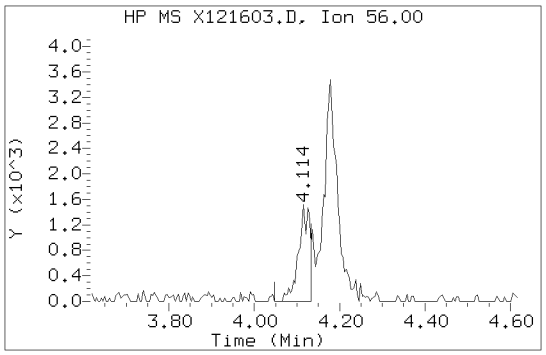
Cyclohexane (110-82-7)

Reason Code:

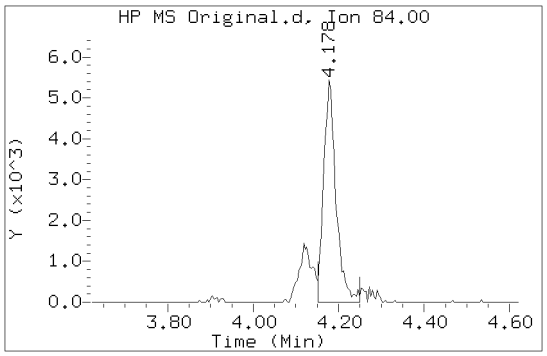
BEFORE
MASS
56
AREA
6884
HEIGHT
3363
27-Dec-2022
16:03
linh
pham



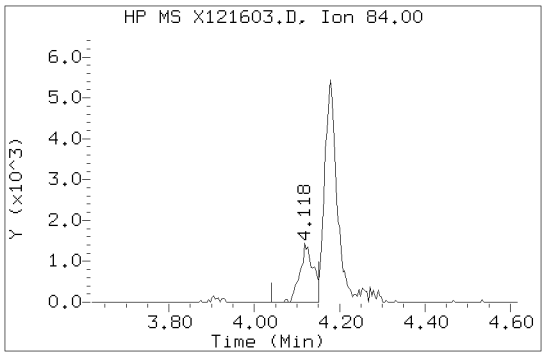
AFTER
MASS
56
AREA
2803
HEIGHT
1514
27-Dec-2022
16:07
linh
pham



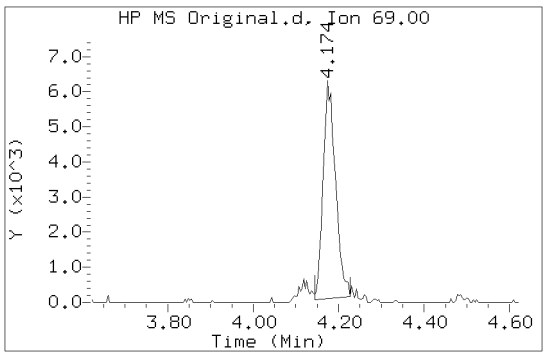
BEFORE
MASS
84
AREA
10951
HEIGHT
5440
27-Dec-2022
16:03
linh
pham



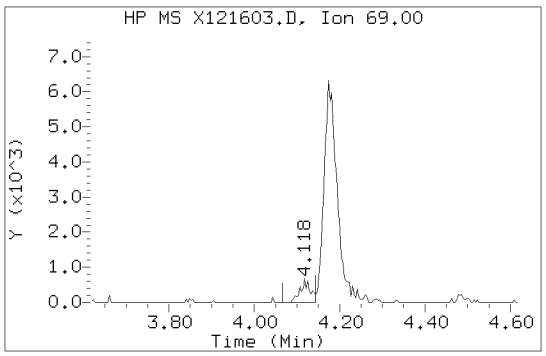
AFTER
MASS
84
AREA
3197
HEIGHT
1443
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
69
AREA
12449
HEIGHT
6206
27-Dec-2022
16:03
linh
pham



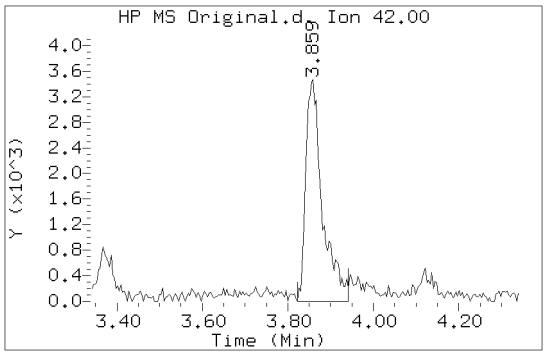
AFTER
MASS
69
AREA
1108
HEIGHT
681
27-Dec-2022
16:07
linh
pham



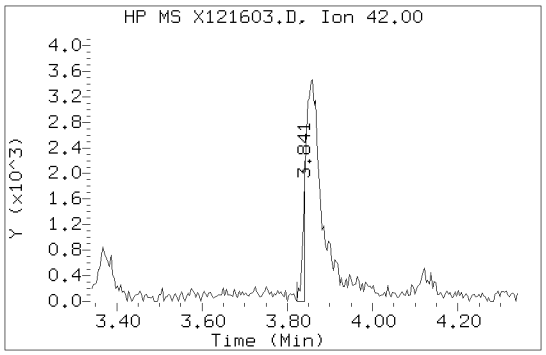
Tetrahydrofuran (109-99-9)

Reason Code:

BEFORE
MASS
42
AREA
9468
HEIGHT
3467
27-Dec-2022
16:03
linh
pham



AFTER
MASS
42
AREA
900
HEIGHT
1891
27-Dec-2022
16:07
linh
pham

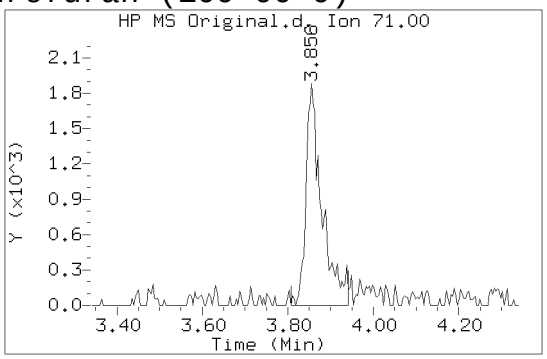


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Tetrahydrofuran (109-99-9)

BEFORE

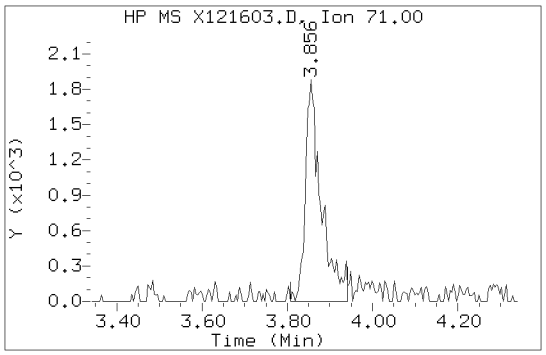
MASS
71
AREA
4885
HEIGHT
1881
27-Dec-2022
16:03
linh
pham



Reason Code:

AFTER

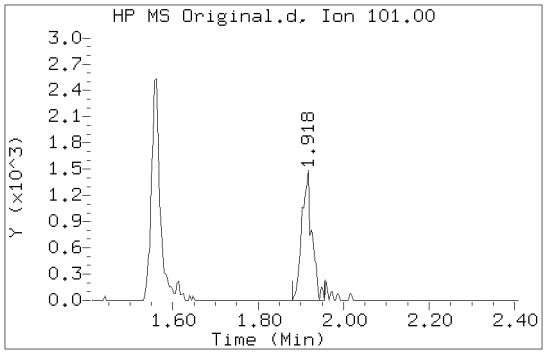
MASS
71
AREA
4885
HEIGHT
1881
27-Dec-2022
16:07
linh
pham



Freon TF (76-13-1)

BEFORE

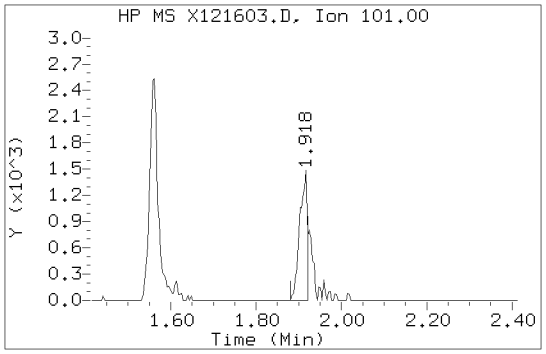
MASS
101
AREA
2478
HEIGHT
1484
27-Dec-2022
16:03
linh
pham



Reason Code:

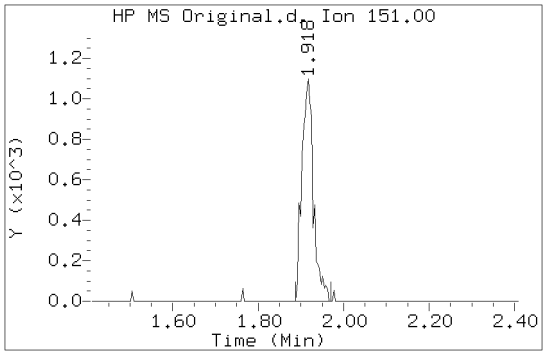
AFTER

MASS
101
AREA
1851
HEIGHT
1484
27-Dec-2022
16:07
linh
pham



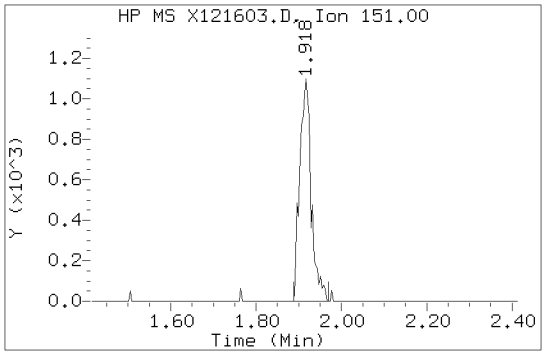
BEFORE

MASS
151
AREA
2095
HEIGHT
1098
27-Dec-2022
16:03
linh
pham



AFTER

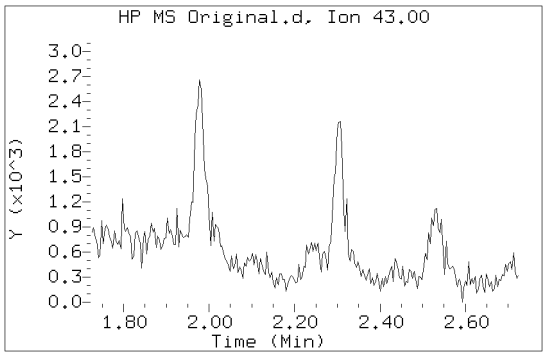
MASS
151
AREA
2095
HEIGHT
1098
27-Dec-2022
16:07
linh
pham



Methyl Acetate (79-20-9)

BEFORE

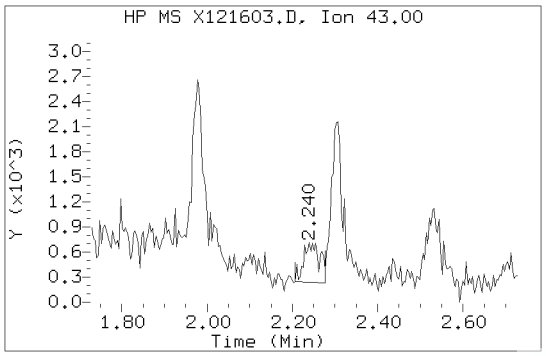
MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

AFTER

MASS
43
AREA
1269
HEIGHT
477
27-Dec-2022
16:07
linh
pham



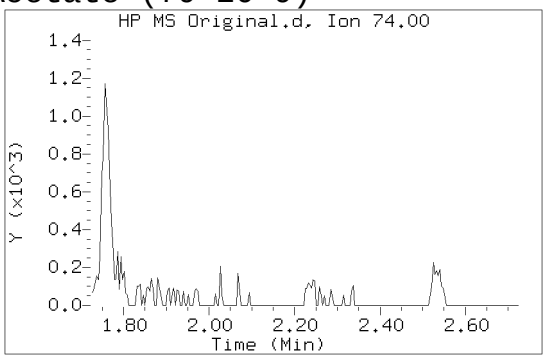
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Methyl Acetate (79-20-9)

Reason Code:

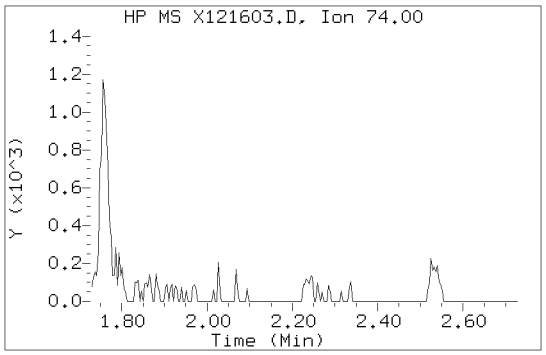
BEFORE

MASS
74
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
74
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

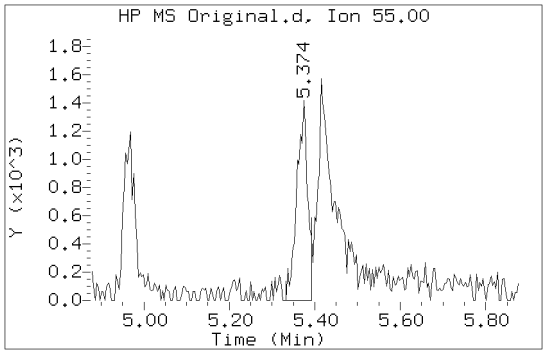


Methylcyclohexane (108-87-2)

Reason Code:

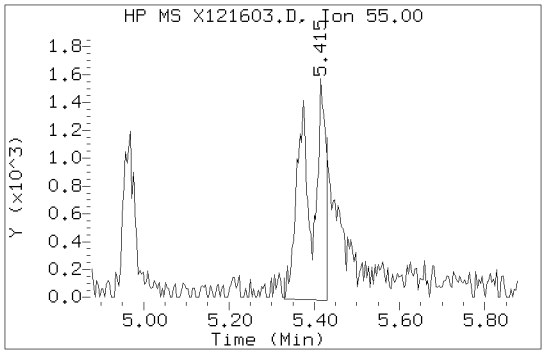
BEFORE

MASS
55
AREA
2505
HEIGHT
1416
27-Dec-2022
16:03
linh
pham



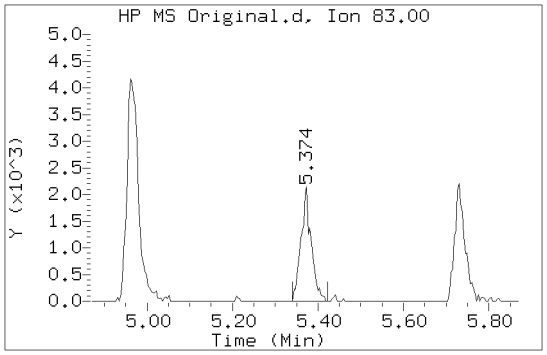
AFTER

MASS
55
AREA
4781
HEIGHT
1590
27-Dec-2022
16:07
linh
pham



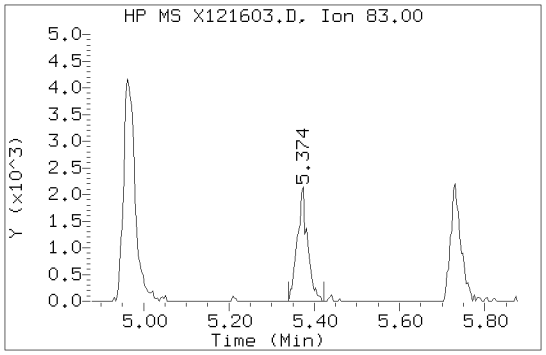
BEFORE

MASS
83
AREA
3627
HEIGHT
2141
27-Dec-2022
16:03
linh
pham



AFTER

MASS
83
AREA
3627
HEIGHT
2141
27-Dec-2022
16:07
linh
pham

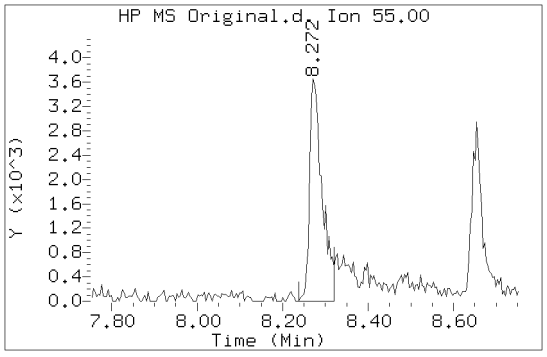


Butyl acrylate (141-32-2)

Reason Code:

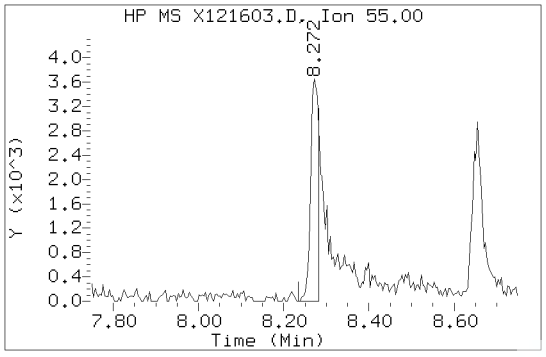
BEFORE

MASS
55
AREA
7480
HEIGHT
3653
27-Dec-2022
16:03
linh
pham



AFTER

MASS
55
AREA
4718
HEIGHT
3653
27-Dec-2022
16:07
linh
pham



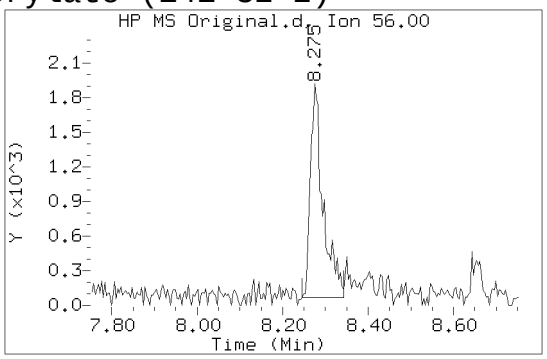
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Butyl acrylate (141-32-2)

Reason Code:

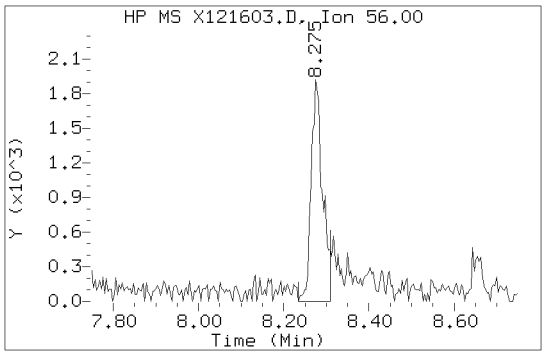
BEFORE

MASS
56
AREA
3795
HEIGHT
1858
27-Dec-2022
16:03
linh
pham



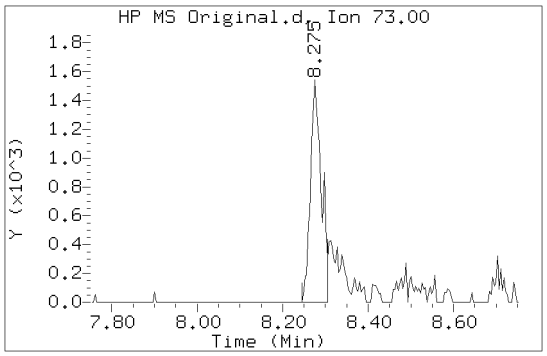
AFTER

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AREA
3566
HEIGHT
1923
27-Dec-2022
16:07
linh
pham



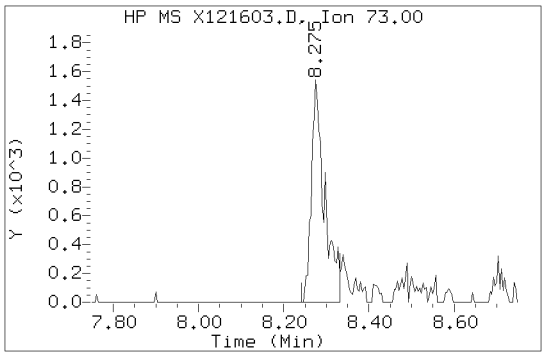
BEFORE

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73
AREA
2742
HEIGHT
1542
27-Dec-2022
16:03
linh
pham



AFTER

MASS
73
AREA
3276
HEIGHT
1542
27-Dec-2022
16:07
linh
pham

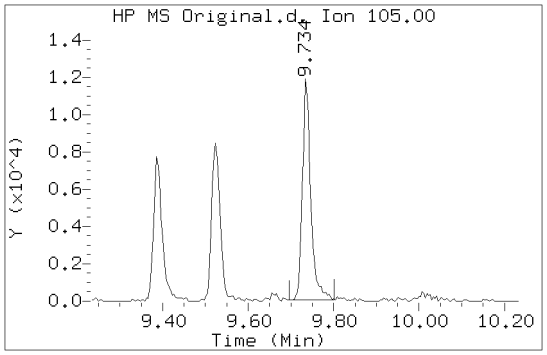


1,2,3-Trimethylbenzene (526-73-8)

Reason Code:

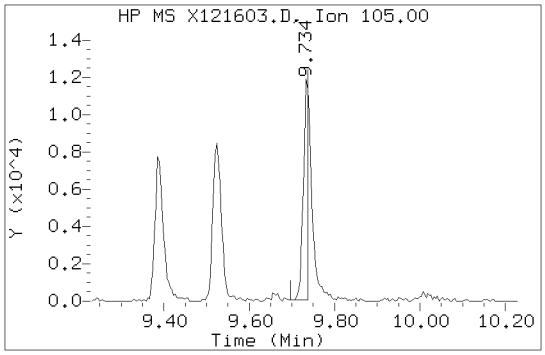
BEFORE

MASS
105
AREA
16642
HEIGHT
11860
27-Dec-2022
16:03
linh
pham



AFTER

MASS
105
AREA
9626
HEIGHT
11860
27-Dec-2022
16:07
linh
pham

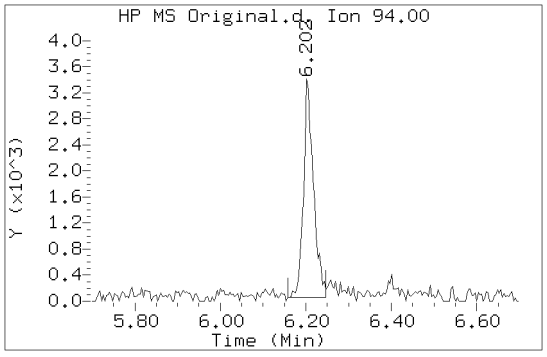


Dimethyl Disulfide (624-92-0)

Reason Code:

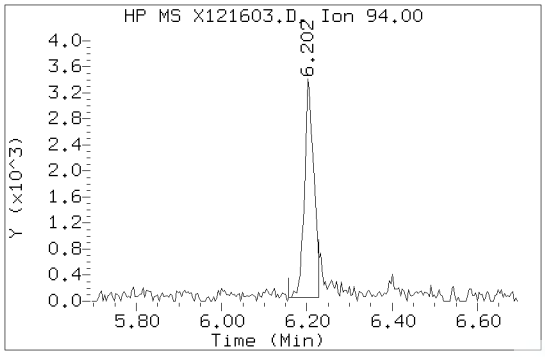
BEFORE

MASS
94
AREA
5523
HEIGHT
3352
27-Dec-2022
16:03
linh
pham



AFTER

MASS
94
AREA
5153
HEIGHT
3352
27-Dec-2022
16:07
linh
pham



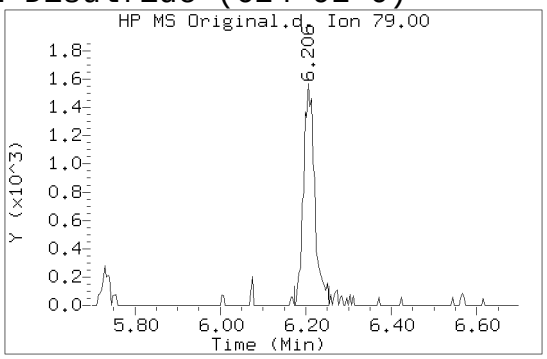
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Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Dimethyl Disulfide (624-92-0)

Reason Code:

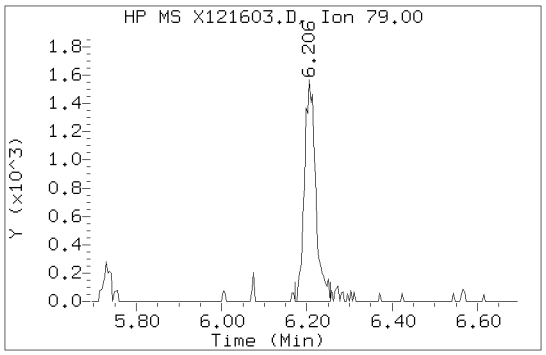
BEFORE

MASS
79
AREA
2905
HEIGHT
1568
27-Dec-2022
16:03
linh
pham



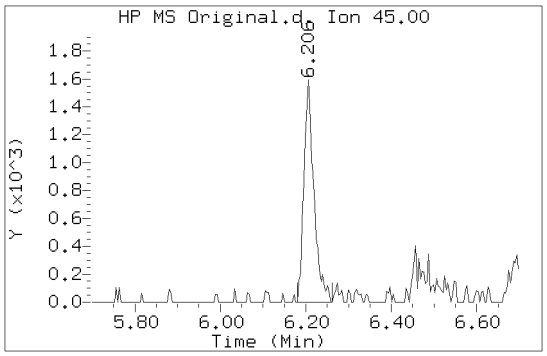
AFTER

MASS
79
AREA
2905
HEIGHT
1568
27-Dec-2022
16:07
linh
pham



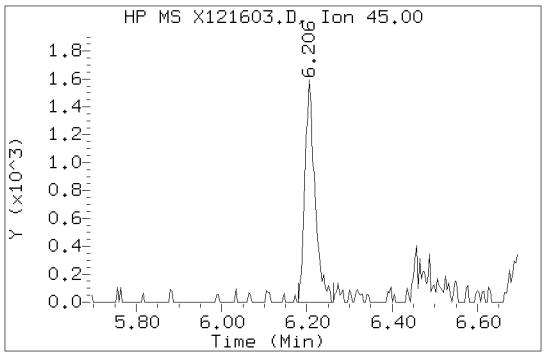
BEFORE

MASS
45
AREA
2647
HEIGHT
1593
27-Dec-2022
16:03
linh
pham



AFTER

MASS
45
AREA
2647
HEIGHT
1593
27-Dec-2022
16:07
linh
pham

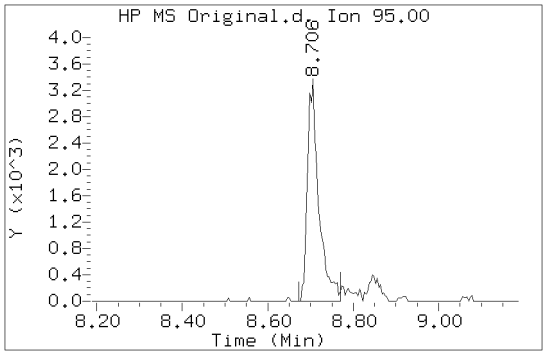


4-Bromofluorobenzene (460-00-4)

Reason Code:

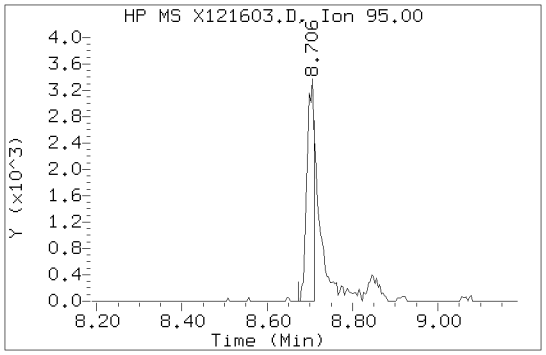
BEFORE

MASS
95
AREA
6240
HEIGHT
3372
27-Dec-2022
16:03
linh
pham



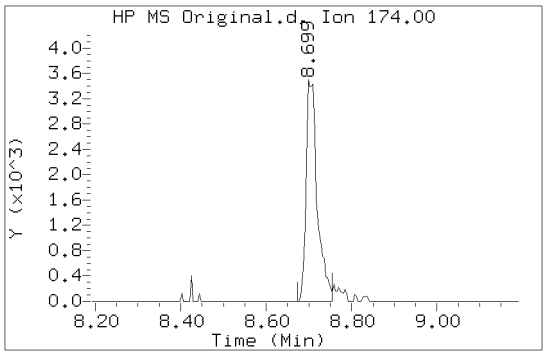
AFTER

MASS
95
AREA
3870
HEIGHT
3372
27-Dec-2022
16:07
linh
pham



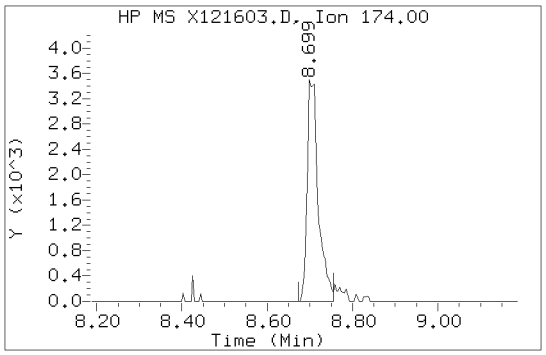
BEFORE

MASS
174
AREA
6370
HEIGHT
3502
27-Dec-2022
16:03
linh
pham



AFTER

MASS
174
AREA
6370
HEIGHT
3502
27-Dec-2022
16:07
linh
pham



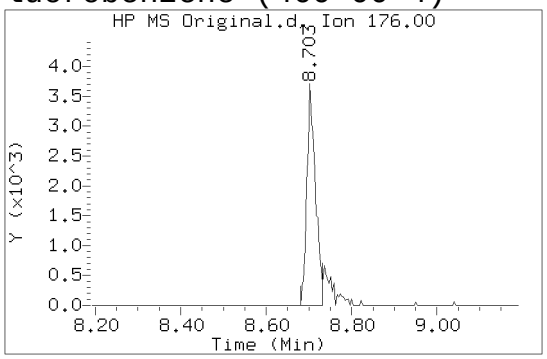
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Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

4-Bromofluorobenzene (460-00-4)

Reason Code:

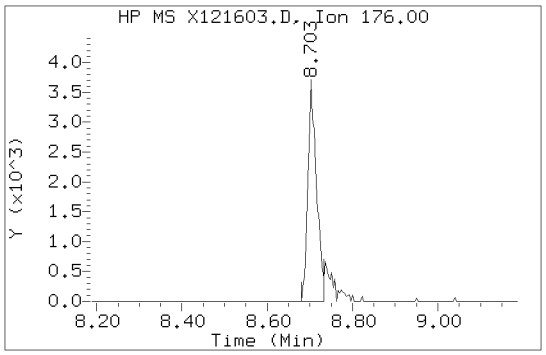
BEFORE

MASS
176
AREA
5204
HEIGHT
3711
27-Dec-2022
16:03
linh
pham



AFTER

MASS
176
AREA
5204
HEIGHT
3711
27-Dec-2022
16:07
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
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Inj Date : 16-DEC-2022 12:41
Operator : PC Inst ID: voa6.i
Smp Info : VSTD001;VSTD001;1;3;
Misc Info : V6;WATER;0;1;
Comment   :
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Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 12:20 Cal File: X121603.D
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	450308	50.0000	
135 1,4-Dioxane	88	5.610	5.610	(1.343)	820	20.0000	19.92(M)
140 1,3-Butadiene	54	1.160	1.160	(0.278)	3432	1.00000	1.11
25 Methacrylonitrile	41	3.852	3.852	(0.922)	3285	1.00000	1.03(M)
12 Isobutyl Alcohol	43	4.695	4.695	(1.124)	9436	20.0000	18.62(M)
13 Acetonitrile	39	2.198	2.198	(0.526)	4183	10.0000	10.20
14 Allyl Chloride	41	2.202	2.202	(0.527)	8574	1.00000	1.09
4 Propionitrile	54	3.687	3.687	(0.882)	4742	10.0000	10.32(M)
136 n-Hexane	57	2.776	2.776	(0.664)	2343	1.00000	0.72
72 trans-1,4-Dichloro-2-butene	53	8.920	8.920	(1.163)	1196	1.00000	0.85(M)
194 Acetaldehyde	44	1.212	1.212	(0.290)	3384	4.00000	(M)
23 Chloroprene	53	1.767	1.767	(0.423)	1686	1.00000	1.10(M)
145 alpha-Methylstyrene	118	9.272	9.272	(0.960)	6032	1.00000	0.77
200 Dimethyl Disulfide	94	6.206	6.206	(0.809)	8295	1.00000	0.94
139 Diethyl ether	59	1.760	1.760	(0.421)	2983	1.00000	0.99
130 Ethyl Acetate	43	3.675	3.675	(0.880)	3144	1.00000	0.89(M)
40 Methyl Methacrylate	41	5.628	5.628	(1.347)	3145	1.00000	1.02
49 Ethyl Methacrylate	69	6.727	6.727	(1.355)	3303	1.00000	1.02(M)
132 n-Butanol	56	5.239	5.239	(1.254)	1171	20.0000	60.69(M)
142 Tetrahydrofuran	42	3.844	3.844	(0.920)	1361	2.00000	(M)

