LONGHORN ARMY AMMUNITION PLANT KARNACK, TEXAS

ADMINISTRATIVE RECORD

Volume 13

2022

Bate Stamp Numbers
01094684 – 01096685

Prepared for

Department of the Army
Longhorn Army Ammunition Plant

1976–2022

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

VOLUME 13

2022

A.	Title:	(Cont'd) Report – Appendix D Level IV DOD (March 2020) to Final First Annual Remediation Action Operation Report, LHAAP-16 Landfill, Longhorn Army Ammunition Plant, Karnack, Texas, April 2022
	Author(s):	Department of the Army
	Recipient:	U.S. Environmental Protection Agency and Texas Commission on Environmental Quality
	Date:	April 19, 2022
	Bate Stamp:	01094684 – 01096685

C:\TOC3201\Data\2020_03_13_001.t32

	Type	Analysis	Sample Name	Sample ID	Origin	Result	Notes	Status
56	Unknown	NPOC	HS20030483-19	1/2	12-27-2019.c	NPOC:0.919		Completed
57	Unknown	NPOC	HS20030483-20	1/2	12-27-2019.c	NPOC:0.893		Completed
58	Unknown	NPOC	CCV	Untitled	12-27-2019.c	NPOC:23.21		Completed
59	Unknown	NPOC	CCB	Untitled	12-27-2019.c	NPOC:0.245		Completed
60	Unknown	NPOC	HS20030483-15MS	1/2	12-27-2019.c	NPOC:10.62		Completed
61	Unknown	NPOC	HS20030483-21	1/2	12-27-2019.c	NPOC:0.870		Completed
62	Unknown	NPOC	HS20030483-22	1/2	12-27-2019.c	NPOC:1.319		Completed
63	Unknown	NPOC	HS20030483-23	1/2	12-27-2019.c	NPOC:1.306		Completed
64	Unknown	NPOC	HS20030483-24	1/2	12-27-2019.c	NPOC:1.294		Completed
65	Unknown	NPOC	CCV	Untitled	12-27-2019.c	NPOC:23.13		Completed
66	Unknown	NPOC	CCB	Untitled	12-27-2019.c	NPOC:0.120		Completed
67	Unknown	NPOC	WBLKW4-031620	Untitled	12-27-2019.c	NPOC:0.125		Completed
68	Unknown	NPOC	WLCSW4-031620	Untitled	12-27-2019.c	NPOC:8.594		Completed
69	Unknown	NPOC	WLCSDW4-031620	Untitled	12-27-2019.c	NPOC:8.751		Completed
70	Unknown	NPOC	HS20030483-25	1/2	12-27-2019.c	NPOC:2.373		Completed
71	Unknown	NPOC	HS20030483-26	1/2	12-27-2019.c	NPOC:2.427		Completed
72	Unknown	NPOC	HS20030483-27	1/2	12-27-2019.c	NPOC:2.396		Completed
73	Unknown	NPOC	HS20030483-28	1/2	12-27-2019.c	NPOC:0.894		Completed
74	Unknown	NPOC	HS20030483-29	1/2	12-27-2019.c	NPOC:0.741		Completed
75	Unknown	NPOC	HS20030483-30	1/2	12-27-2019.c	NPOC:0.774		Completed
76	Unknown	NPOC	HS20030483-31	1/2	12-27-2019.c	NPOC:1.939		Completed
77	Unknown	NPOC	CCV	Untitled	12-27-2019.c	NPOC:23.15		Completed
78	Unknown	NPOC	CCB	Untitled	12-27-2019.c	NPOC:0.205		Completed
79	Unknown	NPOC	HS20030483-32	Untitled	12-27-2019.c	NPOC:1.863		Completed
80	Unknown	NPOC	HS20030483-33	Untitled	12-27-2019.c	NPOC:1.863		Completed
81	Unknown	NPOC	HS20030483-33MS	Untitled	12-27-2019.c	NPOC:11.18		Completed
82	Unknown	NPOC	HS20030502-01	Untitled	12-27-2019.c	NPOC:7.085		Completed
83	Unknown	NPOC	CCV	Untitled	12-27-2019.c	NPOC:23.06		Completed
84	Unknown	NPOC	CCB	Untitled	12-27-2019.c	NPOC:0.209		Completed

	Date / Time	Vial
56	3/16/2020 6:03:46 PM	29
57	3/16/2020 6:16:55 PM	30
58	3/16/2020 6:30:28 PM	31
59	3/16/2020 6:45:47 PM	32
60	3/16/2020 6:58:56 PM	33
61	3/16/2020 7:14:15 PM	34
62	3/16/2020 7:29:29 PM	35
63	3/16/2020 7:44:43 PM	36
64	3/16/2020 7:59:57 PM	37
65	3/16/2020 8:13:14 PM	38
66	3/16/2020 8:28:33 PM	39
67	3/16/2020 8:43:47 PM	40
68	3/16/2020 8:56:56 PM	41
69	3/16/2020 9:10:10 PM	42
70	3/16/2020 9:23:24 PM	43
71	3/16/2020 9:36:38 PM	44
72	3/16/2020 9:49:52 PM	45
73	3/16/2020 10:05:11 PM	46
74	3/16/2020 10:20:26 PM	47
75	3/16/2020 10:33:36 PM	48
76	3/16/2020 10:46:51 PM	49
77	3/16/2020 11:00:09 PM	50
78	3/16/2020 11:13:25 PM	51
79	3/16/2020 11:26:41 PM	52
80	3/16/2020 11:42:01 PM	53
81	3/16/2020 11:55:11 PM	54
82	3/17/2020 12:08:27 AM	55
83	3/17/2020 12:21:43 AM	56
84	3/17/2020 12:34:59 AM	57

Instr.Information

System	TOC csh with asi
Instrument Options	TOC/ASI/IC Unit/
Catalyst	Regular Sensitivity

Sample

Sample Name:	CCV
Sample ID:	Untitled
Origin:	12-27-2019.cal
Status	Completed
Chk. Result	

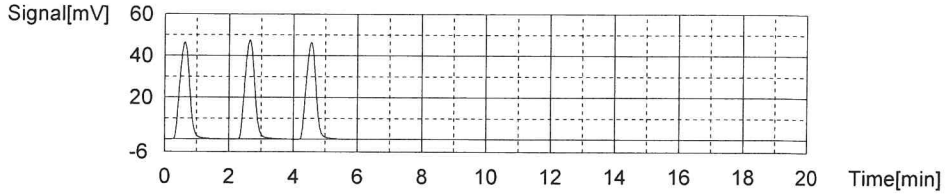
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:23.13mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	98.02	23.15mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 8:09:04 PM
2	98.62	23.29mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 8:11:09 PM
3	97.16	22.95mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 8:13:14 PM

Mean Area 97.93
Mean Conc. 23.13mg/L



Sample

Sample Name:	CCB
Sample ID:	Untitled
Origin:	12-27-2019.cal
Status	Completed
Chk. Result	

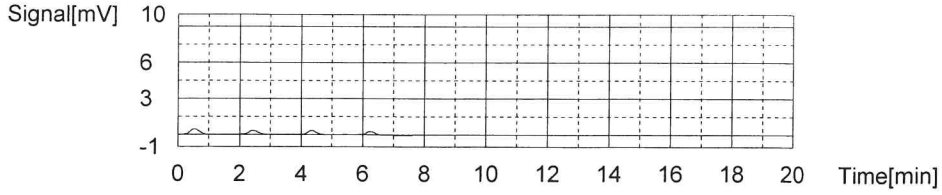
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1206mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.8080	0.1908mg/L	50uL	1	E	12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 8:22:18 PM
2	0.5387	0.1272mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 8:24:23 PM
3	0.5334	0.1260mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 8:26:28 PM
4	0.4593	0.1085mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 8:28:33 PM

Mean Area 0.5105
Mean Conc. 0.1206mg/L



Sample

Sample Name: WBLKW4-031620
Sample ID: Untitled
Origin: 12-27-2019.cal
Status Completed
Chk. Result

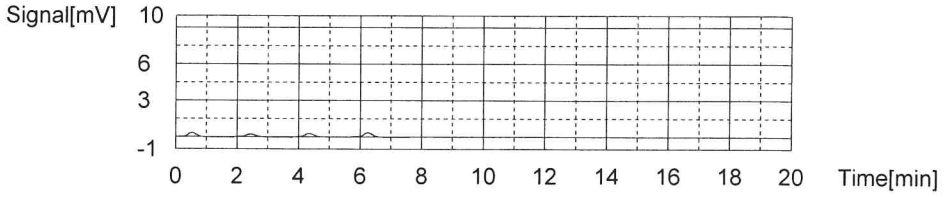
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1254mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.5539	0.1308mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 8:37:32 PM
2	0.3365	0.07947mg/L	50uL	1	E	12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 8:39:37 PM
3	0.4481	0.1058mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 8:41:42 PM
4	0.5914	0.1397mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 8:43:47 PM

Mean Area 0.5311
Mean Conc. 0.1254mg/L



Sample

Sample Name: WLCSW4-031620
Sample ID: Untitled
Origin: 12-27-2019.cal
Status Completed
Chk. Result

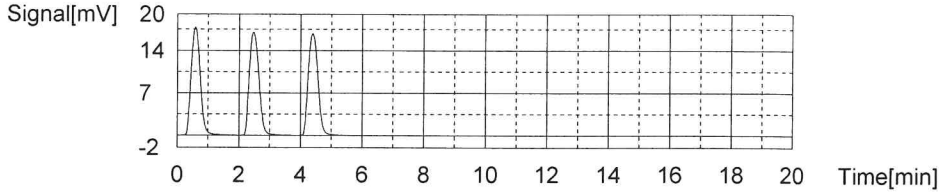
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:8.594mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	36.34	8.583mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 8:52:46 PM
2	36.28	8.568mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 8:54:51 PM
3	36.55	8.632mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 8:56:56 PM

Mean Area 36.39
Mean Conc. 8.594mg/L



Sample

Sample Name: WLCSDW4-031620
Sample ID: Untitled
Origin: 12-27-2019.cal
Status Completed
Chk. Result

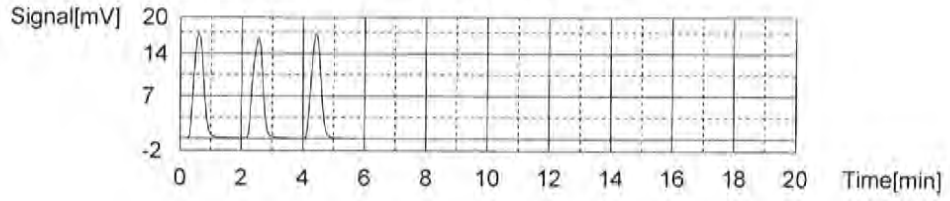
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:8.751mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	36.94	8.724mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 9:06:00 PM
2	37.14	8.771mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 9:08:05 PM
3	37.08	8.757mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 9:10:10 PM

Mean Area 37.05
Mean Conc. 8.751mg/L



Sample

Sample Name: CCV
Sample ID: Untitled
Origin: 12-27-2019.cal
Status Completed
Chk. Result

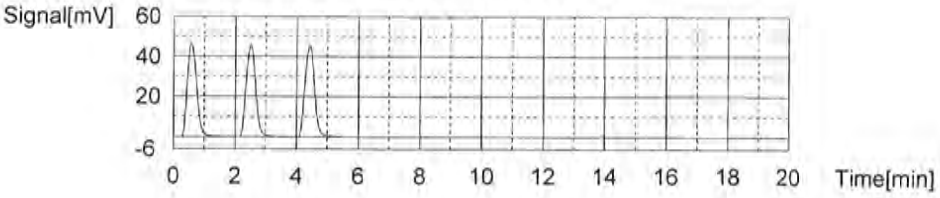
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:23.15mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	98.54	23.27mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 10:55:57 PM
2	97.39	23.00mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 10:58:02 PM
3	98.08	23.16mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 11:00:09 PM

Mean Area 98.00
Mean Conc. 23.15mg/L



Sample

Sample Name: CCB
Sample ID: Untitled
Origin: 12-27-2019.cal
Status Completed
Chk. Result

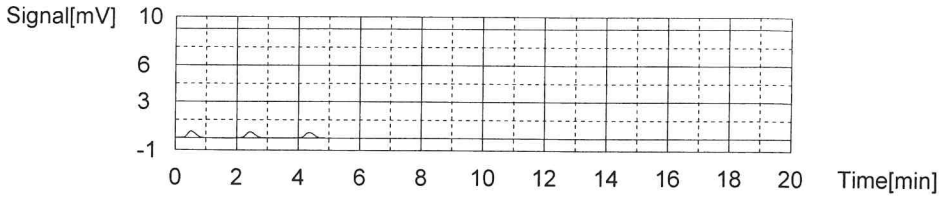
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.2051mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.9272	0.2190mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 11:09:15 PM
2	0.8664	0.2046mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 11:11:20 PM
3	0.8114	0.1916mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 11:13:25 PM

Mean Area 0.8683
Mean Conc. 0.2051mg/L



Sample

Sample Name: HS20030483-33
Sample ID: Untitled
Origin: 12-27-2019.cal
Status Completed
Chk. Result

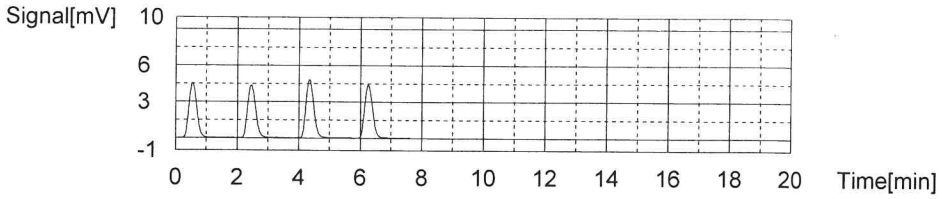
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.863mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.921	1.871mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 11:35:46 PM
2	7.920	1.870mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 11:37:51 PM
3	8.326	1.966mg/L	50uL	1	E	12-27-2019.2019_12_27_17_39_56.cal	3/16/2020 11:39:56 PM
4	7.818	1.846mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 11:42:01 PM

Mean Area 7.886
Mean Conc. 1.863mg/L



Sample

Sample Name: HS20030483-33MS
Sample ID: Untitled
Origin: 12-27-2019.cal
Status Completed
Chk. Result

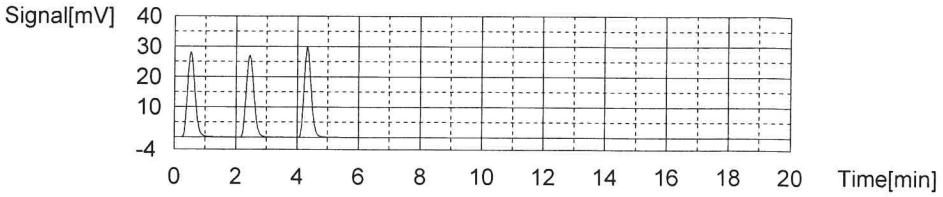
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:11.18mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	47.81	11.29mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 11:51:01 PM
2	46.85	11.06mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 11:53:06 PM
3	47.30	11.17mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/16/2020 11:55:11 PM

Mean Area 47.32
Mean Conc. 11.18mg/L



Sample

Sample Name: CCV
Sample ID: Untitled
Origin: 12-27-2019.cal
Status Completed
Chk. Result

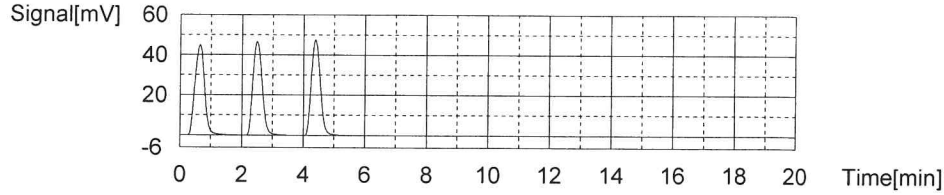
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:23.06mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	97.61	23.05mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/17/2020 12:17:33 AM
2	97.74	23.08mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/17/2020 12:19:38 AM
3	97.54	23.04mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/17/2020 12:21:43 AM

Mean Area 97.63
Mean Conc. 23.06mg/L



Sample

Sample Name: CCB
Sample ID: Untitled
Origin: 12-27-2019.cal
Status Completed
Chk. Result

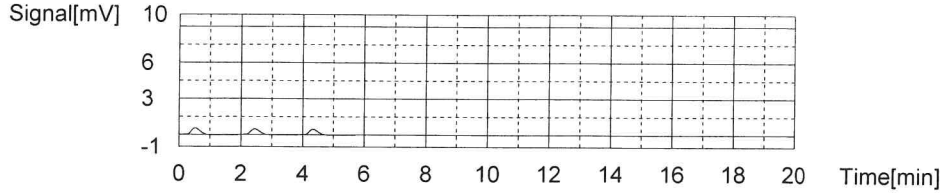
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.2094mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.9644	0.2278mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/17/2020 12:30:49 AM
2	0.8810	0.2081mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/17/2020 12:32:54 AM
3	0.8142	0.1923mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/17/2020 12:34:59 AM

Mean Area 0.8865
Mean Conc. 0.2094mg/L



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	Type	Analysis	Sample Name	Sample ID	Origin	Result	Notes	Status
1	Unknown	NPOC	CCV	313101604	12-27-2019.c	NPOC:22.69		Completed
2	Unknown	NPOC	CCB	Untitled	12-27-2019.c	NPOC:0.191		Completed
3	Unknown	NPOC	HS20030312-01DISSR	2/2	12-27-2019.c	NPOC:38.42		Completed
4	Unknown	NPOC	WBLKW1-031720	TOC_W	12-27-2019.c	NPOC:0.253		Completed
5	Unknown	NPOC	WLCSW1-031720	Untitled	12-27-2019.c	NPOC:8.801		Completed
6	Unknown	NPOC	WLCSDW1-031720	Untitled	12-27-2019.c	NPOC:9.534		Completed
7	Unknown	NPOC	HS20030312-01DISS(preserv	2/2	12-27-2019.c	NPOC:5.109		Completed
8	Unknown	NPOC	HS20030446-02DF10	2/2	12-27-2019.c	NPOC:21.82		Completed
9	Unknown	NPOC	HS20030446-02DF10MS	Untitled	12-27-2019.c	NPOC:32.05		Completed
10	Unknown	NPOC	HS20030687-01	1/2	12-27-2019.c	NPOC:10.22		Completed
11	Unknown	NPOC	CCV	313101604	12-27-2019.c	NPOC:23.26		Completed
12	Unknown	NPOC	CCB	Untitled	12-27-2019.c	NPOC:0.205		Completed
13	Unknown	NPOC	WBLKW2-031720	5310B	12-27-2019.c	NPOC:0.192		Completed
14	Unknown	NPOC	WLCSW2-031720	Untitled	12-27-2019.c	NPOC:9.483		Completed
15	Unknown	NPOC	WLCSDW2-031720	Untitled	12-27-2019.c	NPOC:9.497		Completed
16	Unknown	NPOC	HS20030445-01	1/2	12-27-2019.c	NPOC:5.730		Completed
17	Unknown	NPOC	HS20030502-02	1/2	12-27-2019.c	NPOC:4.076		Completed
18	Unknown	NPOC	HS20030502-03	1/6	12-27-2019.c	NPOC:2.562		Completed
19	Unknown	NPOC	HS20030502-04	1/2	12-27-2019.c	NPOC:2.604		Completed
20	Unknown	NPOC	HS20030312-01DISS(contain	2/2	12-27-2019.c	NPOC:4.836		Completed
21	Unknown	NPOC	HS20030312-01total(containe	2/2	12-27-2019.c	NPOC:5.218		Completed
22	Unknown	NPOC	HS20030513-01	1/2	12-27-2019.c	NPOC:0.942		Completed
23	Unknown	NPOC	CCV	313101604	12-27-2019.c	NPOC:23.23		Completed
24	Unknown	NPOC	CCB	Untitled	12-27-2019.c	NPOC:0.359		Completed
25	Unknown	NPOC	HS20030552-01	1/1	12-27-2019.c	NPOC:2.393		Completed
26	Unknown	NPOC	HS20030544-01DF10	1/2	12-27-2019.c	NPOC:0.496		Completed
27	Unknown	NPOC	HS20030545-01DF50	Untitled	12-27-2019.c	NPOC:35.28		Completed
28	Unknown	NPOC	HS20030559-01	Untitled	12-27-2019.c	NPOC:1.739		Completed
29	Unknown	NPOC	HS20030559-02	Untitled	12-27-2019.c	NPOC:1.806		Completed
30	Unknown	NPOC	CCV	313101604	12-27-2019.c	NPOC:24.20		Completed
31	Unknown	NPOC	CCB	Untitled	12-27-2019.c	NPOC:0.203		Completed
32	Unknown	NPOC	WBLKW3-031720	5310B	12-27-2019.c	NPOC:0.138		Completed
33	Unknown	NPOC	WLCSW3-031720	Untitled	12-27-2019.c	NPOC:9.378		Completed
34	Unknown	NPOC	WLCSDW3-031720	Untitled	12-27-2019.c	NPOC:9.476		Completed
35	Unknown	NPOC	HS20030559-03	Untitled	12-27-2019.c	NPOC:1.766		Completed
36	Unknown	NPOC	HS20030559-04	Untitled	12-27-2019.c	NPOC:4.176		Completed
37	Unknown	NPOC	HS20030559-05	Untitled	12-27-2019.c	NPOC:4.179		Completed
38	Unknown	NPOC	HS20030559-06	Untitled	12-27-2019.c	NPOC:4.188		Completed
39	Unknown	NPOC	HS20030559-07	Untitled	12-27-2019.c	NPOC:0.789		Completed
40	Unknown	NPOC	HS20030559-08	Untitled	12-27-2019.c	NPOC:0.836		Completed
41	Unknown	NPOC	HS20030559-09	Untitled	12-27-2019.c	NPOC:0.921		Completed
42	Unknown	NPOC	CCV	313101604	12-27-2019.c	NPOC:24.16		Completed
43	Unknown	NPOC	CCB	Untitled	12-27-2019.c	NPOC:0.144		Completed
44	Unknown	NPOC	HS20030559-10	Untitled	12-27-2019.c	NPOC:2.223		Completed
45	Unknown	NPOC	HS20030559-11	Untitled	12-27-2019.c	NPOC:2.203		Completed
46	Unknown	NPOC	HS20030559-12	Untitled	12-27-2019.c	NPOC:2.318		Completed
47	Unknown	NPOC	HS20030559-12MS	Untitled	12-27-2019.c	NPOC:11.54		Completed
48	Unknown	NPOC	CCV	313101604	12-27-2019.c	NPOC:24.23		Completed
49	Unknown	NPOC	CCB	Untitled	12-27-2019.c	NPOC:0.216		Completed
50	Unknown	NPOC	WBLKW4-031820	dissolved	12-27-2019.c	NPOC:0.458		Completed
51	Unknown	NPOC	WLCSW4-031820	Untitled	12-27-2019.c	NPOC:8.819		Completed
52	Unknown	NPOC	WLCSDW4-031820	Untitled	12-27-2019.c	NPOC:9.465		Completed
53	Unknown	NPOC	HS20030312-01DISS(contain	2/2	12-27-2019.c	NPOC:3.904		Completed
54	Unknown	NPOC	HS20030312-01DISS(contain	2/2	12-27-2019.c	NPOC:14.32		Completed

	Date / Time	Vial
1	3/18/2020 10:37:57 AM	1
2	3/18/2020 10:51:10 AM	2
3	3/18/2020 11:04:38 AM	46
4	3/18/2020 11:19:59 AM	3
5	3/18/2020 11:33:07 AM	4
6	3/18/2020 11:46:21 AM	5
7	3/18/2020 12:07:13 PM	47
8	3/18/2020 12:20:25 PM	6
9	3/18/2020 12:34:07 PM	7
10	3/18/2020 12:47:20 PM	8
11	3/18/2020 1:00:33 PM	9
12	3/18/2020 1:15:51 PM	10
13	3/18/2020 1:31:04 PM	11
14	3/18/2020 1:44:39 PM	12
15	3/18/2020 1:57:52 PM	13
16	3/18/2020 2:13:11 PM	14
17	3/18/2020 2:26:19 PM	15
18	3/18/2020 2:41:37 PM	16
19	3/18/2020 2:56:50 PM	17
20	3/18/2020 3:19:33 PM	48
21	3/18/2020 3:32:48 PM	49
22	3/18/2020 3:48:15 PM	18
23	3/18/2020 4:01:36 PM	21
24	3/18/2020 4:16:54 PM	22
25	3/18/2020 5:10:01 PM	19
26	3/18/2020 5:23:14 PM	20
27	3/18/2020 5:42:57 PM	23
28	3/18/2020 5:58:15 PM	24
29	3/18/2020 6:13:55 PM	25
30	3/18/2020 6:27:04 PM	26
31	3/18/2020 6:42:23 PM	27
32	3/18/2020 6:55:32 PM	28
33	3/18/2020 7:08:47 PM	29
34	3/18/2020 7:22:11 PM	30
35	3/18/2020 7:37:30 PM	31
36	3/18/2020 7:50:39 PM	32
37	3/18/2020 8:03:53 PM	33
38	3/18/2020 8:19:12 PM	34
39	3/18/2020 8:34:26 PM	35
40	3/18/2020 8:49:40 PM	36
41	3/18/2020 9:04:55 PM	37
42	3/18/2020 9:18:04 PM	38
43	3/18/2020 9:33:22 PM	39
44	3/18/2020 9:46:31 PM	40
45	3/18/2020 10:01:51 PM	41
46	3/18/2020 10:17:05 PM	42
47	3/18/2020 10:30:14 PM	43
48	3/18/2020 10:43:28 PM	44
49	3/18/2020 10:58:46 PM	45
50	3/18/2020 11:12:19 PM	50
51	3/18/2020 11:25:34 PM	51
52	3/18/2020 11:38:49 PM	52
53	3/18/2020 11:52:15 PM	48
54	3/19/2020 12:05:35 AM	53

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	Type	Analysis	Sample Name	Sample ID	Origin	Result	Notes	Status
56	Unknown	NPOC	CCB	Untitled	12-27-2019.c	NPOC:0.194		Completed
57	Unknown	NPOC	WBLKW5-031820	total	12-27-2019.c	NPOC:0.429		Completed
58	Unknown	NPOC	WLCSW5-031820	total	12-27-2019.c	NPOC:0.000		Completed
59	Unknown	NPOC	WLCSDW5-031820	Untitled	12-27-2019.c	NPOC:0.050		Completed
60	Unknown	NPOC	HS20030312-01	2/2	12-27-2019.c	NPOC:4.944		Completed
61	Unknown	NPOC	HS20030312-01MS	2/2	12-27-2019.c	NPOC:14.05		Completed
62	Unknown	NPOC	CCV		12-27-2019.c	NPOC:23.96		Completed
63	Unknown	NPOC	CCB	Untitled	12-27-2019.c	NPOC:0.151		Completed

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	Date / Time	Vial
56	3/19/2020 12:32:19 AM	45
57	3/19/2020 12:45:38 AM	50
58	3/19/2020 12:58:53 AM	51
59	3/19/2020 1:12:09 AM	52
60	3/19/2020 1:25:36 AM	49
61	3/19/2020 1:38:56 AM	54
62	3/19/2020 1:52:17 AM	44
63	3/19/2020 2:07:36 AM	45

Instr.Information

System	TOC csh with asi
Instrument Options	TOC/ASI/IC Unit/
Catalyst	Regular Sensitivity

Sample

Sample Name:	CCV
Sample ID:	313101604
Origin:	12-27-2019.cal
Status	Completed
Chk. Result	

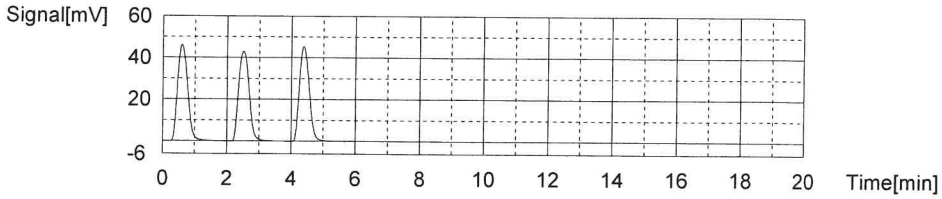
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:23.26mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	99.83	23.58mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 12:56:23 PM
2	98.45	23.25mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 12:58:28 PM
3	97.17	22.95mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 1:00:33 PM

Mean Area 98.48
Mean Conc. 23.26mg/L



Sample

Sample Name:	CCB
Sample ID:	Untitled
Origin:	12-27-2019.cal
Status	Completed
Chk. Result	

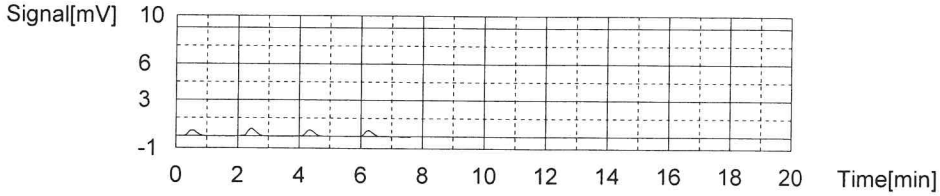
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.2053mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.8358	0.1974mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 1:09:36 PM
2	1.113	0.2629mg/L	50uL	1	E	12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 1:11:41 PM
3	0.9058	0.2139mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 1:13:46 PM
4	0.8663	0.2046mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 1:15:51 PM

Mean Area 0.8693
Mean Conc. 0.2053mg/L



Sample

Sample Name: WBLKW2-031720
Sample ID: 5310B
Origin: 12-27-2019.cal
Status Completed
Chk. Result

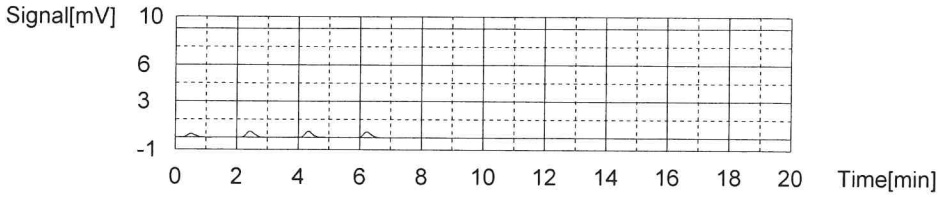
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1920mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.4893	0.1156mg/L	50uL	1	E	12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 1:24:49 PM
2	0.8631	0.2038mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 1:26:54 PM
3	0.7877	0.1860mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 1:28:59 PM
4	0.7878	0.1861mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 1:31:04 PM

Mean Area 0.8129
Mean Conc. 0.1920mg/L



Sample

Sample Name: WLCSW2-031720
Sample ID: Untitled
Origin: 12-27-2019.cal
Status Completed
Chk. Result

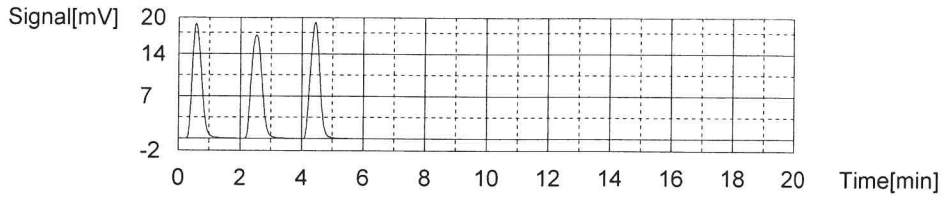
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:9.483mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	39.59	9.350mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 1:40:29 PM
2	40.49	9.563mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 1:42:34 PM
3	40.38	9.537mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 1:44:39 PM

Mean Area 40.15
Mean Conc. 9.483mg/L



Sample

Sample Name: WLCSDW2-031720
Sample ID: Untitled
Origin: 12-27-2019.cal
Status Completed
Chk. Result

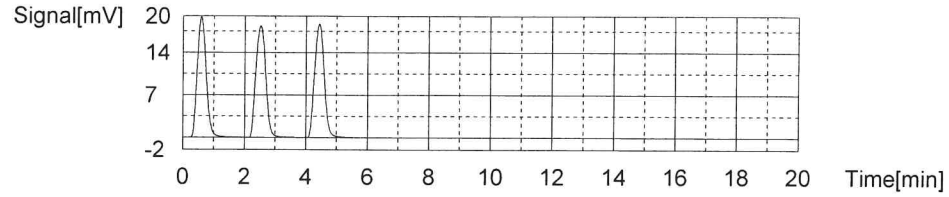
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:9.497mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	39.88	9.419mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 1:53:42 PM
2	40.26	9.508mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 1:55:47 PM
3	40.50	9.565mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 1:57:52 PM

Mean Area 40.21
Mean Conc. 9.497mg/L



Sample

Sample Name: HS20030502-02
Sample ID: 1/2
Origin: 12-27-2019.cal
Status Completed
Chk. Result

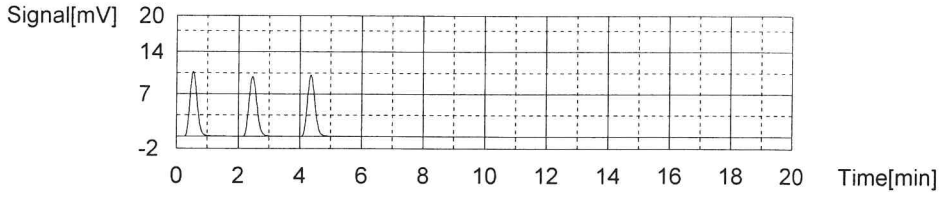
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:4.076mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.15	4.050mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 2:22:09 PM
2	17.40	4.109mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 2:24:14 PM
3	17.23	4.069mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 2:26:19 PM

Mean Area 17.26
Mean Conc. 4.076mg/L



Sample

Sample Name: HS20030502-03
Sample ID: 1/6
Origin: 12-27-2019.cal
Status Completed
Chk. Result

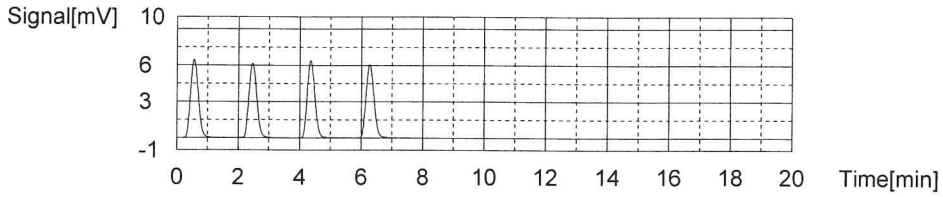
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:2.562mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.49	2.714mg/L	50uL	1	E	12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 2:35:22 PM
2	10.84	2.560mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 2:37:27 PM
3	10.87	2.567mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 2:39:32 PM
4	10.84	2.560mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 2:41:37 PM

Mean Area 10.85
Mean Conc. 2.562mg/L



Sample

Sample Name: HS20030502-04
Sample ID: 1/2
Origin: 12-27-2019.cal
Status Completed
Chk. Result

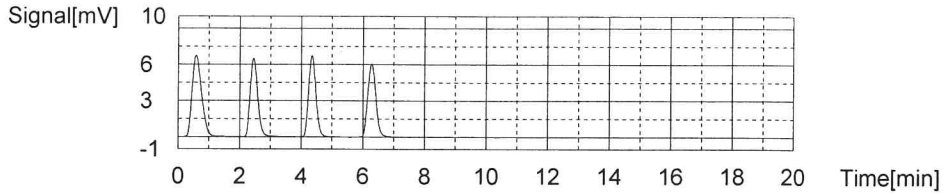
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:2.604mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.25	3.365mg/L	50uL	1	E	12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 2:50:35 PM
2	11.03	2.605mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 2:52:40 PM
3	11.04	2.607mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 2:54:45 PM
4	11.01	2.600mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 2:56:50 PM

Mean Area 11.03
Mean Conc. 2.604mg/L



Sample

Sample Name: CCV
Sample ID: 313101604
Origin: 12-27-2019.cal
Status Completed
Chk. Result

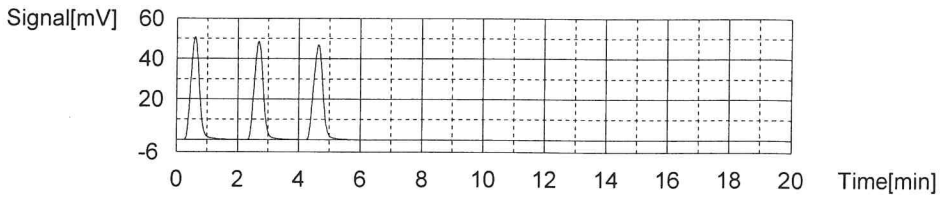
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:23.23mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	99.77	23.56mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 3:57:24 PM
2	97.95	23.13mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 3:59:31 PM
3	97.40	23.00mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 4:01:36 PM

Mean Area 98.37
Mean Conc. 23.23mg/L



Sample

Sample Name: CCB
Sample ID: Untitled
Origin: 12-27-2019.cal
Status Completed
Chk. Result

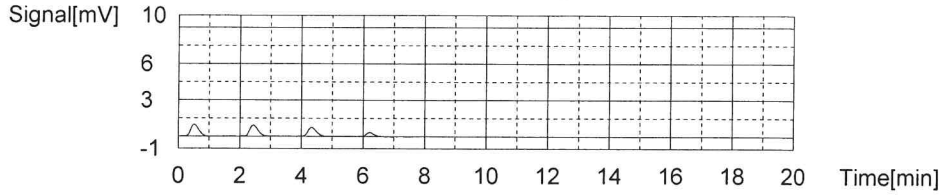
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.3594mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.648	0.3892mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 4:10:39 PM
2	1.627	0.3843mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 4:12:44 PM
3	1.290	0.3047mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 4:14:49 PM
4	0.5187	0.1225mg/L	50uL	1	E	12-27-2019.2019_12_27_17_39_54.cal	3/18/2020 4:16:54 PM

Mean Area 1.522
Mean Conc. 0.3594mg/L



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	Type	Analysis	Sample Name	Sample ID	Origin	Result	Notes	Status
1	Unknown	NPOC	CCV	313101604	12-27-2019.c	NPOC:24.18		Completed
2	Unknown	NPOC	CCB	Untitled	12-27-2019.c	NPOC:0.132		Completed
3	Unknown	NPOC	WLCSW2-031820	Untitled	12-27-2019.c	NPOC:9.371		Completed
4	Unknown	NPOC	WLCSDW2-031820	Untitled	12-27-2019.c	NPOC:9.487		Completed
5	Unknown	NPOC	HS20030502-03MS	1/6	12-27-2019.c	NPOC:13.35		Completed
6	Unknown	NPOC	HS20030544-1		12-27-2019.c	NPOC:3.029		Completed
7	Unknown	NPOC	CCV	313101604	12-27-2019.c	NPOC:23.14		Completed
8	Unknown	NPOC	CCB	Untitled	12-27-2019.c	NPOC:0.148		Completed

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	Date / Time	Vial
1	3/19/2020 8:59:05 AM	1
2	3/19/2020 9:12:18 AM	2
3	3/19/2020 9:25:48 AM	3
4	3/19/2020 9:39:00 AM	4
5	3/19/2020 9:52:40 AM	5
6	3/19/2020 10:07:58 AM	6
7	3/19/2020 10:22:06 AM	7
8	3/19/2020 10:35:19 AM	8

Instr.Information

System	TOC csh with asi
Instrument Options	TOC/ASI/IC Unit/
Catalyst	Regular Sensitivity

Sample

Sample Name:	CCV
Sample ID:	313101604
Origin:	12-27-2019.cal
Status	Completed
Chk. Result	

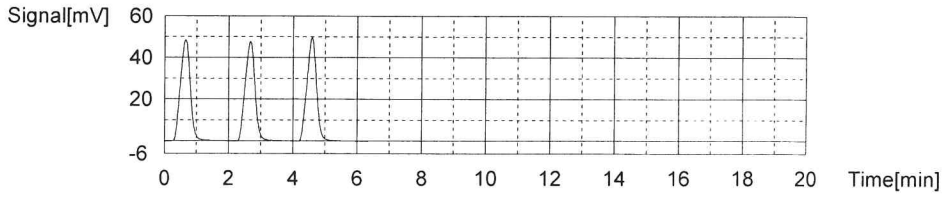
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.18mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	102.8	24.28mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/19/2020 8:54:24 AM
2	101.8	24.04mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/19/2020 8:56:29 AM
3	102.6	24.23mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/19/2020 8:59:05 AM

Mean Area 102.4
Mean Conc. 24.18mg/L



Sample

Sample Name:	CCB
Sample ID:	Untitled
Origin:	12-27-2019.cal
Status	Completed
Chk. Result	

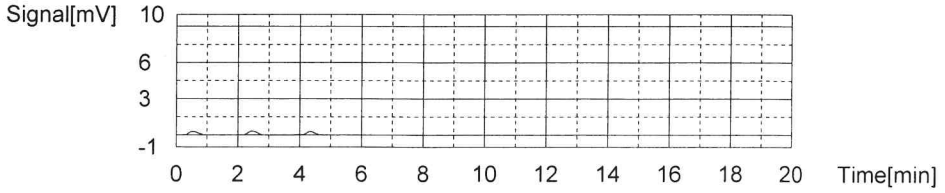
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1322mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.5618	0.1327mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/19/2020 9:08:08 AM
2	0.6443	0.1522mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/19/2020 9:10:13 AM
3	0.4733	0.1118mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/19/2020 9:12:18 AM

Mean Area 0.5598
Mean Conc. 0.1322mg/L



Sample

Sample Name: HS20030502-03MS
Sample ID: 1/6
Origin: 12-27-2019.cal
Status Completed
Chk. Result

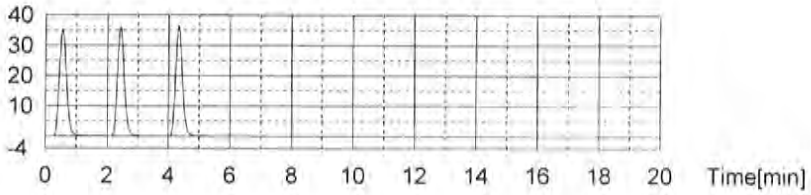
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:13.35mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	56.10	13.25mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/19/2020 9:48:30 AM
2	56.67	13.38mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/19/2020 9:50:35 AM
3	56.80	13.41mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/19/2020 9:52:40 AM

Mean Area 56.52
Mean Conc. 13.35mg/L



Sample

Sample Name: CCV
Sample ID: 313101604
Origin: 12-27-2019.cal
Status Completed
Chk. Result

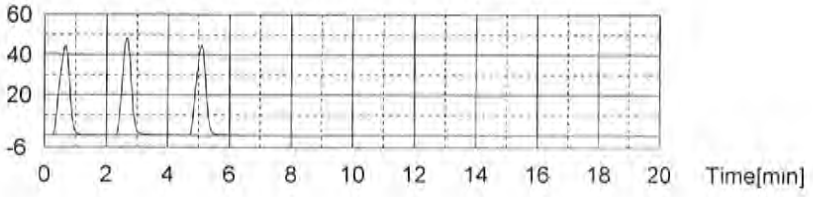
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:23.14mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	97.55	23.04mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/19/2020 10:17:13 AM
2	98.56	23.28mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/19/2020 10:19:48 AM
3	97.81	23.10mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/19/2020 10:22:06 AM

Mean Area 97.97
Mean Conc. 23.14mg/L



Sample

Sample Name: CCB
Sample ID: Untitled
Origin: 12-27-2019.cal
Status Completed
Chk. Result

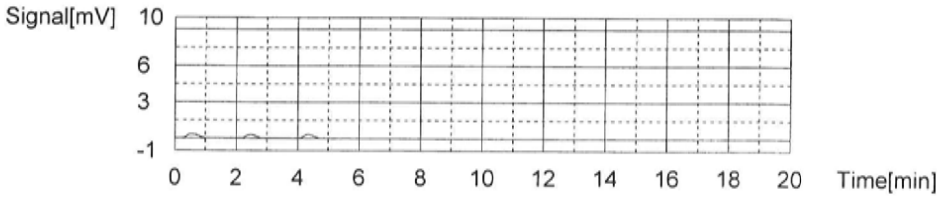
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1487mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.7339	0.1733mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/19/2020 10:31:09 AM
2	0.5755	0.1359mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/19/2020 10:33:14 AM
3	0.5801	0.1370mg/L	50uL	1		12-27-2019.2019_12_27_17_39_54.cal	3/19/2020 10:35:19 AM

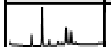
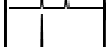
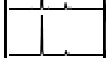
Mean Area 0.6298
Mean Conc. 0.1487mg/L



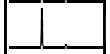
HS20030502 Wet Chem Raw Data (IC)

ALS WO# HS20030502

Sequence: 030820
Last Update Operator: alshs.nouser

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	Processing Method	Volume	Status	Inject Time
	STD1	2970209205	Calibration	GA1	1.0000	1	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 7:39:11 PM -06:00
	STD2	NEW PRGM	Calibration	GA2	1.0000	2	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 7:57:16 PM -06:00
	STD3		Calibration	GA3	1.0000	3	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 8:15:24 PM -06:00
	STD4		Calibration	GA4	1.0000	4	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 8:33:31 PM -06:00
	STD5	NO2/PO4	Calibration	GA5	1.0000	5	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 8:51:36 PM -06:00
	STD6	MAX 10PPM	Calibration	GA6	1.0000	6	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 9:09:41 PM -06:00
	ICV	2970209123	Unknown	GA7	1.0000		Anions Prog	Anions Proce	5.0	Finished	2/5/2020 9:27:48 PM -06:00
	ICB		Unknown	GA8	1.0000		Anions Prog	Anions Proce	5.0	Finished	2/5/2020 9:45:53 PM -06:00
	CCV1	3/16/2020	Unknown	BA2	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/18/2020 6:52:20 PM -05:00
	CCB		Unknown	RE1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/18/2020 7:10:32 PM -05:00
	WMBLKW1-031820	NEW BATCH	Unknown	BB2	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/18/2020 7:28:42 PM -05:00
	WLCSW1-031820	03.18.20 6.10PM	Unknown	BB3	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/18/2020 7:46:47 PM -05:00
	WLCSDW1-031820	DOD BR	Unknown	BB4	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/18/2020 8:04:53 PM -05:00
	CCV		Unknown	RA1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/18/2020 10:29:49 PM -05:00
	CCB		Unknown	BA1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/18/2020 10:47:57 PM -05:00
	HS20030502-01DF10		Unknown	GB7	10.0000		Anions Prog	Anions Proce	5.0	Finished	3/19/2020 1:12:45 AM -05:00
	HS20030502-01DF50		Unknown	GB8	50.0000		Anions Prog	Anions Proce	5.0	Finished	3/19/2020 1:30:51 AM -05:00
	HS20030502-02DF10		Unknown	GC1	10.0000		Anions Prog	Anions Proce	5.0	Finished	3/19/2020 1:48:57 AM -05:00
	CCV1		Unknown	BA2	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/19/2020 2:07:04 AM -05:00
	CCB		Unknown	RE1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/19/2020 2:25:13 AM -05:00
	HS20030502-02DF50		Unknown	GC2	50.0000		Anions Prog	Anions Proce	5.0	Finished	3/19/2020 2:43:19 AM -05:00
	HS20030502-03DF10		Unknown	GC3	10.0000		Anions Prog	Anions Proce	5.0	Finished	3/19/2020 3:01:24 AM -05:00
	HS20030502-03MSDF10		Unknown	GC4	10.0000		Anions Prog	Anions Proce	5.0	Finished	3/19/2020 3:19:29 AM -05:00
	HS20030502-03MSDDF10		Unknown	GC5	10.0000		Anions Prog	Anions Proce	5.0	Finished	3/19/2020 3:37:36 AM -05:00
	HS20030502-03DF50		Unknown	GC6	50.0000		Anions Prog	Anions Proce	5.0	Finished	3/19/2020 3:55:42 AM -05:00

Sequence: 030820
Last Update Operator: alshs.nouser

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	Processing Method	Volume	Status	Inject Time
	HS20030502-03MSDF50		Unknown	GC7	50.0000		Anions Prog	Anions Proce	5.0	Finished	3/19/2020 4:13:48 AM -05:00
	HS20030502-03MSDDF50		Unknown	GC8	50.0000		Anions Prog	Anions Proce	5.0	Finished	3/19/2020 4:31:53 AM -05:00
	HS20030502-04DF10		Unknown	GD1	10.0000		Anions Prog	Anions Proce	5.0	Finished	3/19/2020 4:50:01 AM -05:00
	HS20030502-04DF50	END BATCH	Unknown	GD2	50.0000		Anions Prog	Anions Proce	5.0	Finished	3/19/2020 5:08:06 AM -05:00
	CCV	4.33	Unknown	RA1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/19/2020 5:26:13 AM -05:00
	CCB	END	Unknown	BA1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/19/2020 5:44:20 AM -05:00

Sequence: 030820
Injection #6: STD6

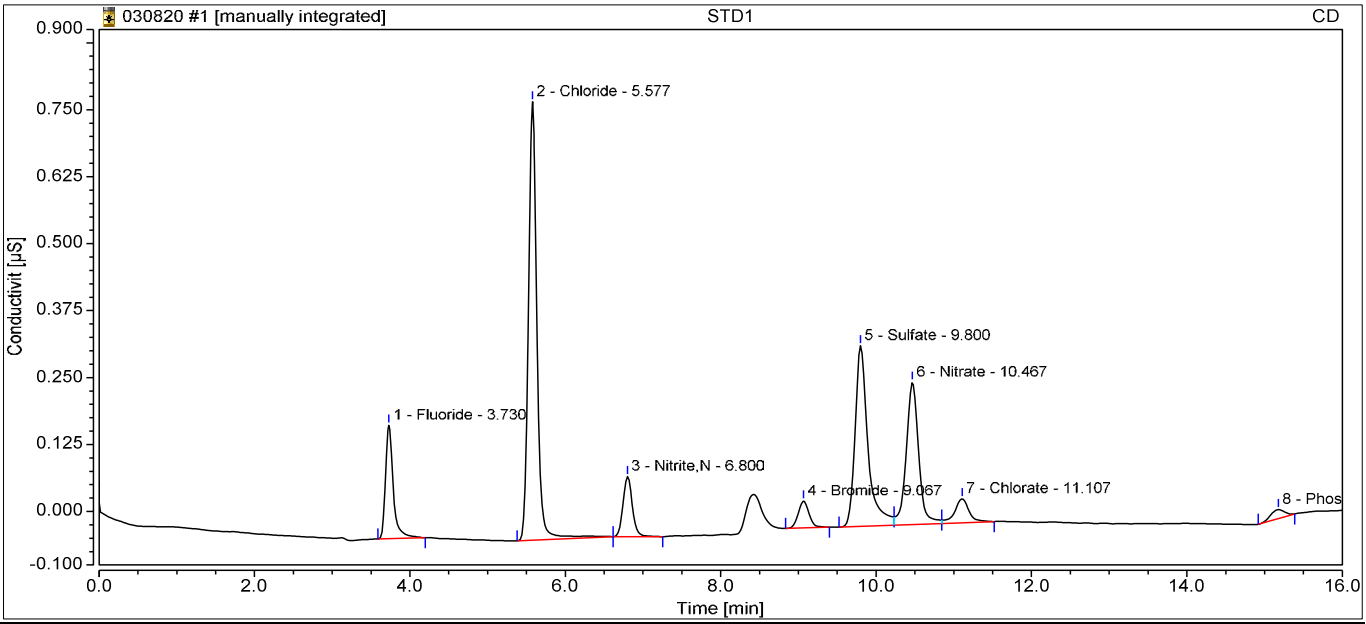
Calibration

Peak No.	Peak Name	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	*Fluoride*	*Lin, WithOffset, 1/*	*Area*	*6*	*13.4314*	*0.99915*	*-0.0083*	*0.3414*	*0.0000*
2	Chloride	Lin, WithOffset, 1/	Area	6	2.2020	0.99998	-0.0141	0.2320	0.0000
3	Nitrite,N	Lin, WithOffset, 1/	Area	5	19.9747	0.99771	-0.0251	0.4962	0.0000
4	Bromide	Lin, WithOffset, 1/	Area	6	12.1436	0.99933	-0.0033	0.0991	0.0000
5	Sulfate	Lin, WithOffset, 1/	Area	6	4.2312	0.99991	-0.0170	0.1679	0.0000
6	Nitrate	Lin, WithOffset, 1/	Area	6	2.3081	0.99997	-0.0076	0.5843	0.0000
7	Chlorate	Lin, WithOffset, 1/	Area	6	9.7729	0.99945	0.0017	0.0949	0.0000
8	Phosphate	Lin, WithOffset, 1/	Area	5	18.6678	0.99857	-0.0214	0.2119	0.0000
Maximum					**19.9747**	0.99998			
Minimum					2.2020	**0.99771**			

1 STD1

Sample Name:	**STD1**	*Injection Volume:*	**5.00**
Vial Number:	**GA1**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 19:39**	*Sample Weight:*	**1.0000**

Run Time:



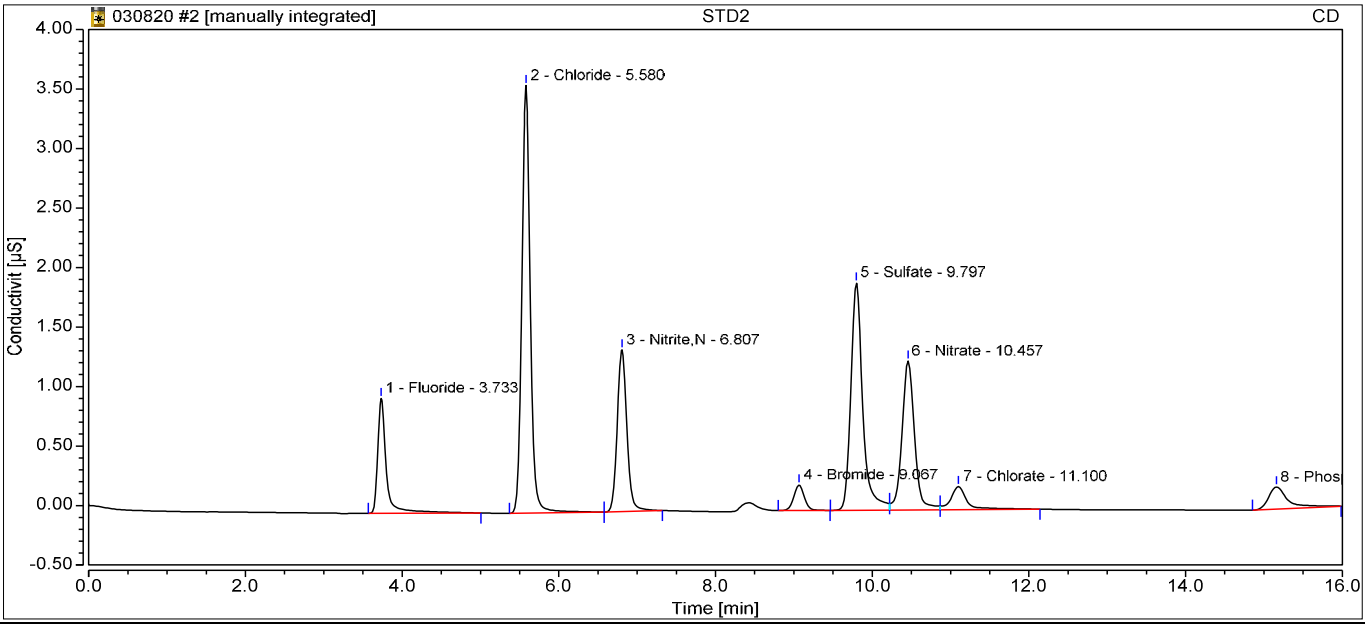
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.024	0.0955	0.0955	1.0000
2	5.58	Chloride	BMB	0.103	0.5065	0.5065	1.0000
3	6.80	Nitrite,N	BMB	0.016	0.0821	0.0821	1.0000
4	9.07	Bromide	BMB	0.008	0.1156	0.1156	1.0000
5	9.80	Sulfate	BM	0.065	0.4885	0.4885	1.0000
6	10.47	Nitrate	M	0.049	0.0974	0.0974	1.0000
7	11.11	Chlorate	MB	0.010	0.0834	0.0834	1.0000
8	15.18	Phosphate	BMB*	0.003	0.1173	0.1173	1.0000
Total:			**0.000**	**0.279**		**1.59**	

2 STD2

Sample Name:	**STD2**	*Injection Volume:*	**5.00**
Vial Number:	**GA2**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 19:57**	*Sample Weight:*	**1.0000**

Run Time:



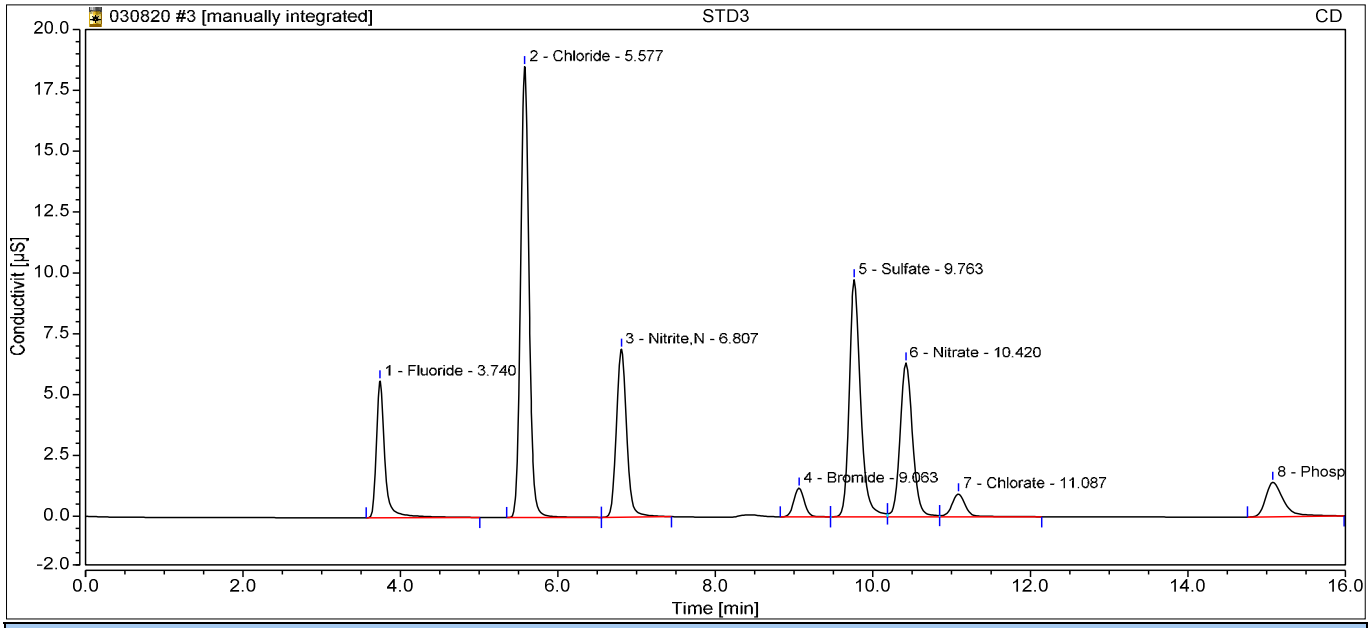
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.123	0.3833	0.3833	1.0000
2	5.58	Chloride	BMb*	0.449	1.9963	1.9963	1.0000
3	6.81	Nitrite,N	bMB*	0.194	0.4423	0.4423	1.0000
4	9.07	Bromide	BMB	0.034	0.3722	0.3722	1.0000
5	9.80	Sulfate	BM	0.335	2.0973	2.0973	1.0000
6	10.46	Nitrate	M	0.232	0.4103	0.4103	1.0000
7	11.10	Chlorate	MB	0.047	0.4759	0.4759	1.0000
8	15.16	Phosphate	BMB	0.053	0.3518	0.3518	1.0000
Total:			**0.000**	**1.467**		**6.53**	

3 STD3

Sample Name:	**STD3**	*Injection Volume:*	**5.00**
Vial Number:	**GA3**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 20:15**	*Sample Weight:*	**1.0000**

Run Time:



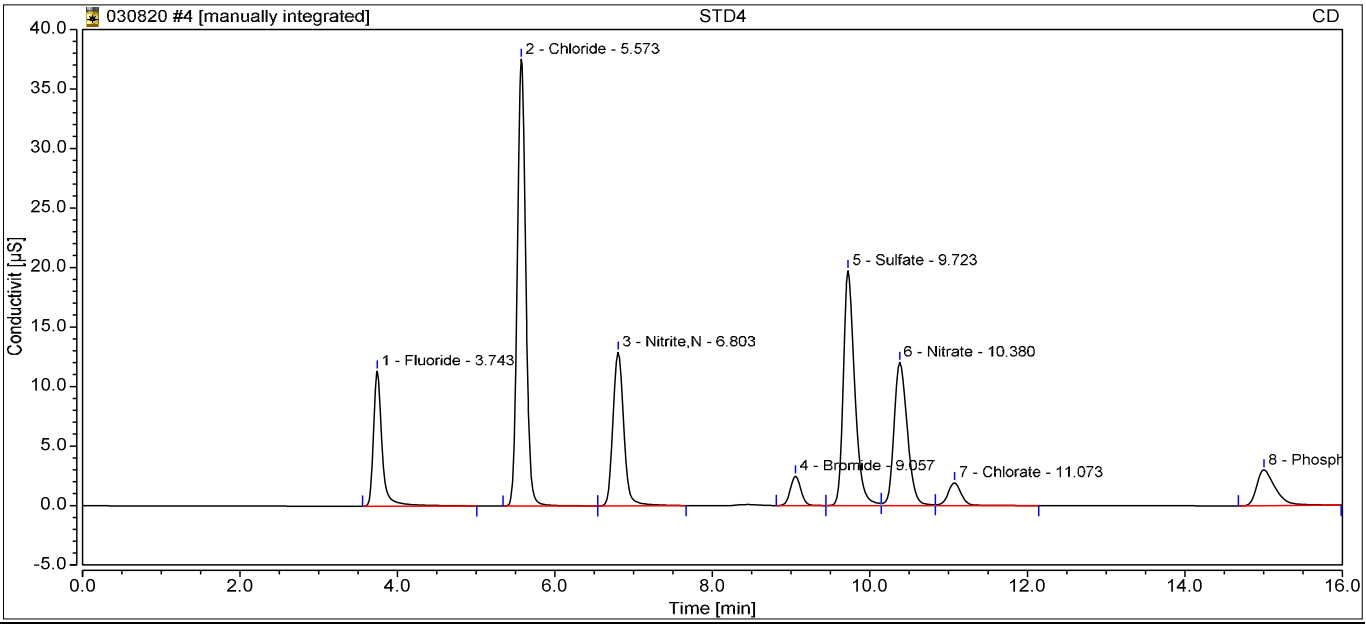
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.701	2.0769	2.0769	1.0000
2	5.58	Chloride	BMb*	2.284	9.9073	9.9073	1.0000
3	6.81	Nitrite,N	bMB*	1.029	2.1245	2.1245	1.0000
4	9.06	Bromide	BM	0.182	1.8657	1.8657	1.0000
5	9.76	Sulfate	M	1.624	9.7730	9.7730	1.0000
6	10.42	Nitrate	M	1.160	1.9980	1.9980	1.0000
7	11.09	Chlorate	MB	0.189	1.9689	1.9689	1.0000
8	15.08	Phosphate	BMB	0.374	1.8664	1.8664	1.0000
Total:			**0.000**	**7.542**		**31.58**	

4 STD4

Sample Name:	**STD4**	*Injection Volume:*	**5.00**
Vial Number:	**GA4**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 20:33**	*Sample Weight:*	**1.0000**

Run Time:



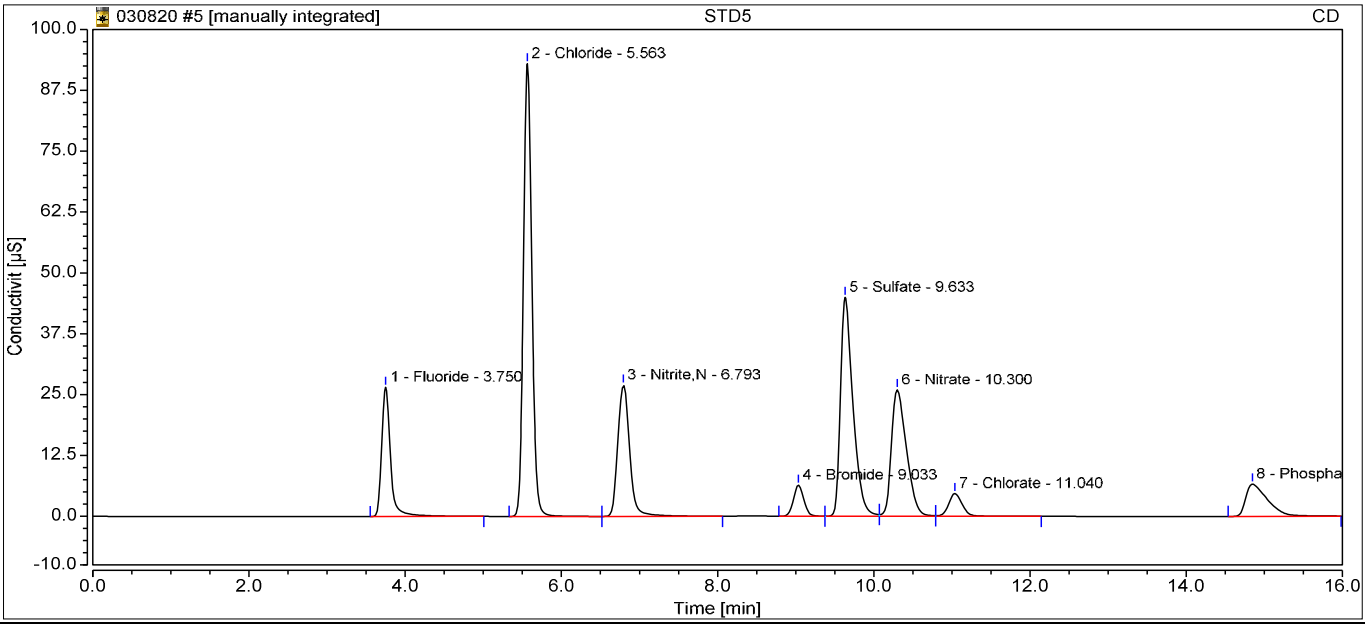
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.428	4.2080	4.2080	1.0000
2	5.57	Chloride	BMb*	4.627	20.0069	20.0069	1.0000
3	6.80	Nitrite,N	bMB*	2.046	4.1745	4.1745	1.0000
4	9.06	Bromide	BM	0.382	3.8871	3.8871	1.0000
5	9.72	Sulfate	M	3.337	19.9713	19.9713	1.0000
6	10.38	Nitrate	M	2.343	4.0228	4.0228	1.0000
7	11.07	Chlorate	MB	0.380	3.9830	3.9830	1.0000
8	15.00	Phosphate	BMB	0.824	3.9874	3.9874	1.0000
Total:			**0.000**	**15.366**		**64.24**	

5 STD5

Sample Name:	**STD5**	*Injection Volume:*	**5.00**
Vial Number:	**GA5**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 20:51**	*Sample Weight:*	**1.0000**

Run Time:



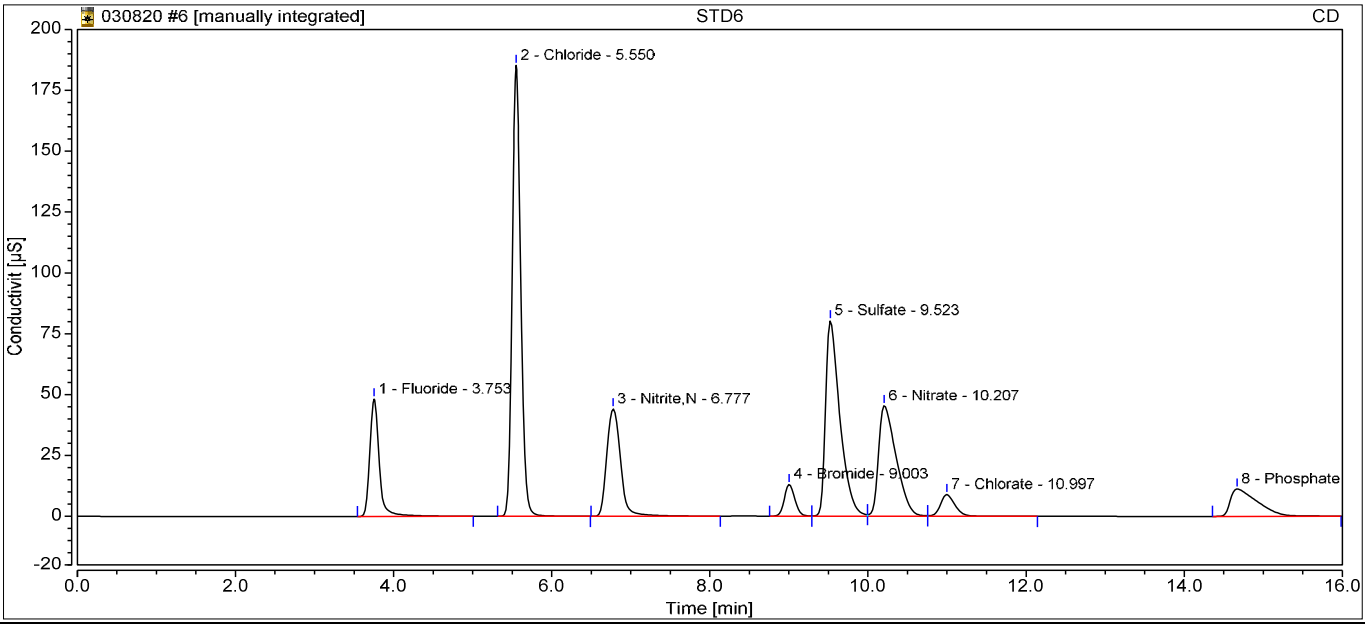
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	3.472	10.1940	10.1940	1.0000
2	5.56	Chloride	BMB	11.516	49.7057	49.7057	1.0000
3	6.79	Nitrite,N	BMB*	4.776	9.6766	9.6766	1.0000
4	9.03	Bromide	BM	0.981	9.9279	9.9279	1.0000
5	9.63	Sulfate	M	8.325	49.6811	49.6811	1.0000
6	10.30	Nitrate	M	5.799	9.9382	9.9382	1.0000
7	11.04	Chlorate	MB	0.944	9.9252	9.9252	1.0000
8	14.85	Phosphate	BMB	2.135	10.1771	10.1771	1.0000
Total:			**0.000**	**37.949**		**159.23**	

6 STD6

Sample Name:	**STD6**	*Injection Volume:*	**5.00**
Vial Number:	**GA6**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 21:09**	*Sample Weight:*	**1.0000**

Run Time:



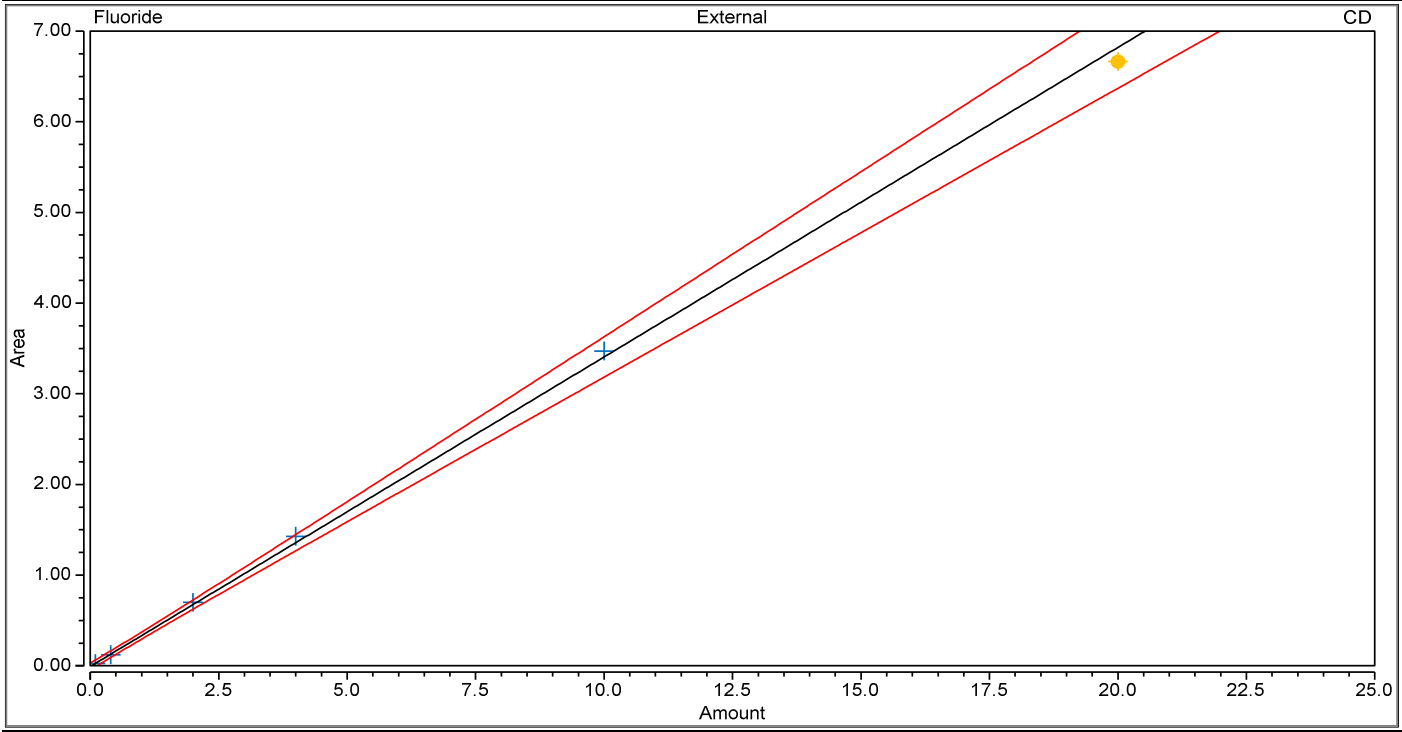
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	6.664	19.5424	19.5424	1.0000
2	5.55	Chloride	BMB	23.270	100.3774	100.3774	1.0000
3	6.78	Nitrite,N	BMB*	8.893	17.9725	17.9725	1.0000
4	9.00	Bromide	BM	2.012	20.3316	20.3316	1.0000
5	9.52	Sulfate	M	16.857	100.4888	100.4888	1.0000
6	10.21	Nitrate	M	11.698	20.0333	20.0333	1.0000
7	11.00	Chlorate	MB	1.906	20.0635	20.0635	1.0000
8	14.67	Phosphate	BMB	4.450	21.0985	21.0985	1.0000
Total:			**0.000**	**75.750**		**319.91**	

Calibration

Calibration Details	Fluoride		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0083
Evaluation Type	Area	*Slope (C1)*	0.3414
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9991

Calibration Plot **Fluoride**



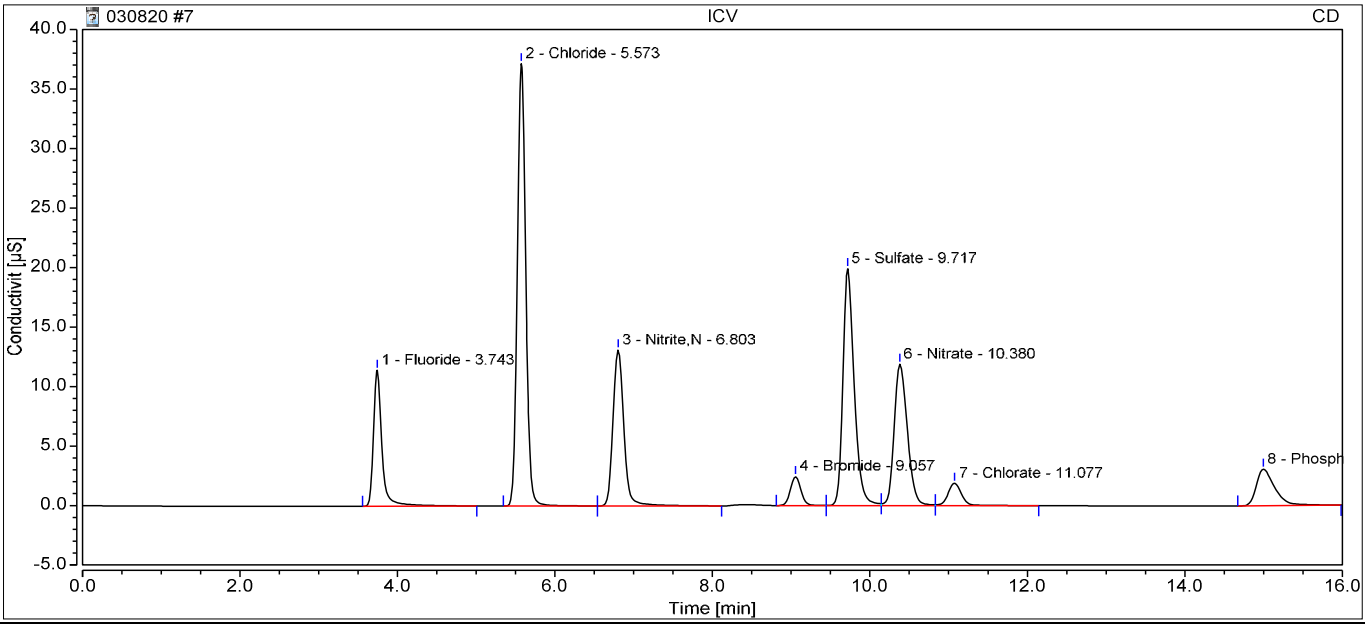
Calibration Results **Fluoride**

No.	Injection Name	Calibration Level	X Value CD Fluoride	Y Value CD Fluoride	Y Value CD Fluoride	Area µS*min CD Fluoride	Height µS CD Fluoride
1	STD1	1	0.1000	0.0243	0.0243	0.024	0.212
2	STD2	2	0.4000	0.1226	0.1226	0.123	0.964
3	STD3	3	2.0000	0.7008	0.7008	0.701	5.614
4	STD4	4	4.0000	1.4284	1.4284	1.428	11.345
5	STD5	5	10.0000	3.4723	3.4723	3.472	26.547
6	STD6	6	20.0000	6.6641	6.6641	6.664	48.233

7 ICV

Sample Name:	**ICV**	*Injection Volume:*	**5.00**
Vial Number:	**GA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 21:27**	*Sample Weight:*	**1.0000**

Run Time:



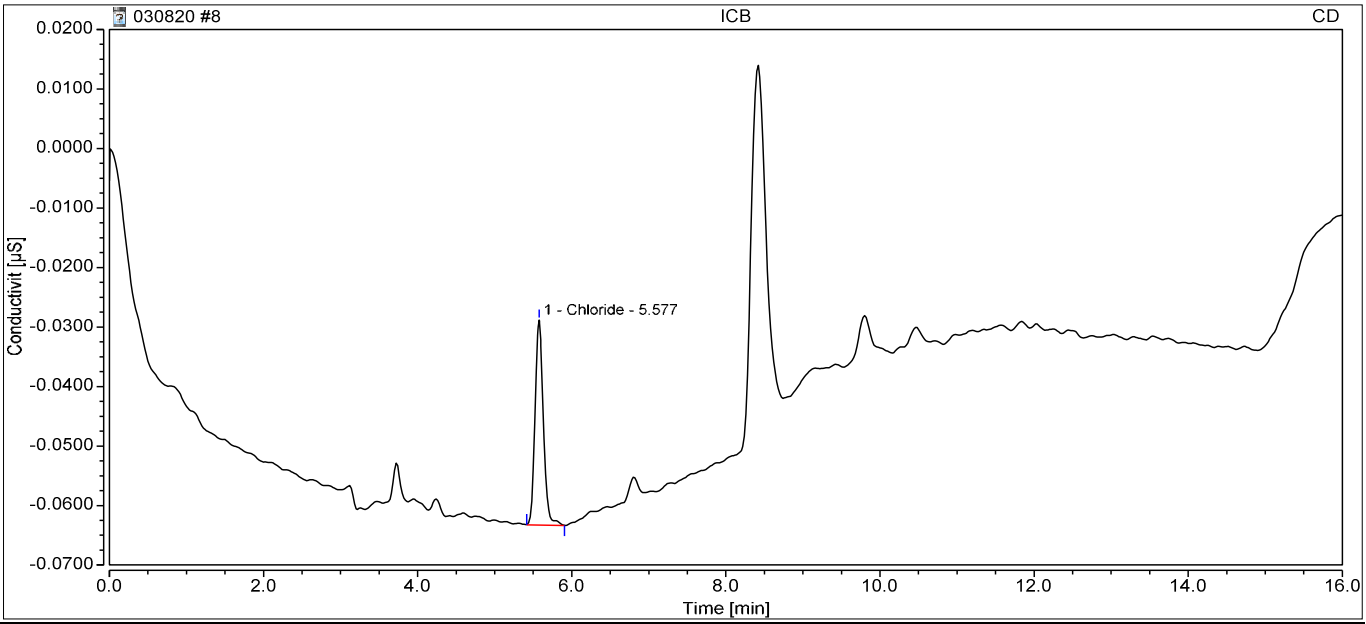
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.412	4.1607	4.1607	1.0000
2	5.57	Chloride	BMB	4.570	19.7627	19.7627	1.0000
3	6.80	Nitrite,N	BMB	2.081	4.2442	4.2442	1.0000
4	9.06	Bromide	BM	0.374	3.8104	3.8104	1.0000
5	9.72	Sulfate	M	3.327	19.9126	19.9126	1.0000
6	10.38	Nitrate	M	2.299	3.9478	3.9478	1.0000
7	11.08	Chlorate	MB	0.379	3.9799	3.9799	1.0000
8	15.00	Phosphate	BMB	0.835	4.0417	4.0417	1.0000
Total:			**0.000**	**15.278**		**63.86**	

8 ICB

Sample Name:	**ICB**	*Injection Volume:*	**5.00**
Vial Number:	**GA8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 21:45**	*Sample Weight:*	**1.0000**

Run Time:



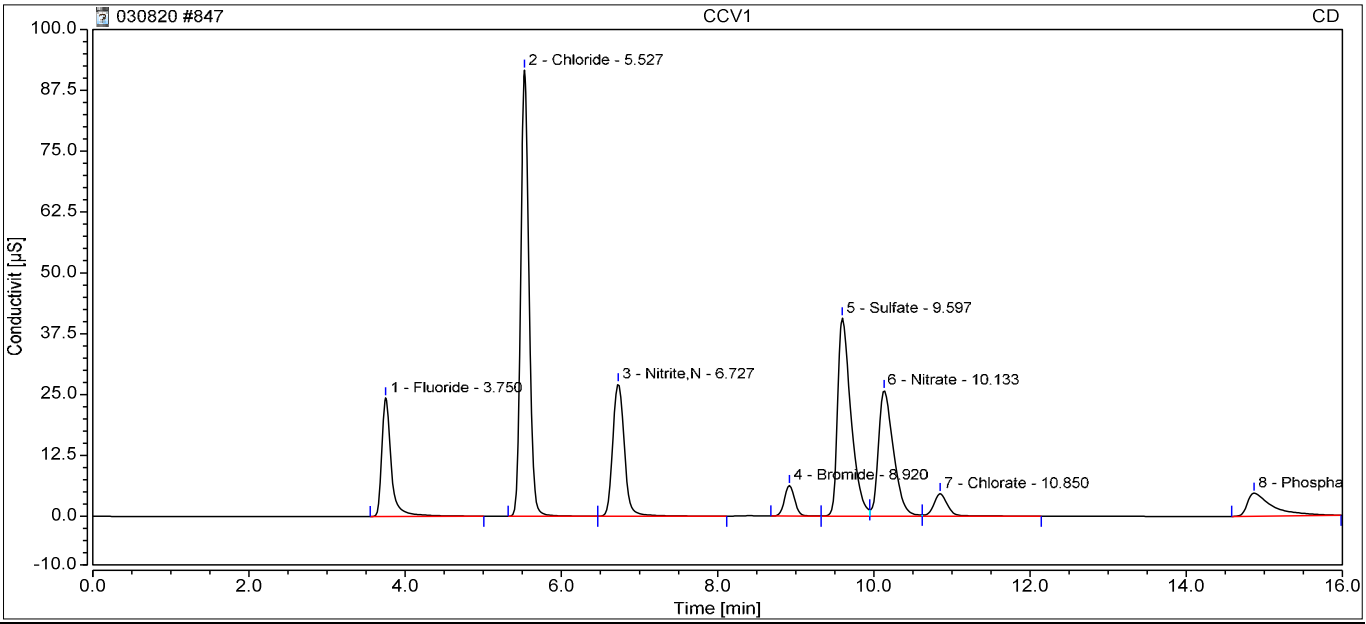
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.58	Chloride	BMB	0.004	0.0794	0.0794	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.004**		**0.08**	

847 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/18/2020 18:52**	*Sample Weight:*	**1.0000**

Run Time:



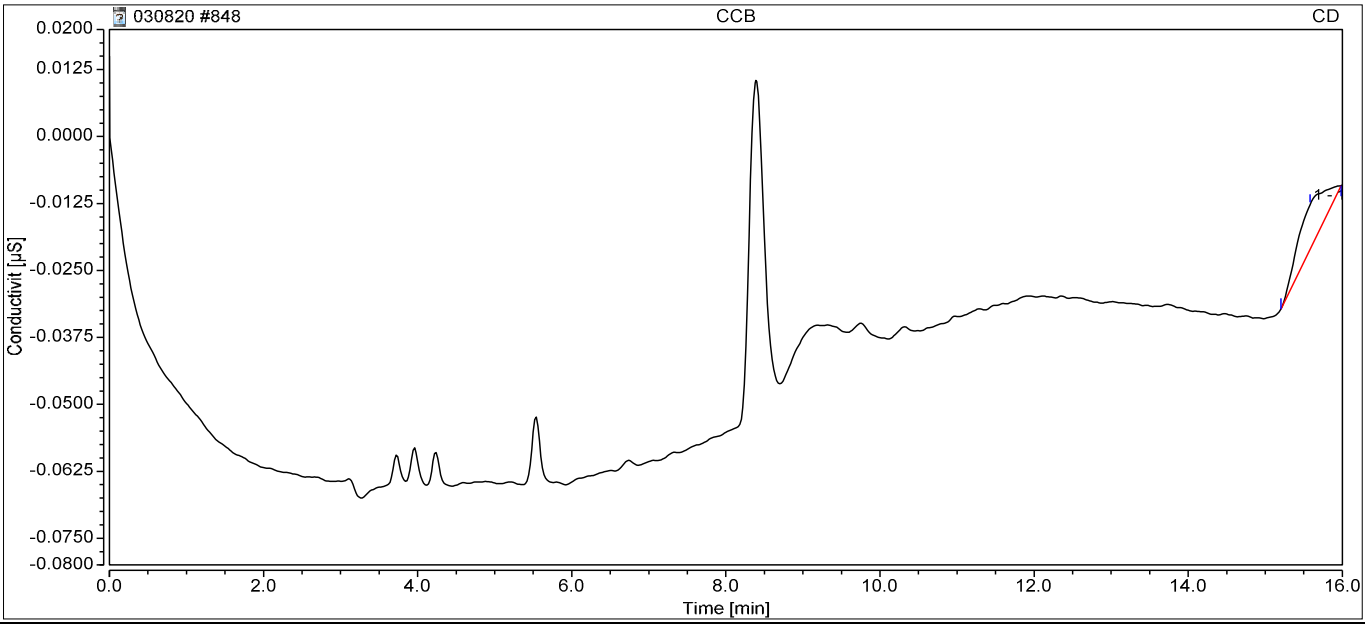
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	3.416	10.0284	10.0284	1.0000
2	5.53	Chloride	BMB	11.244	48.5351	48.5351	1.0000
3	6.73	Nitrite,N	BMB	4.722	9.5676	9.5676	1.0000
4	8.92	Bromide	BM	0.948	9.5923	9.5923	1.0000
5	9.60	Sulfate	M	8.058	48.0883	48.0883	1.0000
6	10.13	Nitrate	M	5.760	9.8714	9.8714	1.0000
7	10.85	Chlorate	MB	0.951	9.9955	9.9955	1.0000
8	14.87	Phosphate	BMB	1.771	8.4577	8.4577	1.0000
Total:			**0.000**	**36.870**		**154.14**	

848 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**RE1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/18/2020 19:10**	*Sample Weight:*	**1.0000**

Run Time:



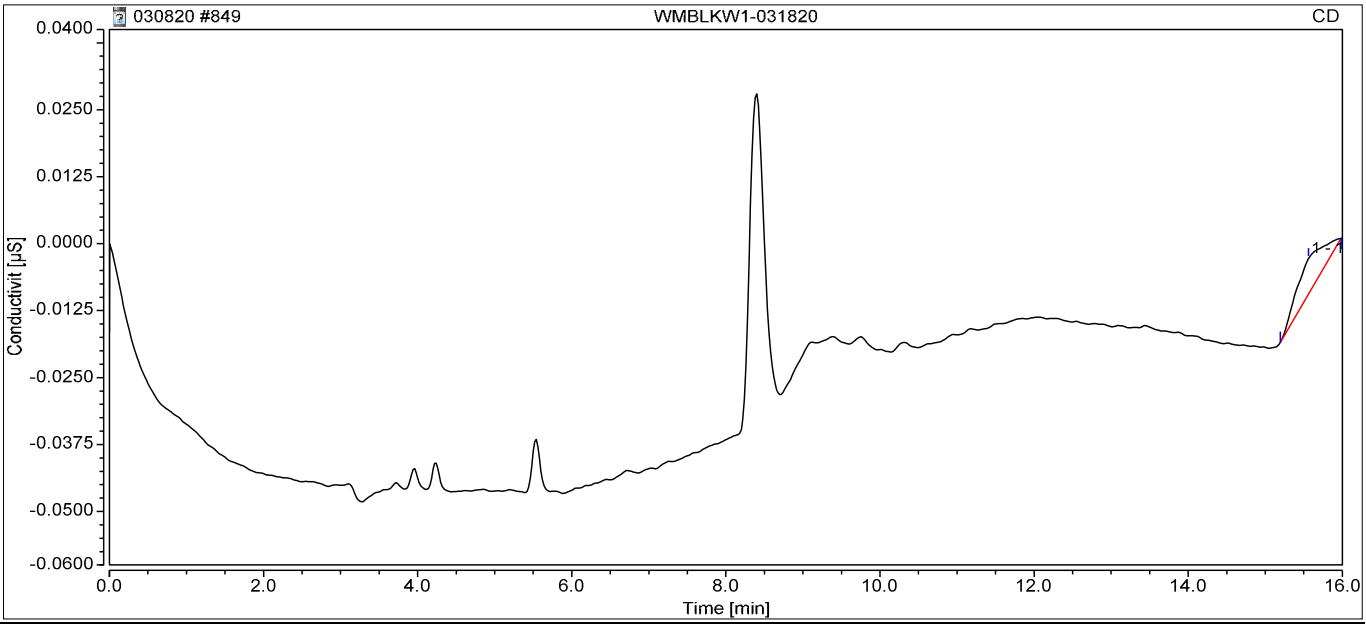
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

849 WMBLKW1-031820

Sample Name:	**WMBLKW1-031820**	*Injection Volume:*	**5.00**
Vial Number:	**BB2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/18/2020 19:28**	*Sample Weight:*	**1.0000**

Run Time:



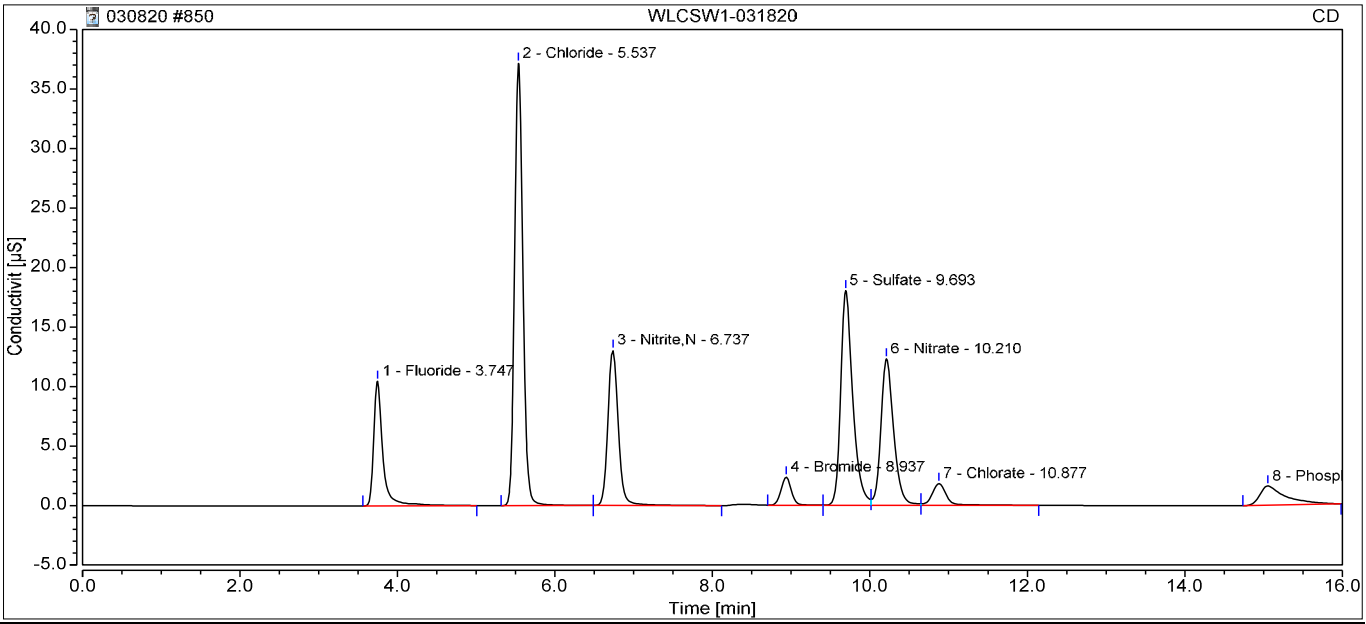
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

850 WLCSW1-031820

Sample Name:	**WLCSW1-031820**	*Injection Volume:*	**5.00**
Vial Number:	**BB3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/18/2020 19:46**	*Sample Weight:*	**1.0000**

Run Time:



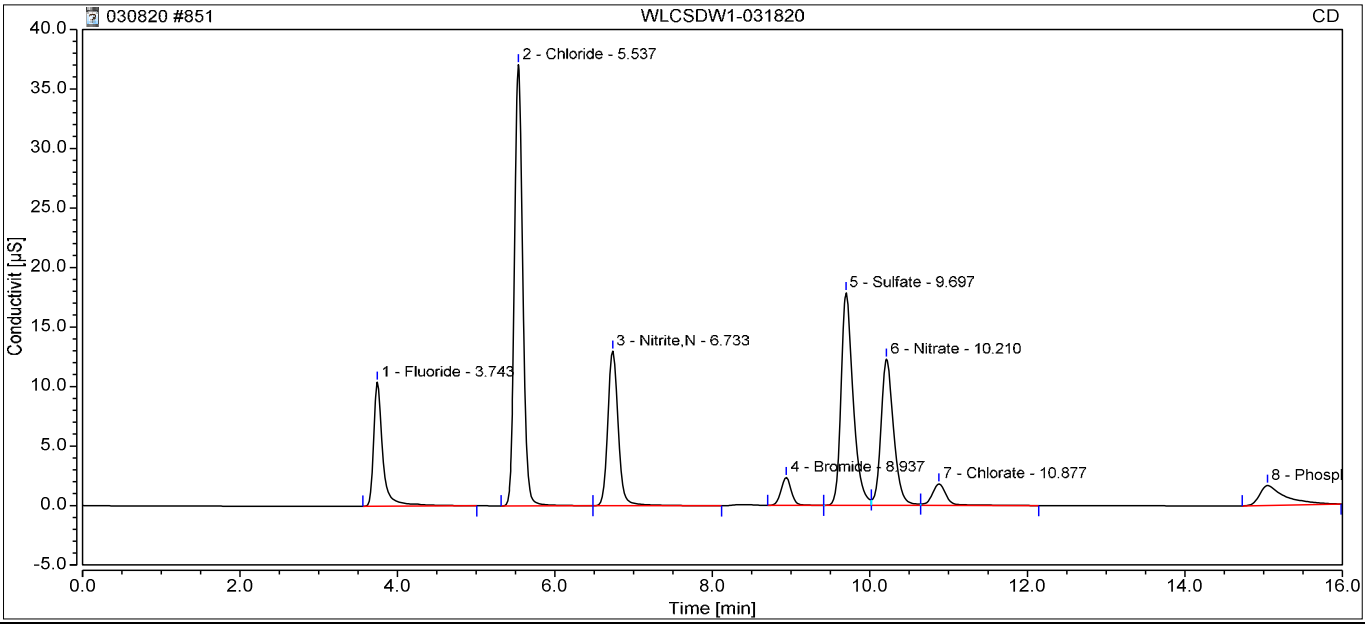
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	1.405	4.1405	4.1405	1.0000
2	5.54	Chloride	BMB	4.520	19.5452	19.5452	1.0000
3	6.74	Nitrite,N	BMB	2.024	4.1296	4.1296	1.0000
4	8.94	Bromide	BM	0.361	3.6766	3.6766	1.0000
5	9.69	Sulfate	M	3.213	19.2332	19.2332	1.0000
6	10.21	Nitrate	M	2.320	3.9839	3.9839	1.0000
7	10.88	Chlorate	MB	0.387	4.0538	4.0538	1.0000
8	15.05	Phosphate	BMB	0.620	3.0284	3.0284	1.0000
Total:			**0.000**	**14.850**		**61.79**	

851 WLCSDW1-031820

Sample Name:	**WLCSDW1-031820**	*Injection Volume:*	**5.00**
Vial Number:	**BB4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/18/2020 20:04**	*Sample Weight:*	**1.0000**

Run Time:



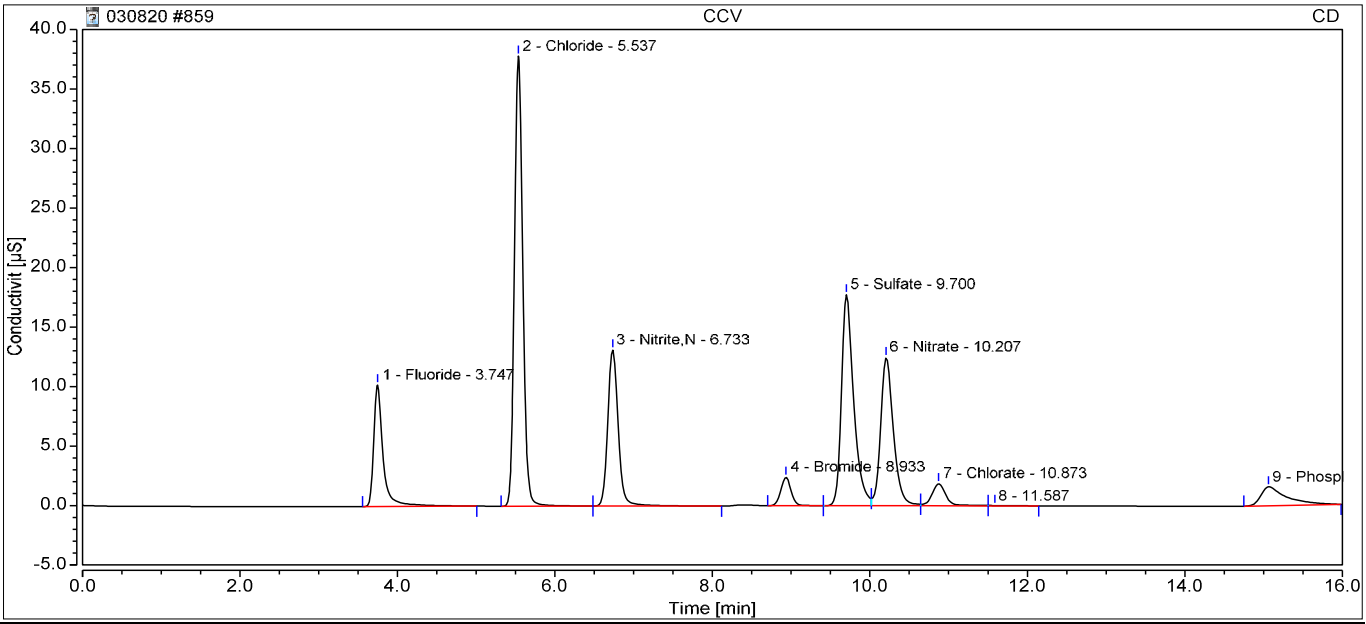
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.393	4.1044	4.1044	1.0000
2	5.54	Chloride	BMB	4.503	19.4713	19.4713	1.0000
3	6.73	Nitrite,N	BMB	2.012	4.1050	4.1050	1.0000
4	8.94	Bromide	BM	0.359	3.6519	3.6519	1.0000
5	9.70	Sulfate	M	3.194	19.1205	19.1205	1.0000
6	10.21	Nitrate	M	2.308	3.9633	3.9633	1.0000
7	10.88	Chlorate	MB	0.384	4.0280	4.0280	1.0000
8	15.05	Phosphate	BMB	0.633	3.0866	3.0866	1.0000
Total:			**0.000**	**14.785**		**61.53**	

859 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**RA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/18/2020 22:29**	*Sample Weight:*	**1.0000**

Run Time:



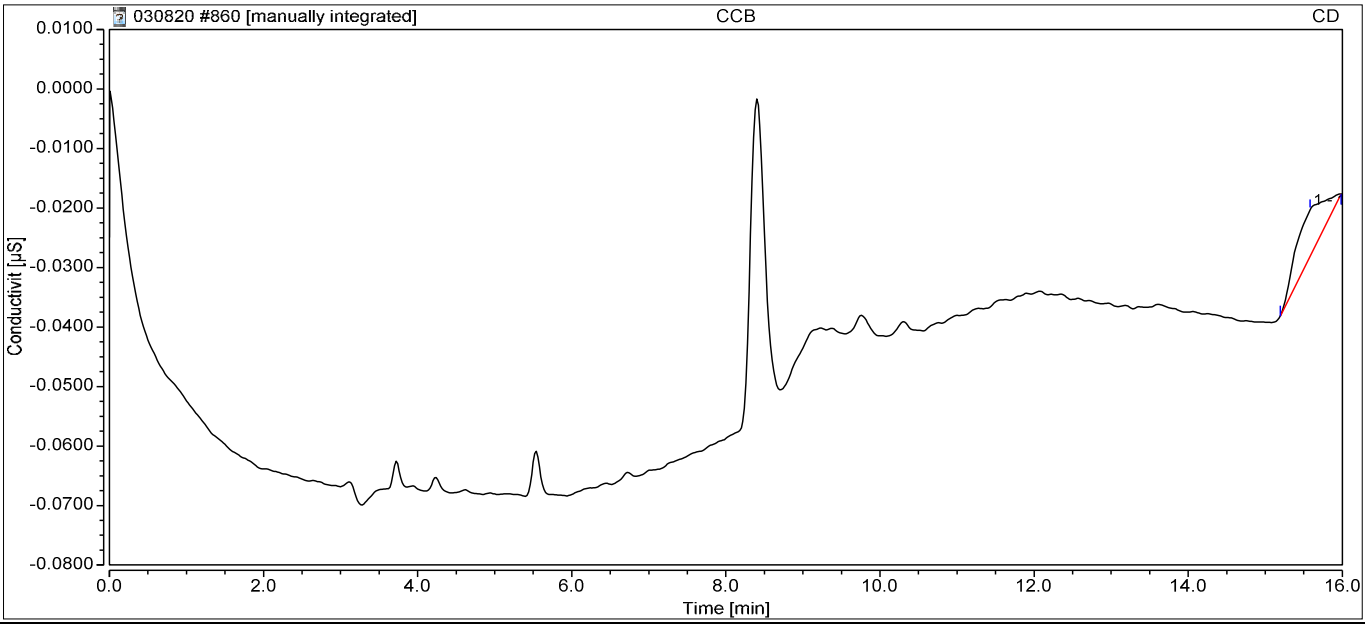
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	1.398	4.1176	4.1176	1.0000
2	5.54	Chloride	BMB	4.596	19.8750	19.8750	1.0000
3	6.73	Nitrite,N	BMB	2.034	4.1497	4.1497	1.0000
4	8.93	Bromide	BM	0.363	3.7002	3.7002	1.0000
5	9.70	Sulfate	M	3.212	19.2315	19.2315	1.0000
6	10.21	Nitrate	M	2.346	4.0282	4.0282	1.0000
7	10.87	Chlorate	M	0.384	4.0255	4.0255	1.0000
9	15.06	Phosphate	BMB	0.609	2.9753	2.9753	1.0000
Total:			**0.000**	**14.943**		**62.10**	

860 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/18/2020 22:47**	*Sample Weight:*	**1.0000**

Run Time:



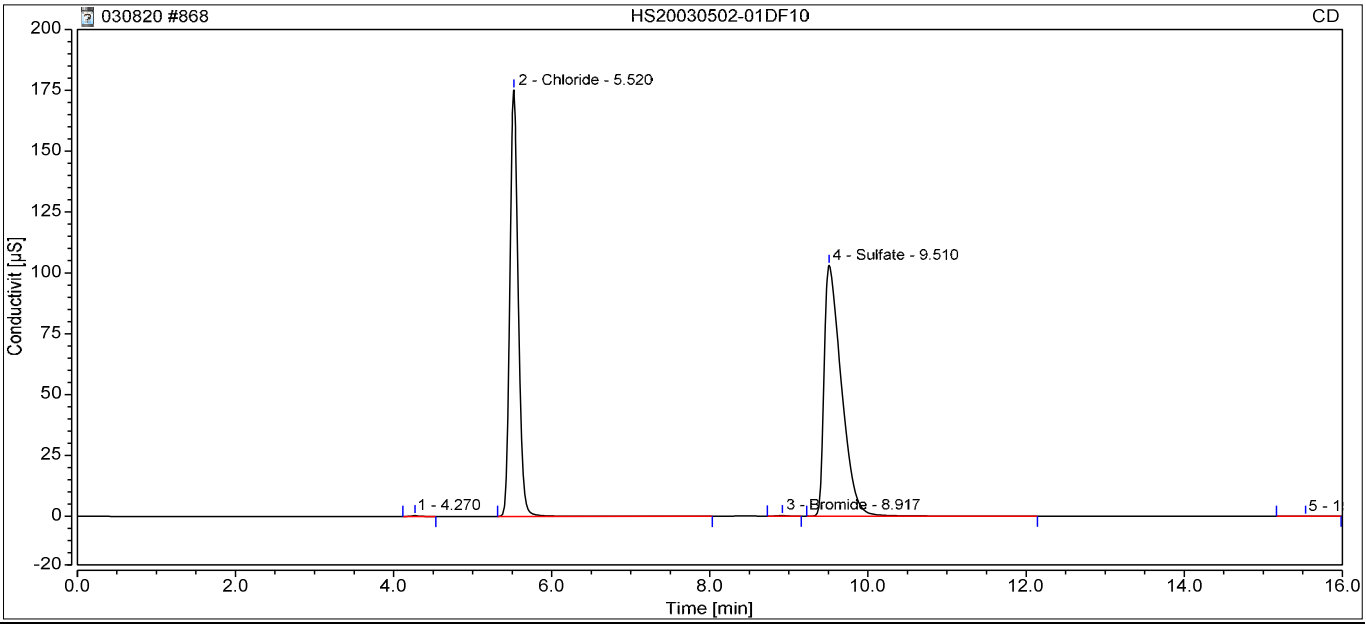
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

868 HS20030502-01DF10

Sample Name:	**HS20030502-01DF10**	*Injection Volume:*	**5.00**
Vial Number:	**GB7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**10.0000**
Recording Time:	**03/19/2020 01:12**	*Sample Weight:*	**1.0000**

Run Time:



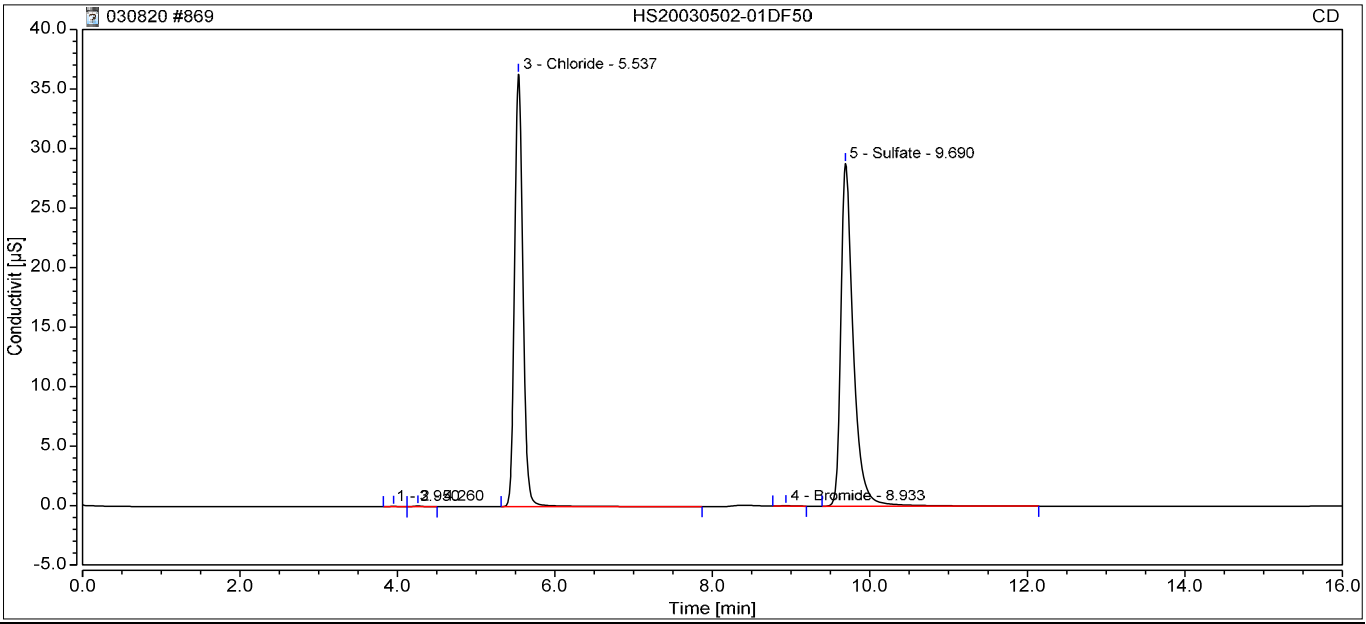
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	10.0000
2	5.52	Chloride	BMB	21.807	94.0686	940.6859	10.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	10.0000
3	8.92	Bromide	BMB	0.033	0.3707	3.7065	10.0000
4	9.51	Sulfate	BMB	26.132	155.7229	1557.2288	10.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	10.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	10.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	10.0000
Total:			**0.000**	**47.972**		**2501.62**	

869 HS20030502-01DF50

Sample Name:	**HS20030502-01DF50**	*Injection Volume:*	**5.00**
Vial Number:	**GB8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**50.0000**
Recording Time:	**03/19/2020 01:30**	*Sample Weight:*	**1.0000**

Run Time:



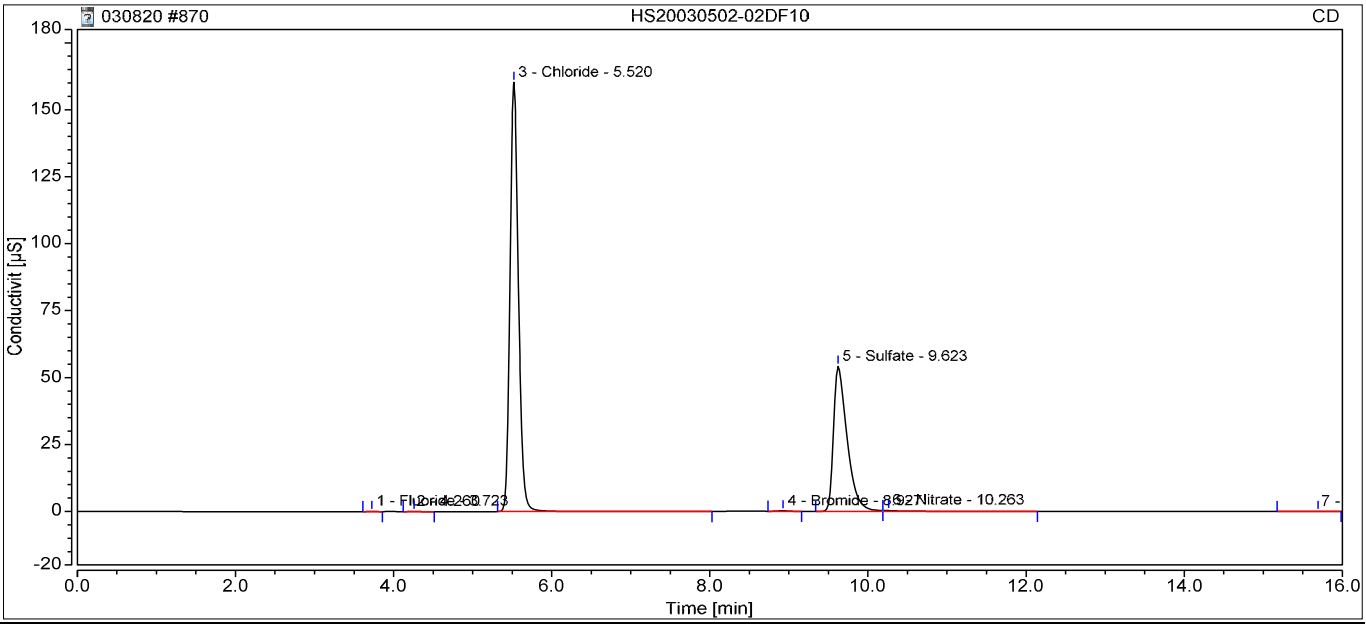
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	50.0000
3	5.54	Chloride	BMB	4.448	19.2364	961.8224	50.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	50.0000
4	8.93	Bromide	BMB	0.006	0.0965	4.8235	50.0000
5	9.69	Sulfate	BMB	5.316	31.7589	1587.9425	50.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	50.0000
Total:			**0.000**	**9.770**		**2554.59**	

870 HS20030502-02DF10

Sample Name:	**HS20030502-02DF10**	*Injection Volume:*	**5.00**
Vial Number:	**GC1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**10.0000**
Recording Time:	**03/19/2020 01:48**	*Sample Weight:*	**1.0000**

Run Time:



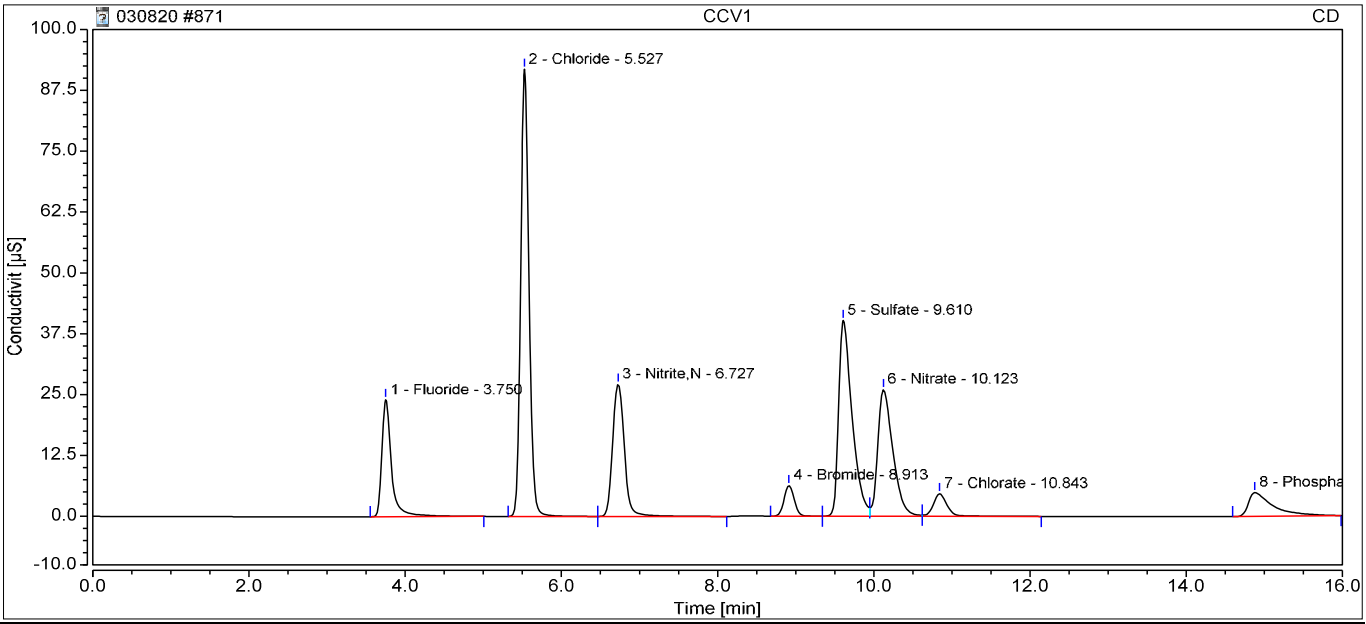
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.003	0.0340	0.3400	10.0000
3	5.52	Chloride	BMB	20.006	86.3053	863.0534	10.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	10.0000
4	8.93	Bromide	BMB	0.030	0.3326	3.3262	10.0000
5	9.62	Sulfate	BM	10.884	64.9211	649.2114	10.0000
6	10.26	Nitrate	MB	0.115	0.2095	2.0951	10.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	10.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	10.0000
Total:			**0.000**	**31.038**		**1518.03**	

871 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/19/2020 02:07**	*Sample Weight:*	**1.0000**

Run Time:



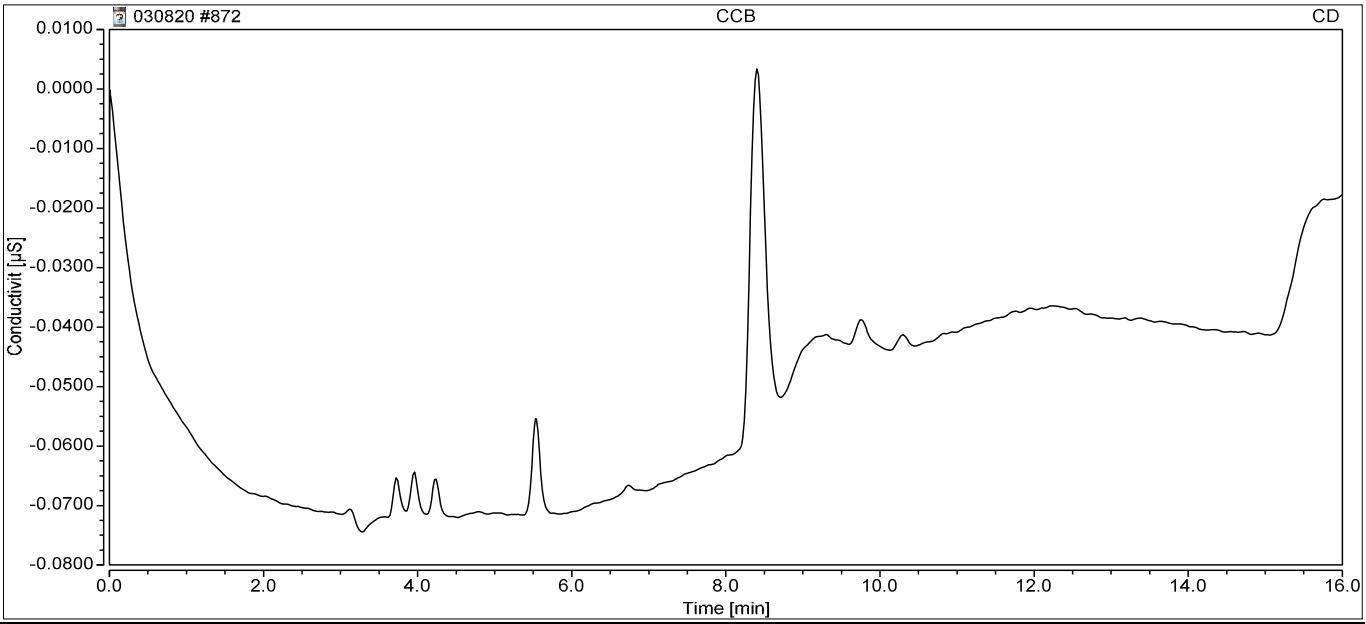
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	3.421	10.0439	10.0439	1.0000
2	5.53	Chloride	BMB	11.285	48.7122	48.7122	1.0000
3	6.73	Nitrite,N	BMB	4.741	9.6048	9.6048	1.0000
4	8.91	Bromide	BM	0.948	9.5999	9.5999	1.0000
5	9.61	Sulfate	M	8.017	47.8437	47.8437	1.0000
6	10.12	Nitrate	M	5.814	9.9639	9.9639	1.0000
7	10.84	Chlorate	MB	0.954	10.0366	10.0366	1.0000
8	14.88	Phosphate	BMB	1.789	8.5423	8.5423	1.0000
Total:			**0.000**	**36.970**		**154.35**	

872 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**RE1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/19/2020 02:25**	*Sample Weight:*	**1.0000**

Run Time:



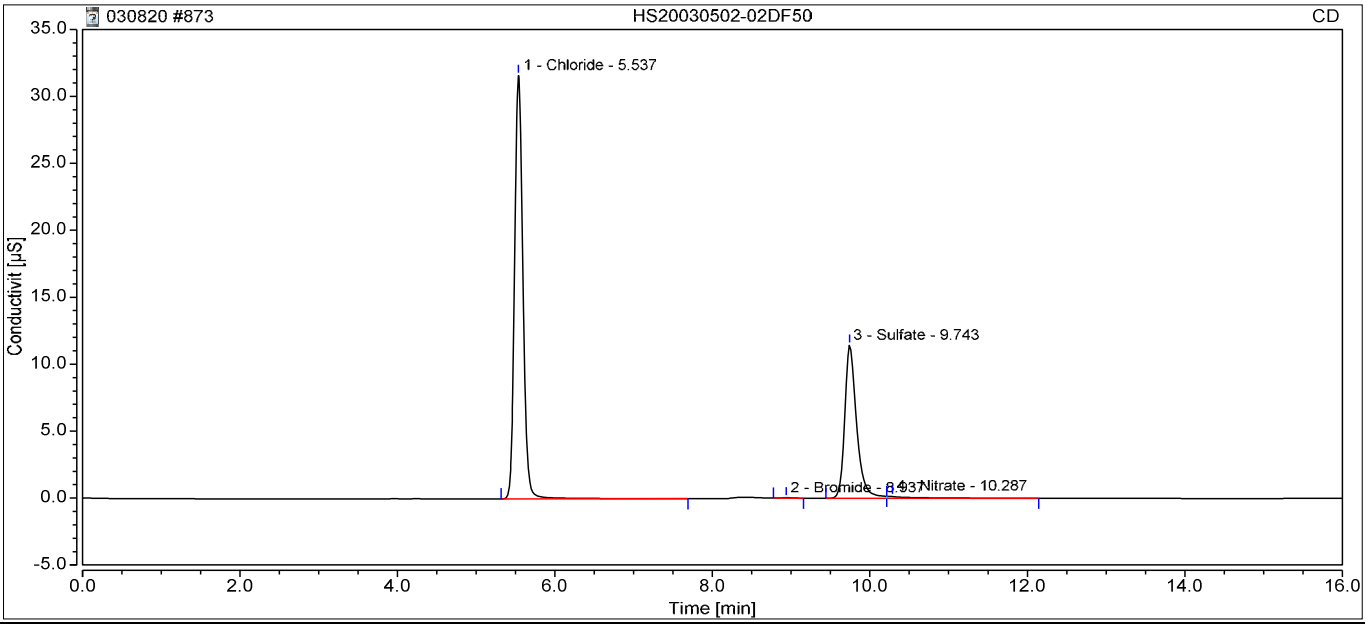
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

873 HS20030502-02DF50

Sample Name:	**HS20030502-02DF50**	*Injection Volume:*	**5.00**
Vial Number:	**GC2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**50.0000**
Recording Time:	**03/19/2020 02:43**	*Sample Weight:*	**1.0000**

Run Time:



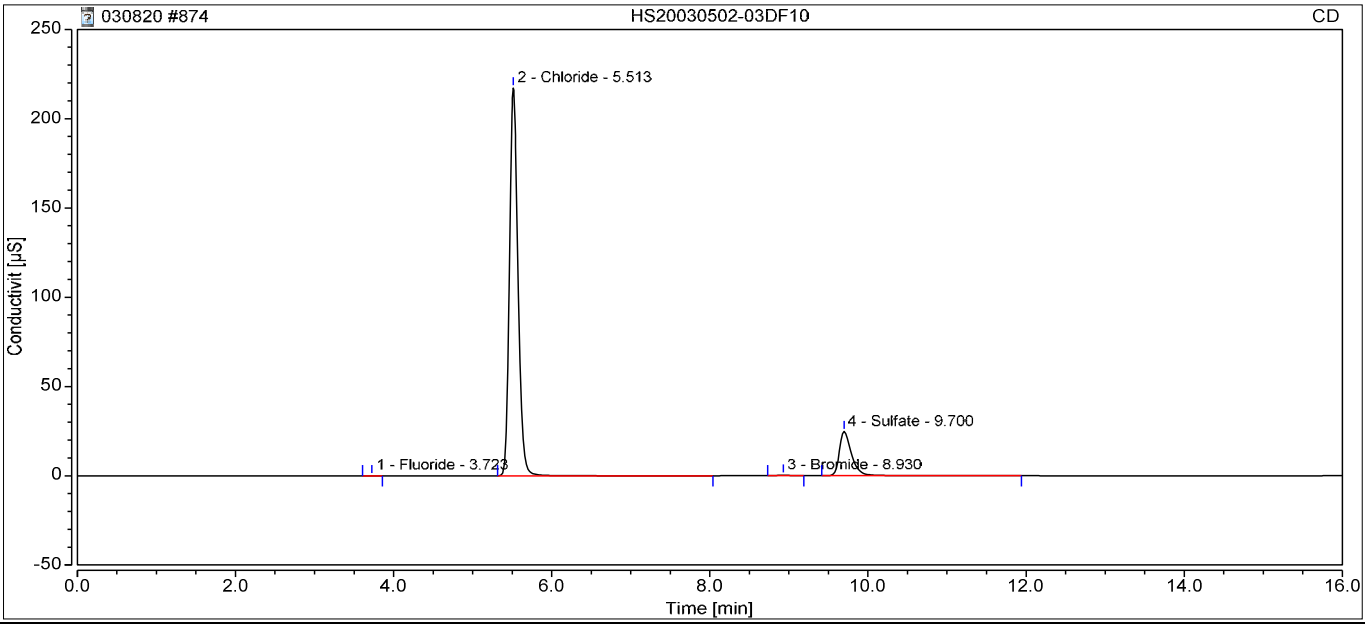
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	50.0000
1	5.54	Chloride	BMB	3.861	16.7049	835.2469	50.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	50.0000
2	8.94	Bromide	BMB	0.005	0.0875	4.3728	50.0000
3	9.74	Sulfate	BM	2.009	12.0658	603.2920	50.0000
4	10.29	Nitrate	MB	0.056	0.1092	5.4602	50.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	50.0000
Total:			**0.000**	**5.931**		**1448.37**	

874 HS20030502-03DF10

Sample Name:	**HS20030502-03DF10**	*Injection Volume:*	**5.00**
Vial Number:	**GC3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**10.0000**
Recording Time:	**03/19/2020 03:01**	*Sample Weight:*	**1.0000**

Run Time:



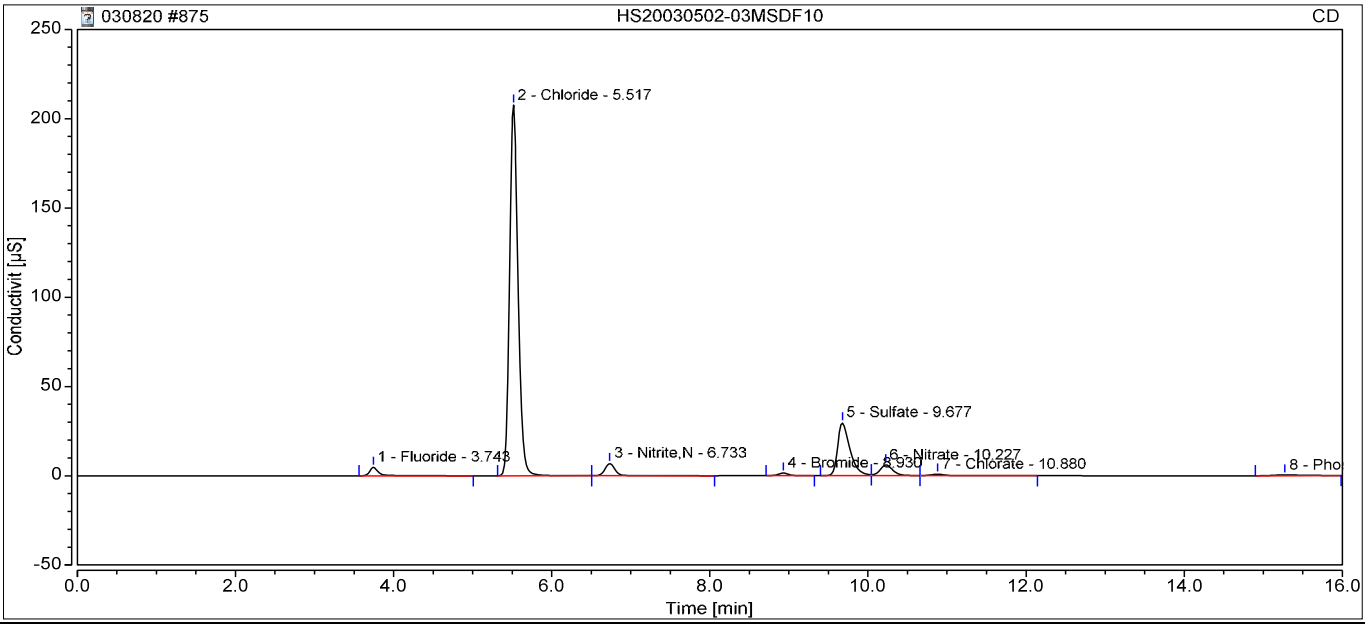
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.003	0.0341	0.3414	10.0000
2	5.51	Chloride	BMB	27.416	118.2501	1182.5012	10.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	10.0000
3	8.93	Bromide	BMB	0.045	0.4865	4.8654	10.0000
4	9.70	Sulfate	BMB	4.431	26.4918	264.9181	10.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	10.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	10.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	10.0000
Total:			**0.000**	**31.896**		**1452.63**	

875 HS20030502-03MSDF10

Sample Name:	**HS20030502-03MSDF10**	*Injection Volume:*	**5.00**
Vial Number:	**GC4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**10.0000**
Recording Time:	**03/19/2020 03:19**	*Sample Weight:*	**1.0000**

Run Time:



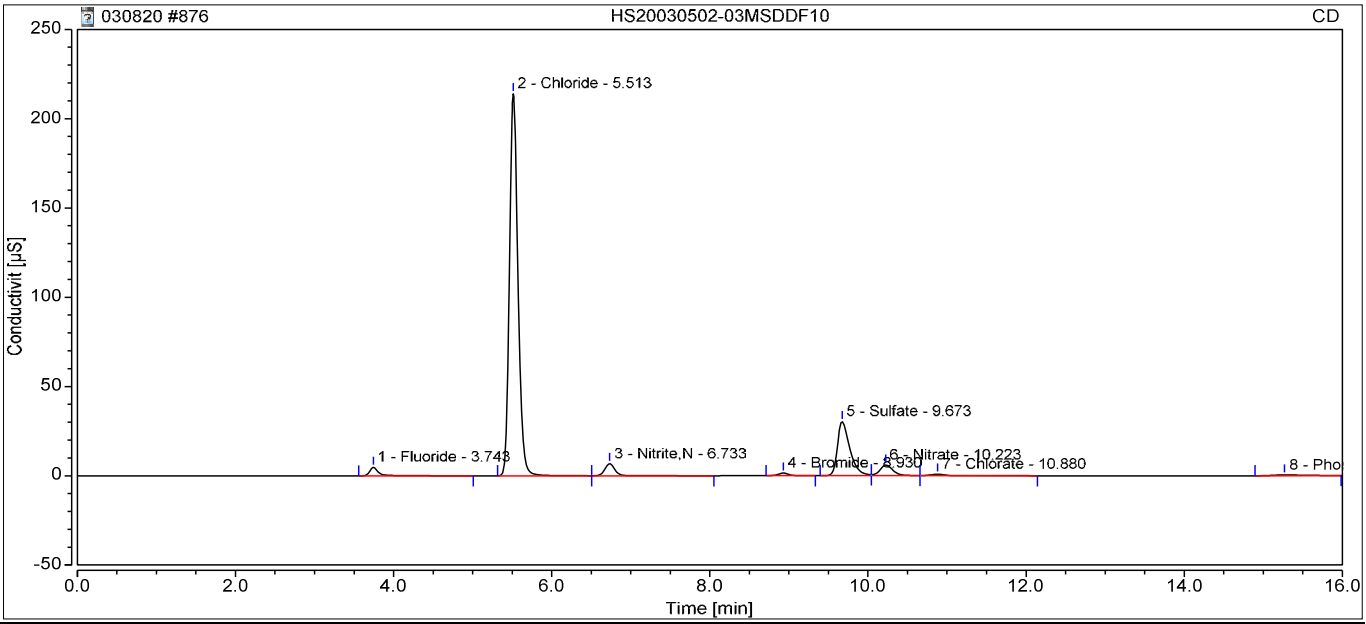
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.657	1.9486	19.4862	10.0000
2	5.52	Chloride	BMB	26.099	112.5744	1125.7438	10.0000
3	6.73	Nitrite,N	BMB	1.005	2.0765	20.7652	10.0000
4	8.93	Bromide	BMB	0.210	2.1513	21.5128	10.0000
5	9.68	Sulfate	BM	5.360	32.0195	320.1945	10.0000
6	10.23	Nitrate	M	1.162	2.0020	20.0205	10.0000
7	10.88	Chlorate	MB	0.193	2.0183	20.1828	10.0000
8	15.27	Phosphate	BMB	0.198	1.0343	10.3434	10.0000
Total:			**0.000**	**34.884**		**1558.25**	

876 HS20030502-03MSDDF10

Sample Name:	**HS20030502-03MSDDF10**	*Injection Volume:*	**5.00**
Vial Number:	**GC5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**10.0000**
Recording Time:	**03/19/2020 03:37**	*Sample Weight:*	**1.0000**

Run Time:



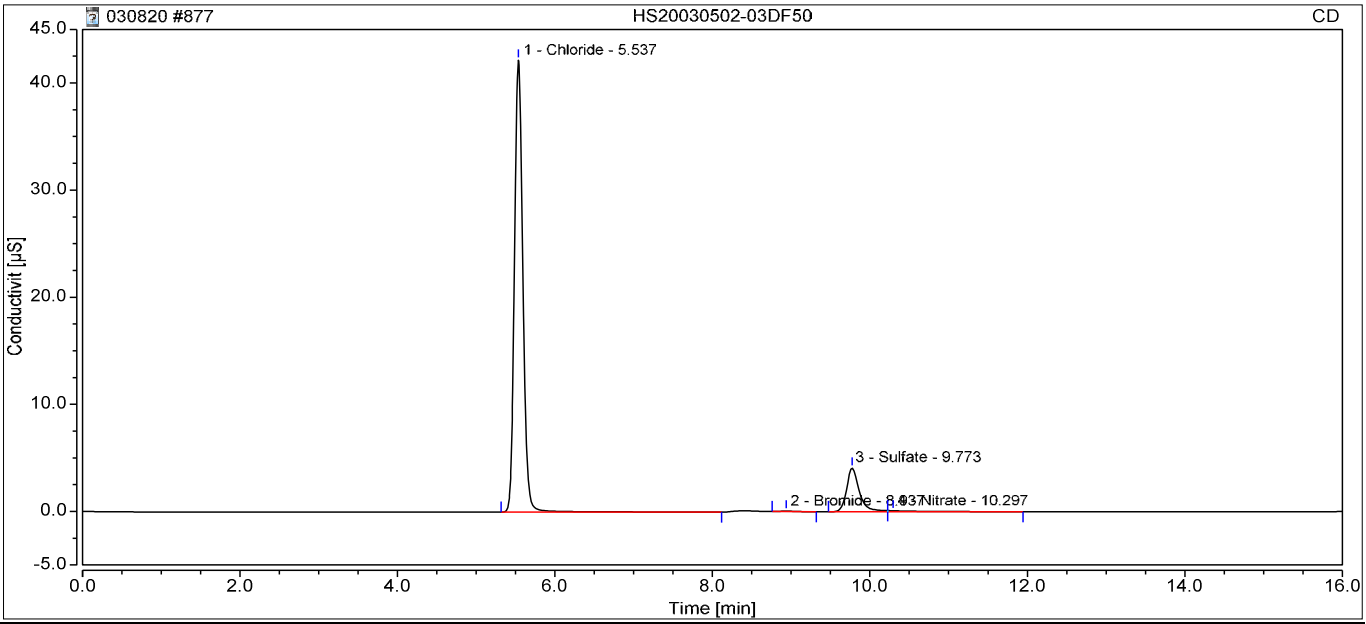
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.659	1.9552	19.5521	10.0000
2	5.51	Chloride	BMB	26.932	116.1633	1161.6334	10.0000
3	6.73	Nitrite,N	BMB	1.002	2.0705	20.7054	10.0000
4	8.93	Bromide	BMB	0.211	2.1636	21.6359	10.0000
5	9.67	Sulfate	BM	5.524	32.9973	329.9727	10.0000
6	10.22	Nitrate	M	1.167	2.0101	20.1007	10.0000
7	10.88	Chlorate	MB	0.194	2.0212	20.2119	10.0000
8	15.27	Phosphate	BMB	0.210	1.0930	10.9298	10.0000
Total:			**0.000**	**35.899**		**1604.74**	

877 HS20030502-03DF50

Sample Name:	**HS20030502-03DF50**	*Injection Volume:*	**5.00**
Vial Number:	**GC6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**50.0000**
Recording Time:	**03/19/2020 03:55**	*Sample Weight:*	**1.0000**

Run Time:



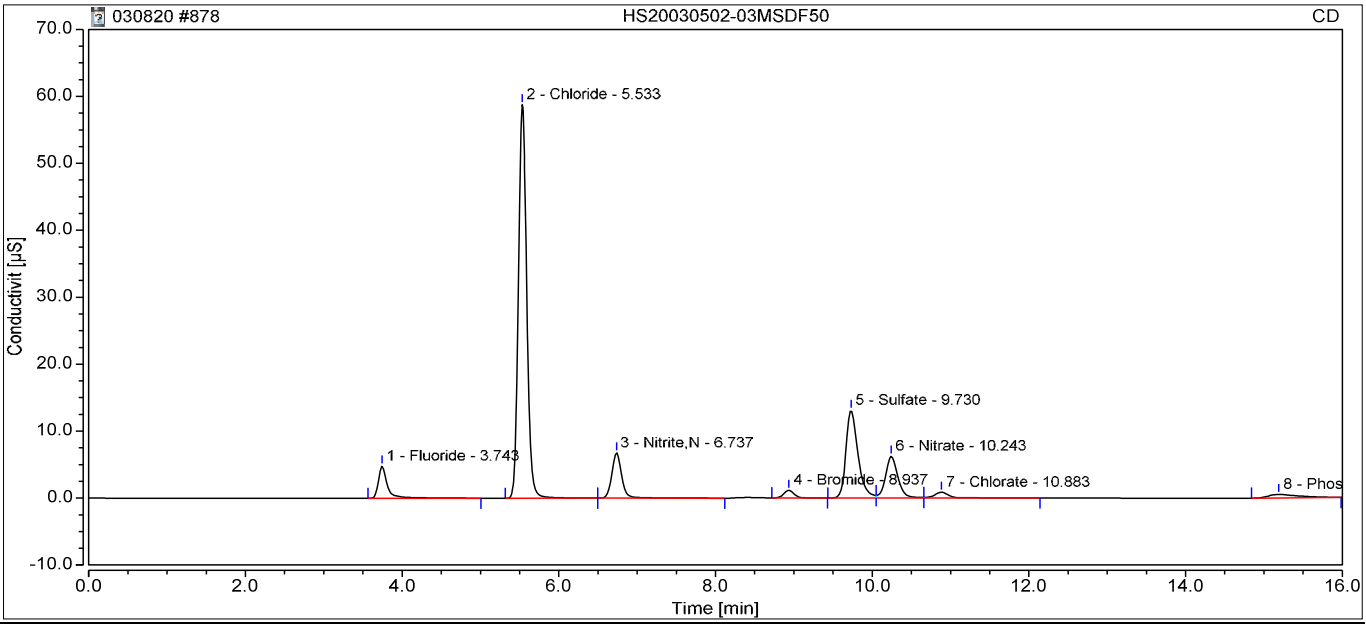
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	50.0000
1	5.54	Chloride	BMB	5.178	22.3852	1119.2577	50.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	50.0000
2	8.94	Bromide	BMB	0.008	0.1141	5.7030	50.0000
3	9.77	Sulfate	BM	0.762	4.6367	231.8326	50.0000
4	10.30	Nitrate	MB	0.039	0.0799	3.9972	50.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	50.0000
Total:			**0.000**	**5.987**		**1360.79**	

878 HS20030502-03MSDF50

Sample Name:	**HS20030502-03MSDF50**	*Injection Volume:*	**5.00**
Vial Number:	**GC7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**50.0000**
Recording Time:	**03/19/2020 04:13**	*Sample Weight:*	**1.0000**

Run Time:



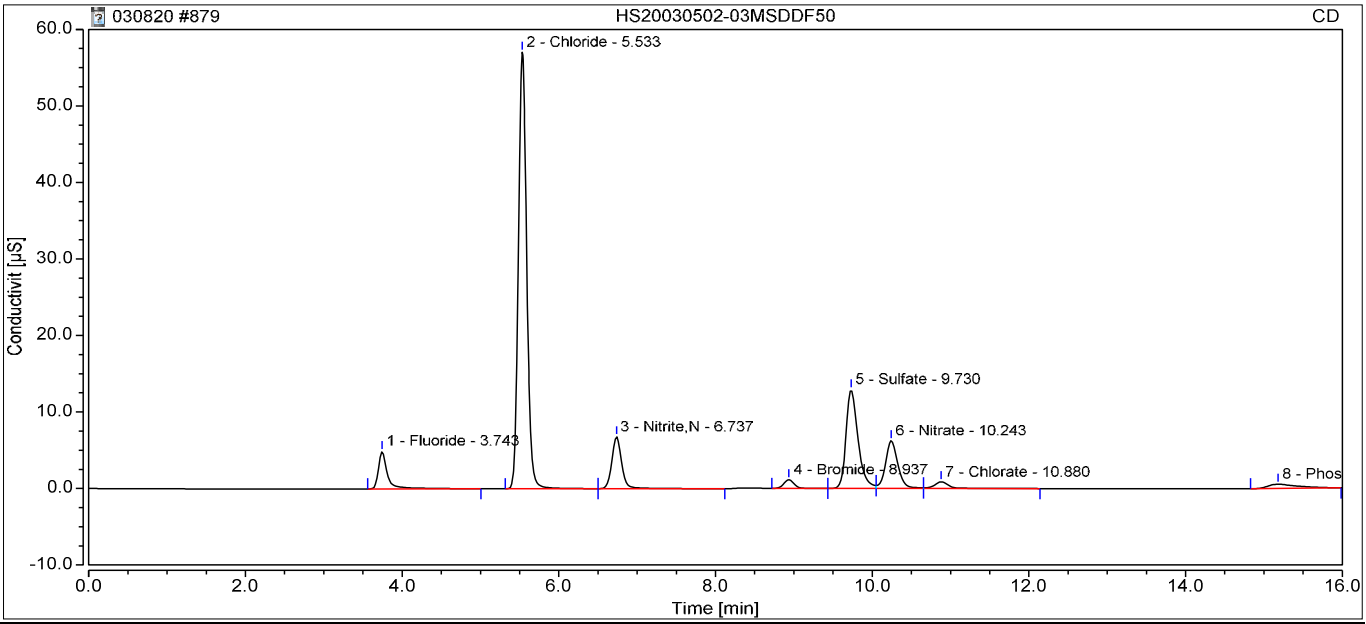
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.657	1.9474	97.3702	50.0000
2	5.53	Chloride	BMB	7.202	31.1079	1555.3960	50.0000
3	6.74	Nitrite,N	BMB	0.997	2.0607	103.0336	50.0000
4	8.94	Bromide	BMB	0.171	1.7626	88.1319	50.0000
5	9.73	Sulfate	BM	2.317	13.8986	694.9291	50.0000
6	10.24	Nitrate	M	1.139	1.9624	98.1223	50.0000
7	10.88	Chlorate	MB	0.192	2.0026	100.1309	50.0000
8	15.19	Phosphate	BMB	0.240	1.2356	61.7798	50.0000
Total:			**0.000**	**12.915**		**2798.89**	

879 HS20030502-03MSDDF50

Sample Name:	**HS20030502-03MSDDF50**	*Injection Volume:*	**5.00**
Vial Number:	**GC8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**50.0000**
Recording Time:	**03/19/2020 04:31**	*Sample Weight:*	**1.0000**

Run Time:



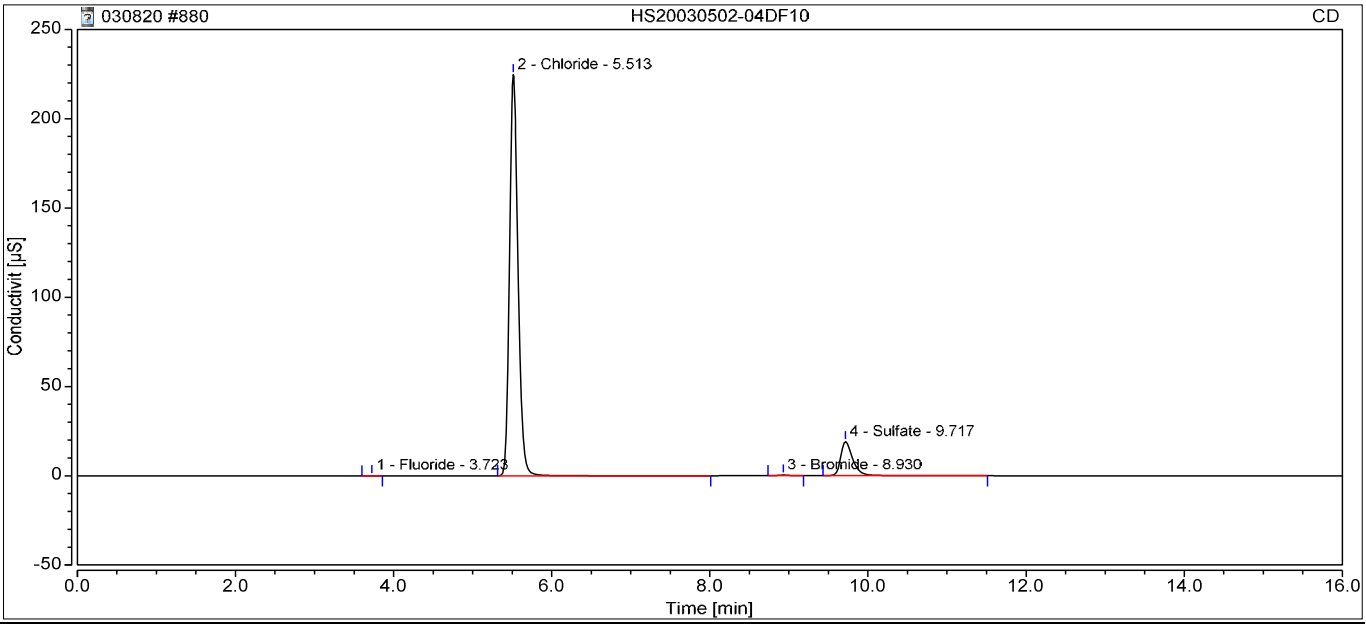
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.659	1.9553	97.7664	50.0000
2	5.53	Chloride	BMB	6.977	30.1372	1506.8622	50.0000
3	6.74	Nitrite,N	BMB	0.999	2.0646	103.2325	50.0000
4	8.94	Bromide	BMB	0.171	1.7614	88.0719	50.0000
5	9.73	Sulfate	BM	2.277	13.6629	683.1444	50.0000
6	10.24	Nitrate	M	1.139	1.9617	98.0851	50.0000
7	10.88	Chlorate	MB	0.193	2.0108	100.5395	50.0000
8	15.18	Phosphate	BMB	0.251	1.2846	64.2304	50.0000
Total:			**0.000**	**12.666**		**2741.93**	

880 HS20030502-04DF10

Sample Name:	**HS20030502-04DF10**	*Injection Volume:*	**5.00**
Vial Number:	**GD1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**10.0000**
Recording Time:	**03/19/2020 04:50**	*Sample Weight:*	**1.0000**

Run Time:



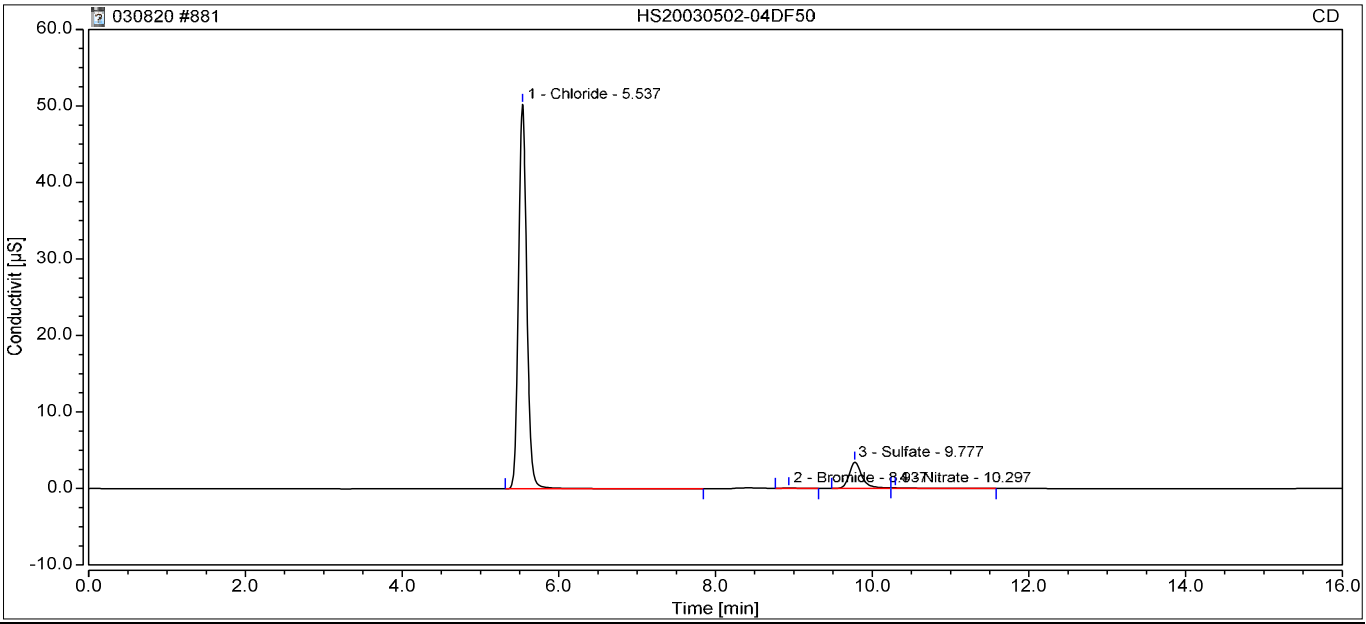
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.004	0.0363	0.3632	10.0000
2	5.51	Chloride	BMB	28.371	122.3662	1223.6616	10.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	10.0000
3	8.93	Bromide	BMB	0.047	0.5097	5.0967	10.0000
4	9.72	Sulfate	BMB	3.385	20.2620	202.6198	10.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	10.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	10.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	10.0000
Total:			**0.000**	**31.807**		**1431.74**	

881 HS20030502-04DF50

Sample Name:	**HS20030502-04DF50**	*Injection Volume:*	**5.00**
Vial Number:	**GD2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**50.0000**
Recording Time:	**03/19/2020 05:08**	*Sample Weight:*	**1.0000**

Run Time:



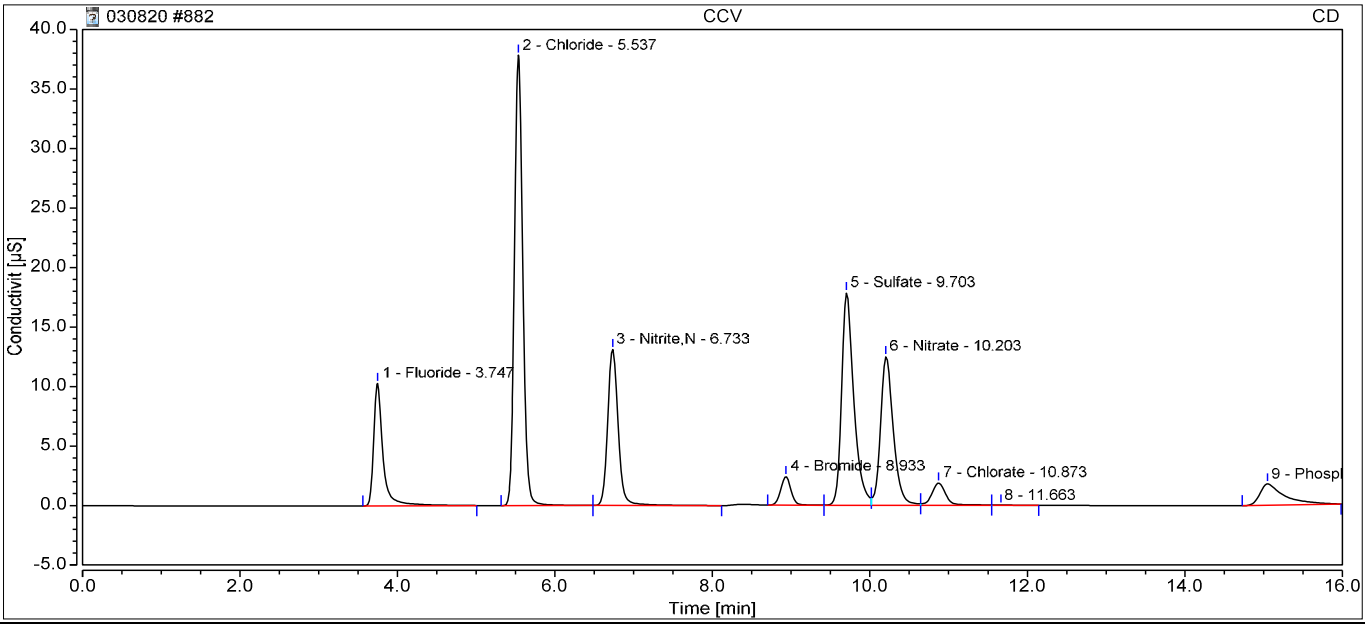
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	50.0000
1	5.54	Chloride	BMB	6.158	26.6084	1330.4186	50.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	50.0000
2	8.94	Bromide	BMB	0.009	0.1277	6.3847	50.0000
3	9.78	Sulfate	BM	0.657	4.0153	200.7648	50.0000
4	10.30	Nitrate	MB	0.032	0.0684	3.4195	50.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	50.0000
Total:			**0.000**	**6.857**		**1540.99**	

882 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**RA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/19/2020 05:26**	*Sample Weight:*	**1.0000**

Run Time:



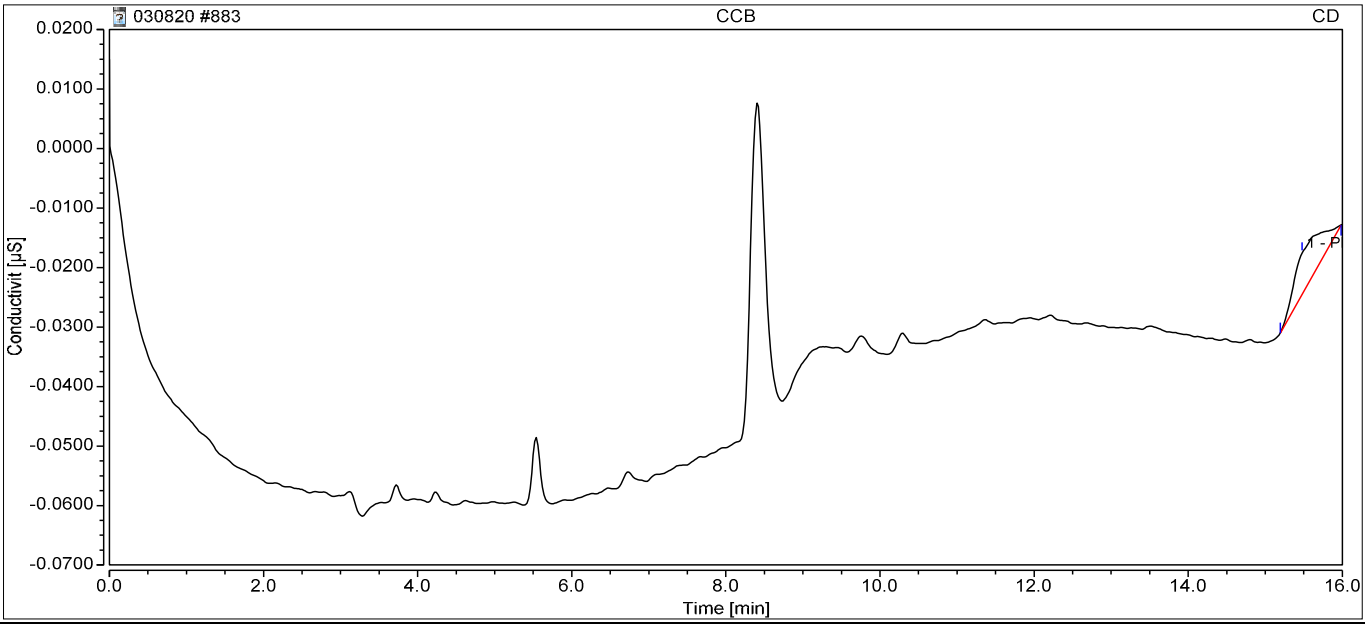
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	1.405	4.1385	4.1385	1.0000
2	5.54	Chloride	BMB	4.600	19.8919	19.8919	1.0000
3	6.73	Nitrite,N	BMB	2.037	4.1563	4.1563	1.0000
4	8.93	Bromide	BM	0.365	3.7142	3.7142	1.0000
5	9.70	Sulfate	M	3.222	19.2878	19.2878	1.0000
6	10.20	Nitrate	M	2.353	4.0396	4.0396	1.0000
7	10.87	Chlorate	M	0.387	4.0550	4.0550	1.0000
9	15.05	Phosphate	BMB	0.651	3.1709	3.1709	1.0000
Total:			**0.000**	**15.019**		**62.45**	

883 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/19/2020 05:44**	*Sample Weight:*	**1.0000**

Run Time:



Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
1	15.48	Phosphate	BMB	0.003	0.1153	0.1153	1.0000
Total:			**0.000**	**0.003**		**0.12**	

10450 Stancliff Rd. Suite 210
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March 30, 2020

Susan Huang
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS20030621**

Laboratory Results for: **Longhorn Army Ammunition Plant - 16**

Dear Susan,

ALS Environmental received 13 sample(s) on Mar 13, 2020 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: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Work Order: HS20030621

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20030621-01	16WW27-200312	Groundwater		12-Mar-2020 08:30	13-Mar-2020 08:52	☐
HS20030621-02	16WW27-200312-FD	Groundwater		12-Mar-2020 08:30	13-Mar-2020 08:52	☐
HS20030621-03	16WW43-200312	Groundwater		12-Mar-2020 09:15	13-Mar-2020 08:52	☐
HS20030621-04	16WW13-200312	Groundwater		12-Mar-2020 10:00	13-Mar-2020 08:52	☐
HS20030621-05	16RW05-200312	Groundwater		12-Mar-2020 10:50	13-Mar-2020 08:52	☐
HS20030621-06	16RW02-200312	Groundwater		12-Mar-2020 11:40	13-Mar-2020 08:52	☐
HS20030621-07	16RW01-200312	Groundwater		12-Mar-2020 12:25	13-Mar-2020 08:52	☐
HS20030621-08	16WW33-200312	Groundwater		12-Mar-2020 13:25	13-Mar-2020 08:52	☐
HS20030621-09	16WW34-200312	Groundwater		12-Mar-2020 14:10	13-Mar-2020 08:52	☐
HS20030621-10	16WW32-200312	Groundwater		12-Mar-2020 15:00	13-Mar-2020 08:52	☐
HS20030621-11	16WW31-200312	Groundwater		12-Mar-2020 15:45	13-Mar-2020 08:52	☐
HS20030621-12	16WW46-200312	Groundwater		12-Mar-2020 16:40	13-Mar-2020 08:52	☐
HS20030621-13	Trip Blank	Water	CG-01720-09	12-Mar-2020 00:00	13-Mar-2020 08:52	☐

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Work Order: HS20030621

CASE NARRATIVE

Work Order Comments

- The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.
- The analysis for Perchlorate was subcontracted to ALS Salt Lake City, UT. Final report attached.

GCMS Volatiles by Method SW8260

Batch ID: R358659

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R359067

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW27-200312
Collection Date: 12-Mar-2020 08:30

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 01:42
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:42
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:42
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:42
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 01:42
Trichloroethene	**1.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 01:42
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:42
Surr: 1,2-Dichloroethane-d4	*92.1*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 01:42*
Surr: 4-Bromofluorobenzene	*96.2*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 01:42*
Surr: Dibromofluoromethane	*95.4*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 01:42*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 01:42*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW27-200312-FD
Collection Date: 12-Mar-2020 08:30

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 03:42
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 03:42
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 03:42
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 03:42
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 03:42
Trichloroethene	**1.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 03:42
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 03:42
Surr: 1,2-Dichloroethane-d4	*91.9*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 03:42*
Surr: 4-Bromofluorobenzene	*96.2*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 03:42*
Surr: Dibromofluoromethane	*95.7*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 03:42*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 03:42*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW43-200312
Collection Date: 12-Mar-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 04:06
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:06
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:06
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:06
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 04:06
Trichloroethene	**0.61**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 04:06
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:06
Surr: 1,2-Dichloroethane-d4	*90.9*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 04:06*
Surr: 4-Bromofluorobenzene	*96.9*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 04:06*
Surr: Dibromofluoromethane	*95.0*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 04:06*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 04:06*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW13-200312
Collection Date: 12-Mar-2020 10:00

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 04:30
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:30
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:30
cis-1,2-Dichloroethene	**18**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 04:30
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 04:30
Trichloroethene	**7.5**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 04:30
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:30
Surr: 1,2-Dichloroethane-d4	*91.1*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 04:30*
Surr: 4-Bromofluorobenzene	*98.1*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 04:30*
Surr: Dibromofluoromethane	*93.5*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 04:30*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 04:30*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16RW05-200312
Collection Date: 12-Mar-2020 10:50

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 04:54
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:54
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:54
cis-1,2-Dichloroethene	**7.8**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 04:54
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 04:54
Trichloroethene	**3.0**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 04:54
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:54
Surr: 1,2-Dichloroethane-d4	*90.0*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 04:54*
Surr: 4-Bromofluorobenzene	*95.5*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 04:54*
Surr: Dibromofluoromethane	*94.9*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 04:54*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 04:54*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**52.8**		**0.300**	**1.00**	**1.00**	**mg/L**	10	27-Mar-2020 14:42
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16RW02-200312
Collection Date: 12-Mar-2020 11:40

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 05:18
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 05:18
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 05:18
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 05:18
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 05:18
Trichloroethene	**2.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 05:18
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 05:18
Surr: 1,2-Dichloroethane-d4	*91.4*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 05:18*
Surr: 4-Bromofluorobenzene	*94.8*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 05:18*
Surr: Dibromofluoromethane	*96.1*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 05:18*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 05:18*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16RW01-200312
Collection Date: 12-Mar-2020 12:25

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	2.5	U	1.5	2.5	5.0	UG/L	5	21-Mar-2020 08:55
1,1-Dichloroethene	2.5	U	1.0	2.5	5.0	UG/L	5	21-Mar-2020 08:55
1,2-Dichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	21-Mar-2020 08:55
cis-1,2-Dichloroethene	**120**		**1.0**	**2.5**	**5.0**	**UG/L**	5	21-Mar-2020 08:55
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	21-Mar-2020 08:55
Trichloroethene	**3,300**		**10**	**25**	**50**	**UG/L**	50	21-Mar-2020 09:19
Vinyl chloride	**4.0**	J	**1.0**	**2.5**	**5.0**	**UG/L**	5	21-Mar-2020 08:55
Surr: 1,2-Dichloroethane-d4	*89.9*			**0**	*81-118*	*%REC*	*50*	*21-Mar-2020 09:19*
Surr: 1,2-Dichloroethane-d4	*90.1*			**0**	*81-118*	*%REC*	*5*	*21-Mar-2020 08:55*
Surr: 4-Bromofluorobenzene	*97.2*			**0**	*85-114*	*%REC*	*5*	*21-Mar-2020 08:55*
Surr: 4-Bromofluorobenzene	*98.9*			**0**	*85-114*	*%REC*	*50*	*21-Mar-2020 09:19*
Surr: Dibromofluoromethane	*94.3*			**0**	*80-119*	*%REC*	*5*	*21-Mar-2020 08:55*
Surr: Dibromofluoromethane	*92.2*			**0**	*80-119*	*%REC*	*50*	*21-Mar-2020 09:19*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*5*	*21-Mar-2020 08:55*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*50*	*21-Mar-2020 09:19*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW33-200312
Collection Date: 12-Mar-2020 13:25

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 05:42
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 05:42
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 05:42
cis-1,2-Dichloroethene	**13**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 05:42
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 05:42
Trichloroethene	**79**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 05:42
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 05:42
Surr: 1,2-Dichloroethane-d4	*92.5*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 05:42*
Surr: 4-Bromofluorobenzene	*94.7*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 05:42*
Surr: Dibromofluoromethane	*95.0*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 05:42*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 05:42*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW34-200312
Collection Date: 12-Mar-2020 14:10

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 02:06
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 02:06
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 02:06
cis-1,2-Dichloroethene	**31**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 02:06
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 02:06
Trichloroethene	**130**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 02:06
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 02:06
Surr: 1,2-Dichloroethane-d4	*89.2*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 02:06*
Surr: 4-Bromofluorobenzene	*98.3*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 02:06*
Surr: Dibromofluoromethane	*94.9*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 02:06*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 02:06*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW32-200312
Collection Date: 12-Mar-2020 15:00

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-10
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 06:06
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:06
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:06
cis-1,2-Dichloroethene	**0.80**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 06:06
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 06:06
Trichloroethene	**9.9**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 06:06
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:06
Surr: 1,2-Dichloroethane-d4	*90.8*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 06:06*
Surr: 4-Bromofluorobenzene	*100.0*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 06:06*
Surr: Dibromofluoromethane	*94.8*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 06:06*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 06:06*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW31-200312
Collection Date: 12-Mar-2020 15:45

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-11
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 06:30
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:30
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:30
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:30
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 06:30
Trichloroethene	**1.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 06:30
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:30
Surr: 1,2-Dichloroethane-d4	*91.3*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 06:30*
Surr: 4-Bromofluorobenzene	*98.1*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 06:30*
Surr: Dibromofluoromethane	*96.0*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 06:30*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 06:30*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW46-200312
Collection Date: 12-Mar-2020 16:40

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-12
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 06:54
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:54
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:54
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:54
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 06:54
Trichloroethene	**2.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 06:54
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:54
Surr: 1,2-Dichloroethane-d4	*90.2*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 06:54*
Surr: 4-Bromofluorobenzene	*99.7*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 06:54*
Surr: Dibromofluoromethane	*93.9*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 06:54*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 06:54*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: Trip Blank
Collection Date: 12-Mar-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-13
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 00:54
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 00:54
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 00:54
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 00:54
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 00:54
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 00:54
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 00:54
Surr: 1,2-Dichloroethane-d4	*90.3*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 00:54*
Surr: 4-Bromofluorobenzene	*97.2*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 00:54*
Surr: Dibromofluoromethane	*94.9*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 00:54*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 00:54*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030621

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R358659 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20030621-13	Trip Blank	12 Mar 2020 00:00			21 Mar 2020 00:54	1
Batch ID: R358659 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20030621-01	16WW27-200312	12 Mar 2020 08:30			21 Mar 2020 01:42	1
HS20030621-02	16WW27-200312-FD	12 Mar 2020 08:30			21 Mar 2020 03:42	1
HS20030621-03	16WW43-200312	12 Mar 2020 09:15			21 Mar 2020 04:06	1
HS20030621-04	16WW13-200312	12 Mar 2020 10:00			21 Mar 2020 04:30	1
HS20030621-05	16RW05-200312	12 Mar 2020 10:50			21 Mar 2020 04:54	1
HS20030621-06	16RW02-200312	12 Mar 2020 11:40			21 Mar 2020 05:18	1
HS20030621-07	16RW01-200312	12 Mar 2020 12:25			21 Mar 2020 09:19	50
HS20030621-07	16RW01-200312	12 Mar 2020 12:25			21 Mar 2020 08:55	5
HS20030621-08	16WW33-200312	12 Mar 2020 13:25			21 Mar 2020 05:42	1
HS20030621-09	16WW34-200312	12 Mar 2020 14:10			21 Mar 2020 02:06	1
HS20030621-10	16WW32-200312	12 Mar 2020 15:00			21 Mar 2020 06:06	1
HS20030621-11	16WW31-200312	12 Mar 2020 15:45			21 Mar 2020 06:30	1
HS20030621-12	16WW46-200312	12 Mar 2020 16:40			21 Mar 2020 06:54	1
Batch ID: R358785 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20030621-01	16WW27-200312	12 Mar 2020 08:30			24 Mar 2020 14:43	1
HS20030621-02	16WW27-200312-FD	12 Mar 2020 08:30			24 Mar 2020 14:43	1
HS20030621-03	16WW43-200312	12 Mar 2020 09:15			24 Mar 2020 14:43	1
HS20030621-04	16WW13-200312	12 Mar 2020 10:00			24 Mar 2020 14:43	1
HS20030621-05	16RW05-200312	12 Mar 2020 10:50			24 Mar 2020 14:43	1
HS20030621-06	16RW02-200312	12 Mar 2020 11:40			24 Mar 2020 14:43	1
HS20030621-07	16RW01-200312	12 Mar 2020 12:25			24 Mar 2020 14:43	1
HS20030621-08	16WW33-200312	12 Mar 2020 13:25			24 Mar 2020 14:43	1
HS20030621-09	16WW34-200312	12 Mar 2020 14:10			24 Mar 2020 14:43	1
HS20030621-10	16WW32-200312	12 Mar 2020 15:00			24 Mar 2020 14:43	1
HS20030621-11	16WW31-200312	12 Mar 2020 15:45			24 Mar 2020 14:43	1
HS20030621-12	16WW46-200312	12 Mar 2020 16:40			24 Mar 2020 14:43	1
Batch ID: R358878 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Groundwater	
HS20030621-05	16RW05-200312	12 Mar 2020 10:50			25 Mar 2020 14:54	1
Batch ID: R359067 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20030621-05	16RW05-200312	12 Mar 2020 10:50			27 Mar 2020 14:42	10

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030621

QC BATCH REPORT

Batch ID: R358659 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW1-200320** Units: **UG/L** Analysis Date: **21-Mar-2020 00:29**
Client ID: Run ID: **VOA6_358659** SeqNo: **5524279** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*44.95*	*1.0*	*50*	*0*	*89.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.05*	*1.0*	*50*	*0*	*98.1*	*85 - 114*				
Surr: Dibromofluoromethane	*47.12*	*1.0*	*50*	*0*	*94.2*	*80 - 119*				
Surr: Toluene-d8	*53.14*	*1.0*	*50*	*0*	*106*	*89 - 112*				

LCS Sample ID: **VLCSW-200320** Units: **UG/L** Analysis Date: **20-Mar-2020 23:41**
Client ID: Run ID: **VOA6_358659** SeqNo: **5524278** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.89	1.0	20	0	99.5	80 - 119				
1,1-Dichloroethene	18.72	1.0	20	0	93.6	71 - 131				
1,2-Dichloroethane	19.83	1.0	20	0	99.1	73 - 128				
cis-1,2-Dichloroethene	20.22	1.0	20	0	101	78 - 123				
Methylene chloride	20.64	2.0	20	0	103	74 - 124				
Trichloroethene	19.59	1.0	20	0	97.9	79 - 123				
Vinyl chloride	18.09	1.0	20	0	90.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*54.98*	*1.0*	*50*	*0*	*110*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.24*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*56.22*	*1.0*	*50*	*0*	*112*	*80 - 119*				
Surr: Toluene-d8	*51.8*	*1.0*	*50*	*0*	*104*	*89 - 112*				

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030621

QC BATCH REPORT

Batch ID: R358659 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20030621-01MS** Units: **UG/L** Analysis Date: **21-Mar-2020 02:30**
Client ID: **16WW27-200312** Run ID: **VOA6_358659** SeqNo: **5524284** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	20.02	1.0	20	0	100	80 - 119				
1,1-Dichloroethene	18.87	1.0	20	0	94.3	71 - 131				
1,2-Dichloroethane	19.26	1.0	20	0	96.3	73 - 128				
cis-1,2-Dichloroethene	19.78	1.0	20	0	98.9	78 - 123				
Methylene chloride	18.69	2.0	20	0	93.5	74 - 124				
Trichloroethene	21.01	1.0	20	1.118	99.4	79 - 123				
Vinyl chloride	19.44	1.0	20	0	97.2	58 - 137				
Surr: 1,2-Dichloroethane-d4	*46.45*	*1.0*	*50*	*0*	*92.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.71*	*1.0*	*50*	*0*	*97.4*	*85 - 114*				
Surr: Dibromofluoromethane	*47.23*	*1.0*	*50*	*0*	*94.5*	*80 - 119*				
Surr: Toluene-d8	*52.29*	*1.0*	*50*	*0*	*105*	*89 - 112*				

MSD Sample ID: **HS20030621-01MSD** Units: **UG/L** Analysis Date: **21-Mar-2020 02:54**
Client ID: **16WW27-200312** Run ID: **VOA6_358659** SeqNo: **5524285** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.73	1.0	20	0	98.6	80 - 119	20.02	1.5	20	
1,1-Dichloroethene	17.66	1.0	20	0	88.3	71 - 131	18.87	6.61	20	
1,2-Dichloroethane	19.51	1.0	20	0	97.6	73 - 128	19.26	1.32	20	
cis-1,2-Dichloroethene	18.67	1.0	20	0	93.3	78 - 123	19.78	5.8	20	
Methylene chloride	17.56	2.0	20	0	87.8	74 - 124	18.69	6.27	20	
Trichloroethene	19.79	1.0	20	1.118	93.4	79 - 123	21.01	5.96	20	
Vinyl chloride	17.46	1.0	20	0	87.3	58 - 137	19.44	10.7	20	
Surr: 1,2-Dichloroethane-d4	*45.71*	*1.0*	*50*	*0*	*91.4*	*81 - 118*	*46.45*	*1.6*	*20*	
Surr: 4-Bromofluorobenzene	*48.72*	*1.0*	*50*	*0*	*97.4*	*85 - 114*	*48.71*	*0.0289*	*20*	
Surr: Dibromofluoromethane	*47.12*	*1.0*	*50*	*0*	*94.2*	*80 - 119*	*47.23*	*0.23*	*20*	
Surr: Toluene-d8	*52.23*	*1.0*	*50*	*0*	*104*	*89 - 112*	*52.29*	*0.122*	*20*	

The following samples were analyzed in this batch:

HS20030621-01	HS20030621-02	HS20030621-03	HS20030621-04
HS20030621-05	HS20030621-06	HS20030621-07	HS20030621-08
HS20030621-09	HS20030621-10	HS20030621-11	HS20030621-12
HS20030621-13			

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030621

QC BATCH REPORT

Batch ID: R359067 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK-03.26.20** Units: **mg/L** Analysis Date: **26-Mar-2020 19:38**
Client ID: Run ID: **ICS-Integrion_359067** SeqNo: **5534695** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U

LCS Sample ID: **LCS-03.26.20** Units: **mg/L** Analysis Date: **26-Mar-2020 19:56**
Client ID: Run ID: **ICS-Integrion_359067** SeqNo: **5534696** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.711	0.100	4	0	92.8	80 - 120				

LCSD Sample ID: **LCSD-03.26.20** Units: **mg/L** Analysis Date: **26-Mar-2020 20:14**
Client ID: Run ID: **ICS-Integrion_359067** SeqNo: **5534697** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.643	0.100	4	0	91.1	80 - 120	3.711	1.85	20	

MS Sample ID: **HS20031162-08MS** Units: **mg/L** Analysis Date: **27-Mar-2020 01:43**
Client ID: Run ID: **ICS-Integrion_359067** SeqNo: **5534702** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.335	0.100	2	0.582	87.6	80 - 120				

MS Sample ID: **HS200301147-01MS** Units: **mg/L** Analysis Date: **27-Mar-2020 02:37**
Client ID: Run ID: **ICS-Integrion_359067** SeqNo: **5534705** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	17.36	1.00	20	0	86.8	80 - 120				

MSD Sample ID: **HS20031162-08MSD** Units: **mg/L** Analysis Date: **27-Mar-2020 02:01**
Client ID: Run ID: **ICS-Integrion_359067** SeqNo: **5534703** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.345	0.100	2	0.582	88.1	80 - 120	2.335	0.415	20	

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030621

QC BATCH REPORT

Batch ID: R359067 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MSD Sample ID: **HS200301147-01MSD** Units: **mg/L** Analysis Date: **27-Mar-2020 03:32**
Client ID: Run ID: **ICS-Integrion_359067** SeqNo: **5534708** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	17.11	1.00	20	0	85.5	80 - 120	17.36	1.46	20	

The following samples were analyzed in this batch: HS20030621-05

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: **HS20030621**

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

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-19-25	30-Apr-2020

ALS Houston, US Date: 30-Mar-20

Sample Receipt Checklist

Client Name: CBI-Houston
Work Order: HS20030621
Date/Time Received: **13-Mar-2020 08:52**
Received by: **AC**

Checklist completed by: *Paresh M. Giga* eSignature 13-Mar-2020 Date
Reviewed by: *RJ Modashia* eSignature 16-Mar-2020 Date

Matrices: **GW/Water**
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 ☐	COC IDs:None
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):	2.1c U/c	IR25
Cooler(s)/Kit(s):	23949	
Date/Time sample(s) sent to storage:	3/13/2020 18:15	

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:

APTIM

Page 1 of ____

COC ID: LHAAP16 March 2020__-ALS | TURNAROUND TIME: Normal | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	Longhorn AAP			Lab Name	ALS Laboratories			Email Invoice To	FedInvoices@aptim.com		
Project Number	501032			Lab Contact	RJ Modashia						
	LHAAP-16			Email	RJ.Modashia@alsglobal.com			Email Report To	Susan.Huang@aptim.com		
Address	1203-B East Grand Avenue			Address	10450 Stancliff Rd., Suite 210			Mail Reports To	Susan Huang		
	PMB 202							Address	4005 Port Chicago Highway, Suite 200		
City	Marshall	State	TX	City	Houston	State	TX	City	Concord	State	CA
Postal Code	75670	Country	USA	Postal Code	77099	Country	USA	Postal Code	94520	Country	USA
Phone Number	713.243.7264			Phone Number	281.575.2279 or 281.530.5656						
Project Manager	Praveen Srivastav							Shipping Company			

SAMPLE DETAILS

ANALYSIS REQUESTED

Sample ID	Location	Start Depth	End Depth	Depth Unit	Field Matrix	Date	Time (24hr)	# Of Cont.	Sample Container and Preservatives	3-40 ml VOA/HCL	3-40 ml VOA/HCL	2-40ml Amber/H2SO4	1-250 ml PE/HNO3	1-250ml PE/ice	1-250ml PE /ice	1-250ml PE/ice	1-125ml PE/ice		
									ANALYSIS	VOCs by SW8260B	MEE by RSK175	TOC by SM5310C	Metals (arsenic, chromium, manganese, nickel, and thallium) by SW6020	Anions (sulfate/nitrate/bromide) by SW9056	Anions (bromide only) by SW9056	Alkalinity by SM2320	Perchlorate by SW6850		
16WW27-200312	LHAAP 16				WG	3/12/20	0830	4		X							X		
16WW27-200312-FD	LHAAP 16				WG	3/12/20	0830	4		X							X		
16WW43-200312	LHAAP 16				WG	3/12/20	0915	4		X							X		
16WW13-200312	LHAAP 16				WG	3/12/20	1000	4		X							X		
16RW05-200312	LHAAP 16				WG	3/12/20	1050	7		X		X			X		X		
16RW02-200312	LHAAP 16				WG	3/12/20	1140	4		X							X		
16RW01-200312	LHAAP 16				WG	3/12/20	1225	4		X							X		
16WW33-200312	LHAAP 16				WG	3/12/20	1325	4		X							X		
16WW34-200312	LHAAP 16				WG	3/12/20	1410	4		X							X		
16WW32-200312	LHAAP 16				WG	3/12/20	1500	4		X							X		
16WW31-200312	LHAAP 16				WG	3/12/20	1545	4		X							X		
16WW46-200312	LHAAP 16				WG	3/12/20	1640	4		X							X		
TRIP BLANK	LHAAP 16				WG	3/12/20		2		X									

RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Sean Bassage / BHATE	3/12/20 1730	AC / ALS	3/13/20 20 08:52

HS20030621

Aptim Environmental & Infrastucture, Inc.
Longhorn Army Ammunition Plant - 16

VIC 2.1 IR#25 CF#0 23949

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

23949

CUSTODY SEAL

Date: 3/12/20 Time: 1730
Name: Scott Beesinger
Company: BHMP

Seal Broken By: SM
Date: 03/13/20

23949

Must Deliver Next Business Day
Time and Temperature Sensitive!