150	Allyl alcohol	57	2.776	2.776 (0.664)	2343	20.0000	13.39
166	1,2,3-Trimethylbenzene	105	9.733	9.733 (1.007)	18347	1.00000	1.08

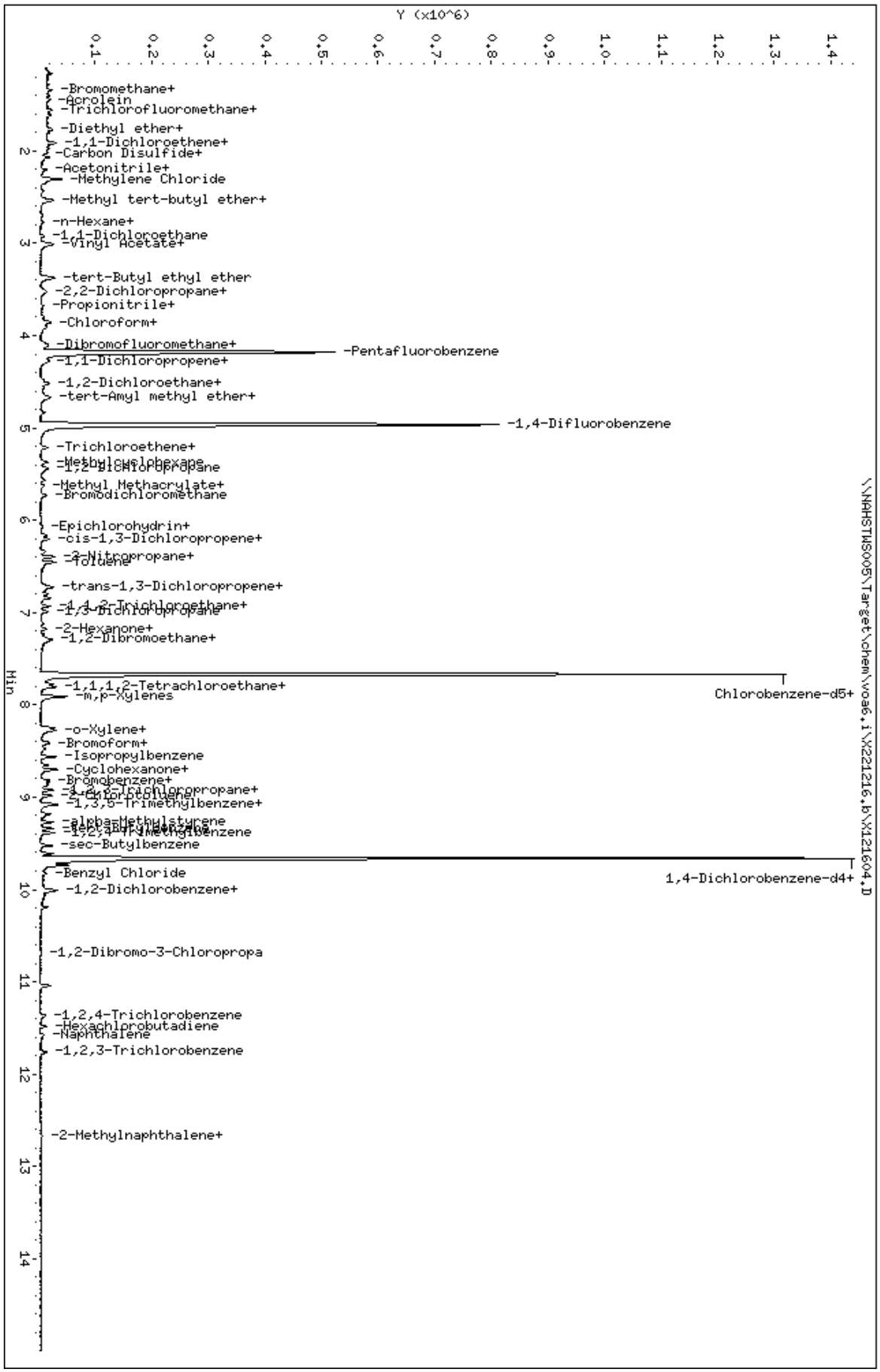
							AMOUNTS	
		QUANT SIG					CAL-AMT	ON-COL
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
	131 Methyl Acrylate	55	3.743	3.743	(0.896)	3084	1.00000	1.00(M)
	162 Butyl acrylate	55	8.271	8.271	(1.078)	7647	1.00000	0.90
	2 Dichlorodifluoromethane	85	0.969	0.969	(0.232)	2911	1.00000	1.30
	3 Chloromethane	50	1.078	1.078	(0.258)	3670	1.00000	3.07
	5 Vinyl Chloride	62	1.141	1.141	(0.273)	3645	1.00000	0.92
	6 Bromomethane	94	1.340	1.340	(0.321)	3293	1.00000	2.83
	7 Chloroethane	64	1.400	1.400	(0.335)	2516	1.00000	0.91(M)
	8 Trichlorofluoromethane	101	1.554	1.554	(0.372)	4906	1.00000	0.89
	9 Acrolein	56	1.452	1.452	(0.348)	761	2.00000	5.22(M)
	10 Acetone	43	1.977	1.977	(0.473)	4787	2.00000	3.75(M)
	11 1,1-Dichloroethene	96	1.913	1.913	(0.458)	3238	1.00000	0.94
	15 Iodomethane	142	2.026	2.026	(0.485)	3865	2.00000	4.18(TM)
	16 Acrylonitrile	53	2.554	2.554	(0.612)	2258	2.00000	1.94(M)
	17 Methylene Chloride	84	2.300	2.300	(0.550)	5355	1.00000	1.14(M)
	18 Methyl tert-butyl ether	73	2.536	2.536	(0.607)	12521	1.00000	1.11
	19 Carbon Disulfide	76	2.067	2.067	(0.495)	18122	2.00000	2.02
	20 trans-1,2-Dichloroethene	96	2.532	2.532	(0.606)	3821	1.00000	0.99
	21 Vinyl Acetate	43	3.012	3.012	(0.721)	17842	2.00000	1.81
	22 1,1-Dichloroethane	63	2.922	2.922	(0.699)	7218	1.00000	1.07
	24 2-Butanone	43	3.619	3.619	(0.866)	2498	2.00000	4.83(M)
	26 2,2-Dichloropropane	77	3.514	3.514	(0.841)	5896	1.00000	1.03
	27 cis-1,2-Dichloroethene	96	3.540	3.540	(0.847)	4469	1.00000	0.96
	28 Chloroform	83	3.908	3.908	(0.935)	7768	1.00000	1.03
	29 Bromochloromethane	128	3.803	3.803	(0.910)	2689	1.00000	1.05
$	30 Dibromofluoromethane	113	4.103	4.103	(0.982)	4769	1.00000	0.94
	31 1,1,1-Trichloroethane	97	4.088	4.088	(0.978)	5914	1.00000	0.99
	32 1,1-Dichloropropene	75	4.286	4.286	(0.863)	4698	1.00000	0.96
	33 1,2-Dichloroethane	62	4.564	4.564	(0.919)	5568	1.00000	0.99
	34 Carbon Tetrachloride	117	4.271	4.271	(0.860)	6221	1.00000	1.19
$	35 1,2-Dichloroethane-d4	65	4.485	4.485	(1.074)	5559	1.00000	1.48
*	36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	685937	50.0000	
	37 Benzene	78	4.515	4.515	(0.909)	16367	1.00000	0.99
	38 Trichloroethene	130	5.216	5.216	(1.051)	4352	1.00000	0.93
	39 Bromodichloromethane	83	5.730	5.730	(1.154)	6296	1.00000	1.02(M)
	41 2-Chloroethylvinyl ether	63	6.071	6.071	(1.223)	3202	2.00000	1.83(M)
	42 1,2-Dichloropropane	63	5.445	5.445	(1.097)	4604	1.00000	1.05(M)
	44 Dibromomethane	93	5.557	5.557	(1.119)	2906	1.00000	0.98
	45 4-Methyl-2-Pentanone	43	6.341	6.341	(0.827)	6859	2.00000	1.97
	46 cis-1,3-Dichloropropene	75	6.168	6.168	(1.242)	6537	1.00000	0.90
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	649074	50.0000	
$	48 Toluene-d8	98	6.401	6.401	(0.834)	17067	1.00000	1.06
	50 Toluene	91	6.457	6.457	(0.842)	17914	1.00000	0.99
	51 trans-1,3-Dichloropropene	75	6.693	6.693	(1.348)	5418	1.00000	0.90
	52 2-Hexanone	43	7.109	7.109	(0.927)	4520	2.00000	1.91
	53 1,1,2-Trichloroethane	83	6.843	6.843	(0.892)	3499	1.00000	0.97
	54 1,3-Dichloropropane	76	6.989	6.989	(0.911)	7216	1.00000	1.01
	55 Dibromochloromethane	129	7.177	7.177	(0.936)	5024	1.00000	0.96
	56 Tetrachloroethene	164	6.933	6.933	(0.904)	3331	1.00000	0.89
	57 1,2-Dibromoethane	107	7.270	7.270	(0.948)	4350	1.00000	0.96
	58 1-Chlorohexane	55	7.705	7.705	(1.552)	3155	1.00000	0.95(MH)
	59 Chlorobenzene	112	7.698	7.698	(1.003)	12555	1.00000	0.98
	60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	4485	1.00000	0.94

61 Ethylbenzene	106	7.806	7.806 (1.018)	5698	1.00000	0.95
62 m,p-Xylenes	106	7.911	7.911 (1.031)	14464	2.00000	1.87

			QUANT SIG					AMOUNTS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)
	63	o-Xylene	106	8.249	8.249	(1.075)	6670	1.00000	0.87
	64	Styrene	104	8.282	8.282	(1.080)	10384	1.00000	0.81
	66	Bromoform	173	8.417	8.417	(1.097)	3274	1.00000	0.90(T)
	67	Isopropylbenzene	105	8.564	8.564	(1.116)	15163	1.00000	0.87
	68	1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	5934	1.00000	1.05(M)
$	69	4-Bromofluorobenzene	95	8.702	8.702	(1.134)	7790	1.00000	1.36(M)
*	70	1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	351251	50.0000	
	71	1,2,3-Trichloropropane	75	8.871	8.871	(0.918)	3978	1.00000	1.01
	73	n-Propylbenzene	91	8.923	8.923	(0.924)	15006	1.00000	0.77
	74	Bromobenzene	156	8.818	8.818	(0.913)	5554	1.00000	0.96
	75	1,3,5-Trimethylbenzene	105	9.073	9.073	(0.939)	11820	1.00000	0.82
	76	2-Chlorotoluene	91	8.980	8.980	(0.929)	12470	1.00000	0.97
	77	4-Chlorotoluene	91	9.085	9.085	(0.940)	12140	1.00000	0.83
	78	tert-Butylbenzene	119	9.340	9.340	(0.967)	9357	1.00000	0.79
	79	1,2,4-Trimethylbenzene	105	9.385	9.385	(0.971)	12988	1.00000	0.85
	81	sec-Butylbenzene	105	9.523	9.523	(0.986)	12395	1.00000	0.79
	82	p-Isopropyltoluene	119	9.651	9.651	(0.999)	10009	1.00000	0.71
	83	1,3-Dichlorobenzene	146	9.609	9.609	(0.995)	8523	1.00000	0.89
	84	1,4-Dichlorobenzene	146	9.681	9.681	(1.002)	9866	1.00000	0.94
	86	Benzyl Chloride	91	9.823	9.823	(1.280)	4632	1.00000	3.12
	87	n-Butylbenzene	91	10.014	10.014	(1.036)	8459	1.00000	2.37(M)
	88	1,2-Dichlorobenzene	146	10.007	10.007	(1.036)	8626	1.00000	0.87
	89	1,2-Dibromo-3-Chloropropane	155	10.689	10.689	(1.106)	778	1.00000	0.95(M)
	90	1,2,4-Trichlorobenzene	180	11.371	11.371	(1.177)	4609	1.00000	0.74
	91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	1928	1.00000	0.65
	92	Naphthalene	128	11.574	11.574	(1.198)	11288	1.00000	0.79(M)
	93	1,2,3-Trichlorobenzene	180	11.754	11.754	(1.216)	4801	1.00000	0.80
M	94	1,2-Dichloroethylene (total)	96				8290	2.00000	
M	95	Xylenes (total)	106				21134	3.00000	
	141	Cyclohexane	56	4.125	4.125	(0.987)	4003	1.00000	2.12(H)
	138	Freon TF	101	1.906	1.906	(0.456)	3356	1.00000	1.01
	147	Methylcyclohexane	55	5.377	5.377	(1.083)	6848	1.00000	0.81(M)
	146	Methyl Acetate	43	2.236	2.236	(0.535)	2127	1.00000	1.04(M)
	148	Tert-Butyl alcohol	59	2.438	2.438	(0.584)	6051	20.0000	19.40(a)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6,i\X221216,b\X121604.D
Date : 16-DEC-2022 12:41
Client ID: VSTD001
Sample Info: VSTD001;VSTD001;1;3;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

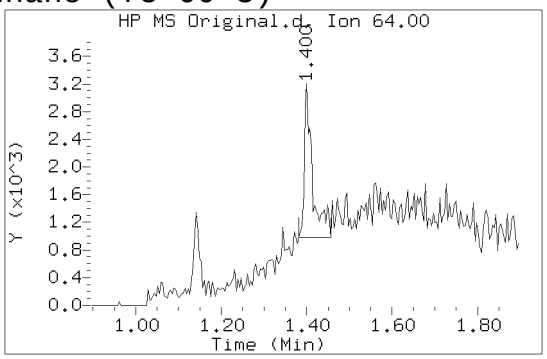
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Chloroethane (75-00-3)

Reason Code:

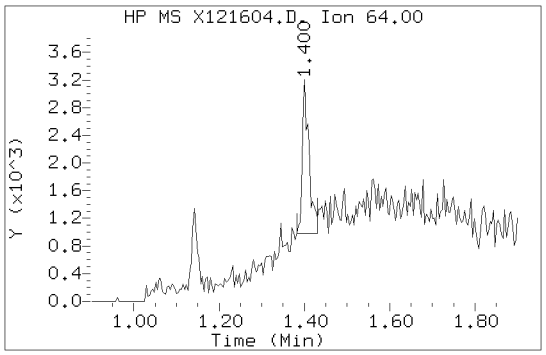
BEFORE

MASS
64
AREA
2984
HEIGHT
2221
27-Dec-2022
16:03
linh
pham



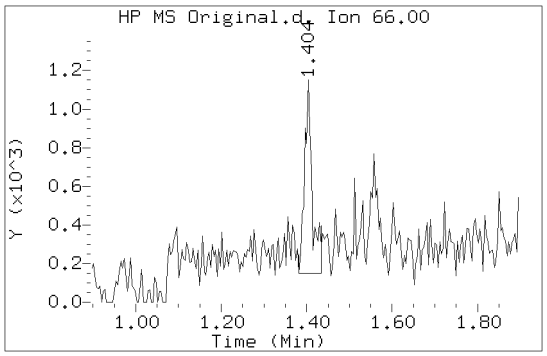
AFTER

MASS
64
AREA
2516
HEIGHT
2221
27-Dec-2022
16:07
linh
pham



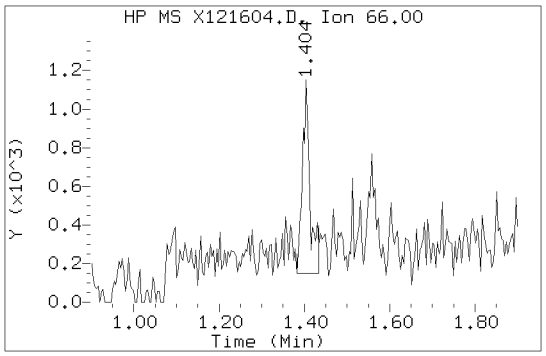
BEFORE

MASS
66
AREA
1262
HEIGHT
1002
27-Dec-2022
16:03
linh
pham



AFTER

MASS
66
AREA
1262
HEIGHT
1002
27-Dec-2022
16:07
linh
pham

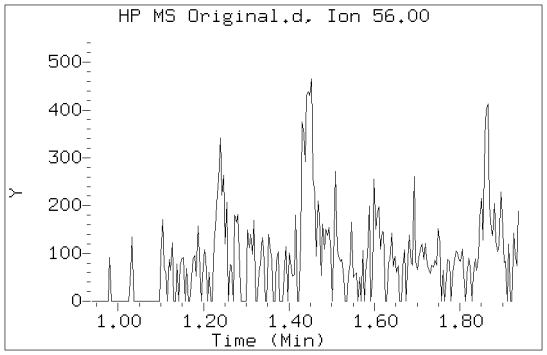


Acrolein (107-02-8)

Reason Code:

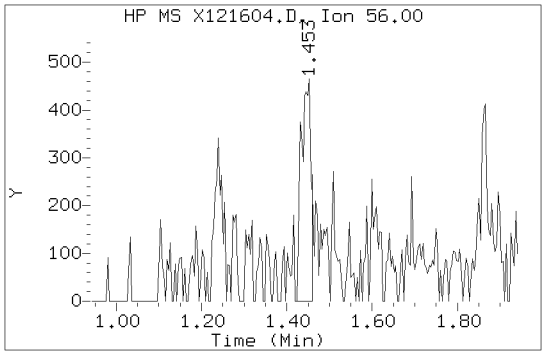
BEFORE

MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



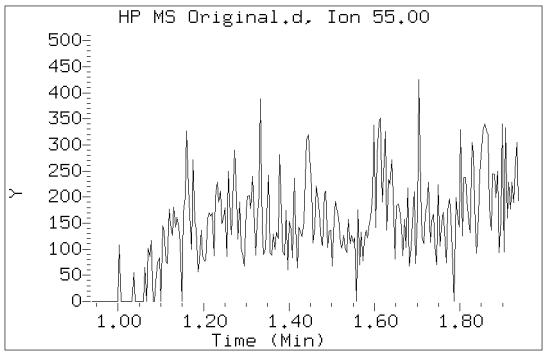
AFTER

MASS
56
AREA
761
HEIGHT
465
27-Dec-2022
16:07
linh
pham



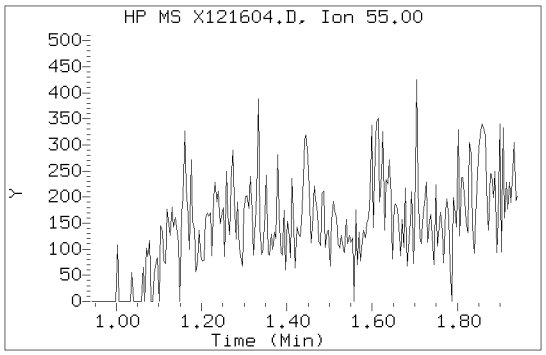
BEFORE

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

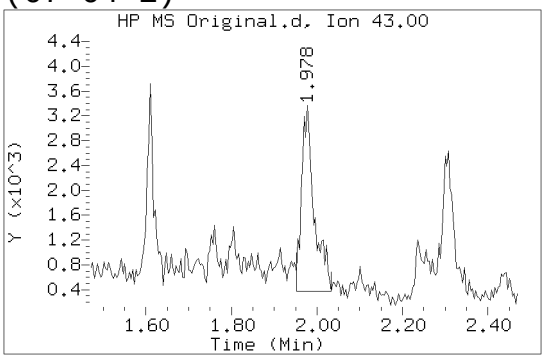


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

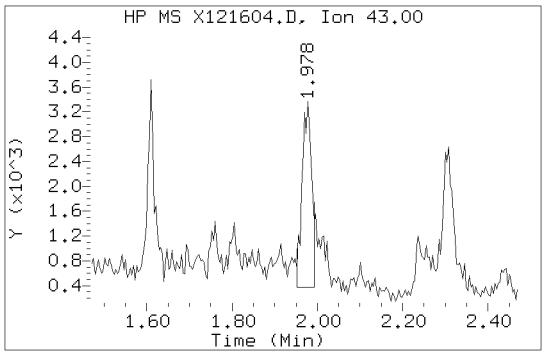
Acetone (67-64-1)

Reason Code:

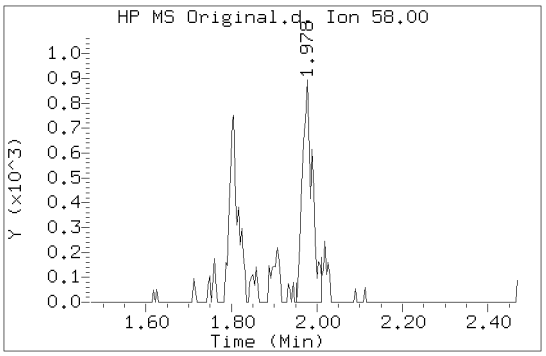
BEFORE
MASS
43
AREA
6265
HEIGHT
2993
27-Dec-2022
16:03
linh
pham



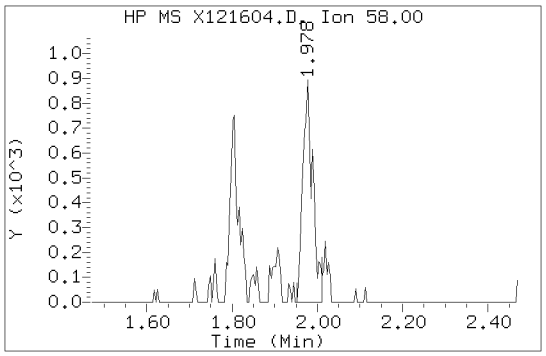
AFTER
MASS
43
AREA
4787
HEIGHT
2993
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
58
AREA
1474
HEIGHT
894
27-Dec-2022
16:03
linh
pham



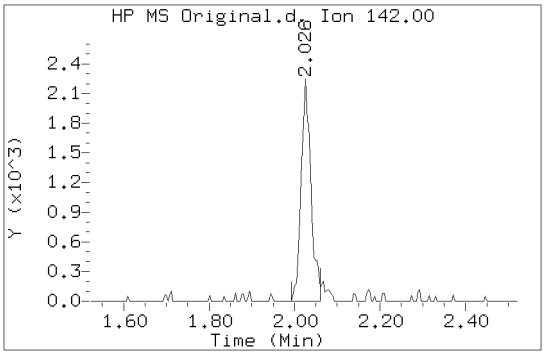
AFTER
MASS
58
AREA
1474
HEIGHT
894
27-Dec-2022
16:07
linh
pham



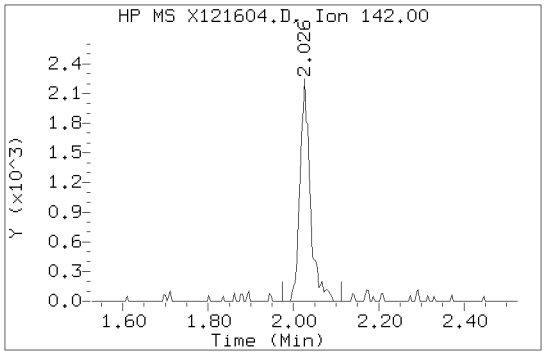
Iodomethane (74-88-4)

Reason Code:

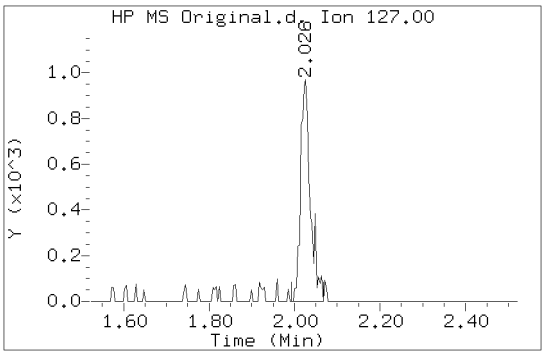
BEFORE
MASS
142
AREA
3661
HEIGHT
2248
27-Dec-2022
16:03
linh
pham



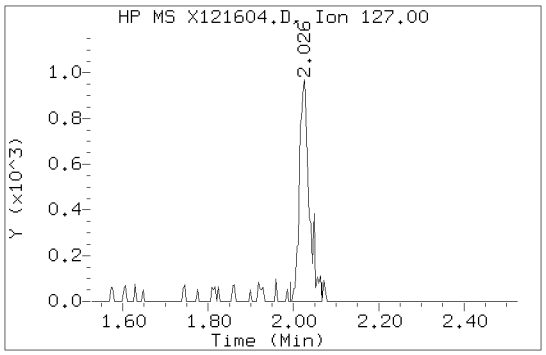
AFTER
MASS
142
AREA
3865
HEIGHT
2248
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
127
AREA
1585
HEIGHT
970
27-Dec-2022
16:03
linh
pham



AFTER
MASS
127
AREA
1585
HEIGHT
970
27-Dec-2022
16:07
linh
pham



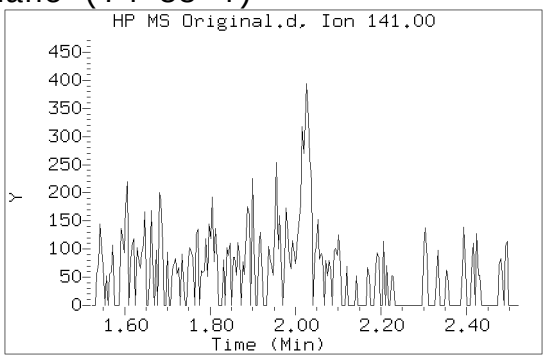
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Iodomethane (74-88-4)

Reason Code:

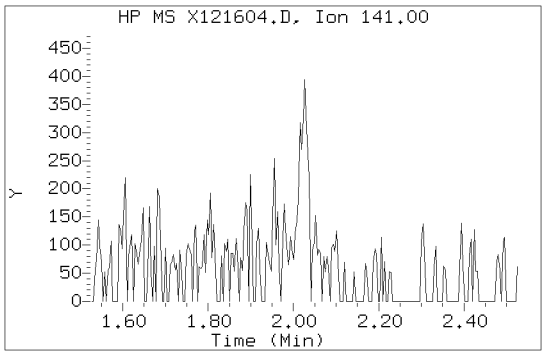
BEFORE

MASS
141
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
141
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

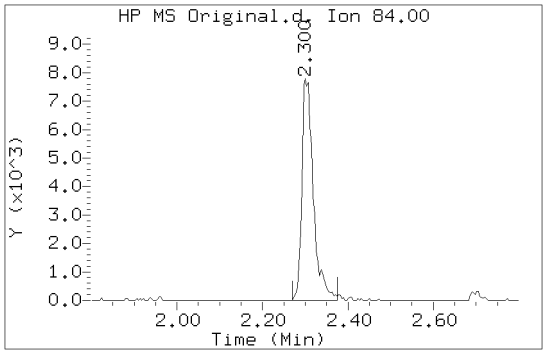


Methylene Chloride (75-09-2)

Reason Code:

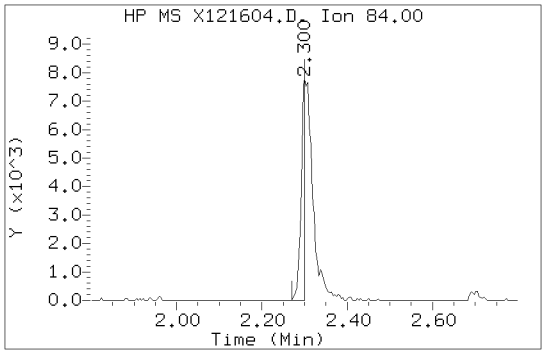
BEFORE

MASS
84
AREA
14864
HEIGHT
7788
27-Dec-2022
16:03
linh
pham



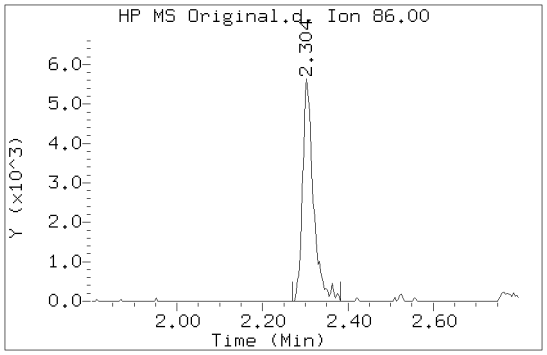
AFTER

MASS
84
AREA
5355
HEIGHT
7788
27-Dec-2022
16:07
linh
pham



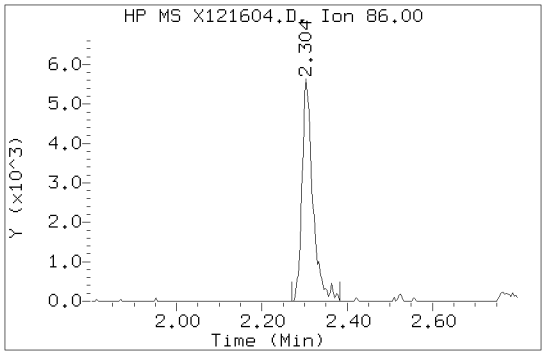
BEFORE

MASS
86
AREA
10161
HEIGHT
5637
27-Dec-2022
16:03
linh
pham



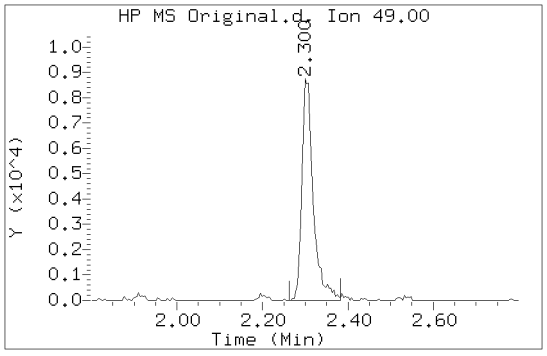
AFTER

MASS
86
AREA
10161
HEIGHT
5637
27-Dec-2022
16:07
linh
pham



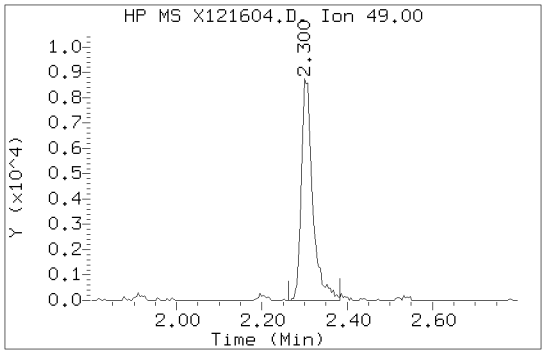
BEFORE

MASS
49
AREA
16641
HEIGHT
8752
27-Dec-2022
16:03
linh
pham



AFTER

MASS
49
AREA
16641
HEIGHT
8752
27-Dec-2022
16:07
linh
pham



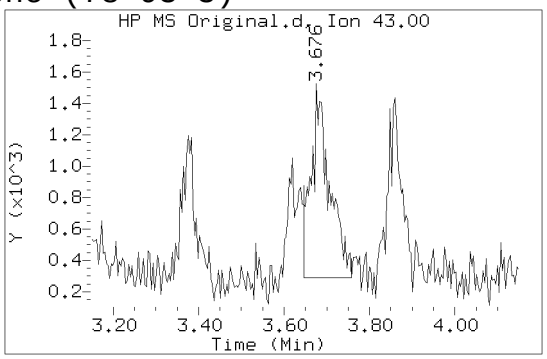
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

2-Butanone (78-93-3)

Reason Code:

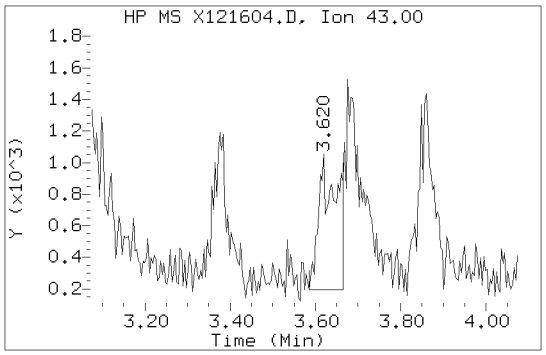
BEFORE

MASS
43
AREA
3758
HEIGHT
1236
27-Dec-2022
16:03
linh
pham



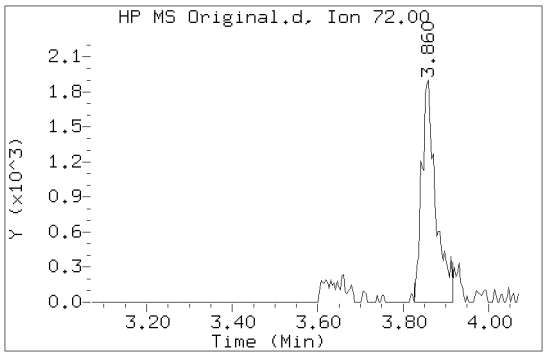
AFTER

MASS
43
AREA
2498
HEIGHT
859
27-Dec-2022
16:07
linh
pham



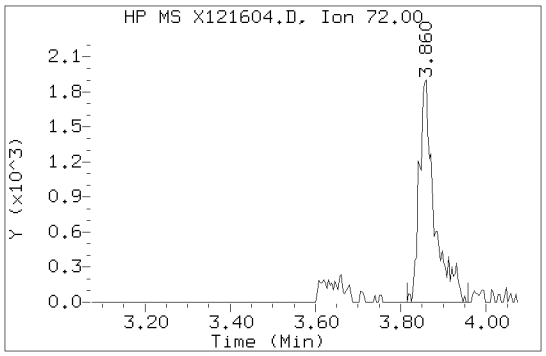
BEFORE

MASS
72
AREA
4320
HEIGHT
1902
27-Dec-2022
16:03
linh
pham



AFTER

MASS
72
AREA
4690
HEIGHT
1902
27-Dec-2022
16:07
linh
pham

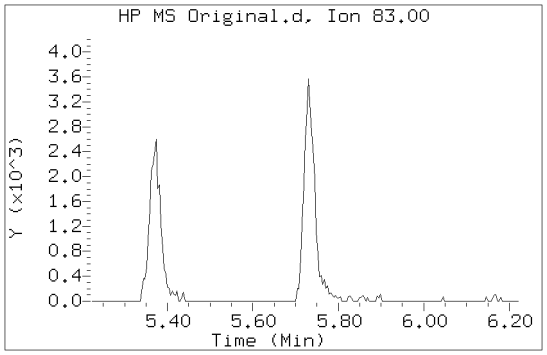


Bromodichloromethane (75-27-4)

Reason Code:

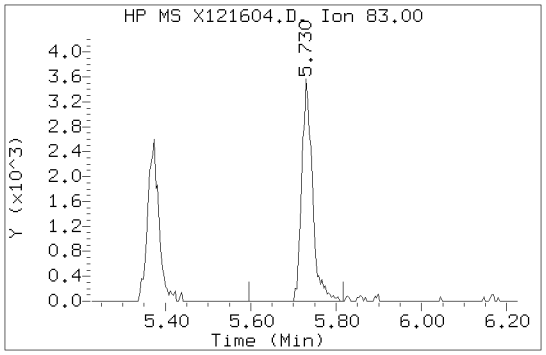
BEFORE

MASS
83
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



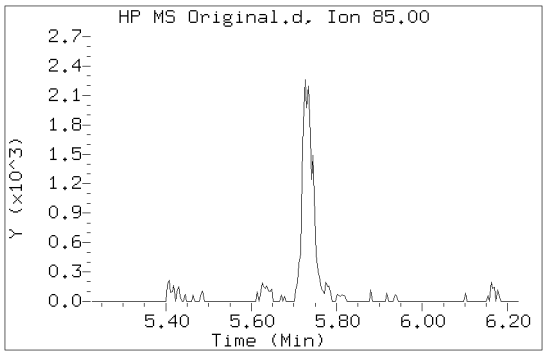
AFTER

MASS
83
AREA
6296
HEIGHT
3568
27-Dec-2022
16:07
linh
pham



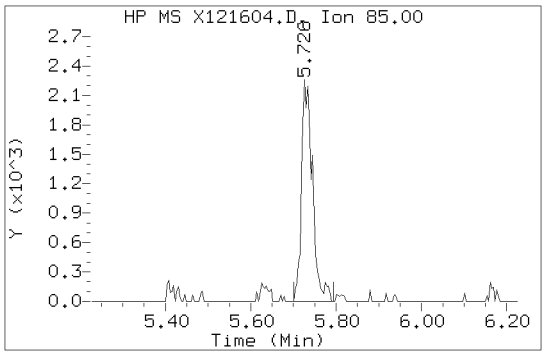
BEFORE

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
85
AREA
4084
HEIGHT
2261
27-Dec-2022
16:07
linh
pham



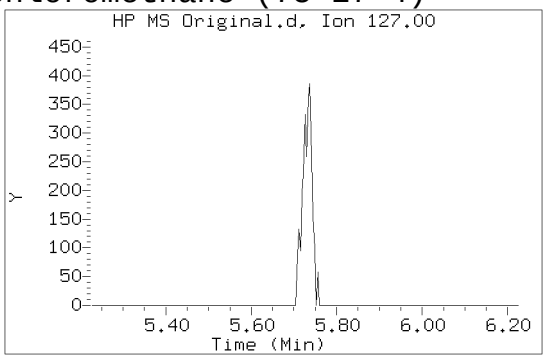
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Bromodichloromethane (75-27-4)

Reason Code:

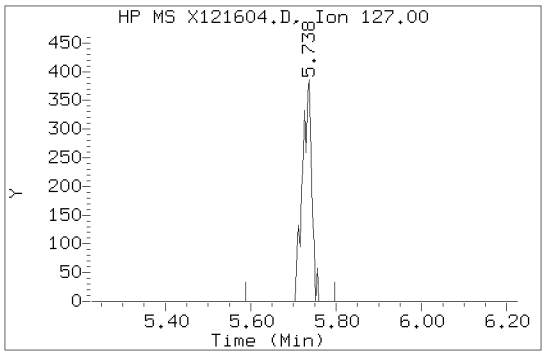
BEFORE

MASS
127
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
127
AREA
595
HEIGHT
386
27-Dec-2022
16:07
linh
pham

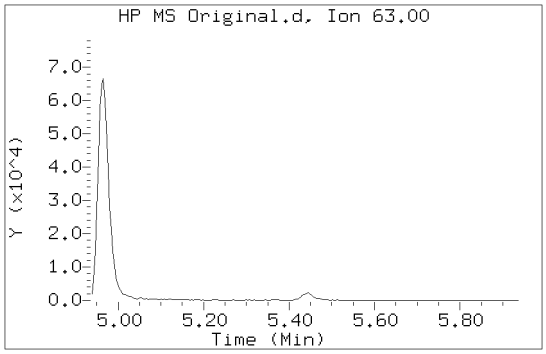


1,2-Dichloropropane (78-87-5)

Reason Code:

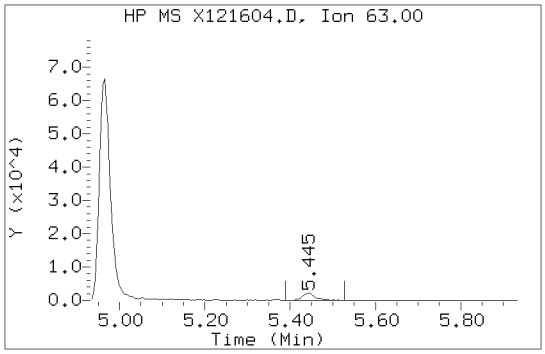
BEFORE

MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



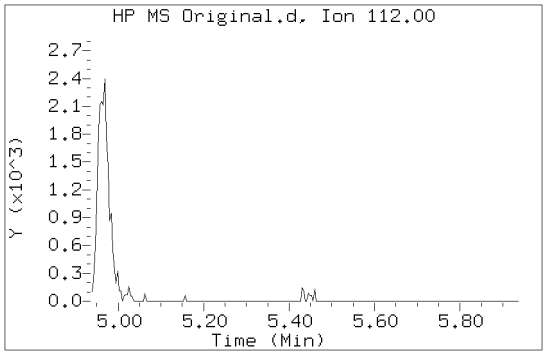
AFTER

MASS
63
AREA
4604
HEIGHT
2381
27-Dec-2022
16:07
linh
pham



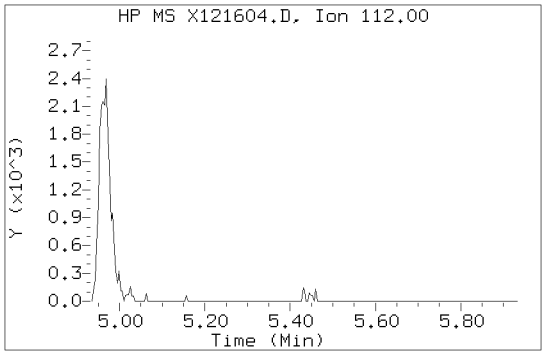
BEFORE

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

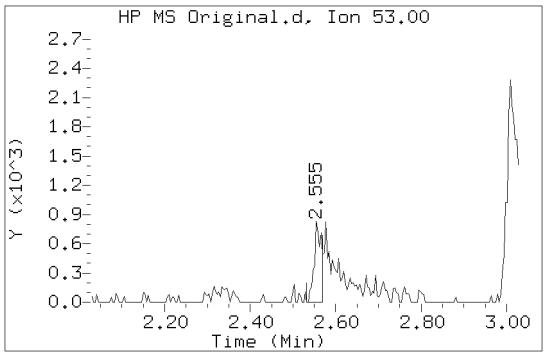


Acrylonitrile (107-13-1)

Reason Code:

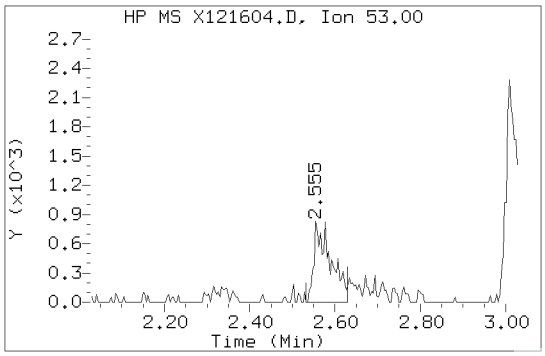
BEFORE

MASS
53
AREA
967
HEIGHT
834
27-Dec-2022
16:03
linh
pham



AFTER

MASS
53
AREA
2258
HEIGHT
834
27-Dec-2022
16:07
linh
pham



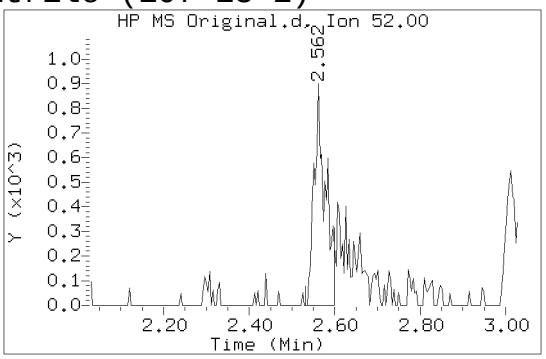
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Acrylonitrile (107-13-1)

Reason Code:

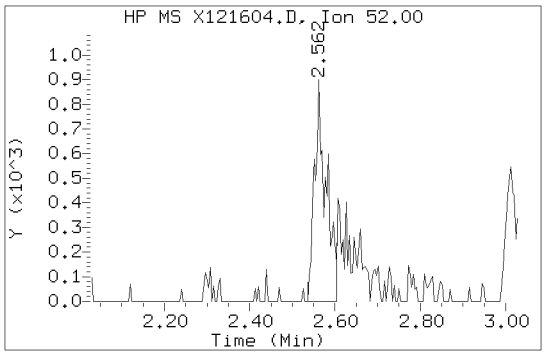
BEFORE

MASS
52
AREA
1657
HEIGHT
900
27-Dec-2022
16:03
linh
pham



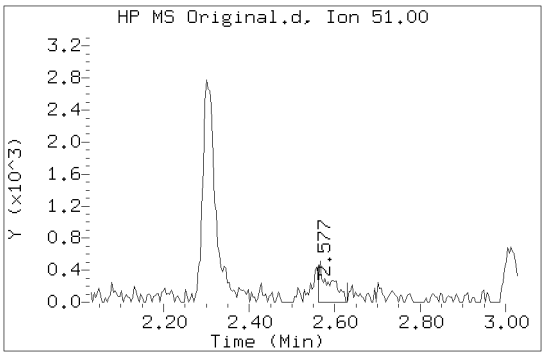
AFTER

MASS
52
AREA
1692
HEIGHT
900
27-Dec-2022
16:07
linh
pham



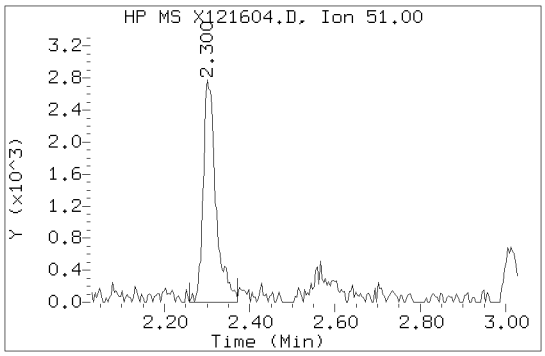
BEFORE

MASS
51
AREA
901
HEIGHT
301
27-Dec-2022
16:03
linh
pham



AFTER

MASS
51
AREA
5757
HEIGHT
2777
27-Dec-2022
16:07
linh
pham

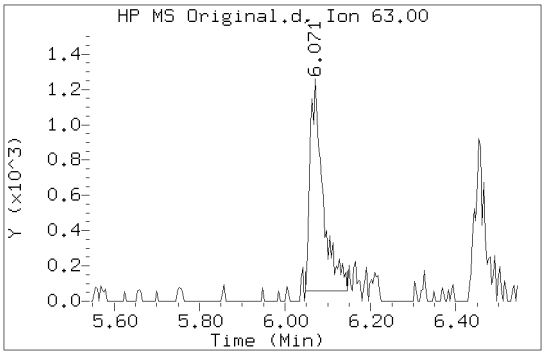


2-Chloroethylvinyl ether (110-75-8)

Reason Code:

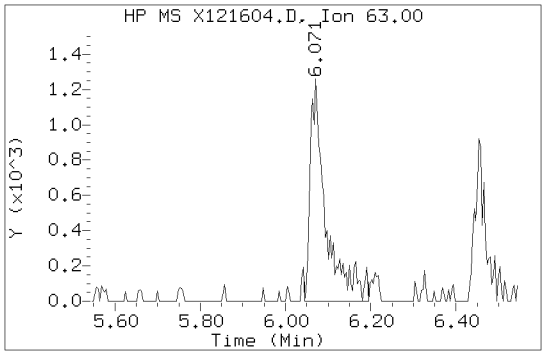
BEFORE

MASS
63
AREA
2513
HEIGHT
1202
27-Dec-2022
16:03
linh
pham



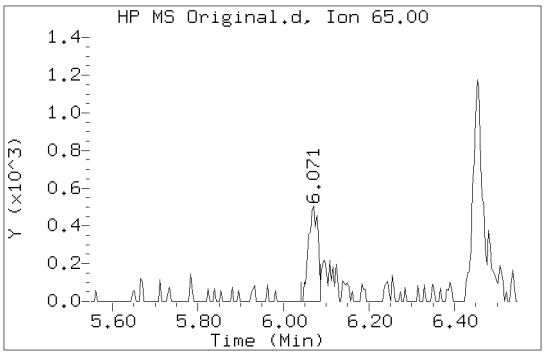
AFTER

MASS
63
AREA
3202
HEIGHT
1260
27-Dec-2022
16:07
linh
pham



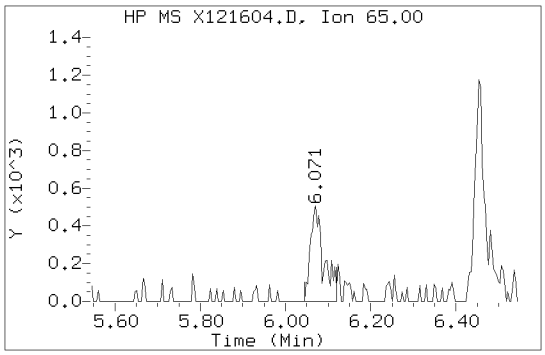
BEFORE

MASS
65
AREA
775
HEIGHT
507
27-Dec-2022
16:03
linh
pham



AFTER

MASS
65
AREA
1093
HEIGHT
507
27-Dec-2022
16:07
linh
pham



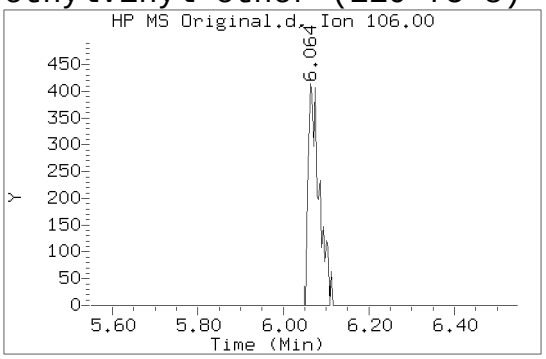
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

2-Chloroethylvinyl ether (110-75-8)

Reason Code:

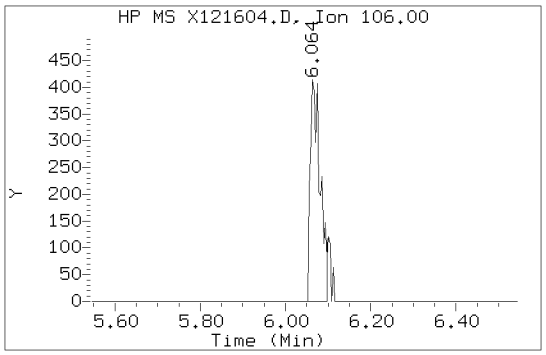
BEFORE

MASS
106
AREA
725
HEIGHT
414
27-Dec-2022
16:03
linh
pham



AFTER

MASS
106
AREA
673
HEIGHT
414
27-Dec-2022
16:07
linh
pham

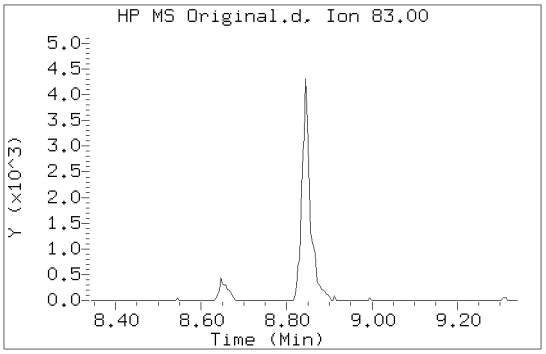


1,1,2,2-Tetrachloroethane (79-34-5)

Reason Code:

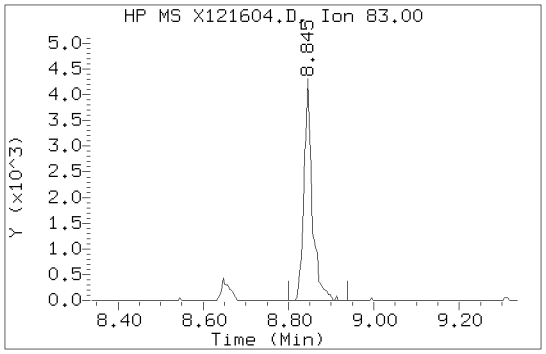
BEFORE

MASS
83
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



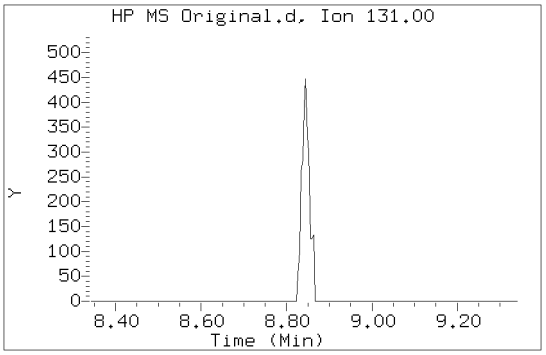
AFTER

MASS
83
AREA
5934
HEIGHT
4312
27-Dec-2022
16:07
linh
pham



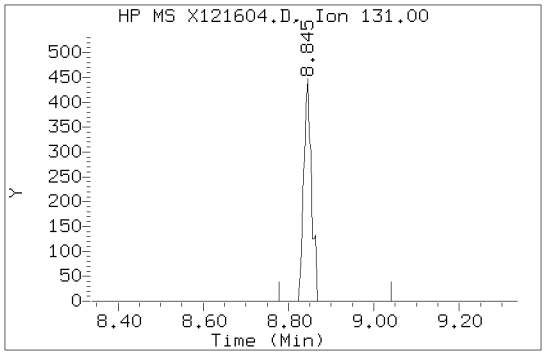
BEFORE

MASS
131
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



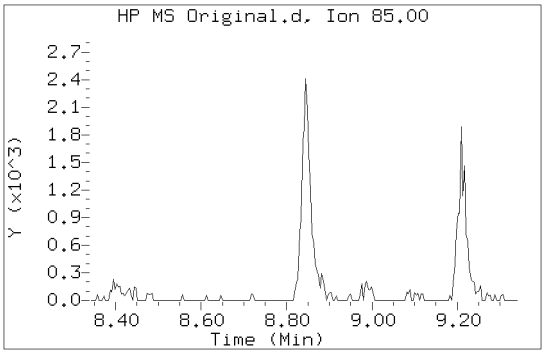
AFTER

MASS
131
AREA
574
HEIGHT
447
27-Dec-2022
16:07
linh
pham



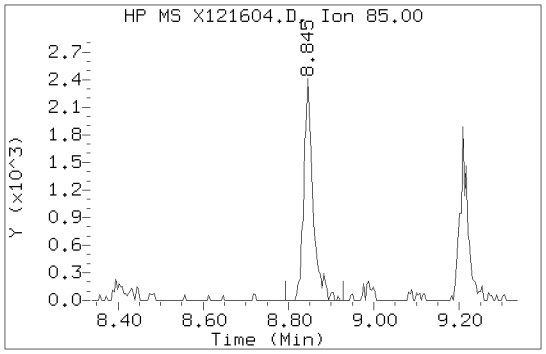
BEFORE

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
85
AREA
3682
HEIGHT
2411
27-Dec-2022
16:07
linh
pham



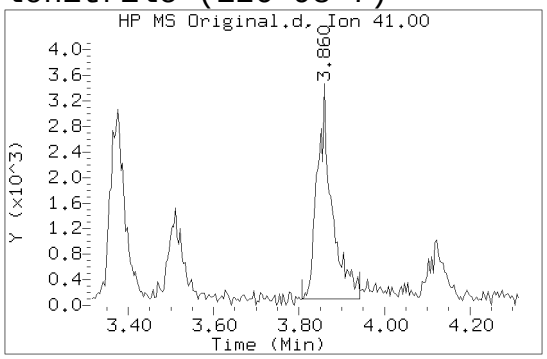
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Methacrylonitrile (126-98-7)

Reason Code:

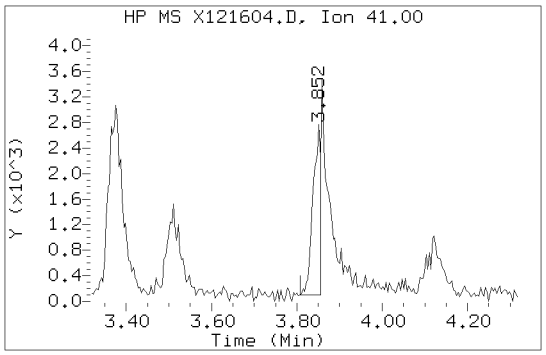
BEFORE

MASS
41
AREA
7966
HEIGHT
3370
27-Dec-2022
16:03
linh
pham



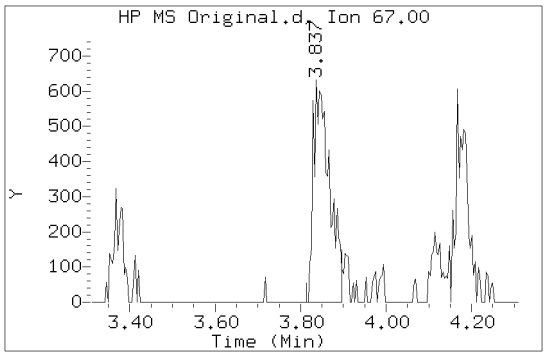
AFTER

MASS
41
AREA
3285
HEIGHT
2668
27-Dec-2022
16:07
linh
pham



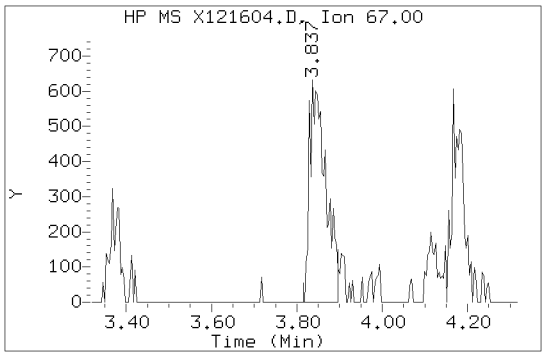
BEFORE

MASS
67
AREA
1649
HEIGHT
632
27-Dec-2022
16:03
linh
pham



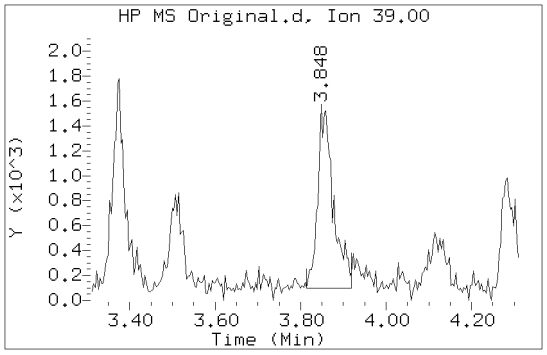
AFTER

MASS
67
AREA
1649
HEIGHT
632
27-Dec-2022
16:07
linh
pham



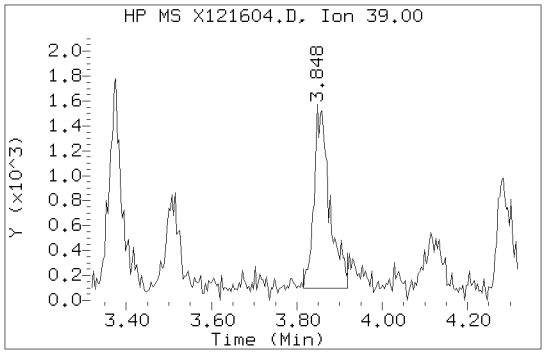
BEFORE

MASS
39
AREA
3700
HEIGHT
1473
27-Dec-2022
16:03
linh
pham



AFTER

MASS
39
AREA
3700
HEIGHT
1473
27-Dec-2022
16:07
linh
pham

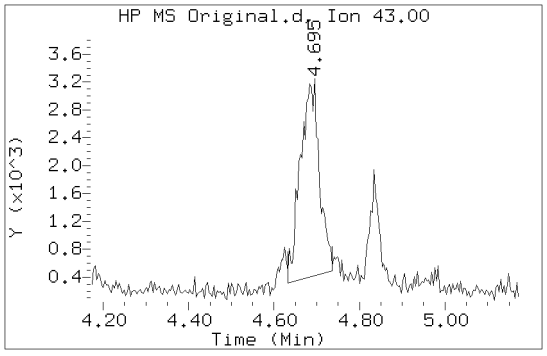


Isobutyl Alcohol (78-83-1)

Reason Code:

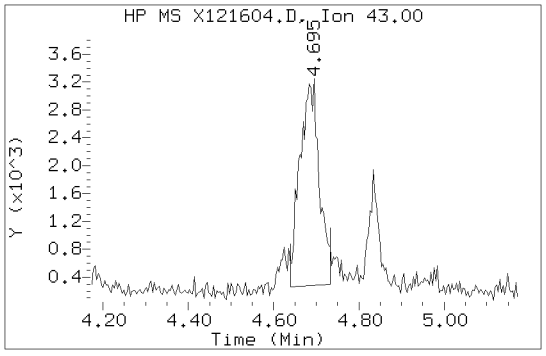
BEFORE

MASS
43
AREA
8847
HEIGHT
2826
27-Dec-2022
16:03
linh
pham



AFTER

MASS
43
AREA
9436
HEIGHT
2966
27-Dec-2022
16:07
linh
pham

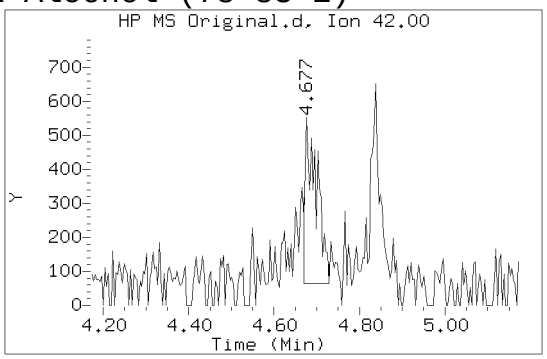


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Isobutyl Alcohol (78-83-1)

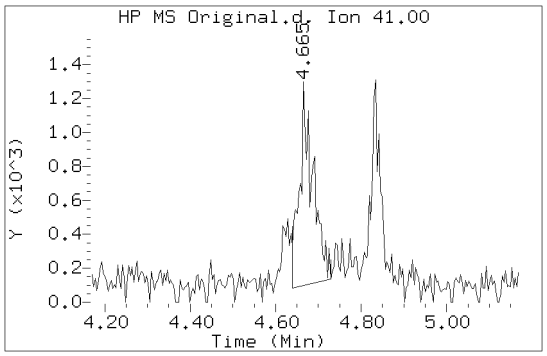
BEFORE

MASS
42
AREA
953
HEIGHT
488
27-Dec-2022
16:03
linh
pham



BEFORE

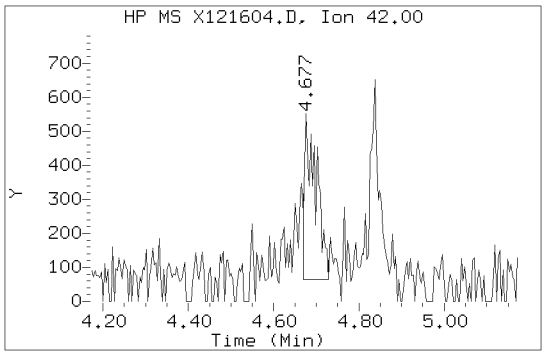
MASS
41
AREA
2650
HEIGHT
1200
27-Dec-2022
16:03
linh
pham



Reason Code:

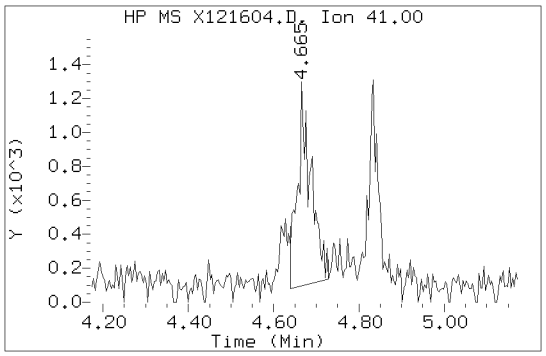
AFTER

MASS
42
AREA
953
HEIGHT
488
27-Dec-2022
16:07
linh
pham



AFTER

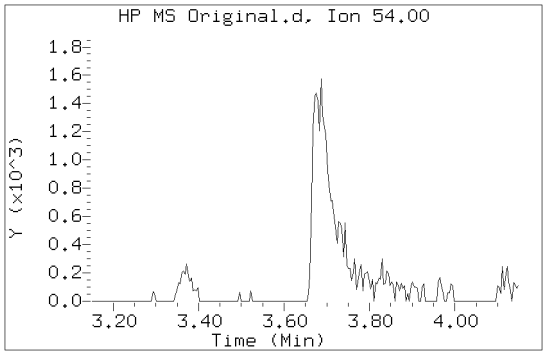
MASS
41
AREA
2656
HEIGHT
1201
27-Dec-2022
16:07
linh
pham