23949

ORIGIN ID:SGRA (903) 930-6193
SCOTT BEESINGER
APTIM
1203-B EAST GRAND AVE
PMB 202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 25FEB20
ACTWGT: 1.00 LB MAN
CAD: 300130/CAFE3211
DIMS: 26x14x14 IN

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-6668
REF: LHAAP 16 - BD 70505 - RJ
RMA:

FedEx Express

TRK# 0221 1251 0294 7873

FRI - 13 MAR 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US IAH

ALS Environmental
ALS Group USA, Corp
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Kelso, WA 98626
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www.alsglobal.com

March 25, 2020

Analytical Report for Service Request No: K2002353

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: HS20030621

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory March 17, 2020
For your reference, these analyses have been assigned our service request number **K2002353.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

RIGHT SOLUTIONS | RIGHT PARTNER

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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
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.
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.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
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www.alsglobal.com

1317 South 13th Ave, Kelso, WA 98626 | 1-360-577-7222 | www.alsglobal.com

Client: ALS Environmental - US
Project: HS20030621
Sample Matrix: Ground Water

Service Request: K2002353
Date Received: 03/17/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

One ground water sample was received for analysis at ALS Environmental on 03/17/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 03/25/2020

Chain of Custody

ALS Environmental—Kelso Laboratory
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Phone (360)577-7222 Fax (360)636-1068
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K2002353

10450 Stancliff Rd, Ste 210
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F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13522**

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626 **Phone:** +1 360 501 3312

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20030621
TSR:	Sonia West

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED			DUE DATE
1. HS20030621-05	**16RW05-200312**	**Groundwater**	**12 Mar 2020 10:50**
TOC Analysis with DOD Level IV/EQuIS APTIM EDD			27 Mar 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 3/16/2020 1800

Received By: RJ Morrow ALS Kelso Date/Time: 3/17/20 0942

Cooler ID(s): _____ Temperature(s): _____

PC KL

Cooler Receipt and Preservation Form

Client ALS - Houston Service Request K2002353

Received: 3/17/20 Opened: 3/17/20 By: KM Unloaded: 3/17/20 By: KL

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 2 Front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Temp Blank	Sample 1	Sample 2	Sample 3	Sample 4	IR GUN	Cooler / COC ID NA	Tracking Number NA	Filed
0.6	—	—	—	—	39800428 WS	13522	125102954360	

4. Packing material: *Inserts* *Baggies* (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA (Y) N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
11. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2002353
Project:	HS20030621	**Date Collected:**	03/12/20
Sample Matrix:	Ground Water	**Date Received:**	03/17/20
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
16RW05-200312	K2002353-001	**500**	200	80	30	400	03/22/20 02:03	
Method Blank	K2002353-MB	**0.29 J**	0.50	0.20	0.07	1	03/21/20 20:07	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2002353
Project	HS20030621	**Date Collected:**	03/12/20
Sample Matrix:	Ground Water	**Date Received:**	03/17/20
		Date Analyzed:	03/22/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	16RW05-200312	**Units:**	mg/L
Lab Code:	K2002353-001	**Basis:**	NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K2002353-001DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	200	80	30	500	480	488	4	10

Results flagged with an asterisk (*) indicate values outside control criteria.

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

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2002353
Project:	HS20030621	**Date Analyzed:**	03/21/20
Sample Matrix:	Ground Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	674205

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2002353-LCS	24.9	25.0	100	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2002353
Project: HS20030621

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C **Units:** mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	674205	KQ2003999-01	03/21/20 19:52	25.0	26.3	105	90-110
CCV2	674205	KQ2003999-02	03/21/20 23:40	25.0	26.3	105	90-110
CCV3	674205	KQ2003999-03	03/22/20 04:51	25.0	26.5	106	90-110
CCV4	674205	KQ2003999-30	03/22/20 09:35	25.0	25.8	103	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2002353
Project: HS20030621

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C **Units:**mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	674205	KQ2003999-04	03/21/20 19:37	0.50	0.20	0.07	ND	U
CCB2	674205	KQ2003999-05	03/21/20 23:55	0.50	0.20	0.07	0.12	J
CCB3	674205	KQ2003999-06	03/22/20 05:06	0.50	0.20	0.07	ND	U
CCB4	674205	KQ2003999-31	03/22/20 09:49	0.50	0.20	0.07	ND	U

Raw Data

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General Chemistry

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Work Request # Original ( ) K2062276, 2337, 2353, 2365, 2412, 2434, 2416, 2424, 2434, 2462, 2470, 2471, 2489, 2492, 2496
IV II IV II IV I IV IV I II IV IV II I II

Tier:

Date Analyzed: 3/21/20

Analyst: RD

Analysis: TOC/DOC

Run # TOC: 674205, 674225, 674226 DOC: 674227

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1.	Is the method name and number correct and appropriate?	yes/no/NA
2.	Holding times met for all analyses and for all samples?	yes/no/NA
3.	Are calculations correct?	yes/no/NA
4.	Is the reporting basis correct? (Dry Weight)	yes/no/NA
5.	All quality control criteria met?	yes/no
6.	Is the calibration curve correlation coefficient ≥ 0.995?	yes/no/NA
7.	MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency?	yes/no/NA
8.	Are ICVs, CCVs, and CCBs all within acceptance limits?	yes/no/NA
9.	Are results for methods blanks all ND?	yes/no/NA
10.	Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.)	yes/no/NA
11.	Are all exceptions explained?	yes/no/NA
12.	Have all applicable service requests been reviewed?	yes/no/NA
13.	Are all samples labeled correctly?	yes/no/NA
14.	Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V)	yes/no/NA
15.	Are detection limits and units reported correctly?	yes/no/NA
16.	Is the unused space on the benchsheet crossed out?	yes/no/NA
17.	Was analysis turned in by the due date? (n-2) (If not record SR#)	yes/no/NA

COMMENTS: K2002416-3/3rd/24/2-4/4th/24127/7th report a high %RSD. However, these samples are less than 5x the MRL

Final Approved by: _____ Date: 3/24/20

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674205 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002276-001	Carbon, Total Organic	N/A		Ground Water	5.85 mg/L	10 mL	58.5 mg/L	10	0.7	5.0			3/22/20 01:06:00	N	IV
K2002337-001	Carbon, Total Organic	N/A		Water	0.92 mg/L	10 mL	0.92 mg/L	1	0.07	0.50			3/21/20 20:51:00	N	II
K2002337-002	Carbon, Total Organic	N/A		Water	0.85 mg/L	10 mL	0.85 mg/L	1	0.07	0.50			3/21/20 21:48:00	N	II
K2002337-003	Carbon, Total Organic	N/A		Water	0.77 mg/L	10 mL	0.77 mg/L	1	0.07	0.50			3/21/20 22:16:00	N	II
K2002337-004	Carbon, Total Organic	N/A		Water	0.68 mg/L	10 mL	0.68 mg/L	1	0.07	0.50			3/21/20 22:44:00	N	II
K2002337-005	Carbon, Total Organic	N/A		Water	0.45 mg/L	10 mL	0.45 mg/L J	1	0.07	0.50			3/21/20 23:12:00	N	II
K2002337-006	Carbon, Total Organic	N/A		Water	1.87 mg/L	10 mL	1.87 mg/L	1	0.07	0.50			3/22/20 00:10:00	N	II
K2002337-007	Carbon, Total Organic	N/A		Water	0.63 mg/L	10 mL	0.63 mg/L	1	0.07	0.50			3/22/20 00:38:00	N	II
K2002353-001	Carbon, Total Organic	N/A		Ground Water	1.25 mg/L	10 mL	500 mg/L	400	30	200			3/22/20 02:03:00	N	IV
K2002365-001	Carbon, Total Organic	N/A		Water	6.75 mg/L	10 mL	6.75 mg/L	1	0.07	0.50			3/22/20 01:34:00	N	II
K2002412-001	Carbon, Total Organic	N/A		Ground Water	10.68 mg/L	10 mL	10.7 mg/L	1	0.07	0.50			3/22/20 02:59:00	N	IV
K2002412-002	Carbon, Total Organic	N/A		Ground Water	2.35 mg/L	10 mL	2.35 mg/L	1	0.07	0.50			3/22/20 03:27:00	N	IV
K2002412-003	Carbon, Total Organic	N/A		Ground Water	44.83 mg/L	10 mL	44.8 mg/L	1	0.07	0.50			3/22/20 03:55:00	N	IV
K2002412-004	Carbon, Total Organic	N/A		Ground Water	1.20 mg/L	10 mL	1.20 mg/L	1	0.07	0.50			3/22/20 04:23:00	N	IV
K2002412-005	Carbon, Total Organic	N/A		Ground Water	4.57 mg/L	10 mL	4.57 mg/L	1	0.07	0.50			3/22/20 05:50:00	N	IV
K2002412-006	Carbon, Total Organic	N/A		Ground Water	31.25 mg/L	10 mL	31.2 mg/L	1	0.07	0.50			3/22/20 06:18:00	N	IV
K2002412-007	Carbon, Total Organic	N/A		Ground Water	0.78 mg/L	10 mL	0.78 mg/L	1	0.07	0.50			3/22/20 06:46:00	N	IV
K2002412-008	Carbon, Total Organic	N/A		Ground Water	5.22 mg/L	10 mL	5.22 mg/L	1	0.07	0.50			3/22/20 07:14:00	N	IV
K2002434-001	Carbon, Total Organic	N/A		Water	0.24 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 07:42:00	N	I
K2002434-002	Carbon, Total Organic	N/A		Water	0.61 mg/L	10 mL	0.61 mg/L	1	0.07	0.50			3/22/20 08:10:00	N	I
KQ2003999-01	Carbon, Total Organic	CCV		Water	26.33 mg/L	10 mL	26.3 mg/L	1					3/21/20 19:52:00	N	II
KQ2003999-02	Carbon, Total Organic	CCV		Water	26.30 mg/L	10 mL	26.3 mg/L	1					3/21/20 23:40:00	N	II
KQ2003999-03	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	II
KQ2003999-04	Carbon, Total Organic	CCB		Water	-0.03 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/21/20 19:37:00	N	II
KQ2003999-05	Carbon, Total Organic	CCB		Water	0.12 mg/L	10 mL	0.12 mg/L J	1	0.07	0.50			3/21/20 23:55:00	N	II
KQ2003999-06	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	II
KQ2003999-07	Carbon, Total Organic	MB		Water	0.29 mg/L	10 mL	0.29 mg/L J	1	0.07	0.50			3/21/20 20:07:00	N	II
KQ2003999-08	Carbon, Total Organic	LCS		Water	24.88 mg/L	10 mL	24.9 mg/L	1	0.07	0.50	100		3/21/20 20:21:00	N	II
KQ2003999-09	Carbon, Total Organic	MS	K2002337-001	Water	29.48 mg/L	10 mL	29.5 mg/L	1	0.07	0.50	114		3/21/20 21:19:00	N	II
KQ2003999-10	Carbon, Total Organic	DUP	K2002276-001	Ground Water	5.92 mg/L	10 mL	59.2 mg/L	10	0.7	5.0		1	3/22/20 01:06:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674205 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2003999-11	Carbon, Total Organic	DUP	K2002337-001	Water	0.91 mg/L	10 mL	0.91 mg/L	1	0.07	0.50		1	3/21/20 20:51:00	N	II
KQ2003999-12	Carbon, Total Organic	DUP	K2002337-002	Water	0.79 mg/L	10 mL	0.79 mg/L	1	0.07	0.50		7	3/21/20 21:48:00	N	II
KQ2003999-13	Carbon, Total Organic	DUP	K2002337-003	Water	0.70 mg/L	10 mL	0.70 mg/L	1	0.07	0.50		10	3/21/20 22:16:00	N	II
KQ2003999-14	Carbon, Total Organic	DUP	K2002337-004	Water	0.67 mg/L	10 mL	0.67 mg/L	1	0.07	0.50		2	3/21/20 22:44:00	N	II
KQ2003999-15	Carbon, Total Organic	DUP	K2002337-005	Water	0.46 mg/L	10 mL	0.46 mg/L J	1	0.07	0.50		3	3/21/20 23:12:00	N	II
KQ2003999-16	Carbon, Total Organic	DUP	K2002337-006	Water	1.85 mg/L	10 mL	1.85 mg/L	1	0.07	0.50		1	3/22/20 00:10:00	N	II
KQ2003999-17	Carbon, Total Organic	DUP	K2002337-007	Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50		9	3/22/20 00:38:00	N	II
KQ2003999-18	Carbon, Total Organic	DUP	K2002353-001	Ground Water	1.19 mg/L	10 mL	480 mg/L	400	30	200		4	3/22/20 02:03:00	N	IV
KQ2003999-19	Carbon, Total Organic	DUP	K2002365-001	Water	6.74 mg/L	10 mL	6.74 mg/L	1	0.07	0.50		<1	3/22/20 01:34:00	N	II
KQ2003999-20	Carbon, Total Organic	DUP	K2002434-001	Water	0.19 mg/L	10 mL	0.19 mg/L J	1	0.07	0.50		NC	3/22/20 07:42:00	N	I
KQ2003999-21	Carbon, Total Organic	DUP	K2002434-002	Water	0.60 mg/L	10 mL	0.60 mg/L	1	0.07	0.50		2	3/22/20 08:10:00	N	I
KQ2003999-22	Carbon, Total Organic	DUP	K2002412-002	Ground Water	2.15 mg/L	10 mL	2.15 mg/L	1	0.07	0.50		9	3/22/20 03:27:00	N	IV
KQ2003999-23	Carbon, Total Organic	DUP	K2002412-001	Ground Water	10.27 mg/L	10 mL	10.3 mg/L	1	0.07	0.50		4	3/22/20 02:59:00	N	IV
KQ2003999-24	Carbon, Total Organic	DUP	K2002412-003	Ground Water	44.51 mg/L	10 mL	44.5 mg/L	1	0.07	0.50		<1	3/22/20 03:55:00	N	IV
KQ2003999-25	Carbon, Total Organic	DUP	K2002412-004	Ground Water	0.91 mg/L	10 mL	0.91 mg/L	1	0.07	0.50		27*	3/22/20 04:23:00	N	IV
KQ2003999-26	Carbon, Total Organic	DUP	K2002412-005	Ground Water	4.41 mg/L	10 mL	4.41 mg/L	1	0.07	0.50		4	3/22/20 05:50:00	N	IV
KQ2003999-27	Carbon, Total Organic	DUP	K2002412-006	Ground Water	30.72 mg/L	10 mL	30.7 mg/L	1	0.07	0.50		2	3/22/20 06:18:00	N	IV
KQ2003999-28	Carbon, Total Organic	DUP	K2002412-007	Ground Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50		30*	3/22/20 06:46:00	N	IV
KQ2003999-29	Carbon, Total Organic	DUP	K2002412-008	Ground Water	5.27 mg/L	10 mL	5.27 mg/L	1	0.07	0.50		<1	3/22/20 07:14:00	N	IV
KQ2003999-30	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	II
KQ2003999-31	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674225 **Method/Testcode:** 415.1/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002416-001	Carbon, Total Organic	N/A		Ground Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:07:00	Y	IV
K2002416-002	Carbon, Total Organic	N/A		Ground Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 10:33:00	N	IV
K2002416-003	Carbon, Total Organic	N/A		Ground Water	0.19 mg/L	10 mL	0.19 mg/L J	1	0.07	0.50			3/22/20 11:01:00	N	IV
K2002416-004	Carbon, Total Organic	N/A		Ground Water	0.54 mg/L	10 mL	0.54 mg/L	1	0.07	0.50			3/22/20 11:29:00	N	IV
K2002421-001	Carbon, Total Organic	N/A		Water	1.53 mg/L	10 mL	1.53 mg/L	1	0.07	0.50			3/22/20 15:45:00	N	IV
K2002421-002	Carbon, Total Organic	N/A		Water	0.79 mg/L	10 mL	0.79 mg/L	1	0.07	0.50			3/22/20 16:14:00	N	IV
K2002421-003	Carbon, Total Organic	N/A		Water	1.69 mg/L	10 mL	1.69 mg/L	1	0.07	0.50			3/22/20 16:42:00	N	IV
K2002421-004	Carbon, Total Organic	N/A		Water	0.82 mg/L	10 mL	0.82 mg/L	1	0.07	0.50			3/22/20 17:10:00	N	IV
K2002434-003	Carbon, Total Organic	N/A		Water	0.11 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 08:39:00	N	I
K2002462-001	Carbon, Total Organic	N/A		Water	2.96 mg/L	10 mL	2.96 mg/L	1	0.07	0.50			3/22/20 11:58:00	N	II
K2002470-001	Carbon, Total Organic	N/A		Water	2.07 mg/L	10 mL	2.07 mg/L	1	0.07	0.50			3/22/20 12:26:00	N	IV
K2002471-001	Carbon, Total Organic	N/A		Ground Water	4.43 mg/L	10 mL	4.43 mg/L	1	0.07	0.50			3/22/20 12:54:00	N	IV
K2002489-001	Carbon, Total Organic	N/A		Water	4.72 mg/L	10 mL	4.72 mg/L	1	0.07	0.50			3/22/20 13:22:00	N	II
K2002492-002	Carbon, Total Organic	N/A		Drinking Water	0.37 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 13:50:00	N	I
K2002496-001	Carbon, Total Organic	N/A		Water	14.38 mg/L	10 mL	14.4 mg/L	1	0.07	0.50			3/22/20 15:17:00	N	II
KQ2004008-01	Carbon, Total Organic	MS	K2002416-001	Ground Water	27.78 mg/L	10 mL	27.8 mg/L	1	0.07	0.50	111		3/22/20 10:04:00	N	IV
KQ2004008-02	Carbon, Total Organic	DUP	K2002416-001	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 09:07:00	N	IV
KQ2004008-03	Carbon, Total Organic	DUP	K2002416-002	Ground Water	0.01 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 10:33:00	N	IV
KQ2004008-04	Carbon, Total Organic	DUP	K2002416-003	Ground Water	0.16 mg/L	10 mL	0.16 mg/L J	1	0.07	0.50		21*	3/22/20 11:01:00	N	IV
KQ2004008-05	Carbon, Total Organic	DUP	K2002416-004	Ground Water	0.53 mg/L	10 mL	0.53 mg/L	1	0.07	0.50		2	3/22/20 11:29:00	N	IV
KQ2004008-06	Carbon, Total Organic	DUP	K2002421-001	Water	1.47 mg/L	10 mL	1.47 mg/L	1	0.07	0.50		4	3/22/20 15:45:00	N	IV
KQ2004008-07	Carbon, Total Organic	DUP	K2002421-002	Water	0.76 mg/L	10 mL	0.76 mg/L	1	0.07	0.50		3	3/22/20 16:14:00	N	IV
KQ2004008-08	Carbon, Total Organic	DUP	K2002421-003	Water	1.71 mg/L	10 mL	1.71 mg/L	1	0.07	0.50		1	3/22/20 16:42:00	N	IV
KQ2004008-09	Carbon, Total Organic	DUP	K2002421-004	Water	0.78 mg/L	10 mL	0.78 mg/L	1	0.07	0.50		5	3/22/20 17:10:00	N	IV
KQ2004008-10	Carbon, Total Organic	DUP	K2002434-003	Water	0.18 mg/L	10 mL	0.18 mg/L J	1	0.07	0.50		NC	3/22/20 08:39:00	N	I
KQ2004008-11	Carbon, Total Organic	DUP	K2002462-001	Water	2.96 mg/L	10 mL	2.96 mg/L	1	0.07	0.50		<1	3/22/20 11:58:00	N	II
KQ2004008-12	Carbon, Total Organic	DUP	K2002470-001	Water	1.98 mg/L	10 mL	1.98 mg/L	1	0.07	0.50		4	3/22/20 12:26:00	N	IV
KQ2004008-13	Carbon, Total Organic	DUP	K2002471-001	Ground Water	4.30 mg/L	10 mL	4.30 mg/L	1	0.07	0.50		3	3/22/20 12:54:00	N	IV
KQ2004008-14	Carbon, Total Organic	DUP	K2002489-001	Water	4.65 mg/L	10 mL	4.65 mg/L	1	0.07	0.50		2	3/22/20 13:22:00	N	II
KQ2004008-15	Carbon, Total Organic	DUP	K2002492-002	Drinking Water	0.40 mg/L	10 mL	0.40 mg/L J	1	0.07	0.50		NC	3/22/20 13:50:00	N	I

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674225 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2004008-16	Carbon, Total Organic	DUP	K2002496-001	Water	13.50 mg/L	10 mL	13.5 mg/L	1	0.07	0.50		6	3/22/20 15:17:00	N	II
KQ2004008-17	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	I
KQ2004008-17	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	I
KQ2004008-18	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	I
KQ2004008-18	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	I
KQ2004008-19	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	I
KQ2004008-19	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	I
KQ2004008-20	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	I
KQ2004008-20	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	I
KQ2004008-21	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	I
KQ2004008-21	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	I
KQ2004008-22	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	I
KQ2004008-22	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	I
KQ2004008-23	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	I
KQ2004008-23	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	I
KQ2004008-24	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	I
KQ2004008-24	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	I
KQ2004008-25	Carbon, Total Organic	MB		Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:21:00	N	I
KQ2004008-25	Carbon, Total Organic	MB		Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:21:00	N	I
KQ2004008-26	Carbon, Total Organic	LCS		Water	24.62 mg/L	10 mL	24.6 mg/L	1	0.07	0.50	98		3/22/20 05:35:00	N	I
KQ2004008-26	Carbon, Total Organic	LCS		Water	24.62 mg/L	10 mL	24.6 mg/L	1	0.07	0.50	98		3/22/20 05:35:00	N	I
KQ2004008-27	Carbon, Total Organic	N/A		Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:07:00	N	IV
KQ2004008-28	Carbon, Total Organic	MS	KQ2004008-27	Water	27.78 mg/L	10 mL	27.8 mg/L	1	0.07	0.50	111		3/22/20 10:04:00	N	IV
KQ2004008-29	Carbon, Total Organic	DUP	KQ2004008-27	Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 09:07:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674226 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002432-001	Carbon, Total Organic	N/A		Water	0.03 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 17:38:00	N	IV
K2002437-001	Carbon, Total Organic	N/A		Water	1.83 mg/L	10 mL	1.83 mg/L	1	0.07	0.50			3/22/20 19:04:00	N	I
K2002437-002	Carbon, Total Organic	N/A		Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			3/22/20 19:33:00	N	I
K2002437-003	Carbon, Total Organic	N/A		Water	3.10 mg/L	10 mL	3.10 mg/L	1	0.07	0.50			3/22/20 20:00:00	N	I
K2002437-004	Carbon, Total Organic	N/A		Water	0.71 mg/L	10 mL	0.71 mg/L	1	0.07	0.50			3/22/20 20:29:00	N	I
K2002437-005	Carbon, Total Organic	N/A		Water	0.59 mg/L	10 mL	0.59 mg/L	1	0.07	0.50			3/22/20 20:57:00	N	I
K2002456-001	Carbon, Total Organic	N/A		Water	1.07 mg/L	10 mL	1.07 mg/L	1	0.07	0.50			3/22/20 21:25:00	N	IV
K2002456-002	Carbon, Total Organic	N/A		Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			3/22/20 21:53:00	N	IV
K2002456-003	Carbon, Total Organic	N/A		Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50			3/22/20 22:21:00	N	IV
K2002456-004	Carbon, Total Organic	N/A		Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50			3/22/20 22:49:00	N	IV
KQ2004009-01	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	IV
KQ2004009-02	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	IV
KQ2004009-03	Carbon, Total Organic	CCV		Water	25.05 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	IV
KQ2004009-04	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	IV
KQ2004009-05	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	IV
KQ2004009-06	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	IV
KQ2004009-07	Carbon, Total Organic	MB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:48:00	N	IV
KQ2004009-08	Carbon, Total Organic	LCS		Water	24.66 mg/L	10 mL	24.7 mg/L	1	0.07	0.50	99		3/22/20 15:03:00	N	IV
KQ2004009-09	Carbon, Total Organic	MS	K2002432-001	Water	26.30 mg/L	10 mL	26.3 mg/L	1	0.07	0.50	105		3/22/20 18:06:00	N	IV
KQ2004009-10	Carbon, Total Organic	DUP	K2002432-001	Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 17:38:00	N	IV
KQ2004009-11	Carbon, Total Organic	DUP	K2002437-001	Water	1.78 mg/L	10 mL	1.78 mg/L	1	0.07	0.50		3	3/22/20 19:04:00	N	I
KQ2004009-12	Carbon, Total Organic	DUP	K2002437-002	Water	0.71 mg/L	10 mL	0.71 mg/L	1	0.07	0.50		2	3/22/20 19:33:00	N	I
KQ2004009-13	Carbon, Total Organic	DUP	K2002437-003	Water	3.13 mg/L	10 mL	3.13 mg/L	1	0.07	0.50		<1	3/22/20 20:00:00	N	I
KQ2004009-14	Carbon, Total Organic	DUP	K2002437-004	Water	0.64 mg/L	10 mL	0.64 mg/L	1	0.07	0.50		10	3/22/20 20:29:00	N	I
KQ2004009-15	Carbon, Total Organic	DUP	K2002437-005	Water	0.56 mg/L	10 mL	0.56 mg/L	1	0.07	0.50		4	3/22/20 20:57:00	N	I
KQ2004009-16	Carbon, Total Organic	DUP	K2002456-001	Water	1.04 mg/L	10 mL	1.04 mg/L	1	0.07	0.50		2	3/22/20 21:25:00	N	IV
KQ2004009-17	Carbon, Total Organic	DUP	K2002456-002	Water	0.66 mg/L	10 mL	0.66 mg/L	1	0.07	0.50		9	3/22/20 21:53:00	N	IV
KQ2004009-18	Carbon, Total Organic	DUP	K2002456-003	Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50		<1	3/22/20 22:21:00	N	IV
KQ2004009-19	Carbon, Total Organic	DUP	K2002456-004	Water	1.30 mg/L	10 mL	1.30 mg/L	1	0.07	0.50		4	3/22/20 22:49:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674227 **Method/Testcode:** SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002422-001	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	9.45 mg/L	10 mL	9.45 mg/L	1	0.07	0.50			3/23/20 02:23:00	N	III
K2002462-002	Carbon, Dissolved Organic	N/A		Water	4.12 mg/L	10 mL	4.12 mg/L	1	0.07	0.50			3/23/20 01:11:00	N	II
KQ2004010-01	Carbon, Dissolved Organic	CCV		Water	25.13 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	II
KQ2004010-01	Carbon, Dissolved Organic (DOC)	CCV		Water	25.13 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	II
KQ2004010-02	Carbon, Dissolved Organic	CCV		Water	25.06 mg/L	10 mL	25.1 mg/L	1					3/23/20 03:20:00	N	II
KQ2004010-02	Carbon, Dissolved Organic (DOC)	CCV		Water	25.06 mg/L	10 mL	25.1 mg/L	1					3/23/20 03:20:00	N	II
KQ2004010-03	Carbon, Dissolved Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	II
KQ2004010-03	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	II
KQ2004010-04	Carbon, Dissolved Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 03:35:00	N	II
KQ2004010-04	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 03:35:00	N	II
KQ2004010-05	Carbon, Dissolved Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:42:00	N	II
KQ2004010-05	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:42:00	N	II
KQ2004010-06	Carbon, Dissolved Organic	LCS		Water	24.20 mg/L	10 mL	24.2 mg/L	1	0.07	0.50	97		3/23/20 00:57:00	N	II
KQ2004010-06	Carbon, Dissolved Organic (DOC)	LCS		Water	24.20 mg/L	10 mL	24.2 mg/L	1	0.07	0.50	97		3/23/20 00:57:00	N	II
KQ2004010-07	Carbon, Dissolved Organic	MS	K2002462-002	Water	32.05 mg/L	10 mL	32.0 mg/L	1	0.07	0.50	112		3/23/20 01:40:00	N	II
KQ2004010-08	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	4.12 mg/L	10 mL	4.12 mg/L	1	0.07	0.50			3/23/20 01:11:00	N	III
KQ2004010-09	Carbon, Dissolved Organic (DOC)	MS	KQ2004010-08	Surface Water	32.05 mg/L	10 mL	32.0 mg/L	1	0.07	0.50	112		3/23/20 01:40:00	N	III
KQ2004010-10	Carbon, Dissolved Organic (DOC)	DUP	K2002422-001	Surface Water	9.61 mg/L	10 mL	9.61 mg/L	1	0.07	0.50		2	3/23/20 02:23:00	N	III
KQ2004010-11	Carbon, Dissolved Organic	DUP	K2002462-002	Water	4.07 mg/L	10 mL	4.07 mg/L	1	0.07	0.50		1	3/23/20 01:11:00	N	II
KQ2004010-12	Carbon, Dissolved Organic (DOC)	DUP	KQ2004010-08	Surface Water	4.07 mg/L	10 mL	4.07 mg/L	1	0.07	0.50		1	3/23/20 01:11:00	N	III

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

0.043	0.043			OBSERVATIONS	12	0.0432
0.366				STD Deviation	0.11429	ABOVE
0.200				AVERAGE	0.06658	ABOVE
0.055	0.055	0.055	######	UCL	0.18087	0.0545
0.136	0.136			LCL	-0.04772	0.1357
0.000						0
0.000						0
0.000				OBSERVATIONS	3	0
0.000				STD Deviation	0.02578	0
0.000				AVERAGE	0.07780	0
0.000				UCL	0.10358	0
0.000				LCL	0.05202	0
						0
						0
				OBSERVATIONS	1	0
				STD Deviation	#DIV/0!	0
				AVERAGE	0.05450	0
				UCL	#DIV/0!	0
				LCL	#DIV/0!	0
						0
						0
				OBSERVATIONS	0	0
				STD Deviation	#DIV/0!	0
				AVERAGE	#DIV/0!	0
						0
						0
						0
						0
						0

BLP 3/24/20

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccb	1	0.043	0.0778	-0.0346	-0.0346	<0.5	3/21/2020
3	ccv	1	26.406	0.0778	26.3280	26.328	26.3	3/21/2020
4	mb	1	0.366	0.0778	0.2878	0.2878	<0.5	3/21/2020
5	lcs	1	24.954	0.0778	24.8758	24.8758	24.9	3/21/2020
6	K2002337-001	1	0.994	0.0778	0.9162	0.9162	0.92	3/21/2020
7	K2002337-001	1	0.983	0.0778	0.9055	0.9055	0.9	3/21/2020
8	KQ2003999-09	1	29.561	0.0778	29.4834	29.4834	29	3/21/2020
9	K2002337-002	1	0.927	0.0778	0.8490	0.849	0.85	3/21/2020
10	K2002337-002	1	0.868	0.0778	0.7902	0.7902	0.79	3/21/2020
11	K2002337-003	1	0.851	0.0778	0.7733	0.7733	0.8	3/21/2020
12	K2002337-003	1	0.778	0.0778	0.6997	0.6997	0.70	3/21/2020
13	K2002337-004	1	0.759	0.0778	0.6814	0.6814	0.68	3/21/2020
14	K2002337-004	1	0.748	0.0778	0.6704	0.6704	0.67	3/21/2020
15	K2002337-005	1	0.530	0.0778	0.4518	0.4518	<0.5	3/21/2020
16	K2002337-005	1	0.543	0.0778	0.4649	0.4649	<0.5	3/21/2020
17	ccv	1	26.379	0.0778	26.3014	26.3014	26.30	3/21/2020
18	ccb	1	0.200	0.0778	0.1221	0.1221	<0.5	3/21/2020
19	K2002337-006	1	1.952	0.0778	1.8738	1.8738	1.9	3/22/2020
20	K2002337-006	1	1.929	0.0778	1.8513	1.8513	1.85	3/22/2020
21	K2002337-007	1	0.710	0.0778	0.6317	0.6317	0.63	3/22/2020
22	K2002337-007	1	0.658	0.0778	0.5798	0.5798	0.6	3/22/2020
23	K2002276-001	10	5.931	0.0778	5.8531	58.531	58.5	3/22/2020
24	K2002276-001	10	5.997	0.0778	5.9193	59.193	59.19	3/22/2020
25	K2002365-001	1	6.825	0.0778	6.7471	6.7471	6.75	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

	date	time
Analyzed By: KD	Date Analyzed 3/21/20	
Reviewed By:	Date Reviewed	

Revision 1, 2010 R:\WET\ANALYSES\TOC\TEMPLATE\TOCwaterLIMS

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002365-001	1	6.814	0.0778	6.7366	6.7366	6.74	3/22/2020
27	K2002353-001	400	1.325	0.0778	1.2473	498.92	498.92	3/22/2020
28	K2002353-001	400	1.272	0.0778	1.1941	477.64	477.6	3/22/2020
29	K2002412-001	1	10.758	0.0778	10.6798	10.6798	10.7	3/22/2020
30	K2002412-001	1	10.352	0.0778	10.2738	10.2738	10.3	3/22/2020
31	K2002412-002	1	2.431	0.0778	2.3535	2.3535	2.4	3/22/2020
32	K2002412-002	1	2.226	0.0778	2.1484	2.1484	2.1	3/22/2020
33	K2002412-003	1	44.908	0.0778	44.8304	44.8304	44.8	3/22/2020
34	K2002412-003	1	44.589	0.0778	44.5114	44.5114	44.5	3/22/2020
35	K2002412-004	1	1.276	0.0778	1.1981	1.1981	1.2	3/22/2020
36	K2002412-004	1	0.987	0.0778	0.9096	0.9096	0.9	3/22/2020
37	ccv	1	26.538	0.0778	26.4599	26.4599	26.5	3/22/2020
38	ccb	1	0.055	0.0778	-0.0233	-0.0233	<0.5	3/22/2020
39	K2002412-005	1	4.650	0.0778	4.5720	4.572	4.6	3/22/2020
40	K2002412-005	1	4.487	0.0778	4.4096	4.4096	4.4	3/22/2020
41	K2002412-006	1	31.326	0.0778	31.2482	31.2482	31.2	3/22/2020
42	K2002412-006	1	30.802	0.0778	30.7243	30.7243	30.7	3/22/2020
43	K2002412-007	1	0.861	0.0778	0.7828	0.7828	0.8	3/22/2020
44	K2002412-007	1	0.659	0.0778	0.5810	0.581	0.6	3/22/2020
45	K2002412-008	1	5.297	0.0778	5.2192	5.2192	5.2	3/22/2020
46	K2002412-008	1	5.349	0.0778	5.2707	5.2707	5.3	3/22/2020
47	K2002434-001	1	0.318	0.0778	0.2402	0.2402	<0.5	3/22/2020
48	K2002434-001	1	0.271	0.0778	0.1933	0.1933	<0.5	3/22/2020
49	K2002434-002	1	0.689	0.0778	0.6116	0.6116	0.6	3/22/2020
50	K2002434-002	1	0.674	0.0778	0.5965	0.5965	0.6	3/22/2020

Analyzed By: BCD	Date Analyzed 3/24/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
51	ccv	1	25.843	0.0778	25.7647	25.7647	25.76	3/22/2020
52	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
53		1		0.0000	0.0000	0	<0.5	
54		1		0.0000	0.0000	0	<0.5	
55		1		0.0000	0.0000	0	<0.5	
56		1		0.0000	0.0000	0	<0.5	
57		1		0.0000	0.0000	0	<0.5	
58		1		0.0000	0.0000	0	<0.5	
59		1		0.0000	0.0000	0	<0.5	
60		1		0.0000	0.0000	0	<0.5	
61		1		0.0000	0.0000	0	<0.5	
62		1		0.0000	0.0000	0	<0.5	
63		1		0.0000	0.0000	0	<0.5	
64		1		0.0000	0.0000	0	<0.5	
65		1		0.0000	0.0000	0	<0.5	
66		1		0.0000	0.0000	0	<0.5	
67		1		0.0000	0.0000	0	<0.5	
68		1		0.0000	0.0000	0	<0.5	
69		1		0.0000	0.0000	0	<0.5	
70		1		0.0000	0.0000	0	<0.5	
71		1		0.0000	0.0000	0	<0.5	
72		1		0.0000	0.0000	0	<0.5	
73		1		0.0000	0.0000	0	<0.5	
74		1		0.0000	0.0000	0	<0.5	
75		1		0.0000	0.0000	0	<0.5	

Analyzed By: BKP	Date Analyzed 3/24/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	26.538	0.0778	26.4599	26.4599	26.5	3/22/2020
3	ccb	1	0.055	0.0778	-0.0233	-0.0233	<0.5	3/22/2020
4	mb	1	0.136	0.0778	0.0579	0.0579	<0.5	3/22/2020
5	lcs	1	24.698	0.0778	24.6205	24.6205	24.6	3/22/2020
6	K2002434-003	1	0.192	0.0778	0.1139	0.1139	<0.5	3/22/2020
7	K2002434-003	1	0.258	0.0778	0.1797	0.1797	<0.5	3/22/2020
8	K2002416-001	1	0.099	0.0778	0.0207	0.0207	<0.5	3/22/2020
9	K2002416-001	1	0.083	0.0778	0.0048	0.0048	<0.5	3/22/2020
10	ccv	1	25.843	0.0778	25.7647	25.7647	25.76	3/22/2020
11	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
12	KQ2004008-01	1	27.862	0.0778	27.7842	27.7842	27.78	3/22/2020
13	K2002416-002	1	0.099	0.0778	0.0210	0.021	<0.5	3/22/2020
14	K2002416-002	1	0.085	0.0778	0.0067	0.0067	<0.5	3/22/2020
15	K2002416-003	1	0.271	0.0778	0.1932	0.1932	<0.5	3/22/2020
16	K2002416-003	1	0.235	0.0778	0.1572	0.1572	<0.5	3/22/2020
17	K2002416-004	1	1.615	0.0778	1.5370	1.537	1.54	3/22/2020
18	K2002416-004	1	1.605	0.0778	1.5267	1.5267	1.5	3/22/2020
19	K2002462-001	1	3.041	0.0778	2.9627	2.9627	3.0	3/22/2020
20	K2002462-001	1	3.038	0.0778	2.9600	2.96	2.96	3/22/2020
21	K2002470-001	1	2.148	0.0778	2.0704	2.0704	2.07	3/22/2020
22	K2002470-001	1	2.061	0.0778	1.9828	1.9828	2.0	3/22/2020
23	K2002471-001	1	4.509	0.0778	4.4308	4.4308	4.4	3/22/2020
24	K2002471-001	1	4.381	0.0778	4.3030	4.303	4.30	3/22/2020
25	K2002489-001	1	4.801	0.0778	4.7227	4.7227	4.72	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

date time

Analyzed By: [signature]	Date Analyzed 3/22/20
Reviewed By:	Date Reviewed

Revision 1, 2010 R:\WET\ANALYSES\TOC\TEMPLATE\TOCwaterLIMS

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002489-001	1	4.724	0.0778	4.6460	4.646	4.65	3/22/2020
27	K2002492-002	1	0.452	0.0778	0.3746	0.3746	<0.5	3/22/2020
28	K2002492-002	1	0.479	0.0778	0.4014	0.4014	<0.5	3/22/2020
29	ccv	1	25.695	0.0778	25.6168	25.6168	25.6	3/22/2020
30	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
31	K2002496-001	1	14.459	0.0778	14.3812	14.3812	14.4	3/22/2020
32	K2002496-001	1	13.578	0.0778	13.5000	13.5	13.5	3/22/2020
33	K2002421-001	1	1.605	0.0778	1.5272	1.5272	1.5	3/22/2020
34	K2002421-001	1	1.548	0.0778	1.4705	1.4705	1.5	3/22/2020
35	K2002421-002	1	0.866	0.0778	0.7878	0.7878	0.8	3/22/2020
36	K2002421-002	1	0.842	0.0778	0.7645	0.7645	0.8	3/22/2020
37	K2002421-003	1	1.766	0.0778	1.6881	1.6881	1.7	3/22/2020
38	K2002421-003	1	1.790	0.0778	1.7125	1.7125	1.7	3/22/2020
39	K2002421-004	1	0.896	0.0778	0.8180	0.818	0.8	3/22/2020
40	K2002421-004	1	0.859	0.0778	0.7812	0.7812	0.8	3/22/2020
41	ccv	1	25.418	0.0778	25.3398	25.3398	25.3	3/22/2020
42	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: KP	Date Analyzed 3/22/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.695	0.0778	25.6168	25.6168	25.6	3/22/2020
3	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
4	mb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
5	lcs	1	24.742	0.0778	24.6645	24.6645	24.7	3/22/2020
6	K2002432-001	1	0.108	0.0778	0.0305	0.0305	<0.5	3/22/2020
7	K2002432-001	1	0.143	0.0778	0.0649	0.0649	<0.5	3/22/2020
8	KQ2004009-09	1	26.380	0.0778	26.3020	26.302	26	3/22/2020
9	ccv	1	25.418	0.0778	25.3398	25.3398	25.34	3/22/2020
10	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
11	K2002437-001	1	1.911	0.0778	1.8331	1.8331	1.8	3/22/2020
12	K2002437-001	1	1.853	0.0778	1.7754	1.7754	1.78	3/22/2020
13	K2002437-002	1	0.802	0.0778	0.7246	0.7246	0.72	3/22/2020
14	K2002437-002	1	0.788	0.0778	0.7099	0.7099	0.71	3/22/2020
15	K2002437-003	1	3.181	0.0778	3.1028	3.1028	3.1	3/22/2020
16	K2002437-003	1	3.208	0.0778	3.1306	3.1306	3.1	3/22/2020
17	K2002437-004	1	0.783	0.0778	0.7056	0.7056	0.71	3/22/2020
18	K2002437-004	1	0.715	0.0778	0.6372	0.6372	0.6	3/22/2020
19	K2002437-005	1	0.665	0.0778	0.5874	0.5874	0.6	3/22/2020
20	K2002437-005	1	0.641	0.0778	0.5633	0.5633	0.56	3/22/2020
21	K2002456-001	1	1.145	0.0778	1.0675	1.0675	1.07	3/22/2020
22	K2002456-001	1	1.122	0.0778	1.0438	1.0438	1.0	3/22/2020
23	K2002456-002	1	0.794	0.0778	0.7165	0.7165	0.7	3/22/2020
24	K2002456-002	1	0.735	0.0778	0.6568	0.6568	0.66	3/22/2020
25	K2002456-003	1	1.431	0.0778	1.3528	1.3528	1.35	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

date time

Analyzed By: BDP	Date Analyzed 3/12/20
Reviewed By:	Date Reviewed

Revision 1, 2010 R:\WET\ANALYSES\TOC\TEMPLATE\TOCwaterLIMS

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002456-003	1	1.431	0.0778	1.3528	1.3528	1.35	3/22/2020
27	K2002456-004	1	1.433	0.0778	1.3548	1.3548	1.35	3/22/2020
28	K2002456-004	1	1.375	0.0778	1.2971	1.2971	1.3	3/22/2020
29	ccv	1	25.130	0.0778	25.0525	25.0525	25.1	3/23/2020
30	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
31		1		0.0000	0.0000	0	<0.5	
32		1		0.0000	0.0000	0	<0.5	
33		1		0.0000	0.0000	0	<0.5	
34		1		0.0000	0.0000	0	<0.5	
35		1		0.0000	0.0000	0	<0.5	
36		1		0.0000	0.0000	0	<0.5	
37		1		0.0000	0.0000	0	<0.5	
38		1		0.0000	0.0000	0	<0.5	
39		1		0.0000	0.0000	0	<0.5	
40		1		0.0000	0.0000	0	<0.5	
41		1		0.0000	0.0000	0	<0.5	
42		1		0.0000	0.0000	0	<0.5	
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: BCP	Date Analyzed 3/21/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.130	0.0778	25.0525	25.0525	25.1	3/23/2020
3	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
4	mb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
5	lcs	1	24.199	0.0778	24.1209	24.1209	24.1	3/23/2020
6	K2002462-002	1	4.117	0.0778	4.0393	4.0393	4.04	3/23/2020
7	K2002462-002	1	4.067	0.0778	3.9892	3.9892	4.0	3/23/2020
8	KQ2004010-07	1	32.047	0.0778	31.9695	31.9695	32	3/23/2020
9	K2002422-001	1	9.445	0.0778	9.3675	9.3675	9.37	3/23/2020
10	K2002422-001	1	9.612	0.0778	9.5338	9.5338	9.53	3/23/2020
11	ccv	1	25.060	0.0778	24.9820	24.982	25.0	3/23/2020
12	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
13		1		0.0000	0.0000	0	<0.5	
14		1		0.0000	0.0000	0	<0.5	
15		1		0.0000	0.0000	0	<0.5	
16		1		0.0000	0.0000	0	<0.5	
17		1		0.0000	0.0000	0	<0.5	
18		1		0.0000	0.0000	0	<0.5	
19		1		0.0000	0.0000	0	<0.5	
20		1		0.0000	0.0000	0	<0.5	
21		1		0.0000	0.0000	0	<0.5	
22		1		0.0000	0.0000	0	<0.5	
23		1		0.0000	0.0000	0	<0.5	
24		1		0.0000	0.0000	0	<0.5	
25		1		0.0000	0.0000	0	<0.5	

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

date time

Analyzed By: BCP	Date Analyzed 3/21/20
Reviewed By:	Date Reviewed

Revision 1, 2010 R:\WET\ANALYSES\TOC\TEMPLATE\TOCwaterLIMS

TOC: 674205, 674225, 674226
DOC: 674227

Schedule: 03212020

Version: 4
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2020/03/21 21:07 - Saturday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
74	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K2002337-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
4	Sample	K2002337-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
5	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
6	Sample	K2002337-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
7	Sample	K2002337-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
8	Sample	K2002337-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
9	Sample	K2002337-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
10	Sample	K2002337-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	K2002337-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	K2002276-001.01 10x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	K2002365-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
14	Sample	K2002353-001.01 400x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
15	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
16	Sample	K2002412-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
17	Sample	K2002412-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
18	Sample	K2002412-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
19	Sample	K2002412-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
21	Sample	K2002412-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K2002412-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
23	Sample	K2002412-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
24	Sample	K2002412-008.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
25	Sample	K2002434-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K2002434-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K2002434-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K2002416-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
29	Sample	K2002416-001.02 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
30	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
31	Sample	K2002416-002.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
32	Sample	K2002416-003.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
33	Sample	K2002416-004.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
34	Sample	K2002462-001.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
35	Sample	K2002470-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
36	Sample	K2002471-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
37	Sample	K2002489-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
38	Sample	K2002492-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready

Schedule: 03212020

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
39	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
40	Sample	K2002496-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
41	Sample	K2002421-001.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
42	Sample	K2002421-002.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
43	Sample	K2002421-003.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
44	Sample	K2002421-004.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
45	Sample	K2002432-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
46	Sample	K2002432-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
47	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
48	Sample	K2002437-001.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
49	Sample	K2002437-002.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
50	Sample	K2002437-003.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
51	Sample	K2002437-004.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
52	Sample	K2002437-005.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
53	Sample	K2002456-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
54	Sample	K2002456-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
55	Sample	K2002456-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
56	Sample	K2002456-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
57	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
58	Sample	MB4	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
59	Sample	K2002462-002.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
60	Sample	K2002462-002.04 ms doc	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
61	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
62	Sample	FB 3/19/20 1619	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
63	Sample	K2002422-001.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
64	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
					False	

Fusion Report - 03212020
Saturday, March 21, 2020 04:44 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/03/24 09:26 - Tuesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	03212020	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v2) Fusion1 (Fusion1) (v3) Fusion1 (Fusion1) (v4)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/03/21 16:44

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	12.01	16.15	4.14	49.81	08:01
2	TC Clean	18.09	21.86	3.77	49.56	07:17
3	TC Clean	6.93	10.79	3.86	49.61	07:02
4	TC Clean	5.02	8.90	3.88	49.63	07:01

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	74	TOC	RB	0.4528 ppm	0.0533 ppm	11.7700%	2020/03/21 17:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4804	4.8037	10.62	14.37	3.75	49.71	10:29
2	TOC	0.4973	4.9732	10.74	14.56	3.82	49.67	10:29
3	TOC	0.4567	4.5672	10.46	14.14	3.68	49.67	10:27
4	TOC	0.3769	3.7687	9.93	13.76	3.83	49.65	10:29

Dilution **Blank Contribution** **Method** **Calibration**

1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◈	(clean)		Clean	2020/03/21 18:14

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	9.17	13.91	4.74	49.79	07:59
2	TC Clean	6.79	10.62	3.83	49.55	07:20
3	TC Clean	4.32	8.23	3.91	49.61	07:00
4	TC Clean	3.54	7.40	3.86	49.60	07:01

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◈	(clean)		Clean	2020/03/21 18:48

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.92	4.73	3.81	49.82	07:59
2	TC Clean	8.57	12.40	3.83	49.62	07:17
3	TC Clean	4.30	8.10	3.80	49.63	07:00
4	TC Clean	3.55	7.36	3.81	49.65	07:03

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	D	TOC	RB	0.2621 ppm	0.0000 ppm	0.0000%	2020/03/21 19:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2621	2.6207	9.15	12.95	3.80	49.69	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCB — From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time

◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0432 ppm (PASS)	0.0000 ppm	0%	2020/03/21 19:37

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0432	0.4318	8.11	11.92	3.82	49.72	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.4058 ppm (PASS)	0.0000 ppm	0%	2020/03/21 19:52

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.4058	264.0582	185.40	189.22	3.82	49.75	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Sample From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	1	TOC	MB1	0.3656 ppm	0.0000 ppm	0.0000%	2020/03/21 20:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3656	3.6557	9.85	13.62	3.77	49.76	10:35

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	24.9536 ppm (PASS)	0.0000 ppm	0%	2020/03/21 20:21

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.9536	249.5362	175.63	179.68	4.05	49.79	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	2	TOC	ICS	2.0813 ppm	0.0000 ppm	0.0000%	2020/03/21 20:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.0813	20.8126	21.39	25.32	3.93	49.83	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	3	TOC	K2002337-001.01	0.9886 ppm	0.0076 ppm	0.7700%	2020/03/21 20:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9940	9.9397	14.08	17.85	3.78	49.85	10:28
2	TOC	0.9833	9.8327	14.00	17.80	3.80	49.88	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	4	TOC	K2002337-001.01 ms	29.5612 ppm	0.0000 ppm	0.0000%	2020/03/21 21:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	29.5612	295.6123	206.19	209.98	3.79	49.90	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	5	TOC	RB	0.2728 ppm	0.0000 ppm	0.0000%	2020/03/21 21:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2728	2.7278	9.23	12.95	3.72	49.94	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	6	TOC	K2002337-002.01	0.8974 ppm	0.0415 ppm	4.6300%	2020/03/21 21:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9268	9.2676	13.62	17.26	3.63	49.95	10:26
2	TOC	0.8680	8.6802	13.23	17.12	3.89	49.98	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	7	TOC	K2002337-003.01	0.8143 ppm	0.0520 ppm	6.3900%	2020/03/21 22:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8511	8.5107	13.12	16.70	3.59	49.97	10:27
2	TOC	0.7775	7.7747	12.62	16.55	3.93	50.00	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	8	TOC	K2002337-004.01	0.7537 ppm	0.0078 ppm	1.0300%	2020/03/21 22:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7592	7.5918	12.50	16.55	4.05	50.01	10:30
2	TOC	0.7482	7.4817	12.42	16.32	3.90	50.00	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	9	TOC	K2002337-005.01	0.5361 ppm	0.0093 ppm	1.7300%	2020/03/21 23:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5296	5.2958	10.95	14.68	3.72	49.98	10:30
2	TOC	0.5427	5.4267	11.04	14.79	3.75	49.99	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.3792 ppm	0.0000 ppm	0%	2020/03/21 23:40

							(PASS)			

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.3792	263.7921	185.22	188.92	3.71	50.01	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.1999 ppm (PASS)	0.0000 ppm	0%	2020/03/21 23:55

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.1999	1.9991	9.16	12.96	3.80	50.00	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	10	TOC	K2002337-006.01	1.9404 ppm	0.0159 ppm	0.8200%	2020/03/22 00:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9516	19.5160	20.52	24.28	3.76	50.01	10:33
2	TOC	1.9291	19.2914	20.37	24.25	3.89	49.98	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	11	TOC	K2002337-007.01	0.6836 ppm	0.0367 ppm	5.3700%	2020/03/22 00:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7095	7.0951	12.16	15.91	3.75	49.97	10:25
2	TOC	0.6576	6.5762	11.81	15.68	3.87	49.95	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis	Sample ID	Result (ppmC)	Std. Dev.	RSD	Start Time

		Type			(ppmC)		
◆	12	TOC	K2002276-001.01 10x	5.9640 ppm	0.0468 ppm	0.7800%	2020/03/22 01:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.9309	59.3095	47.28	51.18	3.91	49.95	10:27
2	TOC	5.9971	59.9712	47.72	51.51	3.79	49.96	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	13	TOC	K2002365-001.01	6.8196 ppm	0.0075 ppm	0.1100%	2020/03/22 01:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.8249	68.2493	53.29	57.25	3.96	49.94	10:26
2	TOC	6.8144	68.1437	53.22	57.13	3.91	49.94	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	14	TOC	K2002353-001.01 400x	1.2985 ppm	0.0376 ppm	2.9000%	2020/03/22 02:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3251	13.2513	16.30	20.20	3.90	49.93	10:28
2	TOC	1.2719	12.7189	15.94	19.92	3.97	49.90	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	15	TOC	RB	0.0981 ppm	0.0036 ppm	3.6500%	2020/03/22 02:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1006	1.0059	8.07	11.84	3.77	49.88	10:26
2	TOC	0.0955	0.9553	8.03	12.08	4.05	49.88	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	16	TOC	K2002412-001.01	10.5546 ppm	0.2870 ppm	2.7200%	2020/03/22 02:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	10.7576	107.5758	79.74	83.68	3.95	49.85	10:29
2	TOC	10.3516	103.5163	77.01	80.95	3.94	49.85	10:26

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	17	TOC	K2002412-002.01	2.3288 ppm	0.1450 ppm	6.2300%	2020/03/22 03:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4313	24.3130	23.74	27.73	3.98	49.85	10:28
2	TOC	2.2262	22.2625	22.36	26.60	4.24	49.85	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	18	TOC	K2002412-003.01	44.7487 ppm	0.2255 ppm	0.5000%	2020/03/22 03:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	44.9082	449.0821	309.40	313.24	3.84	49.85	10:30
2	TOC	44.5892	445.8925	307.25	311.28	4.03	49.85	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	19	TOC	K2002412-004.01	1.1317 ppm	0.2040 ppm	18.0300%	2020/03/22 04:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2759	12.7591	15.97	20.08	4.10	49.87	10:27
2	TOC	0.9874	9.8743	14.03	18.07	4.04	49.92	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.5377 ppm (PASS)	0.0000 ppm	0%	2020/03/22 04:51

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.5377	265.3772	186.28	190.22	3.94	49.88	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	50 ppmC

met.	(v4)	(v32)

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0545 ppm (PASS)	0.0000 ppm	0%	2020/03/22 05:06

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0545	0.5449	8.18	12.24	4.06	49.92	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	20	TOC	MB2	0.1357 ppm	0.0000 ppm	0.0000%	2020/03/22 05:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1357	1.3568	8.30	12.27	3.97	49.92	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	24.6983 ppm (PASS)	0.0000 ppm	0%	2020/03/22 05:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.6983	246.9831	173.91	177.85	3.94	49.91	10:35

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

21	TOC	K2002412-005.01	4.5686 ppm	0.1148 ppm	2.5100%	2020/03/22 05:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.6498	46.4975	38.66	42.58	3.92	49.92	10:28
2	TOC	4.4874	44.8737	37.57	41.59	4.02	49.93	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
	22	TOC	K2002412-006.01	31.0641 ppm	0.3704 ppm	1.1900%	2020/03/22 06:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	31.3260	313.2600	218.06	222.06	4.00	49.92	10:27
2	TOC	30.8021	308.0213	214.54	218.63	4.09	49.93	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
	23	TOC	K2002412-007.01	0.7597 ppm	0.1427 ppm	18.7800%	2020/03/22 06:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8606	8.6059	13.18	17.31	4.14	49.93	10:28
2	TOC	0.6588	6.5880	11.82	15.93	4.11	49.94	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
	24	TOC	K2002412-008.01	5.3228 ppm	0.0364 ppm	0.6800%	2020/03/22 07:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.2970	52.9704	43.01	47.07	4.06	49.93	10:27
2	TOC	5.3485	53.4849	43.36	47.40	4.04	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
	25	TOC	K2002434-001.01	0.2946 ppm	0.0331 ppm	11.2400%	2020/03/22 07:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3180	3.1799	9.53	13.49	3.96	49.96	10:27
2	TOC	0.2711	2.7115	9.22	13.14	3.93	49.95	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	26	TOC	K2002434-002.01	0.6819 ppm	0.0107 ppm	1.5700%	2020/03/22 08:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6894	6.8944	12.03	15.93	3.91	49.95	10:31
2	TOC	0.6743	6.7427	11.93	15.87	3.94	49.94	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	27	TOC	K2002434-003.01	0.2246 ppm	0.0465 ppm	20.6900%	2020/03/22 08:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1917	1.9174	8.68	12.65	3.97	49.94	10:25
2	TOC	0.2575	2.5746	9.12	13.14	4.02	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	28	TOC	K2002416-001.02	0.0905 ppm	0.0113 ppm	12.4200%	2020/03/22 09:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0985	0.9850	8.05	11.97	3.92	49.94	10:26
2	TOC	0.0826	0.8259	7.95	11.91	3.97	49.95	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8425 ppm (PASS)	0.0000 ppm	0%	2020/03/22 09:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8425	258.4255	181.61	185.65	4.04	49.95	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	50 ppmC

met.	(v4)	(v32)

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 09:49

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.06	10.95	3.89	49.94	10:28

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	29	TOC	K2002416-001.02 ms	27.8620 ppm	0.0000 ppm	0.0000%	2020/03/22 10:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.8620	278.6204	194.76	198.67	3.91	49.95	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	30	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 10:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.09	11.09	4.00	49.95	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	31	TOC	K2002416-002.02	0.0917 ppm	0.0101 ppm	11.0100%	2020/03/22 10:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0988	0.9880	8.06	12.13	4.08	49.96	10:26
2	TOC	0.0845	0.8453	7.96	12.11	4.15	49.97	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	32	TOC	K2002416-003.02	0.2530 ppm	0.0254 ppm	10.0600%	2020/03/22 11:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2710	2.7100	9.21	13.27	4.06	49.93	10:29
2	TOC	0.2350	2.3501	8.97	12.92	3.95	49.92	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	33	TOC	K2002416-004.02	1.6097 ppm	0.0073 ppm	0.4500%	2020/03/22 11:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6148	16.1479	18.25	22.09	3.84	49.94	10:26
2	TOC	1.6045	16.0453	18.18	22.08	3.90	49.92	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	34	TOC	K2002462-001.06	3.0392 ppm	0.0019 ppm	0.0600%	2020/03/22 11:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.0405	30.4052	27.84	31.73	3.89	49.91	10:31
2	TOC	3.0378	30.3785	27.82	31.60	3.78	49.91	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	35	TOC	K2002470-001.01	2.1044 ppm	0.0619 ppm	2.9400%	2020/03/22 12:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1482	21.4818	21.84	25.60	3.76	49.92	10:27
2	TOC	2.0606	20.6059	21.25	25.19	3.94	49.92	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	36	TOC	K2002471-001.01	4.4447 ppm	0.0904 ppm	2.0300%	2020/03/22 12:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.5086	45.0863	37.71	41.74	4.03	49.90	10:29

2	TOC	4.3808	43.8075	36.85	40.81	3.96	49.89	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	37	TOC	K2002489-001.01	4.7622 ppm	0.0543 ppm	1.1400%	2020/03/22 13:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.8005	48.0053	39.67	43.66	3.99	49.91	10:29
2	TOC	4.7238	47.2380	39.16	43.00	3.84	49.91	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	38	TOC	K2002492-002.01	0.4658 ppm	0.0189 ppm	4.0600%	2020/03/22 13:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4524	4.5241	10.43	14.40	3.97	49.90	10:27
2	TOC	0.4792	4.7918	10.61	14.28	3.66	49.89	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.6946 ppm (PASS)	0.0000 ppm	0%	2020/03/22 14:19

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.6946	256.9459	180.61	184.49	3.88	49.89	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 14:33

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.32	10.16	3.85	49.87	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	39	TOC	MB3	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 14:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.92	9.75	3.83	49.87	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.7423 ppm (PASS)	0.0000 ppm	0%	2020/03/22 15:03

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.7423	247.4232	174.21	178.06	3.85	49.87	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	40	TOC	K2002496-001.01	14.0184 ppm	0.6231 ppm	4.4400%	2020/03/22 15:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.4590	144.5901	104.63	108.44	3.81	49.85	10:28
2	TOC	13.5778	135.7782	98.70	102.54	3.83	49.84	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	41	TOC	K2002421-001.12	1.5767 ppm	0.0401 ppm	2.5400%	2020/03/22 15:45

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6050	16.0498	18.18	22.01	3.83	49.82	10:28
2	TOC	1.5483	15.4833	17.80	21.76	3.95	49.80	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	42	TOC	K2002421-002.12	0.8540 ppm	0.0165 ppm	1.9300%	2020/03/22 16:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8656	8.6565	13.21	17.17	3.96	49.80	10:29
2	TOC	0.8423	8.4230	13.06	16.87	3.81	49.81	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	43	TOC	K2002421-003.12	1.7781 ppm	0.0172 ppm	0.9700%	2020/03/22 16:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.7659	17.6587	19.27	23.22	3.95	49.79	10:29
2	TOC	1.7903	17.9026	19.43	23.24	3.81	49.77	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	44	TOC	K2002421-004.12	0.8774 ppm	0.0261 ppm	2.9700%	2020/03/22 17:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8958	8.9583	13.42	17.18	3.76	49.77	10:27
2	TOC	0.8590	8.5895	13.17	16.92	3.75	49.78	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	45	TOC	K2002432-001.01	0.1255 ppm	0.0243 ppm	19.3500%	2020/03/22 17:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1083	1.0832	8.12	11.94	3.82	49.80	10:28

2	TOC	0.1427	1.4267	8.35	12.16	3.81	49.84	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	46	TOC	K2002432-001.01 ms	26.3798 ppm	0.0000 ppm	0.0000%	2020/03/22 18:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	26.3798	263.7980	184.80	188.75	3.96	49.85	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	47	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 18:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.97	9.86	3.88	49.86	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.4176 ppm (PASS)	0.0000 ppm	0%	2020/03/22 18:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.4176	254.1757	178.75	182.64	3.89	49.88	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 18:50

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time

D	TOC	0 ppm	1	0.0000	0.0000	6.08	9.82	3.74	49.92	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	48	TOC	K2002437-001.03	1.8820 ppm	0.0408 ppm	2.1700%	2020/03/22 19:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9109	19.1085	20.24	24.02	3.78	49.93	10:29
2	TOC	1.8532	18.5316	19.85	23.57	3.71	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	49	TOC	K2002437-002.03	0.7951 ppm	0.0104 ppm	1.3100%	2020/03/22 19:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8024	8.0245	12.79	16.50	3.71	50.00	10:24
2	TOC	0.7877	7.8773	12.69	16.46	3.77	49.99	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	50	TOC	K2002437-003.03	3.1945 ppm	0.0197 ppm	0.6200%	2020/03/22 20:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.1806	31.8060	28.78	32.47	3.69	50.00	10:30
2	TOC	3.2084	32.0841	28.97	32.65	3.68	50.00	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	51	TOC	K2002437-004.03	0.7492 ppm	0.0484 ppm	6.4600%	2020/03/22 20:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7834	7.8341	12.66	16.42	3.76	50.00	10:32
2	TOC	0.7150	7.1501	12.20	15.91	3.71	50.03	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC)	CAS_salt_010711	CAS_salt_010711

(v1364) (v4) (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	52	TOC	K2002437-005.03	0.6532 ppm	0.0170 ppm	2.6100%	2020/03/22 20:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6652	6.6520	11.86	15.62	3.76	50.00	10:25
2	TOC	0.6411	6.4111	11.70	15.67	3.96	50.03	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	53	TOC	K2002456-001.01	1.1335 ppm	0.0168 ppm	1.4800%	2020/03/22 21:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1453	11.4535	15.09	18.93	3.84	50.00	10:25
2	TOC	1.1216	11.2156	14.93	18.88	3.94	50.02	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	54	TOC	K2002456-002.01	0.7645 ppm	0.0422 ppm	5.5200%	2020/03/22 21:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7943	7.9427	12.73	16.72	3.99	50.05	10:29
2	TOC	0.7346	7.3464	12.33	16.17	3.83	50.01	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	55	TOC	K2002456-003.01	1.4306 ppm	0.0000 ppm	0.0000%	2020/03/22 22:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4306	14.3056	17.01	21.07	4.05	50.03	10:28
2	TOC	1.4306	14.3056	17.01	20.90	3.89	50.04	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	56	TOC	K2002456-004.01	1.4038 ppm	0.0408 ppm	2.9100%	2020/03/22 22:49

Rep	Base	ppm	µg	Adjusted	NDIR (Abs)	Baseline	Pressure	Run

#	Analysis Type			(Abs)		(Abs)	(psig)	Time
1	TOC	1.4326	14.3264	17.03	21.09	4.07	50.03	10:26
2	TOC	1.3749	13.7494	16.64	20.59	3.96	50.03	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	57	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 23:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.12	9.08	3.96	50.08	10:29
2	TOC	0.0000	0.0000	5.08	8.91	3.83	50.03	10:26
3	TOC	0.0000	0.0000	4.92	8.74	3.82	50.02	10:27
4	TOC	0.0000	0.0000	4.82	8.59	3.76	50.04	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.1303 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:13

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.1303	251.3028	176.82	180.56	3.74	50.04	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:27

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.42	9.22	3.80	50.03	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	58	TOC	MB4	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 00:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.04	8.76	3.72	50.03	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.1987 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:57

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.1987	241.9868	170.55	174.42	3.87	50.01	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	59	TOC	K2002462-002.04 doc	4.0921 ppm	0.0354 ppm	0.8700%	2020/03/23 01:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.1171	41.1711	35.08	38.88	3.80	50.00	10:29
2	TOC	4.0670	40.6700	34.74	38.61	3.87	50.04	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	60	TOC	K2002462-002.04 ms doc	32.0473 ppm	0.0000 ppm	0.0000%	2020/03/23 01:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	32.0473	320.4734	222.91	226.80	3.89	50.01	10:31

Dilution	Blank Contribution	Method	Calibration

1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	61	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 01:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.10	10.11	4.00	50.00	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	62	TOC	FB 3/19/20 1619	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 02:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.24	9.23	4.00	49.99	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	63	TOC	K2002422-001.04 doc	9.5284 ppm	0.1176 ppm	1.2300%	2020/03/23 02:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.4453	94.4531	70.91	74.94	4.03	50.01	10:29
2	TOC	9.6116	96.1156	72.03	75.73	3.70	49.98	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	64	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 02:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.59	9.48	3.89	49.99	10:29
2	TOC	0.0000	0.0000	5.25	9.15	3.90	49.99	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25	0 / infinity	25.0598	0.0000	0%	2020/03/23 03:20

					ppm [25 ppm]	(NA / NA)	ppm (PASS)	ppm		

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.0598	250.5980	176.34	180.27	3.92	49.97	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/23 03:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.46	9.42	3.96	50.00	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1364	1.7787	1.3950	0.0000	0.0000	0.0000	2020/03/19 15:10	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v32	Calibration curve formula:	TOC: y = 6.725x + 7.818
Ver Creation:	2020/03/11 15:55	r^2 value:	TOC: r^2 = 0.99921
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	5.8640	0.0000		2020/03/11 14:28
0.500 ppm	9.5210	0.5000		2020/03/11 14:42
1.0 ppm	12.5930	1.0000		2020/03/11 14:56
5.0 ppm	40.5270	5.0000		2020/03/11 15:10
10 ppm	79.5310	10.0000		2020/03/11 15:25
25 ppm	181.4610	25.0000		2020/03/11 15:39
50 ppm	340.5610	50.0000		2020/03/11 15:53

Methods

Name: CAS_salt_010711 (TOC)

Version: v4 Operator: Fusion1 (Fusion1)

Ver Creation: 2019/02/21 17:57

Comment:

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/03/23 03:50

ALS Environmental

StarLIMS Run:	674205, 674225, 674226, 674227
Analysis:	DOC/TOC
Method:	SM 5310 C, 9060A, 415.1, 9060

CCV: 11-GEN-05-82C 50 ppm LCS: 11-GEN-05-79J 25.0 ppm

ICAL Date: 3/11/2020

ICAL ID: 19-GEN-8-7-E->J

ICS ID: 11-GEN-05-78M

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 11-GEN-05-82C 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 19-GEN-08-9-H

21 % H3PO4: 19-GEN-08-8-K

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

21 BKP 3/24/20

Analyzed By: BKP	Date Analyzed: 3/24/20
Reviewed By:	Date Reviewed: 3/24/20

Case Narrative

Method: 6850
Analysis: Perchlorate
Analysis SOP: LC-MS-CLO4
ALS WO ID(s): 2007910

Client: ALS Laboratories (Houston, TX)
Matrix: Water
ELMS Batch (HBN): 2360 (259426)

General Set Information: There were twelve field samples in this Work Order. The samples were analyzed for perchlorate.

Method Summary: Each sample was prepared as noted below and analyzed using an Agilent 1100 LC/MSD system in select ion monitoring (SIM) mode at m/z 83 and 85, which corresponds to the loss of one oxygen atom from the perchlorate molecule. ChemStation software was used for instrument control and data analysis. The ion ratio of m/z 83 to 85 was used to positively identify the response peak as perchlorate. Quantitation was performed using the m/z 83 peak area. An internal standard (ISTD) of ^{18}O labeled perchlorate was added to each sample to establish the perchlorate peak retention time and used in quantitation.

Sample Preparation: A 10.0mL aliquot of each sample was transferred into a 15-mL centrifuge tube. 50µL of an ^{18}O labeled perchlorate solution was added to each sample as an internal standard. The samples were then capped, vortexed, and filtered into autosampler vial using Phenex PES membrane 0.45µm Syringe filters.

Holding Times: Holding times were met for all analyses.

Dilutions: NA

Method QC data: The method blank (LMB 700530) was less than 1/2 the CRDL. The recovery for the LCS (700527) was within acceptable parameters.

MS/MSD Analysis: MS/MSD was performed on sample 2007910001 (Client ID: 16WW27-200312). 3.0µL of Working Standard Solution Horizon ID 49947 was added to 10.0mL of sample preparation. The spike target was 3.µg/L. The MS/MSD percent recoveries and relative percent difference (RPD) were within the performance limits.

Instrument QC: Instrument initial and continuing calibrations were performed in accordance with published procedures.

NC/CAR(s): NA

Sample Calculation: Samples were reported in µg/L. Results were calculated in µg/L by the equation (A)x(B),

where: A = Analyte concentration from the standard curve (µg/L)
B = Dilution performed at time of analysis

Miscellaneous Comments: These samples were analyzed in accordance with the requirements found in the DOD QSM Version 5.1.1. The Reporting Limit Verification Standard (RLVS – 700528) is reported from the analysis of the Laboratory Control Sample (LCS – 700527) at a level of 3.0µg/L. Due to limitations of the Chemstation Software, some of the chromatographic peaks may require manual integrations. A manual integration was performed for one of the Initial Calibration analyses (datafile: 20SEPI03) along with datafiles 23MARD06/07/11.

Thomas Bosch March 23, 2020
Analyst Date

ANALYTICAL REPORT

Report Date: March 23, 2020

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ALS Environmental (Houston)
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Workorder: **34-2007910**
Project ID: HS20030621 031220
Purchase Order: HS20030621
Project Manager Kevin W. Griffiths

Client Sample ID	Lab ID	Collect Date	Receive Date	Sampling Site
16WW27-200312	2007910001	03/12/20	03/17/20	HS20030621
16WW27-200312-FD	2007910002	03/12/20	03/17/20	HS20030621
16WW43-200312	2007910003	03/12/20	03/17/20	HS20030621
16WW13-200312	2007910004	03/12/20	03/17/20	HS20030621
16RW05-200312	2007910005	03/12/20	03/17/20	HS20030621
16RW02-200312	2007910006	03/12/20	03/17/20	HS20030621
16RW01-200312	2007910007	03/12/20	03/17/20	HS20030621
16WW33-200312	2007910008	03/12/20	03/17/20	HS20030621
16WW34-200312	2007910009	03/12/20	03/17/20	HS20030621
16WW32-200312	2007910010	03/12/20	03/17/20	HS20030621
16WW31-200312	2007910011	03/12/20	03/17/20	HS20030621
16WW46-200312	2007910012	03/12/20	03/17/20	HS20030621

ANALYTICAL REPORT

Workorder: 34-2007910
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **16WW27-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910001 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 09:17 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW27-200312-FD** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910002 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 09:59 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW43-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910003 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 10:13 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW13-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910004 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 10:27 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

ANALYTICAL REPORT

Workorder: 34-2007910
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **16RW05-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910005 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 10:41 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16RW02-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910006 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 10:55 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16RW01-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910007 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 11:09 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW33-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910008 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 11:23 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

ANALYTICAL REPORT

Workorder: 34-2007910
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **16WW34-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910009 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 11:51 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW32-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910010 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 12:05 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW31-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910011 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 12:19 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW46-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910012 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 12:33 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

ANALYTICAL REPORT

Workorder: 34-2007910
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method	Analyst	Peer Review
EPA 6850, DoD QSM	/S/ Thomas Bosch 03/23/2020 13:35	/S/ Stephen Brose 03/23/2020 20:33

Laboratory Contact Information

ALS Environmental
960 W Levoy Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: alslt.lab@ALSGlobal.com
Web: www.alsslc.com

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
The following was provided by the client: Sample ID, Collection Date, Sampling Location, Media Type, Sampling Parameter.
Collection Date, Media Type, and Sampling Parameter can potentially affect the validity of the results.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	PJLA (DoD ELAP)	L17-506	http://www.pjlabs.com
	PJLA (ISO 17025)	L17-507-R1	http://www.pjlabs.com
	Utah (TNI)	UT00953	http://lams.nelac-institute.org/search
	Iowa (TNI)	IA# 376	http://www.shl.uiowa.edu/labcert/idnr/
	Kansas	E-10416	http://www.kdheks.gov/envlab/disclaimer.html
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP)	101574	http://www.aihaaccreditedlabs.org
	DOECAP-AP	L18-606	http://www.pjlabs.com
	Washington	C596	https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Laboratory-Accreditation
Dietary Supplements	PJLA (ISO 17025)	L17-507-R1	http://www.pjlabs.com

ANALYTICAL REPORT

Workorder: 34-2007910
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Result Symbol Definitions

MDL = Method Detection Limit, a statistical estimate of method/media/instrument sensitivity.
RL = Reporting Limit, a verified value of method/media/instrument sensitivity.
CRDL = Contract Required Detection Limit
Reg. Limit = Regulatory Limit.
ND = Not Detected, testing result not detected above the MDL or RL.
< Means this testing result is less than the numerical value.
** No result could be reported, see sample comments for details.

Qualifier Symbol Definitions

U = Qualifier indicates that the analyte was not detected above the MDL.
J = Qualifier Indicates that the analyte value is between the MDL and the RL. It is also used to indicate an estimated value for tentatively identified compounds in mass spectrometry where a 1:1 response is assumed.
B = Qualifier indicates that the analyte was detected in the blank.
E = Qualifier indicates that the analyte result exceeds calibration range.
P = Qualifier indicates that the RPD between the two columns is greater than 40%.

Quality Control Sample Batch Report

Analysis Information

Workorder: 2007910

Limits:	Client SOW/Contract Specified	**Preparation:**	NA	**Analysis:**	EPA 6850, DoD QSM
Basis:	DoD QSM	**Batch:**	NA	**Batch:**	ELMS/2360 (HBN: 259426)
		Prepared By:	NA	**Analyzed By:**	Thomas Bosch

Blank

LMB: 700530
Analyzed: 03/23/2020 09:03
Units: ug/L

Analyte	Result	MDL	RL
Perchlorate	ND	1	2.00

Laboratory Control Sample

LCS: 700527
Analyzed: 03/23/2020 08:35
Dilution: 1
Units: ug/L

Analyte	Result	Target	% Rec	QC Limits	
Perchlorate	3.48	3.00	116	78.8	123.8

Matrix Spike - Matrix Spike Duplicate

Sample: 2007910001	**MS:** 700531	**MSD:** 700532
Analyzed: 03/23/2020 09:17	**Analyzed:** 03/23/2020 09:31	**Analyzed:** 03/23/2020 09:45
Dilution: 1	**Dilution:** 1	**Dilution:** 1
Units: ug/L	**Units:** ug/L	**Units:** ug/L

Analyte	Result	Result	Target	% Rec	QC Limits		Result	% Rec	RPD	QC Limits	
Perchlorate	ND	3	3	100	78.8	123.8	2.98	99.3	0.703	0.0	20.0

QC Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Analyst	Peer Review
/S/ Thomas Bosch	/S/ Stephen Brose
03/23/2020 13:38	03/23/2020 20:33

Symbols and Definitions

- * - Analyte above reporting limit or outside of control limits
- ▲ - Sample result is greater than 4 times the spike added
- ◆ - Sample and Matrix Duplicate less than 5 times the reporting limit
- ● - Result is above the calibration range
- # - The Matrix Spike, Matrix Spike duplicate or Matrix Duplicate is reported for your information only. The sample matrix may be inappropriate for the method selected.

RPD - Relative % Difference (Spike / Spike Duplicate)
ND - Not Detected (U - Qualifier also flags analyte as not detected)
NA - Not Applicable
QC results are not adjusted for moisture correction, where applicable

2007910

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

18698/#2

SAMPLING STATE: **Dept of Defense** **COC ID:** **13523**

SUBCONTRACT TO:

ALS Laboratory Group
960 LeVoy Dr
Salt Lake City, UT 84123

Phone: +1 801 266 7700

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20030621
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20030621-01**	**16WW27-200312**	**Groundwater**	**12 Mar 2020 08:30**
	SUB_Perch-6850			27 Mar 2020
2.	**HS20030621-02**	**16WW27-200312-FD**	**Groundwater**	**12 Mar 2020 08:30**
	SUB_Perch-6850			27 Mar 2020
3.	**HS20030621-03**	**16WW43-200312**	**Groundwater**	**12 Mar 2020 09:15**
	SUB_Perch-6850			27 Mar 2020
4.	**HS20030621-04**	**16WW13-200312**	**Groundwater**	**12 Mar 2020 10:00**
	SUB_Perch-6850			27 Mar 2020
5.	**HS20030621-05**	**16RW05-200312**	**Groundwater**	**12 Mar 2020 10:50**
	SUB_Perch-6850			27 Mar 2020
6.	**HS20030621-06**	**16RW02-200312**	**Groundwater**	**12 Mar 2020 11:40**
	SUB_Perch-6850			27 Mar 2020
7.	**HS20030621-07**	**16RW01-200312**	**Groundwater**	**12 Mar 2020 12:25**
	SUB_Perch-6850			27 Mar 2020
8.	**HS20030621-08**	**16WW33-200312**	**Groundwater**	**12 Mar 2020 13:25**
	SUB_Perch-6850			27 Mar 2020
9.	**HS20030621-09**	**16WW34-200312**	**Groundwater**	**12 Mar 2020 14:10**

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID: 13523**

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
		SUB_Perch-6850		27 Mar 2020
10.	**HS20030621-10**	**16WW32-200312**	**Groundwater**	**12 Mar 2020 15:00**
		SUB_Perch-6850		27 Mar 2020
11.	**HS20030621-11**	**16WW31-200312**	**Groundwater**	**12 Mar 2020 15:45**
		SUB_Perch-6850		27 Mar 2020
12.	**HS20030621-12**	**16WW46-200312**	**Groundwater**	**12 Mar 2020 16:40**
		SUB_Perch-6850		27 Mar 2020
~~13.~~	~~**HS20030621-13**~~	~~**Trip Blank**~~	~~**Water**~~	~~**12 Mar 2020 00:00**~~
		SUB_Perch-6850		27 Mar 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 3/16/2020. 1800.

Received By: _____ Date/Time: 03/17/2020 0855

Cooler ID(s): _____ Temperature(s): _____

ALS Environmental

CHAIN-OF-CUSTODY

Project / Job / Task: HS20030621	***Split:***	**Workorder ID: 2007910**	**Level:** ENV_LVL4	**Requested Analysis**
Client: ALS Environmental (Houston)		**Account:** 8101	**Type:** 125Poly	
Comments:			**Preservatives**	

Item	Collect Date/Time	Sample ID	Lab ID	QC	Matrix	Containers ID(s)	Containers Count	COOL	EPA 6850, DoD QSM													
1	03/12/2020 08:30	16WW27-200312	2007910001		Water	A	1		A													
2	03/12/2020 08:30	16WW27-200312-FD	2007910002		Water	A	1		A													
3	03/12/2020 09:15	16WW43-200312	2007910003		Water	A	1		A													
4	03/12/2020 10:00	16WW13-200312	2007910004		Water	A	1		A													
5	03/12/2020 10:50	16RW05-200312	2007910005		Water	A	1		A													
6	03/12/2020 11:40	16RW02-200312	2007910006		Water	A	1		A													
7	03/12/2020 12:25	16RW01-200312	2007910007		Water	A	1		A													
1	03/12/2020 13:25	16WW33-200312	2007910008		Water	A	1		A													
2	03/12/2020 14:10	16WW4-200312	2007910009		Water	A	1		A													
3	03/12/2020 15:00	16WW32-200312	2007910010		Water	A	1		A													

ORIGINAL FIELD SAMPLE CHAIN-OF-CUSTODY

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location
VanTassell, Tami	03/17/2020 08:55	ALS Sample Receiving	Sample Login
Tami VanTassell R-33.1	03-17-20 14:15 03.20.20/08:00	ISD T. Bush	Storage CLOY analysis

SAMPLE PREPARATION / ANALYSIS CHAIN-OF-CUSTODY

Sample Prep / Analysis for: _____ Lab Notebook No.: _____

Prepared / Analyzed by: _____ Date / Time: _____

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location

ALS Environmental

CHAIN-OF-CUSTODY

Project / Job / Task: HS20030621	***Split:***	**Workorder ID:** 2007910	**Level:** ENV_LVL4	**Requested Analysis**
Client: ALS Environmental (Houston)		**Account:** 8101	**Type:** 125Poly	
Comments:			**Preservatives** COOL	EPA 6850, DoD QSM

Item	Collect Date/Time	Sample ID	Lab ID	QC	Matrix	Containers ID(s)	Count	Requested Analysis
4	03/12/2020 15:45	16WW31-200312	2007910011		Water	A	1	A
5	03/12/2020 16:40	16WW46-200312	2007910012		Water	A	1	A

ORIGINAL FIELD SAMPLE CHAIN-OF-CUSTODY

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location
VanTassell, Tami	03/17/2020 08:55	ALS Sample Receiving	Sample Login
Tami VanTassell R.33.1	03-17-20 14:15 03.20.20 08:00	ISD T. Bond	Storage cloy analysis

SAMPLE PREPARATION / ANALYSIS CHAIN-OF-CUSTODY

Sample Prep / Analysis for: _____ Lab Notebook No.: _____

Prepared / Analyzed by: _____ Date / Time: _____

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location

ALS-SALT LAKE CITY-RELATED INFORMATION REPORT (CRIR)

COOLER OR CONTAINER INFORMATION CHECKLIST (Fill In or Circle)

Client Name: ALS Houston

Project/Task/Site: HS 20030621

Date/Time of Receipt: 03/17/2020 0855

Number of Coolers Received: 1

Condition of Coolers:	Acceptable/Unacceptable	Temperature Control:	Present/Not Included
Cooler Custody Seals:	Present/Absent/NA		
	Intact/Broken/NA	Location Temp Taken:	Cooler/Between Samples
Container Custody Seals:	Present/Absent/NA		
	Intact/Broken/NA	Are all temperatures within project specific guidelines?	Yes/No/NA
Ice Present:	Yes/No/NA		
	Frozen/Melted/NA	VOA Headspace Present?	Yes/No/NA

pH Check Performed:							
	Metals	Yes/No/NA	Total Phenolics	Yes/No/NA	NO3/NO2	Yes/No/NA
	Cyanide	Yes/No/NA	TPH – 418.1	Yes/No/NA	Oil & Grease	Yes/No/NA
	Sulfide	Yes/No/NA	COD	Yes/No/NA	Total Phosphorous	Yes/No/NA
	Ammonia	Yes/No/NA	TKN	Yes/No/NA	Gross A.B, Gamma Spec	Yes/No/NA

Cooler Received	Cooler Condition	Temp.	Cooler Received	Cooler Condition	Temp.	Cooler Received	Cooler Condition	Temp.
1	Good	3 °C	4		°C	7		°C
2		°C	5		°C	8		°C
3		°C	6		°C	9		°C

Taken By: _____ (Signature) Rebecca Wise (Printed Name) 03/17/2020 (Date)

CLIENT-RELATED INFORMATION

☐ Missing Cooler	☐ Missing Samples/Bottles	☐ Incorrect Preservation	☐ Insufficient Sample Volume
☐ Cooler Conditions	☐ Broken/Leaking Samples	☐ pH Criteria Not Met	☐ Chain of Custody Problems
☐ Missing Paperwork	☐ Incorrect Bottle Type	☐ Residual Chlorine Present	☐ Other:
☐ Missing/Incorrect Bottle Labels	☐ Cooler Temperatures Out of Range	☐ Head Space in Bottles	

BRIEFLY DESCRIBE THE PROBLEM AND THE ACTION TAKEN:

Client Notified? YES ☐ NO ☐

Response Required Within 24 Hours

PROJECT MANAGEMENT

PROJECT MANAGER COMMENTS:

ALS Project Manager: _____ (Printed Name) Returned to Sample Receipt by: _____ (Signature) Date: _____

Must Deliver Next Business Day
Time and Tempature Sensitive!

ALS

ORIGIN ID:SGRA (281) 530-5656
SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD.
SUITE 210
HOUSTON, TX 77099
UNITED STATES US

SHIP DATE: 16MAR20
ACTWGT: 16.90 LB
CAD: 300130/CAFE3211
DIMS: 14x11x10 IN

BILL THIRD PARTY

TO **SAMPLE RECEIVING**
ALS ENVIRONMENTAL
960 W. LEVOY DRIVE

SALT LAKE CITY UT 84123
(801) 266-7700
REF: HS20030621 - RJ

FedEx Express

TRK# 0201 **1251 0295 4279**

TUE - 17 MAR 3:00P
STANDARD OVERNIGHT

AX BTFA

84123
UT-US **SLC**

Part # 156669-404 RIT2 EXP 12/20

551C2/64E0/104C

J181108080111SH

ALS
10450 Stancliff Rd.,
Houston, Texas 770
Tel. +1 281 530 5656
Fax. +1 281 530 588

Batch Worklist

Batch: ELMS/ 2360 Created: 3/23/2020 07:38 Instrument: HBN: 259426

Rule: EPA 6850, DoD QSM Water Analyst: T. Bosch Status: WP

Workorder: 2007910 [ENV_LVL4]

Pos	Lab ID	Sample ID	Prep Initial	Prep Final	Dust Weight	Type	Mx	Container	Procedure	Mgr	Expire Date	Due Date	Run Date
1	700526	CCV for HBN 259426 [ELMS/2360]				CCV	3		E685041C3Q	5311		3/30/2020	
2	700527	LCS for HBN 259426 [ELMS/2360]				LCS	3		E6850Q413Q	5311		3/30/2020	
3	700528	RLVS for HBN 259426 [ELMS/2360				RLVS	3		E685041C3Q	5311		3/30/2020	
4	700529	ICS for HBN 259426 [ELMS/2360]				ICS	3		E6850..D3Q	5311		3/30/2020	
5	700530	LMB for HBN 259426 [ELMS/2360]				LMB	3		E6850Q413Q	5311		3/30/2020	
6	2007910001	16WW27-200312				SAMPLE	3	2007910001-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
7	700531	16WW27-200312(2007910001MS)				MS	3		E6850Q413Q	5311		3/30/2020	
8	700532	16WW27-200312(2007910001MSD)				MSD	3		E6850Q413Q	5311		3/30/2020	
9	2007910002	16WW27-200312-FD				SAMPLE	3	2007910002-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
10	2007910003	16WW43-200312				SAMPLE	3	2007910003-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
11	2007910004	16WW13-200312				SAMPLE	3	2007910004-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
12	2007910005	16RW05-200312				SAMPLE	3	2007910005-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
13	2007910006	16RW02-200312				SAMPLE	3	2007910006-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
14	2007910007	16RW01-200312				SAMPLE	3	2007910007-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
15	2007910008	16WW33-200312				SAMPLE	3	2007910008-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
16	700533	CCV for HBN 259426 [ELMS/2360]				CCV	3		E685041C3Q	5311		3/30/2020	
17	2007910009	16WW34-200312				SAMPLE	3	2007910009-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
18	2007910010	16WW32-200312				SAMPLE	3	2007910010-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
19	2007910011	16WW31-200312				SAMPLE	3	2007910011-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
20	2007910012	16WW46-200312				SAMPLE	3	2007910012-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
21	700534	CCV for HBN 259426 [ELMS/2360]				CCV	3		E685041C3Q	5311		3/30/2020	

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Analytical Documentation

Analyst Write-up

ALS Work Order #'s & Sample #( )'s: 2007910 (001-12)
ELMS Batch/HBN ID: 2360 (259426)
Prep Date: 03/20/2020 Analysis Date: 03/23/2020 Analyst: Tom Bosch
Analyte: **Perchlorate** Matrix: **Water** Method: **6850**
Sequence: \\HPCHEM\1\SEQUENCE\CLO4\2020\MAR\23MAR0D.s
Reported DL: **1.0µg/L** Reported LOD: **2.0µg/L** Reported LOQ: **4.0µg/L**

SAMPLE PREPARATION/ANALYSIS:

Water: Samples were prepared by Tom Bosch. 10.0mL of each sample was pipetted into a 15-mL centrifuge tube, and 50µL of an oxygen-18 labeled perchlorate solution was added as an internal standard. The samples were capped, vortexed, and filtered with Phenex PES membrane 0.45µm Syringe filters prior to analysis.

REAGENTS: Eluent A1: 95% ASTM Type II water (ALS)/5%ACN (B&J Lot DU461-US)/0.1% glacial acetic acid (JT-Baker Lot 122550).
Eluent B1: 95% ACN (B&J Lot DU461-US)/5% ASTM Type II water (ALS)/0.1% glacial acetic acid (JT-Baker Lot 122550).

STANDARDS: Internal Standard Spiking Solution Horizon# 47863. Dilutions of Working Standards (Horizon: 49947/48) used for ICAL, CCV's, RLVS and ICS.

CALIBRATION CURVE: Used curve from 09/20/2019, sequence 20SEP19D.s Offline Quantitation Method: CLO4-DP3.M

INSTRUMENT CONDITIONS: Samples were analyzed with an Agilent 1100 LC/MSD system, in negative SIM mode, monitoring m/z 83, 85, and 89.
Instrument ID: LCMS04 Online Acquisition Method: CLO4-AQN.M Fragmentor: 160 Output Gain: 10 Injection Volume: 40µL
Column: KP-RPPX C8 separator, 250mm Mobile Phase: 70% Eluent A1; 30% Eluent B1 Run time: 12.0min.

FLOW GRADIENT:

Time (min.)	Flow (mL/min)
0	0.65
5.8	0.65
5.9	0.25
10.3	0.25
10.5	0.65
12.0	0.65

QC DATA: 3.0µL of QC Solution Horizon ID 47516 was used for LCS 700527; Target = 3.0µg/L. ASTM type II water was used for LMB 700530.

MS/MSD: The Matrix Spike and duplicate (MS/MSD) was performed on sample 2007910001 (Client ID: 16WW027-200312). 3.0µl of Working Standard Solution Horizon ID 49947 was added to 10.0mL of sample preparation. Spike target = 3.0µg/L.

COMMENTS:

1) Results reported in µg/L.
2) All QC, Blank, CCV, and MS/MSD results were within method parameters.
3) Sample data can be viewed at two directories within the ALS system: \\ALSLTWS013\LCMS\LCMS04\2020\MAR\HBN# or through NuGenesis\Tree\PrintData\LCMS\DefaultView.
4) Notebook: \\alsltws013\ORGANIC\BOSCH\LCMS\Perchlorates\Waters\2020\DOD\259426-DoD-ALS-Hstn LCMS4 or through \\ALSLTWS013\DATAREVIEW\HBN#
5) The Reporting Limit Verification Standard (RLVS – 700528) is reported from the analysis of the Laboratory Control Sample (LCS – 700527) at a level of 3.0µg/L.
6) Due to limitations of the Chemstation Software, some of the chromatographic peaks require manual integration. Manual Integrations were performed for one of the Initial Calibration analyses (datafile: 20SEPI03) along with datafiles 23MARD06/07/11.

5.5 Chromatography (GC, HPLC and LC/MS) Technical Review

Note: It is the peer reviewer's responsibility to ensure that appropriate criteria are used as defined in the HORIZON PROFILE. The evaluation criteria are prioritized as per Section 2.2 of this SOP. These items must be checked for all projects. The following checklist will be completed by both the analyst and the peer reviewer and scanned into the HBN folder with the raw data.

Chromatography (GC, HPLC, LC/MS) Technical Review Criteria **Batch(es)/SDG:** ELMS. 2360 (HBN: 259426 **Sample Set IDs if Applicable:** 2007910	**Analyst Initials**	**Reviewer Initials**
Sample positions on autosampler verified against instrument sequence	TB	NA
Calibration standards analyzed and meets criteria	TB	SB
Standards traceability checked and meets criteria	TB	SB
Standard curve coefficients evaluated and meet criteria	TB	SB
ICVs analyzed and meet acceptance criteria	TB	SB
CCVs analyzed and meet acceptance criteria	TB	SB
Retention Time Windows checked	TB	SB
For method 8081A, Endrin/DDT Breakdown is checked for compliance	—	—
Surrogate recoveries checked and appropriately addressed	—	—
Method Preparation Blanks analyzed and meet acceptance criteria	TB	SB
MSs, MSDs, and/or MDs analyzed and calculations checked; applicable	TB	SB
RLVS analyzed	TB	SB
Preparation and analysis hold times met	TB	SB
Preparation deviations and re-preparations noted when performed	TB	SB
Analysis deviations and re-analyses noted when performed	TB	SB
Sample dilution factors noted on reports	TB	SB
Electronic records in HBN transcription accuracy and completeness	TB	SB
Preparation and analysis calculations checked	TB	SB
NCRs are completed as necessary NC/CAR#_____	TB	SB
Report forms are complete and accurate	TB	SB
Manual integrations checked	TB	SB

STANDARD REPORT

Working Standard - CLO4ISTDWRK

CLO4ISTDWRK		Description - Perchlorate ISTD Wrk 1,000ug/L
Standard: 49946	**Created By:** Thomas Bosch	**Amount:** 25 mL
MFG: ALS/SLC	**Create Date:** 09/23/2019 03:09PM	**Expires:** 09/19/2020
MFG Lot: TNB: 09/20/2019	**Verified By:** Thomas Bosch	**Usable:** Yes
Pipette ID: Not Provided	**Verify Date:**	**Lab Lot:** CLO4ISTDWRK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	1000 ug/L
2	14797-73-0-89	Perchlorate 89	1000 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
47863	CLO4ISTDSTK	Perchlorate ISTD Stock	CLO4ISTDSTK	0.25 mL	12/05/2028

STANDARD REPORT

Constituent

Stock Standard - CLO4ISTDSTK

CLO4ISTDSTK		Description - Perchlorate ISTD Stock
Standard: 47863	**Created By:** Thomas Bosch	**Amount:** 1 mL
MFG: Cambridge Isotope	**Create Date:** 05/23/2019 10:05AM	**Expires:** 12/05/2028
MFG Lot: SDIH-016	**Verified By:** Thomas Bosch	**Usable:** Yes
Part ID: OLM-7310-S	**Verify Date:**	**Lab Lot:** CLO4ISTDSTK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	100 ug/mL
2	14797-73-0-89	Perchlorate 89	100 ug/mL

STANDARD REPORT

Working Standard - CLO4 WRK

CLO4 WRK		Description - 6850 WKG Std 100.ug/L
Standard: 49948	**Created By:** Thomas Bosch	**Amount:** 10 mL
MFG: ALS/SLC	**Create Date:** 09/20/2019 03:09PM	**Expires:** 07/25/2020
MFG Lot: TNB: 09/20/2019		**Usable:** Yes
Pipette ID: Not Provided		**Lab Lot:** CLO4 WRK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	0.1 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	0.1 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
49947	CLO4 INT	6850 Intermdt AccStd 10.ug/mL	CLO4 INT	0.1 mL	07/25/2020

STANDARD REPORT

Constituent

Stock Standard - CLO4 STOCK

CLO4 STOCK		Description - 6850 Stock AccStd 1,000ug/mL
Standard: 43659	**Created By:** Thomas Bosch	**Amount:** 100 mL
MFG: AccuStandard	**Create Date:** 09/17/2018 09:09AM	**Expires:** 07/25/2020
MFG Lot: 218065075		**Usable:** Yes
Part ID: IC-PER-10X-1		**Lab Lot:** CLO4 STOCK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	1000 ug/mL

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O		**Description - ASTM Type II Water**
Standard: 109	**Created By:** ALS Support (Lims)	**Amount:** 1000 L
MFG: DCL In House	**Create Date:** 10/06/2005 09:10AM	**Expires:** 11/07/2025
MFG Lot: Not Provided		**Usable:** Yes
Part ID: Not Provided		**Lab Lot:** LAB 109

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Working Standard - CLO4 INT

CLO4 INT	Description - 6850 Intermdt AccStd 10.ug/mL

Standard: 49947 | **Created By:** Thomas Bosch | **Amount:** 10 mL
MFG: ALS/SLC | **Create Date:** 09/23/2019 03:09PM | **Expires:** 07/25/2020
MFG Lot: TNB: 09/20/2019 | **Usable:** Yes
Pipette ID: Not Provided | **Lab Lot:** CLO4 INT

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
43659	CLO4 STOCK	6850 Stock AccStd 1,000ug/mL	CLO4 STOCK	0.1 mL	07/25/2020

STANDARD REPORT

Working Standard - CLO4 QC WRK

CLO4 QC WRK		Description - 6850 QC WKG STD 100ug/L
Standard: 47516	**Created By:** Thomas Bosch	**Amount:** 10 mL
MFG: ALS/SLC	**Create Date:** 05/06/2019 03:05PM	**Expires:** 03/31/2020
MFG Lot: TNB: 05/06/2019		**Usable:** Yes
Pipette ID: Not Provided		**Lab Lot:** CLO4 QC WRK 100.ug/L

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	100 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
47515	CLO4 QC INT	6850 QC Intrmdt Std-QC 10ug/mL	CLO4 QC INT 10.ug/mL	0.1 mL	03/31/2020

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O		**Description - ASTM Type II Water**
Standard: 109	**Created By:** ALS Support (Lims)	**Amount:** 1000 L
MFG: DCL In House	**Create Date:** 10/06/2005 09:10AM	**Expires:** 11/07/2025
MFG Lot: Not Provided		**Usable:** Yes
Part ID: Not Provided		**Lab Lot:** LAB 109

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Stock Standard - CLO4 QCSTOCK

CLO4 QCSTOCK		**Description - 6850 QC Stock STD 1,000ug/mL**
Standard: 36748	**Created By:** Thomas Bosch	**Amount:** 100 mL
MFG: Ultra Scientific	**Create Date:** 05/11/2017 01:05PM	**Expires:** 03/31/2020
MFG Lot: CP-0860		**Usable:** Yes
Part ID: ICC-013		**Lab Lot:** CLO4 QC STOCK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL

STANDARD REPORT

Constituent

Working Standard - CLO4 QC INT

CLO4 QC INT		Description - 6850 QC Intrmdt Std-QC 10ug/mL
Standard: 47515	**Created By:** Thomas Bosch	**Amount:** 10 mL
MFG: ALS/SLC	**Create Date:** 05/06/2019 03:05PM	**Expires:** 03/31/2020
MFG Lot: TNB: 05/06/2019		**Usable:** Yes
Pipette ID: Not Provided		**Lab Lot:** CLO4 QC INT 10.ug/mL

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
36748	CLO4 QCSTOCK	6850 QC Stock STD 1,000ug/mL	CLO4 QC STOCK	0.1 mL	03/31/2020

125 Market Street
New Haven, CT 06513
USA

AccuStandard®

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

S 43659

AccuTrace™ Reference Standard

Catalog No: IC-PER-10X-1
Description: Perchlorate Standard
Element: Perchlorate (ClO_4)
SRM: Ind. Std.
Lot: 218065075
Matrix: Water
Hazards: *Refer to SDS for complete safety information*

Signal Word: None

Date Certified: Jun 25, 2018
Expiration: Jul 25, 2020
Sample Size: 100 mL
Components: 1
Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO 17034 Scope of Accreditation: Yes

Component		SRM #	Prepared Concentration (µg/mL)
ClO_4	Perchlorate	Ind. Std.	1000

The gravimetric uncertainty for this product is ±0.24%.

The final solution was checked against an independent standard to verify its concentration.

We use the highest purity raw materials available to minimize impurity levels in the final solution. Typically 99.999%+ pure starting materials are used as well as ASTM Type I 18 megohm deionized water.

All solutions are filtered through a 0.2 µm filter prior to being bottled.

All glassware used in preparation is Class A and calibrated regularly.

All weights are traceable through NIST, Test No. 822-275872-11

All bottles are triple rinsed with deionized water prior to use.

Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware.

We certify the accuracy of this standard to be ±0.5% of the stated value until its expiration date provided it is kept tightly capped and stored under the conditions stated above.

Certified By: Meigan O'Leary

Meigan O'Leary, Inorganic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO 17034, ISO/IEC 17025 and certified to ISO 9001:2015

QR-ORG/INO-001
Rev. 5/18

AccuStandard

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: ICC-013
Lot Number: CP-0860

S 36748

Lot Issue Date: 29-Feb 2016
Expiration Date: 31-Mar 2020

Product Name: Perchlorate IC Standard

Description:
This Reference Material (RM) was gravimetrically prepared in accordance with ISO Guide 34 and under ULTRA Scientific's ISO 9001 registered quality system. The neat materials used for this product have been verified by ULTRA's ISO 17025 laboratory and under ULTRA's ISO Guide 34 accreditation. The analyte concentrations were verified by ULTRA's ISO 17025 accredited laboratory. For each analyte, the true value, with its uncertainty value calculated at the 95% confidence level, is reported below.

Analyte	Starting Material	Lot Number	Purity (%)	Calculated Value	True Value	Traceability & Method
perchlorate	potassium perchlorate	RM07987	100	1001 ± 5 µg/mL	976 ± 6 µg/mL	NIST SRM 3141A; ICP-OES

Solvent: water (low TOC, < 50 ppb)

Storage: Store at Room Temperature (15° to 30°C).

Traceability:
Traceability has been established through an unbroken chain of comparisons, each having stated uncertainties. Comparisons are based on appropriate physical or chemical measurements, including gravimetric or volumetric dilution, where the mass or volume of a solution before and after dilution is measured. The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1, ISO 9001, ISO 17025, and ISO Guide 34. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 819.

Estimation of Uncertainties:
The true value is reported, with its uncertainty value calculated at the 95% confidence level.

Homogeneity:
This RM was formulated and unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening and should be processed without delay for the true value to be valid within the stated uncertainties. Do not pipet from the bottle. Do not return any material removed for pipetting to the bottle. Tightly cap the bottle after removing any material and store according to the instructions noted above.

Hazards:
Refer to the Safety Data Sheet for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid, within the measurement uncertainty specified, until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

ANAB ACCREDITED ACCORDANCE MATERIAL PRODUCER

ANAB ACCREDITED ACCREDITATION TESTING LABORATORY

ISO 9001 Registered Quality System – TUV USA

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: ICC-013 **Lot Issue Date:** 29-Feb 2016
Lot Number: CP-0860 **Expiration Date:** 31-Mar 2020

Maintenance of Certification:
The real-time, long term stability of the RM may be monitored over the lifetime of the certification. If substantive changes occur that affect the certification before the expiration of this certificate, ULTRA Scientific will notify the purchaser.

Peter A. King, Ph.D.
VP, Technical Operations

Daniel J. Lamendola
Director of QA/RA

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 9001 Registered Quality System – TUV USA

Cambridge Isotope Laboratories, Inc.

Certificate of Analysis

S 47863

Product Name: (Isotopic Label & Enrichment Specification)	PERCHLORIC ACID, SODIUM SALT (18O4, 90%+) 100 UG/ML IN WATER
Lot Number:	SDIH-016
Catalog Number:	OLM-7310-S

Product Information

Chemical Purity Specification:	≥ 98%
MW*: ** For isotopically labeled compounds, MW listed is for the fully enriched product.*	130.44
Labeled CAS Number:	NA
Unlabeled CAS Number:	7601-89-0
Chemical Formula:	NaCl*O4
Storage:	Store at room temperature away from light and moisture.
Stability:	See storage and expiration date.

$NaCl^{18}O_4$

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number . Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Sashi Sivendran-Basak

Sashi Sivendran-Basak, Ph.D., Quality Review

Quality Control Tests and Results

QC Release Date	12/05/2018
Expiration Date	12/05/2028
Concentration Based on Gravimetry	100.0 ± 1.0 µg/mL (k=2)
Chemical Purity of Neat Material(s)	98%
LC/MS for Concentration	105.4 ± 1.1 µg/mL (k=2)

CIL subscribes to the following standards for different products: ISO Guide 34, ISO/IEC 17025, ISO 13485 and cGMP as appropriate.

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

Batch Report: C:\HPCHEM\1\DATA\23MAR20D\23MAR20S.B

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DP3.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#	*	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorat RT	Perchlorate Amount
	*	700526 CCV@25	Vial 71	1	Control	1	1.34699e6	7.490	24.78983
	*	700527 LCS@3.	Vial 72	1	Control	2	1.76919e5	7.535	3.47861
	*	700529 ICS@3.0	Vial 73	1	Control	3	1.15214e5	7.444	3.00225
	*	700530 LMB	Vial 74	1	Control	4	0.00000	0.000	0.00000
	*	2007910001	Vial 75	1	Sample	5	0.00000	0.000	0.00000
	*	700531 79101MS	Vial 76	1	Sample	6	1.47108e5	7.055	2.99864
	*	700532 79101SD	Vial 77	1	Sample	7	1.36267e5	7.104	2.97761
	*	2007910002	Vial 78	1	Sample	8	0.00000	0.000	0.00000
	*	2007910003	Vial 79	1	Sample	9	0.00000	0.000	0.00000
	*	2007910004	Vial 80	1	Sample	10	0.00000	0.000	0.00000
	*	2007910005	Vial 81	1	Sample	11	0.00000	0.000	0.00000
	*	2007910006	Vial 82	1	Sample	12	0.00000	0.000	0.00000
	*	2007910007	Vial 83	1	Sample	13	0.00000	0.000	0.00000
	*	2007910008	Vial 84	1	Sample	14	0.00000	0.000	0.00000
	*	700533 CCV@25	Vial 71	1	Control	15	1.23935e6	7.548	25.66524
	*	2007910009	Vial 85	1	Sample	16	0.00000	0.000	0.00000
	*	2007910010	Vial 86	1	Sample	17	0.00000	0.000	0.00000
	*	2007910011	Vial 87	1	Sample	18	0.00000	0.000	0.00000
	*	2007910012	Vial 88	1	Sample	19	0.00000	0.000	0.00000
	*	700534 CCV@25	Vial 71	1	Control	20	1.18590e6	7.514	25.39788

#	*	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-IS RT	CLO4-89-ISTD Amount
	*	700526 CCV@25	Vial 71	1	Control	1	1.85823e5	7.499	5.00000
	*	700527 LCS@3.	Vial 72	1	Control	2	1.87418e5	7.538	5.00000
	*	700529 ICS@3.0	Vial 73	1	Control	3	1.41203e5	7.472	5.00000
	*	700530 LMB	Vial 74	1	Control	4	1.77924e5	7.514	5.00000
	*	2007910001	Vial 75	1	Sample	5	1.90669e5	7.071	5.00000
	*	700531 79101MS	Vial 76	1	Sample	6	1.80505e5	7.106	5.00000
	*	700532 79101SD	Vial 77	1	Sample	7	1.68369e5	7.094	5.00000
	*	2007910002	Vial 78	1	Sample	8	2.18764e5	7.126	5.00000
	*	2007910003	Vial 79	1	Sample	9	1.71964e5	7.496	5.00000
	*	2007910004	Vial 80	1	Sample	10	2.07471e5	7.425	5.00000
	*	2007910005	Vial 81	1	Sample	11	1.43464e5	7.243	5.00000
	*	2007910006	Vial 82	1	Sample	12	1.57888e5	7.444	5.00000
	*	2007910007	Vial 83	1	Sample	13	2.23006e5	7.194	5.00000
	*	2007910008	Vial 84	1	Sample	14	1.64293e5	7.330	5.00000
	*	700533 CCV@25	Vial 71	1	Control	15	1.64548e5	7.564	5.00000
	*	2007910009	Vial 85	1	Sample	16	1.80860e5	7.417	5.00000
	*	2007910010	Vial 86	1	Sample	17	1.82823e5	7.326	5.00000
	*	2007910011	Vial 87	1	Sample	18	1.35149e5	7.374	5.00000
	*	2007910012	Vial 88	1	Sample	19	1.95971e5	7.337	5.00000
	*	700534 CCV@25	Vial 71	1	Control	20	1.59284e5	7.524	5.00000

#	*	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
	*	700526 CCV@25	Vial 71	1	Control	1	4.30772e5	7.505	25.89011
	*	700527 LCS@3.	Vial 72	1	Control	2	6.32826e4	7.526	3.99048
	*	700529 ICS@3.0	Vial 73	1	Control	3	4.39246e4	7.464	3.66855
	*	700530 LMB	Vial 74	1	Control	4	0.00000	0.000	0.00000
	*	2007910001	Vial 75	1	Sample	5	0.00000	0.000	0.00000
	*	700531 79101MS	Vial 76	1	Sample	6	6.07552e4	7.081	3.97753
	*	700532 79101SD	Vial 77	1	Sample	7	5.71041e4	7.073	4.00870
	*	2007910002	Vial 78	1	Sample	8	0.00000	0.000	0.00000

Batch Report: C:\HPCHEM\1\DATA\23MAR20D\23MAR20S.B

#*	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
*	2007910003	Vial 79	1	Sample	9	0.00000	0.000	0.00000
*	2007910004	Vial 80	1	Sample	10	0.00000	0.000	0.00000
*	2007910005	Vial 81	1	Sample	11	0.00000	0.000	0.00000
*	2007910006	Vial 82	1	Sample	12	0.00000	0.000	0.00000
*	2007910007	Vial 83	1	Sample	13	0.00000	0.000	0.00000
*	2007910008	Vial 84	1	Sample	14	0.00000	0.000	0.00000
*	700533 CCV@25	Vial 71	1	Control	15	3.93436e5	7.563	26.62981
*	2007910009	Vial 85	1	Sample	16	0.00000	0.000	0.00000
*	2007910010	Vial 86	1	Sample	17	0.00000	0.000	0.00000
*	2007910011	Vial 87	1	Sample	18	0.00000	0.000	0.00000
*	2007910012	Vial 88	1	Sample	19	0.00000	0.000	0.00000
*	700534 CCV@25	Vial 71	1	Control	20	3.81581e5	7.532	26.67634

*** End of Report ***

Sequence: C:\HPCHEM\1\SEQUENCE\CLO4\2020\MAR\23MAR20D.S

Sequence Table:

Method and Injection Info Part:

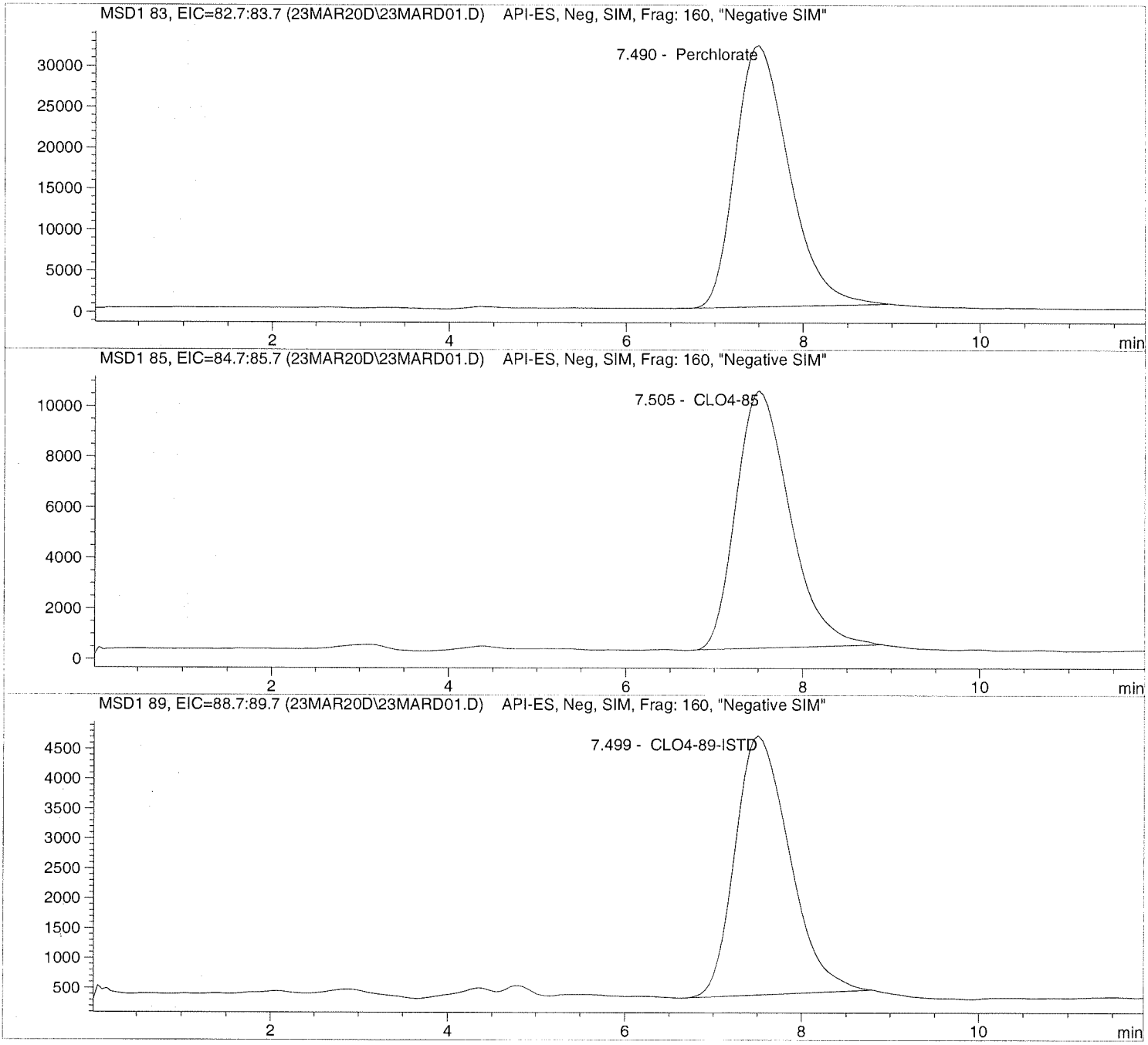
Line	Location	SampleName		Method	Inj	SampleType	InjVolume	DataFile
1	Vial 71	700526	CCV@25	CLO4-AQN	1	Ctrl Samp		
2	Vial 72	700527	LCS@3.	CLO4-AQN	1	Ctrl Samp		
3	Vial 73	700529	ICS@3.0	CLO4-AQN	1	Ctrl Samp		
4	Vial 74	700530	LMB	CLO4-AQN	1	Ctrl Samp		
5	Vial 75	2007910001		CLO4-AQN	1	Sample		
6	Vial 76	700531	79101MS	CLO4-AQN	1	Sample		
7	Vial 77	700532	79101SD	CLO4-AQN	1	Sample		
8	Vial 78	2007910002		CLO4-AQN	1	Sample		
9	Vial 79	2007910003		CLO4-AQN	1	Sample		
10	Vial 80	2007910004		CLO4-AQN	1	Sample		
11	Vial 81	2007910005		CLO4-AQN	1	Sample		
12	Vial 82	2007910006		CLO4-AQN	1	Sample		
13	Vial 83	2007910007		CLO4-AQN	1	Sample		
14	Vial 84	2007910008		CLO4-AQN	1	Sample		
15	Vial 71	700533	CCV@25	CLO4-AQN	1	Ctrl Samp		
16	Vial 85	2007910009		CLO4-AQN	1	Sample		
17	Vial 86	2007910010		CLO4-AQN	1	Sample		
18	Vial 87	2007910011		CLO4-AQN	1	Sample		
19	Vial 88	2007910012		CLO4-AQN	1	Sample		
20	Vial 71	700534	CCV@25	CLO4-AQN	1	Ctrl Samp		

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD01.D Sample Name: 700526 CCV@25

Injection Date:	3/23/2020 08:21:16	Seq Line:	1
Sample Name:	700526 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD01.D Sample Name: 700526 CCV@25

Injection Date:	3/23/2020 08:21:16	Seq Line:	1
Sample Name:	700526 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.490	PBA	1346986.3	24.7898	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.505	PBA	430772.4	25.8901	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.499	PBA	185823.1	5.0000	CLO4-89-ISTD

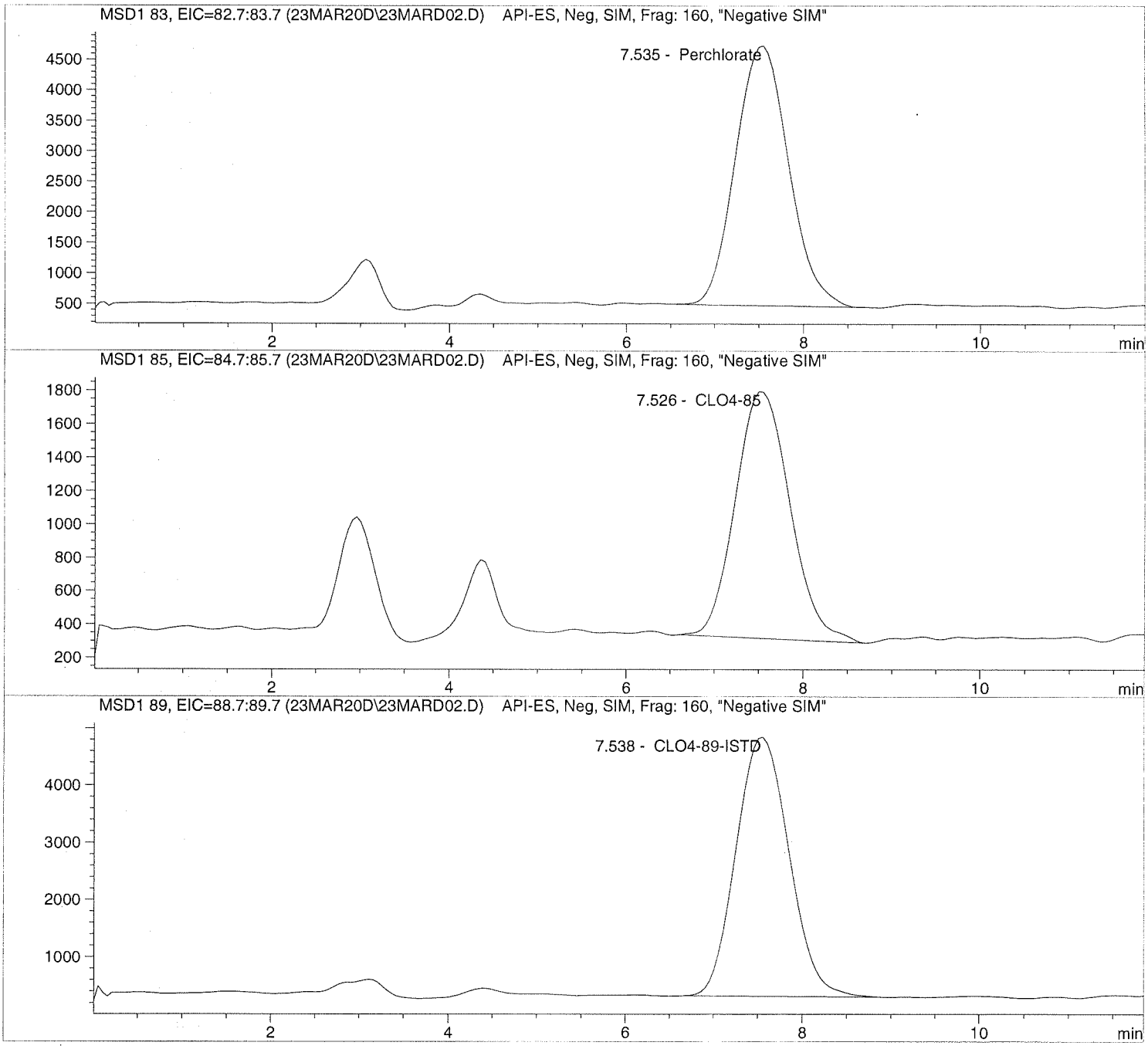
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD02.D Sample Name: 700527 LCS@3.

Injection Date:	3/23/2020 08:35:13	Seq Line:	2
Sample Name:	700527 LCS@3.	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD02.D Sample Name: 700527 LCS@3.

Injection Date:	3/23/2020 08:35:13	Seq Line:	2
Sample Name:	700527 LCS@3.	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	3.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.535	BBA	176919.4	3.4786	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.526	PBA	63282.6	3.9905	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.538	PBA	187417.9	5.0000	CLO4-89-ISTD

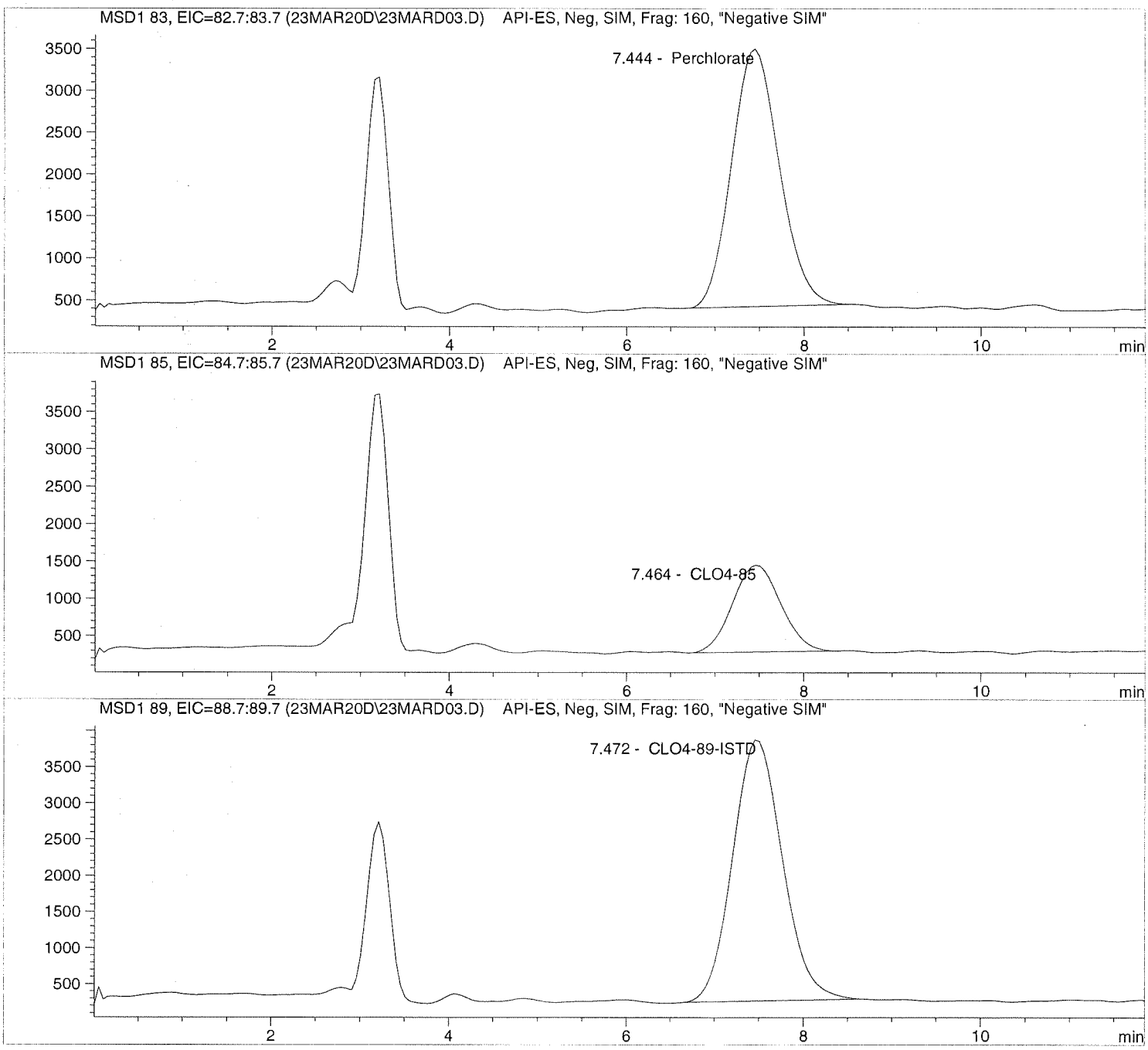
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD03.D Sample Name: 700529 ICS@3.0

Injection Date:	3/23/2020 08:49:13	Seq Line:	3
Sample Name:	700529 ICS@3.0	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD03.D Sample Name: 700529 ICS@3.0

Injection Date:	3/23/2020 08:49:13	Seq Line:	3
Sample Name:	700529 ICS@3.0	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	3.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.444	PBA	115213.8	3.0022	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.464	PBA	43924.6	3.6686	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.472	PBA	141203.3	5.0000	CLO4-89-ISTD

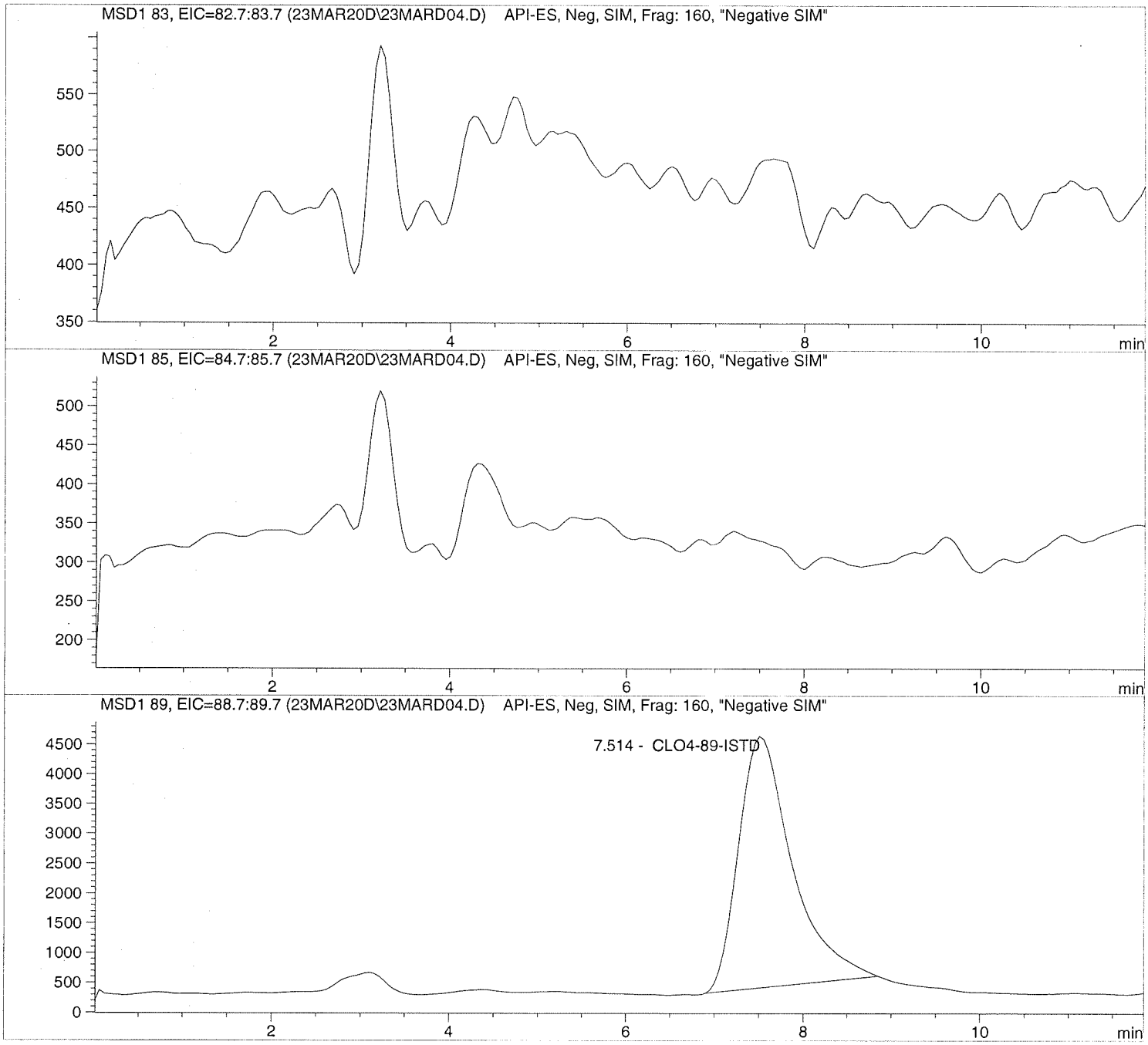
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD04.D Sample Name: 700530 LMB

Injection Date:	3/23/2020 09:03:21	Seq Line:	4
Sample Name:	700530 LMB	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD04.D Sample Name: 700530 LMB

Injection Date:	3/23/2020 09:03:21	Seq Line:	4
Sample Name:	700530 LMB	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.514	PBA	177924.0	5.0000	CLO4-89-ISTD

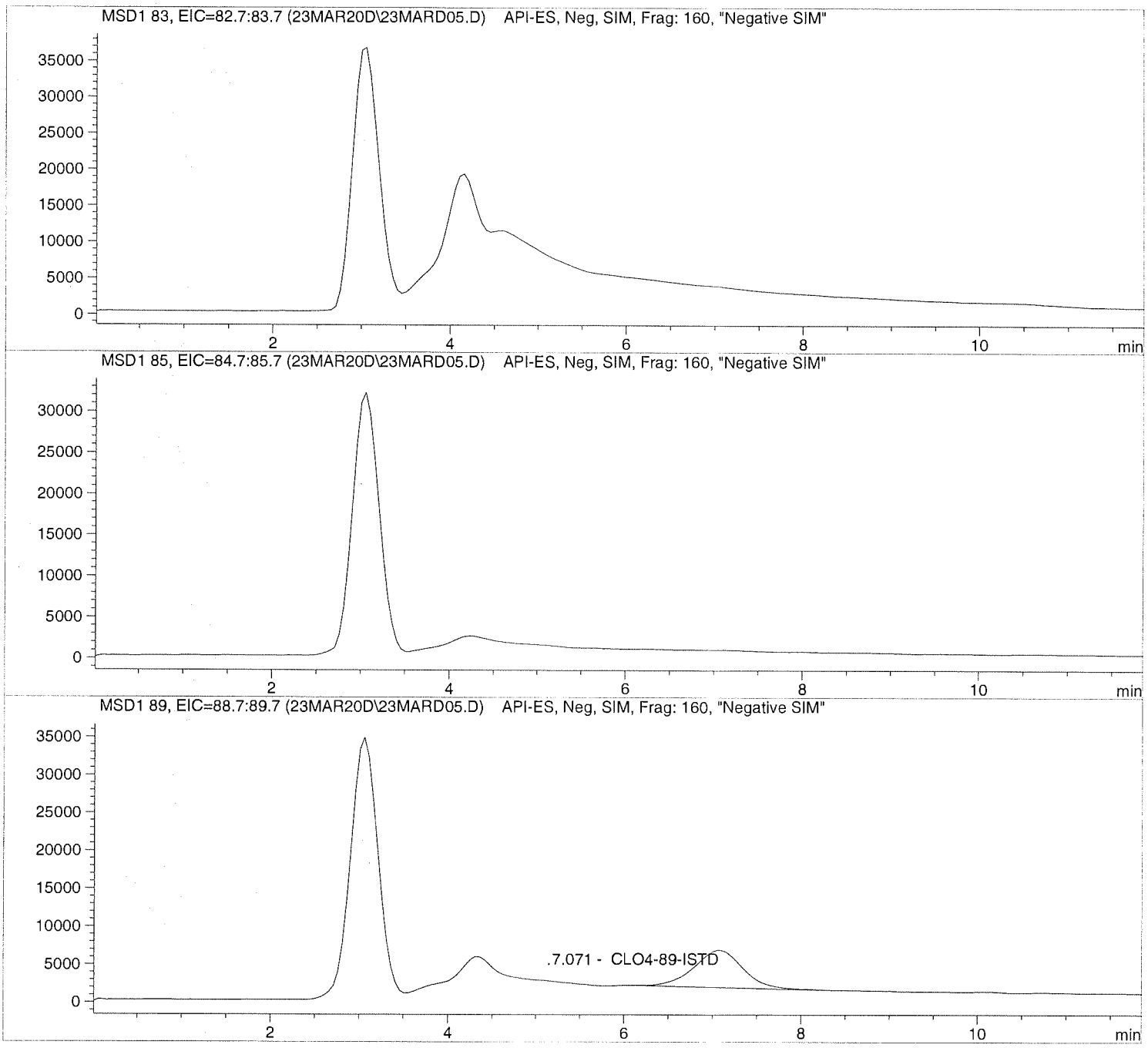
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD05.D Sample Name: 2007910001

Injection Date:	3/23/2020 09:17:21	Seq Line:	5
Sample Name:	2007910001	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD05.D Sample Name: 2007910001

Injection Date:	3/23/2020 09:17:21	Seq Line:	5
Sample Name:	2007910001	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.071	BBA	190669.0	5.0000	CLO4-89-ISTD

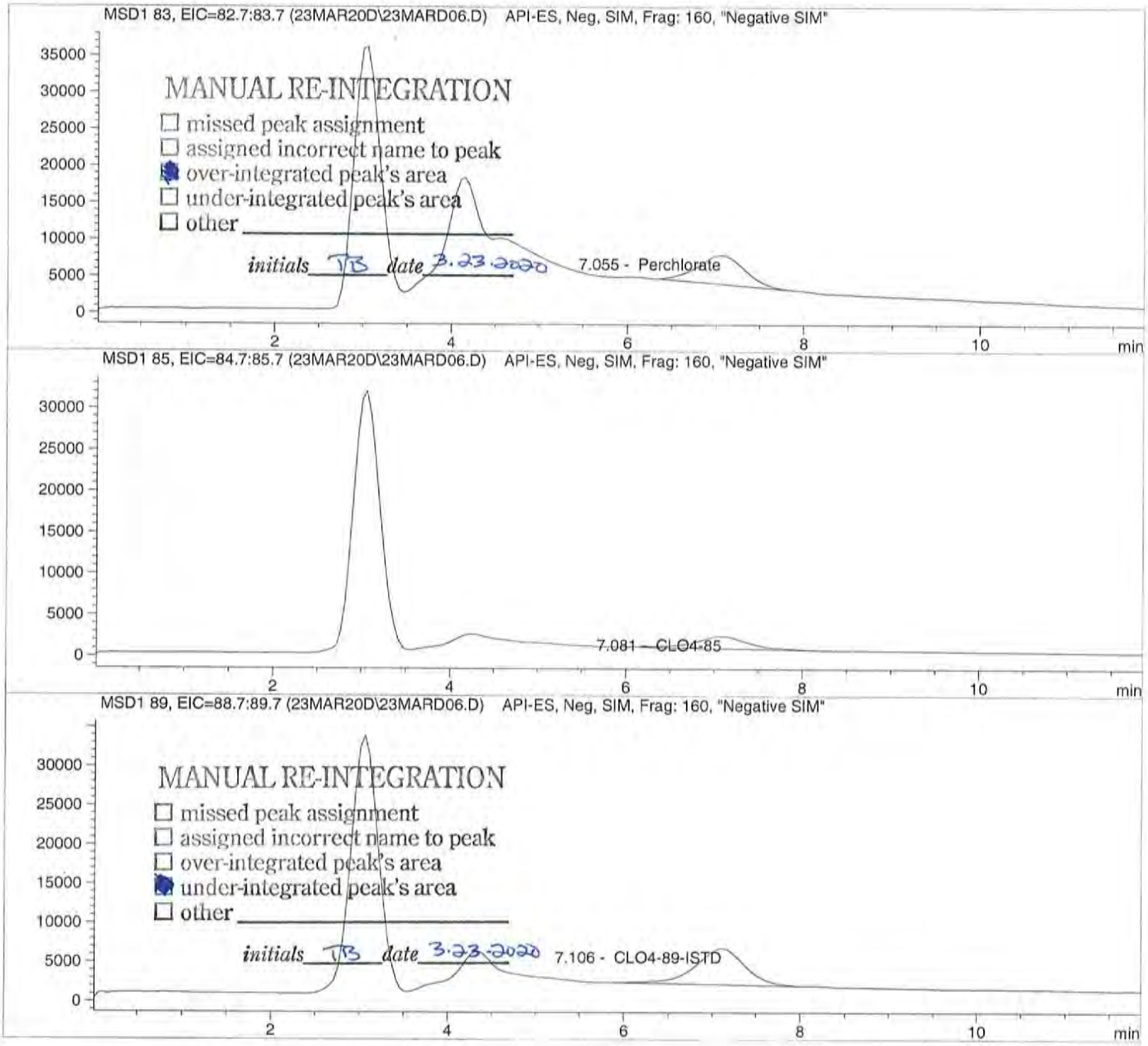
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD06.D Sample Name: 700531 79101MS

Injection Date:	3/23/2020 09:31:23	Seq Line:	6
Sample Name:	700531 79101MS	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD06.D Sample Name: 700531 79101MS

Injection Date:	3/23/2020 09:31:23	Seq Line:	6
Sample Name:	700531 79101MS	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.055	MM	147107.5	2.9986	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.081	BBA	60755.2	3.9775	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.106	MM	180505.4	5.0000	CLO4-89-ISTD

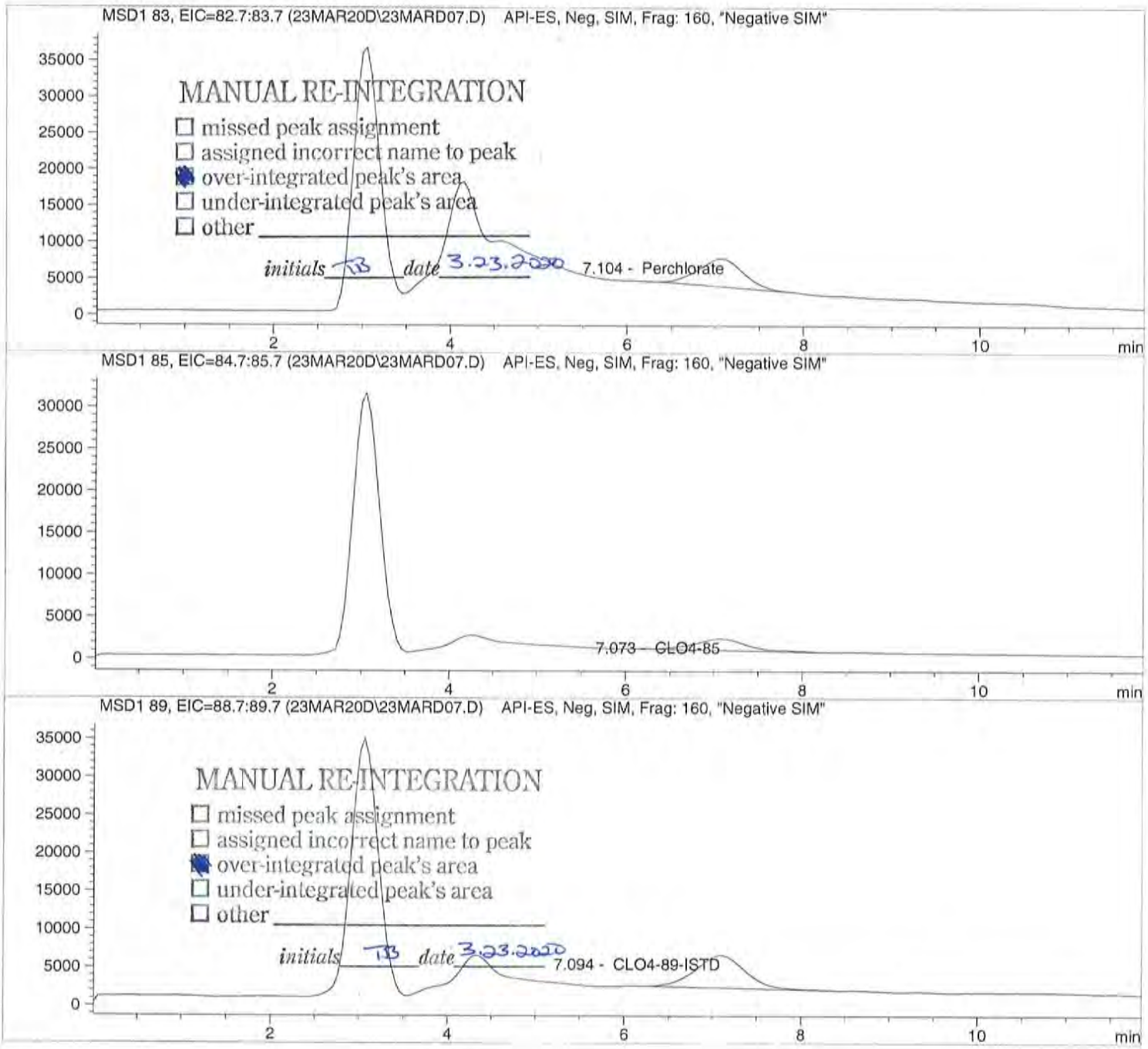
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD07.D Sample Name: 700532 79101SD

Injection Date:	3/23/2020 09:45:23	Seq Line:	7
Sample Name:	700532 79101SD	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD07.D Sample Name: 700532 79101SD

Injection Date:	3/23/2020 09:45:23	Seq Line:	7
Sample Name:	700532 79101SD	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.104	MM	136266.6	2.9776	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.073	PBA	57104.1	4.0087	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.094	MM	168368.7	5.0000	CLO4-89-ISTD

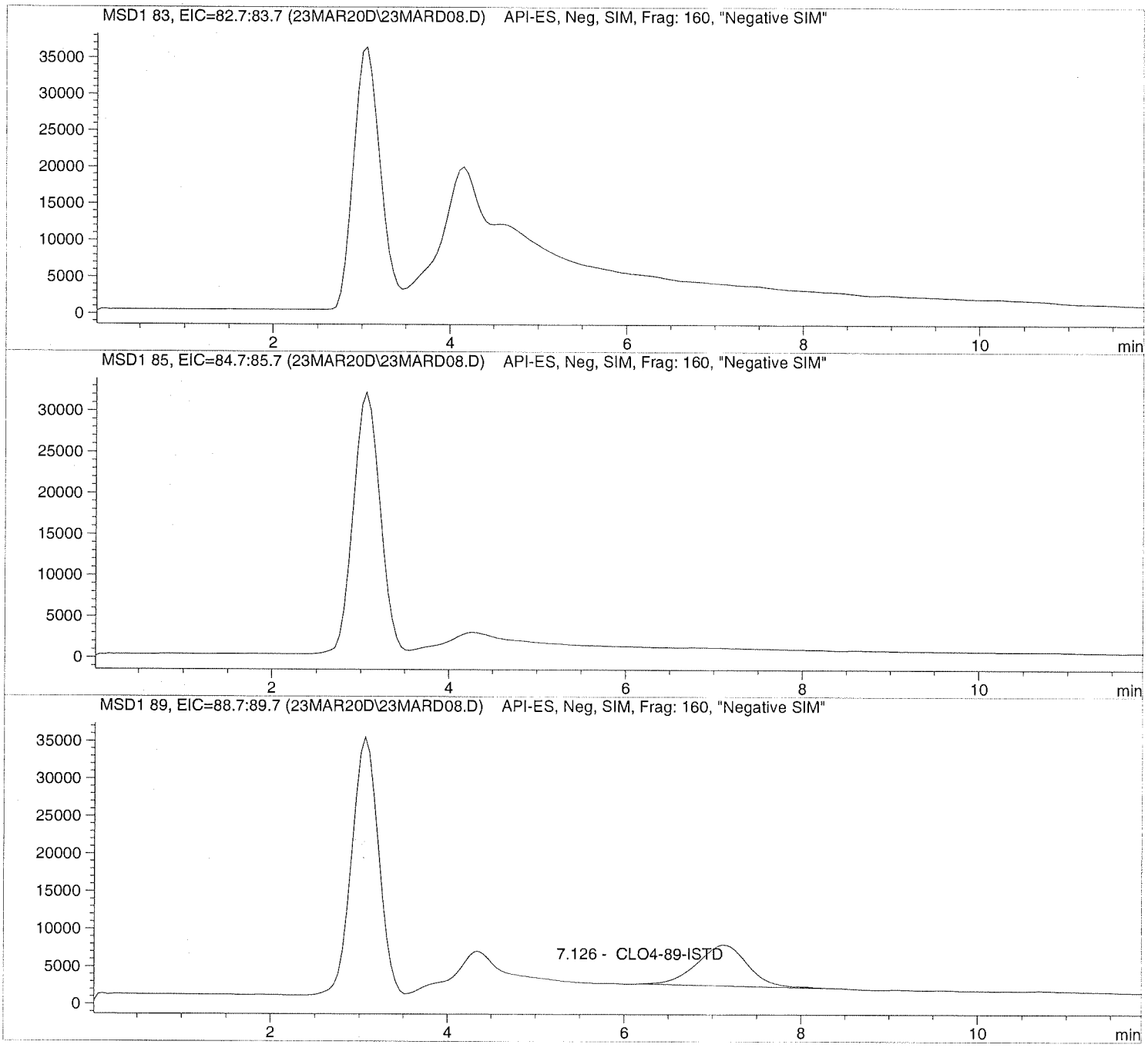
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD08.D Sample Name: 2007910002

Injection Date:	3/23/2020 09:59:24	Seq Line:	8
Sample Name:	2007910002	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD08.D Sample Name: 2007910002

Injection Date:	3/23/2020 09:59:24	Seq Line:	8
Sample Name:	2007910002	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.126	BBA	218764.3	5.0000	CLO4-89-ISTD

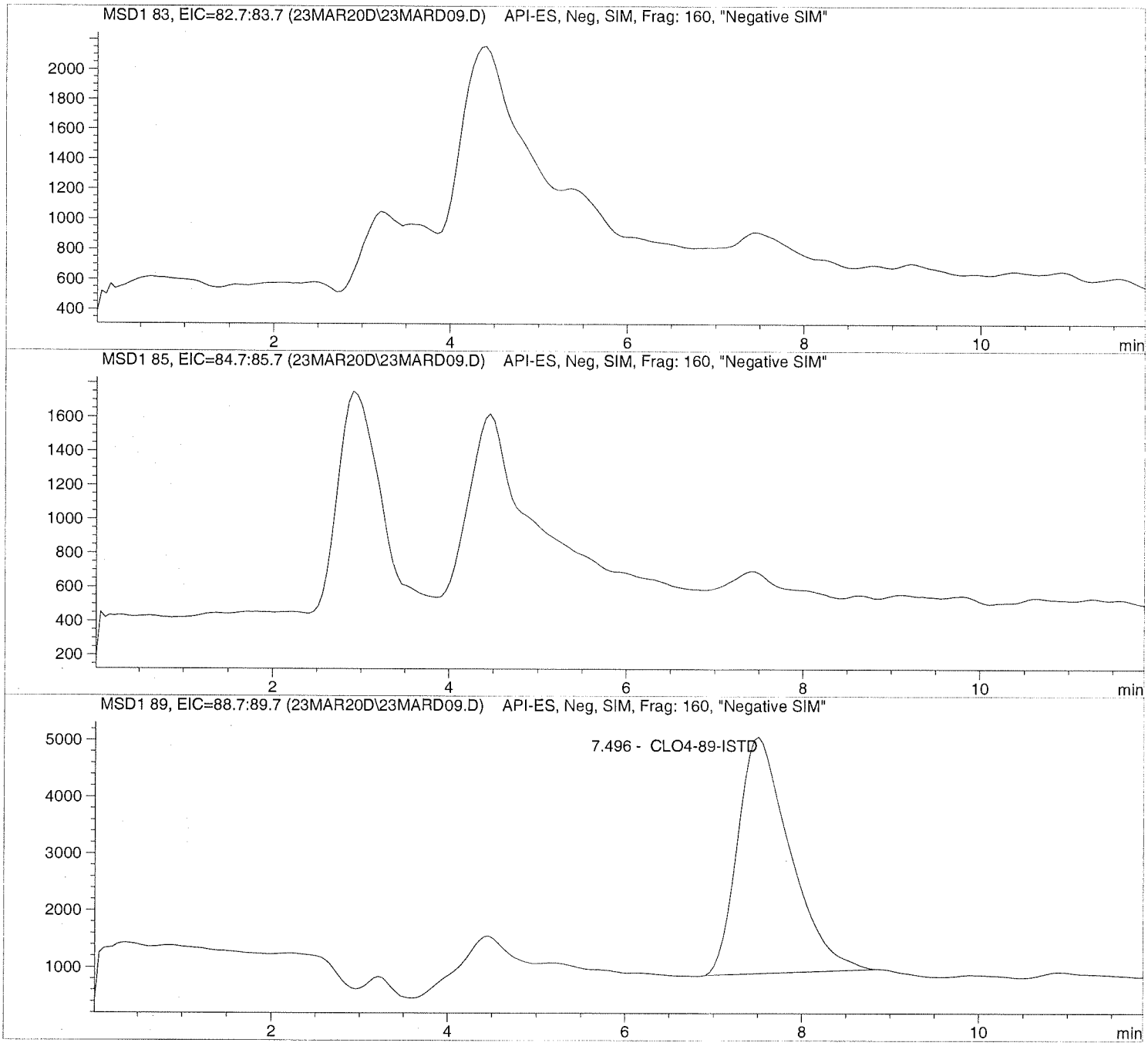
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD09.D Sample Name: 2007910003

Injection Date:	3/23/2020 10:13:23	Seq Line:	9
Sample Name:	2007910003	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD09.D Sample Name: 2007910003

Injection Date:	3/23/2020 10:13:23	Seq Line:	9
Sample Name:	2007910003	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.496	PBA	171963.5	5.0000	CLO4-89-ISTD

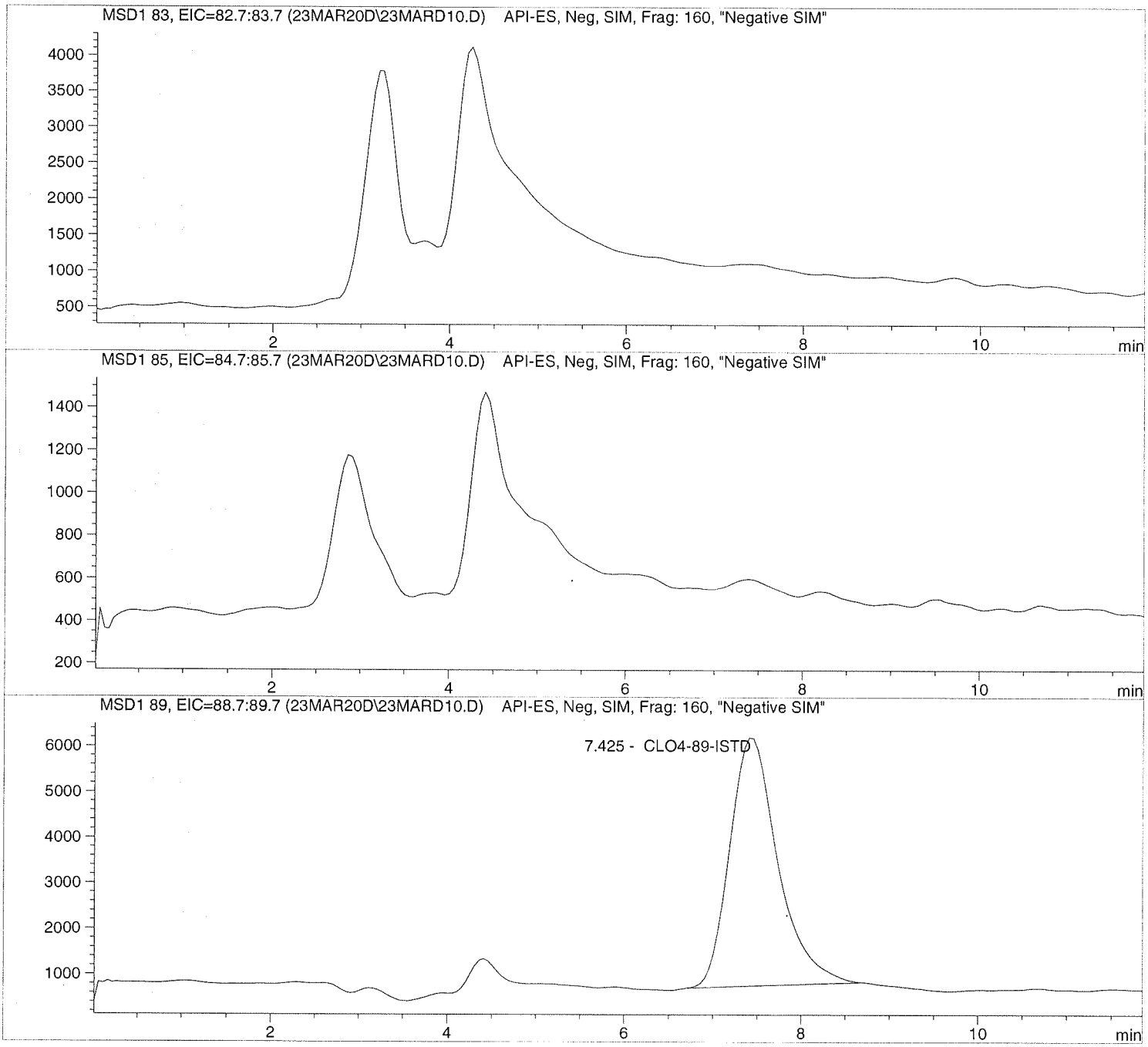
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD10.D Sample Name: 2007910004

Injection Date:	3/23/2020 10:27:23	Seq Line:	10
Sample Name:	2007910004	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD10.D Sample Name: 2007910004

Injection Date:	3/23/2020 10:27:23	Seq Line:	10
Sample Name:	2007910004	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.425	PBA	207471.4	5.0000	CLO4-89-ISTD

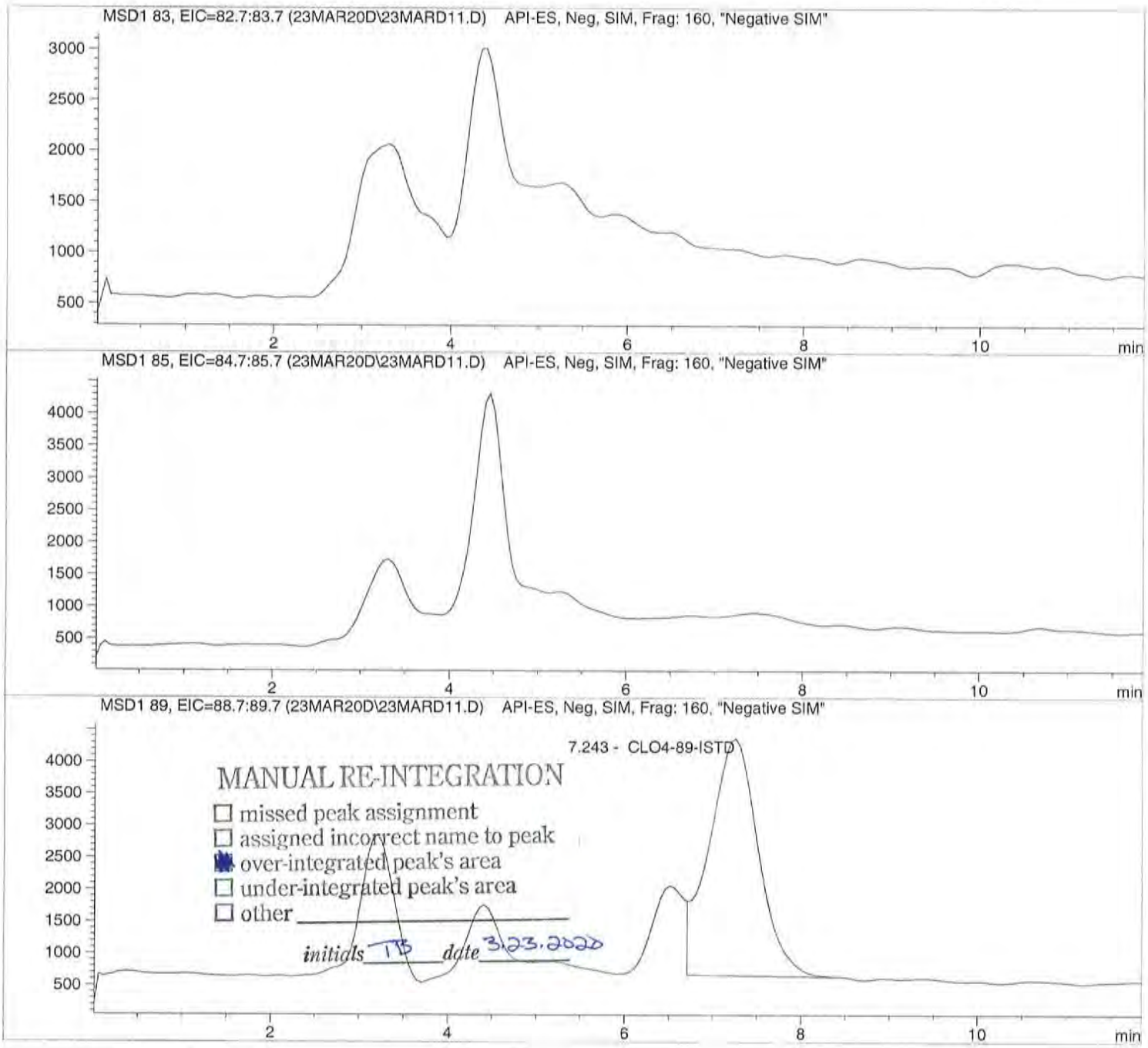
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD11.D Sample Name: 2007910005

Injection Date:	3/23/2020 10:41:21	Seq Line:	11
Sample Name:	2007910005	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD11.D Sample Name: 2007910005

Injection Date:	3/23/2020 10:41:21	Seq Line:	11
Sample Name:	2007910005	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.243	FM	143463.9	5.0000	CLO4-89-ISTD

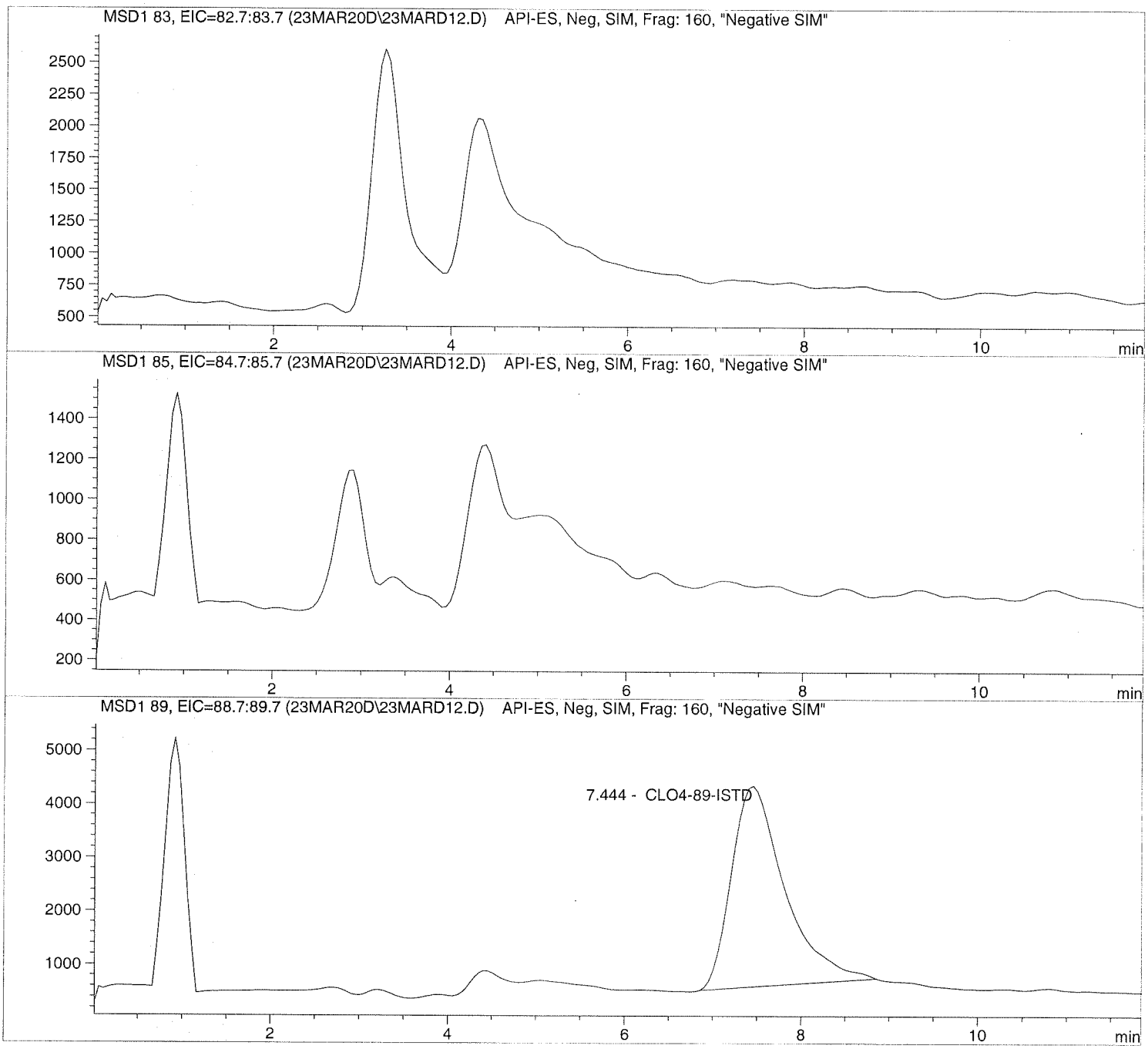
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD12.D Sample Name: 2007910006

Injection Date:	3/23/2020 10:55:18	Seq Line:	12
Sample Name:	2007910006	Location:	Vial 82
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD12.D Sample Name: 2007910006

Injection Date:	3/23/2020 10:55:18	Seq Line:	12
Sample Name:	2007910006	Location:	Vial 82
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.444	PBA	157887.6	5.0000	CLO4-89-ISTD

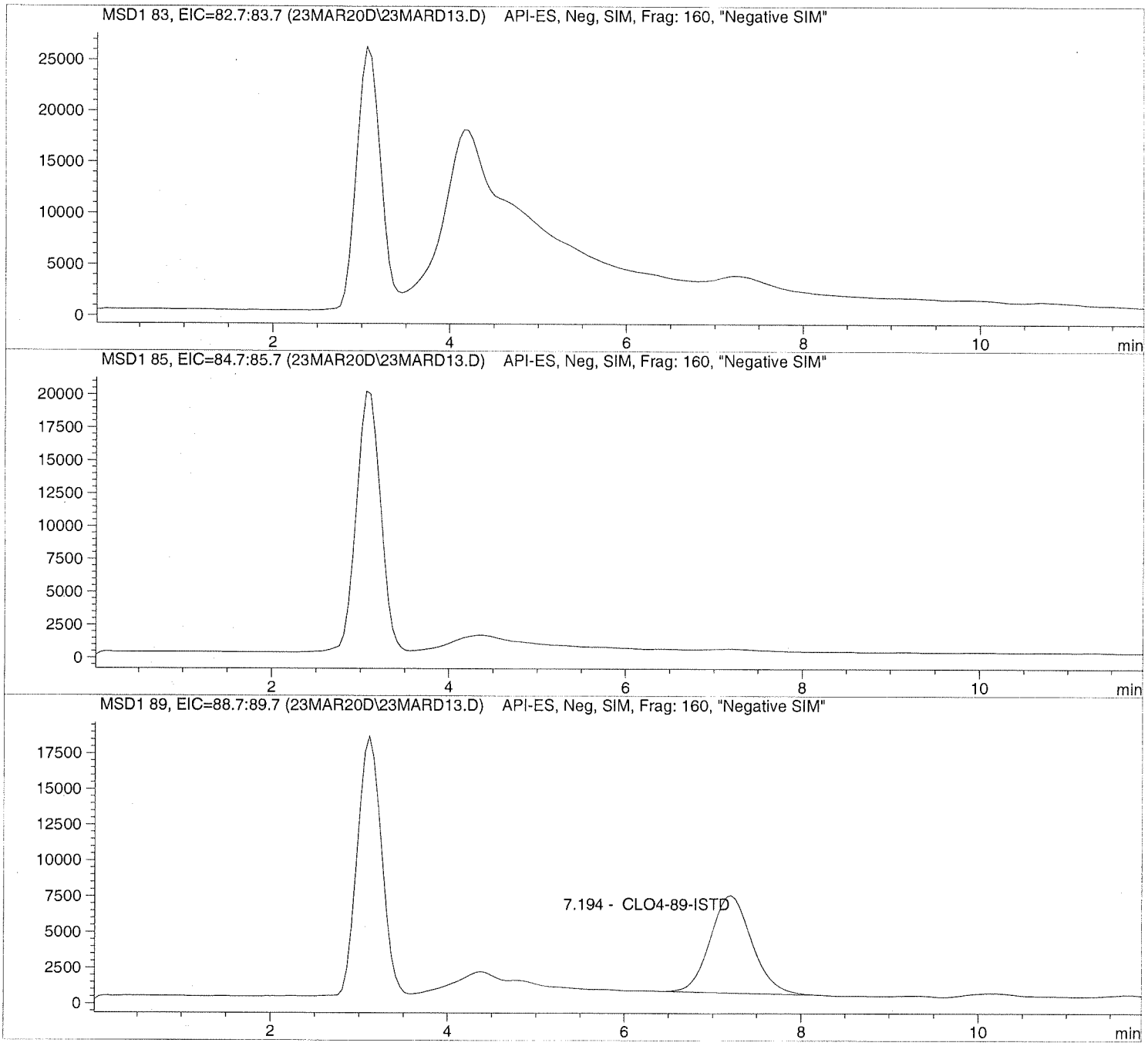
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD13.D Sample Name: 2007910007

Injection Date:	3/23/2020 11:09:16	Seq Line:	13
Sample Name:	2007910007	Location:	Vial 83
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD13.D Sample Name: 2007910007

Injection Date:	3/23/2020 11:09:16	Seq Line:	13
Sample Name:	2007910007	Location:	Vial 83
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.194	PBA	223006.3	5.0000	CLO4-89-ISTD