Propionitrile (107-12-0)

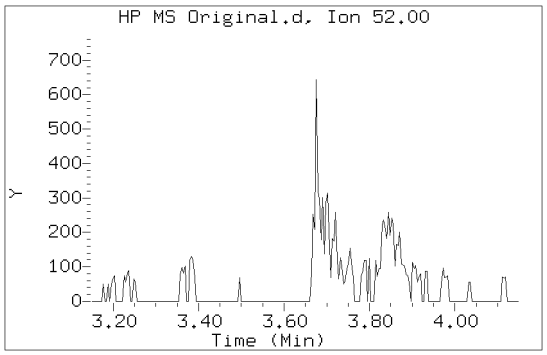
BEFORE

MASS
54
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



BEFORE

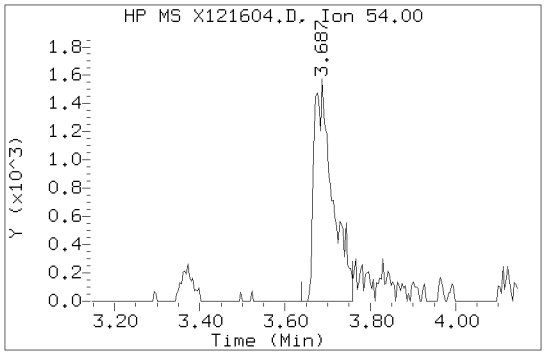
MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

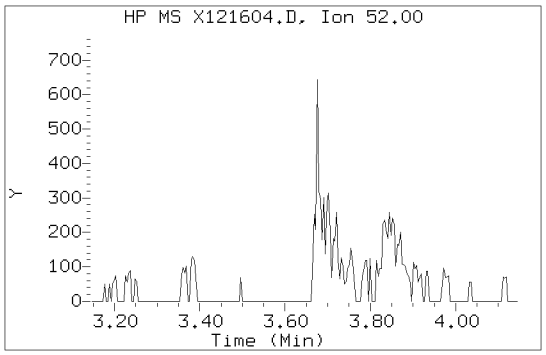
AFTER

MASS
54
AREA
4742
HEIGHT
1574
27-Dec-2022
16:07
linh
pham



AFTER

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



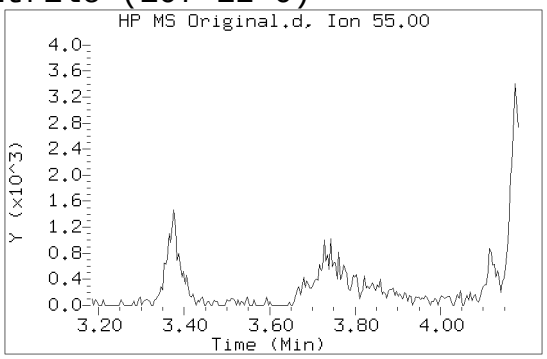
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Propionitrile (107-12-0)

Reason Code:

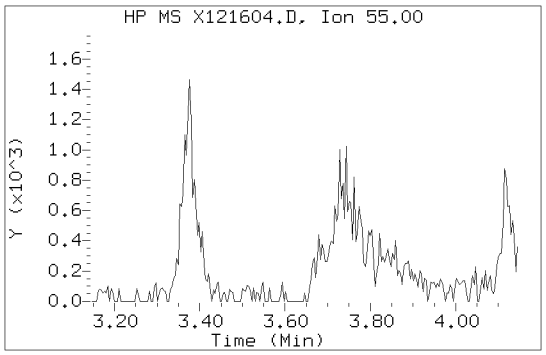
BEFORE

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

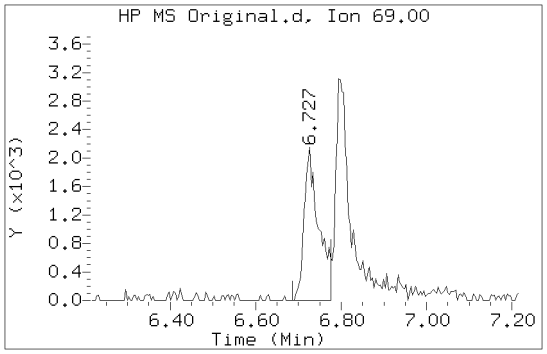


Ethyl Methacrylate (97-63-2)

Reason Code:

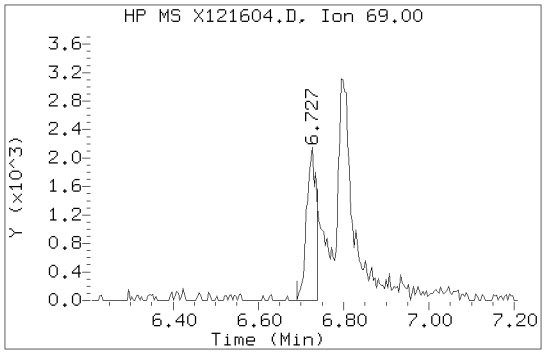
BEFORE

MASS
69
AREA
5177
HEIGHT
2156
27-Dec-2022
16:03
linh
pham



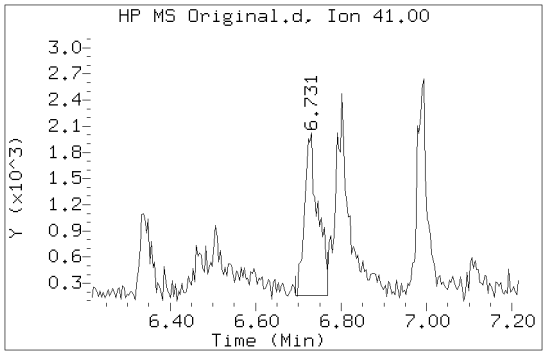
AFTER

MASS
69
AREA
3303
HEIGHT
2156
27-Dec-2022
16:07
linh
pham



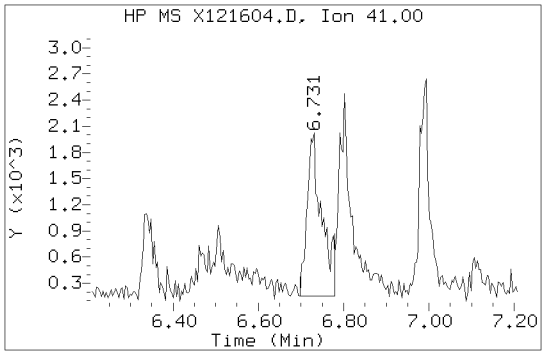
BEFORE

MASS
41
AREA
4059
HEIGHT
1867
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
4485
HEIGHT
1872
27-Dec-2022
16:07
linh
pham

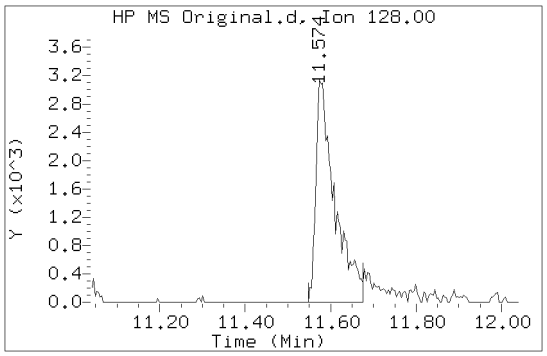


Naphthalene (91-20-3)

Reason Code:

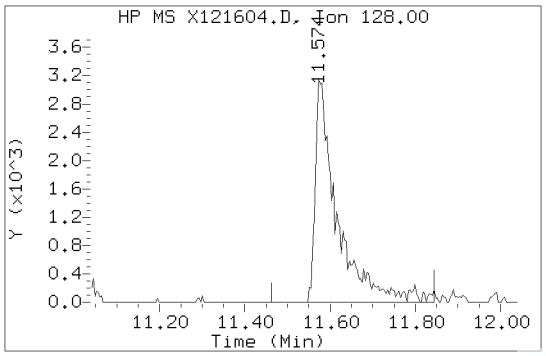
BEFORE

MASS
128
AREA
9627
HEIGHT
3139
27-Dec-2022
16:03
linh
pham



AFTER

MASS
128
AREA
11288
HEIGHT
3139
27-Dec-2022
16:07
linh
pham



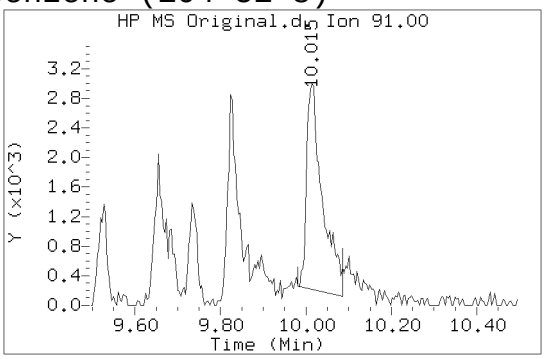
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

n-Butylbenzene (104-51-8)

Reason Code:

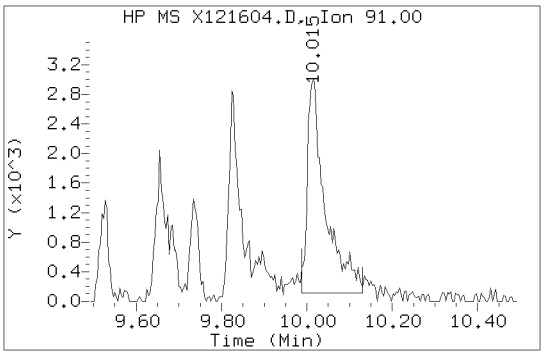
BEFORE

MASS
91
AREA
7194
HEIGHT
2783
27-Dec-2022
16:03
linh
pham



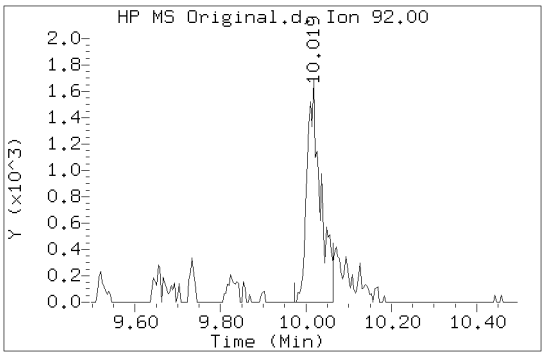
AFTER

MASS
91
AREA
8459
HEIGHT
2887
27-Dec-2022
16:07
linh
pham



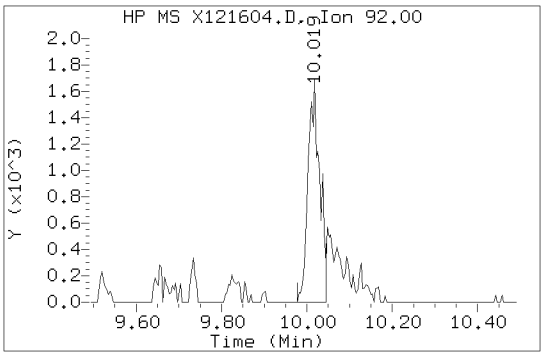
BEFORE

MASS
92
AREA
3696
HEIGHT
1686
27-Dec-2022
16:03
linh
pham



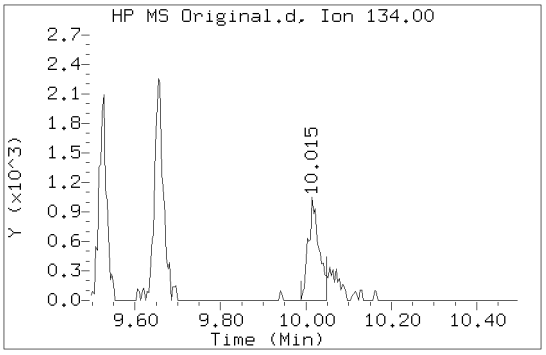
AFTER

MASS
92
AREA
3188
HEIGHT
1686
27-Dec-2022
16:07
linh
pham



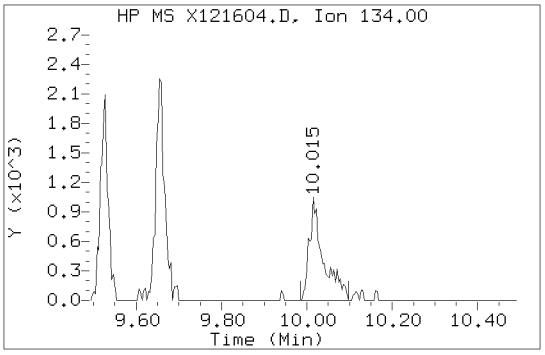
BEFORE

MASS
134
AREA
1829
HEIGHT
1051
27-Dec-2022
16:03
linh
pham



AFTER

MASS
134
AREA
2397
HEIGHT
1051
27-Dec-2022
16:07
linh
pham

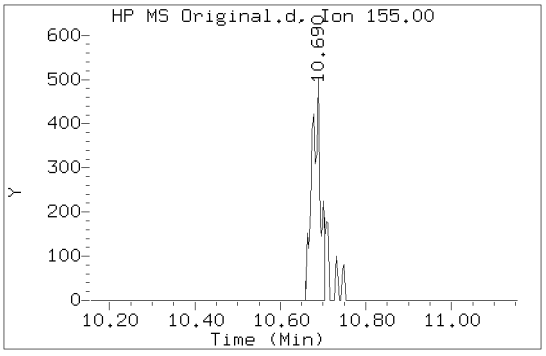


1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

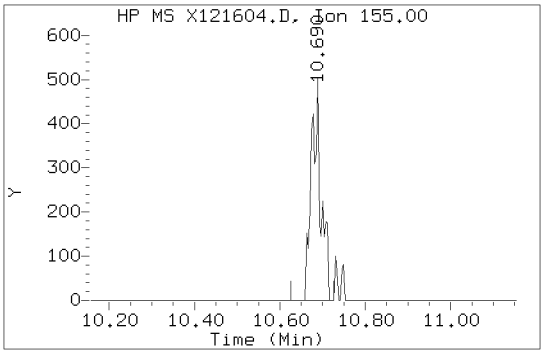
BEFORE

MASS
155
AREA
699
HEIGHT
502
27-Dec-2022
16:03
linh
pham



AFTER

MASS
155
AREA
778
HEIGHT
502
27-Dec-2022
16:07
linh
pham



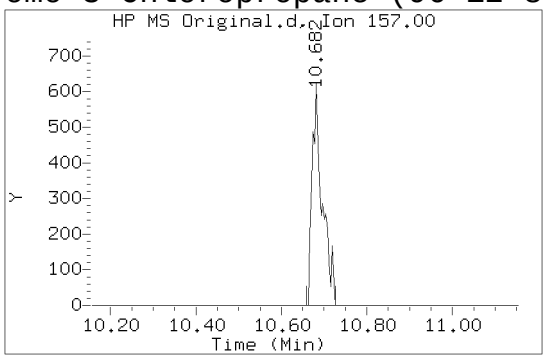
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

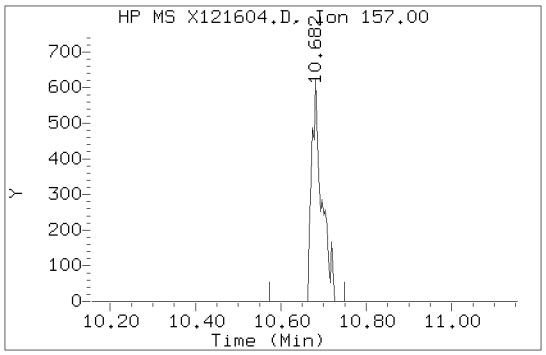
BEFORE

MASS
157
AREA
1023
HEIGHT
622
27-Dec-2022
16:03
linh
pham



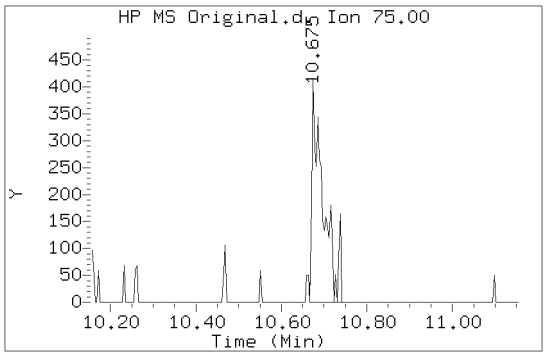
AFTER

MASS
157
AREA
1023
HEIGHT
622
27-Dec-2022
16:07
linh
pham



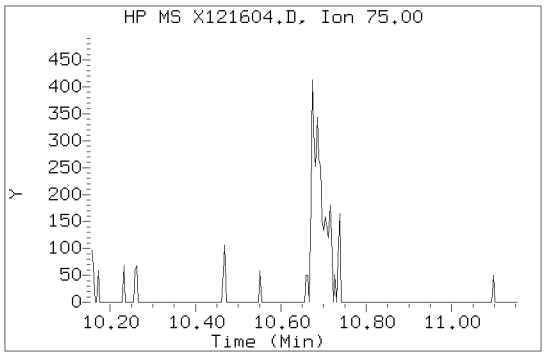
BEFORE

MASS
75
AREA
742
HEIGHT
413
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

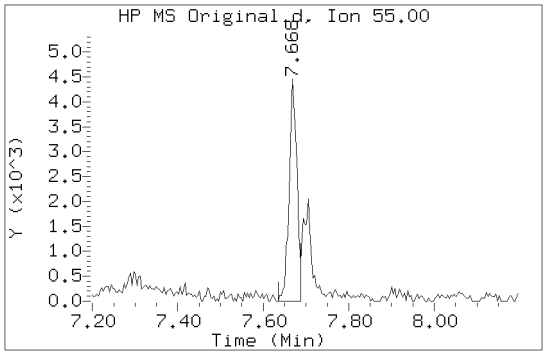


1-Chlorohexane (544-10-5)

Reason Code:

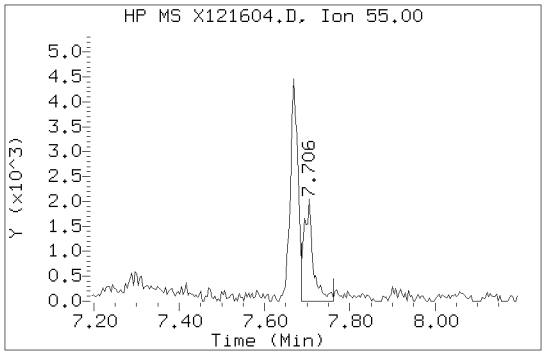
BEFORE

MASS
55
AREA
5660
HEIGHT
4460
27-Dec-2022
16:03
linh
pham



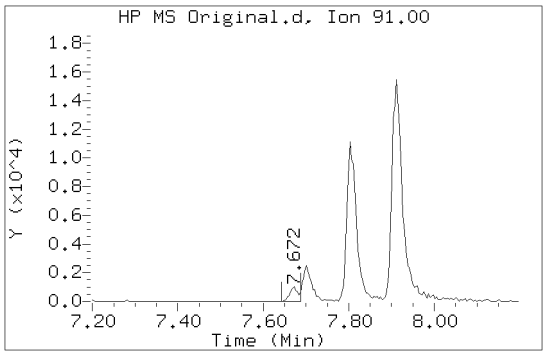
AFTER

MASS
55
AREA
3155
HEIGHT
2048
27-Dec-2022
16:07
linh
pham



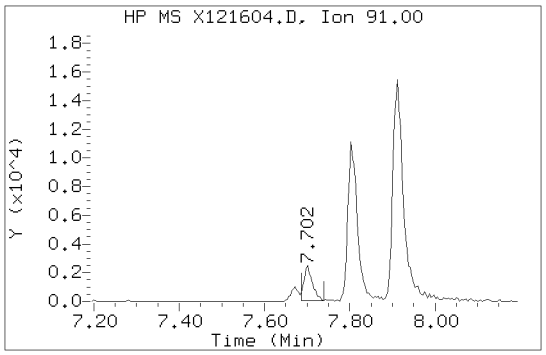
BEFORE

MASS
91
AREA
1392
HEIGHT
1029
27-Dec-2022
16:03
linh
pham



AFTER

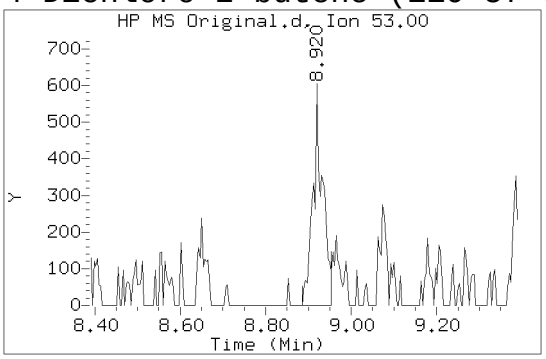
MASS
91
AREA
3448
HEIGHT
2478
27-Dec-2022
16:07
linh
pham



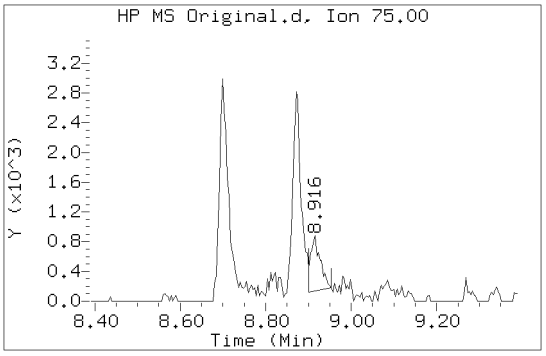
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Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

trans-1,4-Dichloro-2-butene (110-57-6)

BEFORE
MASS
53
AREA
956
HEIGHT
605
27-Dec-2022
16:03
linh
pham

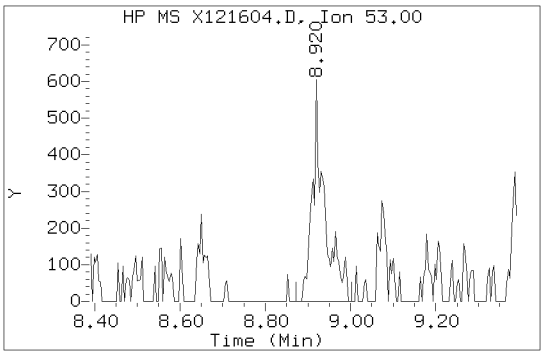


BEFORE
MASS
75
AREA
1166
HEIGHT
745
27-Dec-2022
16:03
linh
pham

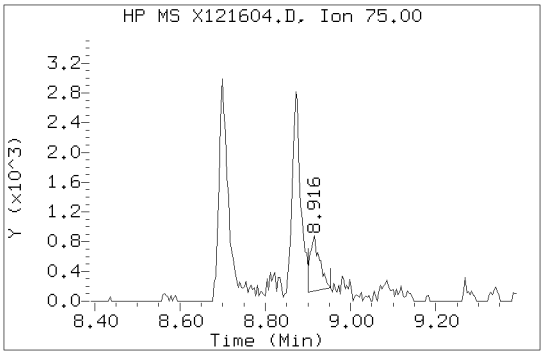


Reason Code:

AFTER
MASS
53
AREA
1196
HEIGHT
605
27-Dec-2022
16:07
linh
pham

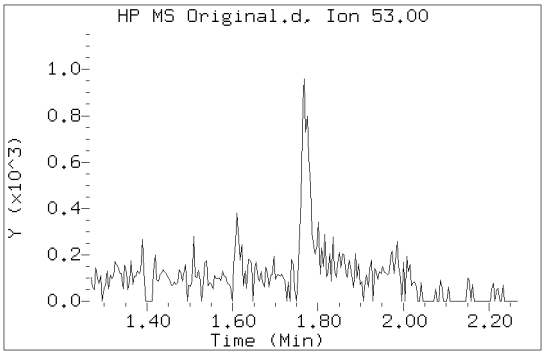


AFTER
MASS
75
AREA
1166
HEIGHT
745
27-Dec-2022
16:07
linh
pham

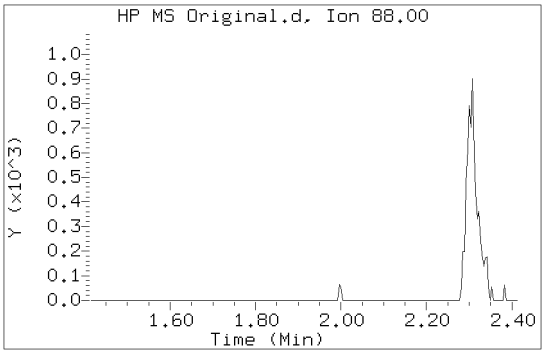


Chloroprene (126-99-8)

BEFORE
MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

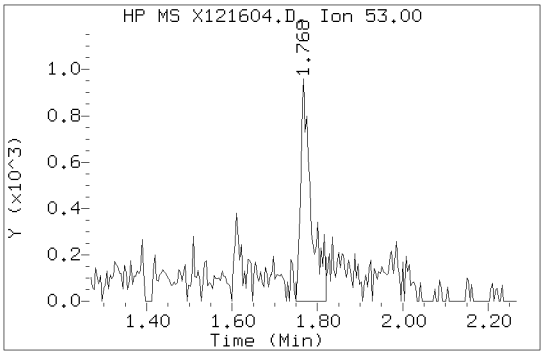


BEFORE
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

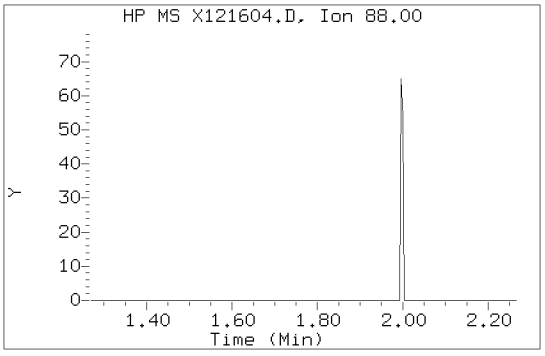


Reason Code:

AFTER
MASS
53
AREA
1686
HEIGHT
959
27-Dec-2022
16:07
linh
pham



AFTER
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

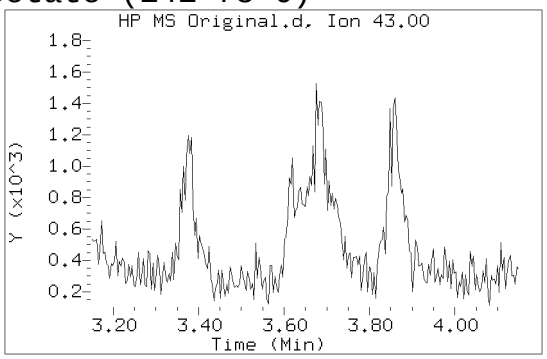


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

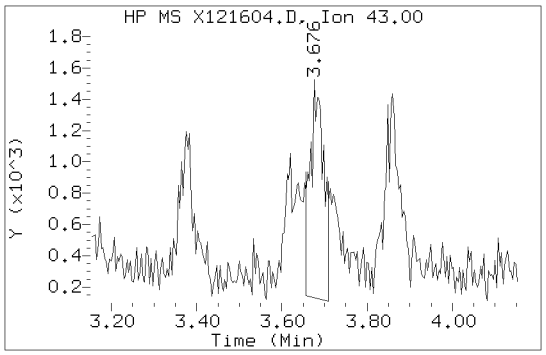
Ethyl Acetate (141-78-6)

Reason Code:

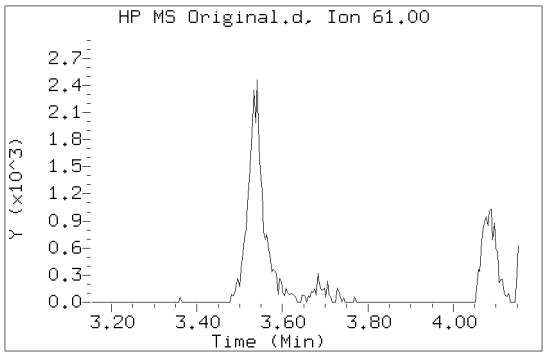
BEFORE
MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



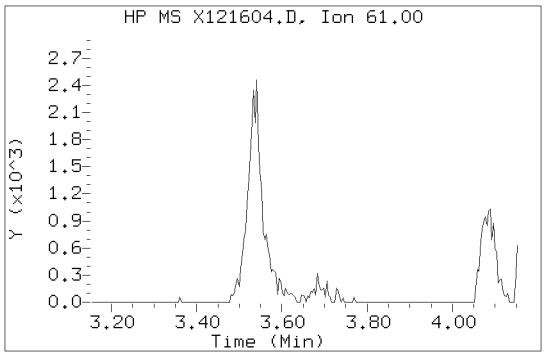
AFTER
MASS
43
AREA
3144
HEIGHT
1392
27-Dec-2022
16:07
linh
pham



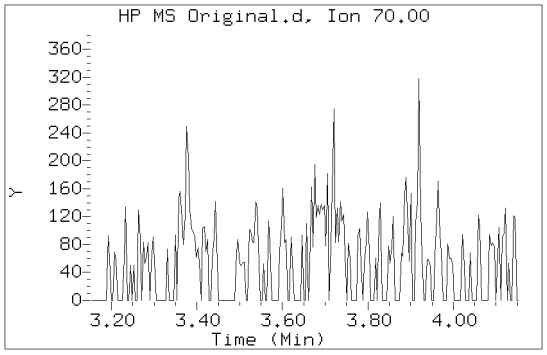
BEFORE
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



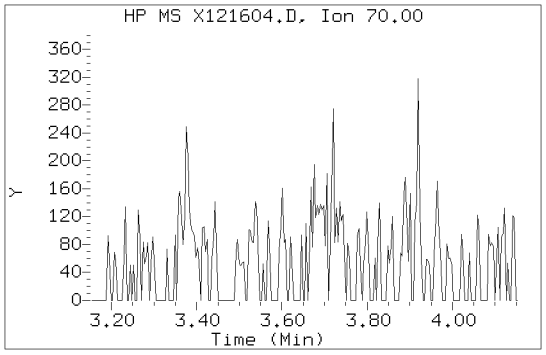
AFTER
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



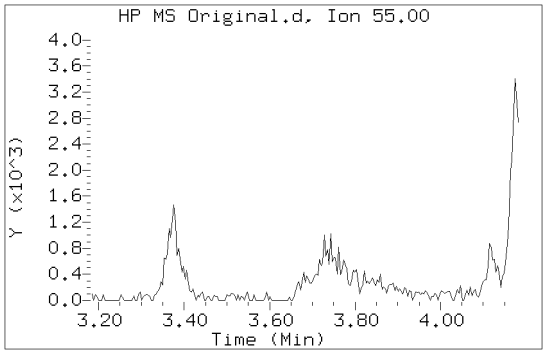
AFTER
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



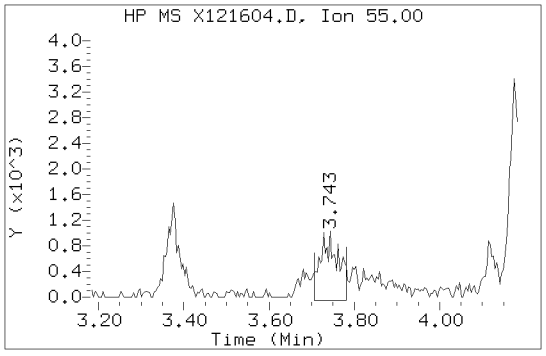
Methyl Acrylate (96-33-3)

Reason Code:

BEFORE
MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER
MASS
55
AREA
3084
HEIGHT
1078
27-Dec-2022
16:07
linh
pham



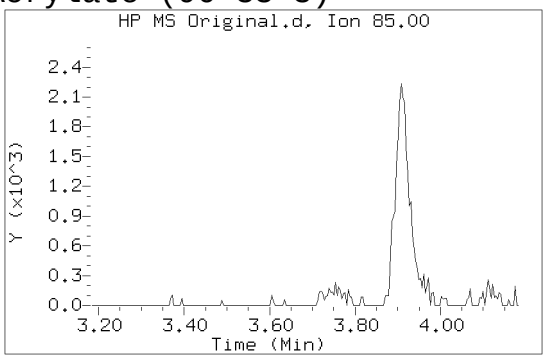
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Methyl Acrylate (96-33-3)

Reason Code:

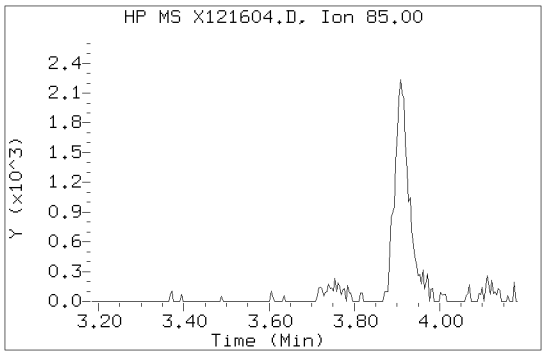
BEFORE

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

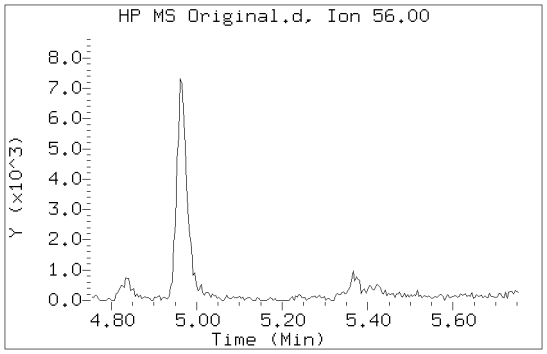


n-Butanol (71-36-3)

Reason Code:

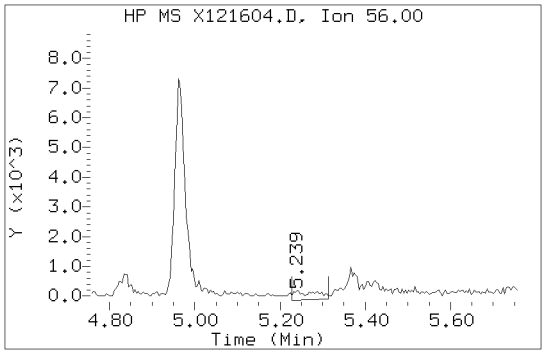
BEFORE

MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



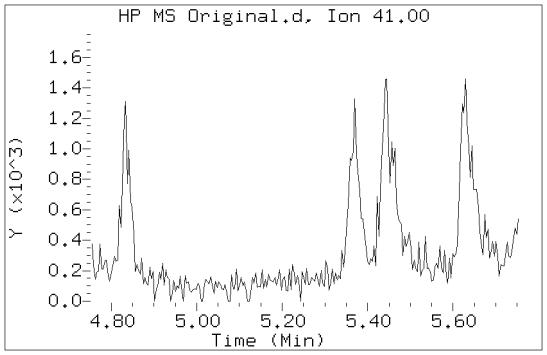
AFTER

MASS
56
AREA
1171
HEIGHT
317
27-Dec-2022
16:07
linh
pham



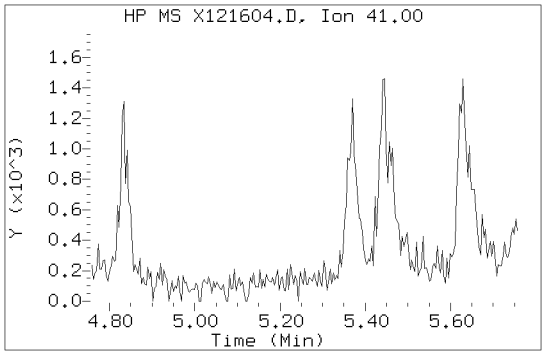
BEFORE

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

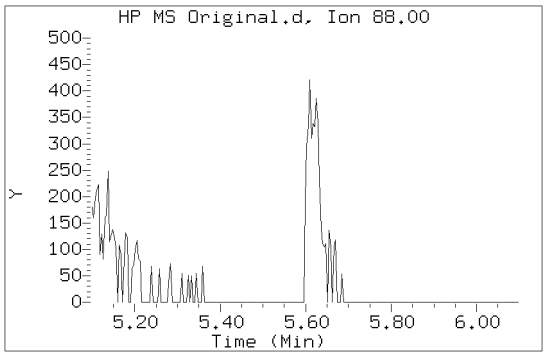


1,4-Dioxane ()

Reason Code:

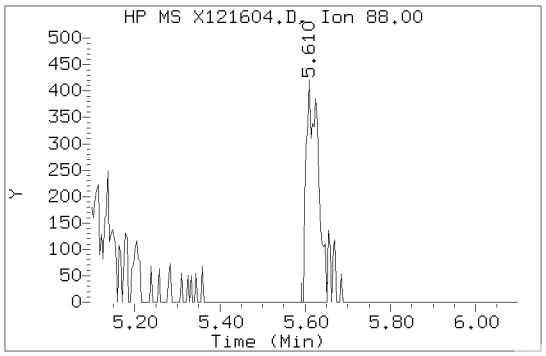
BEFORE

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AFTER

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421
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16:07
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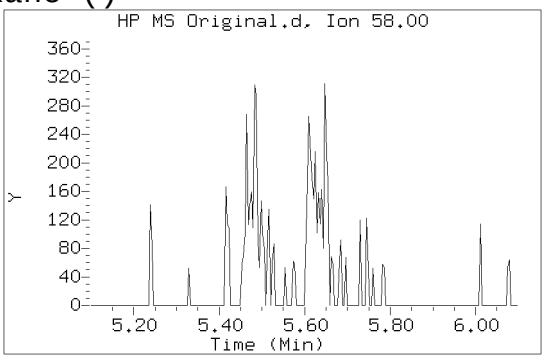
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Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

1,4-Dioxane ()

Reason Code:

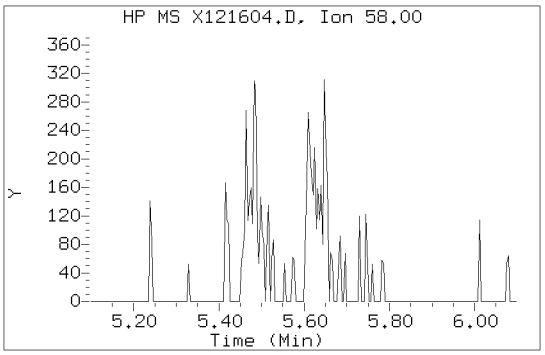
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AFTER

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27-Dec-2022
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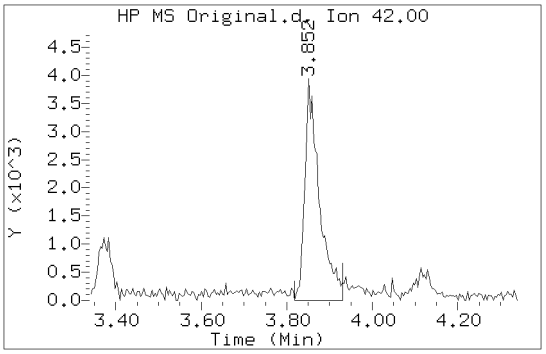


Tetrahydrofuran (109-99-9)

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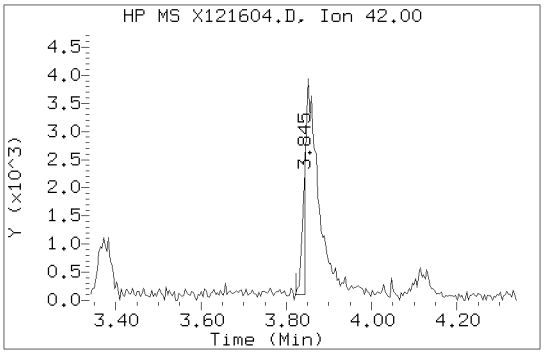
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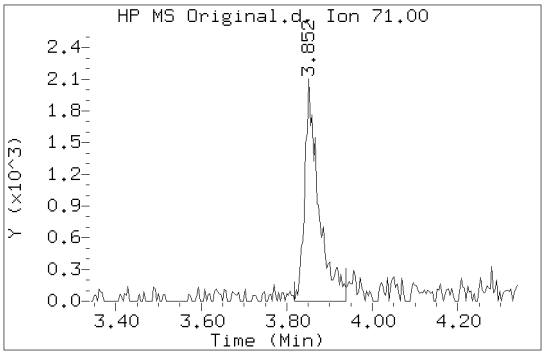
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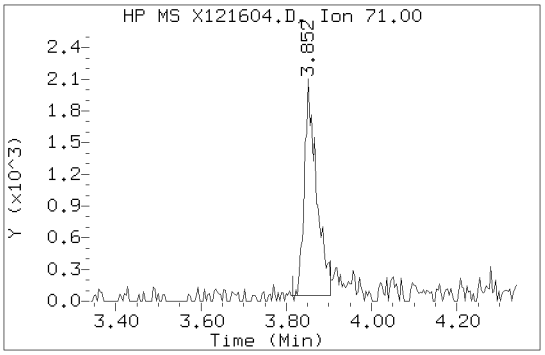
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AFTER

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16:07
linh
pham

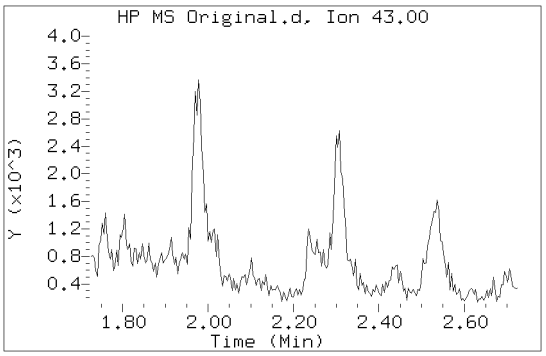


Methyl Acetate (79-20-9)

Reason Code:

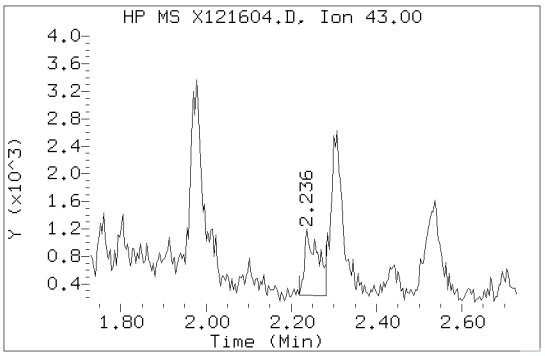
BEFORE

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HEIGHT
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27-Dec-2022
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AFTER

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HEIGHT
968
27-Dec-2022
16:07
linh
pham

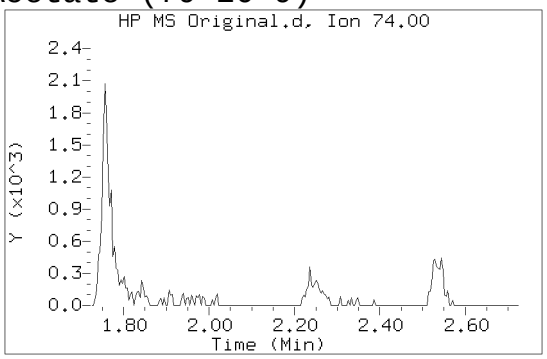


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Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Methyl Acetate (79-20-9)

BEFORE

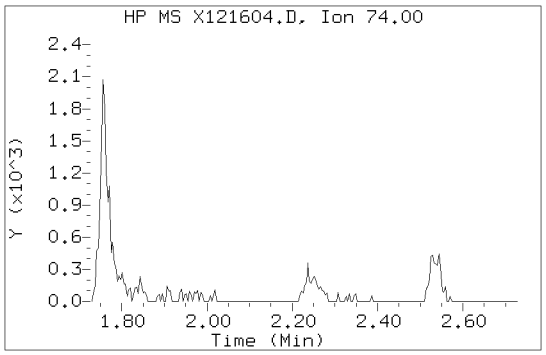
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16:03
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pham



Reason Code:

AFTER

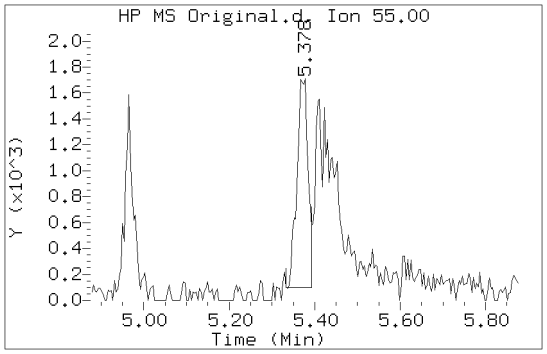
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16:07
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pham



Methylcyclohexane (108-87-2)

BEFORE

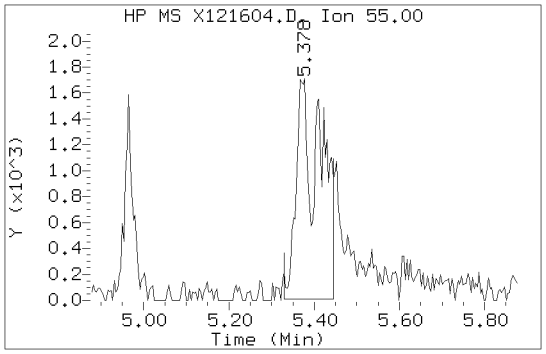
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27-Dec-2022
16:03
linh
pham



Reason Code:

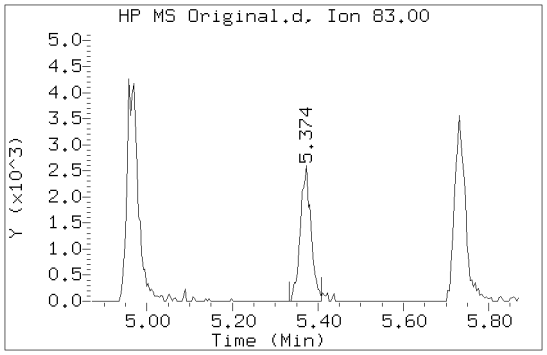
AFTER

MASS
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1699
27-Dec-2022
16:07
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pham



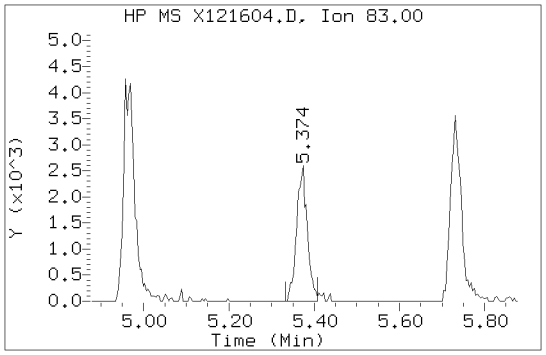
BEFORE

MASS
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AREA
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HEIGHT
2601
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16:03
linh
pham



AFTER

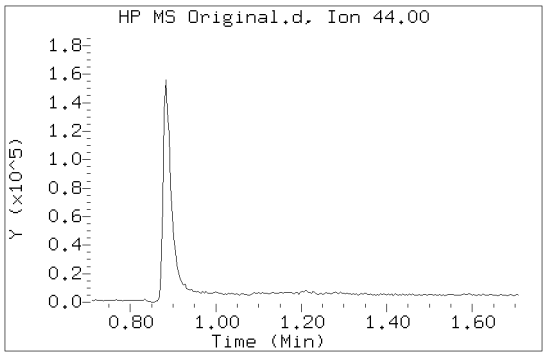
MASS
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HEIGHT
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16:07
linh
pham



Acetaldehyde (75-07-0)

BEFORE

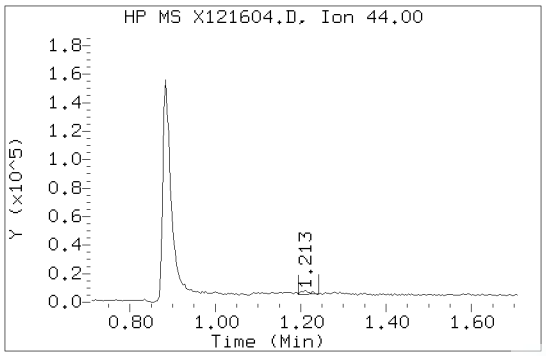
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27-Dec-2022
16:03
linh
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Reason Code:

AFTER

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HEIGHT
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27-Dec-2022
16:07
linh
pham

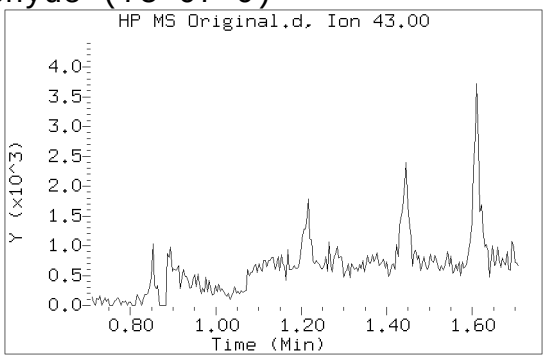


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Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

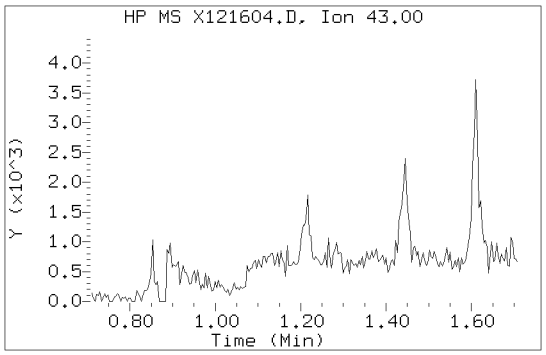
Acetaldehyde (75-07-0)

Reason Code:

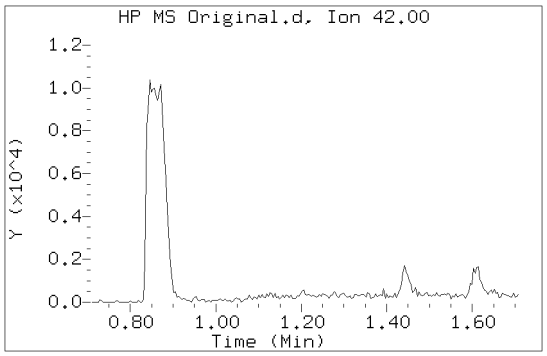
BEFORE
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HEIGHT
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27-Dec-2022
16:03
linh
pham



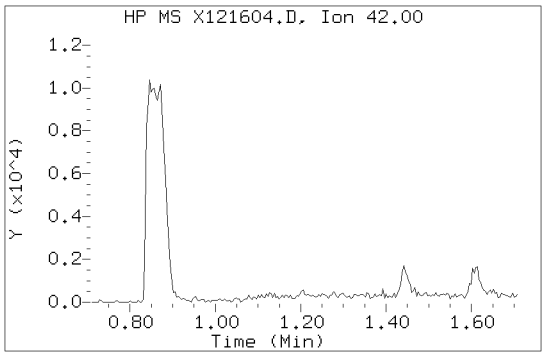
AFTER
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HEIGHT
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27-Dec-2022
16:07
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BEFORE
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AREA
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HEIGHT
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27-Dec-2022
16:03
linh
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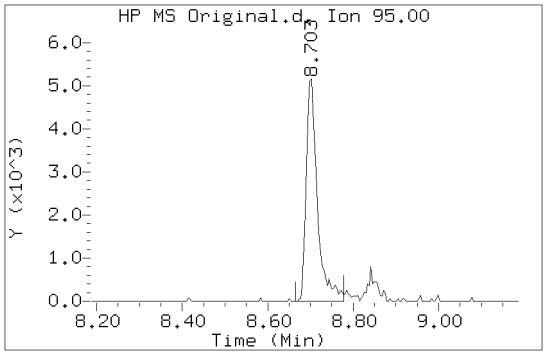
AFTER
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AREA
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HEIGHT
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27-Dec-2022
16:07
linh
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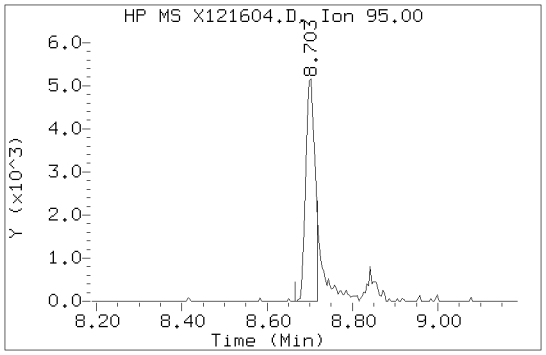
4-Bromofluorobenzene (460-00-4)

Reason Code:

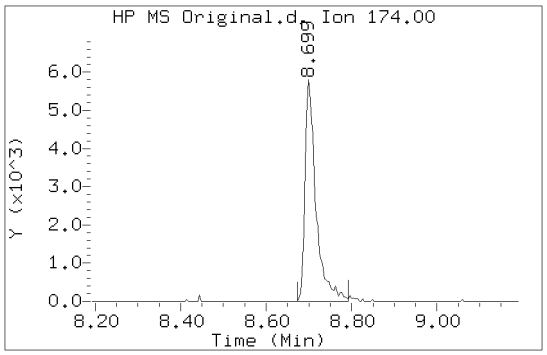
BEFORE
MASS
95
AREA
9514
HEIGHT
5159
27-Dec-2022
16:03
linh
pham



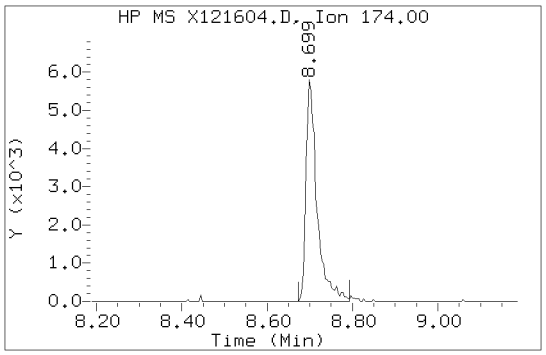
AFTER
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27-Dec-2022
16:07
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pham



BEFORE
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AREA
10505
HEIGHT
5802
27-Dec-2022
16:03
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AFTER
MASS
174
AREA
10505
HEIGHT
5802
27-Dec-2022
16:07
linh
pham



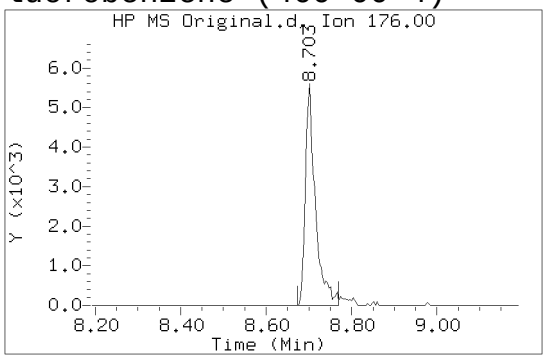
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Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

4-Bromofluorobenzene (460-00-4)

Reason Code:

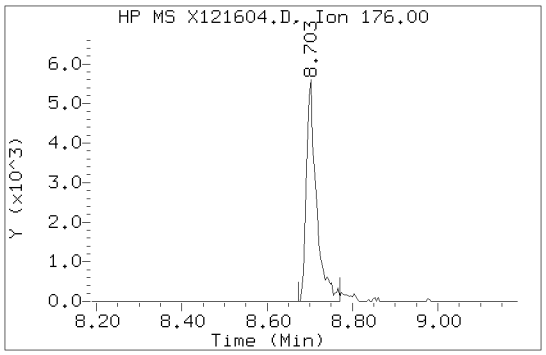
BEFORE

MASS
176
AREA
9226
HEIGHT
5603
27-Dec-2022
16:03
linh
pham



AFTER

MASS
176
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9226
HEIGHT
5603
27-Dec-2022
16:07
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Lab Smp Id: VSTD002 Client Smp ID: VSTD002
Inj Date : 16-DEC-2022 13:02
Operator : PC Inst ID: voa6.i
Smp Info : VSTD002;VSTD002;1;4;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 12:41 Cal File: X121604.D
Als bottle: 6 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	456374	50.0000	
135 1,4-Dioxane	88	5.610	5.610	(1.343)	1409	40.0000	33.77(M)
140 1,3-Butadiene	54	1.160	1.160	(0.278)	5733	2.00000	1.83
25 Methacrylonitrile	41	3.859	3.859	(0.924)	6388	2.00000	1.97(M)
12 Isobutyl Alcohol	43	4.684	4.684	(1.121)	20629	40.0000	40.18(M)
13 Acetonitrile	39	2.198	2.198	(0.526)	7764	20.0000	18.69
14 Allyl Chloride	41	2.206	2.206	(0.528)	14911	2.00000	1.88
4 Propionitrile	54	3.675	3.675	(0.880)	8651	20.0000	18.57
136 n-Hexane	57	2.768	2.768	(0.663)	5898	2.00000	1.79
72 trans-1,4-Dichloro-2-butene	53	8.920	8.920	(1.163)	2690	2.00000	1.92(M)
194 Acetaldehyde	44	1.212	1.212	(0.290)	5661	8.00000	(M)
23 Chloroprene	53	1.771	1.771	(0.424)	3126	2.00000	2.01(M)
145 alpha-Methylstyrene	118	9.268	9.268	(0.959)	14447	2.00000	1.84
200 Dimethyl Disulfide	94	6.202	6.202	(0.808)	15964	2.00000	1.82
139 Diethyl ether	59	1.756	1.756	(0.420)	6354	2.00000	2.08
130 Ethyl Acetate	43	3.675	3.675	(0.880)	7422	2.00000	2.08(M)
40 Methyl Methacrylate	41	5.617	5.617	(1.345)	6185	2.00000	1.98
49 Ethyl Methacrylate	69	6.715	6.715	(1.353)	6546	2.00000	2.03
132 n-Butanol	56	5.343	5.343	(1.279)	2004	40.0000	74.77(TM)
142 Tetrahydrofuran	42	3.848	3.848	(0.921)	2867	4.00000	2.04(M)

150	Allyl alcohol	57	2.768	2.768 (0.663)	5898	40.0000	33.27
166	1,2,3-Trimethylbenzene	105	9.733	9.733 (1.007)	35687	2.00000	2.10

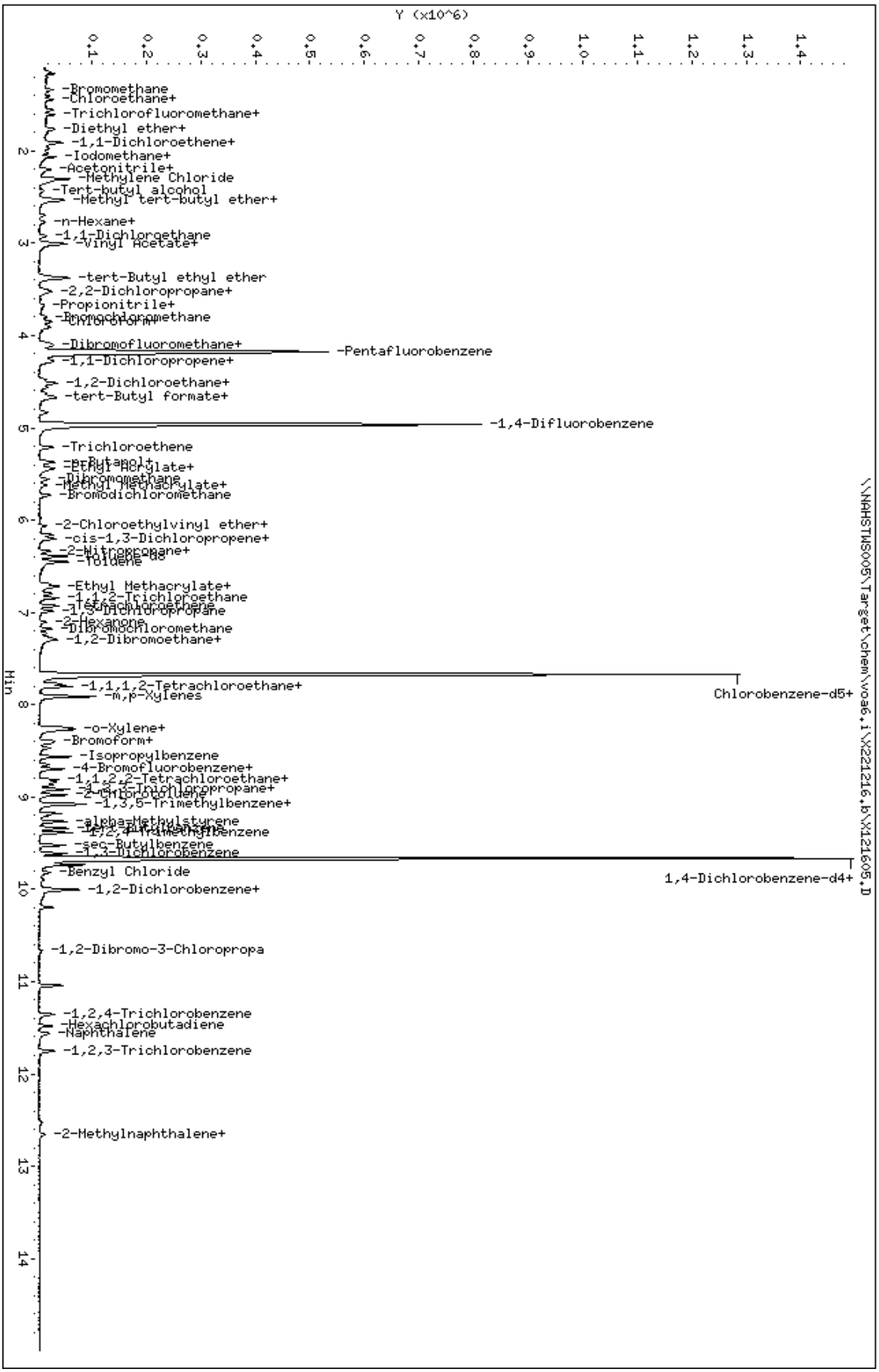
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	131 Methyl Acrylate	55	3.720	3.720	(0.891)	5443	2.00000	1.75(M)
	162 Butyl acrylate	55	8.267	8.267	(1.078)	15015	2.00000	1.77
	2 Dichlorodifluoromethane	85	0.969	0.969	(0.232)	6239	2.00000	2.33
	3 Chloromethane	50	1.077	1.077	(0.258)	8057	2.00000	4.07
	5 Vinyl Chloride	62	1.141	1.141	(0.273)	7263	2.00000	1.82
	6 Bromomethane	94	1.340	1.340	(0.321)	5996	2.00000	3.68(M)
	7 Chloroethane	64	1.400	1.400	(0.335)	5667	2.00000	2.04(M)
	8 Trichlorofluoromethane	101	1.561	1.561	(0.374)	10463	2.00000	1.87
	9 Acrolein	56	1.441	1.441	(0.345)	1317	4.00000	6.92(M)
	10 Acetone	43	1.973	1.973	(0.472)	7041	4.00000	5.46(M)
	11 1,1-Dichloroethene	96	1.910	1.910	(0.457)	6862	2.00000	1.98
	15 Iodomethane	142	2.022	2.022	(0.484)	8702	4.00000	5.23
	16 Acrylonitrile	53	2.554	2.554	(0.611)	4557	4.00000	3.87(M)
	17 Methylene Chloride	84	2.303	2.303	(0.551)	9194	2.00000	1.93(M)
	18 Methyl tert-butyl ether	73	2.536	2.536	(0.607)	23231	2.00000	2.04
	19 Carbon Disulfide	76	2.067	2.067	(0.495)	34948	4.00000	3.85
	20 trans-1,2-Dichloroethene	96	2.532	2.532	(0.606)	7113	2.00000	1.83
	21 Vinyl Acetate	43	3.008	3.008	(0.720)	38835	4.00000	3.90
	22 1,1-Dichloroethane	63	2.922	2.922	(0.699)	12778	2.00000	1.87
	24 2-Butanone	43	3.604	3.604	(0.863)	5418	4.00000	6.89(M)
	26 2,2-Dichloropropane	77	3.507	3.507	(0.839)	11048	2.00000	1.91
	27 cis-1,2-Dichloroethene	96	3.529	3.529	(0.845)	9675	2.00000	2.05
	28 Chloroform	83	3.908	3.908	(0.935)	15581	2.00000	2.04
	29 Bromochloromethane	128	3.803	3.803	(0.910)	5134	2.00000	1.98
$	30 Dibromofluoromethane	113	4.106	4.106	(0.983)	9050	2.00000	1.90
	31 1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	10962	2.00000	1.81
	32 1,1-Dichloropropene	75	4.286	4.286	(0.863)	9042	2.00000	1.86
	33 1,2-Dichloroethane	62	4.560	4.560	(0.918)	10812	2.00000	1.92
	34 Carbon Tetrachloride	117	4.264	4.264	(0.859)	11092	2.00000	2.13(M)
$	35 1,2-Dichloroethane-d4	65	4.477	4.477	(1.072)	9783	2.00000	2.37
*	36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	684444	50.0000	
	37 Benzene	78	4.515	4.515	(0.909)	32394	2.00000	1.98
	38 Trichloroethene	130	5.216	5.216	(1.051)	9277	2.00000	2.00
	39 Bromodichloromethane	83	5.733	5.733	(1.155)	11961	2.00000	1.94
	41 2-Chloroethylvinyl ether	63	6.059	6.059	(1.220)	6648	4.00000	3.80
	42 1,2-Dichloropropane	63	5.441	5.441	(1.096)	8129	2.00000	1.86(M)
	44 Dibromomethane	93	5.553	5.553	(1.119)	6110	2.00000	2.06
	45 4-Methyl-2-Pentanone	43	6.337	6.337	(0.826)	14771	4.00000	4.26
	46 cis-1,3-Dichloropropene	75	6.161	6.161	(1.241)	13738	2.00000	1.90
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	647809	50.0000	
$	48 Toluene-d8	98	6.393	6.393	(0.833)	31289	2.00000	1.95
	50 Toluene	91	6.453	6.453	(0.841)	35620	2.00000	1.98
	51 trans-1,3-Dichloropropene	75	6.693	6.693	(1.348)	10969	2.00000	1.83
	52 2-Hexanone	43	7.105	7.105	(0.926)	9314	4.00000	3.95
	53 1,1,2-Trichloroethane	83	6.843	6.843	(0.892)	7537	2.00000	2.09
	54 1,3-Dichloropropane	76	6.989	6.989	(0.911)	14049	2.00000	1.98
	55 Dibromochloromethane	129	7.180	7.180	(0.936)	10210	2.00000	1.96
	56 Tetrachloroethene	164	6.929	6.929	(0.903)	7331	2.00000	1.97
	57 1,2-Dibromoethane	107	7.263	7.263	(0.947)	8477	2.00000	1.88
	58 1-Chlorohexane	55	7.697	7.697	(1.550)	5855	2.00000	1.77(MH)
	59 Chlorobenzene	112	7.694	7.694	(1.003)	24558	2.00000	1.93
	60 1,1,1,2-Tetrachloroethane	131	7.772	7.772	(1.013)	9378	2.00000	1.98