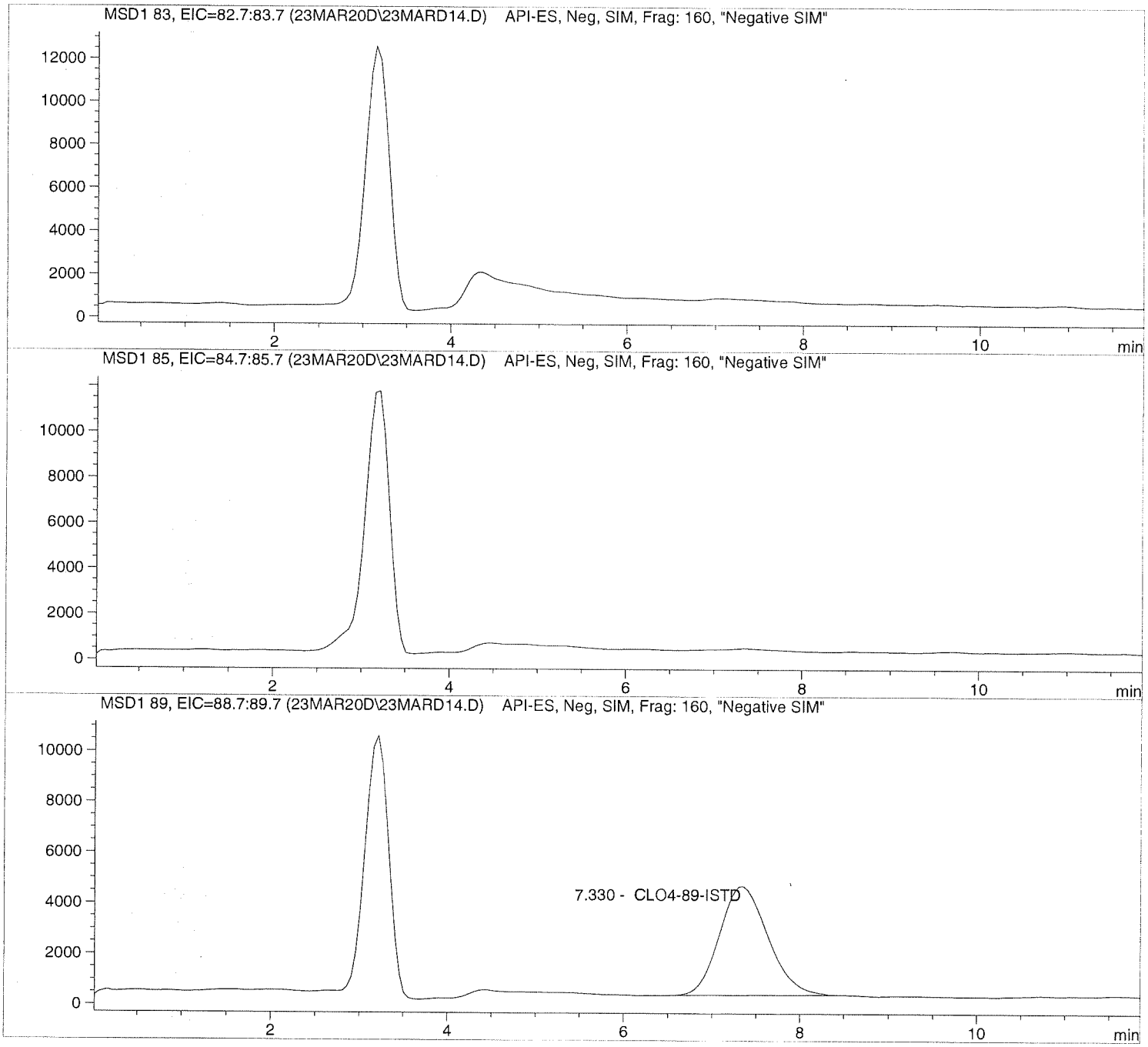
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD14.D Sample Name: 2007910008

Injection Date:	3/23/2020 11:23:15	Seq Line:	14
Sample Name:	2007910008	Location:	Vial 84
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD14.D Sample Name: 2007910008

Injection Date:	3/23/2020 11:23:15	Seq Line:	14
Sample Name:	2007910008	Location:	Vial 84
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.330	PBA	164292.7	5.0000	CLO4-89-ISTD

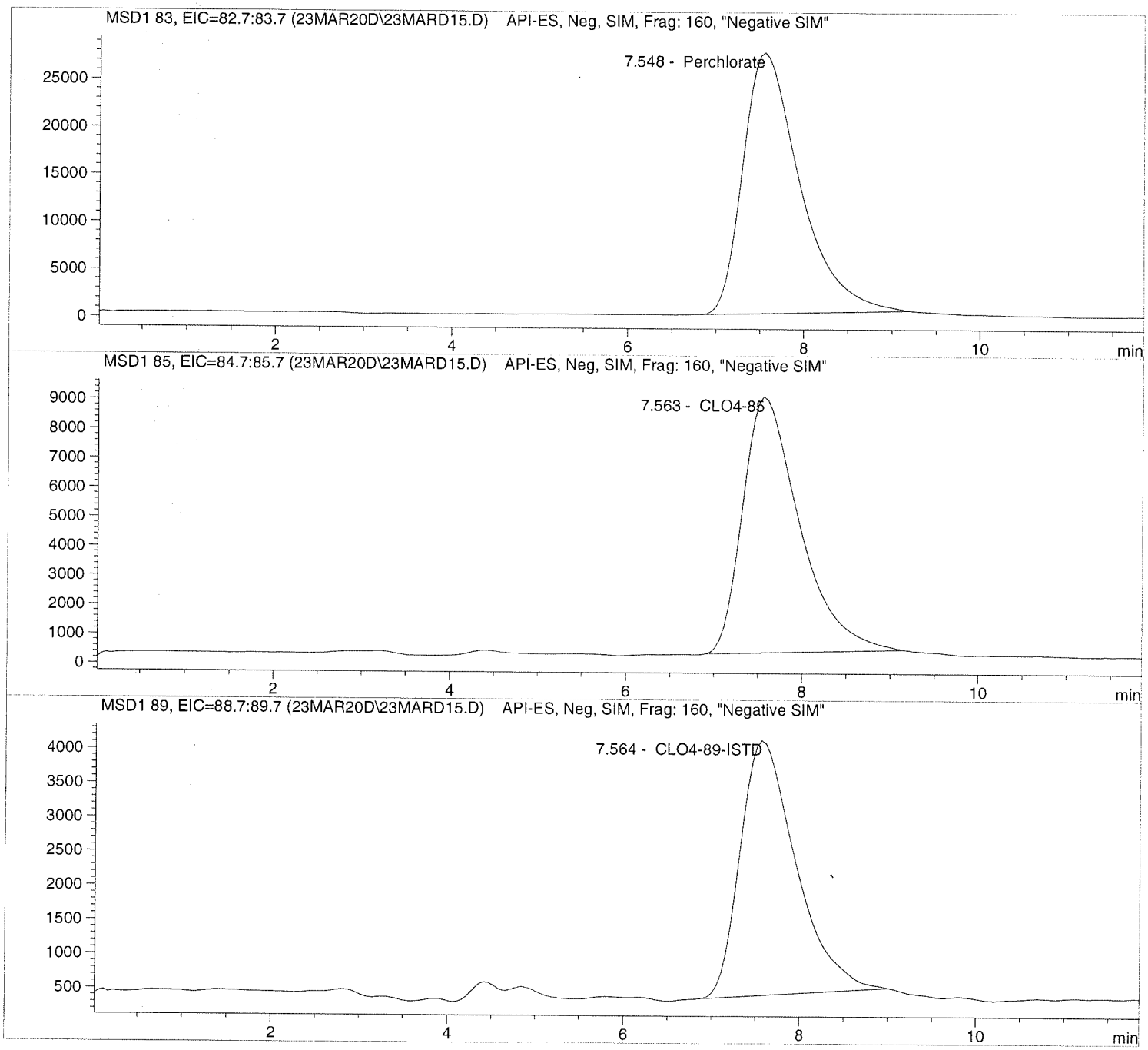
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD15.D Sample Name: 700533 CCV@25

Injection Date:	3/23/2020 11:37:13	Seq Line:	15
Sample Name:	700533 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD15.D Sample Name: 700533 CCV@25

Injection Date:	3/23/2020 11:37:13	Seq Line:	15
Sample Name:	700533 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.548	PBA	1239352.8	25.6652	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.563	BBA	393436.2	26.6298	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.564	PBA	164548.0	5.0000	CLO4-89-ISTD

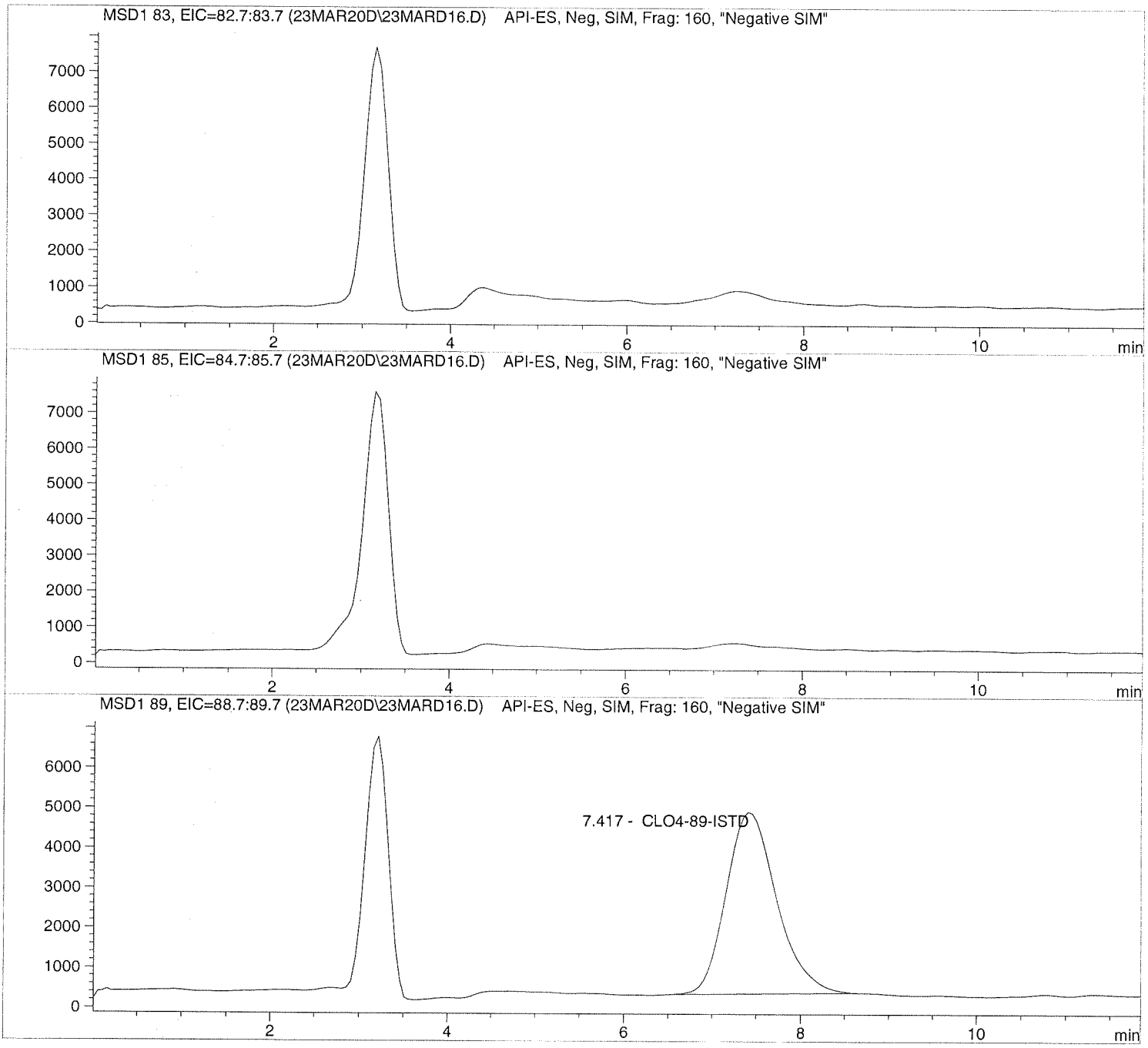
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD16.D Sample Name: 2007910009

Injection Date:	3/23/2020 11:51:13	Seq Line:	16
Sample Name:	2007910009	Location:	Vial 85
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD16.D Sample Name: 2007910009

Injection Date:	3/23/2020 11:51:13	Seq Line:	16
Sample Name:	2007910009	Location:	Vial 85
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.417	BBA	180860.0	5.0000	CLO4-89-ISTD

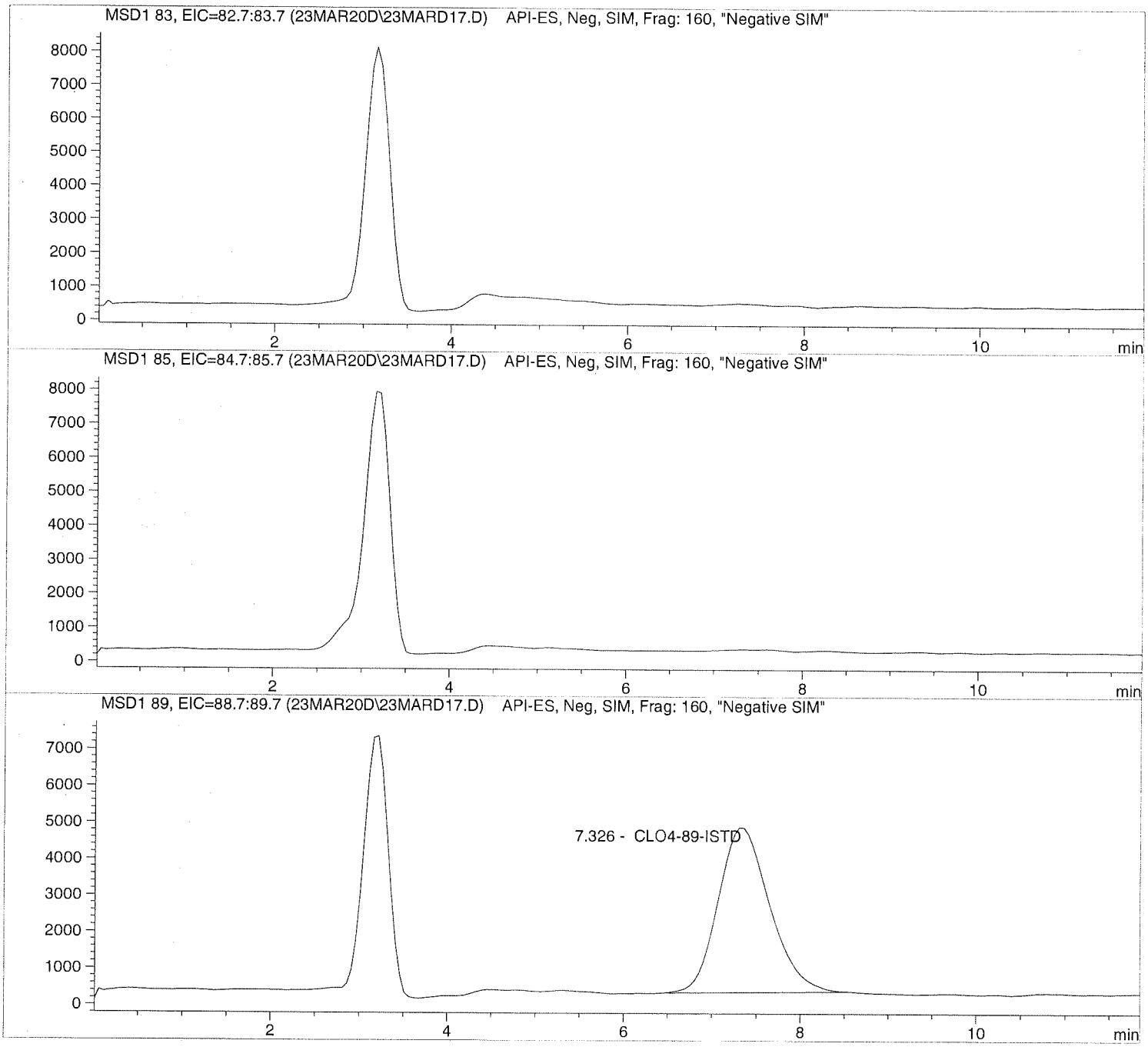
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD17.D Sample Name: 2007910010

Injection Date:	3/23/2020 12:05:10	Seq Line:	17
Sample Name:	2007910010	Location:	Vial 86
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD17.D Sample Name: 2007910010

Injection Date:	3/23/2020 12:05:10	Seq Line:	17
Sample Name:	2007910010	Location:	Vial 86
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.326	PBA	182823.0	5.0000	CLO4-89-ISTD

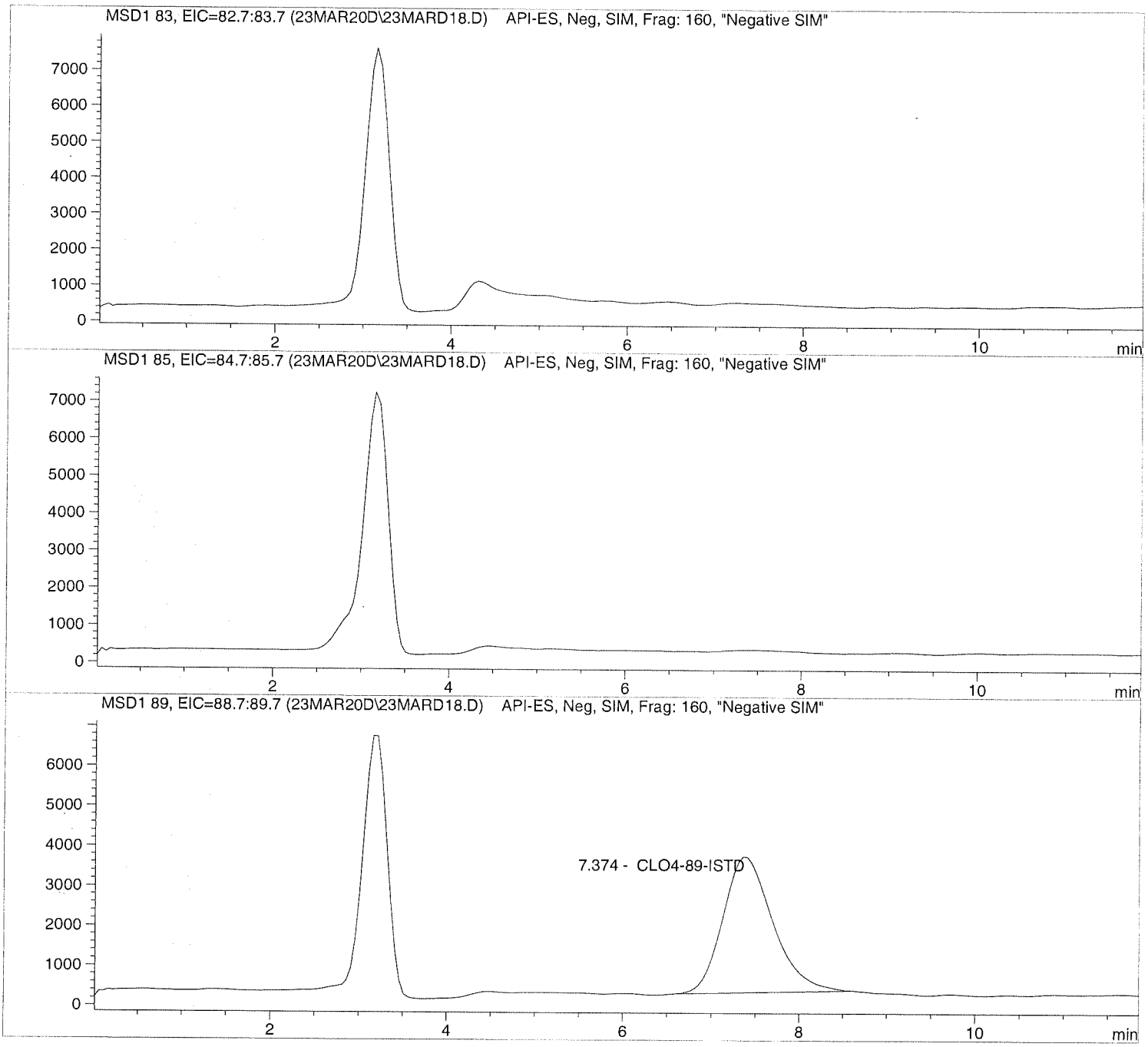
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD18.D Sample Name: 2007910011

Injection Date:	3/23/2020 12:19:08	Seq Line:	18
Sample Name:	2007910011	Location:	Vial 87
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD18.D Sample Name: 2007910011

Injection Date:	3/23/2020 12:19:08	Seq Line:	18
Sample Name:	2007910011	Location:	Vial 87
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.374	PBA	135148.7	5.0000	CLO4-89-ISTD

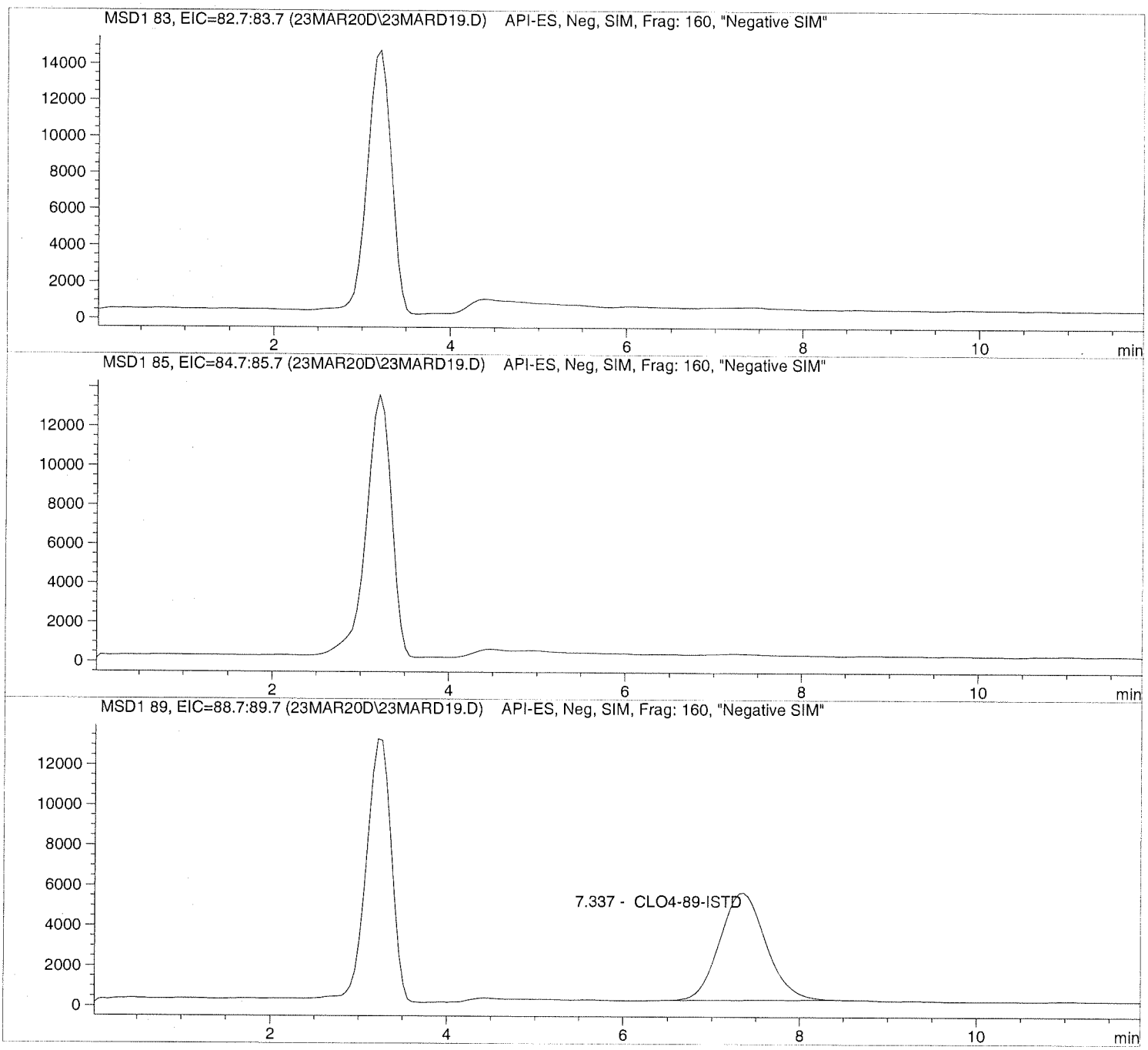
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD19.D Sample Name: 2007910012

Injection Date:	3/23/2020 12:33:07	Seq Line:	19
Sample Name:	2007910012	Location:	Vial 88
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD19.D Sample Name: 2007910012

Injection Date:	3/23/2020 12:33:07	Seq Line:	19
Sample Name:	2007910012	Location:	Vial 88
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.337	BBA	195970.8	5.0000	CLO4-89-ISTD

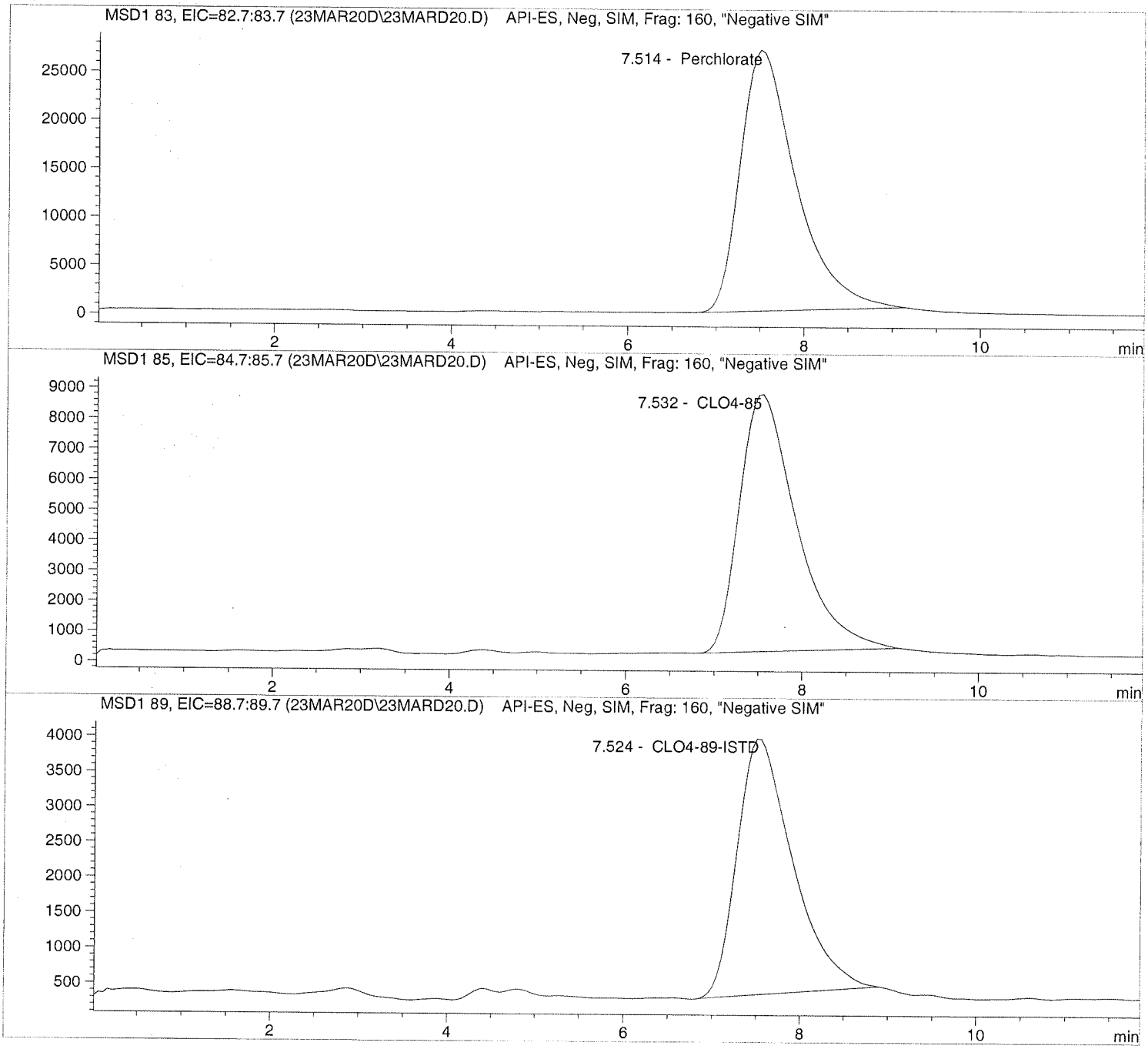
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD20.D Sample Name: 700534 CCV@25

Injection Date:	3/23/2020 12:47:39	Seq Line:	20
Sample Name:	700534 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD20.D Sample Name: 700534 CCV@25

Injection Date:	3/23/2020 12:47:39	Seq Line:	20
Sample Name:	700534 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.514	PBA	1185898.6	25.3979	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.532	PBA	381580.9	26.6763	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.524	PBA	159283.8	5.0000	CLO4-89-ISTD

*** End of Report ***

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

Initial Calibration

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

Calibration Table

Perchlorate

Calib. Data Modified : 9/23/2019 12:20:59 PM

Calculate : Internal Standard
Based on : Peak Area

Rel. Reference Window : 20.000 %
Abs. Reference Window : 0.000 min
Rel. Non-ref. Window : 20.000 %
Abs. Non-ref. Window : 0.000 min
Use Multiplier & Dilution Factor with ISTDs
Uncalibrated Peaks : not reported
Partial Calibration : No recalibration if peaks missing

Curve Type : Quadratic (some peaks differ, see below)
Origin : Ignored (some peaks differ, see below)
Weight : Linear (Amnt) (some peaks differ, see below)

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Default Sample ISTD Information (if not set in sample table):

ISTD #	ISTD Amount	Name
1	5.00000	CLO4-89-ISTD

Signal 1: MSD1 83, EIC=82.7:83.7
Signal 2: MSD1 85, EIC=84.7:85.7
Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Lvl Sig		Amount	Area	Amt/Area	Ref	Grp	Name
7.750	1	3	1.00000	5.39218e4	1.85454e-5		1	Perchlorate
		4	2.00000	1.32825e5	1.50574e-5			
		5	5.00000	2.76271e5	1.80982e-5			
		6	10.00000	5.61298e5	1.78159e-5			
		7	25.00000	1.51820e6	1.64669e-5			
		8	50.00000	3.31156e6	1.50986e-5			
		9	75.00000	5.23914e6	1.43153e-5			
7.767	3	3	5.00000	2.14568e5	2.33026e-5	+I1		CLO4-89-ISTD
		4	5.00000	2.04758e5	2.44190e-5			
		5	5.00000	2.13407e5	2.34294e-5			
		6	5.00000	2.09246e5	2.38953e-5			
		7	5.00000	2.07403e5	2.41077e-5			
		8	5.00000	2.02929e5	2.46391e-5			
		9	5.00000	1.97933e5	2.52611e-5			
7.778	2	3	1.00000	1.70436e4	5.86732e-5		1	CLO4-85
		4	2.00000	4.20754e4	4.75337e-5			
		5	5.00000	9.24707e4	5.40712e-5			
		6	10.00000	1.68622e5	5.93041e-5			
		7	25.00000	4.63724e5	5.39114e-5			
		8	50.00000	9.95933e5	5.02042e-5			

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

RetTime [min]	Sig	Lvl	Amount	Area	Amt/Area	Ref	Grp	Name
		9	75.00000	1.58066e6	4.74484e-5			

More compound-specific settings:

Compound: Perchlorate
- Time Window : From 3.581 min To 11.899 min
- Curve Type : Quadratic
- Origin : Ignored
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 0.5
  - Level 5 : 0.2
  - Level 6 : 0.1
  - Level 7 : 0.04
  - Level 8 : 0.02
  - Level 9 : 0.013333

Compound: CLO4-89-ISTD
- Time Window : From 3.581 min To 11.896 min
- Curve Type : Linear
- Origin : Included
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 1
  - Level 5 : 1
  - Level 6 : 1
  - Level 7 : 1
  - Level 8 : 1
  - Level 9 : 1

Compound: CLO4-85
- Time Window : From 3.601 min To 11.913 min
- Curve Type : Quadratic
- Origin : Ignored
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 0.5
  - Level 5 : 0.2
  - Level 6 : 0.1
  - Level 7 : 0.04
  - Level 8 : 0.02
  - Level 9 : 0.013333

Peak Sum Table

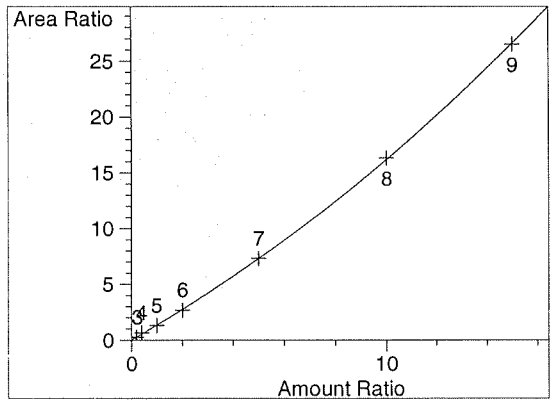
No Entries in table

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

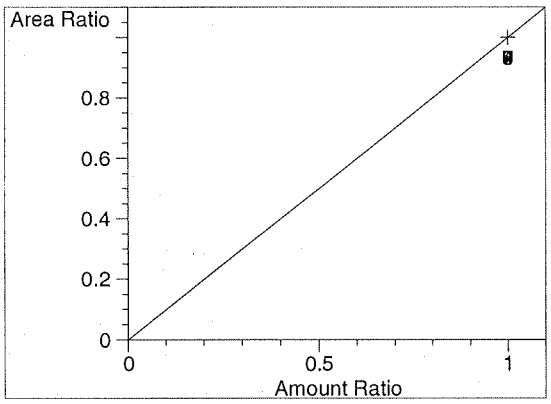
==========

Calibration Curves

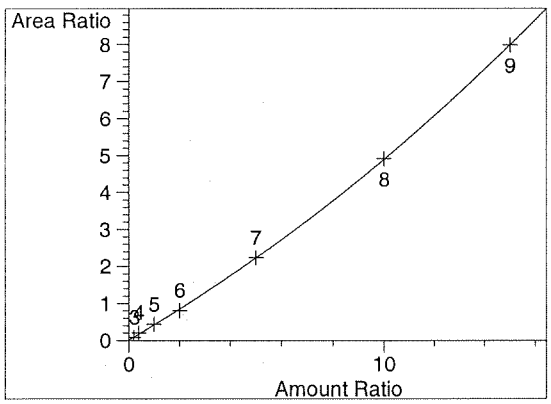
==========



Perchlorate at exp. RT: 7.750
MSD1 83, EIC=82.7:83.7
Correlation: 0.99975
Residual Std. Dev.: 0.10284
Formula: $y = ax^2 + bx + c$
a: 3.10463e-2
b: 1.30369
c: 2.19496e-2
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 0.5
Level 5 : 0.2
Level 6 : 0.1
Level 7 : 0.04
Level 8 : 0.02
Level 9 : 0.013333



CLO4-89-ISTD at exp. RT: 7.767
MSD1 89, EIC=88.7:89.7
Correlation: 1.00000
Residual Std. Dev.: 0.00000
Formula: $y = mx + b$
m: 1.00000
b: 0.00000
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 1
Level 5 : 1
Level 6 : 1
Level 7 : 1
Level 8 : 1
Level 9 : 1



CLO4-85 at exp. RT: 7.778
MSD1 85, EIC=84.7:85.7
Correlation: 0.99969
Residual Std. Dev.: 0.02601
Formula: $y = ax^2 + bx + c$
a: 8.85207e-3
b: 3.99283e-1
c: 1.33505e-2
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 0.5
Level 5 : 0.2
Level 6 : 0.1
Level 7 : 0.04
Level 8 : 0.02
Level 9 : 0.013333

==========

Batch Report: C:\HPCHEM\1\DATA\20SEP19I\20SEP19D.B

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DP3.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorat RT	Perchlorate Amount
#*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	5.39218e4	7.750	8.75982e-1
#*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	1.32825e5	7.797	2.37682
#*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	2.76271e5	7.770	4.77237
#*	CLO4@ 10.ug/L	Vial 76	1	Control	6	5.61298e5	7.785	9.75097
#*	CLO4@ 25.ug/L	Vial 77	1	Control	7	1.51820e6	7.741	25.01082
#*	CLO4@ 50.ug/L	Vial 78	1	Control	8	3.31156e6	7.775	50.40300
#*	CLO4@ 75.ug/L	Vial 79	1	Control	9	5.23914e6	7.736	74.79107
#*	ICAL Verf@10ug/L	Vial 80	1	Control	11	5.74879e5	7.756	10.11855

#	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-IS RT	CLO4-89-ISTD Amount
#*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	2.14568e5	7.767	5.00000
#*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	2.04758e5	7.816	5.00000
#*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	2.13407e5	7.793	5.00000
#*	CLO4@ 10.ug/L	Vial 76	1	Control	6	2.09246e5	7.798	5.00000
#*	CLO4@ 25.ug/L	Vial 77	1	Control	7	2.07403e5	7.763	5.00000
#*	CLO4@ 50.ug/L	Vial 78	1	Control	8	2.02929e5	7.800	5.00000
#*	CLO4@ 75.ug/L	Vial 79	1	Control	9	1.97933e5	7.765	5.00000
#*	ICAL Verf@10ug/L	Vial 80	1	Control	11	2.06243e5	7.776	5.00000

#	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
#*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	1.70436e4	7.778	8.24488e-1
#*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	4.20754e4	7.805	2.38090
#*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	9.24707e4	7.787	5.14166
#*	CLO4@ 10.ug/L	Vial 76	1	Control	6	1.68622e5	7.781	9.52209
#*	CLO4@ 25.ug/L	Vial 77	1	Control	7	4.63724e5	7.760	25.04916
#*	CLO4@ 50.ug/L	Vial 78	1	Control	8	9.95933e5	7.793	50.14223
#*	CLO4@ 75.ug/L	Vial 79	1	Control	9	1.58066e6	7.758	74.93659
#*	ICAL Verf@10ug/L	Vial 80	1	Control	11	1.71000e5	7.760	9.79043

*** End of Report ***

Sequence: C:\HPCHEM\1\SEQUENCE\CLO4\2019\SEP\20SEP19I.S

Sequence Table:

Method and Injection Info Part:

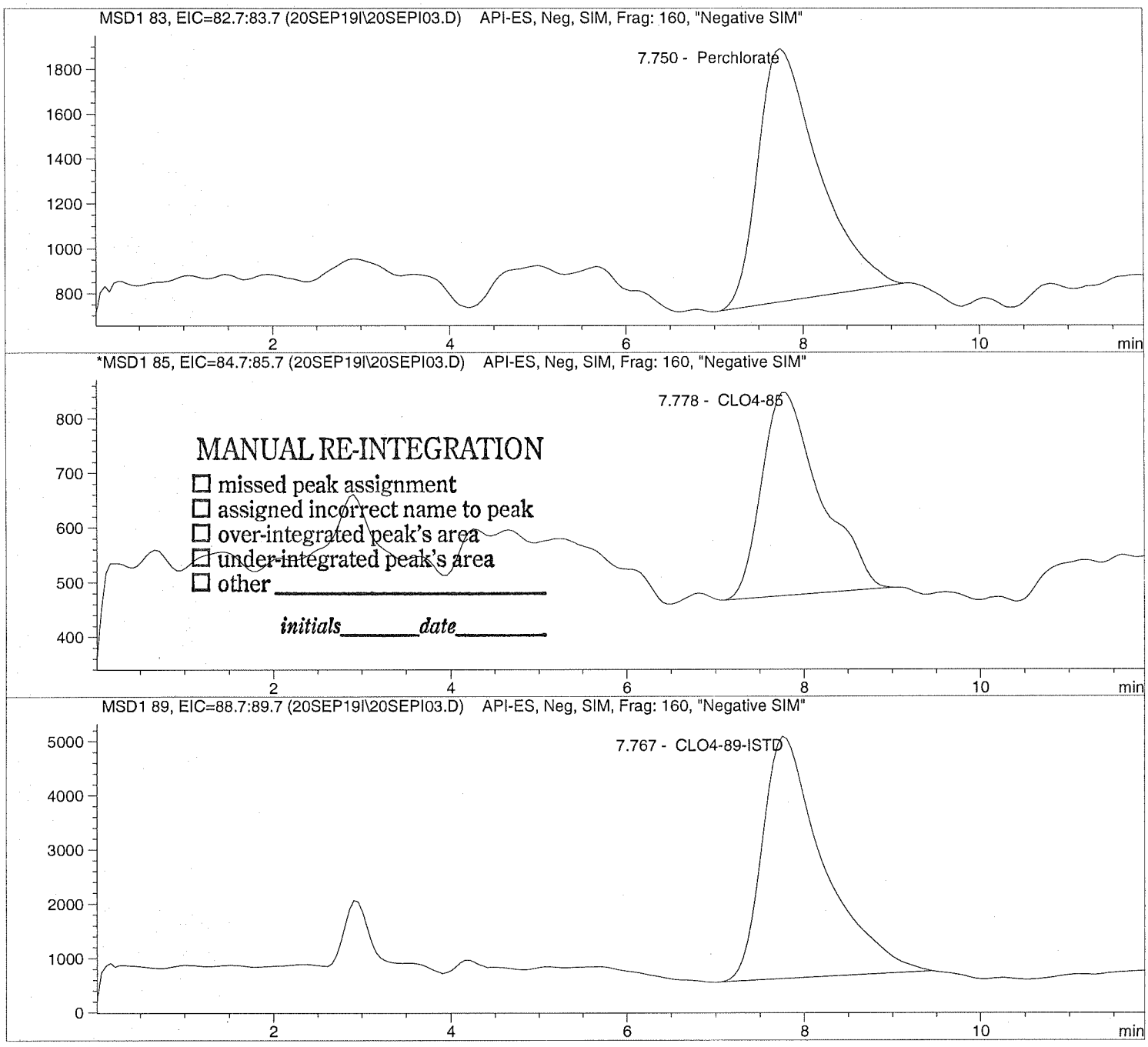
Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 71	CLO4@ 0.2ug/L	CLO4-AQN	1	Ctrl Samp		
2	Vial 72	CLO4@ 0.5ug/L	CLO4-AQN	1	Ctrl Samp		
3	Vial 73	CLO4@ 1.0ug/L	CLO4-AQN	1	Ctrl Samp		
4	Vial 74	CLO4@ 2.0ug/L	CLO4-AQN	1	Ctrl Samp		
5	Vial 75	CLO4@ 5.0ug/L	CLO4-AQN	1	Ctrl Samp		
6	Vial 76	CLO4@ 10.ug/L	CLO4-AQN	1	Ctrl Samp		
7	Vial 77	CLO4@ 25.ug/L	CLO4-AQN	1	Ctrl Samp		
8	Vial 78	CLO4@ 50.ug/L	CLO4-AQN	1	Ctrl Samp		
9	Vial 79	CLO4@ 75.ug/L	CLO4-AQN	1	Ctrl Samp		
10	Vial 71	CLO4@ 0.2ug/L	CLO4-AQN	1	Ctrl Samp		
11	Vial 80	ICAL Verf@10ug/L	CLO4-AQN	1	Ctrl Samp		

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.750	PBA	53921.8	0.8760	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.778	MM	17043.6	0.8245	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.767	PBA	214568.1	5.0000	CLO4-89-ISTD

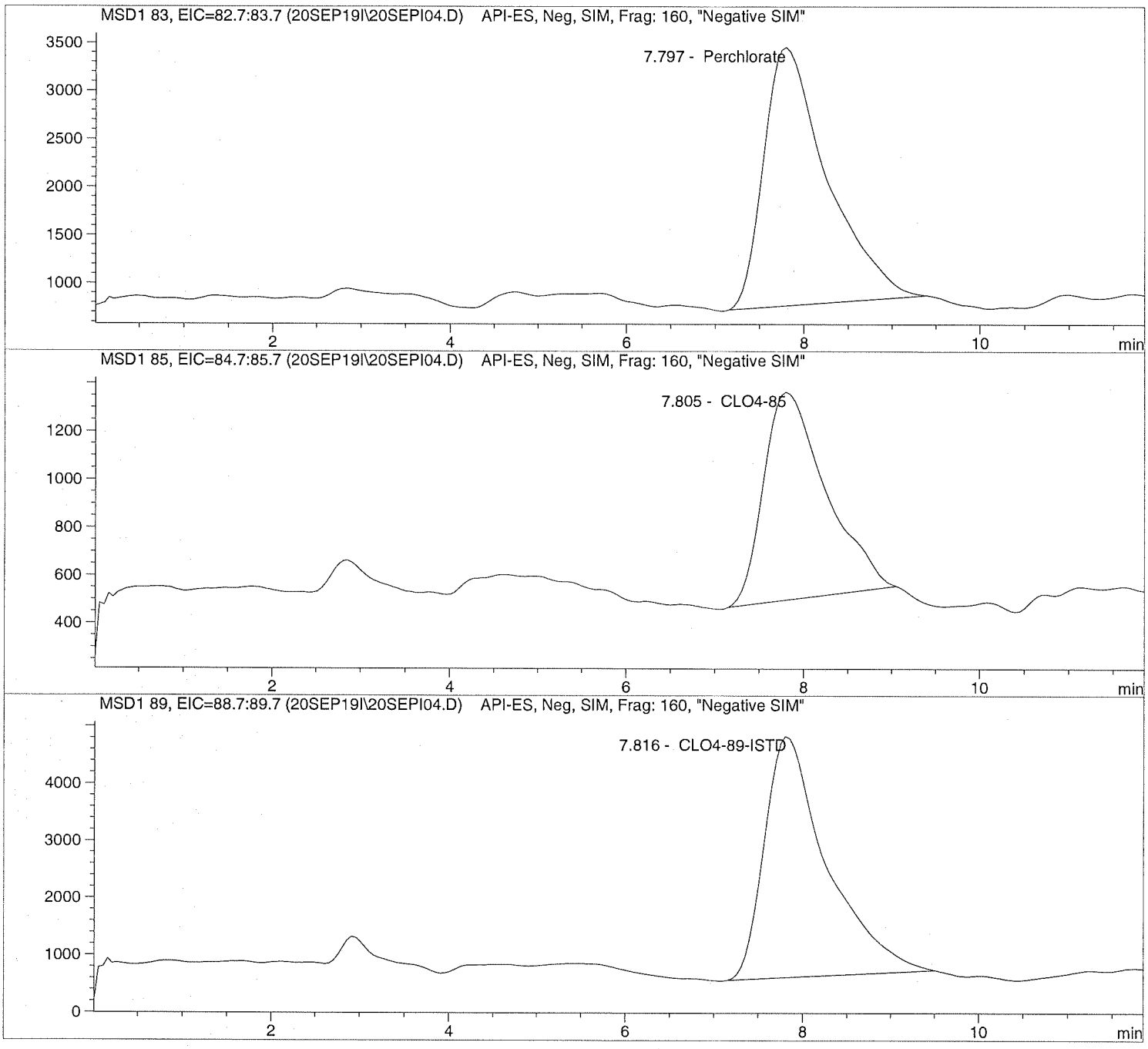
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI04.D Sample Name: CLO4@ 2.0ug/L

Injection Date:	9/20/2019 09:37:58	Seq Line:	4
Sample Name:	CLO4@ 2.0ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI04.D Sample Name: CLO4@ 2.0ug/L

Injection Date:	9/20/2019 09:37:58	Seq Line:	4
Sample Name:	CLO4@ 2.0ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	2.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.797	PBA	132825.2	2.3768	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.805	PBA	42075.4	2.3809	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.816	PBA	204758.3	5.0000	CLO4-89-ISTD

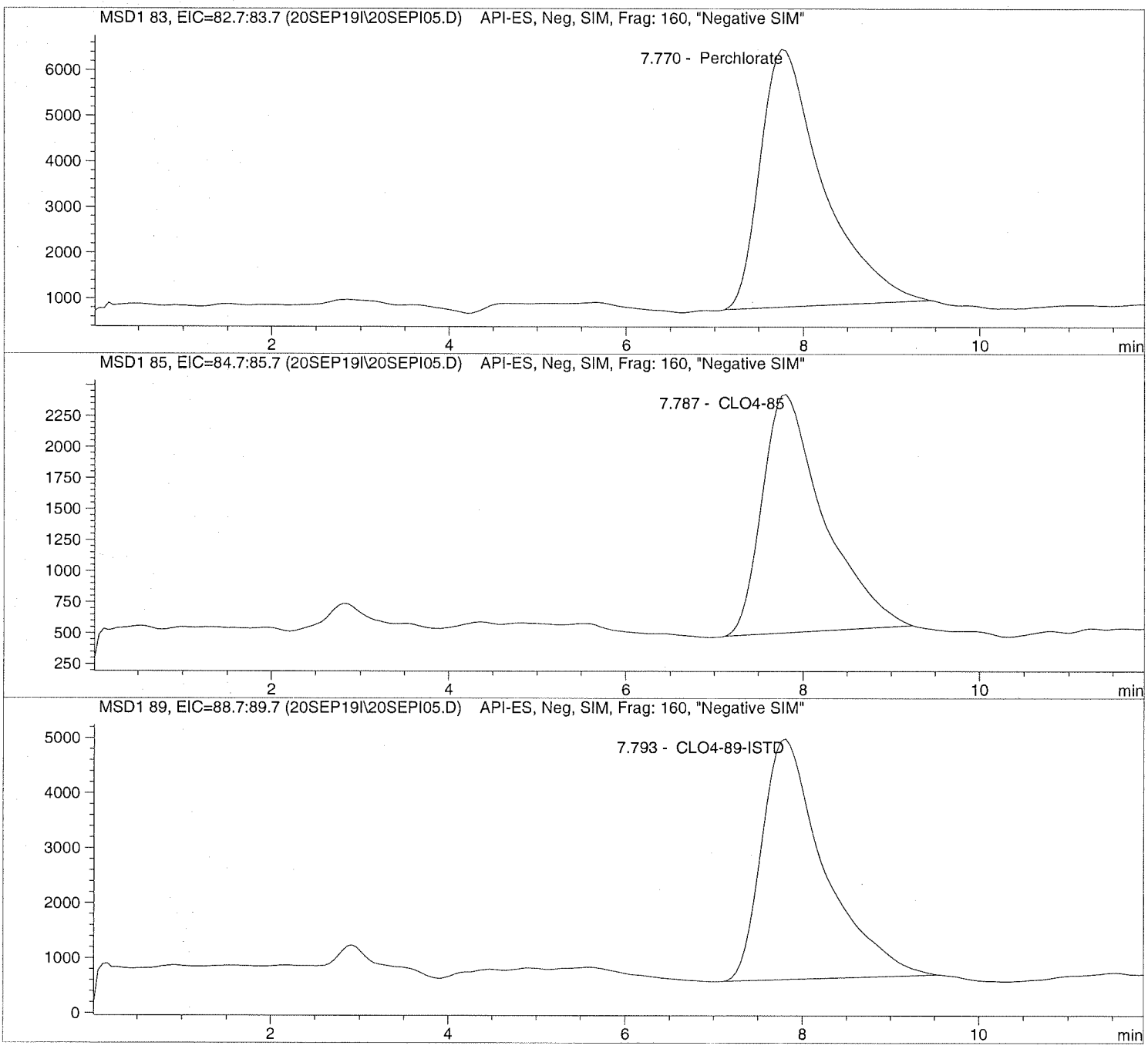
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI05.D Sample Name: CLO4@ 5.0ug/L

Injection Date:	9/20/2019 09:51:49	Seq Line:	5
Sample Name:	CLO4@ 5.0ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI05.D Sample Name: CLO4@ 5.0ug/L

Injection Date:	9/20/2019 09:51:49	Seq Line:	5
Sample Name:	CLO4@ 5.0ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	5.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.770	PBA	276270.7	4.7724	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.787	PBA	92470.7	5.1417	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.793	PBA	213407.0	5.0000	CLO4-89-ISTD

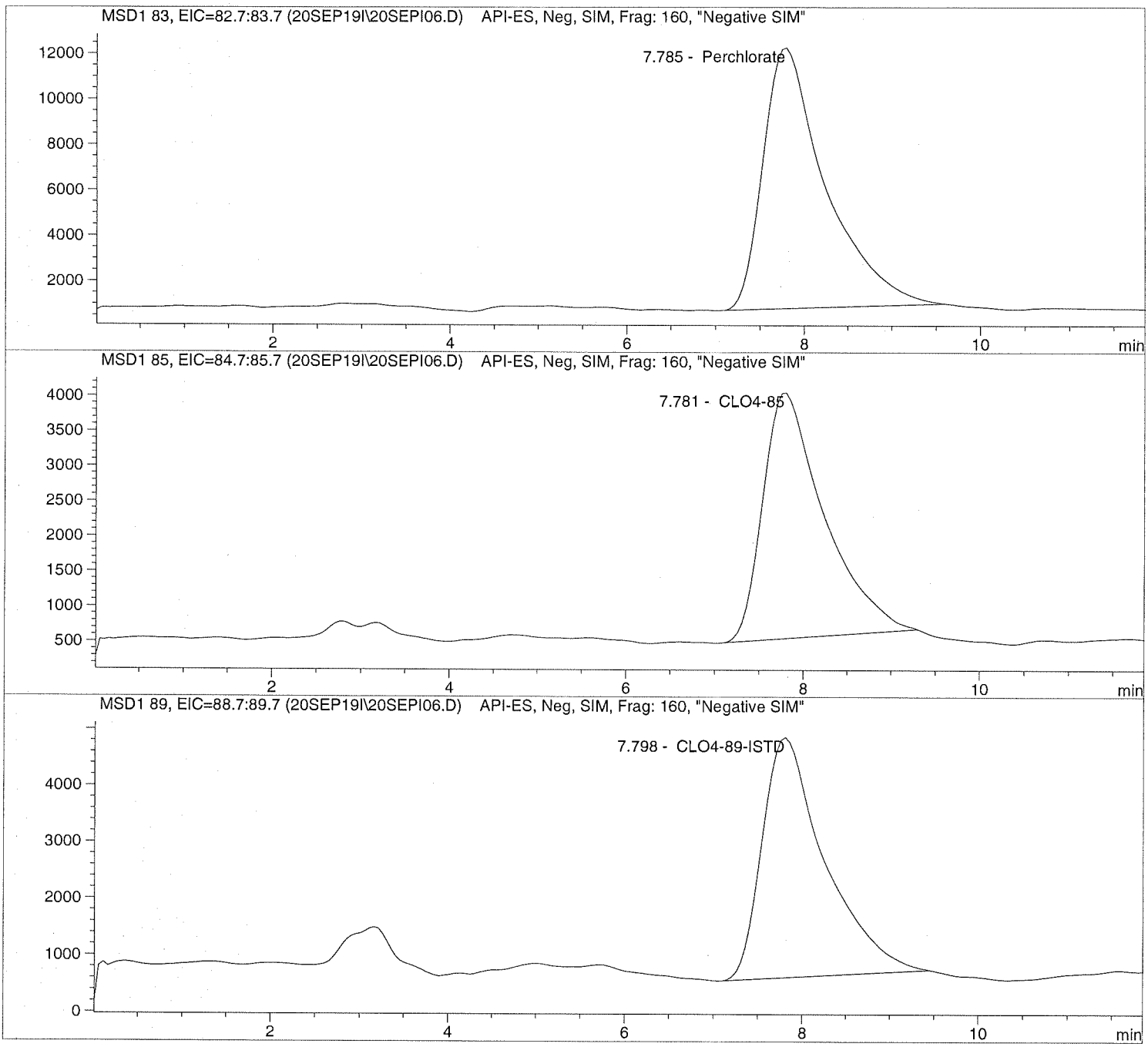
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI06.D Sample Name: CLO4@ 10.ug/L

Injection Date:	9/20/2019 10:05:36	Seq Line:	6
Sample Name:	CLO4@ 10.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI06.D Sample Name: CLO4@ 10.ug/L

Injection Date:	9/20/2019 10:05:36	Seq Line:	6
Sample Name:	CLO4@ 10.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.785	PBA	561297.7	9.7510	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.781	PBA	168622.4	9.5221	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.798	PBA	209246.3	5.0000	CLO4-89-ISTD

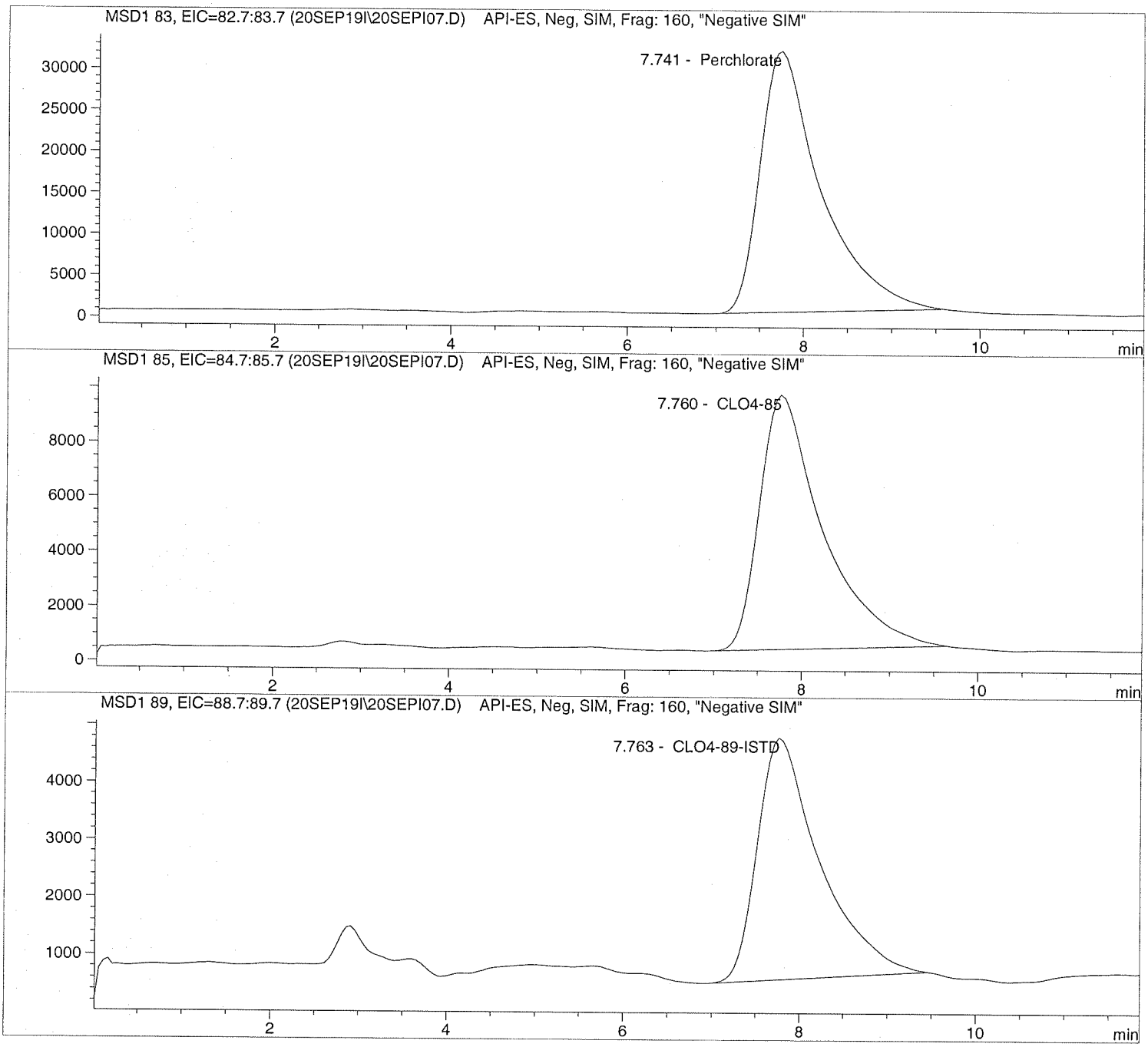
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI07.D Sample Name: CLO4@ 25.ug/L

Injection Date:	9/20/2019 10:19:23	Seq Line:	7
Sample Name:	CLO4@ 25.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI07.D Sample Name: CLO4@ 25.ug/L

Injection Date:	9/20/2019 10:19:23	Seq Line:	7
Sample Name:	CLO4@ 25.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.741	PBA	1518197.9	25.0108	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.760	PBA	463724.0	25.0492	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.763	PBA	207402.8	5.0000	CLO4-89-ISTD

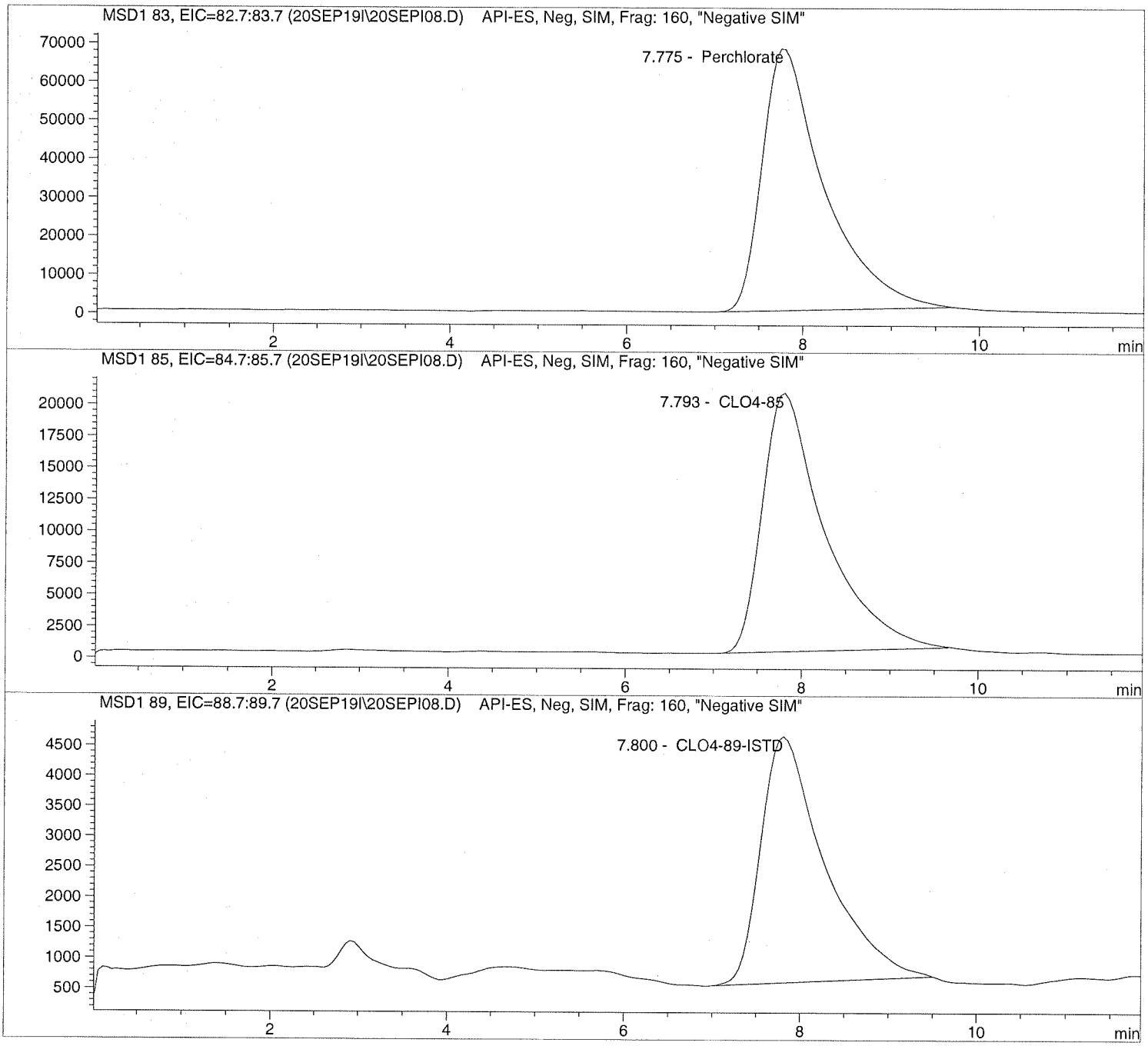
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI08.D Sample Name: CLO4@ 50.ug/L

Injection Date:	9/20/2019 10:33:18	Seq Line:	8
Sample Name:	CLO4@ 50.ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI08.D Sample Name: CLO4@ 50.ug/L

Injection Date:	9/20/2019 10:33:18	Seq Line:	8
Sample Name:	CLO4@ 50.ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	50.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.775	PBA	3311559.2	50.4030	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.793	PBA	995933.0	50.1422	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.800	PBA	202929.2	5.0000	CLO4-89-ISTD

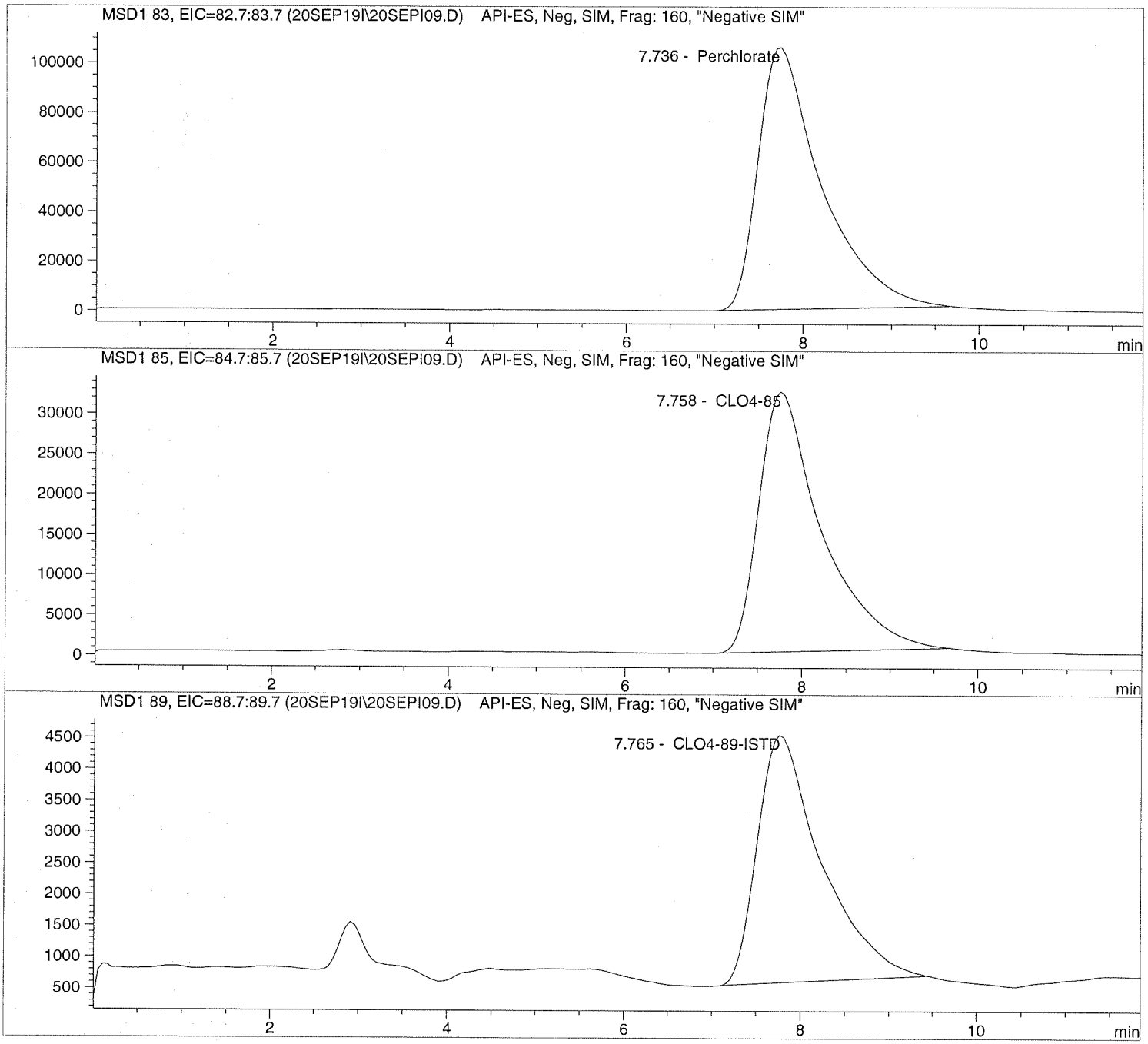
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI09.D Sample Name: CLO4@ 75.ug/L

Injection Date:	9/20/2019 10:47:05	Seq Line:	9
Sample Name:	CLO4@ 75.ug/L	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI09.D Sample Name: CLO4@ 75.ug/L

Injection Date:	9/20/2019 10:47:05	Seq Line:	9
Sample Name:	CLO4@ 75.ug/L	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	75.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.736	PBA	5239145.0	74.7911	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.758	PBA	1580664.2	74.9366	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.765	PBA	197932.5	5.0000	CLO4-89-ISTD

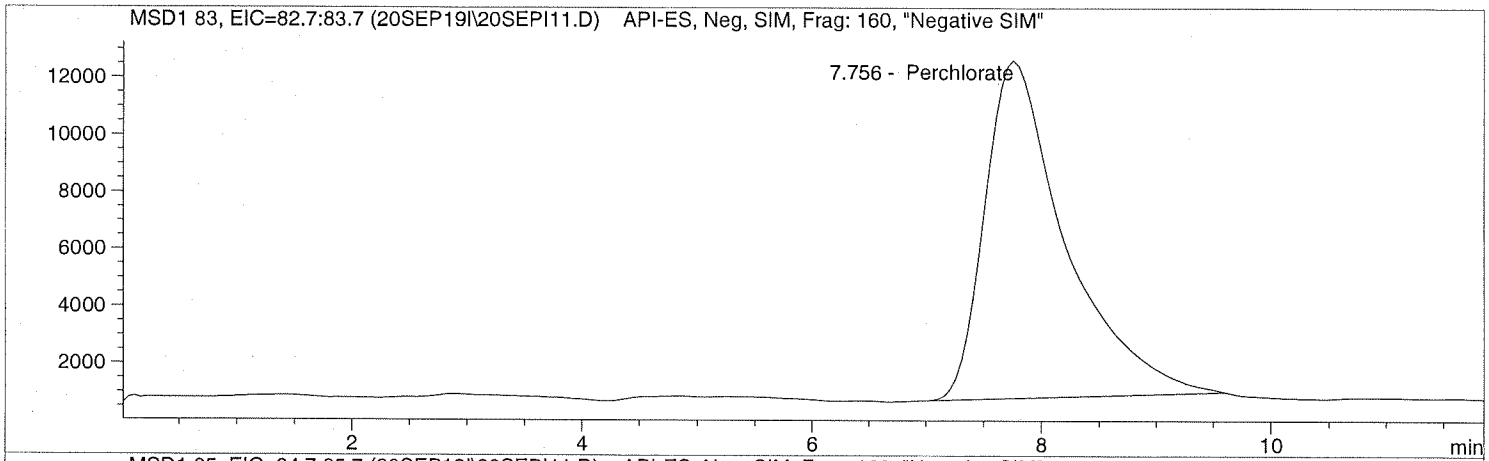
*** End of Report ***

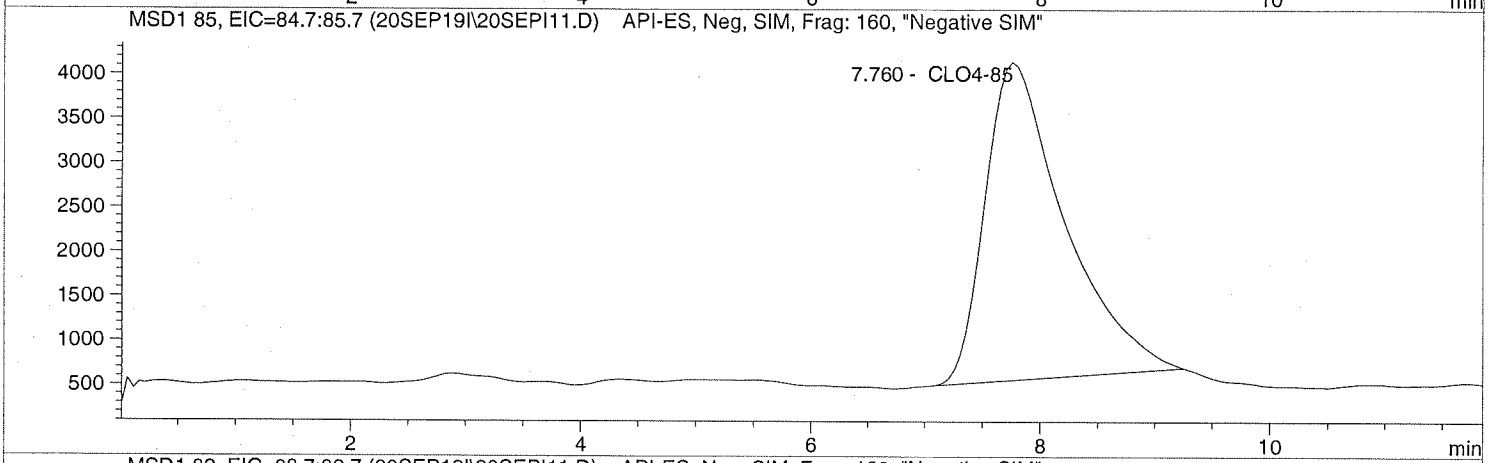
Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI11.D Sample Name: ICAL Verf@10ug/L

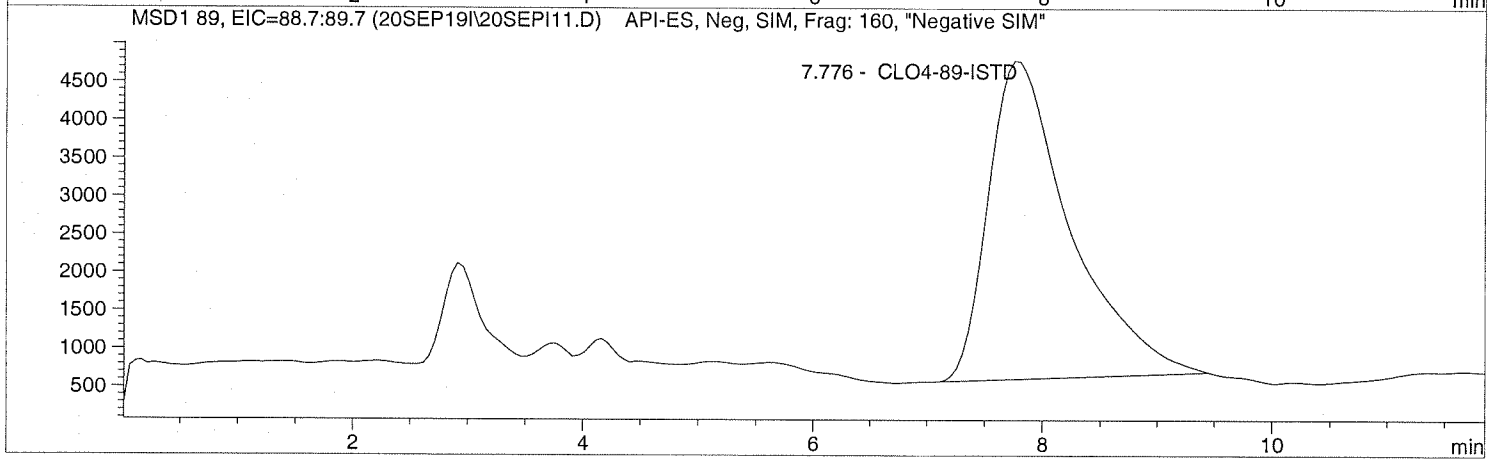
Injection Date:	9/20/2019 11:14:45	Seq Line:	11
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI11.D Sample Name: ICAL Verf@10ug/L

Injection Date:	9/20/2019 11:14:45	Seq Line:	11
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.756	PBA	574879.4	10.1185	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.760	PBA	171000.4	9.7904	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.776	PBA	206243.3	5.0000	CLO4-89-ISTD

*** End of Report ***

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

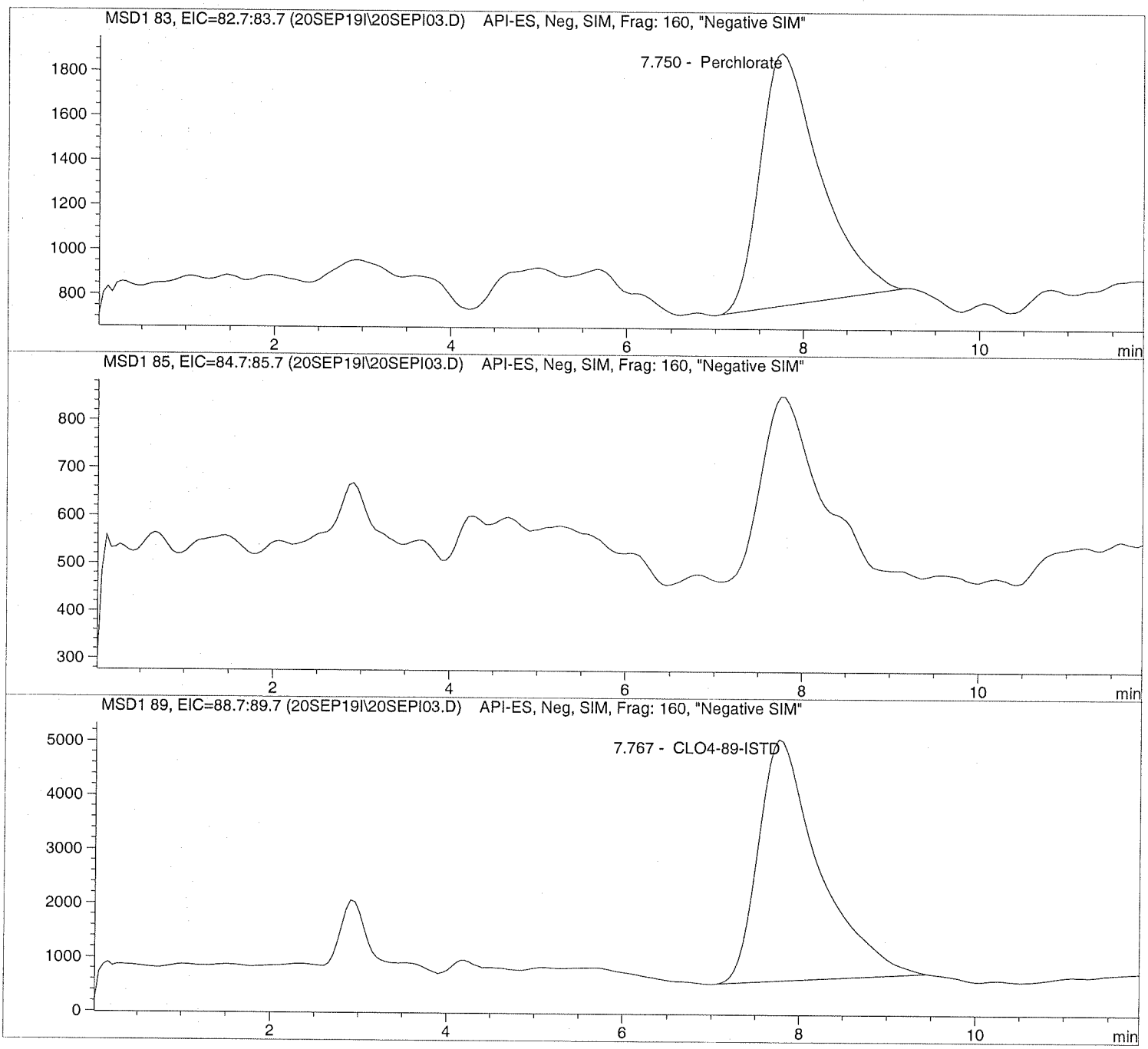
Unmodified

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:27:11

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:27:11

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.750	PBA	53921.8	0.8760	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.767	PBA	214568.1	5.0000	CLO4-89-ISTD

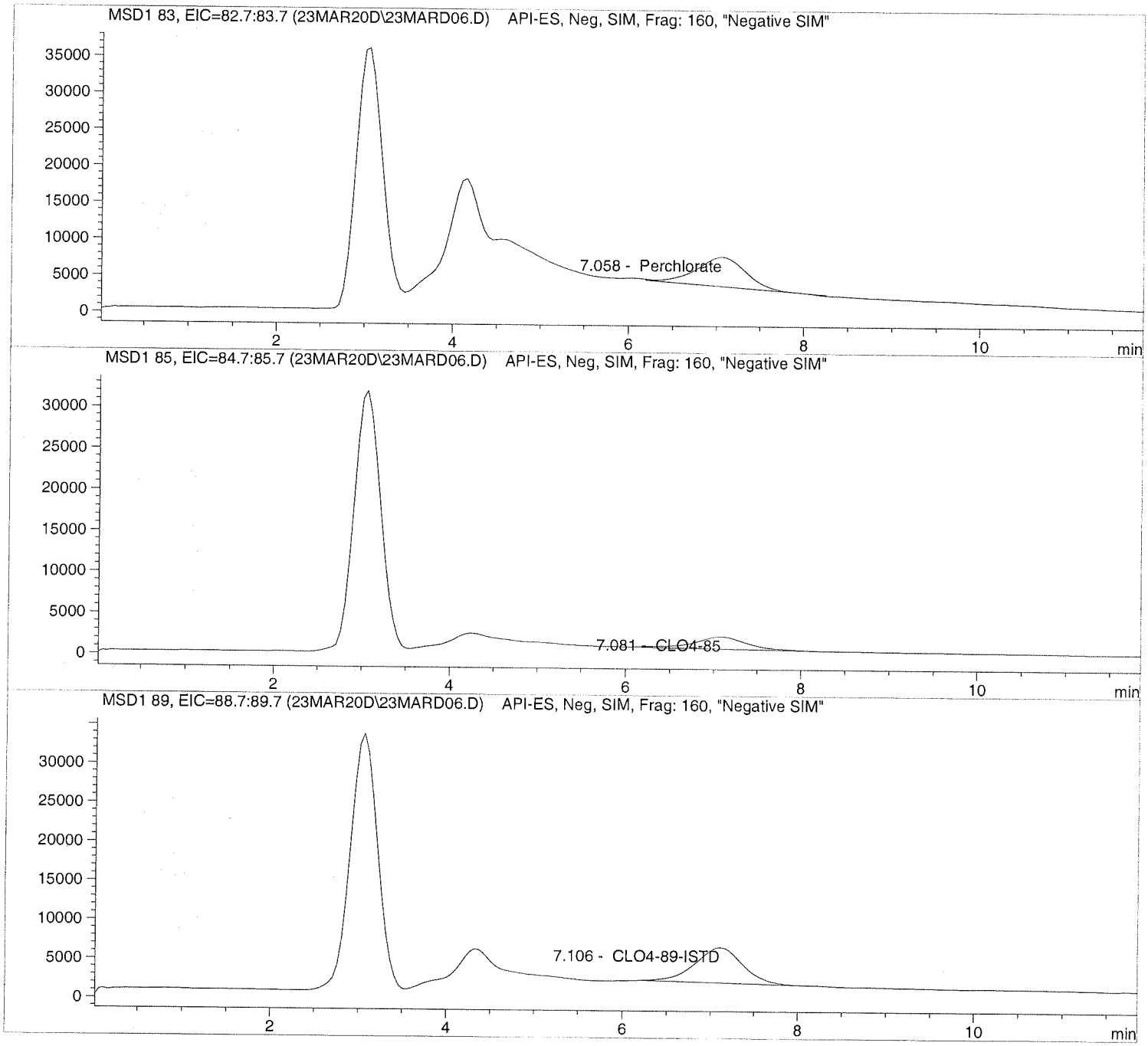
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD06.D Sample Name: 700531 79101MS

Injection Date:	3/23/2020 09:31:23	Seq Line:	6
Sample Name:	700531 79101MS	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD06.D Sample Name: 700531 79101MS

Injection Date:	3/23/2020 09:31:23	Seq Line:	6
Sample Name:	700531 79101MS	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.058	BBA	154695.2	3.3062	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.081	BBA	60755.2	4.1701	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.106	PBA	172346.3	5.0000	CLO4-89-ISTD

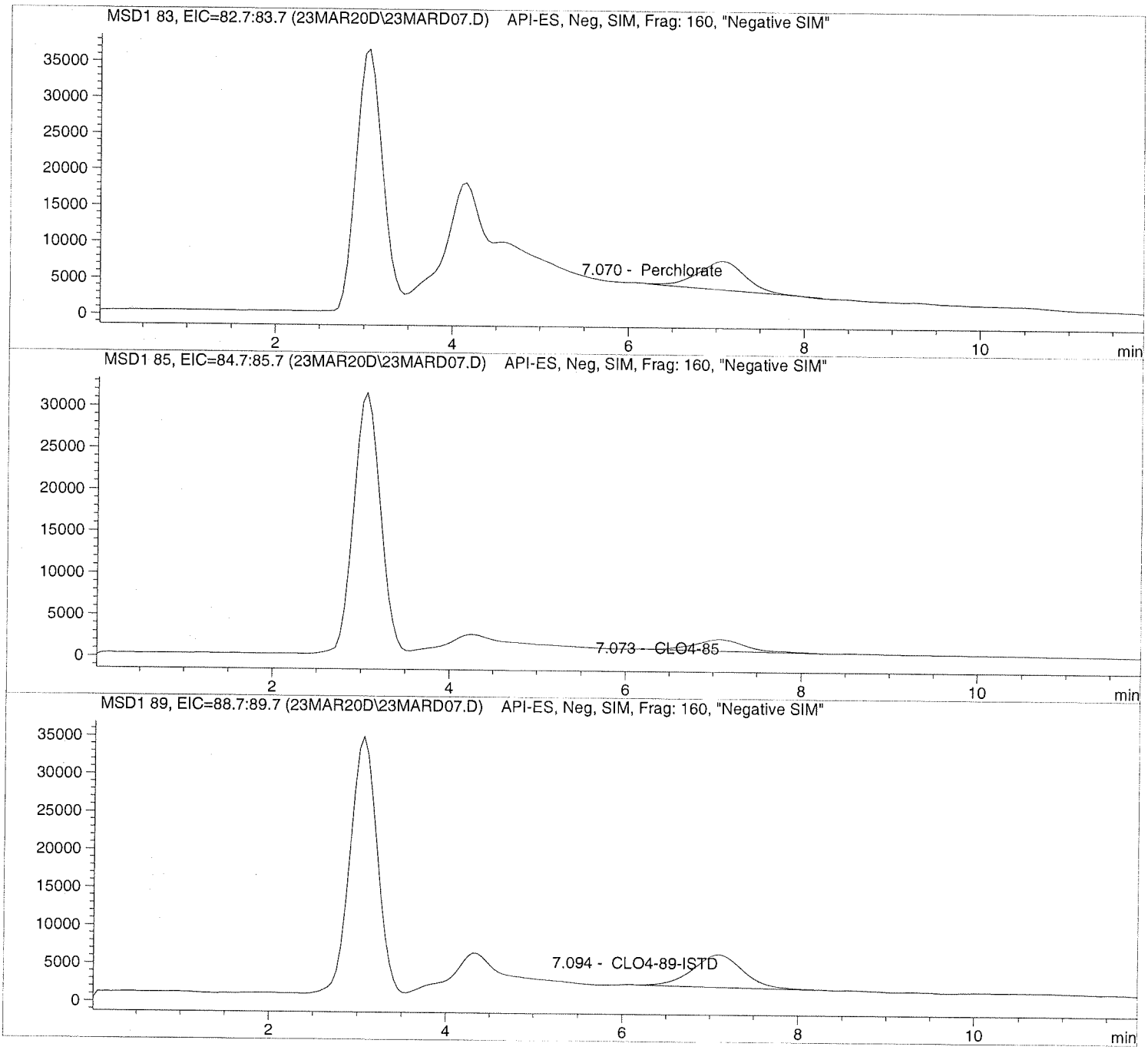
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD07.D Sample Name: 700532 79101SD

Injection Date:	3/23/2020 09:45:23	Seq Line:	7
Sample Name:	700532 79101SD	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD07.D Sample Name: 700532 79101SD

Injection Date:	3/23/2020 09:45:23	Seq Line:	7
Sample Name:	700532 79101SD	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.070	BBA	146805.8	3.1347	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.073	PBA	57104.1	3.9125	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.094	BBA	172409.8	5.0000	CLO4-89-ISTD

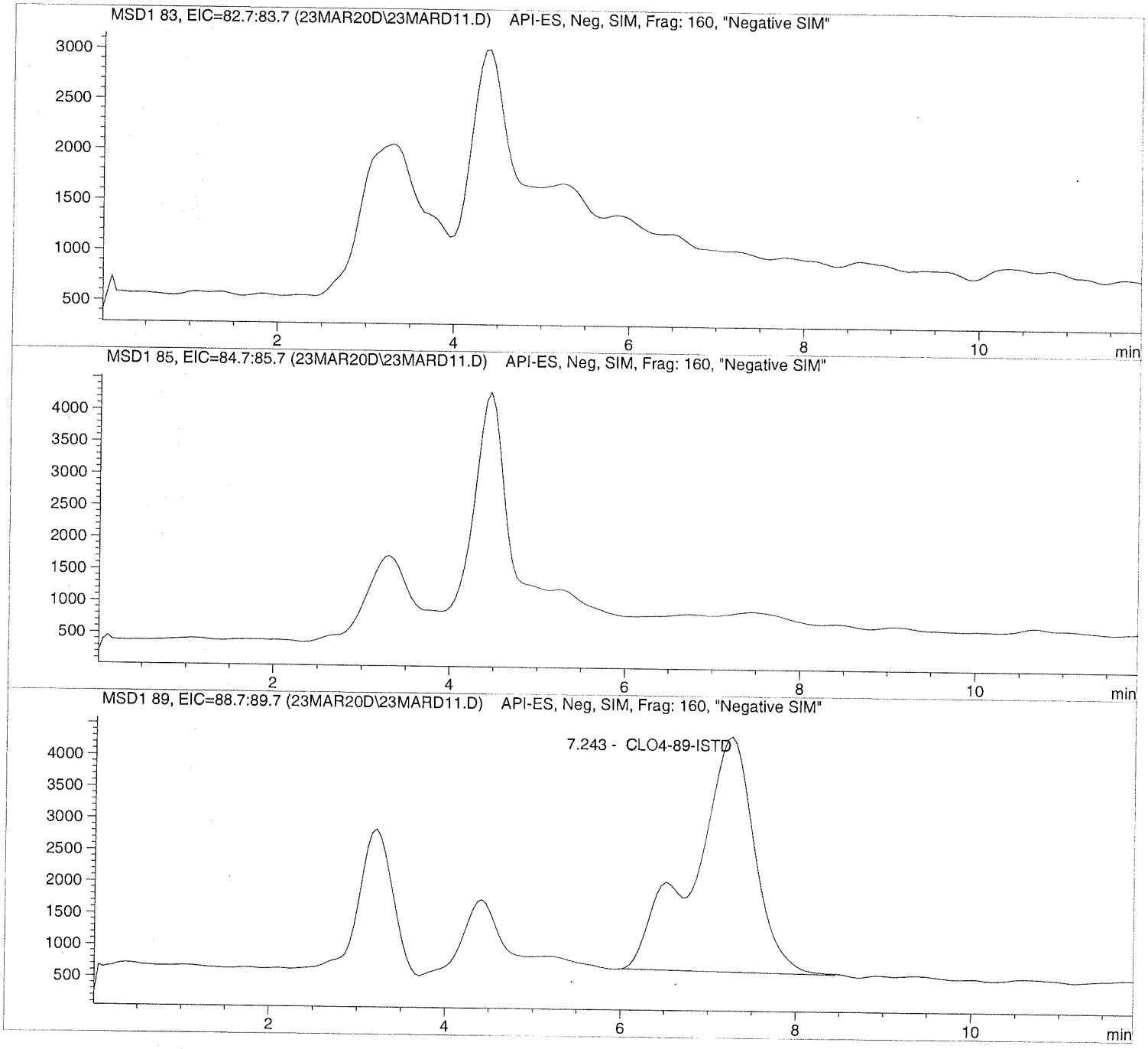
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD11.D Sample Name: 2007910005

Injection Date:	3/23/2020 10:41:21	Seq Line:	11
Sample Name:	2007910005	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD11.D Sample Name: 2007910005

Injection Date:	3/23/2020 10:41:21	Seq Line:	11
Sample Name:	2007910005	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.243	PBA	179483.4	5.0000	CLO4-89-ISTD

*** End of Report ***

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WorkOrder: HS20030621

Longhorn Army Ammunition Plant - 16

Aptim Environmental & Infrastucture, Inc.

Susan Huang
2500 City West Blvd., Suite 1700
Houston TX 77042

29-Apr-2020

ALS Environmental
ALS Group USA, Corp
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HS20030621

ALS WO# HS20030621

HS20030621 Longhorn Army Ammunition Plant 16 Final

ALS WO# HS20030621

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March 30, 2020

Susan Huang
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS20030621**

Laboratory Results for: **Longhorn Army Ammunition Plant - 16**

Dear Susan,

ALS Environmental received 13 sample(s) on Mar 13, 2020 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: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Work Order: HS20030621

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20030621-01	16WW27-200312	Groundwater		12-Mar-2020 08:30	13-Mar-2020 08:52	☐
HS20030621-02	16WW27-200312-FD	Groundwater		12-Mar-2020 08:30	13-Mar-2020 08:52	☐
HS20030621-03	16WW43-200312	Groundwater		12-Mar-2020 09:15	13-Mar-2020 08:52	☐
HS20030621-04	16WW13-200312	Groundwater		12-Mar-2020 10:00	13-Mar-2020 08:52	☐
HS20030621-05	16RW05-200312	Groundwater		12-Mar-2020 10:50	13-Mar-2020 08:52	☐
HS20030621-06	16RW02-200312	Groundwater		12-Mar-2020 11:40	13-Mar-2020 08:52	☐
HS20030621-07	16RW01-200312	Groundwater		12-Mar-2020 12:25	13-Mar-2020 08:52	☐
HS20030621-08	16WW33-200312	Groundwater		12-Mar-2020 13:25	13-Mar-2020 08:52	☐
HS20030621-09	16WW34-200312	Groundwater		12-Mar-2020 14:10	13-Mar-2020 08:52	☐
HS20030621-10	16WW32-200312	Groundwater		12-Mar-2020 15:00	13-Mar-2020 08:52	☐
HS20030621-11	16WW31-200312	Groundwater		12-Mar-2020 15:45	13-Mar-2020 08:52	☐
HS20030621-12	16WW46-200312	Groundwater		12-Mar-2020 16:40	13-Mar-2020 08:52	☐
HS20030621-13	Trip Blank	Water	CG-01720-09	12-Mar-2020 00:00	13-Mar-2020 08:52	☐

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Work Order: HS20030621

CASE NARRATIVE

Work Order Comments

- The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.
- The analysis for Perchlorate was subcontracted to ALS Salt Lake City, UT. Final report attached.

GCMS Volatiles by Method SW8260

Batch ID: R358659

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R359067

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW27-200312
Collection Date: 12-Mar-2020 08:30

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 01:42
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:42
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:42
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:42
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 01:42
Trichloroethene	**1.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 01:42
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:42
Surr: 1,2-Dichloroethane-d4	*92.1*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 01:42*
Surr: 4-Bromofluorobenzene	*96.2*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 01:42*
Surr: Dibromofluoromethane	*95.4*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 01:42*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 01:42*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW27-200312-FD
Collection Date: 12-Mar-2020 08:30

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 03:42
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 03:42
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 03:42
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 03:42
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 03:42
Trichloroethene	**1.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 03:42
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 03:42
Surr: 1,2-Dichloroethane-d4	*91.9*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 03:42*
Surr: 4-Bromofluorobenzene	*96.2*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 03:42*
Surr: Dibromofluoromethane	*95.7*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 03:42*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 03:42*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW43-200312
Collection Date: 12-Mar-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 04:06
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:06
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:06
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:06
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 04:06
Trichloroethene	**0.61**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 04:06
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:06
Surr: 1,2-Dichloroethane-d4	*90.9*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 04:06*
Surr: 4-Bromofluorobenzene	*96.9*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 04:06*
Surr: Dibromofluoromethane	*95.0*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 04:06*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 04:06*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW13-200312
Collection Date: 12-Mar-2020 10:00

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 04:30
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:30
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:30
cis-1,2-Dichloroethene	**18**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 04:30
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 04:30
Trichloroethene	**7.5**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 04:30
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:30
Surr: 1,2-Dichloroethane-d4	*91.1*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 04:30*
Surr: 4-Bromofluorobenzene	*98.1*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 04:30*
Surr: Dibromofluoromethane	*93.5*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 04:30*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 04:30*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16RW05-200312
Collection Date: 12-Mar-2020 10:50

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 04:54
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:54
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:54
cis-1,2-Dichloroethene	**7.8**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 04:54
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 04:54
Trichloroethene	**3.0**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 04:54
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 04:54
Surr: 1,2-Dichloroethane-d4	*90.0*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 04:54*
Surr: 4-Bromofluorobenzene	*95.5*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 04:54*
Surr: Dibromofluoromethane	*94.9*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 04:54*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 04:54*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**52.8**		**0.300**	**1.00**	**1.00**	**mg/L**	10	27-Mar-2020 14:42
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16RW02-200312
Collection Date: 12-Mar-2020 11:40

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 05:18
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 05:18
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 05:18
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 05:18
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 05:18
Trichloroethene	**2.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 05:18
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 05:18
Surr: 1,2-Dichloroethane-d4	*91.4*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 05:18*
Surr: 4-Bromofluorobenzene	*94.8*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 05:18*
Surr: Dibromofluoromethane	*96.1*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 05:18*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 05:18*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16RW01-200312
Collection Date: 12-Mar-2020 12:25

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	2.5	U	1.5	2.5	5.0	UG/L	5	21-Mar-2020 08:55
1,1-Dichloroethene	2.5	U	1.0	2.5	5.0	UG/L	5	21-Mar-2020 08:55
1,2-Dichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	21-Mar-2020 08:55
cis-1,2-Dichloroethene	**120**		**1.0**	**2.5**	**5.0**	**UG/L**	5	21-Mar-2020 08:55
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	21-Mar-2020 08:55
Trichloroethene	**3,300**		**10**	**25**	**50**	**UG/L**	50	21-Mar-2020 09:19
Vinyl chloride	**4.0**	J	**1.0**	**2.5**	**5.0**	**UG/L**	5	21-Mar-2020 08:55
Surr: 1,2-Dichloroethane-d4	*89.9*			**0**	*81-118*	*%REC*	*50*	*21-Mar-2020 09:19*
Surr: 1,2-Dichloroethane-d4	*90.1*			**0**	*81-118*	*%REC*	*5*	*21-Mar-2020 08:55*
Surr: 4-Bromofluorobenzene	*97.2*			**0**	*85-114*	*%REC*	*5*	*21-Mar-2020 08:55*
Surr: 4-Bromofluorobenzene	*98.9*			**0**	*85-114*	*%REC*	*50*	*21-Mar-2020 09:19*
Surr: Dibromofluoromethane	*94.3*			**0**	*80-119*	*%REC*	*5*	*21-Mar-2020 08:55*
Surr: Dibromofluoromethane	*92.2*			**0**	*80-119*	*%REC*	*50*	*21-Mar-2020 09:19*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*5*	*21-Mar-2020 08:55*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*50*	*21-Mar-2020 09:19*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW33-200312
Collection Date: 12-Mar-2020 13:25

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 05:42
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 05:42
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 05:42
cis-1,2-Dichloroethene	**13**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 05:42
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 05:42
Trichloroethene	**79**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 05:42
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 05:42
Surr: 1,2-Dichloroethane-d4	*92.5*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 05:42*
Surr: 4-Bromofluorobenzene	*94.7*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 05:42*
Surr: Dibromofluoromethane	*95.0*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 05:42*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 05:42*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW34-200312
Collection Date: 12-Mar-2020 14:10

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 02:06
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 02:06
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 02:06
cis-1,2-Dichloroethene	**31**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 02:06
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 02:06
Trichloroethene	**130**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 02:06
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 02:06
Surr: 1,2-Dichloroethane-d4	*89.2*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 02:06*
Surr: 4-Bromofluorobenzene	*98.3*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 02:06*
Surr: Dibromofluoromethane	*94.9*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 02:06*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 02:06*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW32-200312
Collection Date: 12-Mar-2020 15:00

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-10
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 06:06
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:06
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:06
cis-1,2-Dichloroethene	**0.80**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 06:06
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 06:06
Trichloroethene	**9.9**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 06:06
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:06
Surr: 1,2-Dichloroethane-d4	*90.8*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 06:06*
Surr: 4-Bromofluorobenzene	*100.0*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 06:06*
Surr: Dibromofluoromethane	*94.8*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 06:06*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 06:06*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW31-200312
Collection Date: 12-Mar-2020 15:45

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-11
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 06:30
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:30
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:30
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:30
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 06:30
Trichloroethene	**1.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 06:30
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:30
Surr: 1,2-Dichloroethane-d4	*91.3*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 06:30*
Surr: 4-Bromofluorobenzene	*98.1*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 06:30*
Surr: Dibromofluoromethane	*96.0*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 06:30*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 06:30*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW46-200312
Collection Date: 12-Mar-2020 16:40

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-12
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 06:54
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:54
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:54
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:54
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 06:54
Trichloroethene	**2.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 06:54
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 06:54
Surr: 1,2-Dichloroethane-d4	*90.2*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 06:54*
Surr: 4-Bromofluorobenzene	*99.7*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 06:54*
Surr: Dibromofluoromethane	*93.9*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 06:54*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 06:54*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Mar-2020 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: Trip Blank
Collection Date: 12-Mar-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20030621
Lab ID:HS20030621-13
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 00:54
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 00:54
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 00:54
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 00:54
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 00:54
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 00:54
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 00:54
Surr: 1,2-Dichloroethane-d4	*90.3*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 00:54*
Surr: 4-Bromofluorobenzene	*97.2*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 00:54*
Surr: Dibromofluoromethane	*94.9*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 00:54*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 00:54*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030621

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R358659 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20030621-13	Trip Blank	12 Mar 2020 00:00			21 Mar 2020 00:54	1
Batch ID: R358659 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20030621-01	16WW27-200312	12 Mar 2020 08:30			21 Mar 2020 01:42	1
HS20030621-02	16WW27-200312-FD	12 Mar 2020 08:30			21 Mar 2020 03:42	1
HS20030621-03	16WW43-200312	12 Mar 2020 09:15			21 Mar 2020 04:06	1
HS20030621-04	16WW13-200312	12 Mar 2020 10:00			21 Mar 2020 04:30	1
HS20030621-05	16RW05-200312	12 Mar 2020 10:50			21 Mar 2020 04:54	1
HS20030621-06	16RW02-200312	12 Mar 2020 11:40			21 Mar 2020 05:18	1
HS20030621-07	16RW01-200312	12 Mar 2020 12:25			21 Mar 2020 09:19	50
HS20030621-07	16RW01-200312	12 Mar 2020 12:25			21 Mar 2020 08:55	5
HS20030621-08	16WW33-200312	12 Mar 2020 13:25			21 Mar 2020 05:42	1
HS20030621-09	16WW34-200312	12 Mar 2020 14:10			21 Mar 2020 02:06	1
HS20030621-10	16WW32-200312	12 Mar 2020 15:00			21 Mar 2020 06:06	1
HS20030621-11	16WW31-200312	12 Mar 2020 15:45			21 Mar 2020 06:30	1
HS20030621-12	16WW46-200312	12 Mar 2020 16:40			21 Mar 2020 06:54	1
Batch ID: R358785 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20030621-01	16WW27-200312	12 Mar 2020 08:30			24 Mar 2020 14:43	1
HS20030621-02	16WW27-200312-FD	12 Mar 2020 08:30			24 Mar 2020 14:43	1
HS20030621-03	16WW43-200312	12 Mar 2020 09:15			24 Mar 2020 14:43	1
HS20030621-04	16WW13-200312	12 Mar 2020 10:00			24 Mar 2020 14:43	1
HS20030621-05	16RW05-200312	12 Mar 2020 10:50			24 Mar 2020 14:43	1
HS20030621-06	16RW02-200312	12 Mar 2020 11:40			24 Mar 2020 14:43	1
HS20030621-07	16RW01-200312	12 Mar 2020 12:25			24 Mar 2020 14:43	1
HS20030621-08	16WW33-200312	12 Mar 2020 13:25			24 Mar 2020 14:43	1
HS20030621-09	16WW34-200312	12 Mar 2020 14:10			24 Mar 2020 14:43	1
HS20030621-10	16WW32-200312	12 Mar 2020 15:00			24 Mar 2020 14:43	1
HS20030621-11	16WW31-200312	12 Mar 2020 15:45			24 Mar 2020 14:43	1
HS20030621-12	16WW46-200312	12 Mar 2020 16:40			24 Mar 2020 14:43	1
Batch ID: R358878 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Groundwater	
HS20030621-05	16RW05-200312	12 Mar 2020 10:50			25 Mar 2020 14:54	1
Batch ID: R359067 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20030621-05	16RW05-200312	12 Mar 2020 10:50			27 Mar 2020 14:42	10

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030621

QC BATCH REPORT

Batch ID: R358659 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW1-200320** Units: **UG/L** Analysis Date: **21-Mar-2020 00:29**
Client ID: Run ID: **VOA6_358659** SeqNo: **5524279** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*44.95*	*1.0*	*50*	*0*	*89.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.05*	*1.0*	*50*	*0*	*98.1*	*85 - 114*				
Surr: Dibromofluoromethane	*47.12*	*1.0*	*50*	*0*	*94.2*	*80 - 119*				
Surr: Toluene-d8	*53.14*	*1.0*	*50*	*0*	*106*	*89 - 112*				

LCS Sample ID: **VLCSW-200320** Units: **UG/L** Analysis Date: **20-Mar-2020 23:41**
Client ID: Run ID: **VOA6_358659** SeqNo: **5524278** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.89	1.0	20	0	99.5	80 - 119				
1,1-Dichloroethene	18.72	1.0	20	0	93.6	71 - 131				
1,2-Dichloroethane	19.83	1.0	20	0	99.1	73 - 128				
cis-1,2-Dichloroethene	20.22	1.0	20	0	101	78 - 123				
Methylene chloride	20.64	2.0	20	0	103	74 - 124				
Trichloroethene	19.59	1.0	20	0	97.9	79 - 123				
Vinyl chloride	18.09	1.0	20	0	90.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*54.98*	*1.0*	*50*	*0*	*110*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.24*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*56.22*	*1.0*	*50*	*0*	*112*	*80 - 119*				
Surr: Toluene-d8	*51.8*	*1.0*	*50*	*0*	*104*	*89 - 112*				

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030621

QC BATCH REPORT

Batch ID: R358659 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20030621-01MS** Units: **UG/L** Analysis Date: **21-Mar-2020 02:30**
Client ID: **16WW27-200312** Run ID: **VOA6_358659** SeqNo: **5524284** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	20.02	1.0	20	0	100	80 - 119				
1,1-Dichloroethene	18.87	1.0	20	0	94.3	71 - 131				
1,2-Dichloroethane	19.26	1.0	20	0	96.3	73 - 128				
cis-1,2-Dichloroethene	19.78	1.0	20	0	98.9	78 - 123				
Methylene chloride	18.69	2.0	20	0	93.5	74 - 124				
Trichloroethene	21.01	1.0	20	1.118	99.4	79 - 123				
Vinyl chloride	19.44	1.0	20	0	97.2	58 - 137				
Surr: 1,2-Dichloroethane-d4	*46.45*	*1.0*	*50*	*0*	*92.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.71*	*1.0*	*50*	*0*	*97.4*	*85 - 114*				
Surr: Dibromofluoromethane	*47.23*	*1.0*	*50*	*0*	*94.5*	*80 - 119*				
Surr: Toluene-d8	*52.29*	*1.0*	*50*	*0*	*105*	*89 - 112*				

MSD Sample ID: **HS20030621-01MSD** Units: **UG/L** Analysis Date: **21-Mar-2020 02:54**
Client ID: **16WW27-200312** Run ID: **VOA6_358659** SeqNo: **5524285** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.73	1.0	20	0	98.6	80 - 119	20.02	1.5	20	
1,1-Dichloroethene	17.66	1.0	20	0	88.3	71 - 131	18.87	6.61	20	
1,2-Dichloroethane	19.51	1.0	20	0	97.6	73 - 128	19.26	1.32	20	
cis-1,2-Dichloroethene	18.67	1.0	20	0	93.3	78 - 123	19.78	5.8	20	
Methylene chloride	17.56	2.0	20	0	87.8	74 - 124	18.69	6.27	20	
Trichloroethene	19.79	1.0	20	1.118	93.4	79 - 123	21.01	5.96	20	
Vinyl chloride	17.46	1.0	20	0	87.3	58 - 137	19.44	10.7	20	
Surr: 1,2-Dichloroethane-d4	*45.71*	*1.0*	*50*	*0*	*91.4*	*81 - 118*	*46.45*	*1.6*	*20*	
Surr: 4-Bromofluorobenzene	*48.72*	*1.0*	*50*	*0*	*97.4*	*85 - 114*	*48.71*	*0.0289*	*20*	
Surr: Dibromofluoromethane	*47.12*	*1.0*	*50*	*0*	*94.2*	*80 - 119*	*47.23*	*0.23*	*20*	
Surr: Toluene-d8	*52.23*	*1.0*	*50*	*0*	*104*	*89 - 112*	*52.29*	*0.122*	*20*	

The following samples were analyzed in this batch:

HS20030621-01	HS20030621-02	HS20030621-03	HS20030621-04
HS20030621-05	HS20030621-06	HS20030621-07	HS20030621-08
HS20030621-09	HS20030621-10	HS20030621-11	HS20030621-12
HS20030621-13			

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030621

QC BATCH REPORT

Batch ID: R359067 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK-03.26.20** Units: **mg/L** Analysis Date: **26-Mar-2020 19:38**
Client ID: Run ID: **ICS-Integrion_359067** SeqNo: **5534695** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U

LCS Sample ID: **LCS-03.26.20** Units: **mg/L** Analysis Date: **26-Mar-2020 19:56**
Client ID: Run ID: **ICS-Integrion_359067** SeqNo: **5534696** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.711	0.100	4	0	92.8	80 - 120				

LCSD Sample ID: **LCSD-03.26.20** Units: **mg/L** Analysis Date: **26-Mar-2020 20:14**
Client ID: Run ID: **ICS-Integrion_359067** SeqNo: **5534697** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.643	0.100	4	0	91.1	80 - 120	3.711	1.85	20	

MS Sample ID: **HS20031162-08MS** Units: **mg/L** Analysis Date: **27-Mar-2020 01:43**
Client ID: Run ID: **ICS-Integrion_359067** SeqNo: **5534702** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.335	0.100	2	0.582	87.6	80 - 120				

MS Sample ID: **HS200301147-01MS** Units: **mg/L** Analysis Date: **27-Mar-2020 02:37**
Client ID: Run ID: **ICS-Integrion_359067** SeqNo: **5534705** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	17.36	1.00	20	0	86.8	80 - 120				

MSD Sample ID: **HS20031162-08MSD** Units: **mg/L** Analysis Date: **27-Mar-2020 02:01**
Client ID: Run ID: **ICS-Integrion_359067** SeqNo: **5534703** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.345	0.100	2	0.582	88.1	80 - 120	2.335	0.415	20	

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030621

QC BATCH REPORT

Batch ID: R359067 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY SW9056A

MSD Sample ID: **HS200301147-01MSD** Units: **mg/L** Analysis Date: **27-Mar-2020 03:32**
Client ID: Run ID: **ICS-Integrion_359067** SeqNo: **5534708** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	17.11	1.00	20	0	85.5	80 - 120	17.36	1.46	20	

The following samples were analyzed in this batch: HS20030621-05

ALS Houston, US Date: 30-Mar-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: **HS20030621**

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

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-19-25	30-Apr-2020

ALS Houston, US Date: 30-Mar-20

Sample Receipt Checklist

Client Name: CBI-Houston
Work Order: HS20030621
Date/Time Received: **13-Mar-2020 08:52**
Received by: **AC**

Checklist completed by: *Paresh M. Giga* eSignature 13-Mar-2020 Date
Reviewed by: *RJ Modashia* eSignature 16-Mar-2020 Date

Matrices: **GW/Water**
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 ☐	COC IDs:None
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):	2.1c U/c	IR25
Cooler(s)/Kit(s):	23949	
Date/Time sample(s) sent to storage:	3/13/2020 18:15	

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:

APTIM

Page 1 of _____

COC ID: LHAAP16 March 2020__-ALS | TURNAROUND TIME: Normal | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	Longhorn AAP			Lab Name	ALS Laboratories			Email Invoice To	FedInvoices@aptim.com		
Project Number	501032			Lab Contact	RJ Modashia						
	LHAAP-16			Email	RJ.Modashia@alsglobal.com			Email Report To	Susan.Huang@aptim.com		
Address	1203-B East Grand Avenue			Address	10450 Stancliff Rd., Suite 210			Mail Reports To	Susan Huang		
	PMB 202							Address	4005 Port Chicago Highway, Suite 200		
City	Marshall	State	TX	City	Houston	State	TX	City	Concord	State	CA
Postal Code	75670	Country	USA	Postal Code	77099	Country	USA	Postal Code	94520	Country	USA
Phone Number	713.243.7264			Phone Number	281.575.2279 or 281.530.5656						
Project Manager	Praveen Srivastav							Shipping Company			

SAMPLE DETAILS

ANALYSIS REQUESTED

Sample ID	Location	Start Depth	End Depth	Depth Unit	Field Matrix	Date	Time (24hr)	# Of Cont.	ANALYSIS	Sample Container and Preservatives	3-40 ml VOA/HCL	3-40 ml VOA/HCL	3-40ml Amber/H2SO4	1-250 ml PE/HNO3	1-250 ml PE/Ice	1-250ml PE /Ice	1-250ml PE/Ice	1-125ml PE/Ice		
											VOCs by SW8260B	MEE by RSK175	TOC by SM5310C	Metals (arsenic, chromium, manganese, nickel, and thallium) by SW6020	Anions (sulfate/nitrate/bromide) by SW9056	Anions (bromide only) by SW9056	Alkalinity by SM2320	Perchlorate by SW6850		
16WW27-200312	LHAAP 16				WG	3/12/20	0830	4			X							X		
16WW27-200312-FD	LHAAP 16				WG	3/12/20	0830	4			X							X		
16WW43-200312	LHAAP 16				WG	3/12/20	0915	4			X							X		
16WW13-200312	LHAAP16				WG	3/12/20	1000	4			X							X		
16RW05-200312	LHAAP 16				WG	3/12/20	1050	7			X		X			X		X		
16RW02-200312	LHAAP 16				WG	3/12/20	1140	4			X							X		
16RW01-200312	LHAAP 16				WG	3/12/20	1225	4			X							X		
16WW33-200312	LHAAP 16				WG	3/12/20	1325	4			X							X		
16WW34-200312	LHAAP 16				WG	3/12/20	1410	4			X							X		
16WW32-200312	LHAAP 16				WG	3/12/20	1500	4			X							X		
16WW31-200312	LHAAP16				WG	3/12/20	1545	4			X							X		
16WW46-200312	LHAAP16				WG	3/12/20	1640	4			X							X		
TRIP BLANK	LHAAP 16				WG	3/12/20		2			X									

HS20030621

Aptim Environmental & Infrastucture, Inc.
Longhorn Army Ammunition Plant - 16

RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Sean Bassinger / BHATE	3/12/20 1730	AC / ALS	3/13/2020 08:52

UIC 2.1 IR#25 CR0 23949

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

23949

CUSTODY SEAL

Date: 3/12/20 Time: 1730
Name: Scott Beesinger
Company: BHAPTIM

Seal Broken By: SM
Date: 03/13/20

23949

Must Deliver Next Business Day
Time and Temperature Sensitive!

23949

ORIGIN ID:SGRA (903) 930-6193
SCOTT BEESINGER
APTIM
1203-B EAST GRAND AVE
PMB 202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 25FEB20
ACTWGT: 1.00 LB MAN
CAD: 300130/CAFE3211
DIMS: 26x14x14 IN

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-6668
REF: LHAAP 16 - BD 70505 - RJ
RMA:

FedEx Express

TRK# 0221 1251 0294 7873

FRI - 13 MAR 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US IAH

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

March 25, 2020

Analytical Report for Service Request No: K2002353

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: HS20030621

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory March 17, 2020
For your reference, these analyses have been assigned our service request number **K2002353.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
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www.alsglobal.com

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Acronyms
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Raw Data
    General Chemistry

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
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.
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.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
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1317 South 13th Ave, Kelso, WA 98626 | 1-360-577-7222 | www.alsglobal.com

Client: ALS Environmental - US
Project: HS20030621
Sample Matrix: Ground Water

Service Request: K2002353
Date Received: 03/17/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

One ground water sample was received for analysis at ALS Environmental on 03/17/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 03/25/2020

Chain of Custody

ALS Environmental—Kelso Laboratory
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K2002353

10450 Stancliff Rd, Ste 210
Houston, TX 77099
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F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13522**

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20030621
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20030621-05**	**16RW05-200312**	**Groundwater**	**12 Mar 2020 10:50**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			27 Mar 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 3/16/2020 1800

Received By: RJ Monrow ALS Kelso Date/Time: 3/17/20 0942

Cooler ID(s): _____ Temperature(s): _____

PC KL

Cooler Receipt and Preservation Form

Client ALS - Houston Service Request K2002353

Received: 3/17/20 Opened: 3/17/20 By: KM Unloaded: 3/17/20 By: KM

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 2 Front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Temp Blank	Sample 1	Sample 2	Sample 3	Sample 4	IR GUN	Cooler / COC ID NA	Tracking Number NA	Filed
0.6	—	—	—	—	39800488WS	13522	125102954360	

4. Packing material: *Inserts* *Baggies* (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA (Y) N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
11. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

General Chemistry

ALS Environmental—Kelso Laboratory
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www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2002353
Project:	HS20030621	**Date Collected:**	03/12/20
Sample Matrix:	Ground Water	**Date Received:**	03/17/20
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
16RW05-200312	K2002353-001	**500**	200	80	30	400	03/22/20 02:03	
Method Blank	K2002353-MB	**0.29 J**	0.50	0.20	0.07	1	03/21/20 20:07	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2002353
Project	HS20030621	**Date Collected:**	03/12/20
Sample Matrix:	Ground Water	**Date Received:**	03/17/20
		Date Analyzed:	03/22/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	16RW05-200312	**Units:**	mg/L
Lab Code:	K2002353-001	**Basis:**	NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K2002353-001DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	200	80	30	500	480	488	4	10

Results flagged with an asterisk (*) indicate values outside control criteria.

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

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2002353
Project:	HS20030621	**Date Analyzed:**	03/21/20
Sample Matrix:	Ground Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	674205

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2002353-LCS	24.9	25.0	100	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2002353
Project: HS20030621

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C **Units:** mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	674205	KQ2003999-01	03/21/20 19:52	25.0	26.3	105	90-110
CCV2	674205	KQ2003999-02	03/21/20 23:40	25.0	26.3	105	90-110
CCV3	674205	KQ2003999-03	03/22/20 04:51	25.0	26.5	106	90-110
CCV4	674205	KQ2003999-30	03/22/20 09:35	25.0	25.8	103	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2002353
Project: HS20030621

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C **Units:**mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	674205	KQ2003999-04	03/21/20 19:37	0.50	0.20	0.07	ND	U
CCB2	674205	KQ2003999-05	03/21/20 23:55	0.50	0.20	0.07	0.12	J
CCB3	674205	KQ2003999-06	03/22/20 05:06	0.50	0.20	0.07	ND	U
CCB4	674205	KQ2003999-31	03/22/20 09:49	0.50	0.20	0.07	ND	U

Raw Data

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General Chemistry

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Work Request # Original ( ) K2062276, 2337, 2353, 2365, 2412, 2432, 2434, 2416, 2424, 2434, 2462, 2470, 2471, 2489, 2492, 2496, 2457, 2456, 2422
IV II IV II IV I IV IV I II IV IV II I II I IV IV

Tier:

Date Analyzed: 3/21/20

Analyst: RD

Analysis: TOC/DOC

Run # TOC: 674205, 674225, 674226, DOC: 674227

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1.	Is the method name and number correct and appropriate?	yes/no/NA
2.	Holding times met for all analyses and for all samples?	yes/no/NA
3.	Are calculations correct?	yes/no/NA
4.	Is the reporting basis correct? (Dry Weight)	yes/no/NA
5.	All quality control criteria met?	yes/no
6.	Is the calibration curve correlation coefficient ≥ 0.995?	yes/no/NA
7.	MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency?	yes/no/NA
8.	Are ICVs, CCVs, and CCBs all within acceptance limits?	yes/no/NA
9.	Are results for methods blanks all ND?	yes/no/NA
10.	Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.)	yes/no/NA
11.	Are all exceptions explained?	yes/no/NA
12.	Have all applicable service requests been reviewed?	yes/no/NA
13.	Are all samples labeled correctly?	yes/no/NA
14.	Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V)	yes/no/NA
15.	Are detection limits and units reported correctly?	yes/no/NA
16.	Is the unused space on the benchsheet crossed out?	yes/no/NA
17.	Was analysis turned in by the due date? (n-2) (If not record SR#)	yes/no/NA

COMMENTS: K2002416-3/3rd/2412-4/4th, 2412711d report a high %RSD. However, these samples are less than 5x the MRL

Final Approved by: _____ Date: 3/24/20

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674205 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002276-001	Carbon, Total Organic	N/A		Ground Water	5.85 mg/L	10 mL	58.5 mg/L	10	0.7	5.0			3/22/20 01:06:00	N	IV
K2002337-001	Carbon, Total Organic	N/A		Water	0.92 mg/L	10 mL	0.92 mg/L	1	0.07	0.50			3/21/20 20:51:00	N	II
K2002337-002	Carbon, Total Organic	N/A		Water	0.85 mg/L	10 mL	0.85 mg/L	1	0.07	0.50			3/21/20 21:48:00	N	II
K2002337-003	Carbon, Total Organic	N/A		Water	0.77 mg/L	10 mL	0.77 mg/L	1	0.07	0.50			3/21/20 22:16:00	N	II
K2002337-004	Carbon, Total Organic	N/A		Water	0.68 mg/L	10 mL	0.68 mg/L	1	0.07	0.50			3/21/20 22:44:00	N	II
K2002337-005	Carbon, Total Organic	N/A		Water	0.45 mg/L	10 mL	0.45 mg/L J	1	0.07	0.50			3/21/20 23:12:00	N	II
K2002337-006	Carbon, Total Organic	N/A		Water	1.87 mg/L	10 mL	1.87 mg/L	1	0.07	0.50			3/22/20 00:10:00	N	II
K2002337-007	Carbon, Total Organic	N/A		Water	0.63 mg/L	10 mL	0.63 mg/L	1	0.07	0.50			3/22/20 00:38:00	N	II
K2002353-001	Carbon, Total Organic	N/A		Ground Water	1.25 mg/L	10 mL	500 mg/L	400	30	200			3/22/20 02:03:00	N	IV
K2002365-001	Carbon, Total Organic	N/A		Water	6.75 mg/L	10 mL	6.75 mg/L	1	0.07	0.50			3/22/20 01:34:00	N	II
K2002412-001	Carbon, Total Organic	N/A		Ground Water	10.68 mg/L	10 mL	10.7 mg/L	1	0.07	0.50			3/22/20 02:59:00	N	IV
K2002412-002	Carbon, Total Organic	N/A		Ground Water	2.35 mg/L	10 mL	2.35 mg/L	1	0.07	0.50			3/22/20 03:27:00	N	IV
K2002412-003	Carbon, Total Organic	N/A		Ground Water	44.83 mg/L	10 mL	44.8 mg/L	1	0.07	0.50			3/22/20 03:55:00	N	IV
K2002412-004	Carbon, Total Organic	N/A		Ground Water	1.20 mg/L	10 mL	1.20 mg/L	1	0.07	0.50			3/22/20 04:23:00	N	IV
K2002412-005	Carbon, Total Organic	N/A		Ground Water	4.57 mg/L	10 mL	4.57 mg/L	1	0.07	0.50			3/22/20 05:50:00	N	IV
K2002412-006	Carbon, Total Organic	N/A		Ground Water	31.25 mg/L	10 mL	31.2 mg/L	1	0.07	0.50			3/22/20 06:18:00	N	IV
K2002412-007	Carbon, Total Organic	N/A		Ground Water	0.78 mg/L	10 mL	0.78 mg/L	1	0.07	0.50			3/22/20 06:46:00	N	IV
K2002412-008	Carbon, Total Organic	N/A		Ground Water	5.22 mg/L	10 mL	5.22 mg/L	1	0.07	0.50			3/22/20 07:14:00	N	IV
K2002434-001	Carbon, Total Organic	N/A		Water	0.24 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 07:42:00	N	I
K2002434-002	Carbon, Total Organic	N/A		Water	0.61 mg/L	10 mL	0.61 mg/L	1	0.07	0.50			3/22/20 08:10:00	N	I
KQ2003999-01	Carbon, Total Organic	CCV		Water	26.33 mg/L	10 mL	26.3 mg/L	1					3/21/20 19:52:00	N	II
KQ2003999-02	Carbon, Total Organic	CCV		Water	26.30 mg/L	10 mL	26.3 mg/L	1					3/21/20 23:40:00	N	II
KQ2003999-03	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	II
KQ2003999-04	Carbon, Total Organic	CCB		Water	-0.03 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/21/20 19:37:00	N	II
KQ2003999-05	Carbon, Total Organic	CCB		Water	0.12 mg/L	10 mL	0.12 mg/L J	1	0.07	0.50			3/21/20 23:55:00	N	II
KQ2003999-06	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	II
KQ2003999-07	Carbon, Total Organic	MB		Water	0.29 mg/L	10 mL	0.29 mg/L J	1	0.07	0.50			3/21/20 20:07:00	N	II
KQ2003999-08	Carbon, Total Organic	LCS		Water	24.88 mg/L	10 mL	24.9 mg/L	1	0.07	0.50	100		3/21/20 20:21:00	N	II
KQ2003999-09	Carbon, Total Organic	MS	K2002337-001	Water	29.48 mg/L	10 mL	29.5 mg/L	1	0.07	0.50	114		3/21/20 21:19:00	N	II
KQ2003999-10	Carbon, Total Organic	DUP	K2002276-001	Ground Water	5.92 mg/L	10 mL	59.2 mg/L	10	0.7	5.0		1	3/22/20 01:06:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674205 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2003999-11	Carbon, Total Organic	DUP	K2002337-001	Water	0.91 mg/L	10 mL	0.91 mg/L	1	0.07	0.50		1	3/21/20 20:51:00	N	II
KQ2003999-12	Carbon, Total Organic	DUP	K2002337-002	Water	0.79 mg/L	10 mL	0.79 mg/L	1	0.07	0.50		7	3/21/20 21:48:00	N	II
KQ2003999-13	Carbon, Total Organic	DUP	K2002337-003	Water	0.70 mg/L	10 mL	0.70 mg/L	1	0.07	0.50		10	3/21/20 22:16:00	N	II
KQ2003999-14	Carbon, Total Organic	DUP	K2002337-004	Water	0.67 mg/L	10 mL	0.67 mg/L	1	0.07	0.50		2	3/21/20 22:44:00	N	II
KQ2003999-15	Carbon, Total Organic	DUP	K2002337-005	Water	0.46 mg/L	10 mL	0.46 mg/L J	1	0.07	0.50		3	3/21/20 23:12:00	N	II
KQ2003999-16	Carbon, Total Organic	DUP	K2002337-006	Water	1.85 mg/L	10 mL	1.85 mg/L	1	0.07	0.50		1	3/22/20 00:10:00	N	II
KQ2003999-17	Carbon, Total Organic	DUP	K2002337-007	Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50		9	3/22/20 00:38:00	N	II
KQ2003999-18	Carbon, Total Organic	DUP	K2002353-001	Ground Water	1.19 mg/L	10 mL	480 mg/L	400	30	200		4	3/22/20 02:03:00	N	IV
KQ2003999-19	Carbon, Total Organic	DUP	K2002365-001	Water	6.74 mg/L	10 mL	6.74 mg/L	1	0.07	0.50		<1	3/22/20 01:34:00	N	II
KQ2003999-20	Carbon, Total Organic	DUP	K2002434-001	Water	0.19 mg/L	10 mL	0.19 mg/L J	1	0.07	0.50		NC	3/22/20 07:42:00	N	I
KQ2003999-21	Carbon, Total Organic	DUP	K2002434-002	Water	0.60 mg/L	10 mL	0.60 mg/L	1	0.07	0.50		2	3/22/20 08:10:00	N	I
KQ2003999-22	Carbon, Total Organic	DUP	K2002412-002	Ground Water	2.15 mg/L	10 mL	2.15 mg/L	1	0.07	0.50		9	3/22/20 03:27:00	N	IV
KQ2003999-23	Carbon, Total Organic	DUP	K2002412-001	Ground Water	10.27 mg/L	10 mL	10.3 mg/L	1	0.07	0.50		4	3/22/20 02:59:00	N	IV
KQ2003999-24	Carbon, Total Organic	DUP	K2002412-003	Ground Water	44.51 mg/L	10 mL	44.5 mg/L	1	0.07	0.50		<1	3/22/20 03:55:00	N	IV
KQ2003999-25	Carbon, Total Organic	DUP	K2002412-004	Ground Water	0.91 mg/L	10 mL	0.91 mg/L	1	0.07	0.50		27*	3/22/20 04:23:00	N	IV
KQ2003999-26	Carbon, Total Organic	DUP	K2002412-005	Ground Water	4.41 mg/L	10 mL	4.41 mg/L	1	0.07	0.50		4	3/22/20 05:50:00	N	IV
KQ2003999-27	Carbon, Total Organic	DUP	K2002412-006	Ground Water	30.72 mg/L	10 mL	30.7 mg/L	1	0.07	0.50		2	3/22/20 06:18:00	N	IV
KQ2003999-28	Carbon, Total Organic	DUP	K2002412-007	Ground Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50		30*	3/22/20 06:46:00	N	IV
KQ2003999-29	Carbon, Total Organic	DUP	K2002412-008	Ground Water	5.27 mg/L	10 mL	5.27 mg/L	1	0.07	0.50		<1	3/22/20 07:14:00	N	IV
KQ2003999-30	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	II
KQ2003999-31	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674225 **Method/Testcode:** 415.1/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002416-001	Carbon, Total Organic	N/A		Ground Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:07:00	Y	IV
K2002416-002	Carbon, Total Organic	N/A		Ground Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 10:33:00	N	IV
K2002416-003	Carbon, Total Organic	N/A		Ground Water	0.19 mg/L	10 mL	0.19 mg/L J	1	0.07	0.50			3/22/20 11:01:00	N	IV
K2002416-004	Carbon, Total Organic	N/A		Ground Water	0.54 mg/L	10 mL	0.54 mg/L	1	0.07	0.50			3/22/20 11:29:00	N	IV
K2002421-001	Carbon, Total Organic	N/A		Water	1.53 mg/L	10 mL	1.53 mg/L	1	0.07	0.50			3/22/20 15:45:00	N	IV
K2002421-002	Carbon, Total Organic	N/A		Water	0.79 mg/L	10 mL	0.79 mg/L	1	0.07	0.50			3/22/20 16:14:00	N	IV
K2002421-003	Carbon, Total Organic	N/A		Water	1.69 mg/L	10 mL	1.69 mg/L	1	0.07	0.50			3/22/20 16:42:00	N	IV
K2002421-004	Carbon, Total Organic	N/A		Water	0.82 mg/L	10 mL	0.82 mg/L	1	0.07	0.50			3/22/20 17:10:00	N	IV
K2002434-003	Carbon, Total Organic	N/A		Water	0.11 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 08:39:00	N	I
K2002462-001	Carbon, Total Organic	N/A		Water	2.96 mg/L	10 mL	2.96 mg/L	1	0.07	0.50			3/22/20 11:58:00	N	II
K2002470-001	Carbon, Total Organic	N/A		Water	2.07 mg/L	10 mL	2.07 mg/L	1	0.07	0.50			3/22/20 12:26:00	N	IV
K2002471-001	Carbon, Total Organic	N/A		Ground Water	4.43 mg/L	10 mL	4.43 mg/L	1	0.07	0.50			3/22/20 12:54:00	N	IV
K2002489-001	Carbon, Total Organic	N/A		Water	4.72 mg/L	10 mL	4.72 mg/L	1	0.07	0.50			3/22/20 13:22:00	N	II
K2002492-002	Carbon, Total Organic	N/A		Drinking Water	0.37 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 13:50:00	N	I
K2002496-001	Carbon, Total Organic	N/A		Water	14.38 mg/L	10 mL	14.4 mg/L	1	0.07	0.50			3/22/20 15:17:00	N	II
KQ2004008-01	Carbon, Total Organic	MS	K2002416-001	Ground Water	27.78 mg/L	10 mL	27.8 mg/L	1	0.07	0.50	111		3/22/20 10:04:00	N	IV
KQ2004008-02	Carbon, Total Organic	DUP	K2002416-001	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 09:07:00	N	IV
KQ2004008-03	Carbon, Total Organic	DUP	K2002416-002	Ground Water	0.01 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 10:33:00	N	IV
KQ2004008-04	Carbon, Total Organic	DUP	K2002416-003	Ground Water	0.16 mg/L	10 mL	0.16 mg/L J	1	0.07	0.50		21*	3/22/20 11:01:00	N	IV
KQ2004008-05	Carbon, Total Organic	DUP	K2002416-004	Ground Water	0.53 mg/L	10 mL	0.53 mg/L	1	0.07	0.50		2	3/22/20 11:29:00	N	IV
KQ2004008-06	Carbon, Total Organic	DUP	K2002421-001	Water	1.47 mg/L	10 mL	1.47 mg/L	1	0.07	0.50		4	3/22/20 15:45:00	N	IV
KQ2004008-07	Carbon, Total Organic	DUP	K2002421-002	Water	0.76 mg/L	10 mL	0.76 mg/L	1	0.07	0.50		3	3/22/20 16:14:00	N	IV
KQ2004008-08	Carbon, Total Organic	DUP	K2002421-003	Water	1.71 mg/L	10 mL	1.71 mg/L	1	0.07	0.50		1	3/22/20 16:42:00	N	IV
KQ2004008-09	Carbon, Total Organic	DUP	K2002421-004	Water	0.78 mg/L	10 mL	0.78 mg/L	1	0.07	0.50		5	3/22/20 17:10:00	N	IV
KQ2004008-10	Carbon, Total Organic	DUP	K2002434-003	Water	0.18 mg/L	10 mL	0.18 mg/L J	1	0.07	0.50		NC	3/22/20 08:39:00	N	I
KQ2004008-11	Carbon, Total Organic	DUP	K2002462-001	Water	2.96 mg/L	10 mL	2.96 mg/L	1	0.07	0.50		<1	3/22/20 11:58:00	N	II
KQ2004008-12	Carbon, Total Organic	DUP	K2002470-001	Water	1.98 mg/L	10 mL	1.98 mg/L	1	0.07	0.50		4	3/22/20 12:26:00	N	IV
KQ2004008-13	Carbon, Total Organic	DUP	K2002471-001	Ground Water	4.30 mg/L	10 mL	4.30 mg/L	1	0.07	0.50		3	3/22/20 12:54:00	N	IV
KQ2004008-14	Carbon, Total Organic	DUP	K2002489-001	Water	4.65 mg/L	10 mL	4.65 mg/L	1	0.07	0.50		2	3/22/20 13:22:00	N	II
KQ2004008-15	Carbon, Total Organic	DUP	K2002492-002	Drinking Water	0.40 mg/L	10 mL	0.40 mg/L J	1	0.07	0.50		NC	3/22/20 13:50:00	N	I

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674225 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2004008-16	Carbon, Total Organic	DUP	K2002496-001	Water	13.50 mg/L	10 mL	13.5 mg/L	1	0.07	0.50		6	3/22/20 15:17:00	N	II
KQ2004008-17	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	I
KQ2004008-17	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	I
KQ2004008-18	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	I
KQ2004008-18	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	I
KQ2004008-19	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	I
KQ2004008-19	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	I
KQ2004008-20	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	I
KQ2004008-20	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	I
KQ2004008-21	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	I
KQ2004008-21	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	I
KQ2004008-22	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	I
KQ2004008-22	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	I
KQ2004008-23	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	I
KQ2004008-23	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	I
KQ2004008-24	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	I
KQ2004008-24	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	I
KQ2004008-25	Carbon, Total Organic	MB		Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:21:00	N	I
KQ2004008-25	Carbon, Total Organic	MB		Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:21:00	N	I
KQ2004008-26	Carbon, Total Organic	LCS		Water	24.62 mg/L	10 mL	24.6 mg/L	1	0.07	0.50	98		3/22/20 05:35:00	N	I
KQ2004008-26	Carbon, Total Organic	LCS		Water	24.62 mg/L	10 mL	24.6 mg/L	1	0.07	0.50	98		3/22/20 05:35:00	N	I
KQ2004008-27	Carbon, Total Organic	N/A		Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:07:00	N	IV
KQ2004008-28	Carbon, Total Organic	MS	KQ2004008-27	Water	27.78 mg/L	10 mL	27.8 mg/L	1	0.07	0.50	111		3/22/20 10:04:00	N	IV
KQ2004008-29	Carbon, Total Organic	DUP	KQ2004008-27	Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 09:07:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674226 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002432-001	Carbon, Total Organic	N/A		Water	0.03 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 17:38:00	N	IV
K2002437-001	Carbon, Total Organic	N/A		Water	1.83 mg/L	10 mL	1.83 mg/L	1	0.07	0.50			3/22/20 19:04:00	N	I
K2002437-002	Carbon, Total Organic	N/A		Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			3/22/20 19:33:00	N	I
K2002437-003	Carbon, Total Organic	N/A		Water	3.10 mg/L	10 mL	3.10 mg/L	1	0.07	0.50			3/22/20 20:00:00	N	I
K2002437-004	Carbon, Total Organic	N/A		Water	0.71 mg/L	10 mL	0.71 mg/L	1	0.07	0.50			3/22/20 20:29:00	N	I
K2002437-005	Carbon, Total Organic	N/A		Water	0.59 mg/L	10 mL	0.59 mg/L	1	0.07	0.50			3/22/20 20:57:00	N	I
K2002456-001	Carbon, Total Organic	N/A		Water	1.07 mg/L	10 mL	1.07 mg/L	1	0.07	0.50			3/22/20 21:25:00	N	IV
K2002456-002	Carbon, Total Organic	N/A		Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			3/22/20 21:53:00	N	IV
K2002456-003	Carbon, Total Organic	N/A		Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50			3/22/20 22:21:00	N	IV
K2002456-004	Carbon, Total Organic	N/A		Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50			3/22/20 22:49:00	N	IV
KQ2004009-01	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	IV
KQ2004009-02	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	IV
KQ2004009-03	Carbon, Total Organic	CCV		Water	25.05 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	IV
KQ2004009-04	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	IV
KQ2004009-05	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	IV
KQ2004009-06	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	IV
KQ2004009-07	Carbon, Total Organic	MB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:48:00	N	IV
KQ2004009-08	Carbon, Total Organic	LCS		Water	24.66 mg/L	10 mL	24.7 mg/L	1	0.07	0.50	99		3/22/20 15:03:00	N	IV
KQ2004009-09	Carbon, Total Organic	MS	K2002432-001	Water	26.30 mg/L	10 mL	26.3 mg/L	1	0.07	0.50	105		3/22/20 18:06:00	N	IV
KQ2004009-10	Carbon, Total Organic	DUP	K2002432-001	Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 17:38:00	N	IV
KQ2004009-11	Carbon, Total Organic	DUP	K2002437-001	Water	1.78 mg/L	10 mL	1.78 mg/L	1	0.07	0.50		3	3/22/20 19:04:00	N	I
KQ2004009-12	Carbon, Total Organic	DUP	K2002437-002	Water	0.71 mg/L	10 mL	0.71 mg/L	1	0.07	0.50		2	3/22/20 19:33:00	N	I
KQ2004009-13	Carbon, Total Organic	DUP	K2002437-003	Water	3.13 mg/L	10 mL	3.13 mg/L	1	0.07	0.50		<1	3/22/20 20:00:00	N	I
KQ2004009-14	Carbon, Total Organic	DUP	K2002437-004	Water	0.64 mg/L	10 mL	0.64 mg/L	1	0.07	0.50		10	3/22/20 20:29:00	N	I
KQ2004009-15	Carbon, Total Organic	DUP	K2002437-005	Water	0.56 mg/L	10 mL	0.56 mg/L	1	0.07	0.50		4	3/22/20 20:57:00	N	I
KQ2004009-16	Carbon, Total Organic	DUP	K2002456-001	Water	1.04 mg/L	10 mL	1.04 mg/L	1	0.07	0.50		2	3/22/20 21:25:00	N	IV
KQ2004009-17	Carbon, Total Organic	DUP	K2002456-002	Water	0.66 mg/L	10 mL	0.66 mg/L	1	0.07	0.50		9	3/22/20 21:53:00	N	IV
KQ2004009-18	Carbon, Total Organic	DUP	K2002456-003	Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50		<1	3/22/20 22:21:00	N	IV
KQ2004009-19	Carbon, Total Organic	DUP	K2002456-004	Water	1.30 mg/L	10 mL	1.30 mg/L	1	0.07	0.50		4	3/22/20 22:49:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674227 **Method/Testcode:** SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002422-001	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	9.45 mg/L	10 mL	9.45 mg/L	1	0.07	0.50			3/23/20 02:23:00	N	III
K2002462-002	Carbon, Dissolved Organic	N/A		Water	4.12 mg/L	10 mL	4.12 mg/L	1	0.07	0.50			3/23/20 01:11:00	N	II
KQ2004010-01	Carbon, Dissolved Organic	CCV		Water	25.13 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	II
KQ2004010-01	Carbon, Dissolved Organic (DOC)	CCV		Water	25.13 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	II
KQ2004010-02	Carbon, Dissolved Organic	CCV		Water	25.06 mg/L	10 mL	25.1 mg/L	1					3/23/20 03:20:00	N	II
KQ2004010-02	Carbon, Dissolved Organic (DOC)	CCV		Water	25.06 mg/L	10 mL	25.1 mg/L	1					3/23/20 03:20:00	N	II
KQ2004010-03	Carbon, Dissolved Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	II
KQ2004010-03	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	II
KQ2004010-04	Carbon, Dissolved Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 03:35:00	N	II
KQ2004010-04	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 03:35:00	N	II
KQ2004010-05	Carbon, Dissolved Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:42:00	N	II
KQ2004010-05	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:42:00	N	II
KQ2004010-06	Carbon, Dissolved Organic	LCS		Water	24.20 mg/L	10 mL	24.2 mg/L	1	0.07	0.50	97		3/23/20 00:57:00	N	II
KQ2004010-06	Carbon, Dissolved Organic (DOC)	LCS		Water	24.20 mg/L	10 mL	24.2 mg/L	1	0.07	0.50	97		3/23/20 00:57:00	N	II
KQ2004010-07	Carbon, Dissolved Organic	MS	K2002462-002	Water	32.05 mg/L	10 mL	32.0 mg/L	1	0.07	0.50	112		3/23/20 01:40:00	N	II
KQ2004010-08	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	4.12 mg/L	10 mL	4.12 mg/L	1	0.07	0.50			3/23/20 01:11:00	N	III
KQ2004010-09	Carbon, Dissolved Organic (DOC)	MS	KQ2004010-08	Surface Water	32.05 mg/L	10 mL	32.0 mg/L	1	0.07	0.50	112		3/23/20 01:40:00	N	III
KQ2004010-10	Carbon, Dissolved Organic (DOC)	DUP	K2002422-001	Surface Water	9.61 mg/L	10 mL	9.61 mg/L	1	0.07	0.50		2	3/23/20 02:23:00	N	III
KQ2004010-11	Carbon, Dissolved Organic	DUP	K2002462-002	Water	4.07 mg/L	10 mL	4.07 mg/L	1	0.07	0.50		1	3/23/20 01:11:00	N	II
KQ2004010-12	Carbon, Dissolved Organic (DOC)	DUP	KQ2004010-08	Surface Water	4.07 mg/L	10 mL	4.07 mg/L	1	0.07	0.50		1	3/23/20 01:11:00	N	III

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

0.043	0.043			OBSERVATIONS	12	0.0432
0.366				STD Deviation	0.11429	ABOVE
0.200				AVERAGE	0.06658	ABOVE
0.055	0.055	0.055	######	UCL	0.18087	0.0545
0.136	0.136			LCL	-0.04772	0.1357
0.000						0
0.000						0
0.000				OBSERVATIONS	3	0
0.000				STD Deviation	0.02578	0
0.000				AVERAGE	0.07780	0
0.000				UCL	0.10358	0
0.000				LCL	0.05202	0
						0
						0
				OBSERVATIONS	1	0
				STD Deviation	#DIV/0!	0
				AVERAGE	0.05450	0
				UCL	#DIV/0!	0
				LCL	#DIV/0!	0
						0
						0
				OBSERVATIONS	0	0
				STD Deviation	#DIV/0!	0
				AVERAGE	#DIV/0!	0
						0
						0
						0
						0
						0

BLP 3/24/20

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccb	1	0.043	0.0778	-0.0346	-0.0346	<0.5	3/21/2020
3	ccv	1	26.406	0.0778	26.3280	26.328	26.3	3/21/2020
4	mb	1	0.366	0.0778	0.2878	0.2878	<0.5	3/21/2020
5	lcs	1	24.954	0.0778	24.8758	24.8758	24.9	3/21/2020
6	K2002337-001	1	0.994	0.0778	0.9162	0.9162	0.92	3/21/2020
7	K2002337-001	1	0.983	0.0778	0.9055	0.9055	0.9	3/21/2020
8	KQ2003999-09	1	29.561	0.0778	29.4834	29.4834	29	3/21/2020
9	K2002337-002	1	0.927	0.0778	0.8490	0.849	0.85	3/21/2020
10	K2002337-002	1	0.868	0.0778	0.7902	0.7902	0.79	3/21/2020
11	K2002337-003	1	0.851	0.0778	0.7733	0.7733	0.8	3/21/2020
12	K2002337-003	1	0.778	0.0778	0.6997	0.6997	0.70	3/21/2020
13	K2002337-004	1	0.759	0.0778	0.6814	0.6814	0.68	3/21/2020
14	K2002337-004	1	0.748	0.0778	0.6704	0.6704	0.67	3/21/2020
15	K2002337-005	1	0.530	0.0778	0.4518	0.4518	<0.5	3/21/2020
16	K2002337-005	1	0.543	0.0778	0.4649	0.4649	<0.5	3/21/2020
17	ccv	1	26.379	0.0778	26.3014	26.3014	26.30	3/21/2020
18	ccb	1	0.200	0.0778	0.1221	0.1221	<0.5	3/21/2020
19	K2002337-006	1	1.952	0.0778	1.8738	1.8738	1.9	3/22/2020
20	K2002337-006	1	1.929	0.0778	1.8513	1.8513	1.85	3/22/2020
21	K2002337-007	1	0.710	0.0778	0.6317	0.6317	0.63	3/22/2020
22	K2002337-007	1	0.658	0.0778	0.5798	0.5798	0.6	3/22/2020
23	K2002276-001	10	5.931	0.0778	5.8531	58.531	58.5	3/22/2020
24	K2002276-001	10	5.997	0.0778	5.9193	59.193	59.19	3/22/2020
25	K2002365-001	1	6.825	0.0778	6.7471	6.7471	6.75	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

	date	time
Analyzed By: KW	Date Analyzed 3/21/20	
Reviewed By:	Date Reviewed	

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002365-001	1	6.814	0.0778	6.7366	6.7366	6.74	3/22/2020
27	K2002353-001	400	1.325	0.0778	1.2473	498.92	498.92	3/22/2020
28	K2002353-001	400	1.272	0.0778	1.1941	477.64	477.6	3/22/2020
29	K2002412-001	1	10.758	0.0778	10.6798	10.6798	10.7	3/22/2020
30	K2002412-001	1	10.352	0.0778	10.2738	10.2738	10.3	3/22/2020
31	K2002412-002	1	2.431	0.0778	2.3535	2.3535	2.4	3/22/2020
32	K2002412-002	1	2.226	0.0778	2.1484	2.1484	2.1	3/22/2020
33	K2002412-003	1	44.908	0.0778	44.8304	44.8304	44.8	3/22/2020
34	K2002412-003	1	44.589	0.0778	44.5114	44.5114	44.5	3/22/2020
35	K2002412-004	1	1.276	0.0778	1.1981	1.1981	1.2	3/22/2020
36	K2002412-004	1	0.987	0.0778	0.9096	0.9096	0.9	3/22/2020
37	ccv	1	26.538	0.0778	26.4599	26.4599	26.5	3/22/2020
38	ccb	1	0.055	0.0778	-0.0233	-0.0233	<0.5	3/22/2020
39	K2002412-005	1	4.650	0.0778	4.5720	4.572	4.6	3/22/2020
40	K2002412-005	1	4.487	0.0778	4.4096	4.4096	4.4	3/22/2020
41	K2002412-006	1	31.326	0.0778	31.2482	31.2482	31.2	3/22/2020
42	K2002412-006	1	30.802	0.0778	30.7243	30.7243	30.7	3/22/2020
43	K2002412-007	1	0.861	0.0778	0.7828	0.7828	0.8	3/22/2020
44	K2002412-007	1	0.659	0.0778	0.5810	0.581	0.6	3/22/2020
45	K2002412-008	1	5.297	0.0778	5.2192	5.2192	5.2	3/22/2020
46	K2002412-008	1	5.349	0.0778	5.2707	5.2707	5.3	3/22/2020
47	K2002434-001	1	0.318	0.0778	0.2402	0.2402	<0.5	3/22/2020
48	K2002434-001	1	0.271	0.0778	0.1933	0.1933	<0.5	3/22/2020
49	K2002434-002	1	0.689	0.0778	0.6116	0.6116	0.6	3/22/2020
50	K2002434-002	1	0.674	0.0778	0.5965	0.5965	0.6	3/22/2020

Analyzed By: BCD	Date Analyzed 3/24/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
51	ccv	1	25.843	0.0778	25.7647	25.7647	25.76	3/22/2020
52	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
53		1		0.0000	0.0000	0	<0.5	
54		1		0.0000	0.0000	0	<0.5	
55		1		0.0000	0.0000	0	<0.5	
56		1		0.0000	0.0000	0	<0.5	
57		1		0.0000	0.0000	0	<0.5	
58		1		0.0000	0.0000	0	<0.5	
59		1		0.0000	0.0000	0	<0.5	
60		1		0.0000	0.0000	0	<0.5	
61		1		0.0000	0.0000	0	<0.5	
62		1		0.0000	0.0000	0	<0.5	
63		1		0.0000	0.0000	0	<0.5	
64		1		0.0000	0.0000	0	<0.5	
65		1		0.0000	0.0000	0	<0.5	
66		1		0.0000	0.0000	0	<0.5	
67		1		0.0000	0.0000	0	<0.5	
68		1		0.0000	0.0000	0	<0.5	
69		1		0.0000	0.0000	0	<0.5	
70		1		0.0000	0.0000	0	<0.5	
71		1		0.0000	0.0000	0	<0.5	
72		1		0.0000	0.0000	0	<0.5	
73		1		0.0000	0.0000	0	<0.5	
74		1		0.0000	0.0000	0	<0.5	
75		1		0.0000	0.0000	0	<0.5	

Analyzed By: BKP	Date Analyzed 3/24/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	26.538	0.0778	26.4599	26.4599	26.5	3/22/2020
3	ccb	1	0.055	0.0778	-0.0233	-0.0233	<0.5	3/22/2020
4	mb	1	0.136	0.0778	0.0579	0.0579	<0.5	3/22/2020
5	lcs	1	24.698	0.0778	24.6205	24.6205	24.6	3/22/2020
6	K2002434-003	1	0.192	0.0778	0.1139	0.1139	<0.5	3/22/2020
7	K2002434-003	1	0.258	0.0778	0.1797	0.1797	<0.5	3/22/2020
8	K2002416-001	1	0.099	0.0778	0.0207	0.0207	<0.5	3/22/2020
9	K2002416-001	1	0.083	0.0778	0.0048	0.0048	<0.5	3/22/2020
10	ccv	1	25.843	0.0778	25.7647	25.7647	25.76	3/22/2020
11	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
12	KQ2004008-01	1	27.862	0.0778	27.7842	27.7842	27.78	3/22/2020
13	K2002416-002	1	0.099	0.0778	0.0210	0.021	<0.5	3/22/2020
14	K2002416-002	1	0.085	0.0778	0.0067	0.0067	<0.5	3/22/2020
15	K2002416-003	1	0.271	0.0778	0.1932	0.1932	<0.5	3/22/2020
16	K2002416-003	1	0.235	0.0778	0.1572	0.1572	<0.5	3/22/2020
17	K2002416-004	1	1.615	0.0778	1.5370	1.537	1.54	3/22/2020
18	K2002416-004	1	1.605	0.0778	1.5267	1.5267	1.5	3/22/2020
19	K2002462-001	1	3.041	0.0778	2.9627	2.9627	3.0	3/22/2020
20	K2002462-001	1	3.038	0.0778	2.9600	2.96	2.96	3/22/2020
21	K2002470-001	1	2.148	0.0778	2.0704	2.0704	2.07	3/22/2020
22	K2002470-001	1	2.061	0.0778	1.9828	1.9828	2.0	3/22/2020
23	K2002471-001	1	4.509	0.0778	4.4308	4.4308	4.4	3/22/2020
24	K2002471-001	1	4.381	0.0778	4.3030	4.303	4.30	3/22/2020
25	K2002489-001	1	4.801	0.0778	4.7227	4.7227	4.72	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

date time

Analyzed By: [signature]	Date Analyzed 3/22/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002489-001	1	4.724	0.0778	4.6460	4.646	4.65	3/22/2020
27	K2002492-002	1	0.452	0.0778	0.3746	0.3746	<0.5	3/22/2020
28	K2002492-002	1	0.479	0.0778	0.4014	0.4014	<0.5	3/22/2020
29	ccv	1	25.695	0.0778	25.6168	25.6168	25.6	3/22/2020
30	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
31	K2002496-001	1	14.459	0.0778	14.3812	14.3812	14.4	3/22/2020
32	K2002496-001	1	13.578	0.0778	13.5000	13.5	13.5	3/22/2020
33	K2002421-001	1	1.605	0.0778	1.5272	1.5272	1.5	3/22/2020
34	K2002421-001	1	1.548	0.0778	1.4705	1.4705	1.5	3/22/2020
35	K2002421-002	1	0.866	0.0778	0.7878	0.7878	0.8	3/22/2020
36	K2002421-002	1	0.842	0.0778	0.7645	0.7645	0.8	3/22/2020
37	K2002421-003	1	1.766	0.0778	1.6881	1.6881	1.7	3/22/2020
38	K2002421-003	1	1.790	0.0778	1.7125	1.7125	1.7	3/22/2020
39	K2002421-004	1	0.896	0.0778	0.8180	0.818	0.8	3/22/2020
40	K2002421-004	1	0.859	0.0778	0.7812	0.7812	0.8	3/22/2020
41	ccv	1	25.418	0.0778	25.3398	25.3398	25.3	3/22/2020
42	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: KP	Date Analyzed 3/22/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.695	0.0778	25.6168	25.6168	25.6	3/22/2020
3	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
4	mb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
5	lcs	1	24.742	0.0778	24.6645	24.6645	24.7	3/22/2020
6	K2002432-001	1	0.108	0.0778	0.0305	0.0305	<0.5	3/22/2020
7	K2002432-001	1	0.143	0.0778	0.0649	0.0649	<0.5	3/22/2020
8	KQ2004009-09	1	26.380	0.0778	26.3020	26.302	26	3/22/2020
9	ccv	1	25.418	0.0778	25.3398	25.3398	25.34	3/22/2020
10	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
11	K2002437-001	1	1.911	0.0778	1.8331	1.8331	1.8	3/22/2020
12	K2002437-001	1	1.853	0.0778	1.7754	1.7754	1.78	3/22/2020
13	K2002437-002	1	0.802	0.0778	0.7246	0.7246	0.72	3/22/2020
14	K2002437-002	1	0.788	0.0778	0.7099	0.7099	0.71	3/22/2020
15	K2002437-003	1	3.181	0.0778	3.1028	3.1028	3.1	3/22/2020
16	K2002437-003	1	3.208	0.0778	3.1306	3.1306	3.1	3/22/2020
17	K2002437-004	1	0.783	0.0778	0.7056	0.7056	0.71	3/22/2020
18	K2002437-004	1	0.715	0.0778	0.6372	0.6372	0.6	3/22/2020
19	K2002437-005	1	0.665	0.0778	0.5874	0.5874	0.6	3/22/2020
20	K2002437-005	1	0.641	0.0778	0.5633	0.5633	0.56	3/22/2020
21	K2002456-001	1	1.145	0.0778	1.0675	1.0675	1.07	3/22/2020
22	K2002456-001	1	1.122	0.0778	1.0438	1.0438	1.0	3/22/2020
23	K2002456-002	1	0.794	0.0778	0.7165	0.7165	0.7	3/22/2020
24	K2002456-002	1	0.735	0.0778	0.6568	0.6568	0.66	3/22/2020
25	K2002456-003	1	1.431	0.0778	1.3528	1.3528	1.35	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

date time

Analyzed By: BW	Date Analyzed 3/12/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002456-003	1	1.431	0.0778	1.3528	1.3528	1.35	3/22/2020
27	K2002456-004	1	1.433	0.0778	1.3548	1.3548	1.35	3/22/2020
28	K2002456-004	1	1.375	0.0778	1.2971	1.2971	1.3	3/22/2020
29	ccv	1	25.130	0.0778	25.0525	25.0525	25.1	3/23/2020
30	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
31		1		0.0000	0.0000	0	<0.5	
32		1		0.0000	0.0000	0	<0.5	
33		1		0.0000	0.0000	0	<0.5	
34		1		0.0000	0.0000	0	<0.5	
35		1		0.0000	0.0000	0	<0.5	
36		1		0.0000	0.0000	0	<0.5	
37		1		0.0000	0.0000	0	<0.5	
38		1		0.0000	0.0000	0	<0.5	
39		1		0.0000	0.0000	0	<0.5	
40		1		0.0000	0.0000	0	<0.5	
41		1		0.0000	0.0000	0	<0.5	
42		1		0.0000	0.0000	0	<0.5	
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: BCP	Date Analyzed 3/21/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.130	0.0778	25.0525	25.0525	25.1	3/23/2020
3	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
4	mb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
5	lcs	1	24.199	0.0778	24.1209	24.1209	24.1	3/23/2020
6	K2002462-002	1	4.117	0.0778	4.0393	4.0393	4.04	3/23/2020
7	K2002462-002	1	4.067	0.0778	3.9892	3.9892	4.0	3/23/2020
8	KQ2004010-07	1	32.047	0.0778	31.9695	31.9695	32	3/23/2020
9	K2002422-001	1	9.445	0.0778	9.3675	9.3675	9.37	3/23/2020
10	K2002422-001	1	9.612	0.0778	9.5338	9.5338	9.53	3/23/2020
11	ccv	1	25.060	0.0778	24.9820	24.982	25.0	3/23/2020
12	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
13		1		0.0000	0.0000	0	<0.5	
14		1		0.0000	0.0000	0	<0.5	
15		1		0.0000	0.0000	0	<0.5	
16		1		0.0000	0.0000	0	<0.5	
17		1		0.0000	0.0000	0	<0.5	
18		1		0.0000	0.0000	0	<0.5	
19		1		0.0000	0.0000	0	<0.5	
20		1		0.0000	0.0000	0	<0.5	
21		1		0.0000	0.0000	0	<0.5	
22		1		0.0000	0.0000	0	<0.5	
23		1		0.0000	0.0000	0	<0.5	
24		1		0.0000	0.0000	0	<0.5	
25		1		0.0000	0.0000	0	<0.5	

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

	date	time
Analyzed By: BCP	Date Analyzed 3/21/20	
Reviewed By:	Date Reviewed	

TOC: 674205, 674225, 674226
DOC: 674227

Schedule: 03212020

Version: 4
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2020/03/21 21:07 - Saturday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
74	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K2002337-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
4	Sample	K2002337-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
5	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
6	Sample	K2002337-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
7	Sample	K2002337-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
8	Sample	K2002337-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
9	Sample	K2002337-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
10	Sample	K2002337-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	K2002337-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	K2002276-001.01 10x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	K2002365-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
14	Sample	K2002353-001.01 400x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
15	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
16	Sample	K2002412-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
17	Sample	K2002412-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
18	Sample	K2002412-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
19	Sample	K2002412-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
21	Sample	K2002412-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K2002412-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
23	Sample	K2002412-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
24	Sample	K2002412-008.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
25	Sample	K2002434-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K2002434-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K2002434-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K2002416-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
29	Sample	K2002416-001.02 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
30	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
31	Sample	K2002416-002.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
32	Sample	K2002416-003.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
33	Sample	K2002416-004.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
34	Sample	K2002462-001.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
35	Sample	K2002470-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
36	Sample	K2002471-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
37	Sample	K2002489-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
38	Sample	K2002492-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready

Schedule: 03212020

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
39	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
40	Sample	K2002496-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
41	Sample	K2002421-001.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
42	Sample	K2002421-002.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
43	Sample	K2002421-003.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
44	Sample	K2002421-004.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
45	Sample	K2002432-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
46	Sample	K2002432-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
47	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
48	Sample	K2002437-001.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
49	Sample	K2002437-002.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
50	Sample	K2002437-003.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
51	Sample	K2002437-004.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
52	Sample	K2002437-005.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
53	Sample	K2002456-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
54	Sample	K2002456-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
55	Sample	K2002456-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
56	Sample	K2002456-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
57	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
58	Sample	MB4	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
59	Sample	K2002462-002.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
60	Sample	K2002462-002.04 ms doc	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
61	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
62	Sample	FB 3/19/20 1619	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
63	Sample	K2002422-001.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
64	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
					False	

Fusion Report - 03212020
Saturday, March 21, 2020 04:44 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/03/24 09:26 - Tuesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	03212020	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v2) Fusion1 (Fusion1) (v3) Fusion1 (Fusion1) (v4)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/03/21 16:44

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	12.01	16.15	4.14	49.81	08:01
2	TC Clean	18.09	21.86	3.77	49.56	07:17
3	TC Clean	6.93	10.79	3.86	49.61	07:02
4	TC Clean	5.02	8.90	3.88	49.63	07:01

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	74	TOC	RB	0.4528 ppm	0.0533 ppm	11.7700%	2020/03/21 17:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4804	4.8037	10.62	14.37	3.75	49.71	10:29
2	TOC	0.4973	4.9732	10.74	14.56	3.82	49.67	10:29
3	TOC	0.4567	4.5672	10.46	14.14	3.68	49.67	10:27
4	TOC	0.3769	3.7687	9.93	13.76	3.83	49.65	10:29

Dilution **Blank Contribution** **Method** **Calibration**

1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◈	(clean)		Clean	2020/03/21 18:14

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	9.17	13.91	4.74	49.79	07:59
2	TC Clean	6.79	10.62	3.83	49.55	07:20
3	TC Clean	4.32	8.23	3.91	49.61	07:00
4	TC Clean	3.54	7.40	3.86	49.60	07:01

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◈	(clean)		Clean	2020/03/21 18:48

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.92	4.73	3.81	49.82	07:59
2	TC Clean	8.57	12.40	3.83	49.62	07:17
3	TC Clean	4.30	8.10	3.80	49.63	07:00
4	TC Clean	3.55	7.36	3.81	49.65	07:03

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	D	TOC	RB	0.2621 ppm	0.0000 ppm	0.0000%	2020/03/21 19:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2621	2.6207	9.15	12.95	3.80	49.69	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCB — From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time

◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0432 ppm (PASS)	0.0000 ppm	0%	2020/03/21 19:37

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0432	0.4318	8.11	11.92	3.82	49.72	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.4058 ppm (PASS)	0.0000 ppm	0%	2020/03/21 19:52

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.4058	264.0582	185.40	189.22	3.82	49.75	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Sample

From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	1	TOC	MB1	0.3656 ppm	0.0000 ppm	0.0000%	2020/03/21 20:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3656	3.6557	9.85	13.62	3.77	49.76	10:35

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS

From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	24.9536 ppm (PASS)	0.0000 ppm	0%	2020/03/21 20:21

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.9536	249.5362	175.63	179.68	4.05	49.79	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	2	TOC	ICS	2.0813 ppm	0.0000 ppm	0.0000%	2020/03/21 20:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.0813	20.8126	21.39	25.32	3.93	49.83	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	3	TOC	K2002337-001.01	0.9886 ppm	0.0076 ppm	0.7700%	2020/03/21 20:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9940	9.9397	14.08	17.85	3.78	49.85	10:28
2	TOC	0.9833	9.8327	14.00	17.80	3.80	49.88	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	4	TOC	K2002337-001.01 ms	29.5612 ppm	0.0000 ppm	0.0000%	2020/03/21 21:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	29.5612	295.6123	206.19	209.98	3.79	49.90	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	5	TOC	RB	0.2728 ppm	0.0000 ppm	0.0000%	2020/03/21 21:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2728	2.7278	9.23	12.95	3.72	49.94	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	6	TOC	K2002337-002.01	0.8974 ppm	0.0415 ppm	4.6300%	2020/03/21 21:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9268	9.2676	13.62	17.26	3.63	49.95	10:26
2	TOC	0.8680	8.6802	13.23	17.12	3.89	49.98	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	7	TOC	K2002337-003.01	0.8143 ppm	0.0520 ppm	6.3900%	2020/03/21 22:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8511	8.5107	13.12	16.70	3.59	49.97	10:27
2	TOC	0.7775	7.7747	12.62	16.55	3.93	50.00	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	8	TOC	K2002337-004.01	0.7537 ppm	0.0078 ppm	1.0300%	2020/03/21 22:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7592	7.5918	12.50	16.55	4.05	50.01	10:30
2	TOC	0.7482	7.4817	12.42	16.32	3.90	50.00	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	9	TOC	K2002337-005.01	0.5361 ppm	0.0093 ppm	1.7300%	2020/03/21 23:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5296	5.2958	10.95	14.68	3.72	49.98	10:30
2	TOC	0.5427	5.4267	11.04	14.79	3.75	49.99	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.3792 ppm	0.0000 ppm	0%	2020/03/21 23:40

							(PASS)				

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.3792	263.7921	185.22	188.92	3.71	50.01	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB

From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.1999 ppm (PASS)	0.0000 ppm	0%	2020/03/21 23:55

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.1999	1.9991	9.16	12.96	3.80	50.00	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample

From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	10	TOC	K2002337-006.01	1.9404 ppm	0.0159 ppm	0.8200%	2020/03/22 00:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9516	19.5160	20.52	24.28	3.76	50.01	10:33
2	TOC	1.9291	19.2914	20.37	24.25	3.89	49.98	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	11	TOC	K2002337-007.01	0.6836 ppm	0.0367 ppm	5.3700%	2020/03/22 00:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7095	7.0951	12.16	15.91	3.75	49.97	10:25
2	TOC	0.6576	6.5762	11.81	15.68	3.87	49.95	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis	Sample ID	Result (ppmC)	Std. Dev.	RSD	Start Time

		Type			(ppmC)		
◆	12	TOC	K2002276-001.01 10x	5.9640 ppm	0.0468 ppm	0.7800%	2020/03/22 01:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.9309	59.3095	47.28	51.18	3.91	49.95	10:27
2	TOC	5.9971	59.9712	47.72	51.51	3.79	49.96	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	13	TOC	K2002365-001.01	6.8196 ppm	0.0075 ppm	0.1100%	2020/03/22 01:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.8249	68.2493	53.29	57.25	3.96	49.94	10:26
2	TOC	6.8144	68.1437	53.22	57.13	3.91	49.94	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	14	TOC	K2002353-001.01 400x	1.2985 ppm	0.0376 ppm	2.9000%	2020/03/22 02:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3251	13.2513	16.30	20.20	3.90	49.93	10:28
2	TOC	1.2719	12.7189	15.94	19.92	3.97	49.90	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	15	TOC	RB	0.0981 ppm	0.0036 ppm	3.6500%	2020/03/22 02:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1006	1.0059	8.07	11.84	3.77	49.88	10:26
2	TOC	0.0955	0.9553	8.03	12.08	4.05	49.88	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	16	TOC	K2002412-001.01	10.5546 ppm	0.2870 ppm	2.7200%	2020/03/22 02:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	10.7576	107.5758	79.74	83.68	3.95	49.85	10:29
2	TOC	10.3516	103.5163	77.01	80.95	3.94	49.85	10:26

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	17	TOC	K2002412-002.01	2.3288 ppm	0.1450 ppm	6.2300%	2020/03/22 03:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4313	24.3130	23.74	27.73	3.98	49.85	10:28
2	TOC	2.2262	22.2625	22.36	26.60	4.24	49.85	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	18	TOC	K2002412-003.01	44.7487 ppm	0.2255 ppm	0.5000%	2020/03/22 03:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	44.9082	449.0821	309.40	313.24	3.84	49.85	10:30
2	TOC	44.5892	445.8925	307.25	311.28	4.03	49.85	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	19	TOC	K2002412-004.01	1.1317 ppm	0.2040 ppm	18.0300%	2020/03/22 04:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2759	12.7591	15.97	20.08	4.10	49.87	10:27
2	TOC	0.9874	9.8743	14.03	18.07	4.04	49.92	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.5377 ppm (PASS)	0.0000 ppm	0%	2020/03/22 04:51

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.5377	265.3772	186.28	190.22	3.94	49.88	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	50 ppmC

met.	(v4)	(v32)

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0545 ppm (PASS)	0.0000 ppm	0%	2020/03/22 05:06

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0545	0.5449	8.18	12.24	4.06	49.92	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	20	TOC	MB2	0.1357 ppm	0.0000 ppm	0.0000%	2020/03/22 05:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1357	1.3568	8.30	12.27	3.97	49.92	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	24.6983 ppm (PASS)	0.0000 ppm	0%	2020/03/22 05:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.6983	246.9831	173.91	177.85	3.94	49.91	10:35

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

◆	21	TOC	K2002412-005.01	4.5686 ppm	0.1148 ppm	2.5100%	2020/03/22 05:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.6498	46.4975	38.66	42.58	3.92	49.92	10:28
2	TOC	4.4874	44.8737	37.57	41.59	4.02	49.93	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	22	TOC	K2002412-006.01	31.0641 ppm	0.3704 ppm	1.1900%	2020/03/22 06:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	31.3260	313.2600	218.06	222.06	4.00	49.92	10:27
2	TOC	30.8021	308.0213	214.54	218.63	4.09	49.93	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	23	TOC	K2002412-007.01	0.7597 ppm	0.1427 ppm	18.7800%	2020/03/22 06:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8606	8.6059	13.18	17.31	4.14	49.93	10:28
2	TOC	0.6588	6.5880	11.82	15.93	4.11	49.94	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	24	TOC	K2002412-008.01	5.3228 ppm	0.0364 ppm	0.6800%	2020/03/22 07:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.2970	52.9704	43.01	47.07	4.06	49.93	10:27
2	TOC	5.3485	53.4849	43.36	47.40	4.04	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	25	TOC	K2002434-001.01	0.2946 ppm	0.0331 ppm	11.2400%	2020/03/22 07:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3180	3.1799	9.53	13.49	3.96	49.96	10:27
2	TOC	0.2711	2.7115	9.22	13.14	3.93	49.95	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	26	TOC	K2002434-002.01	0.6819 ppm	0.0107 ppm	1.5700%	2020/03/22 08:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6894	6.8944	12.03	15.93	3.91	49.95	10:31
2	TOC	0.6743	6.7427	11.93	15.87	3.94	49.94	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	27	TOC	K2002434-003.01	0.2246 ppm	0.0465 ppm	20.6900%	2020/03/22 08:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1917	1.9174	8.68	12.65	3.97	49.94	10:25
2	TOC	0.2575	2.5746	9.12	13.14	4.02	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	28	TOC	K2002416-001.02	0.0905 ppm	0.0113 ppm	12.4200%	2020/03/22 09:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0985	0.9850	8.05	11.97	3.92	49.94	10:26
2	TOC	0.0826	0.8259	7.95	11.91	3.97	49.95	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8425 ppm (PASS)	0.0000 ppm	0%	2020/03/22 09:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8425	258.4255	181.61	185.65	4.04	49.95	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	50 ppmC

met.	(v4)	(v32)

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 09:49

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.06	10.95	3.89	49.94	10:28

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	29	TOC	K2002416-001.02 ms	27.8620 ppm	0.0000 ppm	0.0000%	2020/03/22 10:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.8620	278.6204	194.76	198.67	3.91	49.95	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	30	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 10:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.09	11.09	4.00	49.95	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	31	TOC	K2002416-002.02	0.0917 ppm	0.0101 ppm	11.0100%	2020/03/22 10:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0988	0.9880	8.06	12.13	4.08	49.96	10:26
2	TOC	0.0845	0.8453	7.96	12.11	4.15	49.97	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	32	TOC	K2002416-003.02	0.2530 ppm	0.0254 ppm	10.0600%	2020/03/22 11:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2710	2.7100	9.21	13.27	4.06	49.93	10:29
2	TOC	0.2350	2.3501	8.97	12.92	3.95	49.92	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	33	TOC	K2002416-004.02	1.6097 ppm	0.0073 ppm	0.4500%	2020/03/22 11:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6148	16.1479	18.25	22.09	3.84	49.94	10:26
2	TOC	1.6045	16.0453	18.18	22.08	3.90	49.92	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	34	TOC	K2002462-001.06	3.0392 ppm	0.0019 ppm	0.0600%	2020/03/22 11:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.0405	30.4052	27.84	31.73	3.89	49.91	10:31
2	TOC	3.0378	30.3785	27.82	31.60	3.78	49.91	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	35	TOC	K2002470-001.01	2.1044 ppm	0.0619 ppm	2.9400%	2020/03/22 12:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1482	21.4818	21.84	25.60	3.76	49.92	10:27
2	TOC	2.0606	20.6059	21.25	25.19	3.94	49.92	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	36	TOC	K2002471-001.01	4.4447 ppm	0.0904 ppm	2.0300%	2020/03/22 12:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.5086	45.0863	37.71	41.74	4.03	49.90	10:29

2	TOC	4.3808	43.8075	36.85	40.81	3.96	49.89	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	37	TOC	K2002489-001.01	4.7622 ppm	0.0543 ppm	1.1400%	2020/03/22 13:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.8005	48.0053	39.67	43.66	3.99	49.91	10:29
2	TOC	4.7238	47.2380	39.16	43.00	3.84	49.91	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	38	TOC	K2002492-002.01	0.4658 ppm	0.0189 ppm	4.0600%	2020/03/22 13:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4524	4.5241	10.43	14.40	3.97	49.90	10:27
2	TOC	0.4792	4.7918	10.61	14.28	3.66	49.89	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.6946 ppm (PASS)	0.0000 ppm	0%	2020/03/22 14:19

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.6946	256.9459	180.61	184.49	3.88	49.89	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 14:33

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.32	10.16	3.85	49.87	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	39	TOC	MB3	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 14:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.92	9.75	3.83	49.87	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.7423 ppm (PASS)	0.0000 ppm	0%	2020/03/22 15:03

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.7423	247.4232	174.21	178.06	3.85	49.87	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	40	TOC	K2002496-001.01	14.0184 ppm	0.6231 ppm	4.4400%	2020/03/22 15:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.4590	144.5901	104.63	108.44	3.81	49.85	10:28
2	TOC	13.5778	135.7782	98.70	102.54	3.83	49.84	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	41	TOC	K2002421-001.12	1.5767 ppm	0.0401 ppm	2.5400%	2020/03/22 15:45

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6050	16.0498	18.18	22.01	3.83	49.82	10:28
2	TOC	1.5483	15.4833	17.80	21.76	3.95	49.80	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	42	TOC	K2002421-002.12	0.8540 ppm	0.0165 ppm	1.9300%	2020/03/22 16:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8656	8.6565	13.21	17.17	3.96	49.80	10:29
2	TOC	0.8423	8.4230	13.06	16.87	3.81	49.81	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	43	TOC	K2002421-003.12	1.7781 ppm	0.0172 ppm	0.9700%	2020/03/22 16:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.7659	17.6587	19.27	23.22	3.95	49.79	10:29
2	TOC	1.7903	17.9026	19.43	23.24	3.81	49.77	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	44	TOC	K2002421-004.12	0.8774 ppm	0.0261 ppm	2.9700%	2020/03/22 17:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8958	8.9583	13.42	17.18	3.76	49.77	10:27
2	TOC	0.8590	8.5895	13.17	16.92	3.75	49.78	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	45	TOC	K2002432-001.01	0.1255 ppm	0.0243 ppm	19.3500%	2020/03/22 17:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1083	1.0832	8.12	11.94	3.82	49.80	10:28

2	TOC	0.1427	1.4267	8.35	12.16	3.81	49.84	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	46	TOC	K2002432-001.01 ms	26.3798 ppm	0.0000 ppm	0.0000%	2020/03/22 18:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	26.3798	263.7980	184.80	188.75	3.96	49.85	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	47	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 18:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.97	9.86	3.88	49.86	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.4176 ppm (PASS)	0.0000 ppm	0%	2020/03/22 18:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.4176	254.1757	178.75	182.64	3.89	49.88	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 18:50

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time

D	TOC	0 ppm	1	0.0000	0.0000	6.08	9.82	3.74	49.92	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	48	TOC	K2002437-001.03	1.8820 ppm	0.0408 ppm	2.1700%	2020/03/22 19:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9109	19.1085	20.24	24.02	3.78	49.93	10:29
2	TOC	1.8532	18.5316	19.85	23.57	3.71	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	49	TOC	K2002437-002.03	0.7951 ppm	0.0104 ppm	1.3100%	2020/03/22 19:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8024	8.0245	12.79	16.50	3.71	50.00	10:24
2	TOC	0.7877	7.8773	12.69	16.46	3.77	49.99	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	50	TOC	K2002437-003.03	3.1945 ppm	0.0197 ppm	0.6200%	2020/03/22 20:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.1806	31.8060	28.78	32.47	3.69	50.00	10:30
2	TOC	3.2084	32.0841	28.97	32.65	3.68	50.00	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	51	TOC	K2002437-004.03	0.7492 ppm	0.0484 ppm	6.4600%	2020/03/22 20:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7834	7.8341	12.66	16.42	3.76	50.00	10:32
2	TOC	0.7150	7.1501	12.20	15.91	3.71	50.03	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC)	CAS_salt_010711	CAS_salt_010711

(v1364) (v4) (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	52	TOC	K2002437-005.03	0.6532 ppm	0.0170 ppm	2.6100%	2020/03/22 20:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6652	6.6520	11.86	15.62	3.76	50.00	10:25
2	TOC	0.6411	6.4111	11.70	15.67	3.96	50.03	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	53	TOC	K2002456-001.01	1.1335 ppm	0.0168 ppm	1.4800%	2020/03/22 21:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1453	11.4535	15.09	18.93	3.84	50.00	10:25
2	TOC	1.1216	11.2156	14.93	18.88	3.94	50.02	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	54	TOC	K2002456-002.01	0.7645 ppm	0.0422 ppm	5.5200%	2020/03/22 21:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7943	7.9427	12.73	16.72	3.99	50.05	10:29
2	TOC	0.7346	7.3464	12.33	16.17	3.83	50.01	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	55	TOC	K2002456-003.01	1.4306 ppm	0.0000 ppm	0.0000%	2020/03/22 22:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4306	14.3056	17.01	21.07	4.05	50.03	10:28
2	TOC	1.4306	14.3056	17.01	20.90	3.89	50.04	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	56	TOC	K2002456-004.01	1.4038 ppm	0.0408 ppm	2.9100%	2020/03/22 22:49

Rep	Base	ppm	µg	Adjusted	NDIR (Abs)	Baseline	Pressure	Run

#	Analysis Type			(Abs)		(Abs)	(psig)	Time
1	TOC	1.4326	14.3264	17.03	21.09	4.07	50.03	10:26
2	TOC	1.3749	13.7494	16.64	20.59	3.96	50.03	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	57	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 23:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.12	9.08	3.96	50.08	10:29
2	TOC	0.0000	0.0000	5.08	8.91	3.83	50.03	10:26
3	TOC	0.0000	0.0000	4.92	8.74	3.82	50.02	10:27
4	TOC	0.0000	0.0000	4.82	8.59	3.76	50.04	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.1303 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:13

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.1303	251.3028	176.82	180.56	3.74	50.04	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:27

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.42	9.22	3.80	50.03	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	58	TOC	MB4	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 00:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.04	8.76	3.72	50.03	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.1987 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:57

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.1987	241.9868	170.55	174.42	3.87	50.01	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	59	TOC	K2002462-002.04 doc	4.0921 ppm	0.0354 ppm	0.8700%	2020/03/23 01:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.1171	41.1711	35.08	38.88	3.80	50.00	10:29
2	TOC	4.0670	40.6700	34.74	38.61	3.87	50.04	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	60	TOC	K2002462-002.04 ms doc	32.0473 ppm	0.0000 ppm	0.0000%	2020/03/23 01:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	32.0473	320.4734	222.91	226.80	3.89	50.01	10:31

Dilution	Blank Contribution	Method	Calibration

1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	61	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 01:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.10	10.11	4.00	50.00	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	62	TOC	FB 3/19/20 1619	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 02:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.24	9.23	4.00	49.99	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	63	TOC	K2002422-001.04 doc	9.5284 ppm	0.1176 ppm	1.2300%	2020/03/23 02:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.4453	94.4531	70.91	74.94	4.03	50.01	10:29
2	TOC	9.6116	96.1156	72.03	75.73	3.70	49.98	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	64	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 02:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.59	9.48	3.89	49.99	10:29
2	TOC	0.0000	0.0000	5.25	9.15	3.90	49.99	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25	0 / infinity	25.0598	0.0000	0%	2020/03/23 03:20

					ppm [25 ppm]	(NA / NA)	ppm (PASS)	ppm		

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.0598	250.5980	176.34	180.27	3.92	49.97	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/23 03:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.46	9.42	3.96	50.00	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1364	1.7787	1.3950	0.0000	0.0000	0.0000	2020/03/19 15:10	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v32	Calibration curve formula:	TOC: y = 6.725x + 7.818
Ver Creation:	2020/03/11 15:55	r^2 value:	TOC: r^2 = 0.99921
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	5.8640	0.0000		2020/03/11 14:28
0.500 ppm	9.5210	0.5000		2020/03/11 14:42
1.0 ppm	12.5930	1.0000		2020/03/11 14:56
5.0 ppm	40.5270	5.0000		2020/03/11 15:10
10 ppm	79.5310	10.0000		2020/03/11 15:25
25 ppm	181.4610	25.0000		2020/03/11 15:39
50 ppm	340.5610	50.0000		2020/03/11 15:53

Methods

Name: CAS_salt_010711 (TOC)

Version: v4 Operator: Fusion1 (Fusion1)

Ver Creation: 2019/02/21 17:57

Comment:

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/03/23 03:50

ALS Environmental

StarLIMS Run: 674205, 674225, 674226, 674227

Analysis: DOC/TOC

Method: SM 5310 C, 9060A, 415.1, 9060

CCV: 11-GEN-05-82C 50 ppm LCS: 11-GEN-05-79J 25.0 ppm

ICAL Date: 3/11/2020

ICAL ID: 19-GEN-8-7-E->J

ICS ID: 11-GEN-05-78M

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 11-GEN-05-82C 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 19-GEN-08-9-H

21 % H3PO4: 19-GEN-08-8-K

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

21 BCP 3/24/20

Analyzed By: BCP	Date Analyzed: 3/24/20
Reviewed By: QC	Date Reviewed: 3/24/20

Case Narrative

Method: 6850
Analysis: Perchlorate
Analysis SOP: LC-MS-CLO4
ALS WO ID(s): 2007910

Client: ALS Laboratories (Houston, TX)
Matrix: Water
ELMS Batch (HBN): 2360 (259426)

General Set Information: There were twelve field samples in this Work Order. The samples were analyzed for perchlorate.