61 Ethylbenzene	106	7.802	7.802 (1.017)	11791	2.00000	1.97
62 m,p-Xylenes	106	7.911	7.911 (1.031)	29170	4.00000	3.78

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	63 o-Xylene	106	8.249	8.249	(1.075)	14764	2.00000	1.93
	64 Styrene	104	8.271	8.271	(1.078)	22967	2.00000	1.80
	66 Bromoform	173	8.417	8.417	(1.097)	6949	2.00000	1.93(T)
	67 Isopropylbenzene	105	8.563	8.563	(1.116)	32641	2.00000	1.87
	68 1,1,2,2-Tetrachloroethane	83	8.841	8.841	(0.915)	11741	2.00000	2.08
$	69 4-Bromofluorobenzene	95	8.698	8.698	(1.134)	13631	2.00000	2.33
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	352851	50.0000	
	71 1,2,3-Trichloropropane	75	8.867	8.867	(0.918)	7514	2.00000	1.91
	73 n-Propylbenzene	91	8.916	8.916	(0.923)	34981	2.00000	1.78
	74 Bromobenzene	156	8.815	8.815	(0.912)	11721	2.00000	2.02
	75 1,3,5-Trimethylbenzene	105	9.073	9.073	(0.939)	27917	2.00000	1.93
	76 2-Chlorotoluene	91	8.980	8.980	(0.929)	26853	2.00000	2.09
	77 4-Chlorotoluene	91	9.077	9.077	(0.939)	28173	2.00000	1.92
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	22104	2.00000	1.87
	79 1,2,4-Trimethylbenzene	105	9.384	9.384	(0.971)	28377	2.00000	1.86
	81 sec-Butylbenzene	105	9.519	9.519	(0.985)	27643	2.00000	1.75
	82 p-Isopropyltoluene	119	9.651	9.651	(0.999)	24966	2.00000	1.77
	83 1,3-Dichlorobenzene	146	9.613	9.613	(0.995)	18708	2.00000	1.94
	84 1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	20552	2.00000	1.96
	86 Benzyl Chloride	91	9.819	9.819	(1.280)	12783	2.00000	3.88
	87 n-Butylbenzene	91	10.003	10.003	(1.035)	19853	2.00000	3.18(M)
	88 1,2-Dichlorobenzene	146	9.999	9.999	(1.035)	18921	2.00000	1.91
	89 1,2-Dibromo-3-Chloropropane	155	10.678	10.678	(1.105)	1619	2.00000	1.88(M)
	90 1,2,4-Trichlorobenzene	180	11.352	11.352	(1.175)	11764	2.00000	1.88(M)
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	3970	2.00000	1.39
	92 Naphthalene	128	11.559	11.559	(1.196)	26250	2.00000	1.84(M)
	93 1,2,3-Trichlorobenzene	180	11.750	11.750	(1.216)	11288	2.00000	1.88
M	94 1,2-Dichloroethylene (total)	96				16788	4.00000	
M	95 Xylenes (total)	106				43934	6.00000	
	141 Cyclohexane	56	4.125	4.125	(0.987)	7375	2.00000	2.82(H)
	138 Freon TF	101	1.917	1.917	(0.459)	6025	2.00000	1.79
	147 Methylcyclohexane	55	5.373	5.373	(1.082)	16016	2.00000	1.91(M)
	146 Methyl Acetate	43	2.247	2.247	(0.538)	4149	2.00000	2.02
	148 Tert-Butyl alcohol	59	2.434	2.434	(0.583)	12015	40.0000	38.02(a)
	149 Isopropyl Alcohol	45	2.101	2.101	(0.503)	5607	40.0000	33.97

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Date : 16-DEC-2022 13:02
Client ID: VSTD002
Sample Info: VSTD002;VSTD002;1;4;
Purge Volume: 5.0
Column phase: DB624

\\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D

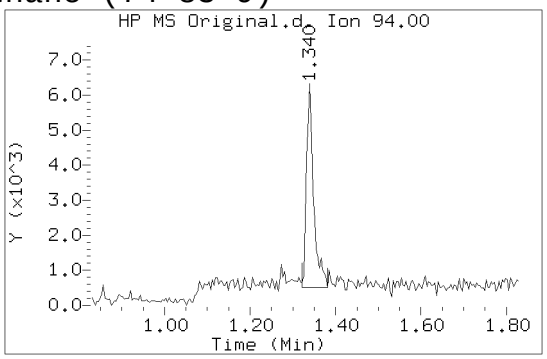
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

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Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

Bromomethane (74-83-9)

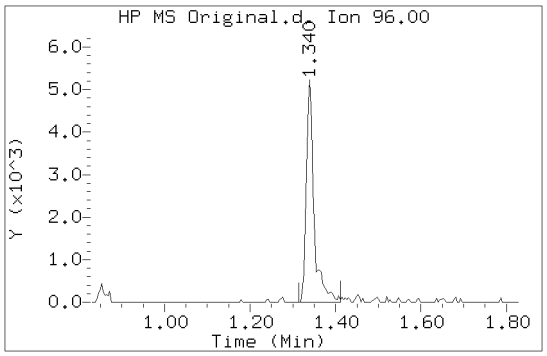
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27-Dec-2022
16:03
linh
pham



BEFORE

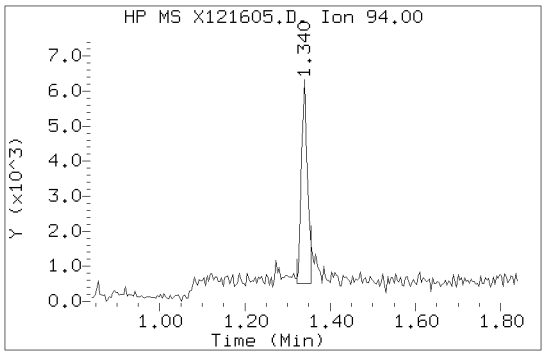
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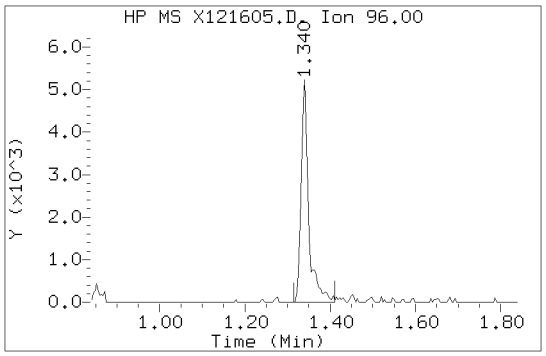
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AFTER

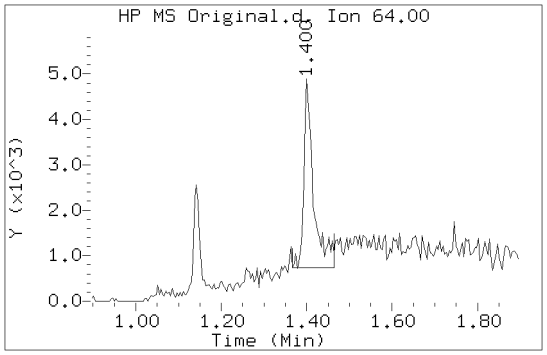
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27-Dec-2022
16:07
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pham



Chloroethane (75-00-3)

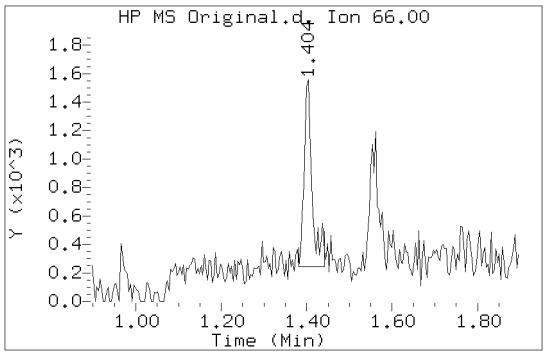
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BEFORE

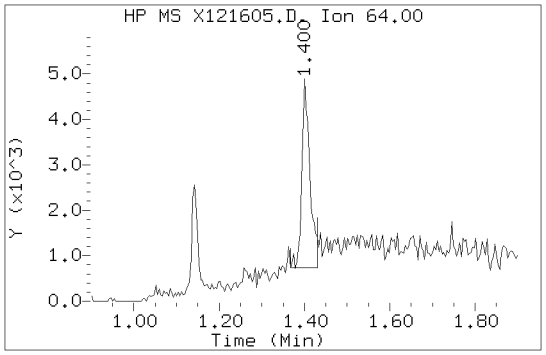
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Reason Code:

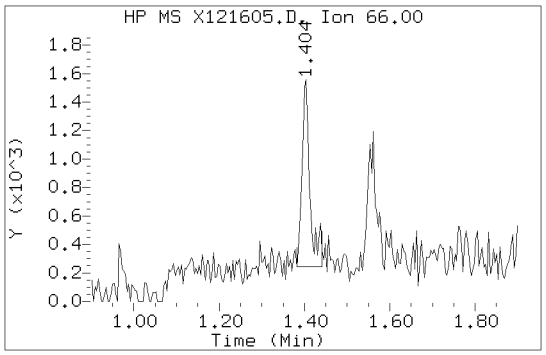
AFTER

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27-Dec-2022
16:07
linh
pham



AFTER

MASS
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AREA
1745
HEIGHT
1315
27-Dec-2022
16:07
linh
pham



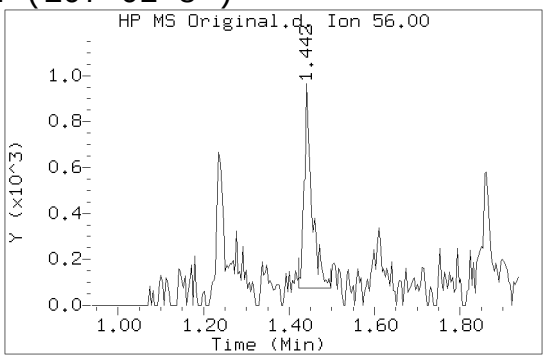
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Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

Acrolein (107-02-8)

Reason Code:

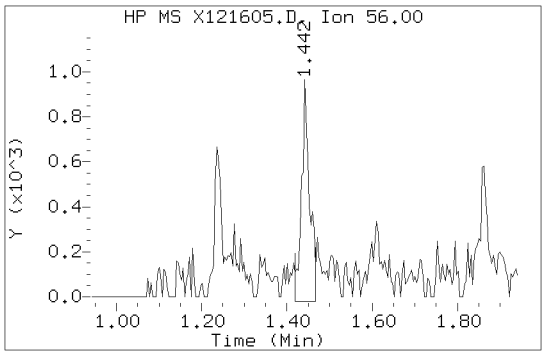
BEFORE

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HEIGHT
890
27-Dec-2022
16:03
linh
pham



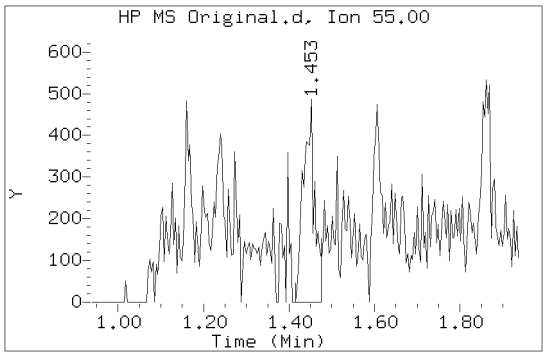
AFTER

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AREA
1317
HEIGHT
985
27-Dec-2022
16:07
linh
pham



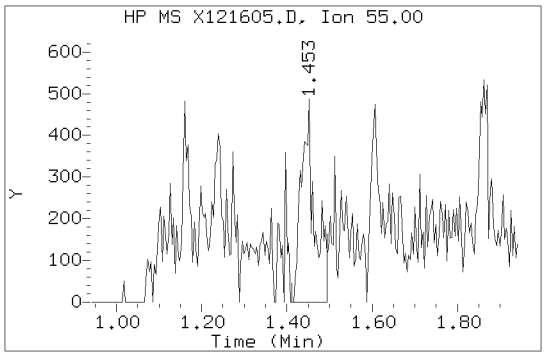
BEFORE

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AREA
885
HEIGHT
487
27-Dec-2022
16:03
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AFTER

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AREA
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HEIGHT
487
27-Dec-2022
16:07
linh
pham

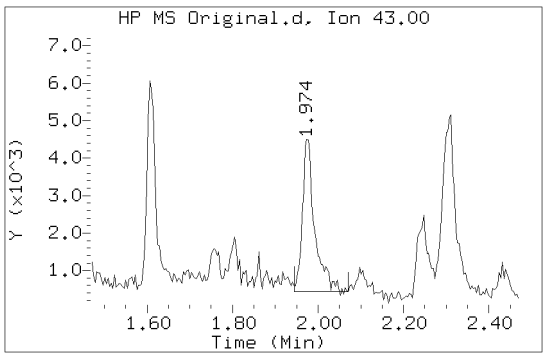


Acetone (67-64-1)

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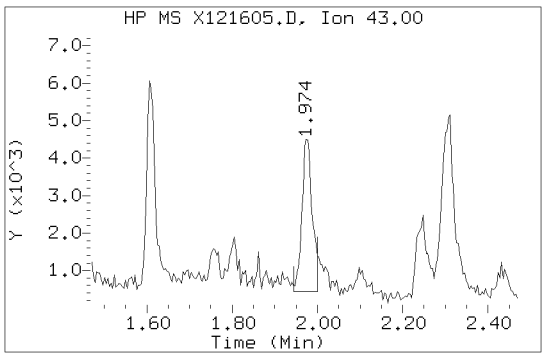
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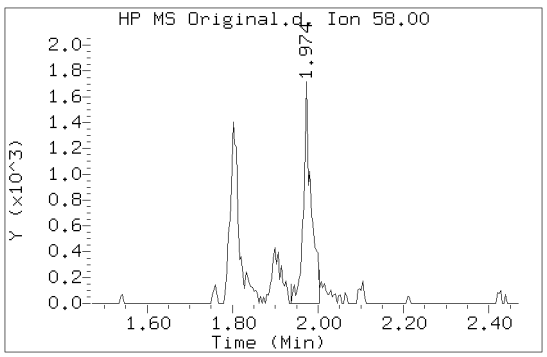
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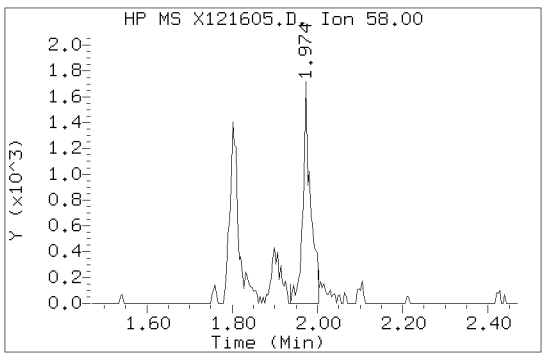
BEFORE

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58
AREA
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HEIGHT
1717
27-Dec-2022
16:03
linh
pham



AFTER

MASS
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2165
HEIGHT
1717
27-Dec-2022
16:07
linh
pham

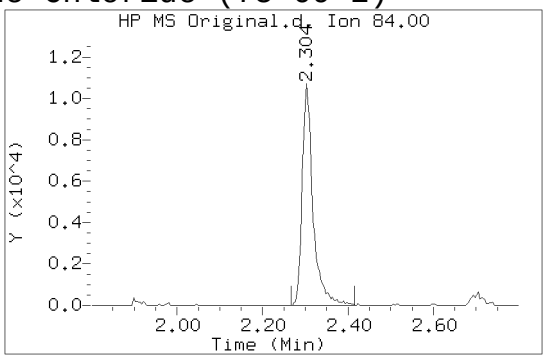


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Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

Methylene Chloride (75-09-2)

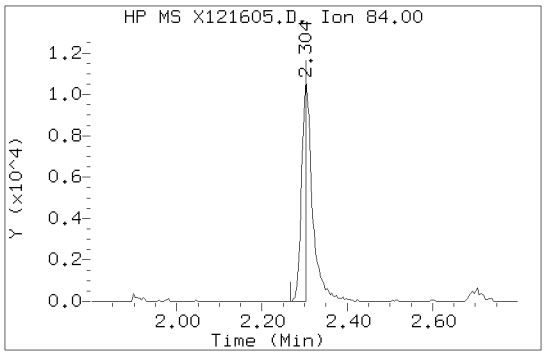
BEFORE

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HEIGHT
10710
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16:03
linh
pham



AFTER

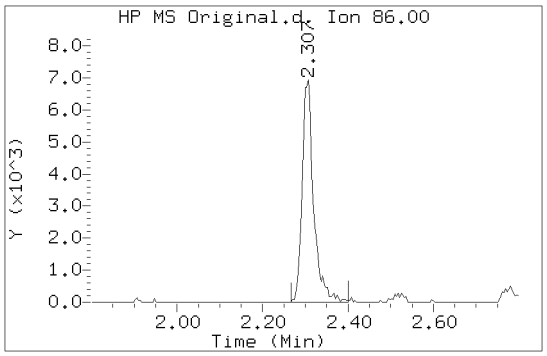
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Reason Code:

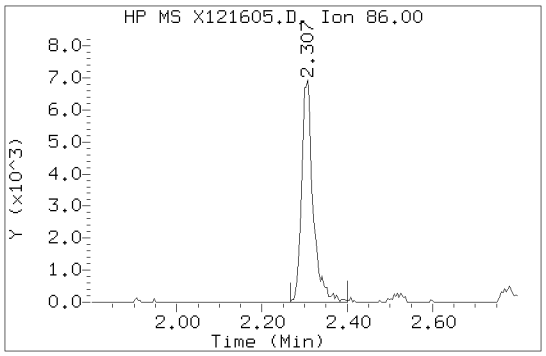
BEFORE

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HEIGHT
6936
27-Dec-2022
16:03
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pham



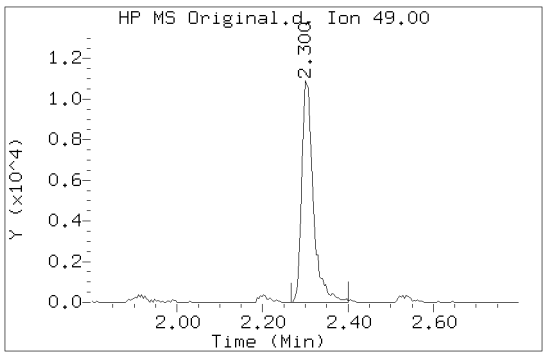
AFTER

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27-Dec-2022
16:07
linh
pham



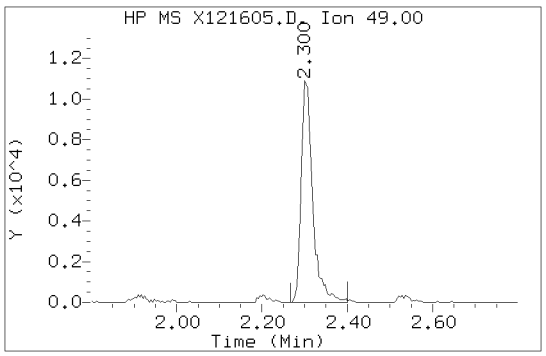
BEFORE

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10905
27-Dec-2022
16:03
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AFTER

MASS
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21067
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10905
27-Dec-2022
16:07
linh
pham

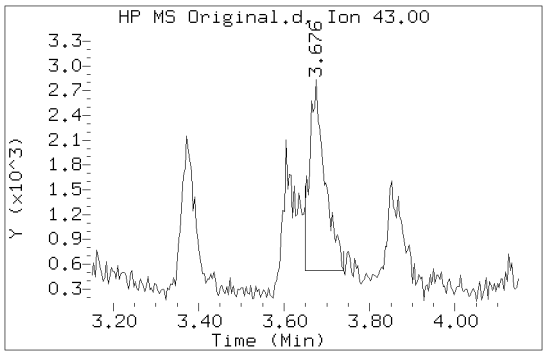


2-Butanone (78-93-3)

Reason Code:

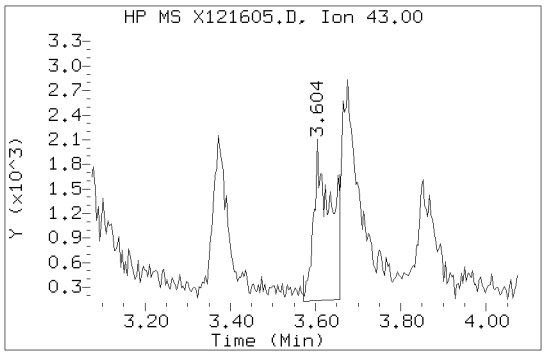
BEFORE

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HEIGHT
2307
27-Dec-2022
16:03
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AFTER

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HEIGHT
1969
27-Dec-2022
16:07
linh
pham



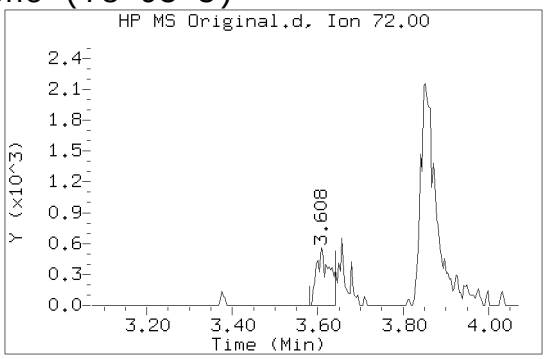
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InstruID : voa6.i
LabSampID : VSTD002

2-Butanone (78-93-3)

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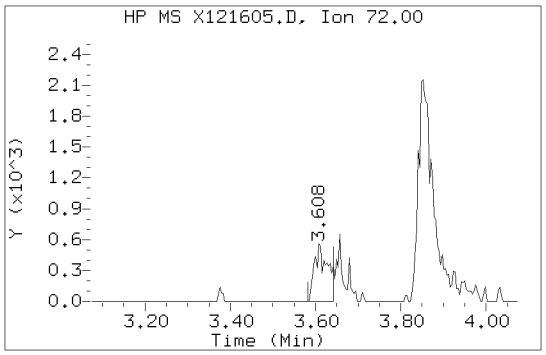
BEFORE

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HEIGHT
563
27-Dec-2022
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AFTER

MASS
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HEIGHT
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27-Dec-2022
16:07
linh
pham

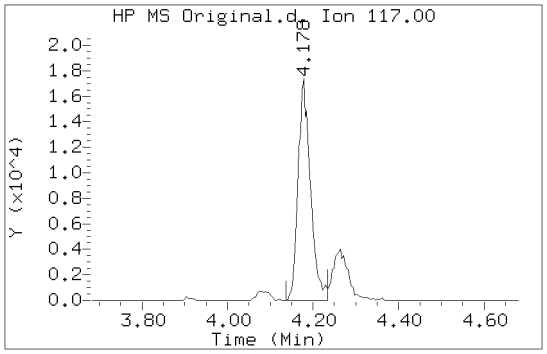


Carbon Tetrachloride (56-23-5)

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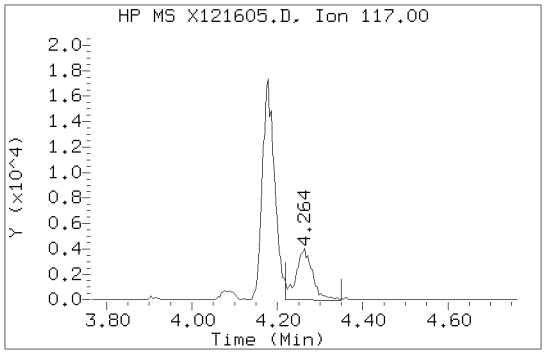
BEFORE

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27-Dec-2022
16:03
linh
pham



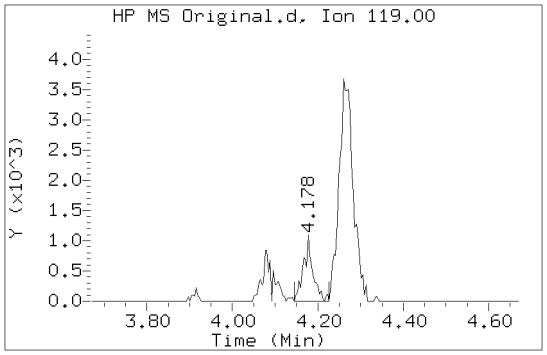
AFTER

MASS
117
AREA
11092
HEIGHT
4036
27-Dec-2022
16:07
linh
pham



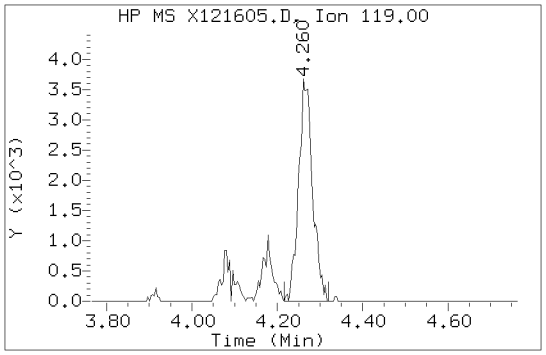
BEFORE

MASS
119
AREA
1692
HEIGHT
1100
27-Dec-2022
16:03
linh
pham



AFTER

MASS
119
AREA
8494
HEIGHT
3676
27-Dec-2022
16:07
linh
pham

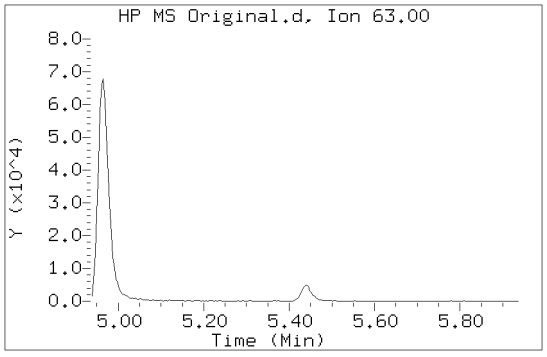


1,2-Dichloropropane (78-87-5)

Reason Code:

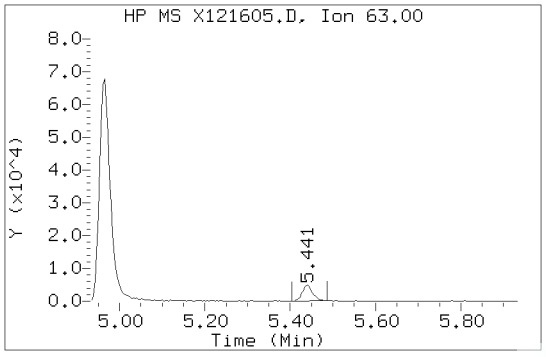
BEFORE

MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
63
AREA
8129
HEIGHT
4705
27-Dec-2022
16:07
linh
pham



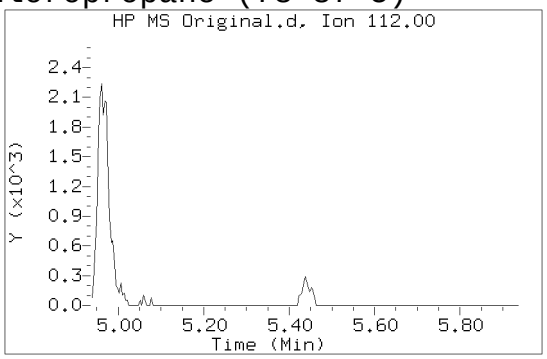
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

1,2-Dichloropropane (78-87-5)

Reason Code:

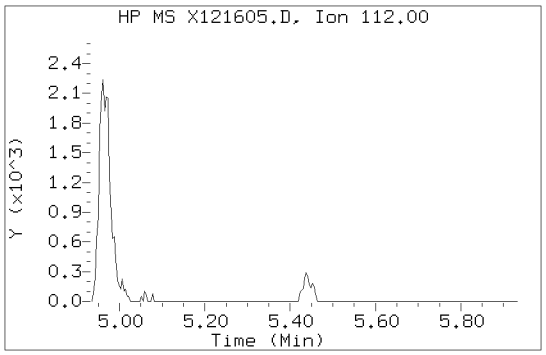
BEFORE

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

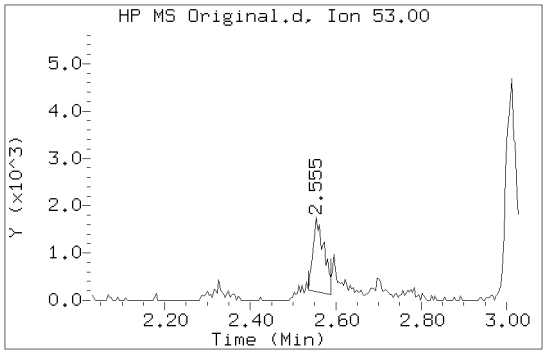


Acrylonitrile (107-13-1)

Reason Code:

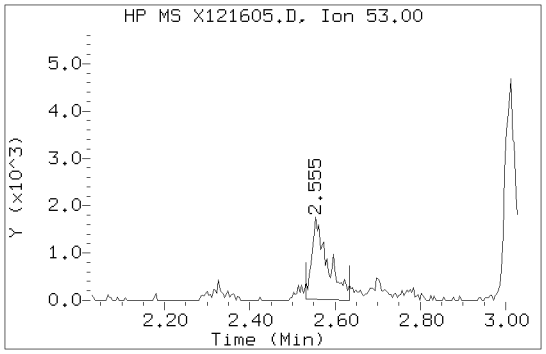
BEFORE

MASS
53
AREA
2810
HEIGHT
1577
27-Dec-2022
16:03
linh
pham



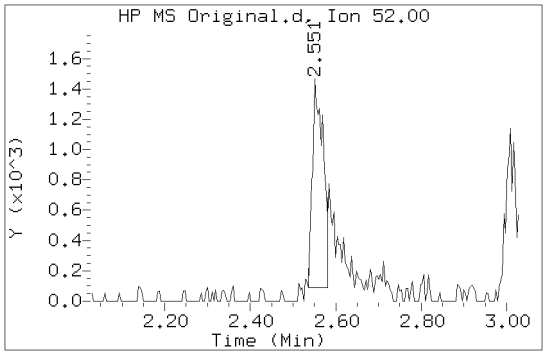
AFTER

MASS
53
AREA
4557
HEIGHT
1735
27-Dec-2022
16:07
linh
pham



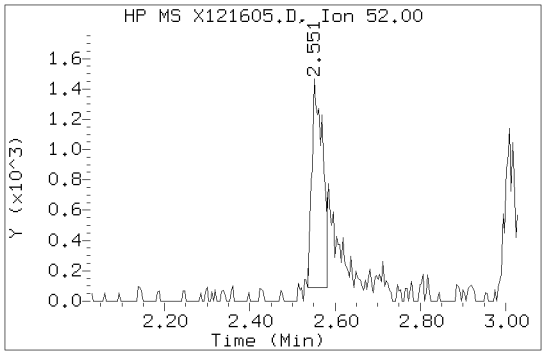
BEFORE

MASS
52
AREA
2408
HEIGHT
1379
27-Dec-2022
16:03
linh
pham



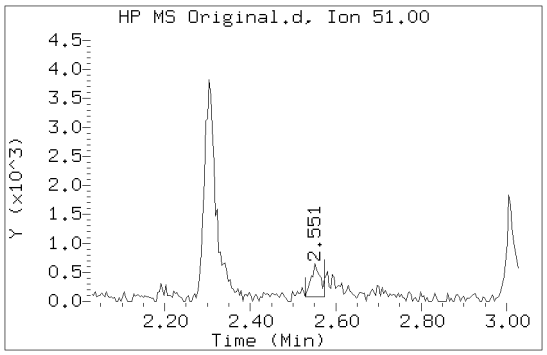
AFTER

MASS
52
AREA
2408
HEIGHT
1379
27-Dec-2022
16:07
linh
pham



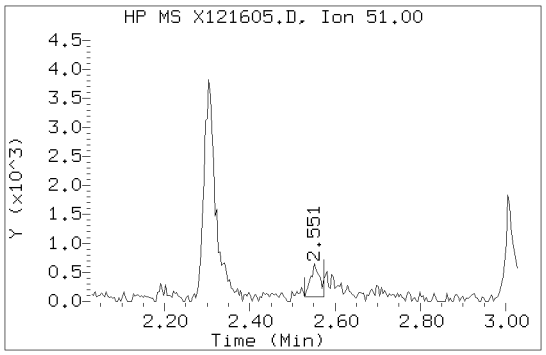
BEFORE

MASS
51
AREA
876
HEIGHT
575
27-Dec-2022
16:03
linh
pham



AFTER

MASS
51
AREA
876
HEIGHT
575
27-Dec-2022
16:07
linh
pham

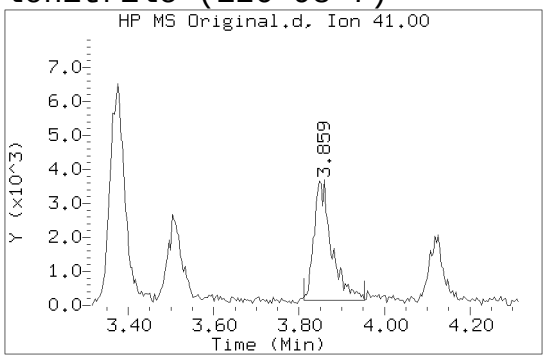


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

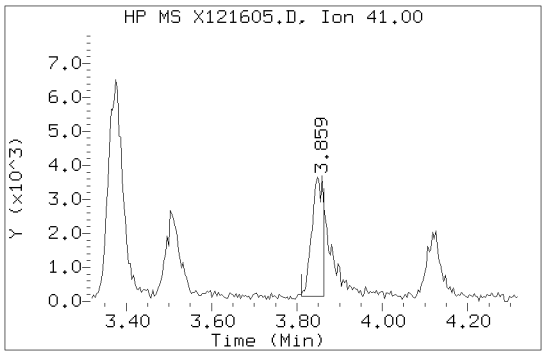
Methacrylonitrile (126-98-7)

Reason Code:

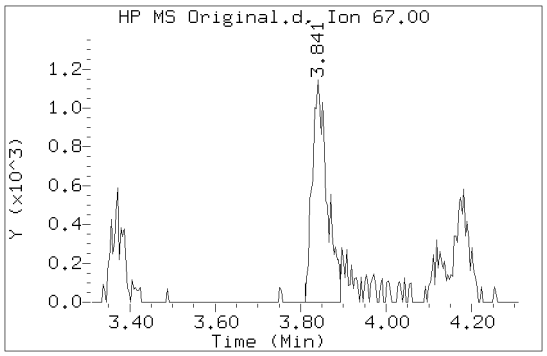
BEFORE
MASS
41
AREA
10013
HEIGHT
3544
27-Dec-2022
16:03
linh
pham



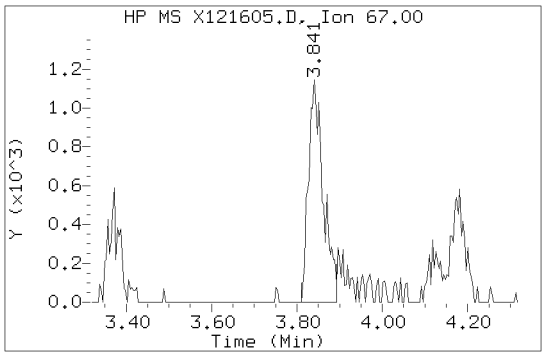
AFTER
MASS
41
AREA
6388
HEIGHT
3544
27-Dec-2022
16:07
linh
pham



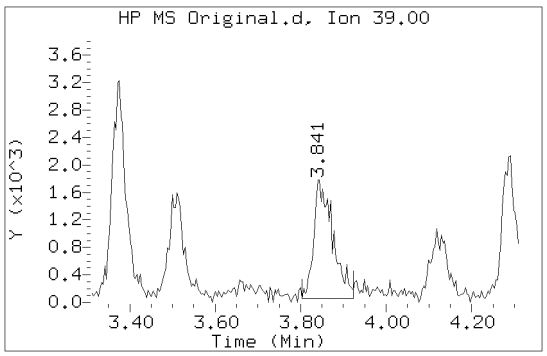
BEFORE
MASS
67
AREA
2751
HEIGHT
1145
27-Dec-2022
16:03
linh
pham



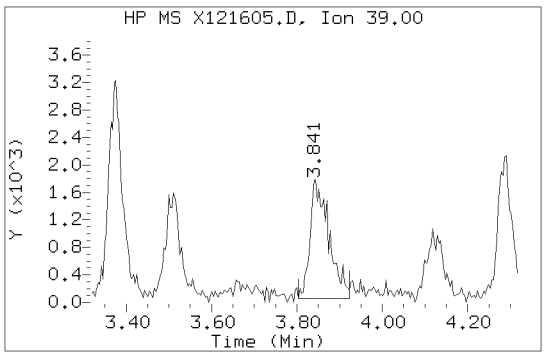
AFTER
MASS
67
AREA
2751
HEIGHT
1145
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
39
AREA
5310
HEIGHT
1724
27-Dec-2022
16:03
linh
pham



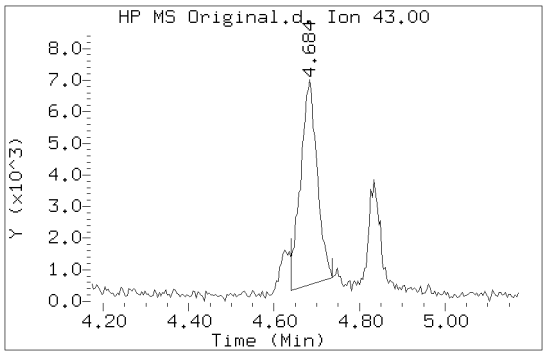
AFTER
MASS
39
AREA
5310
HEIGHT
1724
27-Dec-2022
16:07
linh
pham



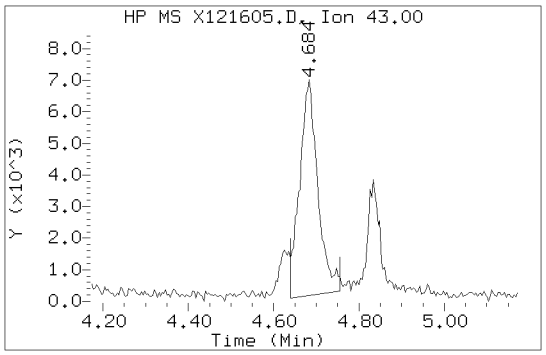
Isobutyl Alcohol (78-83-1)

Reason Code:

BEFORE
MASS
43
AREA
17811
HEIGHT
6479
27-Dec-2022
16:03
linh
pham



AFTER
MASS
43
AREA
20629
HEIGHT
6832
27-Dec-2022
16:07
linh
pham



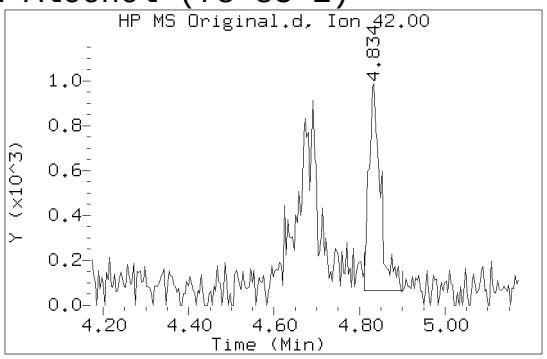
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

Isobutyl Alcohol (78-83-1)

Reason Code:

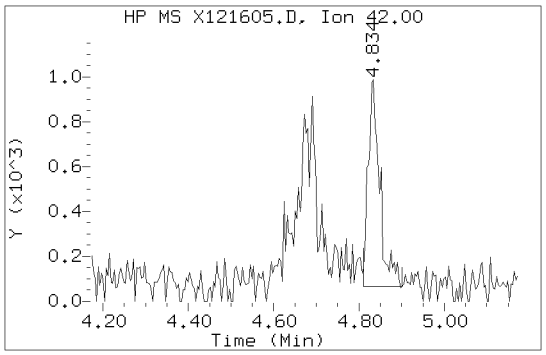
BEFORE

MASS
42
AREA
1728
HEIGHT
920
27-Dec-2022
16:03
linh
pham



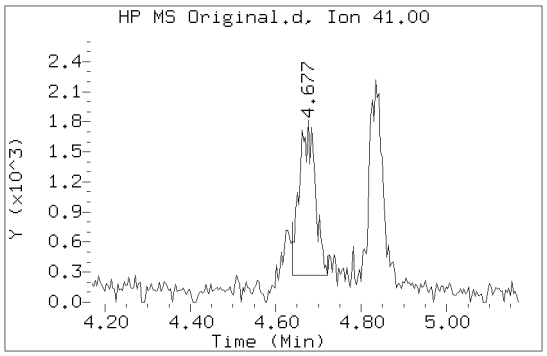
AFTER

MASS
42
AREA
1728
HEIGHT
920
27-Dec-2022
16:07
linh
pham



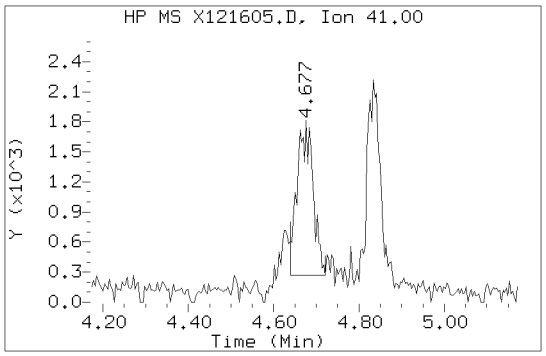
BEFORE

MASS
41
AREA
4067
HEIGHT
1547
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
4067
HEIGHT
1547
27-Dec-2022
16:07
linh
pham

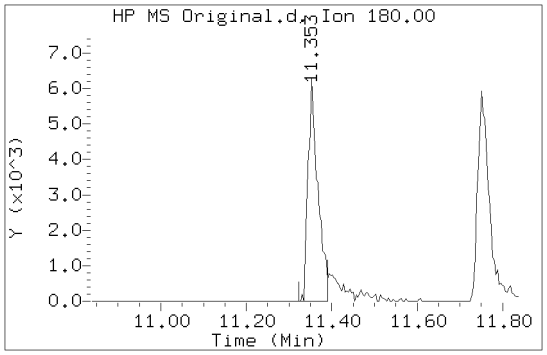


1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

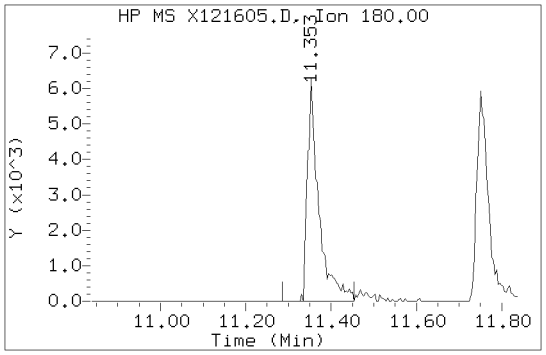
BEFORE

MASS
180
AREA
10131
HEIGHT
6269
27-Dec-2022
16:03
linh
pham



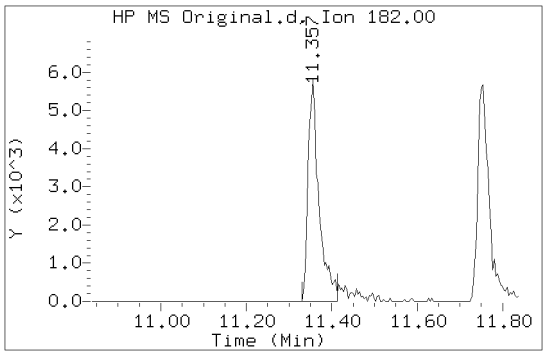
AFTER

MASS
180
AREA
11764
HEIGHT
6269
27-Dec-2022
16:07
linh
pham



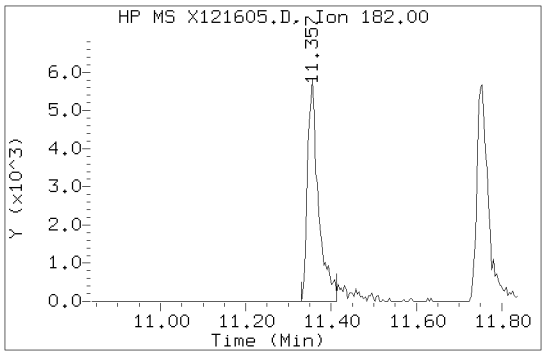
BEFORE

MASS
182
AREA
10317
HEIGHT
5807
27-Dec-2022
16:03
linh
pham



AFTER

MASS
182
AREA
10317
HEIGHT
5807
27-Dec-2022
16:07
linh
pham



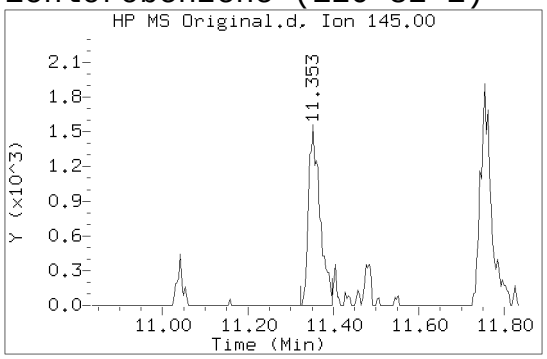
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

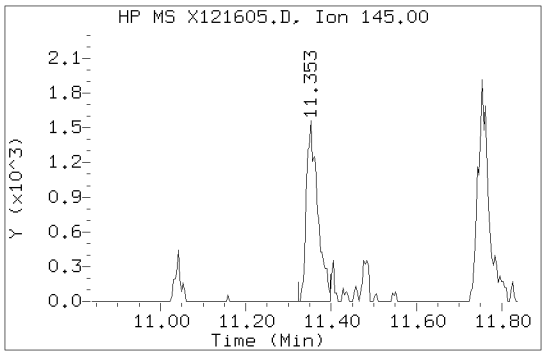
BEFORE

MASS
145
AREA
2887
HEIGHT
1565
27-Dec-2022
16:03
linh
pham



AFTER

MASS
145
AREA
2887
HEIGHT
1565
27-Dec-2022
16:07
linh
pham

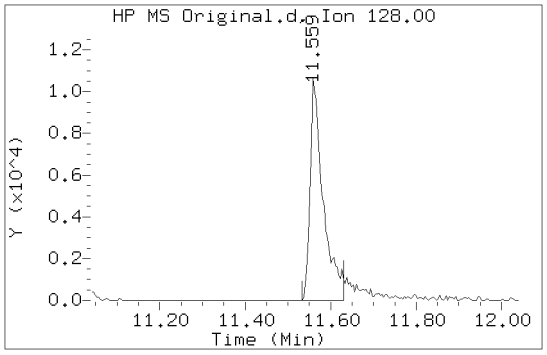


Naphthalene (91-20-3)

Reason Code:

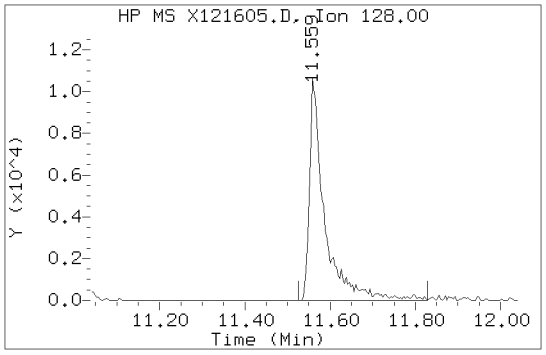
BEFORE

MASS
128
AREA
22581
HEIGHT
10616
27-Dec-2022
16:03
linh
pham



AFTER

MASS
128
AREA
26250
HEIGHT
10616
27-Dec-2022
16:07
linh
pham

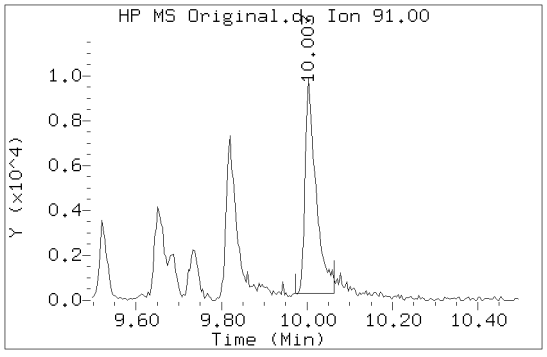


n-Butylbenzene (104-51-8)

Reason Code:

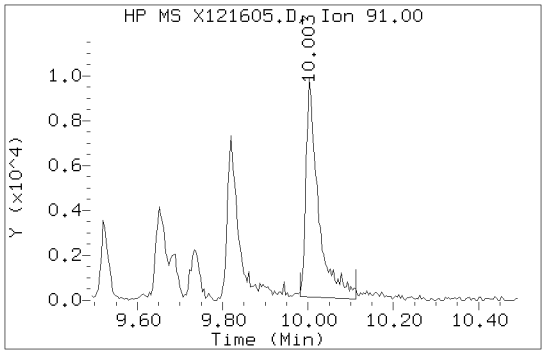
BEFORE

MASS
91
AREA
17181
HEIGHT
9558
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
19853
HEIGHT
9720
27-Dec-2022
16:07
linh
pham



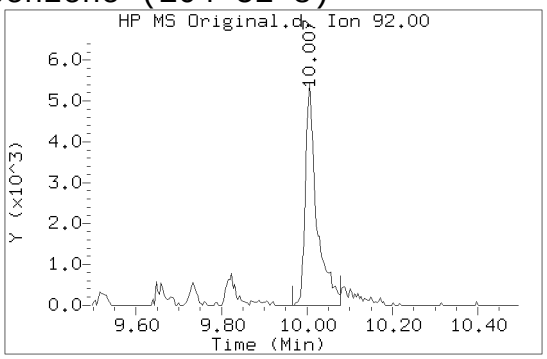
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

n-Butylbenzene (104-51-8)

Reason Code:

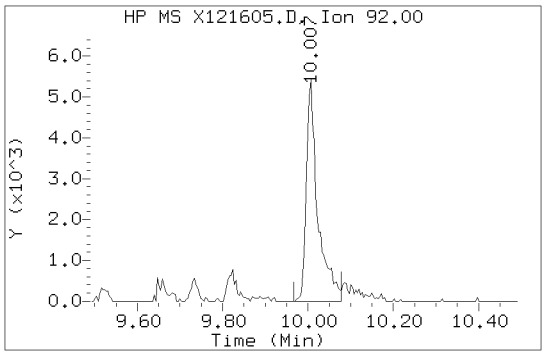
BEFORE

MASS
92
AREA
10185
HEIGHT
5422
27-Dec-2022
16:03
linh
pham



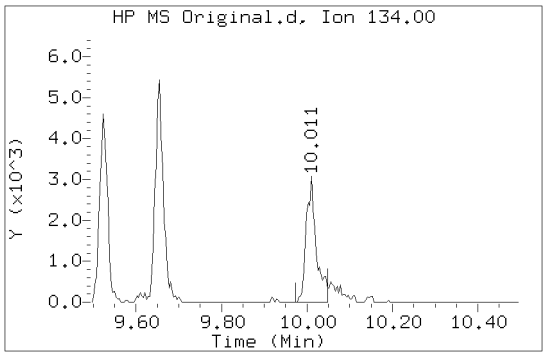
AFTER

MASS
92
AREA
10185
HEIGHT
5422
27-Dec-2022
16:07
linh
pham



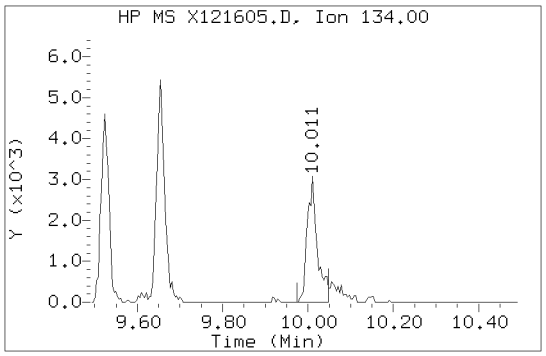
BEFORE

MASS
134
AREA
5059
HEIGHT
3076
27-Dec-2022
16:03
linh
pham



AFTER

MASS
134
AREA
5059
HEIGHT
3076
27-Dec-2022
16:07
linh
pham

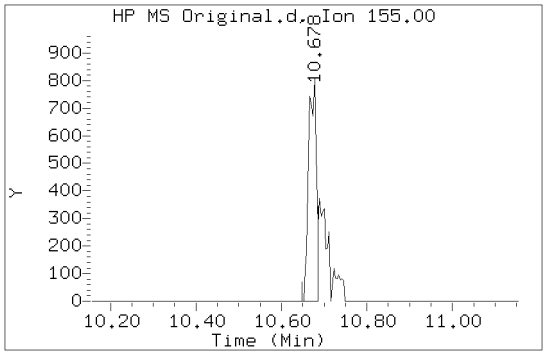


1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

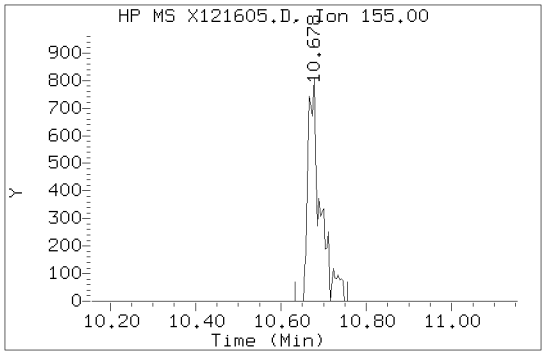
BEFORE

MASS
155
AREA
1026
HEIGHT
806
27-Dec-2022
16:03
linh
pham



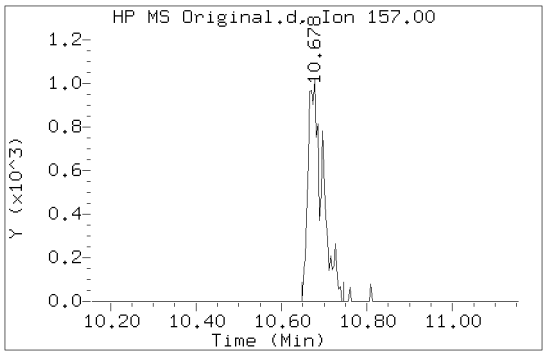
AFTER

MASS
155
AREA
1619
HEIGHT
806
27-Dec-2022
16:07
linh
pham



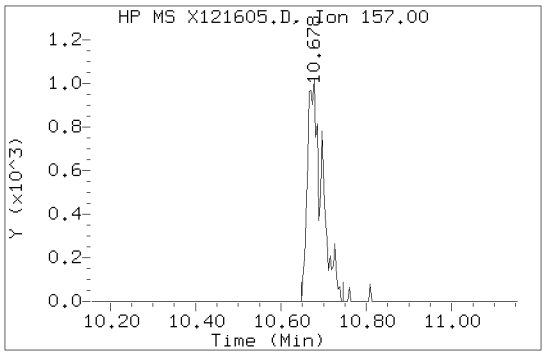
BEFORE

MASS
157
AREA
2422
HEIGHT
1016
27-Dec-2022
16:03
linh
pham



AFTER

MASS
157
AREA
2422
HEIGHT
1016
27-Dec-2022
16:07
linh
pham



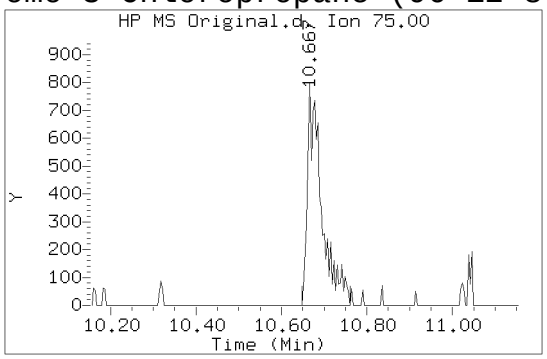
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

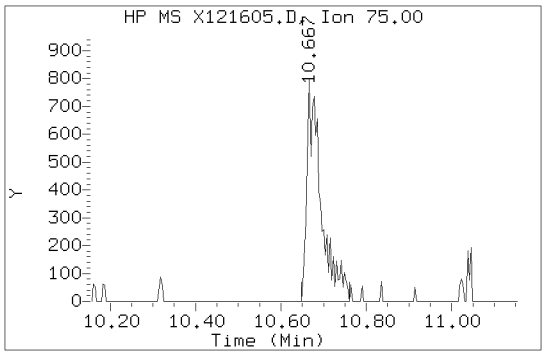
BEFORE

MASS
75
AREA
1843
HEIGHT
796
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
1843
HEIGHT
796
27-Dec-2022
16:07
linh
pham

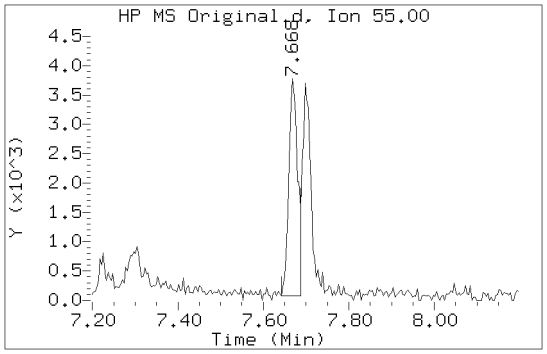


1-Chlorohexane (544-10-5)

Reason Code:

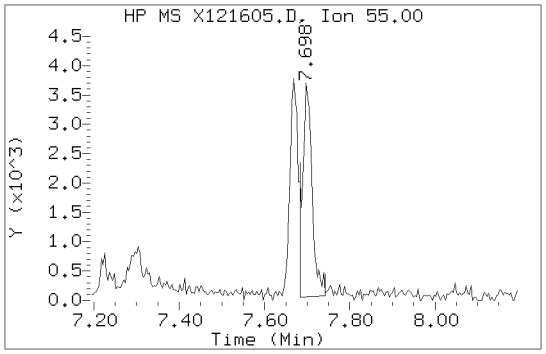
BEFORE

MASS
55
AREA
5357
HEIGHT
3703
27-Dec-2022
16:03
linh
pham



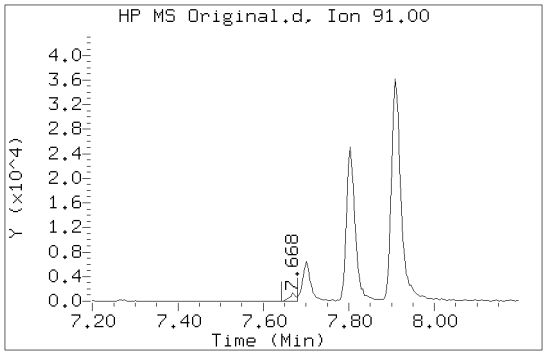
AFTER

MASS
55
AREA
5855
HEIGHT
3647
27-Dec-2022
16:07
linh
pham



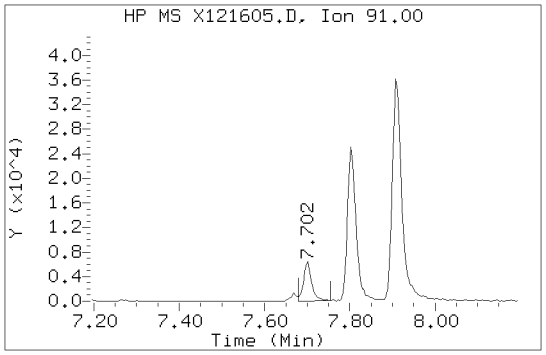
BEFORE

MASS
91
AREA
1356
HEIGHT
1324
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
8682
HEIGHT
6440
27-Dec-2022
16:07
linh
pham

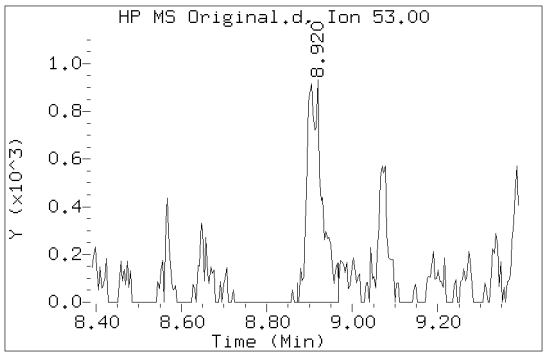


trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

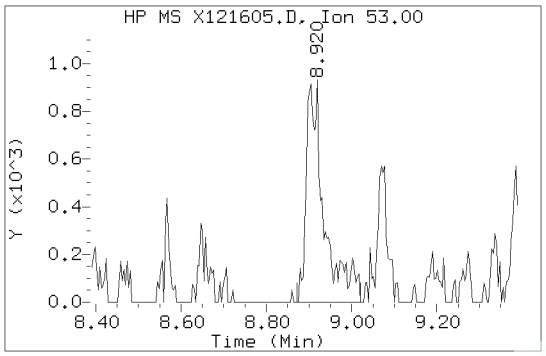
BEFORE

MASS
53
AREA
2313
HEIGHT
932
27-Dec-2022
16:03
linh
pham



AFTER

MASS
53
AREA
2690
HEIGHT
932
27-Dec-2022
16:07
linh
pham



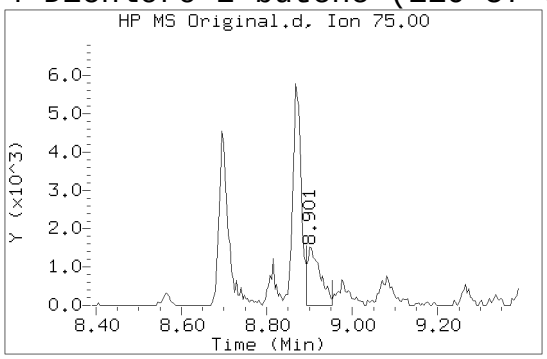
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

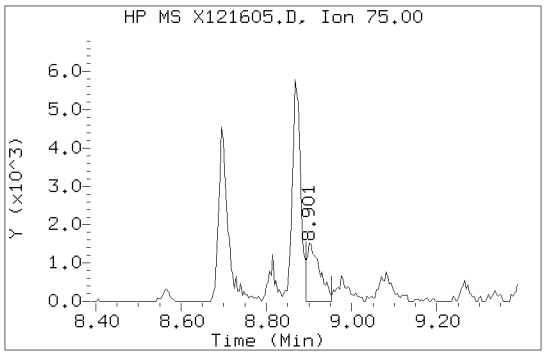
BEFORE

MASS
75
AREA
3228
HEIGHT
1526
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
3228
HEIGHT
1526
27-Dec-2022
16:07
linh
pham

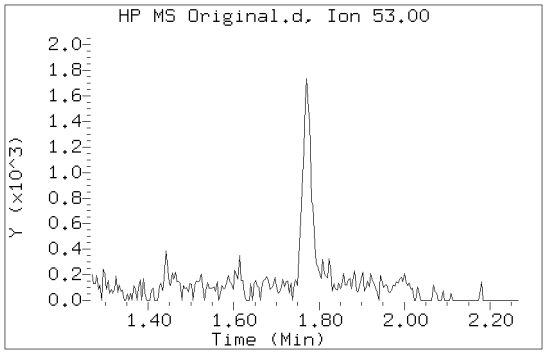


Chloroprene (126-99-8)