Method Summary: Each sample was prepared as noted below and analyzed using an Agilent 1100 LC/MSD system in select ion monitoring (SIM) mode at m/z 83 and 85, which corresponds to the loss of one oxygen atom from the perchlorate molecule. ChemStation software was used for instrument control and data analysis. The ion ratio of m/z 83 to 85 was used to positively identify the response peak as perchlorate. Quantitation was performed using the m/z 83 peak area. An internal standard (ISTD) of ^{18}O labeled perchlorate was added to each sample to establish the perchlorate peak retention time and used in quantitation.

Sample Preparation: A 10.0mL aliquot of each sample was transferred into a 15-mL centrifuge tube. 50µL of an ^{18}O labeled perchlorate solution was added to each sample as an internal standard. The samples were then capped, vortexed, and filtered into autosampler vial using Phenex PES membrane 0.45µm Syringe filters.

Holding Times: Holding times were met for all analyses.

Dilutions: NA

Method QC data: The method blank (LMB 700530) was less than 1/2 the CRDL. The recovery for the LCS (700527) was within acceptable parameters.

MS/MSD Analysis: MS/MSD was performed on sample 2007910001 (Client ID: 16WW27-200312). 3.0µL of Working Standard Solution Horizon ID 49947 was added to 10.0mL of sample preparation. The spike target was 3.µg/L. The MS/MSD percent recoveries and relative percent difference (RPD) were within the performance limits.

Instrument QC: Instrument initial and continuing calibrations were performed in accordance with published procedures.

NC/CAR(s): NA

Sample Calculation: Samples were reported in µg/L. Results were calculated in µg/L by the equation (A)x(B),

where: A = Analyte concentration from the standard curve (µg/L)
B = Dilution performed at time of analysis

Miscellaneous Comments: These samples were analyzed in accordance with the requirements found in the DOD QSM Version 5.1.1. The Reporting Limit Verification Standard (RLVS – 700528) is reported from the analysis of the Laboratory Control Sample (LCS – 700527) at a level of 3.0µg/L. Due to limitations of the Chemstation Software, some of the chromatographic peaks may require manual integrations. A manual integration was performed for one of the Initial Calibration analyses (datafile: 20SEPI03) along with datafiles 23MARD06/07/11.

Thomas Bosch March 23, 2020
Analyst Date

ANALYTICAL REPORT

Report Date: March 23, 2020

RJ Modashia
ALS Environmental (Houston)
10450 Stancliff Road
Suite 210
Houston, TX 77099

Phone: 281 530-5656

E-mail: RJ.Modashia@ALSGlobal.com

Workorder: **34-2007910**
Project ID: HS20030621 031220
Purchase Order: HS20030621
Project Manager Kevin W. Griffiths

Client Sample ID	Lab ID	Collect Date	Receive Date	Sampling Site
16WW27-200312	2007910001	03/12/20	03/17/20	HS20030621
16WW27-200312-FD	2007910002	03/12/20	03/17/20	HS20030621
16WW43-200312	2007910003	03/12/20	03/17/20	HS20030621
16WW13-200312	2007910004	03/12/20	03/17/20	HS20030621
16RW05-200312	2007910005	03/12/20	03/17/20	HS20030621
16RW02-200312	2007910006	03/12/20	03/17/20	HS20030621
16RW01-200312	2007910007	03/12/20	03/17/20	HS20030621
16WW33-200312	2007910008	03/12/20	03/17/20	HS20030621
16WW34-200312	2007910009	03/12/20	03/17/20	HS20030621
16WW32-200312	2007910010	03/12/20	03/17/20	HS20030621
16WW31-200312	2007910011	03/12/20	03/17/20	HS20030621
16WW46-200312	2007910012	03/12/20	03/17/20	HS20030621

ANALYTICAL REPORT

Workorder: 34-2007910
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **16WW27-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910001 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 09:17 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW27-200312-FD** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910002 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 09:59 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW43-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910003 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 10:13 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW13-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910004 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 10:27 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

ANALYTICAL REPORT

Workorder: 34-2007910
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **16RW05-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910005 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 10:41 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16RW02-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910006 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 10:55 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16RW01-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910007 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 11:09 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW33-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910008 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 11:23 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

ANALYTICAL REPORT

Workorder: 34-2007910
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **16WW34-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910009 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 11:51 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW32-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910010 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 12:05 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW31-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910011 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 12:19 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW46-200312** | Sampling Site: HS20030621 | Collected: 03/12/2020
Lab ID: 2007910012 | Media: 125 mL Nalgene | Received: 03/17/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2360 (HBN: 259426) | **%Solids:** NA
Analyzed: 03/23/2020 12:33 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

ANALYTICAL REPORT

Workorder: 34-2007910
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method	Analyst	Peer Review
EPA 6850, DoD QSM	/S/ Thomas Bosch 03/23/2020 13:35	/S/ Stephen Brose 03/23/2020 20:33

Laboratory Contact Information

ALS Environmental
960 W Levoy Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: alslt.lab@ALSGlobal.com
Web: www.alsslc.com

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
The following was provided by the client: Sample ID, Collection Date, Sampling Location, Media Type, Sampling Parameter.
Collection Date, Media Type, and Sampling Parameter can potentially affect the validity of the results.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	PJLA (DoD ELAP)	L17-506	http://www.pjlabs.com
	PJLA (ISO 17025)	L17-507-R1	http://www.pjlabs.com
	Utah (TNI)	UT00953	http://lams.nelac-institute.org/search
	Iowa (TNI)	IA# 376	http://www.shl.uiowa.edu/labcert/idnr/
	Kansas	E-10416	http://www.kdheks.gov/envlab/disclaimer.html
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP)	101574	http://www.aihaaccreditedlabs.org
	DOECAP-AP	L18-606	http://www.pjlabs.com
	Washington	C596	https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Laboratory-Accreditation
Dietary Supplements	PJLA (ISO 17025)	L17-507-R1	http://www.pjlabs.com

ANALYTICAL REPORT

Workorder: 34-2007910
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Result Symbol Definitions

MDL = Method Detection Limit, a statistical estimate of method/media/instrument sensitivity.
RL = Reporting Limit, a verified value of method/media/instrument sensitivity.
CRDL = Contract Required Detection Limit
Reg. Limit = Regulatory Limit.
ND = Not Detected, testing result not detected above the MDL or RL.
< Means this testing result is less than the numerical value.
** No result could be reported, see sample comments for details.

Qualifier Symbol Definitions

U = Qualifier indicates that the analyte was not detected above the MDL.
J = Qualifier Indicates that the analyte value is between the MDL and the RL. It is also used to indicate an estimated value for tentatively identified compounds in mass spectrometry where a 1:1 response is assumed.
B = Qualifier indicates that the analyte was detected in the blank.
E = Qualifier indicates that the analyte result exceeds calibration range.
P = Qualifier indicates that the RPD between the two columns is greater than 40%.

Quality Control Sample Batch Report

Analysis Information

Workorder: 2007910

Limits:	Client SOW/Contract Specified	**Preparation:**	NA	**Analysis:**	EPA 6850, DoD QSM
Basis:	DoD QSM	**Batch:**	NA	**Batch:**	ELMS/2360 (HBN: 259426)
		Prepared By:	NA	**Analyzed By:**	Thomas Bosch

Blank

LMB: 700530
Analyzed: 03/23/2020 09:03
Units: ug/L

Analyte	Result	MDL	RL
Perchlorate	ND	1	2.00

Laboratory Control Sample

LCS: 700527
Analyzed: 03/23/2020 08:35
Dilution: 1
Units: ug/L

Analyte	Result	Target	% Rec	QC Limits	
Perchlorate	3.48	3.00	116	78.8	123.8

Matrix Spike - Matrix Spike Duplicate

Sample:	2007910001	**MS:**	700531	**MSD:**	700532
Analyzed:	03/23/2020 09:17	**Analyzed:**	03/23/2020 09:31	**Analyzed:**	03/23/2020 09:45
Dilution:	1	**Dilution:**	1	**Dilution:**	1
Units:	ug/L	**Units:**	ug/L	**Units:**	ug/L

Analyte	Result	Result	Target	% Rec	QC Limits		Result	% Rec	RPD	QC Limits	
Perchlorate	ND	3	3	100	78.8	123.8	2.98	99.3	0.703	0.0	20.0

QC Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Analyst	Peer Review
/S/ Thomas Bosch	/S/ Stephen Brose
03/23/2020 13:38	03/23/2020 20:33

Symbols and Definitions

* - Analyte above reporting limit or outside of control limits
▲ - Sample result is greater than 4 times the spike added
◆ - Sample and Matrix Duplicate less than 5 times the reporting limit
● - Result is above the calibration range
- The Matrix Spike, Matrix Spike duplicate or Matrix Duplicate is reported for your information only. The sample matrix may be inappropriate for the method selected.

RPD - Relative % Difference (Spike / Spike Duplicate)
ND - Not Detected (U - Qualifier also flags analyte as not detected)
NA - Not Applicable
QC results are not adjusted for moisture correction, where applicable

2007910

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

18698/#2

SAMPLING STATE: **Dept of Defense** **COC ID:** **13523**

SUBCONTRACT TO:

ALS Laboratory Group
960 LeVoy Dr
Salt Lake City, UT 84123

Phone: +1 801 266 7700

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20030621
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20030621-01**	**16WW27-200312**	**Groundwater**	**12 Mar 2020 08:30**
	SUB_Perch-6850			27 Mar 2020
2.	**HS20030621-02**	**16WW27-200312-FD**	**Groundwater**	**12 Mar 2020 08:30**
	SUB_Perch-6850			27 Mar 2020
3.	**HS20030621-03**	**16WW43-200312**	**Groundwater**	**12 Mar 2020 09:15**
	SUB_Perch-6850			27 Mar 2020
4.	**HS20030621-04**	**16WW13-200312**	**Groundwater**	**12 Mar 2020 10:00**
	SUB_Perch-6850			27 Mar 2020
5.	**HS20030621-05**	**16RW05-200312**	**Groundwater**	**12 Mar 2020 10:50**
	SUB_Perch-6850			27 Mar 2020
6.	**HS20030621-06**	**16RW02-200312**	**Groundwater**	**12 Mar 2020 11:40**
	SUB_Perch-6850			27 Mar 2020
7.	**HS20030621-07**	**16RW01-200312**	**Groundwater**	**12 Mar 2020 12:25**
	SUB_Perch-6850			27 Mar 2020
8.	**HS20030621-08**	**16WW33-200312**	**Groundwater**	**12 Mar 2020 13:25**
	SUB_Perch-6850			27 Mar 2020
9.	**HS20030621-09**	**16WW34-200312**	**Groundwater**	**12 Mar 2020 14:10**

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13523**

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
		SUB_Perch-6850		27 Mar 2020
10.	**HS20030621-10**	**16WW32-200312**	**Groundwater**	**12 Mar 2020 15:00**
		SUB_Perch-6850		27 Mar 2020
11.	**HS20030621-11**	**16WW31-200312**	**Groundwater**	**12 Mar 2020 15:45**
		SUB_Perch-6850		27 Mar 2020
12.	**HS20030621-12**	**16WW46-200312**	**Groundwater**	**12 Mar 2020 16:40**
		SUB_Perch-6850		27 Mar 2020
~~**13.**~~	~~**HS20030621-13**~~	~~**Trip Blank**~~	~~**Water**~~	~~**12 Mar 2020 00:00**~~
		SUB_Perch-6850		27 Mar 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 3/16/2020. 1800.

Received By: _____ Date/Time: 03/17/2020 0855

Cooler ID(s): _____ Temperature(s): _____

ALS Environmental

CHAIN-OF-CUSTODY

Project / Job / Task: HS20030621	***Split:***	**Workorder ID:** 2007910	**Level:** ENV_LVL4	**Requested Analysis**
Client: ALS Environmental (Houston)		**Account:** 8101	**Type:** 125Poly	
Comments:			**Preservatives**	

Item	Collect Date/Time	Sample ID	Lab ID	QC	Matrix	Containers ID(s)	Containers Count	Preservatives COOL	EPA 6850, DoD QSM	Requested Analysis
1	03/12/2020 08:30	16WW27-200312	2007910001		Water	A	1		A	
2	03/12/2020 08:30	16WW27-200312-FD	2007910002		Water	A	1		A	
3	03/12/2020 09:15	16WW43-200312	2007910003		Water	A	1		A	
4	03/12/2020 10:00	16WW13-200312	2007910004		Water	A	1		A	
5	03/12/2020 10:50	16RW05-200312	2007910005		Water	A	1		A	
6	03/12/2020 11:40	16RW02-200312	2007910006		Water	A	1		A	
7	03/12/2020 12:25	16RW01-200312	2007910007		Water	A	1		A	
1	03/12/2020 13:25	16WW33-200312	2007910008		Water	A	1		A	
2	03/12/2020 14:10	16WW4-200312	2007910009		Water	A	1		A	
3	03/12/2020 15:00	16WW32-200312	2007910010		Water	A	1		A	

ORIGINAL FIELD SAMPLE CHAIN-OF-CUSTODY

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location
VanTassell, Tami	03/17/2020 08:55	ALS Sample Receiving	Sample Login
Tami VanTassell R.33.1	03-17-20 14:15 03.20.20/08:00	ISD T. Bush	Storage CLOA analysis

SAMPLE PREPARATION / ANALYSIS CHAIN-OF-CUSTODY

Sample Prep / Analysis for: _____ Lab Notebook No.: _____

Prepared / Analyzed by: _____ Date / Time: _____

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location

ALS Environmental

CHAIN-OF-CUSTODY

Project / Job / Task: HS20030621	***Split:***	**Workorder ID:** 2007910	**Level:** ENV_LVL4	**Requested Analysis**
Client: ALS Environmental (Houston)		**Account:** 8101	**Type:** 125Poly	
Comments:			**Preservatives**	

Item	Collect Date/Time	Sample ID	Lab ID	QC	Matrix	Containers ID(s)	Containers Count	Preservatives COOL	EPA 6850, DoD QSM												
4	03/12/2020 15:45	16WW31-200312	2007910011		Water	A	1		A												
5	03/12/2020 16:40	16WW46-200312	2007910012		Water	A	1		A												

ORIGINAL FIELD SAMPLE CHAIN-OF-CUSTODY

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location
VanTassell, Tami	03/17/2020 08:55	ALS Sample Receiving	Sample Login
Tami VanTassell R.33.1	03-17-20 14:18 03.20.20 08:00	ISD T. Bond	Storage CLOA analysis

SAMPLE PREPARATION / ANALYSIS CHAIN-OF-CUSTODY

Sample Prep / Analysis for: _____ Lab Notebook No.: _____

Prepared / Analyzed by: _____ Date / Time: _____

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location

ALS-SALT LAKE CITY-RELATED INFORMATION REPORT (CRIR)

COOLER OR CONTAINER INFORMATION CHECKLIST (Fill In or Circle)

Client Name: ALS Houston

Project/Task/Site: HS 20030621

Date/Time of Receipt: 03/17/2020 0855

Number of Coolers Received: 1

Condition of Coolers:	~~Acceptable~~/Unacceptable	Temperature Control:	~~Present~~/Not Included
Cooler Custody Seals:	~~Present~~/Absent/NA ~~Intact~~/Broken/NA	Location Temp Taken:	~~Control~~/Between Samples
Container Custody Seals:	Present/~~Absent~~/NA Intact/Broken/~~NA~~	Are all temperatures within project specific guidelines?	Yes/No/NA
Ice Present:	~~Yes~~/No/NA ~~Frozen~~/Melted/NA	VOA Headspace Present?	Yes/No/NA

pH Check Performed:								
	Metals	Yes/No/NA	Total Phenolics	Yes/No/NA	NO3/NO2	Yes/No/NA
	Cyanide	Yes/No/NA	TPH – 418.1	Yes/No/NA	Oil & Grease	Yes/No/NA
	Sulfide	Yes/No/NA	COD	Yes/No/NA	Total Phosphorous	Yes/No/NA
	Ammonia	Yes/No/NA	TKN	Yes/No/NA	Gross A.B, Gamma Spec	Yes/No/NA

Cooler Received	Cooler Condition	Temp.	Cooler Received	Cooler Condition	Temp.	Cooler Received	Cooler Condition	Temp.
1	Good	3 °C	4		°C	7		°C
2		°C	5		°C	8		°C
3		°C	6		°C	9		°C

Taken By: _____ (Signature) Rebecca Wise (Printed Name) 03/17/2020 (Date)

CLIENT-RELATED INFORMATION

☐ Missing Cooler	☐ Missing Samples/Bottles	☐ Incorrect Preservation	☐ Insufficient Sample Volume
☐ Cooler Conditions	☐ Broken/Leaking Samples	☐ pH Criteria Not Met	☐ Chain of Custody Problems
☐ Missing Paperwork	☐ Incorrect Bottle Type	☐ Residual Chlorine Present	☐ Other:
☐ Missing/Incorrect Bottle Labels	☐ Cooler Temperatures Out of Range	☐ Head Space in Bottles	

BRIEFLY DESCRIBE THE PROBLEM AND THE ACTION TAKEN:

Client Notified? YES ☐ NO ☐

Response Required Within 24 Hours

PROJECT MANAGEMENT

PROJECT MANAGER COMMENTS:

ALS Project Manager: _____ (Printed Name) Returned to Sample Receipt by: _____ (Signature) Date: _____

Must Deliver Next Business Day
Time and Tempature Sensitive!

Part # 159469-434 RM2 EXP 1220 ee

551C2/64E9/104C

ORIGIN ID:SGRA (281) 530-5656
SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD.
SUITE 210
HOUSTON, TX 77099
UNITED STATES US

SHIP DATE: 16MAR20
ACTWGT: 16.90 LB
CAD: 300130/CAFE3211
DIMS: 14x11x10 IN

BILL THIRD PARTY

TO SAMPLE RECEIVING
ALS ENVIRONMENTAL
960 W. LEVOY DRIVE

SALT LAKE CITY UT 84123
(801) 266-7700
REF: HS20030621 - RJ

FedEx Express

TRK# 0201 1251 0295 4279

TUE - 17 MAR 3:00P
STANDARD OVERNIGHT

AX BTFA

84123
UT-US SLC

ALS
10450 Stancliff Rd.,
Houston, Texas 770
Tel. +1 281 530 5656
Fax. +1 281 530 588

Batch Worklist

Batch: ELMS/ 2360 Created: 3/23/2020 07:38 Instrument: HBN: 259426

Rule: EPA 6850, DoD QSM Water Analyst: T. Bosch Status: WP

Workorder: 2007910 [ENV_LVL4]

Pos	Lab ID	Sample ID	Prep Initial	Prep Final	Dust Weight	Type	Mx	Container	Procedure	Mgr	Expire Date	Due Date	Run Date
1	700526	CCV for HBN 259426 [ELMS/2360]				CCV	3		E685041C3Q	5311		3/30/2020	
2	700527	LCS for HBN 259426 [ELMS/2360]				LCS	3		E6850Q413Q	5311		3/30/2020	
3	700528	RLVS for HBN 259426 [ELMS/2360				RLVS	3		E685041C3Q	5311		3/30/2020	
4	700529	ICS for HBN 259426 [ELMS/2360]				ICS	3		E6850..D3Q	5311		3/30/2020	
5	700530	LMB for HBN 259426 [ELMS/2360]				LMB	3		E6850Q413Q	5311		3/30/2020	
6	2007910001	16WW27-200312				SAMPLE	3	2007910001-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
7	700531	16WW27-200312(2007910001MS)				MS	3		E6850Q413Q	5311		3/30/2020	
8	700532	16WW27-200312(2007910001MSD)				MSD	3		E6850Q413Q	5311		3/30/2020	
9	2007910002	16WW27-200312-FD				SAMPLE	3	2007910002-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
10	2007910003	16WW43-200312				SAMPLE	3	2007910003-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
11	2007910004	16WW13-200312				SAMPLE	3	2007910004-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
12	2007910005	16RW05-200312				SAMPLE	3	2007910005-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
13	2007910006	16RW02-200312				SAMPLE	3	2007910006-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
14	2007910007	16RW01-200312				SAMPLE	3	2007910007-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
15	2007910008	16WW33-200312				SAMPLE	3	2007910008-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
16	700533	CCV for HBN 259426 [ELMS/2360]				CCV	3		E685041C3Q	5311		3/30/2020	
17	2007910009	16WW34-200312				SAMPLE	3	2007910009-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
18	2007910010	16WW32-200312				SAMPLE	3	2007910010-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
19	2007910011	16WW31-200312				SAMPLE	3	2007910011-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
20	2007910012	16WW46-200312				SAMPLE	3	2007910012-A	E6850Q41.3	5480	4/9/2020	3/30/2020	
21	700534	CCV for HBN 259426 [ELMS/2360]				CCV	3		E685041C3Q	5311		3/30/2020	

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Analytical Documentation

Analyst Write-up

ALS Work Order #'s & Sample #( )'s: 2007910 (001-12)
ELMS Batch/HBN ID: 2360 (259426)
Prep Date: 03/20/2020 Analysis Date: 03/23/2020 Analyst: Tom Bosch
Analyte: **Perchlorate** Matrix: **Water** Method: **6850**
Sequence: \\HPCHEM\1\SEQUENCE\CLO4\2020\MAR\23MAR0D.s
Reported DL: **1.0µg/L** Reported LOD: **2.0µg/L** Reported LOQ: **4.0µg/L**

SAMPLE PREPARATION/ANALYSIS:

Water: Samples were prepared by Tom Bosch. 10.0mL of each sample was pipetted into a 15-mL centrifuge tube, and 50µL of an oxygen-18 labeled perchlorate solution was added as an internal standard. The samples were capped, vortexed, and filtered with Phenex PES membrane 0.45µm Syringe filters prior to analysis.

REAGENTS: Eluent A1: 95% ASTM Type II water (ALS)/5%ACN (B&J Lot DU461-US)/0.1% glacial acetic acid (JT-Baker Lot 122550).
Eluent B1: 95% ACN (B&J Lot DU461-US)/5% ASTM Type II water (ALS)/0.1% glacial acetic acid (JT-Baker Lot 122550).

STANDARDS: Internal Standard Spiking Solution Horizon# 47863. Dilutions of Working Standards (Horizon: 49947/48) used for ICAL, CCV's, RLVS and ICS.

CALIBRATION CURVE: Used curve from 09/20/2019, sequence 20SEP19D.s Offline Quantitation Method: CLO4-DP3.M

INSTRUMENT CONDITIONS: Samples were analyzed with an Agilent 1100 LC/MSD system, in negative SIM mode, monitoring m/z 83, 85, and 89.
Instrument ID: LCMS04 Online Acquisition Method: CLO4-AQN.M Fragmentor: 160 Output Gain: 10 Injection Volume: 40µL
Column: KP-RPPX C8 separator, 250mm Mobile Phase: 70% Eluent A1; 30% Eluent B1 Run time: 12.0min.

FLOW GRADIENT:

Time (min.)	Flow (mL/min)
0	0.65
5.8	0.65
5.9	0.25
10.3	0.25
10.5	0.65
12.0	0.65

QC DATA: 3.0µL of QC Solution Horizon ID 47516 was used for LCS 700527; Target = 3.0µg/L. ASTM type II water was used for LMB 700530.

MS/MSD: The Matrix Spike and duplicate (MS/MSD) was performed on sample 2007910001 (Client ID: 16WW027-200312). 3.0µl of Working Standard Solution Horizon ID 49947 was added to 10.0mL of sample preparation. Spike target = 3.0µg/L.

COMMENTS:

1) Results reported in µg/L.
2) All QC, Blank, CCV, and MS/MSD results were within method parameters.
3) Sample data can be viewed at two directories within the ALS system: \\ALSLTWS013\LCMS\LCMS04\2020\MAR\HBN# or through NuGenesis\Tree\PrintData\LCMS\DefaultView.
4) Notebook: \\alsltws013\ORGANIC\BOSCH\LCMS\Perchlorates\Waters\2020\DOD\259426-DoD-ALS-Hstn LCMS4 or through \\ALSLTWS013\DATAREVIEW\HBN#
5) The Reporting Limit Verification Standard (RLVS – 700528) is reported from the analysis of the Laboratory Control Sample (LCS – 700527) at a level of 3.0µg/L.
6) Due to limitations of the Chemstation Software, some of the chromatographic peaks require manual integration. Manual Integrations were performed for one of the Initial Calibration analyses (datafile: 20SEPI03) along with datafiles 23MARD06/07/11.

5.5 Chromatography (GC, HPLC and LC/MS) Technical Review

Note: It is the peer reviewer's responsibility to ensure that appropriate criteria are used as defined in the HORIZON PROFILE. The evaluation criteria are prioritized as per Section 2.2 of this SOP. These items must be checked for all projects. The following checklist will be completed by both the analyst and the peer reviewer and scanned into the HBN folder with the raw data.

Chromatography (GC, HPLC, LC/MS) Technical Review Criteria **Batch(es)/SDG:** ELMS. 2360 (HBN: 259426 **Sample Set IDs if Applicable:** 2007910	**Analyst Initials**	**Reviewer Initials**
Sample positions on autosampler verified against instrument sequence	TB	NA
Calibration standards analyzed and meets criteria	TB	SB
Standards traceability checked and meets criteria	TB	SB
Standard curve coefficients evaluated and meet criteria	TB	SB
ICVs analyzed and meet acceptance criteria	TB	SB
CCVs analyzed and meet acceptance criteria	TB	SB
Retention Time Windows checked	TB	SB
For method 8081A, Endrin/DDT Breakdown is checked for compliance	—	—
Surrogate recoveries checked and appropriately addressed	—	—
Method Preparation Blanks analyzed and meet acceptance criteria	TB	SB
MSs, MSDs, and/or MDs analyzed and calculations checked; applicable	TB	SB
RLVS analyzed	TB	SB
Preparation and analysis hold times met	TB	SB
Preparation deviations and re-preparations noted when performed	TB	SB
Analysis deviations and re-analyses noted when performed	TB	SB
Sample dilution factors noted on reports	TB	SB
Electronic records in HBN transcription accuracy and completeness	TB	SB
Preparation and analysis calculations checked	TB	SB
NCRs are completed as necessary NC/CAR#_____	TB	SB
Report forms are complete and accurate	TB	SB
Manual integrations checked	TB	SB

STANDARD REPORT

Working Standard - CLO4ISTDWRK

CLO4ISTDWRK		Description - Perchlorate ISTD Wrk 1,000ug/L
Standard: 49946	**Created By:** Thomas Bosch	**Amount:** 25 mL
MFG: ALS/SLC	**Create Date:** 09/23/2019 03:09PM	**Expires:** 09/19/2020
MFG Lot: TNB: 09/20/2019	**Verified By:** Thomas Bosch	**Usable:** Yes
Pipette ID: Not Provided	**Verify Date:**	**Lab Lot:** CLO4ISTDWRK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	1000 ug/L
2	14797-73-0-89	Perchlorate 89	1000 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
47863	CLO4ISTDSTK	Perchlorate ISTD Stock	CLO4ISTDSTK	0.25 mL	12/05/2028

STANDARD REPORT

Constituent

Stock Standard - CLO4ISTDSTK

CLO4ISTDSTK		Description - Perchlorate ISTD Stock
Standard: 47863	**Created By:** Thomas Bosch	**Amount:** 1 mL
MFG: Cambridge Isotope	**Create Date:** 05/23/2019 10:05AM	**Expires:** 12/05/2028
MFG Lot: SDIH-016	**Verified By:** Thomas Bosch	**Usable:** Yes
Part ID: OLM-7310-S	**Verify Date:**	**Lab Lot:** CLO4ISTDSTK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	100 ug/mL
2	14797-73-0-89	Perchlorate 89	100 ug/mL

STANDARD REPORT

Working Standard - CLO4 WRK

CLO4 WRK		Description - 6850 WKG Std 100.ug/L
Standard: 49948	**Created By:** Thomas Bosch	**Amount:** 10 mL
MFG: ALS/SLC	**Create Date:** 09/20/2019 03:09PM	**Expires:** 07/25/2020
MFG Lot: TNB: 09/20/2019		**Usable:** Yes
Pipette ID: Not Provided		**Lab Lot:** CLO4 WRK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	0.1 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	0.1 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
49947	CLO4 INT	6850 Intermdt AccStd 10.ug/mL	CLO4 INT	0.1 mL	07/25/2020

STANDARD REPORT

Constituent

Stock Standard - CLO4 STOCK

CLO4 STOCK		Description - 6850 Stock AccStd 1,000ug/mL
Standard: 43659	**Created By:** Thomas Bosch	**Amount:** 100 mL
MFG: AccuStandard	**Create Date:** 09/17/2018 09:09AM	**Expires:** 07/25/2020
MFG Lot: 218065075		**Usable:** Yes
Part ID: IC-PER-10X-1		**Lab Lot:** CLO4 STOCK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	1000 ug/mL

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O		Description - ASTM Type II Water
Standard: 109	**Created By:** ALS Support (Lims)	**Amount:** 1000 L
MFG: DCL In House	**Create Date:** 10/06/2005 09:10AM	**Expires:** 11/07/2025
MFG Lot: Not Provided		**Usable:** Yes
Part ID: Not Provided		**Lab Lot:** LAB 109

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Working Standard - CLO4 INT

CLO4 INT		Description - 6850 Intermdt AccStd 10.ug/mL
Standard: 49947	**Created By:** Thomas Bosch	**Amount:** 10 mL
MFG: ALS/SLC	**Create Date:** 09/23/2019 03:09PM	**Expires:** 07/25/2020
MFG Lot: TNB: 09/20/2019		**Usable:** Yes
Pipette ID: Not Provided		**Lab Lot:** CLO4 INT

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
43659	CLO4 STOCK	6850 Stock AccStd 1,000ug/mL	CLO4 STOCK	0.1 mL	07/25/2020

STANDARD REPORT

Working Standard - CLO4 QC WRK

CLO4 QC WRK — **Description - 6850 QC WKG STD 100ug/L**

Standard: 47516
MFG: ALS/SLC
MFG Lot: TNB: 05/06/2019
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 05/06/2019 03:05PM

Amount: 10 mL
Expires: 03/31/2020
Usable: Yes
Lab Lot: CLO4 QC WRK 100.ug/L

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	100 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
47515	CLO4 QC INT	6850 QC Intrmdt Std-QC 10ug/mL	CLO4 QC INT 10.ug/mL	0.1 mL	03/31/2020

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O			Description - ASTM Type II Water
Standard: 109	**Created By:** ALS Support (Lims)	**Amount:** 1000 L	
MFG: DCL In House	**Create Date:** 10/06/2005 09:10AM	**Expires:** 11/07/2025	
MFG Lot: Not Provided		**Usable:** Yes	
Part ID: Not Provided		**Lab Lot:** LAB 109	

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Stock Standard - CLO4 QCSTOCK

CLO4 QCSTOCK			Description - 6850 QC Stock STD 1,000ug/mL
Standard: 36748	**Created By:** Thomas Bosch	**Amount:** 100 mL	
MFG: Ultra Scientific	**Create Date:** 05/11/2017 01:05PM	**Expires:** 03/31/2020	
MFG Lot: CP-0860		**Usable:** Yes	
Part ID: ICC-013		**Lab Lot:** CLO4 QC STOCK	

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL

STANDARD REPORT

Constituent

Working Standard - CLO4 QC INT

CLO4 QC INT — **Description - 6850 QC Intrmdt Std-QC 10ug/mL**

Standard: 47515
MFG: ALS/SLC
MFG Lot: TNB: 05/06/2019
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 05/06/2019 03:05PM

Amount: 10 mL
Expires: 03/31/2020
Usable: Yes
Lab Lot: CLO4 QC INT 10.ug/mL

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
36748	CLO4 QCSTOCK	6850 QC Stock STD 1,000ug/mL	CLO4 QC STOCK	0.1 mL	03/31/2020

125 Market Street
New Haven, CT 06513
USA

AccuStandard®

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

S 43659

AccuTrace™ Reference Standard

Catalog No: IC-PER-10X-1
Description: Perchlorate Standard
Element: Perchlorate (ClO_4)
SRM: Ind. Std.
Lot: 218065075
Matrix: Water
Hazards: *Refer to SDS for complete safety information*

Signal Word: None

Date Certified: Jun 25, 2018
Expiration: Jul 25, 2020
Sample Size: 100 mL
Components: 1
Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO 17034 Scope of Accreditation: Yes

Component		SRM #	Prepared Concentration (µg/mL)
ClO_4	Perchlorate	Ind. Std.	1000

The gravimetric uncertainty for this product is ±0.24%.

The final solution was checked against an independent standard to verify its concentration.

We use the highest purity raw materials available to minimize impurity levels in the final solution. Typically 99.999%+ pure starting materials are used as well as ASTM Type I 18 megohm deionized water.

All solutions are filtered through a 0.2 µm filter prior to being bottled.

All glassware used in preparation is Class A and calibrated regularly.

All weights are traceable through NIST, Test No. 822-275872-11

All bottles are triple rinsed with deionized water prior to use.

Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware.

We certify the accuracy of this standard to be ±0.5% of the stated value until its expiration date provided it is kept tightly capped and stored under the conditions stated above.

Certified By: Meigan O'Leary

Meigan O'Leary, Inorganic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO 17034, ISO/IEC 17025 and certified to ISO 9001:2015

QR-ORG/INO-001
Rev. 5/18

AccuStandard

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: ICC-013
Lot Number: CP-0860

S 36748

Lot Issue Date: 29-Feb 2016
Expiration Date: 31-Mar 2020

Product Name: Perchlorate IC Standard

Description:
This Reference Material (RM) was gravimetrically prepared in accordance with ISO Guide 34 and under ULTRA Scientific's ISO 9001 registered quality system. The neat materials used for this product have been verified by ULTRA's ISO 17025 laboratory and under ULTRA's ISO Guide 34 accreditation. The analyte concentrations were verified by ULTRA's ISO 17025 accredited laboratory. For each analyte, the true value, with its uncertainty value calculated at the 95% confidence level, is reported below.

Analyte	Starting Material	Lot Number	Purity (%)	Calculated Value	True Value	Traceability & Method
perchlorate	potassium perchlorate	RM07987	100	1001 ± 5 µg/mL	976 ± 6 µg/mL	NIST SRM 3141A; ICP-OES

Solvent: water (low TOC, < 50 ppb)

Storage: Store at Room Temperature (15° to 30°C).

Traceability:
Traceability has been established through an unbroken chain of comparisons, each having stated uncertainties. Comparisons are based on appropriate physical or chemical measurements, including gravimetric or volumetric dilution, where the mass or volume of a solution before and after dilution is measured. The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1, ISO 9001, ISO 17025, and ISO Guide 34. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 819.

Estimation of Uncertainties:
The true value is reported, with its uncertainty value calculated at the 95% confidence level.

Homogeneity:
This RM was formulated and unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening and should be processed without delay for the true value to be valid within the stated uncertainties. Do not pipet from the bottle. Do not return any material removed for pipetting to the bottle. Tightly cap the bottle after removing any material and store according to the instructions noted above.

Hazards:
Refer to the Safety Data Sheet for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid, within the measurement uncertainty specified, until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

ANAB ACCREDITED ACCREDITATION 17034 REFERENCE MATERIAL PRODUCER

ANAB ACCREDITED ACCREDITATION 17025 TESTING LABORATORY

ISO 9001 Registered Quality System – TUV USA

ALS

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: ICC-013
Lot Number: CP-0860

Lot Issue Date: 29-Feb 2016
Expiration Date: 31-Mar 2020

Maintenance of Certification:
The real-time, long term stability of the RM may be monitored over the lifetime of the certification. If substantive changes occur that affect the certification before the expiration of this certificate, ULTRA Scientific will notify the purchaser.

Peter A. King, Ph.D.
VP, Technical Operations

Daniel J. Lamendola
Director of QA/RA

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

Cambridge Isotope Laboratories, Inc.

Certificate of Analysis

S 47863

Product Name: (Isotopic Label & Enrichment Specification)	PERCHLORIC ACID, SODIUM SALT (18O4, 90%+) 100 UG/ML IN WATER
Lot Number:	SDIH-016
Catalog Number:	OLM-7310-S

Product Information

Chemical Purity Specification:	≥ 98%
MW*: ** For isotopically labeled compounds, MW listed is for the fully enriched product.*	130.44
Labeled CAS Number:	NA
Unlabeled CAS Number:	7601-89-0
Chemical Formula:	NaCl*O4
Storage:	Store at room temperature away from light and moisture.
Stability:	See storage and expiration date.

$NaCl^{18}O_4$

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number . Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Sashi Sivendran-Basak

Sashi Sivendran-Basak, Ph.D., Quality Review

Quality Control Tests and Results

QC Release Date	12/05/2018
Expiration Date	12/05/2028
Concentration Based on Gravimetry	100.0 ± 1.0 µg/mL (k=2)
Chemical Purity of Neat Material(s)	98%
LC/MS for Concentration	105.4 ± 1.1 µg/mL (k=2)

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

Batch Report: C:\HPCHEM\1\DATA\23MAR20D\23MAR20S.B

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DP3.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#*	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorat RT	Perchlorate Amount
*	700526 CCV@25	Vial 71	1	Control	1	1.34699e6	7.490	24.78983
*	700527 LCS@3.	Vial 72	1	Control	2	1.76919e5	7.535	3.47861
*	700529 ICS@3.0	Vial 73	1	Control	3	1.15214e5	7.444	3.00225
*	700530 LMB	Vial 74	1	Control	4	0.00000	0.000	0.00000
*	2007910001	Vial 75	1	Sample	5	0.00000	0.000	0.00000
*	700531 79101MS	Vial 76	1	Sample	6	1.47108e5	7.055	2.99864
*	700532 79101SD	Vial 77	1	Sample	7	1.36267e5	7.104	2.97761
*	2007910002	Vial 78	1	Sample	8	0.00000	0.000	0.00000
*	2007910003	Vial 79	1	Sample	9	0.00000	0.000	0.00000
*	2007910004	Vial 80	1	Sample	10	0.00000	0.000	0.00000
*	2007910005	Vial 81	1	Sample	11	0.00000	0.000	0.00000
*	2007910006	Vial 82	1	Sample	12	0.00000	0.000	0.00000
*	2007910007	Vial 83	1	Sample	13	0.00000	0.000	0.00000
*	2007910008	Vial 84	1	Sample	14	0.00000	0.000	0.00000
*	700533 CCV@25	Vial 71	1	Control	15	1.23935e6	7.548	25.66524
*	2007910009	Vial 85	1	Sample	16	0.00000	0.000	0.00000
*	2007910010	Vial 86	1	Sample	17	0.00000	0.000	0.00000
*	2007910011	Vial 87	1	Sample	18	0.00000	0.000	0.00000
*	2007910012	Vial 88	1	Sample	19	0.00000	0.000	0.00000
*	700534 CCV@25	Vial 71	1	Control	20	1.18590e6	7.514	25.39788

#*	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-IS RT	CLO4-89-ISTD Amount
*	700526 CCV@25	Vial 71	1	Control	1	1.85823e5	7.499	5.00000
*	700527 LCS@3.	Vial 72	1	Control	2	1.87418e5	7.538	5.00000
*	700529 ICS@3.0	Vial 73	1	Control	3	1.41203e5	7.472	5.00000
*	700530 LMB	Vial 74	1	Control	4	1.77924e5	7.514	5.00000
*	2007910001	Vial 75	1	Sample	5	1.90669e5	7.071	5.00000
*	700531 79101MS	Vial 76	1	Sample	6	1.80505e5	7.106	5.00000
*	700532 79101SD	Vial 77	1	Sample	7	1.68369e5	7.094	5.00000
*	2007910002	Vial 78	1	Sample	8	2.18764e5	7.126	5.00000
*	2007910003	Vial 79	1	Sample	9	1.71964e5	7.496	5.00000
*	2007910004	Vial 80	1	Sample	10	2.07471e5	7.425	5.00000
*	2007910005	Vial 81	1	Sample	11	1.43464e5	7.243	5.00000
*	2007910006	Vial 82	1	Sample	12	1.57888e5	7.444	5.00000
*	2007910007	Vial 83	1	Sample	13	2.23006e5	7.194	5.00000
*	2007910008	Vial 84	1	Sample	14	1.64293e5	7.330	5.00000
*	700533 CCV@25	Vial 71	1	Control	15	1.64548e5	7.564	5.00000
*	2007910009	Vial 85	1	Sample	16	1.80860e5	7.417	5.00000
*	2007910010	Vial 86	1	Sample	17	1.82823e5	7.326	5.00000
*	2007910011	Vial 87	1	Sample	18	1.35149e5	7.374	5.00000
*	2007910012	Vial 88	1	Sample	19	1.95971e5	7.337	5.00000
*	700534 CCV@25	Vial 71	1	Control	20	1.59284e5	7.524	5.00000

#*	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
*	700526 CCV@25	Vial 71	1	Control	1	4.30772e5	7.505	25.89011
*	700527 LCS@3.	Vial 72	1	Control	2	6.32826e4	7.526	3.99048
*	700529 ICS@3.0	Vial 73	1	Control	3	4.39246e4	7.464	3.66855
*	700530 LMB	Vial 74	1	Control	4	0.00000	0.000	0.00000
*	2007910001	Vial 75	1	Sample	5	0.00000	0.000	0.00000
*	700531 79101MS	Vial 76	1	Sample	6	6.07552e4	7.081	3.97753
*	700532 79101SD	Vial 77	1	Sample	7	5.71041e4	7.073	4.00870
*	2007910002	Vial 78	1	Sample	8	0.00000	0.000	0.00000

Batch Report: C:\HPCHEM\1\DATA\23MAR20D\23MAR20S.B

#*	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
*	2007910003	Vial 79	1	Sample	9	0.00000	0.000	0.00000
*	2007910004	Vial 80	1	Sample	10	0.00000	0.000	0.00000
*	2007910005	Vial 81	1	Sample	11	0.00000	0.000	0.00000
*	2007910006	Vial 82	1	Sample	12	0.00000	0.000	0.00000
*	2007910007	Vial 83	1	Sample	13	0.00000	0.000	0.00000
*	2007910008	Vial 84	1	Sample	14	0.00000	0.000	0.00000
*	700533 CCV@25	Vial 71	1	Control	15	3.93436e5	7.563	26.62981
*	2007910009	Vial 85	1	Sample	16	0.00000	0.000	0.00000
*	2007910010	Vial 86	1	Sample	17	0.00000	0.000	0.00000
*	2007910011	Vial 87	1	Sample	18	0.00000	0.000	0.00000
*	2007910012	Vial 88	1	Sample	19	0.00000	0.000	0.00000
*	700534 CCV@25	Vial 71	1	Control	20	3.81581e5	7.532	26.67634

*** End of Report ***

Sequence: C:\HPCHEM\1\SEQUENCE\CLO4\2020\MAR\23MAR20D.S

Sequence Table:

Method and Injection Info Part:

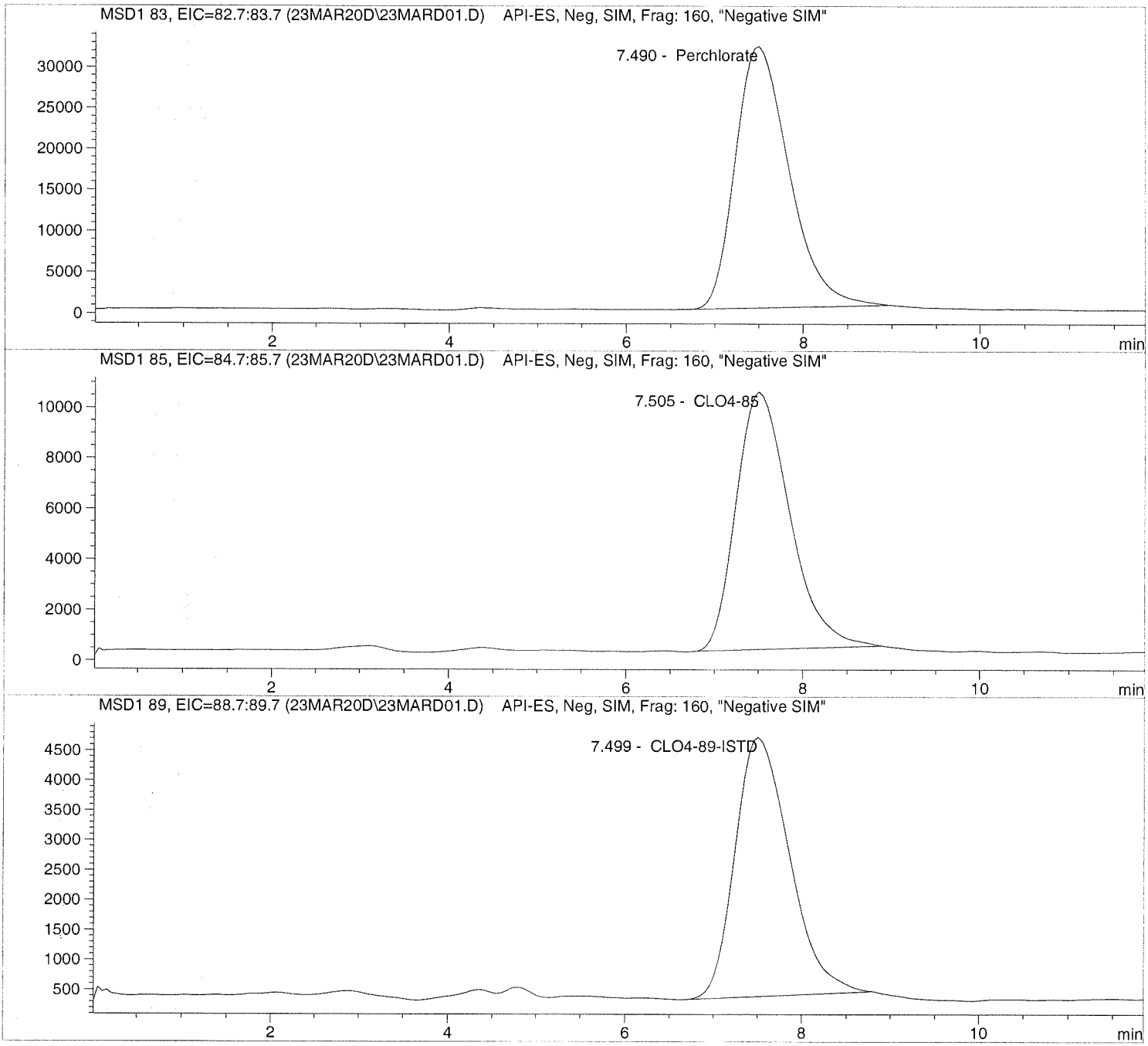
Line	Location	SampleName		Method	Inj	SampleType	InjVolume	DataFile
1	Vial 71	700526	CCV@25	CLO4-AQN	1	Ctrl Samp		
2	Vial 72	700527	LCS@3.	CLO4-AQN	1	Ctrl Samp		
3	Vial 73	700529	ICS@3.0	CLO4-AQN	1	Ctrl Samp		
4	Vial 74	700530	LMB	CLO4-AQN	1	Ctrl Samp		
5	Vial 75	2007910001		CLO4-AQN	1	Sample		
6	Vial 76	700531	79101MS	CLO4-AQN	1	Sample		
7	Vial 77	700532	79101SD	CLO4-AQN	1	Sample		
8	Vial 78	2007910002		CLO4-AQN	1	Sample		
9	Vial 79	2007910003		CLO4-AQN	1	Sample		
10	Vial 80	2007910004		CLO4-AQN	1	Sample		
11	Vial 81	2007910005		CLO4-AQN	1	Sample		
12	Vial 82	2007910006		CLO4-AQN	1	Sample		
13	Vial 83	2007910007		CLO4-AQN	1	Sample		
14	Vial 84	2007910008		CLO4-AQN	1	Sample		
15	Vial 71	700533	CCV@25	CLO4-AQN	1	Ctrl Samp		
16	Vial 85	2007910009		CLO4-AQN	1	Sample		
17	Vial 86	2007910010		CLO4-AQN	1	Sample		
18	Vial 87	2007910011		CLO4-AQN	1	Sample		
19	Vial 88	2007910012		CLO4-AQN	1	Sample		
20	Vial 71	700534	CCV@25	CLO4-AQN	1	Ctrl Samp		

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD01.D Sample Name: 700526 CCV@25

Injection Date:	3/23/2020 08:21:16	Seq Line:	1
Sample Name:	700526 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD01.D Sample Name: 700526 CCV@25

Injection Date:	3/23/2020 08:21:16	Seq Line:	1
Sample Name:	700526 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.490	PBA	1346986.3	24.7898	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.505	PBA	430772.4	25.8901	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.499	PBA	185823.1	5.0000	CLO4-89-ISTD

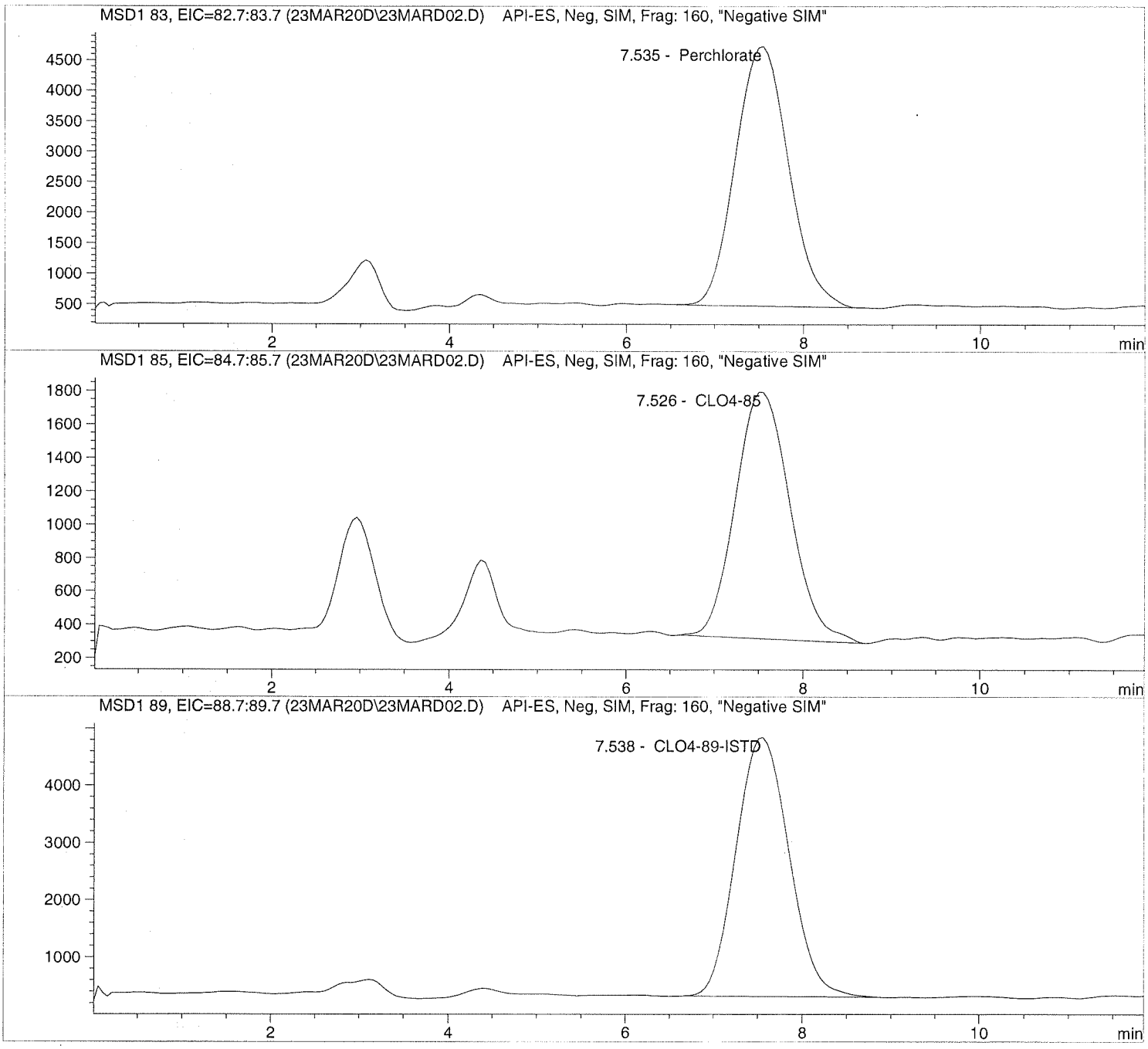
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD02.D Sample Name: 700527 LCS@3.

Injection Date:	3/23/2020 08:35:13	Seq Line:	2
Sample Name:	700527 LCS@3.	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD02.D Sample Name: 700527 LCS@3.

Injection Date:	3/23/2020 08:35:13	Seq Line:	2
Sample Name:	700527 LCS@3.	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	3.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.535	BBA	176919.4	3.4786	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.526	PBA	63282.6	3.9905	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.538	PBA	187417.9	5.0000	CLO4-89-ISTD

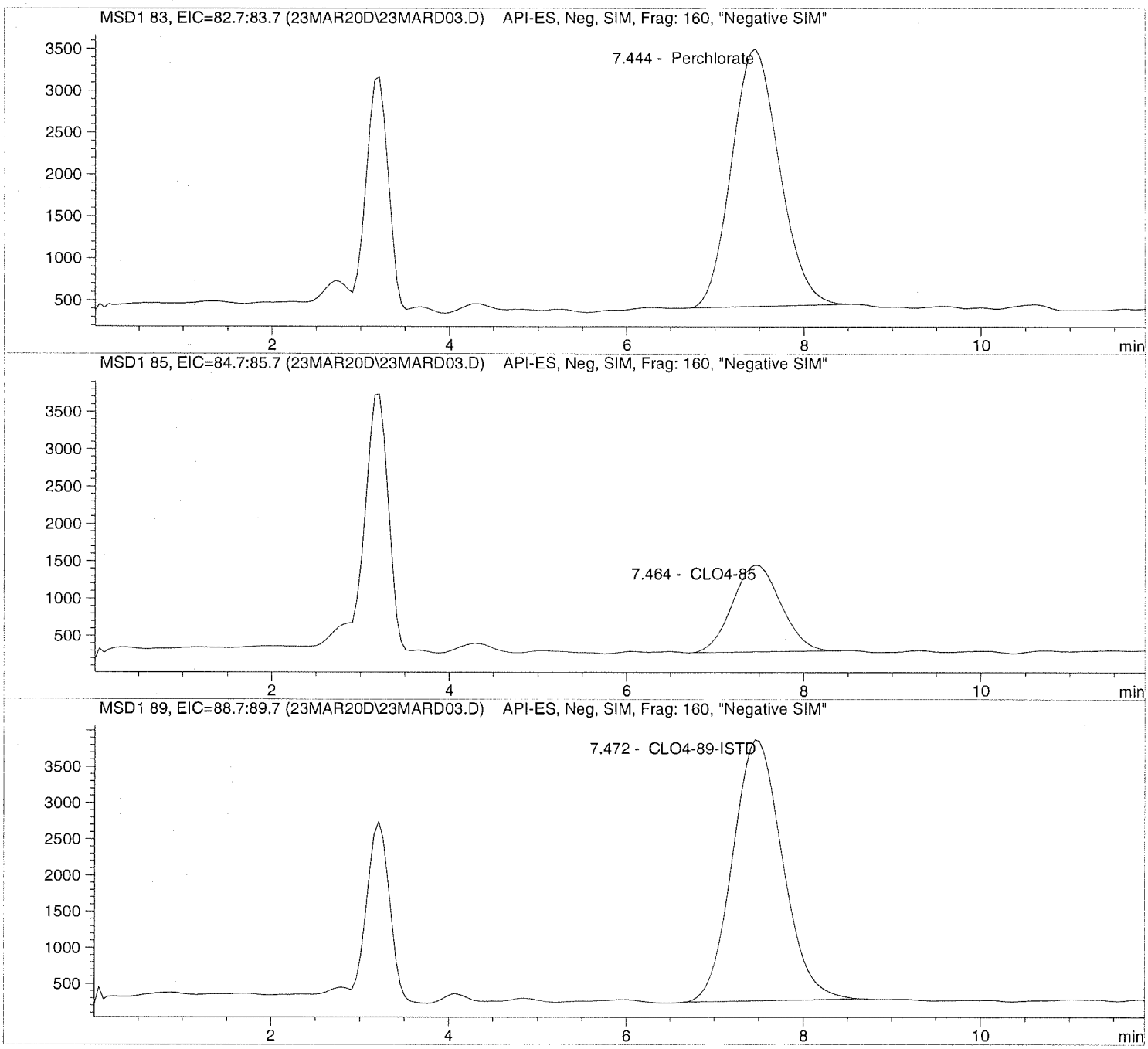
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD03.D Sample Name: 700529 ICS@3.0

Injection Date:	3/23/2020 08:49:13	Seq Line:	3
Sample Name:	700529 ICS@3.0	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD03.D Sample Name: 700529 ICS@3.0

Injection Date:	3/23/2020 08:49:13	Seq Line:	3
Sample Name:	700529 ICS@3.0	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	3.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.444	PBA	115213.8	3.0022	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.464	PBA	43924.6	3.6686	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.472	PBA	141203.3	5.0000	CLO4-89-ISTD

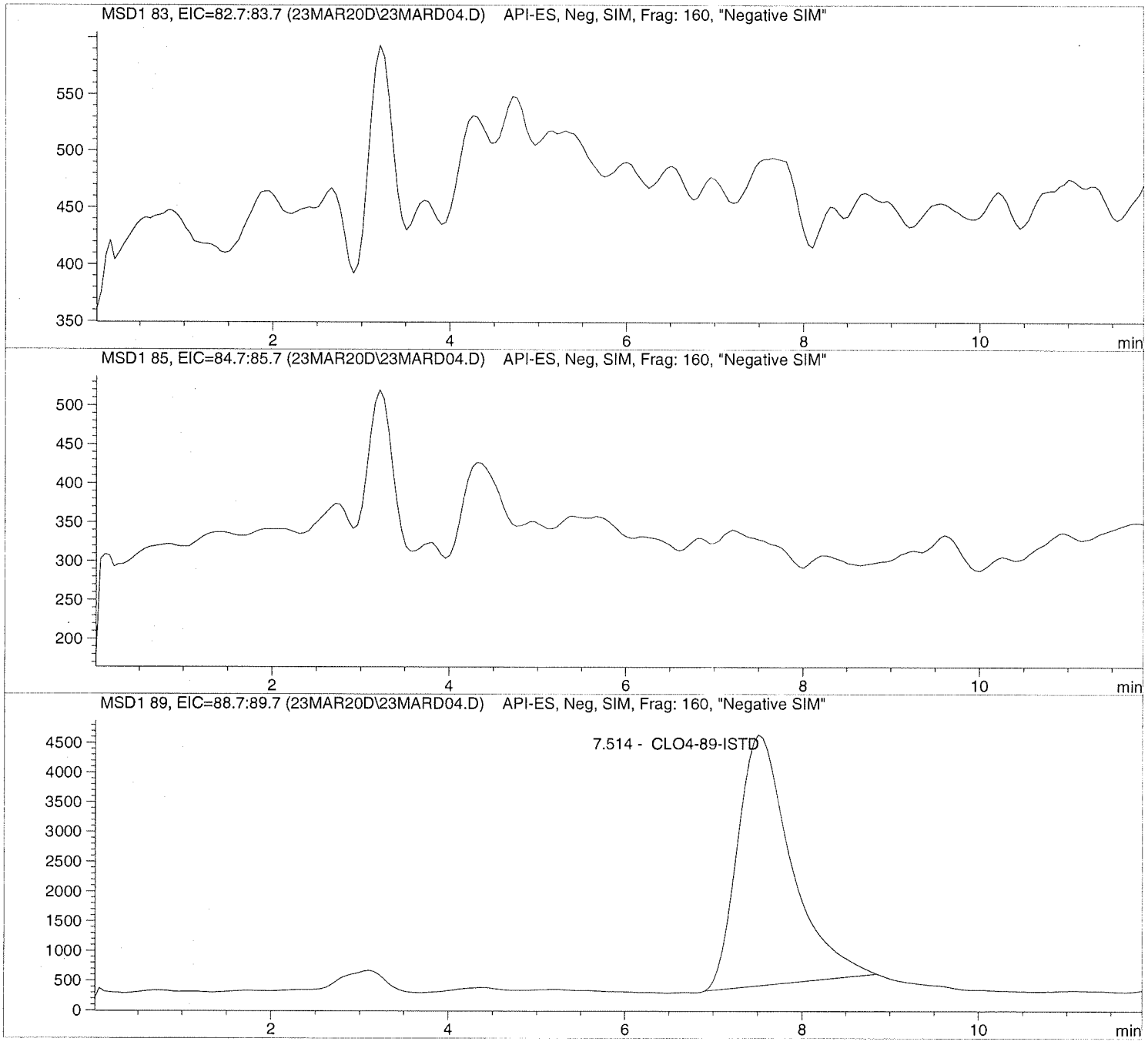
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD04.D Sample Name: 700530 LMB

Injection Date:	3/23/2020 09:03:21	Seq Line:	4
Sample Name:	700530 LMB	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD04.D Sample Name: 700530 LMB

Injection Date:	3/23/2020 09:03:21	Seq Line:	4
Sample Name:	700530 LMB	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.514	PBA	177924.0	5.0000	CLO4-89-ISTD

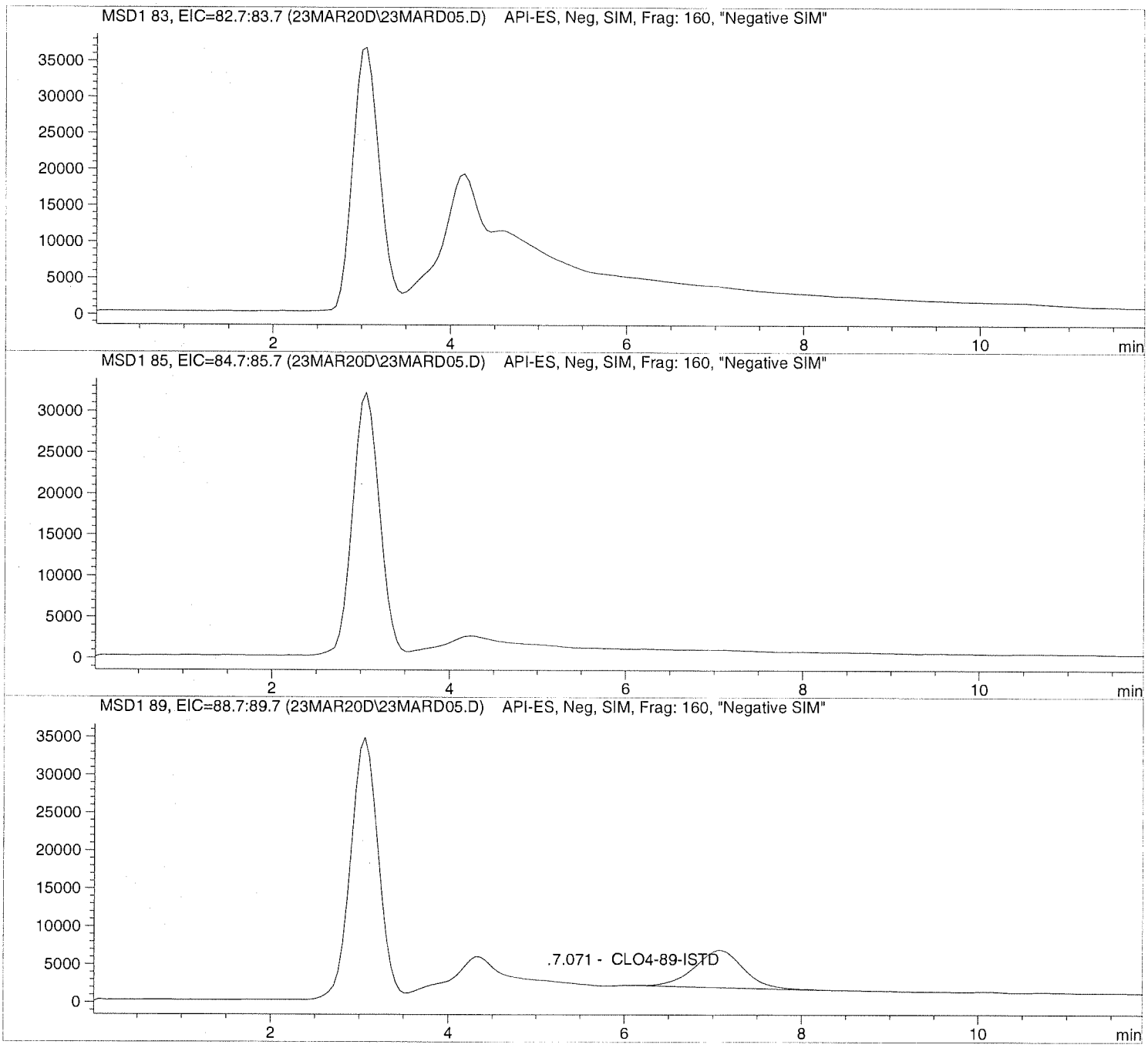
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD05.D Sample Name: 2007910001

Injection Date:	3/23/2020 09:17:21	Seq Line:	5
Sample Name:	2007910001	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD05.D Sample Name: 2007910001

Injection Date:	3/23/2020 09:17:21	Seq Line:	5
Sample Name:	2007910001	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.071	BBA	190669.0	5.0000	CLO4-89-ISTD

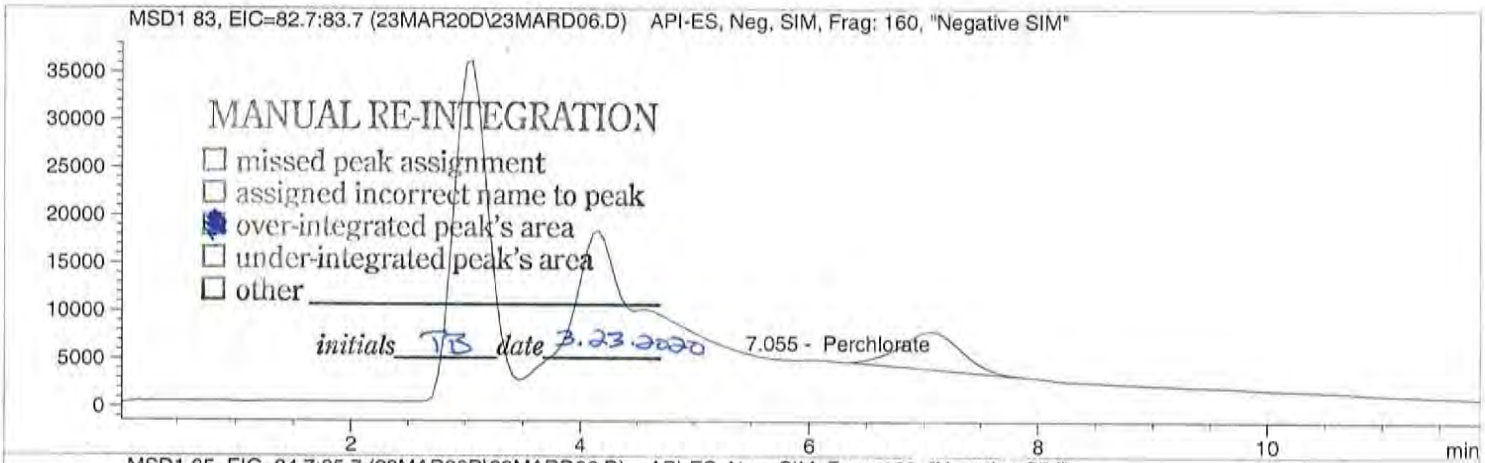
*** End of Report ***

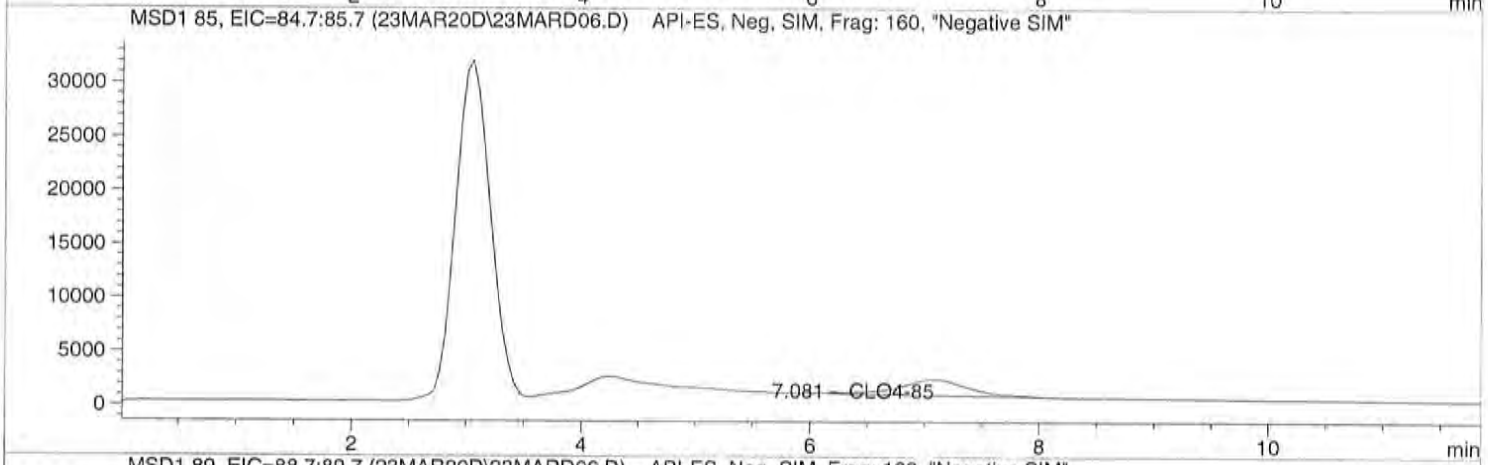
Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD06.D Sample Name: 700531 79101MS

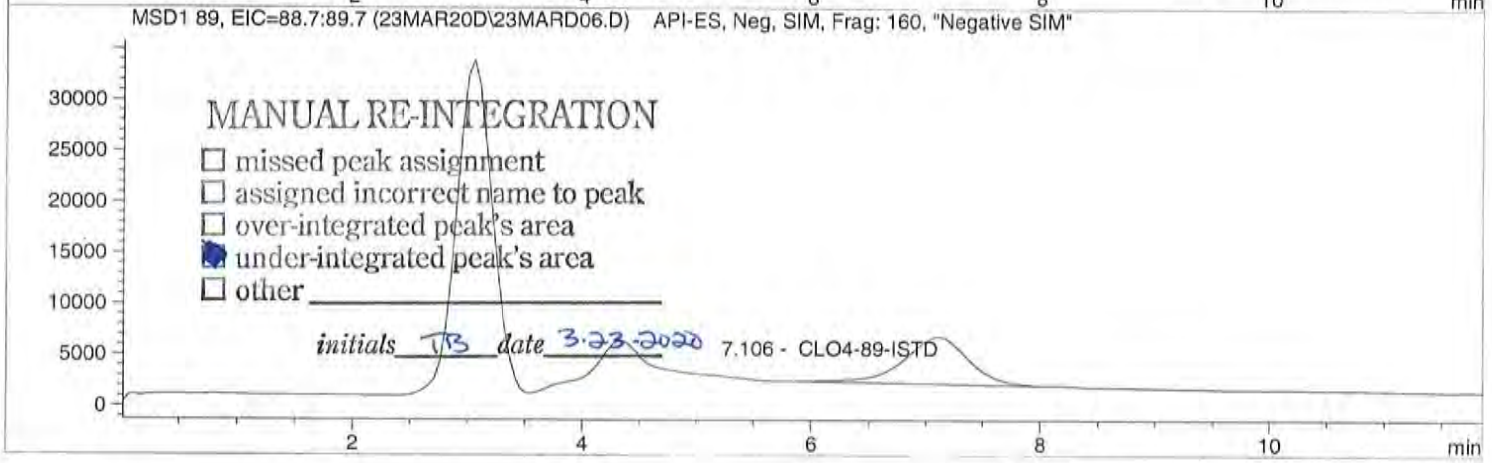
Injection Date:	3/23/2020 09:31:23	Seq Line:	6
Sample Name:	700531 79101MS	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD06.D Sample Name: 700531 79101MS

Injection Date:	3/23/2020 09:31:23	Seq Line:	6
Sample Name:	700531 79101MS	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.055	MM	147107.5	2.9986	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.081	BBA	60755.2	3.9775	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.106	MM	180505.4	5.0000	CLO4-89-ISTD

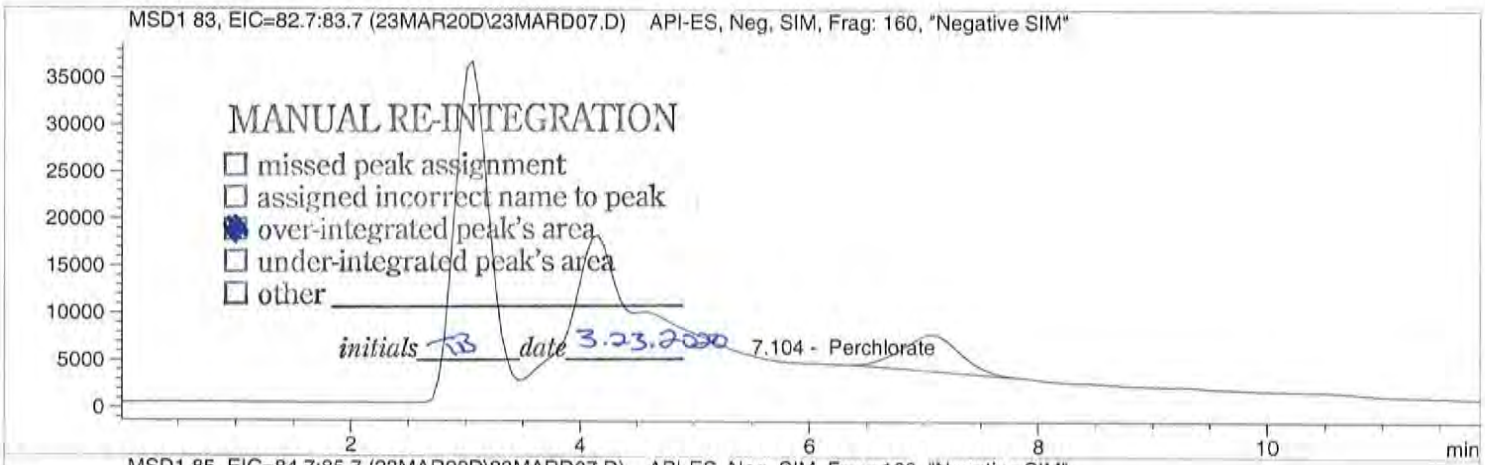
*** End of Report ***

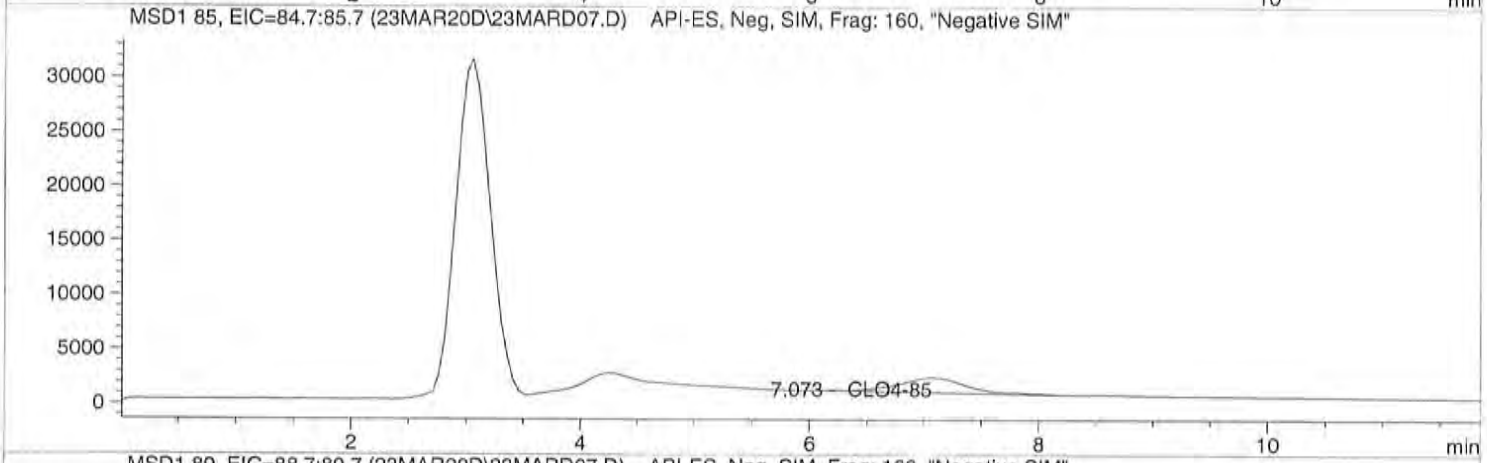
Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD07.D Sample Name: 700532 79101SD

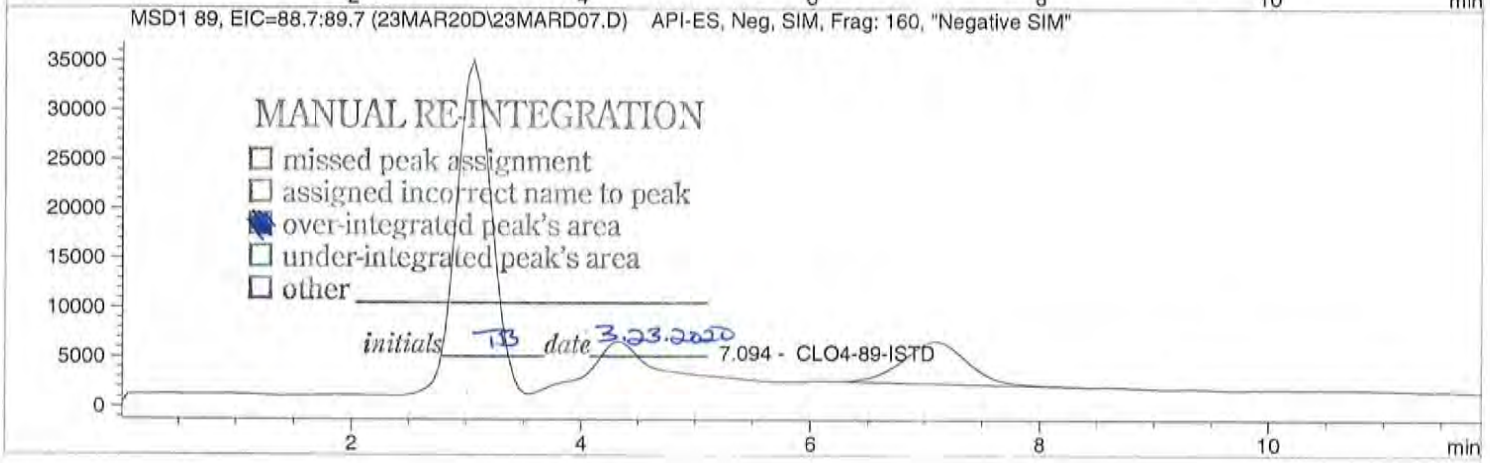
Injection Date:	3/23/2020 09:45:23	Seq Line:	7
Sample Name:	700532 79101SD	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD07.D Sample Name: 700532 79101SD

Injection Date:	3/23/2020 09:45:23	Seq Line:	7
Sample Name:	700532 79101SD	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.104	MM	136266.6	2.9776	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.073	PBA	57104.1	4.0087	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.094	MM	168368.7	5.0000	CLO4-89-ISTD