Reason Code:

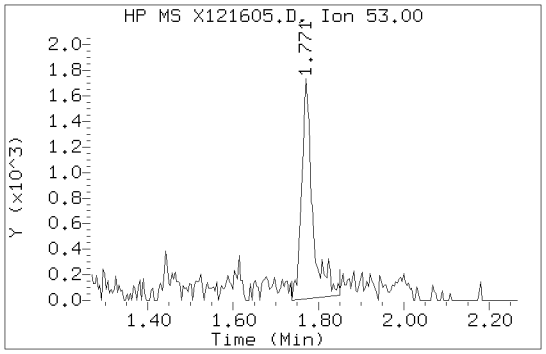
BEFORE

MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



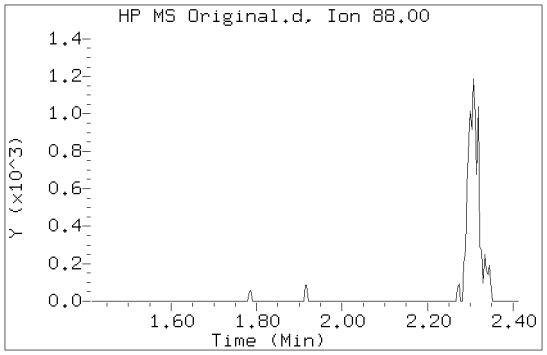
AFTER

MASS
53
AREA
3126
HEIGHT
1722
27-Dec-2022
16:07
linh
pham



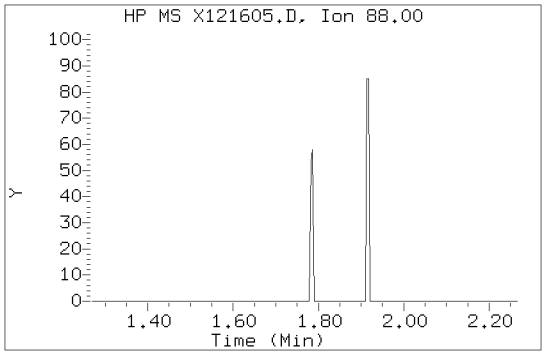
BEFORE

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

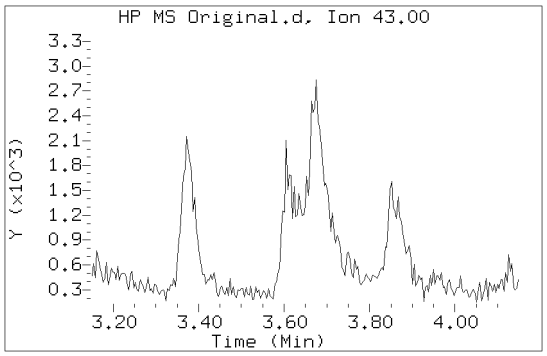


Ethyl Acetate (141-78-6)

Reason Code:

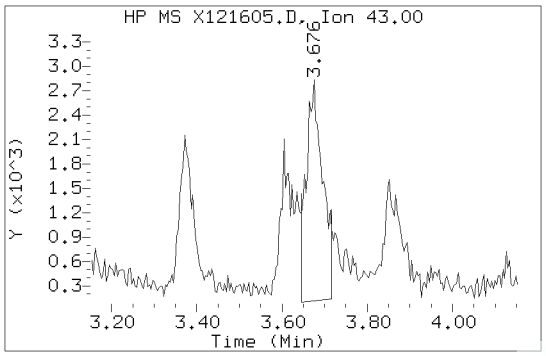
BEFORE

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

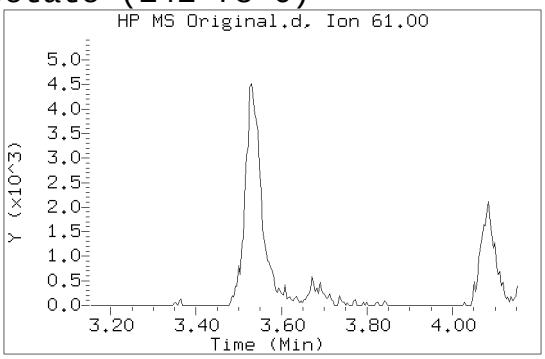
MASS
43
AREA
7422
HEIGHT
2716
27-Dec-2022
16:07
linh
pham



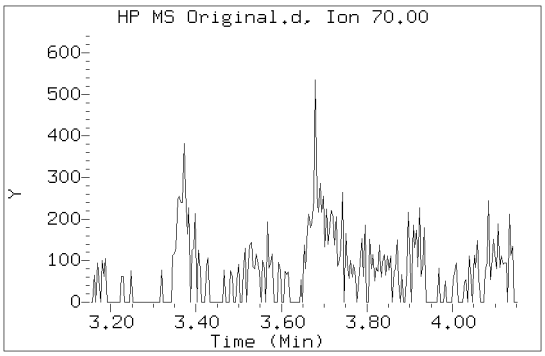
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

Ethyl Acetate (141-78-6)

BEFORE
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

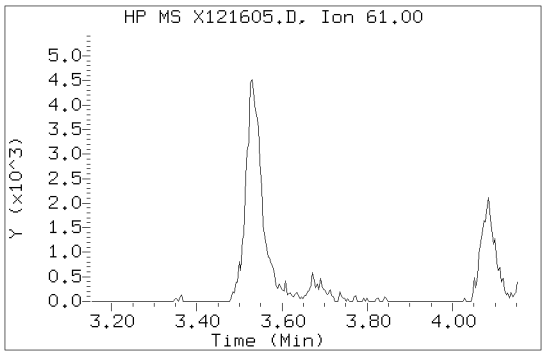


BEFORE
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

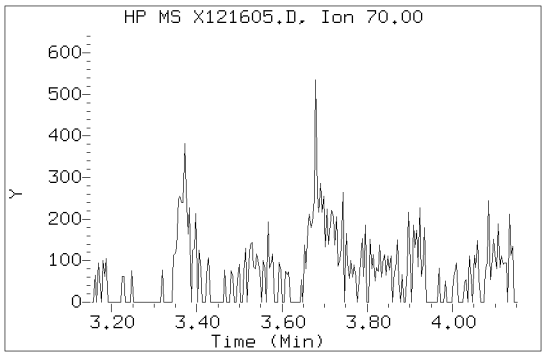


Reason Code:

AFTER
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

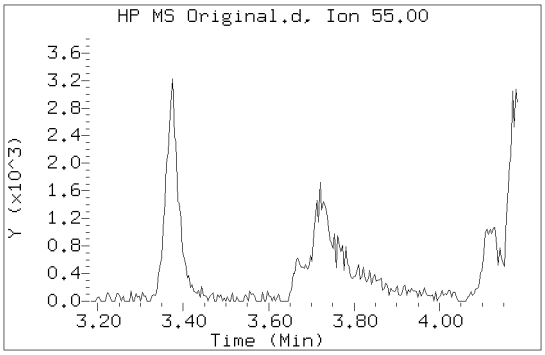


AFTER
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

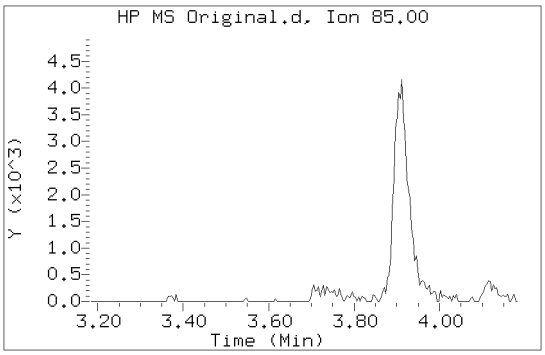


Methyl Acrylate (96-33-3)

BEFORE
MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

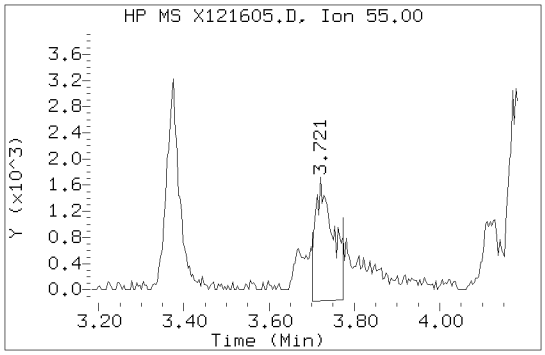


BEFORE
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

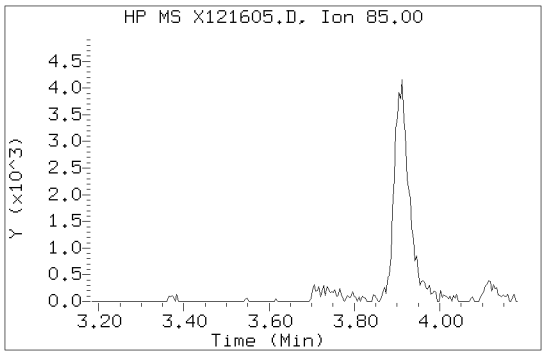


Reason Code:

AFTER
MASS
55
AREA
5443
HEIGHT
1892
27-Dec-2022
16:07
linh
pham



AFTER
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



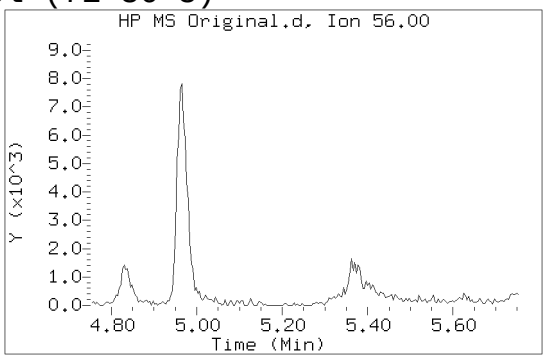
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

n-Butanol (71-36-3)

Reason Code:

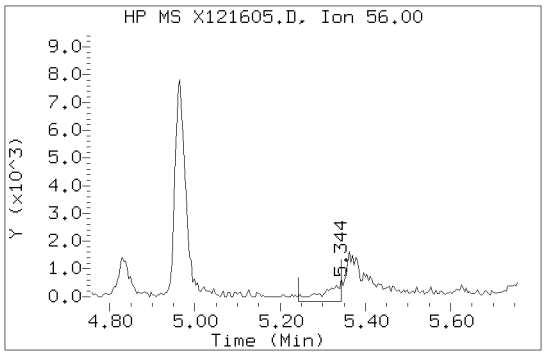
BEFORE

MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



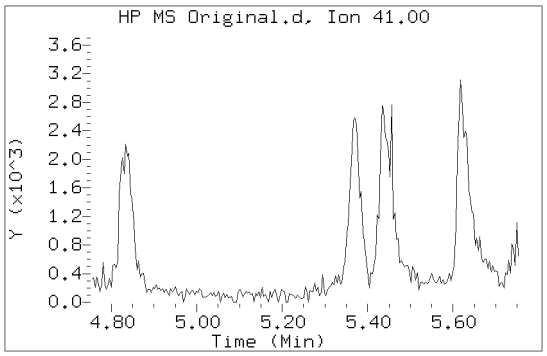
AFTER

MASS
56
AREA
2004
HEIGHT
808
27-Dec-2022
16:07
linh
pham



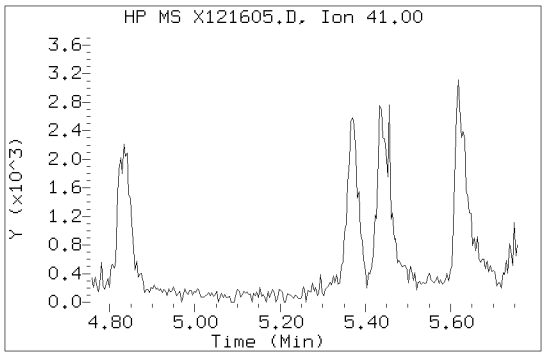
BEFORE

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

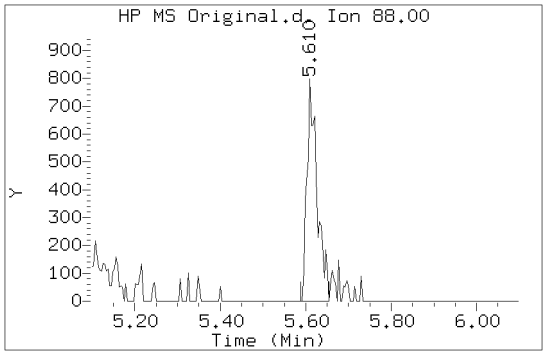


1,4-Dioxane ()

Reason Code:

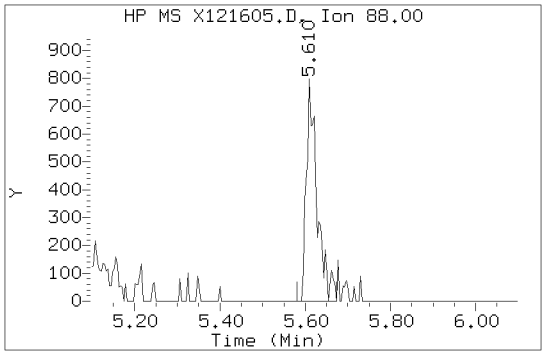
BEFORE

MASS
88
AREA
1335
HEIGHT
798
27-Dec-2022
16:03
linh
pham



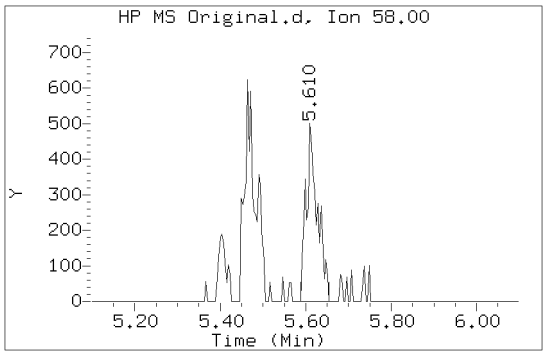
AFTER

MASS
88
AREA
1409
HEIGHT
798
27-Dec-2022
16:07
linh
pham



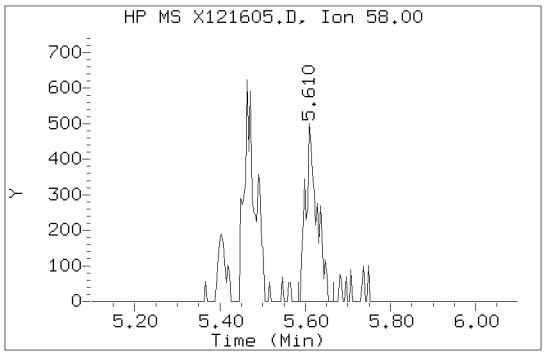
BEFORE

MASS
58
AREA
934
HEIGHT
501
27-Dec-2022
16:03
linh
pham



AFTER

MASS
58
AREA
934
HEIGHT
501
27-Dec-2022
16:07
linh
pham



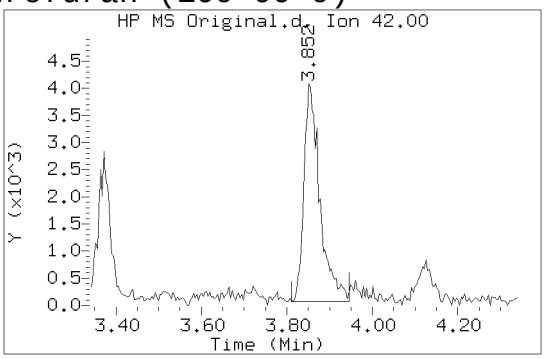
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

Tetrahydrofuran (109-99-9)

Reason Code:

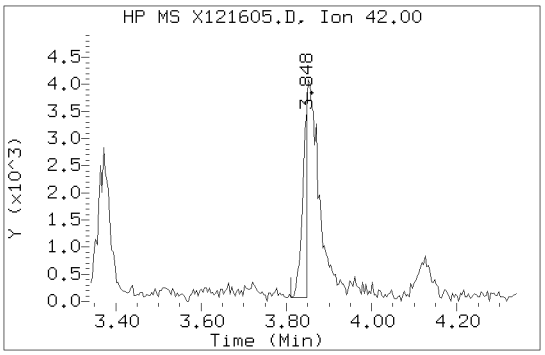
BEFORE

MASS
42
AREA
10469
HEIGHT
4012
27-Dec-2022
16:03
linh
pham



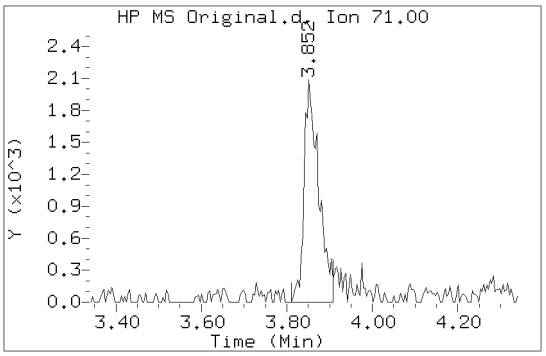
AFTER

MASS
42
AREA
2867
HEIGHT
3419
27-Dec-2022
16:07
linh
pham



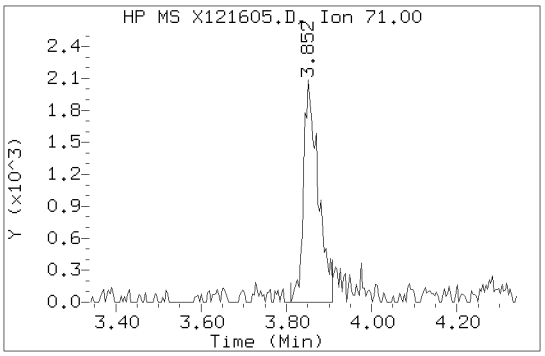
BEFORE

MASS
71
AREA
5020
HEIGHT
2086
27-Dec-2022
16:03
linh
pham



AFTER

MASS
71
AREA
5020
HEIGHT
2086
27-Dec-2022
16:07
linh
pham

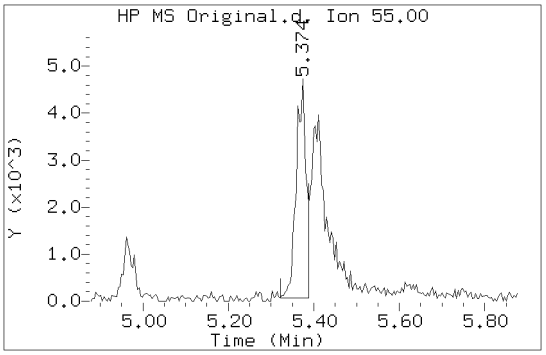


Methylcyclohexane (108-87-2)

Reason Code:

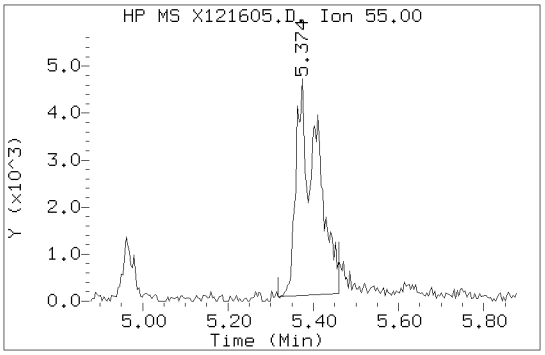
BEFORE

MASS
55
AREA
7676
HEIGHT
4656
27-Dec-2022
16:03
linh
pham



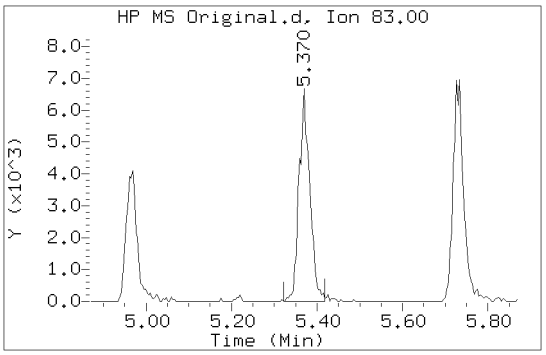
AFTER

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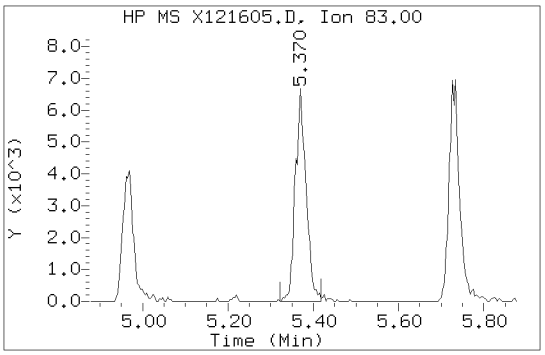
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AFTER

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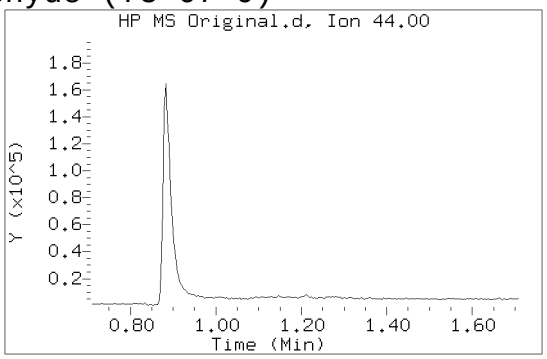
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Acetaldehyde (75-07-0)

Reason Code:

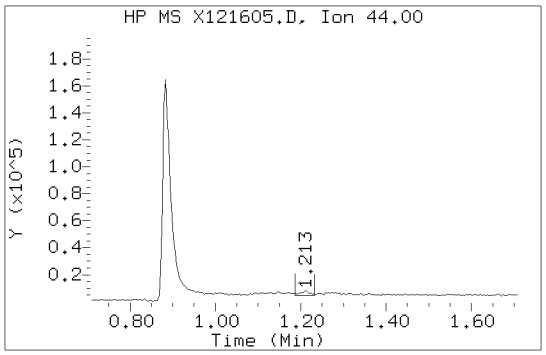
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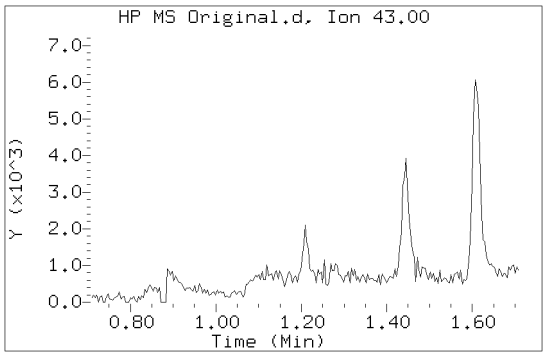
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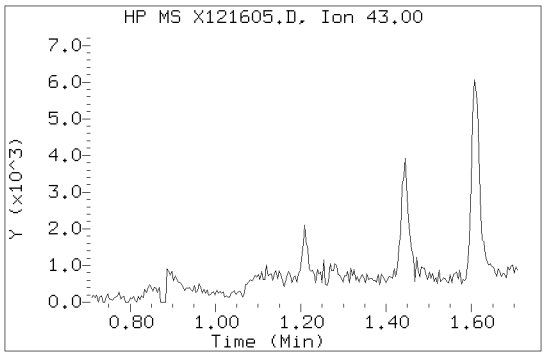
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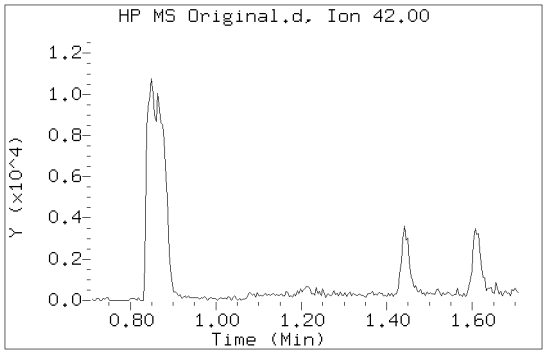
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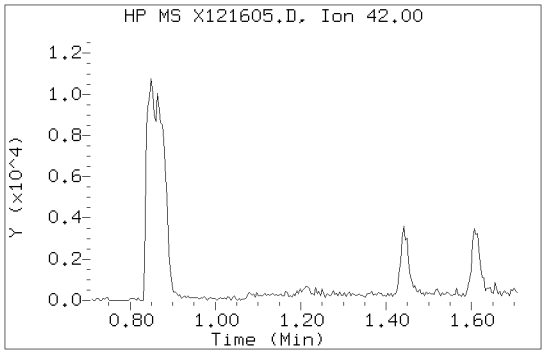
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AFTER

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Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
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Inj Date : 16-DEC-2022 13:23
Operator : PC Inst ID: voa6.i
Smp Info : VSTD005;VSTD005;1;5;
Misc Info : V6;WATER;0;1;
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Cal Date : 16-DEC-2022 13:02 Cal File: X121605.D
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	450664	50.0000	
135 1,4-Dioxane	88	5.602	5.602	(1.341)	4197	100.000	101.88(M)
140 1,3-Butadiene	54	1.164	1.164	(0.279)	14283	5.00000	4.61
25 Methacrylonitrile	41	3.840	3.840	(0.919)	15701	5.00000	4.92(M)
12 Isobutyl Alcohol	43	4.680	4.680	(1.120)	51624	100.000	101.84
13 Acetonitrile	39	2.198	2.198	(0.526)	19635	50.0000	47.87
14 Allyl Chloride	41	2.198	2.198	(0.526)	37993	5.00000	4.86
4 Propionitrile	54	3.660	3.660	(0.876)	23049	50.0000	50.12
136 n-Hexane	57	2.772	2.772	(0.664)	14618	5.00000	4.50
72 trans-1,4-Dichloro-2-butene	53	8.901	8.901	(1.161)	6648	5.00000	4.70(M)
194 Acetaldehyde	44	1.209	1.209	(0.289)	6161	20.0000	0.80(M)
23 Chloroprene	53	1.771	1.771	(0.424)	7154	5.00000	4.66(M)
145 alpha-Methylstyrene	118	9.261	9.261	(0.958)	37831	5.00000	4.79
200 Dimethyl Disulfide	94	6.198	6.198	(0.808)	40144	5.00000	4.53
139 Diethyl ether	59	1.756	1.756	(0.420)	15119	5.00000	5.02
130 Ethyl Acetate	43	3.660	3.660	(0.876)	18020	5.00000	5.12(M)
40 Methyl Methacrylate	41	5.617	5.617	(1.345)	15119	5.00000	4.92
49 Ethyl Methacrylate	69	6.715	6.715	(1.353)	13801	5.00000	4.27
132 n-Butanol	56	5.287	5.287	(1.266)	4891	100.000	125.41(M)
142 Tetrahydrofuran	42	3.848	3.848	(0.921)	7598	10.0000	10.82(M)

150	Allyl alcohol	57	2.772	2.772 (0.664)	14618	100.000	83.50
166	1,2,3-Trimethylbenzene	105	9.733	9.733 (1.007)	80329	5.00000	4.68

			QUANT SIG					AMOUNTS	
								CAL-AMT	ON-COL
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
	131	Methyl Acrylate	55	3.705	3.705	(0.887)	14950	5.00000	4.88(M)
	162	Butyl acrylate	55	8.260	8.260	(1.077)	38320	5.00000	4.48
	2	Dichlorodifluoromethane	85	0.972	0.972	(0.233)	15008	5.00000	5.11
	3	Chloromethane	50	1.077	1.077	(0.258)	19623	5.00000	6.81
	5	Vinyl Chloride	62	1.141	1.141	(0.273)	19002	5.00000	4.82
	6	Bromomethane	94	1.336	1.336	(0.320)	15112	5.00000	6.66
	7	Chloroethane	64	1.400	1.400	(0.335)	14167	5.00000	5.17
	8	Trichlorofluoromethane	101	1.557	1.557	(0.373)	26620	5.00000	4.83
	9	Acrolein	56	1.441	1.441	(0.345)	2699	10.0000	11.33
	10	Acetone	43	1.973	1.973	(0.472)	17632	10.0000	13.91
	11	1,1-Dichloroethene	96	1.910	1.910	(0.457)	16850	5.00000	4.92
	15	Iodomethane	142	2.026	2.026	(0.485)	26708	10.0000	9.27
	16	Acrylonitrile	53	2.551	2.551	(0.611)	11047	10.0000	9.52
	17	Methylene Chloride	84	2.303	2.303	(0.551)	22932	5.00000	4.88(M)
	18	Methyl tert-butyl ether	73	2.532	2.532	(0.606)	56330	5.00000	5.03
	19	Carbon Disulfide	76	2.067	2.067	(0.495)	85418	10.0000	9.54
	20	trans-1,2-Dichloroethene	96	2.532	2.532	(0.606)	19006	5.00000	4.96
	21	Vinyl Acetate	43	3.000	3.000	(0.718)	101238	10.0000	10.30
	22	1,1-Dichloroethane	63	2.922	2.922	(0.699)	33810	5.00000	5.03
	24	2-Butanone	43	3.600	3.600	(0.862)	11771	10.0000	11.53(H)
	26	2,2-Dichloropropane	77	3.507	3.507	(0.839)	27881	5.00000	4.88
	27	cis-1,2-Dichloroethene	96	3.533	3.533	(0.846)	22734	5.00000	4.88
	28	Chloroform	83	3.904	3.904	(0.935)	38156	5.00000	5.06
	29	Bromochloromethane	128	3.799	3.799	(0.909)	13213	5.00000	5.18
$	30	Dibromofluoromethane	113	4.103	4.103	(0.982)	24255	5.00000	5.45
	31	1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	29017	5.00000	4.85
	32	1,1-Dichloropropene	75	4.279	4.279	(0.862)	23845	5.00000	4.90(M)
	33	1,2-Dichloroethane	62	4.556	4.556	(0.918)	28173	5.00000	5.01
	34	Carbon Tetrachloride	117	4.264	4.264	(0.859)	24171	5.00000	4.65
$	35	1,2-Dichloroethane-d4	65	4.477	4.477	(1.072)	24938	5.00000	5.70(M)
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	685413	50.0000	
	37	Benzene	78	4.511	4.511	(0.909)	81981	5.00000	5.00
	38	Trichloroethene	130	5.208	5.208	(1.049)	22693	5.00000	4.88
	39	Bromodichloromethane	83	5.729	5.729	(1.154)	29358	5.00000	4.77
	41	2-Chloroethylvinyl ether	63	6.056	6.056	(1.220)	17700	10.0000	10.12
	42	1,2-Dichloropropane	63	5.437	5.437	(1.095)	21679	5.00000	4.97
	44	Dibromomethane	93	5.557	5.557	(1.119)	14449	5.00000	4.88
	45	4-Methyl-2-Pentanone	43	6.329	6.329	(0.825)	34912	10.0000	9.98
	46	cis-1,3-Dichloropropene	75	6.161	6.161	(1.241)	35507	5.00000	4.92
*	47	Chlorobenzene-d5	117	7.668	7.668	(1.000)	654176	50.0000	
$	48	Toluene-d8	98	6.389	6.389	(0.833)	81640	5.00000	5.05
	50	Toluene	91	6.449	6.449	(0.841)	89594	5.00000	4.95
	51	trans-1,3-Dichloropropene	75	6.689	6.689	(1.347)	28399	5.00000	4.74(M)
	52	2-Hexanone	43	7.094	7.094	(0.925)	24056	10.0000	10.11
	53	1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	18638	5.00000	5.13
	54	1,3-Dichloropropane	76	6.985	6.985	(0.911)	35759	5.00000	5.00
	55	Dibromochloromethane	129	7.176	7.176	(0.936)	25357	5.00000	4.84
	56	Tetrachloroethene	164	6.929	6.929	(0.904)	17219	5.00000	4.60
	57	1,2-Dibromoethane	107	7.263	7.263	(0.947)	23172	5.00000	5.10
	58	1-Chlorohexane	55	7.698	7.698	(1.550)	15210	5.00000	4.59(MH)
	59	Chlorobenzene	112	7.694	7.694	(1.003)	62744	5.00000	4.89
	60	1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	22632	5.00000	4.74

61 Ethylbenzene	106	7.802	7.802 (1.018)	29550	5.00000	4.89
62 m,p-Xylenes	106	7.907	7.907 (1.031)	73283	10.0000	9.40