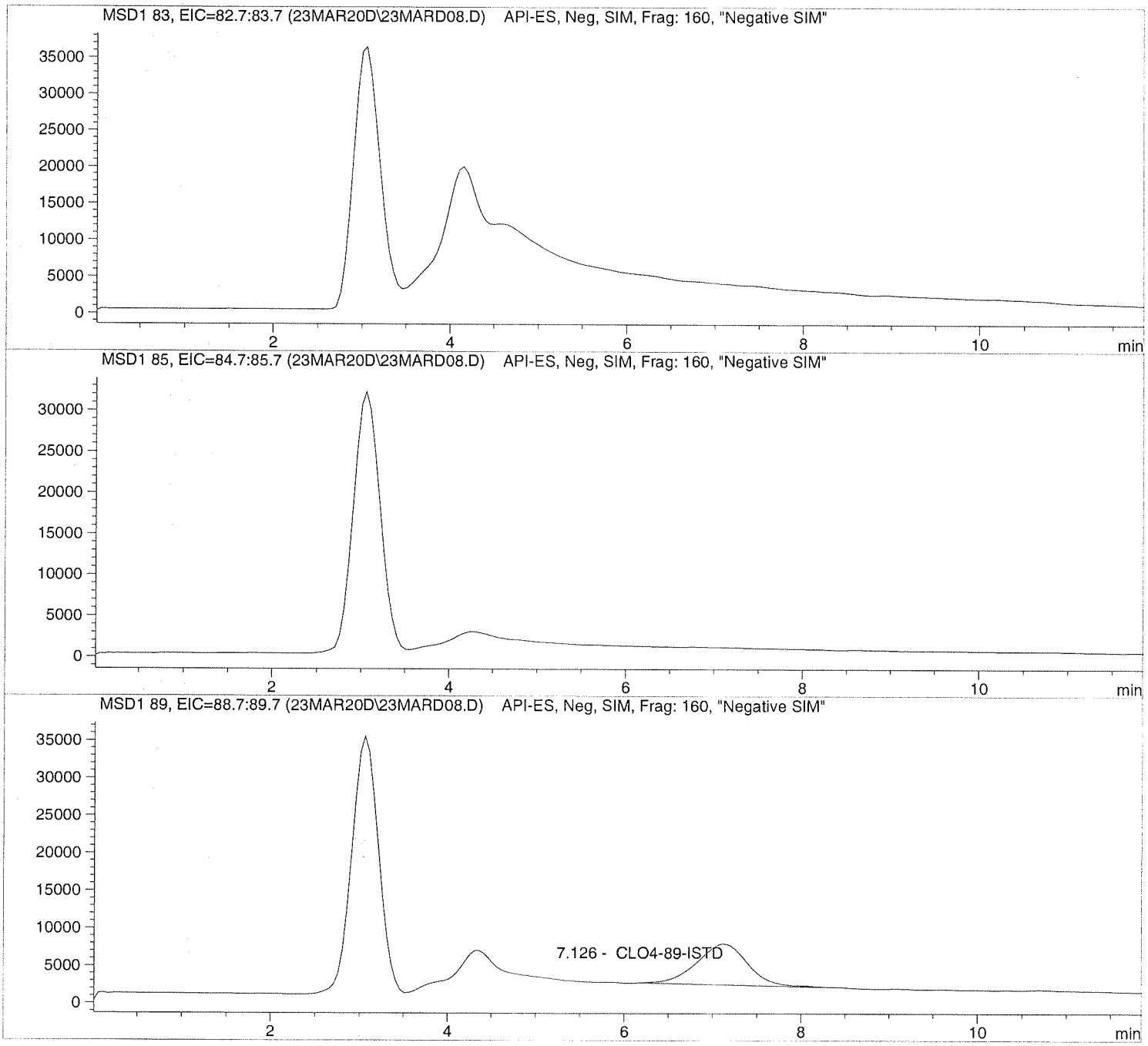
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD08.D Sample Name: 2007910002

Injection Date:	3/23/2020 09:59:24	Seq Line:	8
Sample Name:	2007910002	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD08.D Sample Name: 2007910002

Injection Date:	3/23/2020 09:59:24	Seq Line:	8
Sample Name:	2007910002	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.126	BBA	218764.3	5.0000	CLO4-89-ISTD

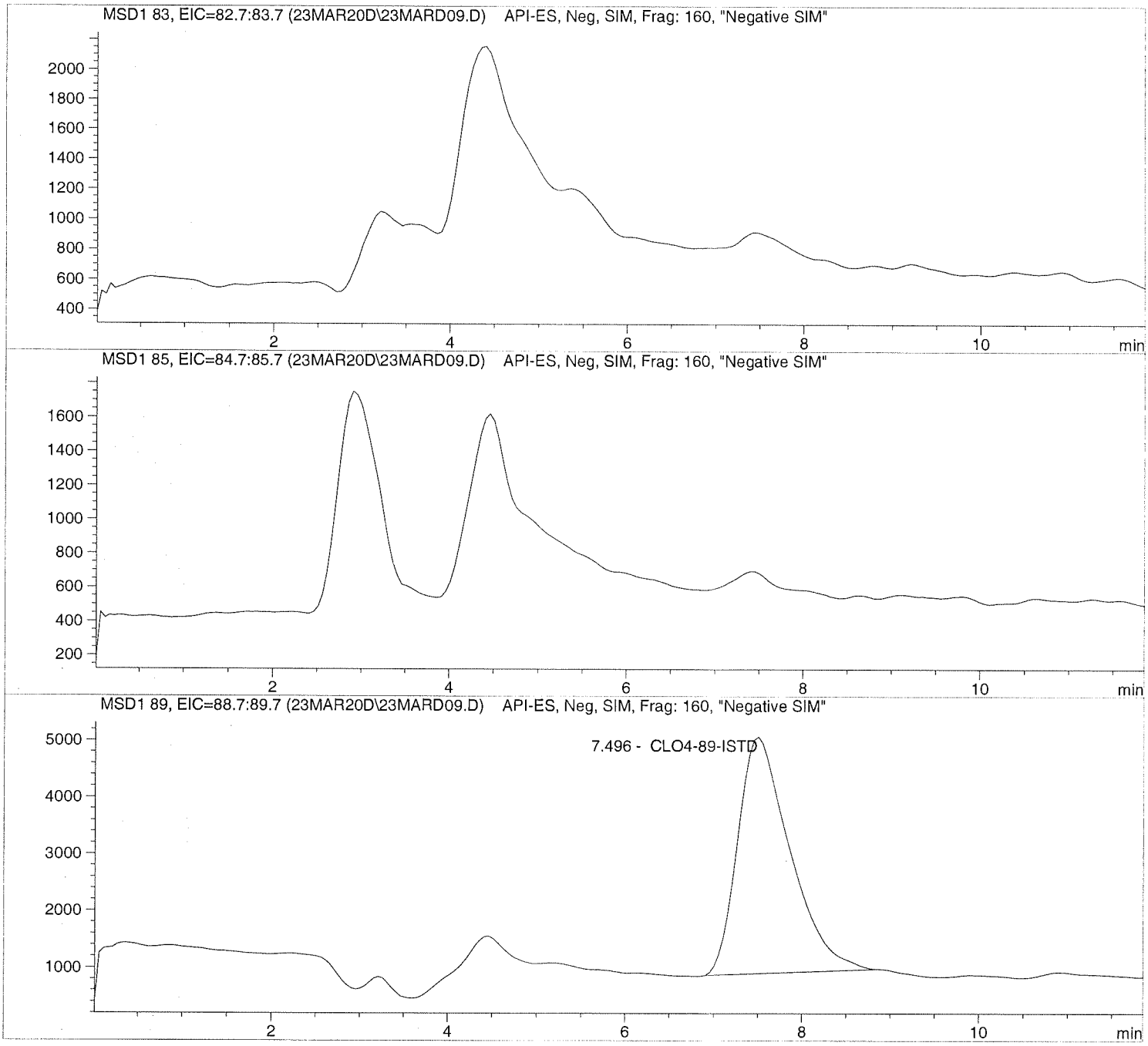
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD09.D Sample Name: 2007910003

Injection Date:	3/23/2020 10:13:23	Seq Line:	9
Sample Name:	2007910003	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD09.D Sample Name: 2007910003

Injection Date:	3/23/2020 10:13:23	Seq Line:	9
Sample Name:	2007910003	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.496	PBA	171963.5	5.0000	CLO4-89-ISTD

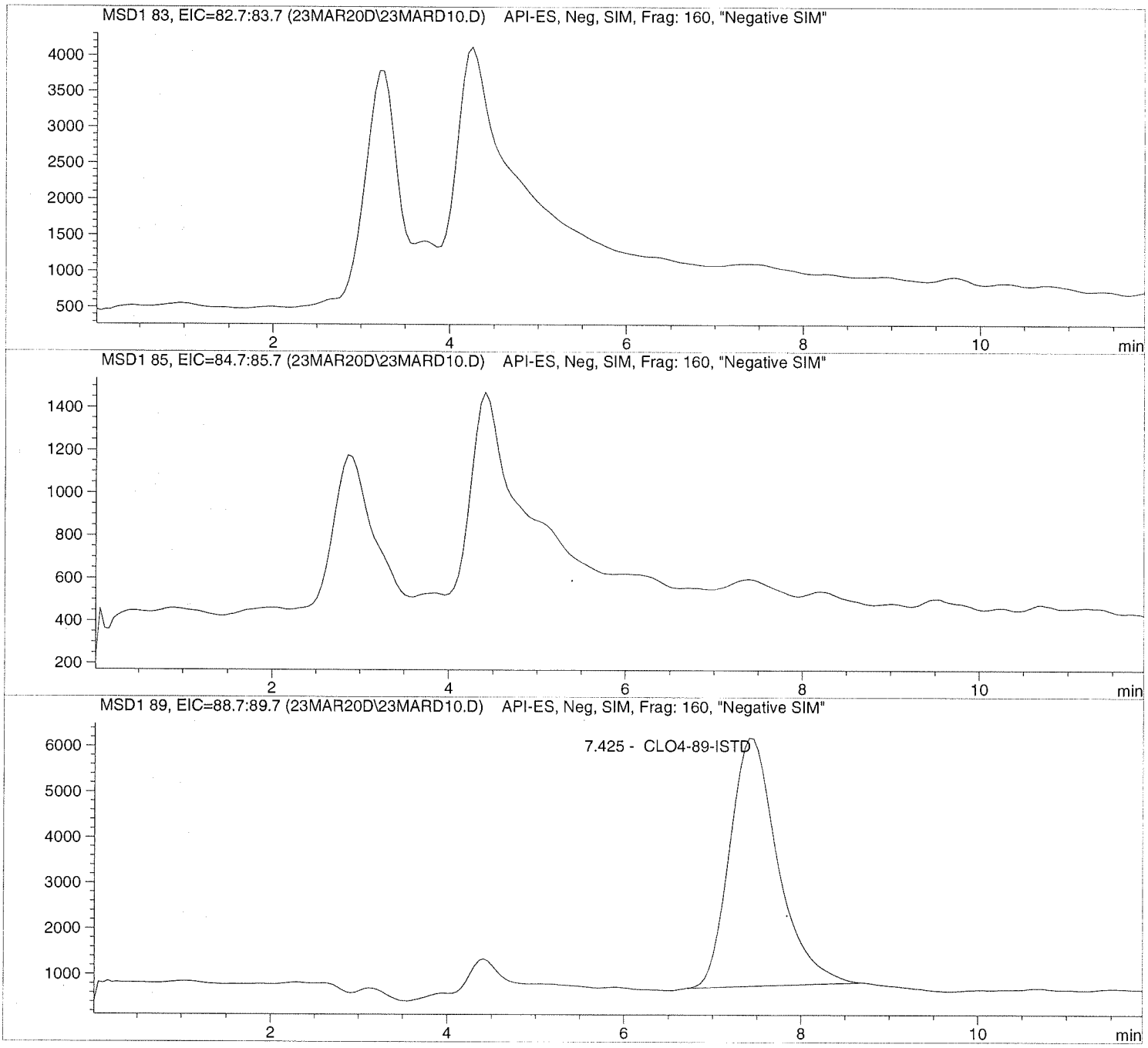
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD10.D Sample Name: 2007910004

Injection Date:	3/23/2020 10:27:23	Seq Line:	10
Sample Name:	2007910004	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD10.D Sample Name: 2007910004

Injection Date:	3/23/2020 10:27:23	Seq Line:	10
Sample Name:	2007910004	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.425	PBA	207471.4	5.0000	CLO4-89-ISTD

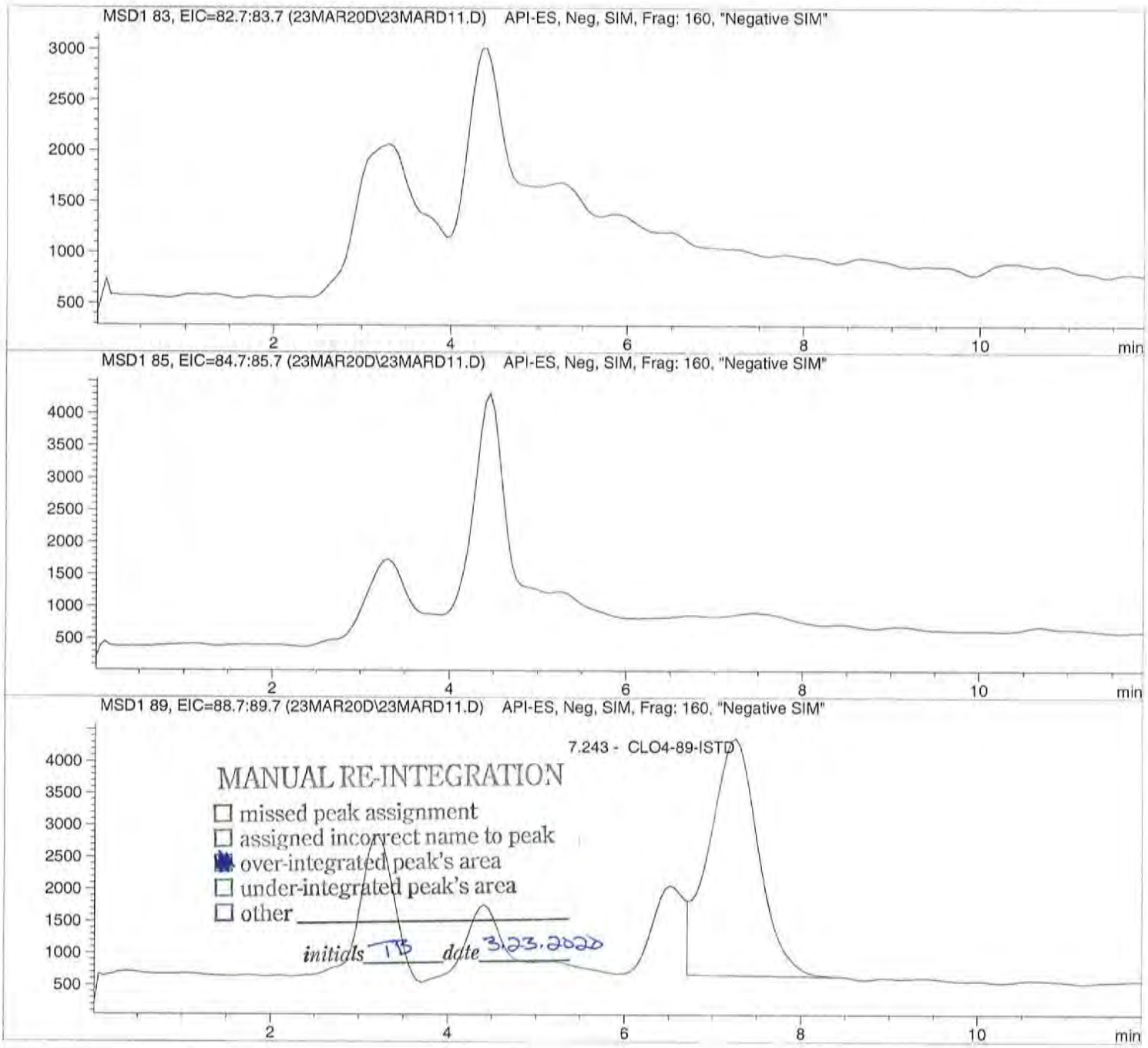
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD11.D Sample Name: 2007910005

Injection Date:	3/23/2020 10:41:21	Seq Line:	11
Sample Name:	2007910005	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD11.D Sample Name: 2007910005

Injection Date:	3/23/2020 10:41:21	Seq Line:	11
Sample Name:	2007910005	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.243	FM	143463.9	5.0000	CLO4-89-ISTD

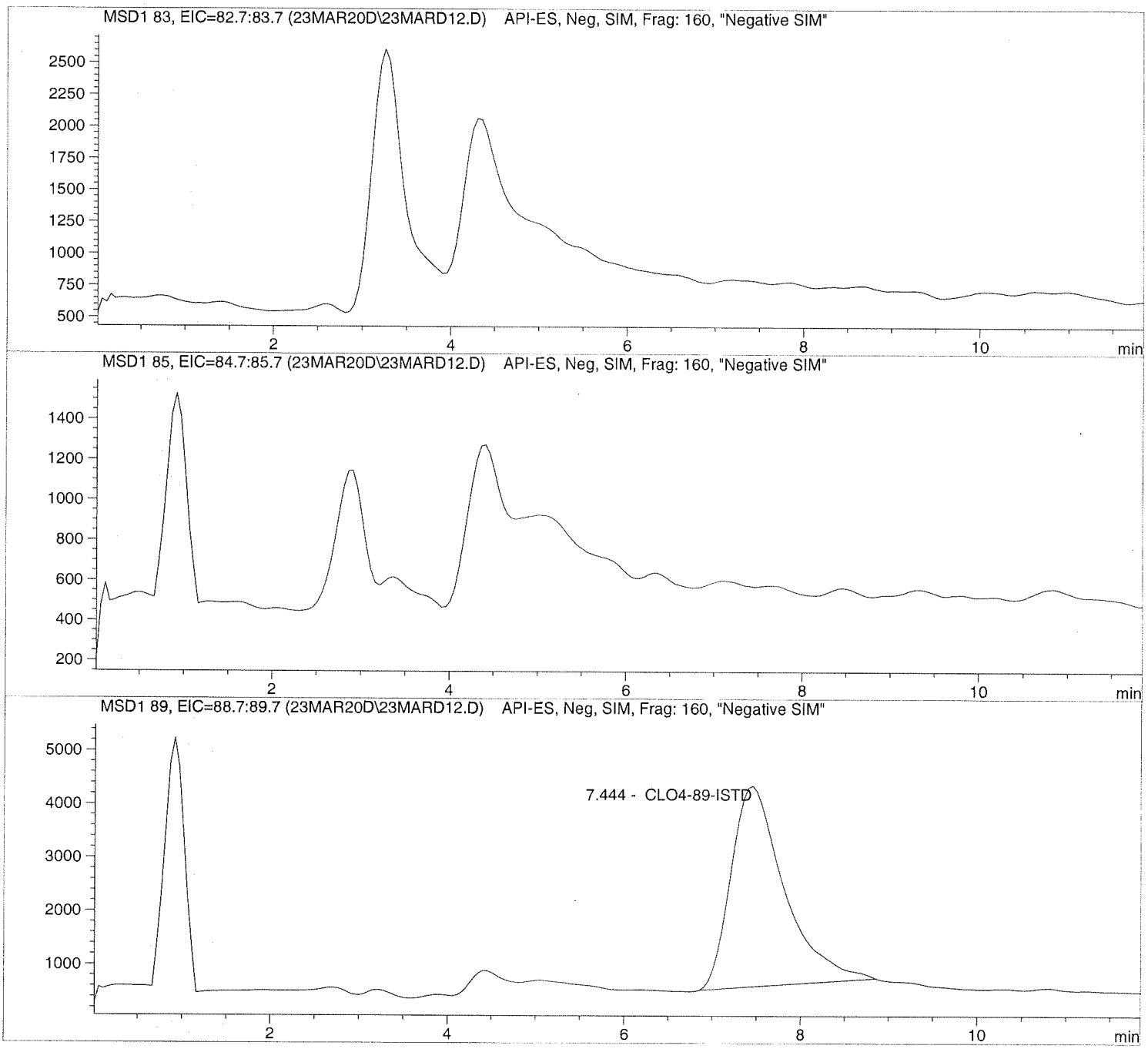
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD12.D Sample Name: 2007910006

Injection Date:	3/23/2020 10:55:18	Seq Line:	12
Sample Name:	2007910006	Location:	Vial 82
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD12.D Sample Name: 2007910006

Injection Date:	3/23/2020 10:55:18	Seq Line:	12
Sample Name:	2007910006	Location:	Vial 82
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.444	PBA	157887.6	5.0000	CLO4-89-ISTD

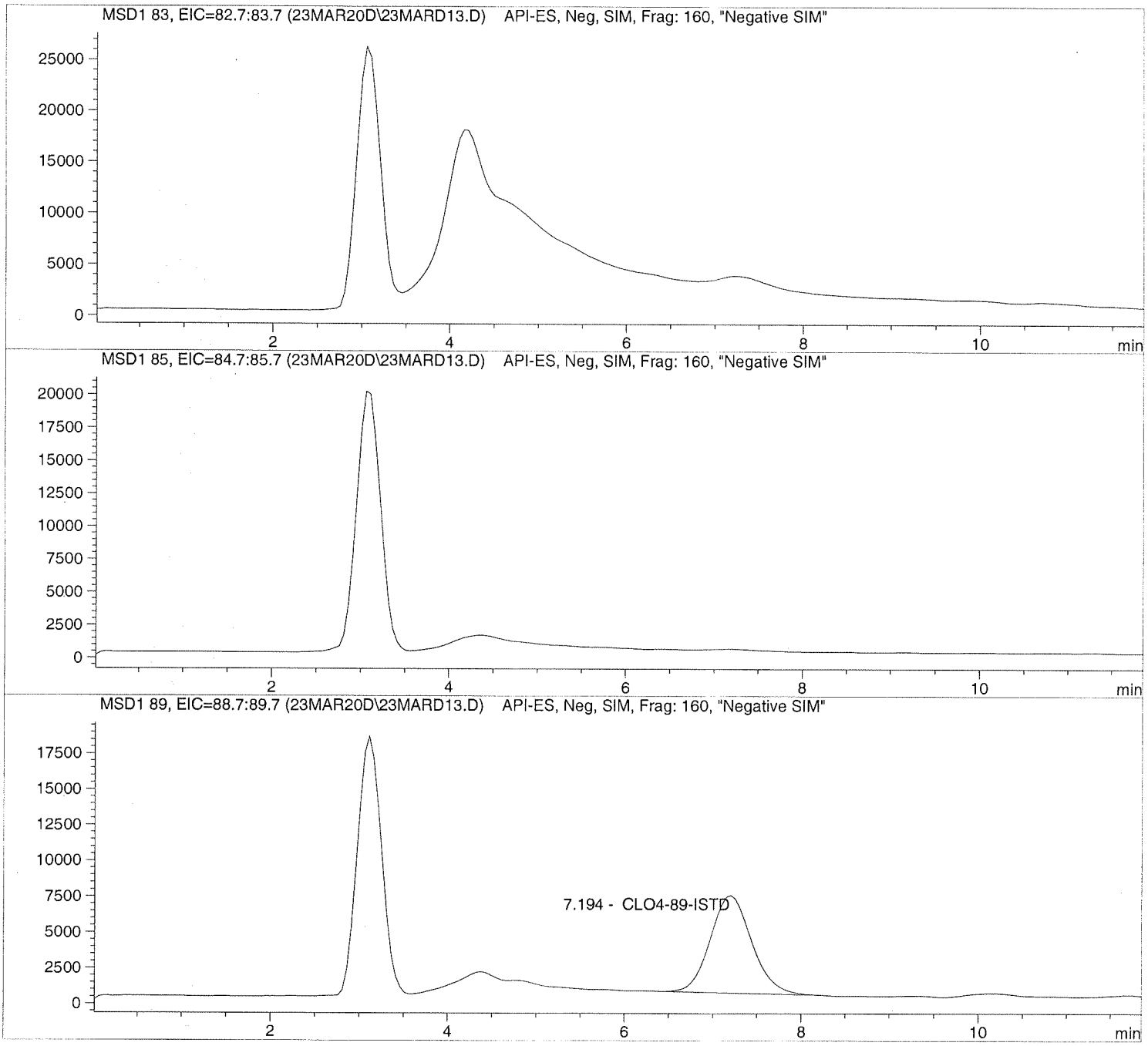
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD13.D Sample Name: 2007910007

Injection Date:	3/23/2020 11:09:16	Seq Line:	13
Sample Name:	2007910007	Location:	Vial 83
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD13.D Sample Name: 2007910007

Injection Date:	3/23/2020 11:09:16	Seq Line:	13
Sample Name:	2007910007	Location:	Vial 83
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.194	PBA	223006.3	5.0000	CLO4-89-ISTD

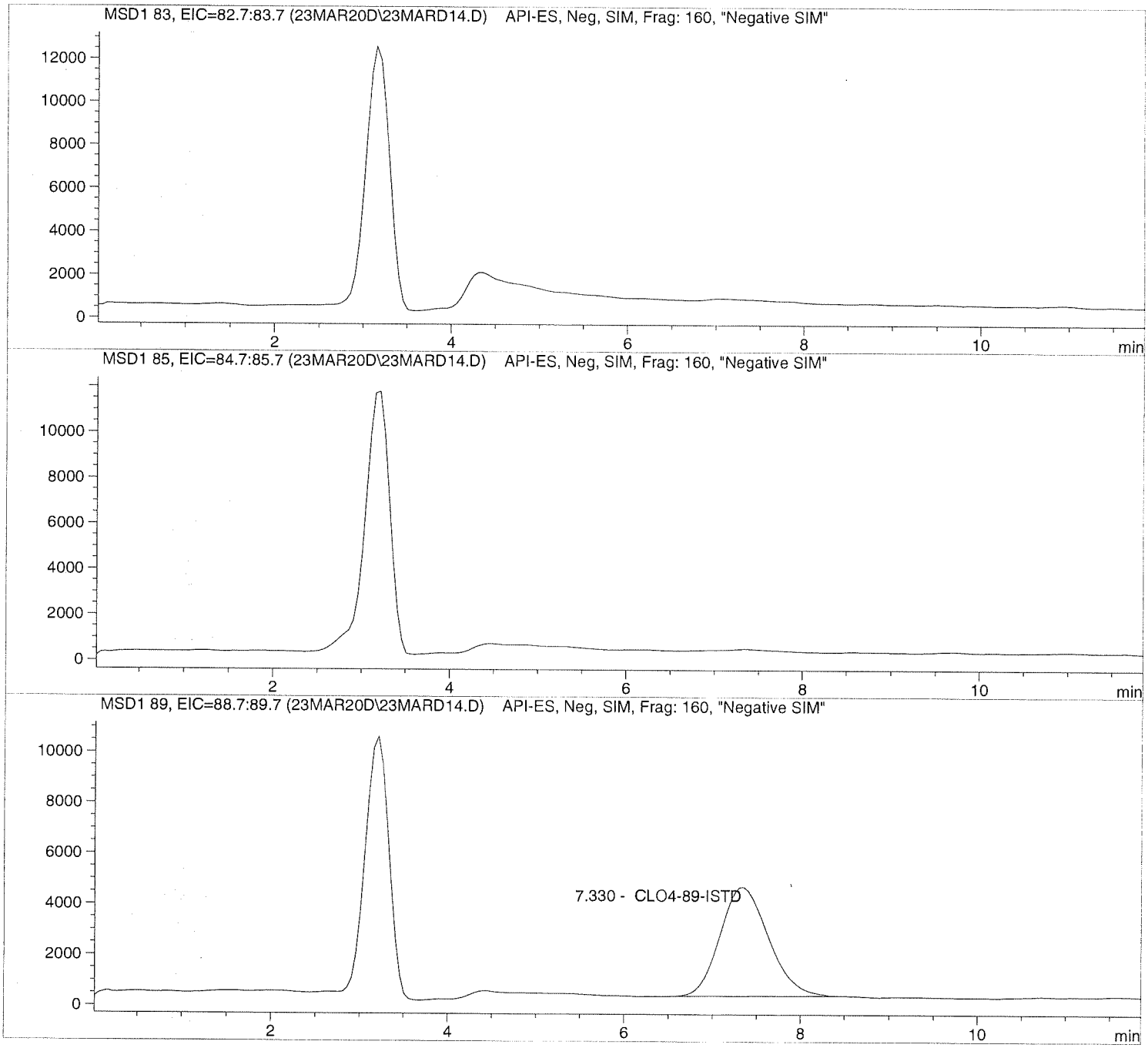
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD14.D Sample Name: 2007910008

Injection Date:	3/23/2020 11:23:15	Seq Line:	14
Sample Name:	2007910008	Location:	Vial 84
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD14.D Sample Name: 2007910008

Injection Date:	3/23/2020 11:23:15	Seq Line:	14
Sample Name:	2007910008	Location:	Vial 84
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.330	PBA	164292.7	5.0000	CLO4-89-ISTD

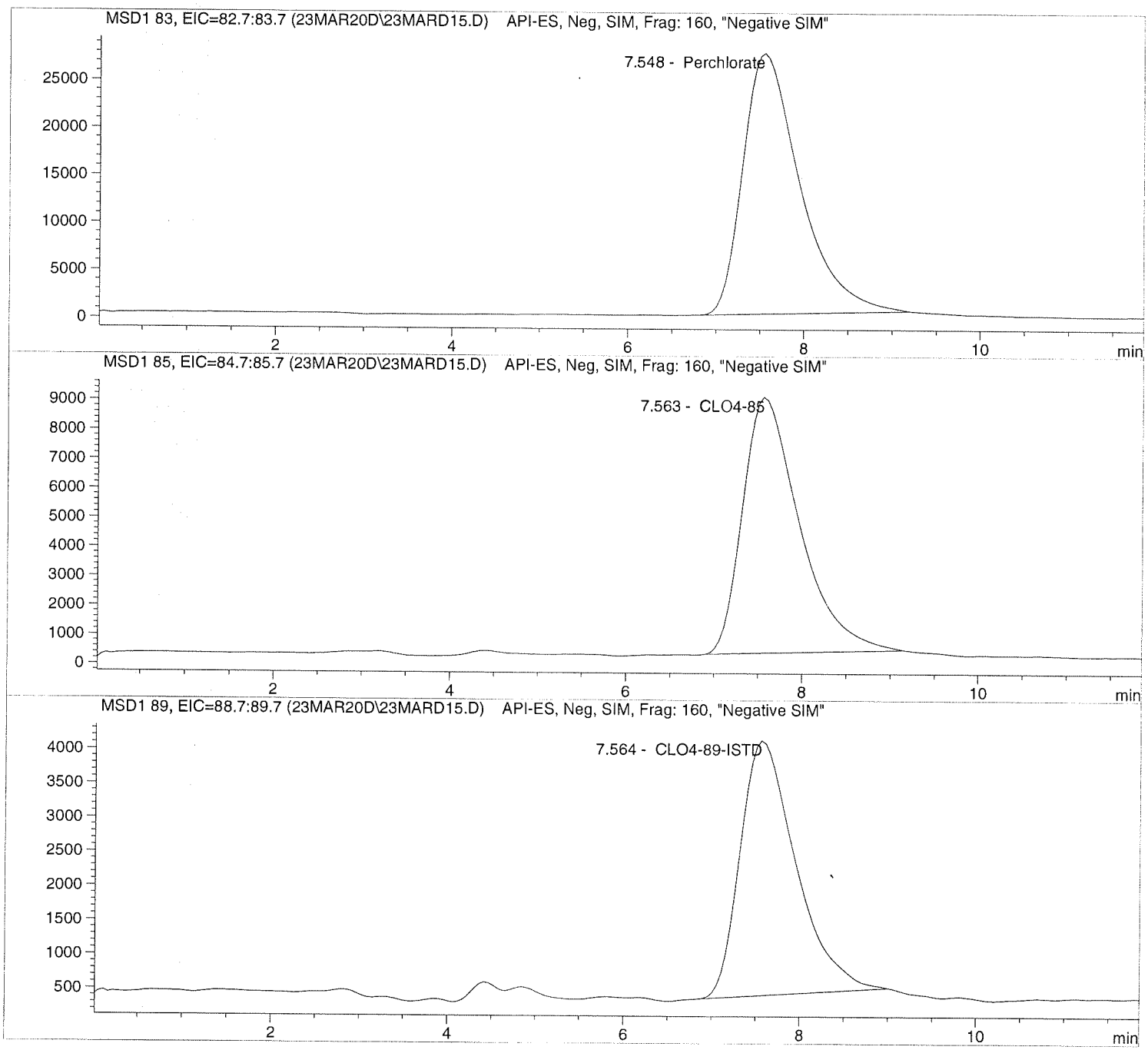
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD15.D Sample Name: 700533 CCV@25

Injection Date:	3/23/2020 11:37:13	Seq Line:	15
Sample Name:	700533 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD15.D Sample Name: 700533 CCV@25

Injection Date:	3/23/2020 11:37:13	Seq Line:	15
Sample Name:	700533 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.548	PBA	1239352.8	25.6652	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.563	BBA	393436.2	26.6298	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.564	PBA	164548.0	5.0000	CLO4-89-ISTD

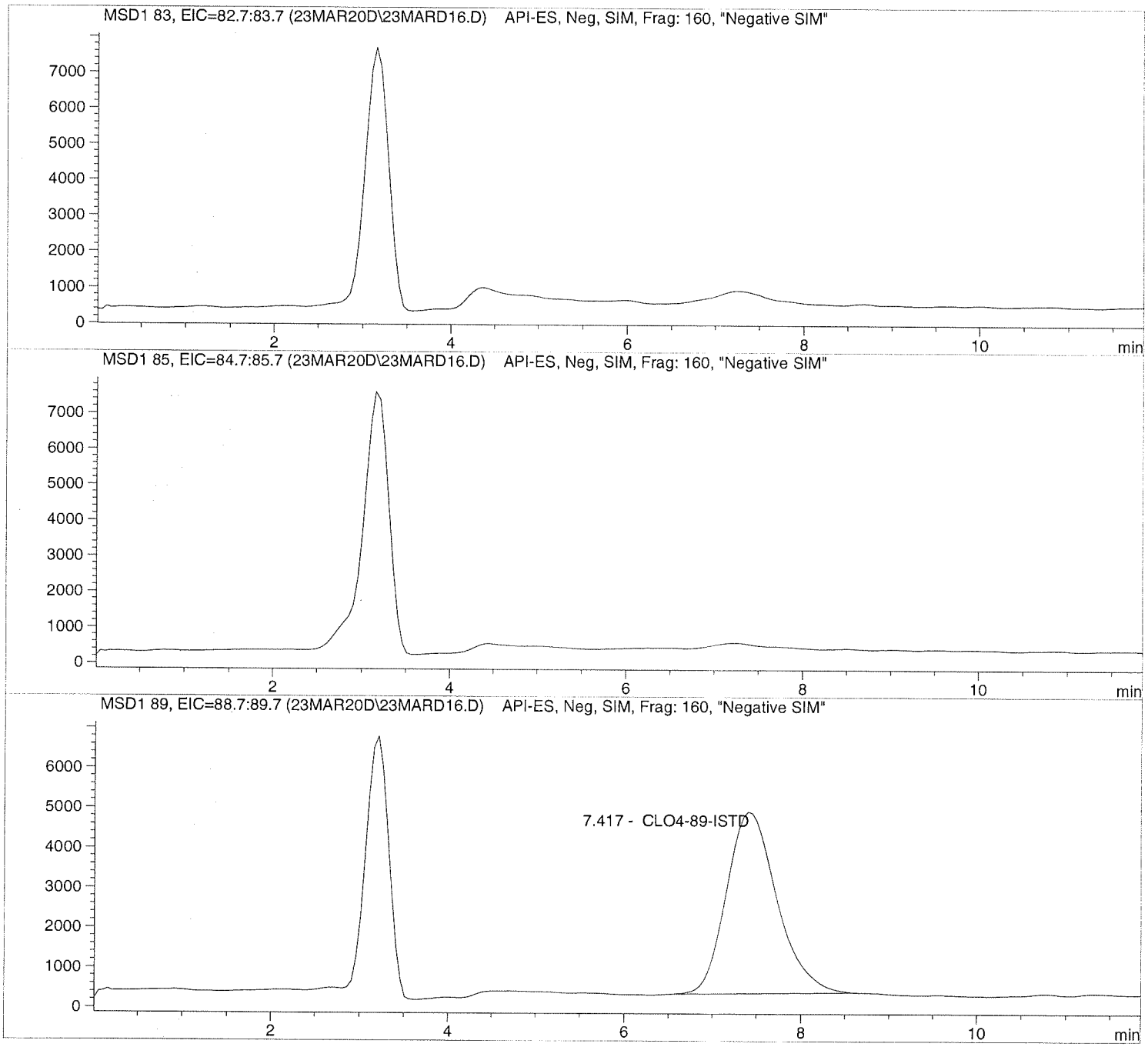
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD16.D Sample Name: 2007910009

Injection Date:	3/23/2020 11:51:13	Seq Line:	16
Sample Name:	2007910009	Location:	Vial 85
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD16.D Sample Name: 2007910009

Injection Date:	3/23/2020 11:51:13	Seq Line:	16
Sample Name:	2007910009	Location:	Vial 85
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.417	BBA	180860.0	5.0000	CLO4-89-ISTD

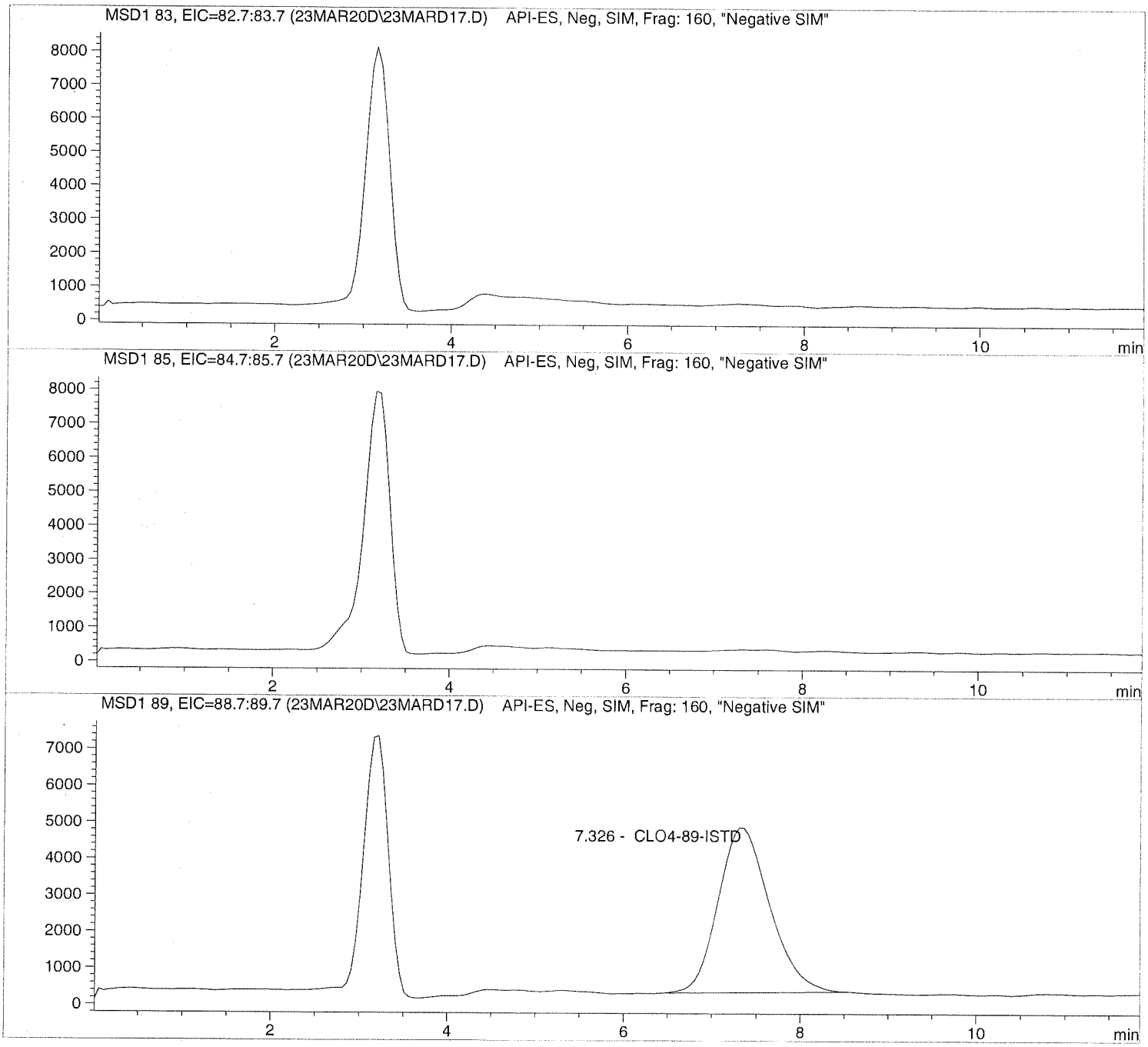
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD17.D Sample Name: 2007910010

Injection Date:	3/23/2020 12:05:10	Seq Line:	17
Sample Name:	2007910010	Location:	Vial 86
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD17.D Sample Name: 2007910010

Injection Date:	3/23/2020 12:05:10	Seq Line:	17
Sample Name:	2007910010	Location:	Vial 86
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.326	PBA	182823.0	5.0000	CLO4-89-ISTD

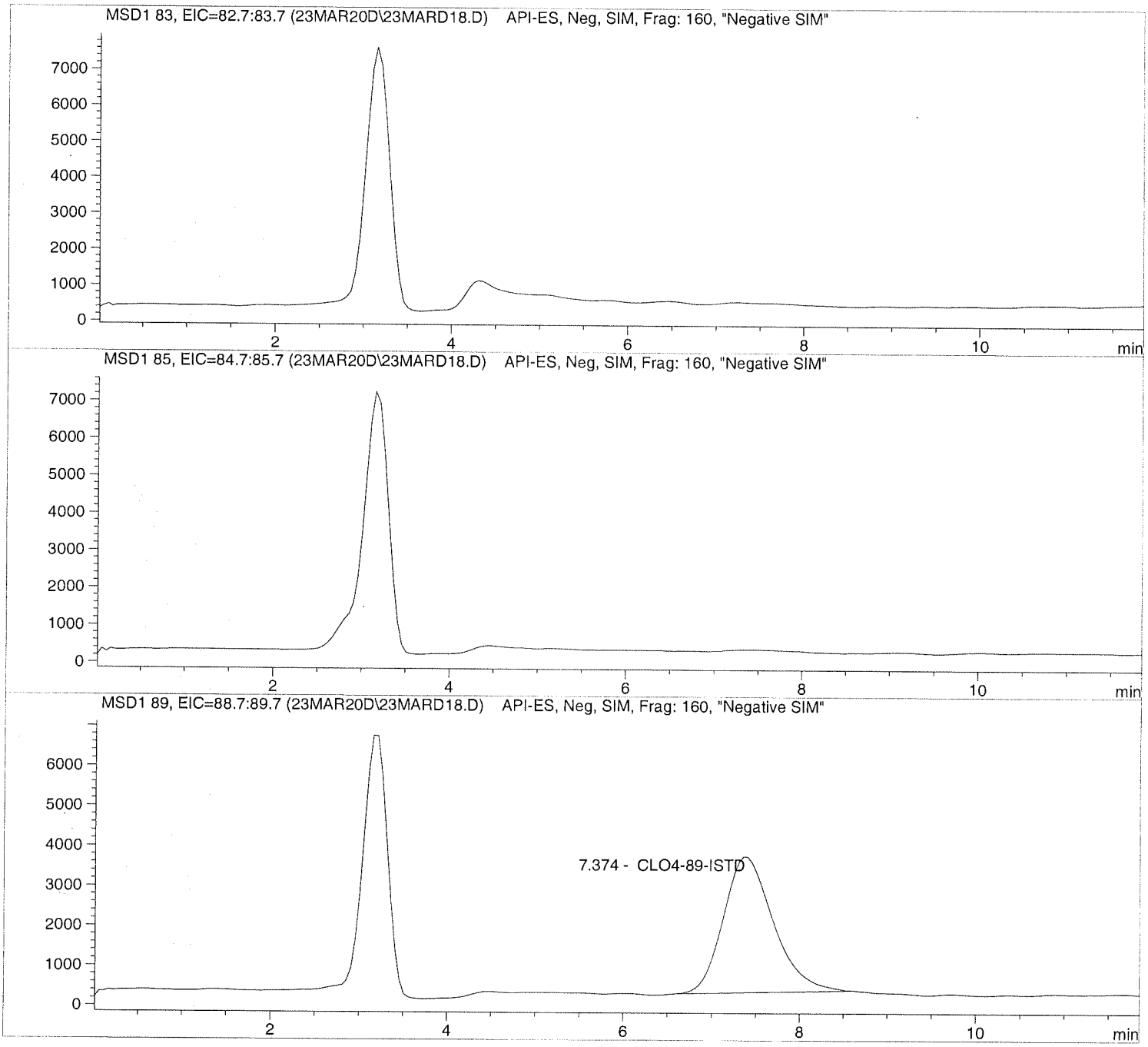
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD18.D Sample Name: 2007910011

Injection Date:	3/23/2020 12:19:08	Seq Line:	18
Sample Name:	2007910011	Location:	Vial 87
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD18.D Sample Name: 2007910011

Injection Date:	3/23/2020 12:19:08	Seq Line:	18
Sample Name:	2007910011	Location:	Vial 87
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.374	PBA	135148.7	5.0000	CLO4-89-ISTD

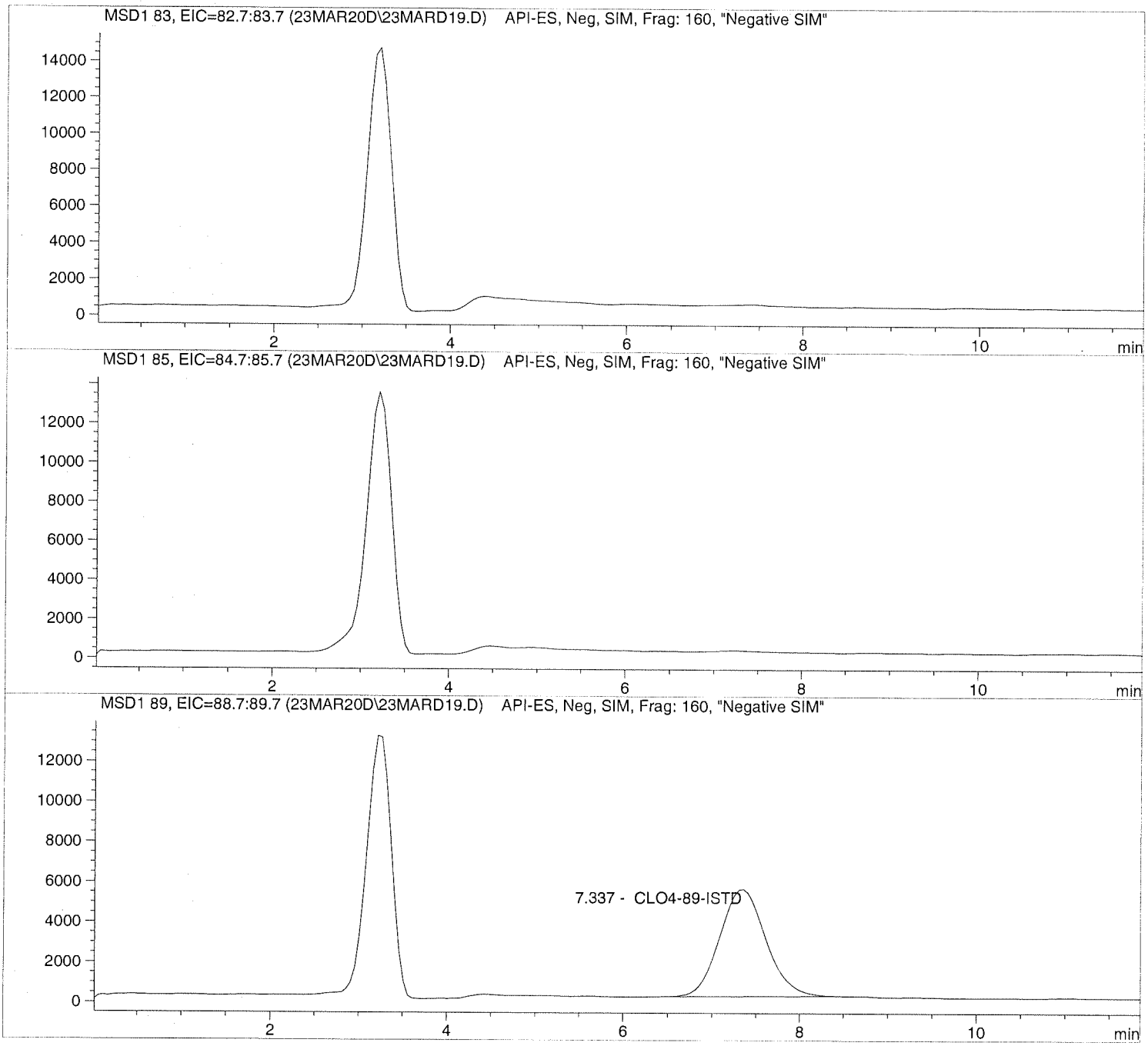
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD19.D Sample Name: 2007910012

Injection Date:	3/23/2020 12:33:07	Seq Line:	19
Sample Name:	2007910012	Location:	Vial 88
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD19.D Sample Name: 2007910012

Injection Date:	3/23/2020 12:33:07	Seq Line:	19
Sample Name:	2007910012	Location:	Vial 88
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.337	BBA	195970.8	5.0000	CLO4-89-ISTD

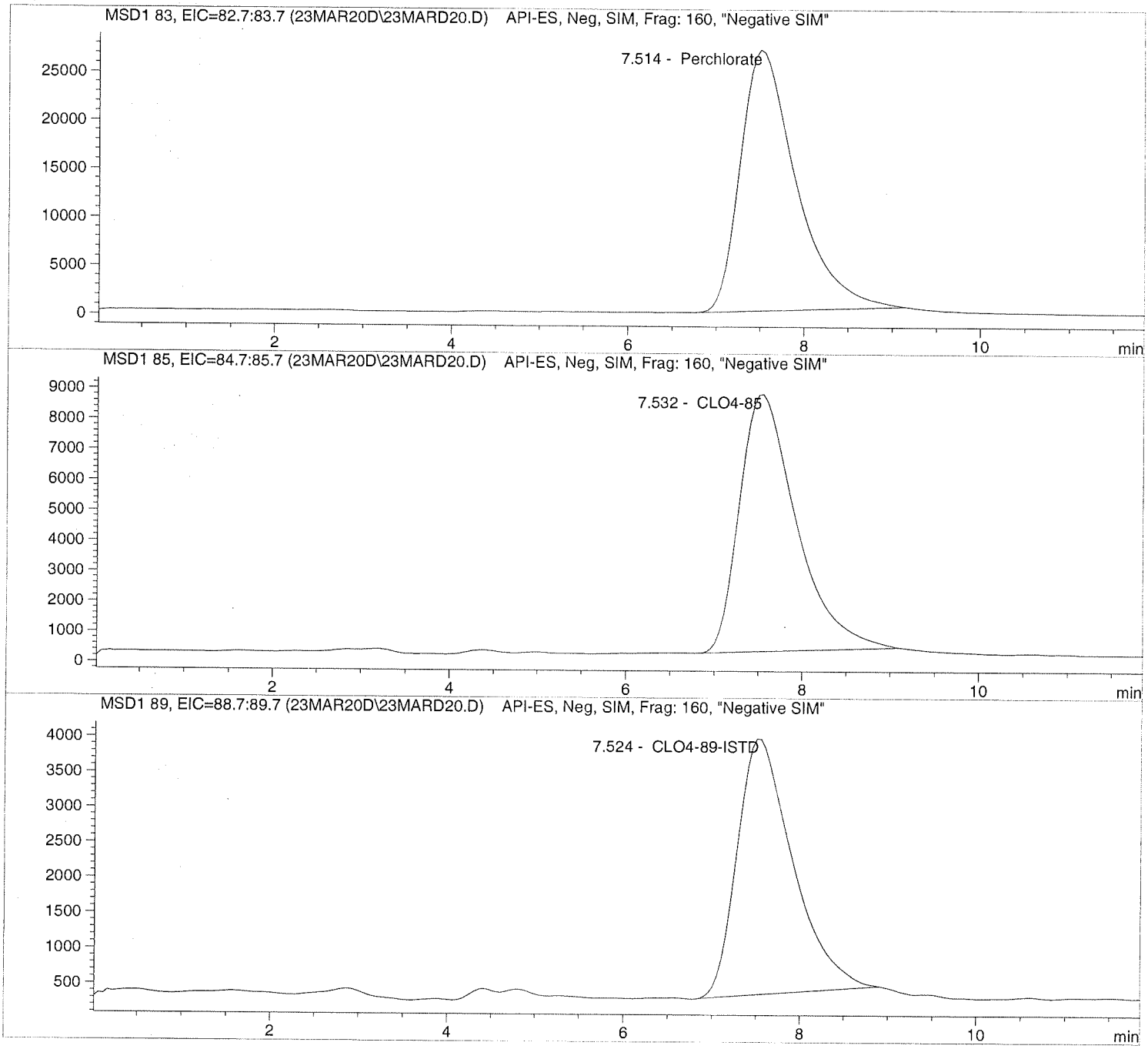
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD20.D Sample Name: 700534 CCV@25

Injection Date:	3/23/2020 12:47:39	Seq Line:	20
Sample Name:	700534 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD20.D Sample Name: 700534 CCV@25

Injection Date:	3/23/2020 12:47:39	Seq Line:	20
Sample Name:	700534 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.514	PBA	1185898.6	25.3979	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.532	PBA	381580.9	26.6763	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.524	PBA	159283.8	5.0000	CLO4-89-ISTD

*** End of Report ***

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

Initial Calibration

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

Calibration Table

Perchlorate

Calib. Data Modified : 9/23/2019 12:20:59 PM

Calculate : Internal Standard
Based on : Peak Area

Rel. Reference Window : 20.000 %
Abs. Reference Window : 0.000 min
Rel. Non-ref. Window : 20.000 %
Abs. Non-ref. Window : 0.000 min
Use Multiplier & Dilution Factor with ISTDs
Uncalibrated Peaks : not reported
Partial Calibration : No recalibration if peaks missing

Curve Type : Quadratic (some peaks differ, see below)
Origin : Ignored (some peaks differ, see below)
Weight : Linear (Amnt) (some peaks differ, see below)

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Default Sample ISTD Information (if not set in sample table):

ISTD #	ISTD Amount	Name
1	5.00000	CLO4-89-ISTD

Signal 1: MSD1 83, EIC=82.7:83.7
Signal 2: MSD1 85, EIC=84.7:85.7
Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Sig	Lvl	Amount	Area	Amt/Area	Ref	Grp	Name
7.750	1	3	1.00000	5.39218e4	1.85454e-5		1	Perchlorate
		4	2.00000	1.32825e5	1.50574e-5			
		5	5.00000	2.76271e5	1.80982e-5			
		6	10.00000	5.61298e5	1.78159e-5			
		7	25.00000	1.51820e6	1.64669e-5			
		8	50.00000	3.31156e6	1.50986e-5			
		9	75.00000	5.23914e6	1.43153e-5			
7.767	3	3	5.00000	2.14568e5	2.33026e-5	+I1		CLO4-89-ISTD
		4	5.00000	2.04758e5	2.44190e-5			
		5	5.00000	2.13407e5	2.34294e-5			
		6	5.00000	2.09246e5	2.38953e-5			
		7	5.00000	2.07403e5	2.41077e-5			
		8	5.00000	2.02929e5	2.46391e-5			
		9	5.00000	1.97933e5	2.52611e-5			
7.778	2	3	1.00000	1.70436e4	5.86732e-5		1	CLO4-85
		4	2.00000	4.20754e4	4.75337e-5			
		5	5.00000	9.24707e4	5.40712e-5			
		6	10.00000	1.68622e5	5.93041e-5			
		7	25.00000	4.63724e5	5.39114e-5			
		8	50.00000	9.95933e5	5.02042e-5			

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

RetTime [min]	Sig	Lvl	Amount	Area	Amt/Area	Ref	Grp	Name
		9	75.00000	1.58066e6	4.74484e-5			

More compound-specific settings:

Compound: Perchlorate
- Time Window : From 3.581 min To 11.899 min
- Curve Type : Quadratic
- Origin : Ignored
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 0.5
  - Level 5 : 0.2
  - Level 6 : 0.1
  - Level 7 : 0.04
  - Level 8 : 0.02
  - Level 9 : 0.013333

Compound: CLO4-89-ISTD
- Time Window : From 3.581 min To 11.896 min
- Curve Type : Linear
- Origin : Included
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 1
  - Level 5 : 1
  - Level 6 : 1
  - Level 7 : 1
  - Level 8 : 1
  - Level 9 : 1

Compound: CLO4-85
- Time Window : From 3.601 min To 11.913 min
- Curve Type : Quadratic
- Origin : Ignored
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 0.5
  - Level 5 : 0.2
  - Level 6 : 0.1
  - Level 7 : 0.04
  - Level 8 : 0.02
  - Level 9 : 0.013333

Peak Sum Table

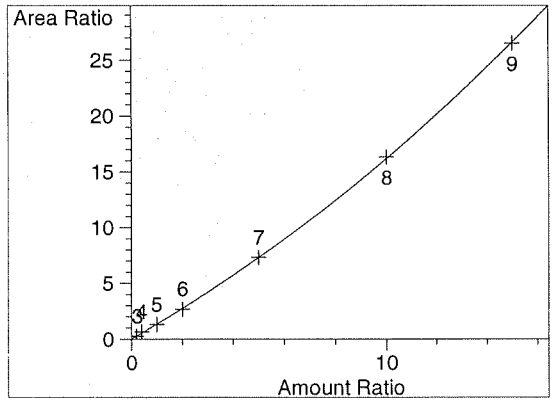
No Entries in table

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

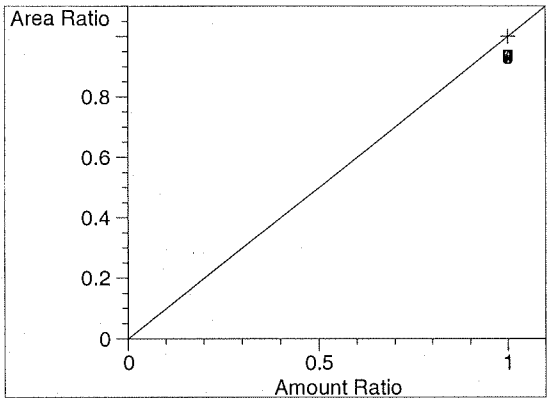
==========

Calibration Curves

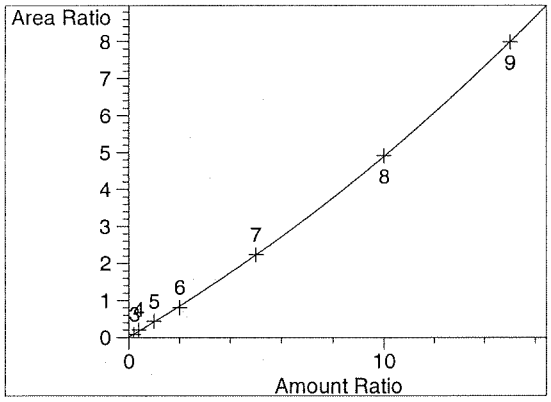
==========



Perchlorate at exp. RT: 7.750
MSD1 83, EIC=82.7:83.7
Correlation: 0.99975
Residual Std. Dev.: 0.10284
Formula: $y = ax^2 + bx + c$
a: 3.10463e-2
b: 1.30369
c: 2.19496e-2
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 0.5
Level 5 : 0.2
Level 6 : 0.1
Level 7 : 0.04
Level 8 : 0.02
Level 9 : 0.013333



CLO4-89-ISTD at exp. RT: 7.767
MSD1 89, EIC=88.7:89.7
Correlation: 1.00000
Residual Std. Dev.: 0.00000
Formula: $y = mx + b$
m: 1.00000
b: 0.00000
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 1
Level 5 : 1
Level 6 : 1
Level 7 : 1
Level 8 : 1
Level 9 : 1



CLO4-85 at exp. RT: 7.778
MSD1 85, EIC=84.7:85.7
Correlation: 0.99969
Residual Std. Dev.: 0.02601
Formula: $y = ax^2 + bx + c$
a: 8.85207e-3
b: 3.99283e-1
c: 1.33505e-2
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 0.5
Level 5 : 0.2
Level 6 : 0.1
Level 7 : 0.04
Level 8 : 0.02
Level 9 : 0.013333

==========

Batch Report: C:\HPCHEM\1\DATA\20SEP19I\20SEP19D.B

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DP3.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorat RT	Perchlorate Amount
#*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	5.39218e4	7.750	8.75982e-1
#*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	1.32825e5	7.797	2.37682
#*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	2.76271e5	7.770	4.77237
#*	CLO4@ 10.ug/L	Vial 76	1	Control	6	5.61298e5	7.785	9.75097
#*	CLO4@ 25.ug/L	Vial 77	1	Control	7	1.51820e6	7.741	25.01082
#*	CLO4@ 50.ug/L	Vial 78	1	Control	8	3.31156e6	7.775	50.40300
#*	CLO4@ 75.ug/L	Vial 79	1	Control	9	5.23914e6	7.736	74.79107
#*	ICAL Verf@10ug/L	Vial 80	1	Control	11	5.74879e5	7.756	10.11855

#	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-IS RT	CLO4-89-ISTD Amount
#*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	2.14568e5	7.767	5.00000
#*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	2.04758e5	7.816	5.00000
#*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	2.13407e5	7.793	5.00000
#*	CLO4@ 10.ug/L	Vial 76	1	Control	6	2.09246e5	7.798	5.00000
#*	CLO4@ 25.ug/L	Vial 77	1	Control	7	2.07403e5	7.763	5.00000
#*	CLO4@ 50.ug/L	Vial 78	1	Control	8	2.02929e5	7.800	5.00000
#*	CLO4@ 75.ug/L	Vial 79	1	Control	9	1.97933e5	7.765	5.00000
#*	ICAL Verf@10ug/L	Vial 80	1	Control	11	2.06243e5	7.776	5.00000

#	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
#*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	1.70436e4	7.778	8.24488e-1
#*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	4.20754e4	7.805	2.38090
#*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	9.24707e4	7.787	5.14166
#*	CLO4@ 10.ug/L	Vial 76	1	Control	6	1.68622e5	7.781	9.52209
#*	CLO4@ 25.ug/L	Vial 77	1	Control	7	4.63724e5	7.760	25.04916
#*	CLO4@ 50.ug/L	Vial 78	1	Control	8	9.95933e5	7.793	50.14223
#*	CLO4@ 75.ug/L	Vial 79	1	Control	9	1.58066e6	7.758	74.93659
#*	ICAL Verf@10ug/L	Vial 80	1	Control	11	1.71000e5	7.760	9.79043

*** End of Report ***

Sequence: C:\HPCHEM\1\SEQUENCE\CLO4\2019\SEP\20SEP19I.S

Sequence Table:

Method and Injection Info Part:

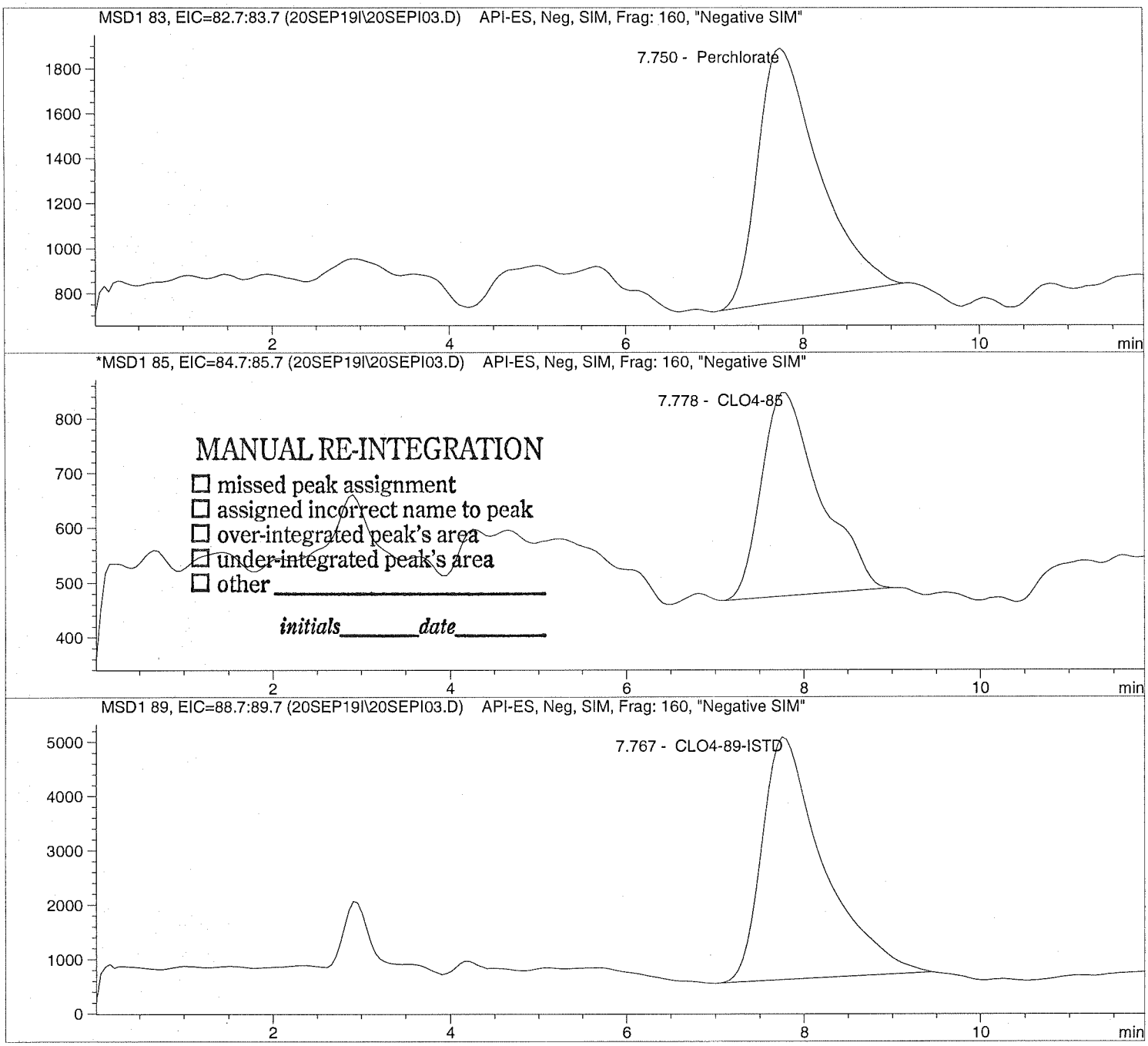
Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 71	CLO4@ 0.2ug/L	CLO4-AQN	1	Ctrl Samp		
2	Vial 72	CLO4@ 0.5ug/L	CLO4-AQN	1	Ctrl Samp		
3	Vial 73	CLO4@ 1.0ug/L	CLO4-AQN	1	Ctrl Samp		
4	Vial 74	CLO4@ 2.0ug/L	CLO4-AQN	1	Ctrl Samp		
5	Vial 75	CLO4@ 5.0ug/L	CLO4-AQN	1	Ctrl Samp		
6	Vial 76	CLO4@ 10.ug/L	CLO4-AQN	1	Ctrl Samp		
7	Vial 77	CLO4@ 25.ug/L	CLO4-AQN	1	Ctrl Samp		
8	Vial 78	CLO4@ 50.ug/L	CLO4-AQN	1	Ctrl Samp		
9	Vial 79	CLO4@ 75.ug/L	CLO4-AQN	1	Ctrl Samp		
10	Vial 71	CLO4@ 0.2ug/L	CLO4-AQN	1	Ctrl Samp		
11	Vial 80	ICAL Verf@10ug/L	CLO4-AQN	1	Ctrl Samp		

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.750	PBA	53921.8	0.8760	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.778	MM	17043.6	0.8245	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.767	PBA	214568.1	5.0000	CLO4-89-ISTD

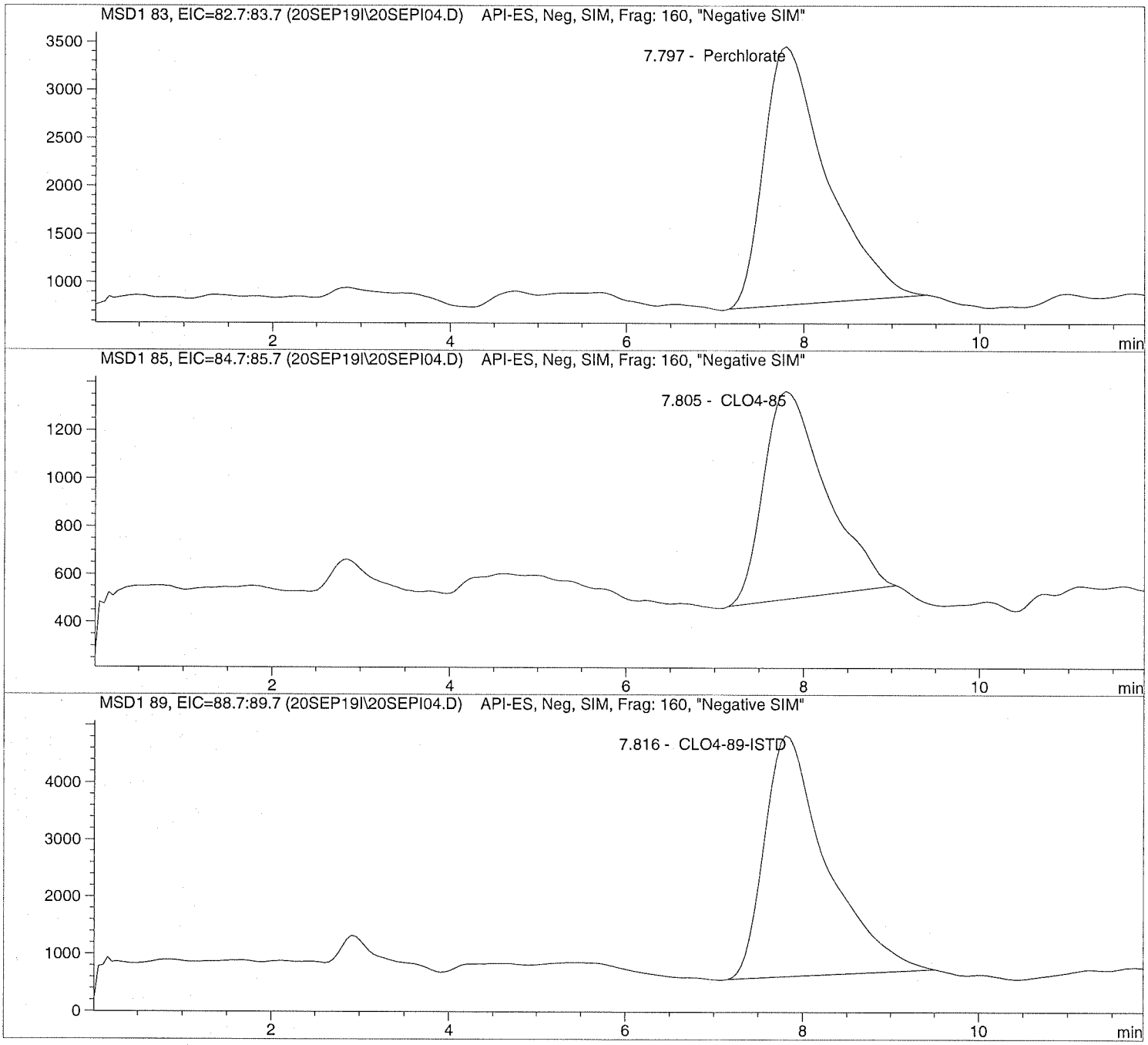
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI04.D Sample Name: CLO4@ 2.0ug/L

Injection Date:	9/20/2019 09:37:58	Seq Line:	4
Sample Name:	CLO4@ 2.0ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI04.D Sample Name: CLO4@ 2.0ug/L

Injection Date:	9/20/2019 09:37:58	Seq Line:	4
Sample Name:	CLO4@ 2.0ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	2.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.797	PBA	132825.2	2.3768	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.805	PBA	42075.4	2.3809	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.816	PBA	204758.3	5.0000	CLO4-89-ISTD

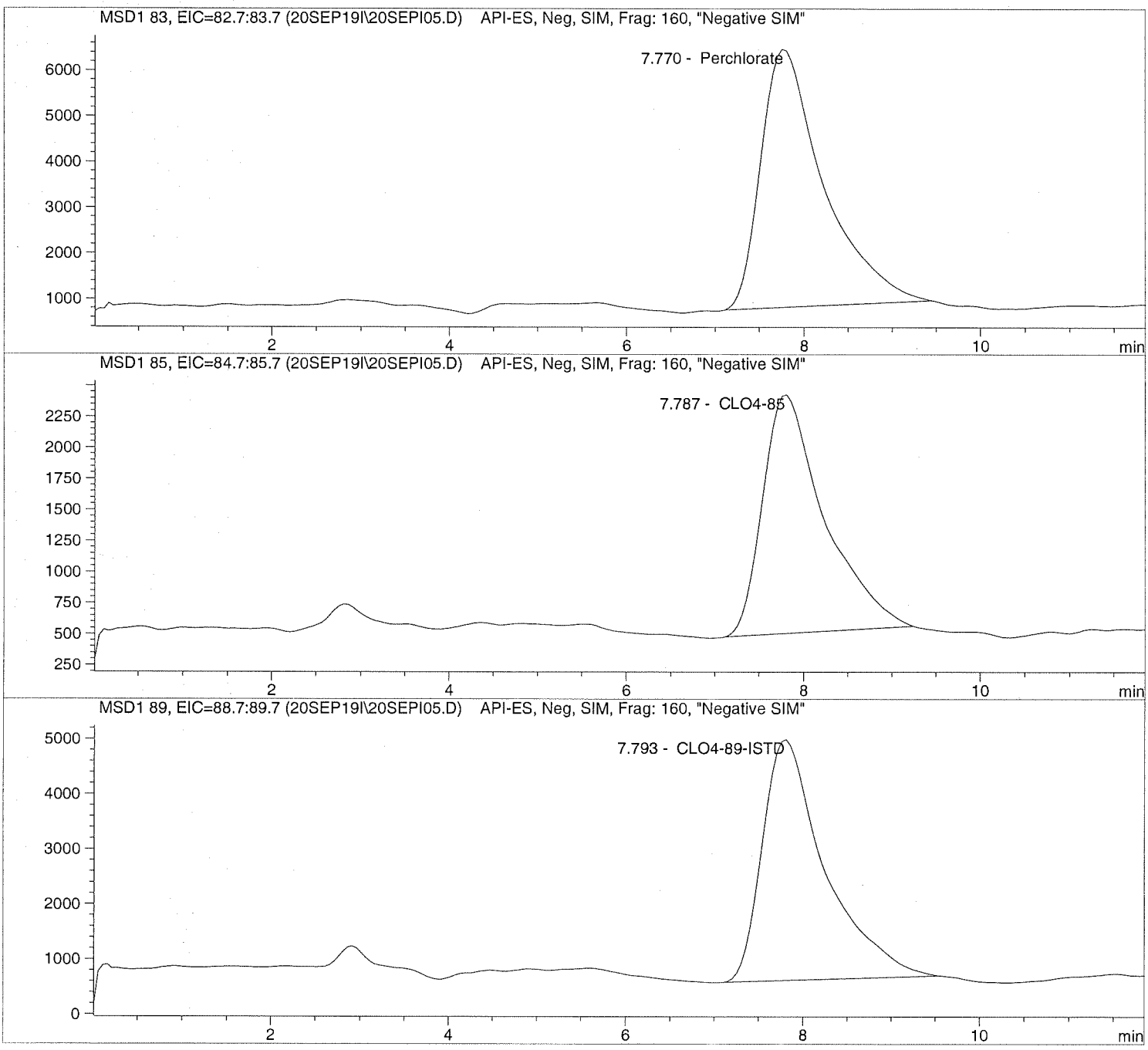
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI05.D Sample Name: CLO4@ 5.0ug/L

Injection Date:	9/20/2019 09:51:49	Seq Line:	5
Sample Name:	CLO4@ 5.0ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI05.D Sample Name: CLO4@ 5.0ug/L

Injection Date:	9/20/2019 09:51:49	Seq Line:	5
Sample Name:	CLO4@ 5.0ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	5.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.770	PBA	276270.7	4.7724	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.787	PBA	92470.7	5.1417	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.793	PBA	213407.0	5.0000	CLO4-89-ISTD

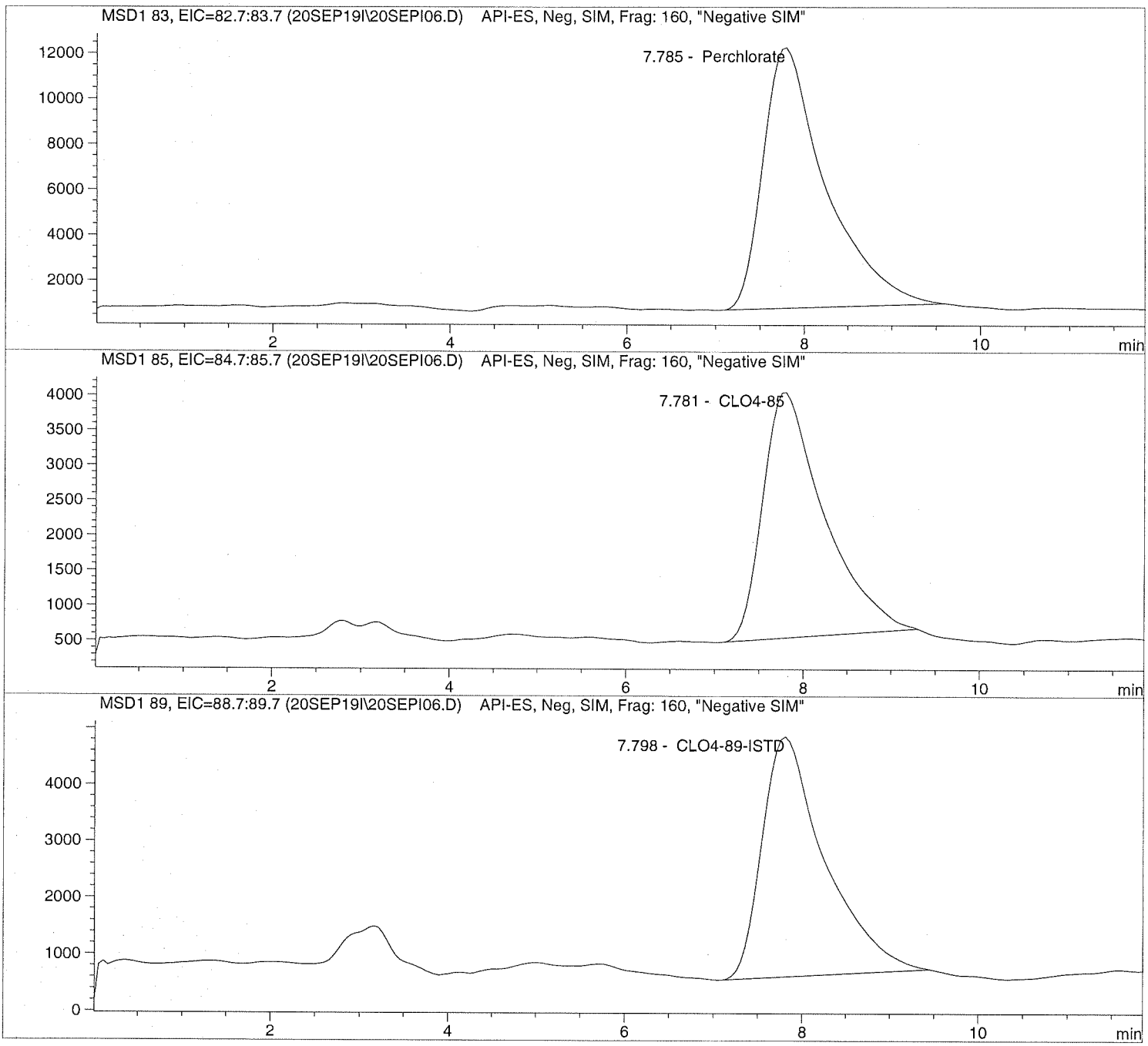
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI06.D Sample Name: CLO4@ 10.ug/L

Injection Date:	9/20/2019 10:05:36	Seq Line:	6
Sample Name:	CLO4@ 10.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI06.D Sample Name: CLO4@ 10.ug/L

Injection Date:	9/20/2019 10:05:36	Seq Line:	6
Sample Name:	CLO4@ 10.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.785	PBA	561297.7	9.7510	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.781	PBA	168622.4	9.5221	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.798	PBA	209246.3	5.0000	CLO4-89-ISTD

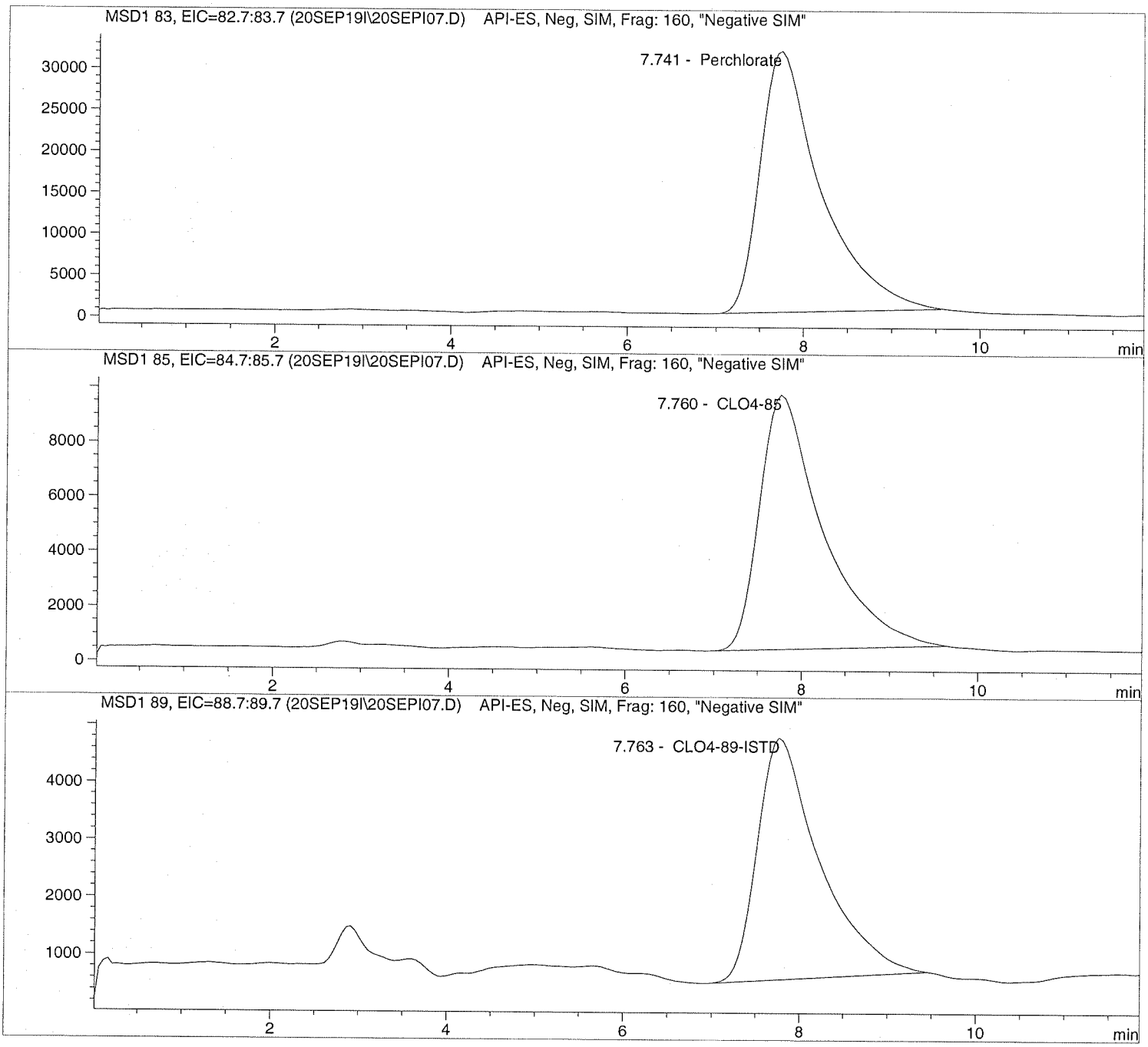
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI07.D Sample Name: CLO4@ 25.ug/L

Injection Date:	9/20/2019 10:19:23	Seq Line:	7
Sample Name:	CLO4@ 25.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI07.D Sample Name: CLO4@ 25.ug/L

Injection Date:	9/20/2019 10:19:23	Seq Line:	7
Sample Name:	CLO4@ 25.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.741	PBA	1518197.9	25.0108	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.760	PBA	463724.0	25.0492	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.763	PBA	207402.8	5.0000	CLO4-89-ISTD

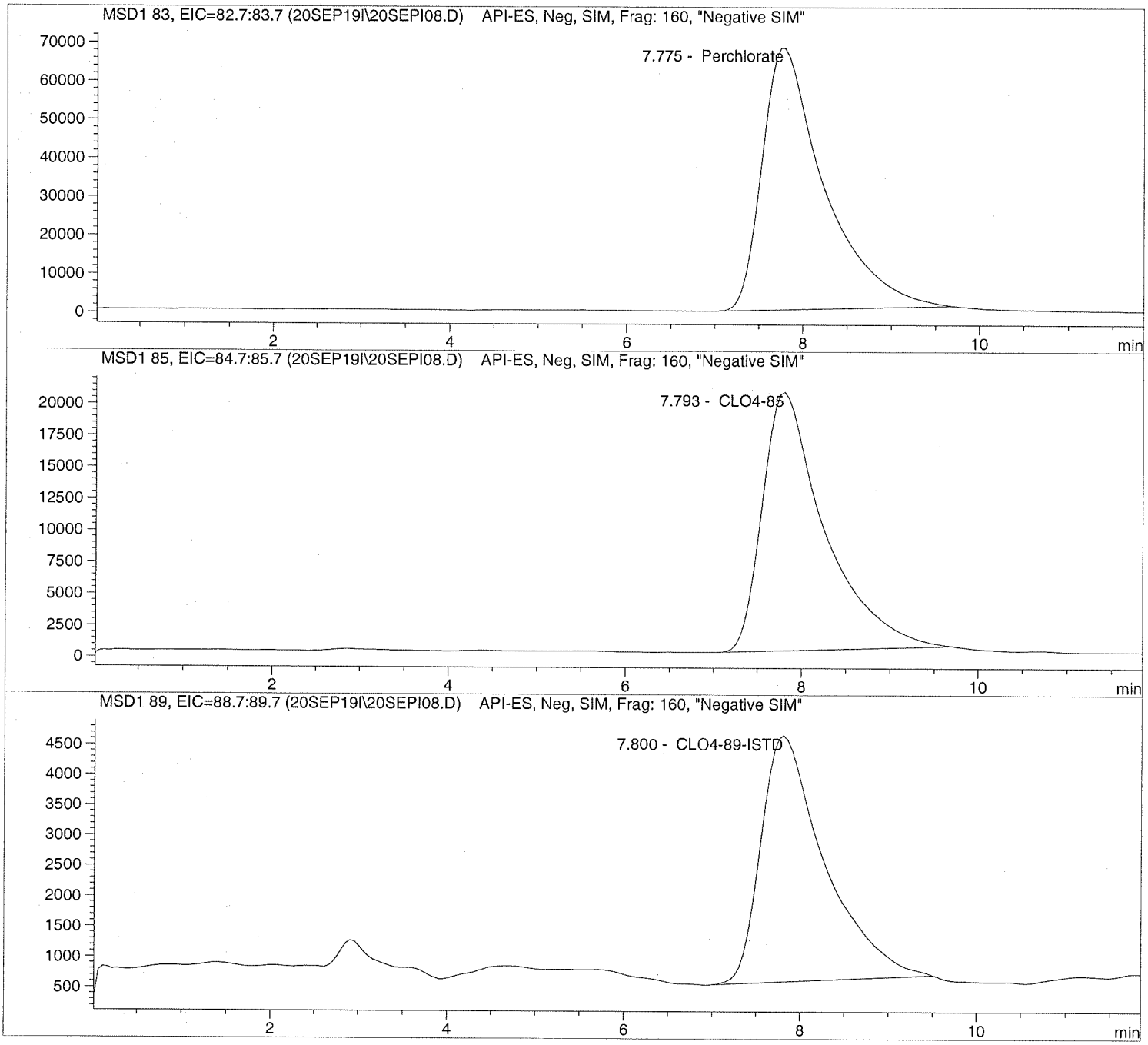
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI08.D Sample Name: CLO4@ 50.ug/L

Injection Date:	9/20/2019 10:33:18	Seq Line:	8
Sample Name:	CLO4@ 50.ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI08.D Sample Name: CLO4@ 50.ug/L

Injection Date:	9/20/2019 10:33:18	Seq Line:	8
Sample Name:	CLO4@ 50.ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	50.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.775	PBA	3311559.2	50.4030	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.793	PBA	995933.0	50.1422	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.800	PBA	202929.2	5.0000	CLO4-89-ISTD

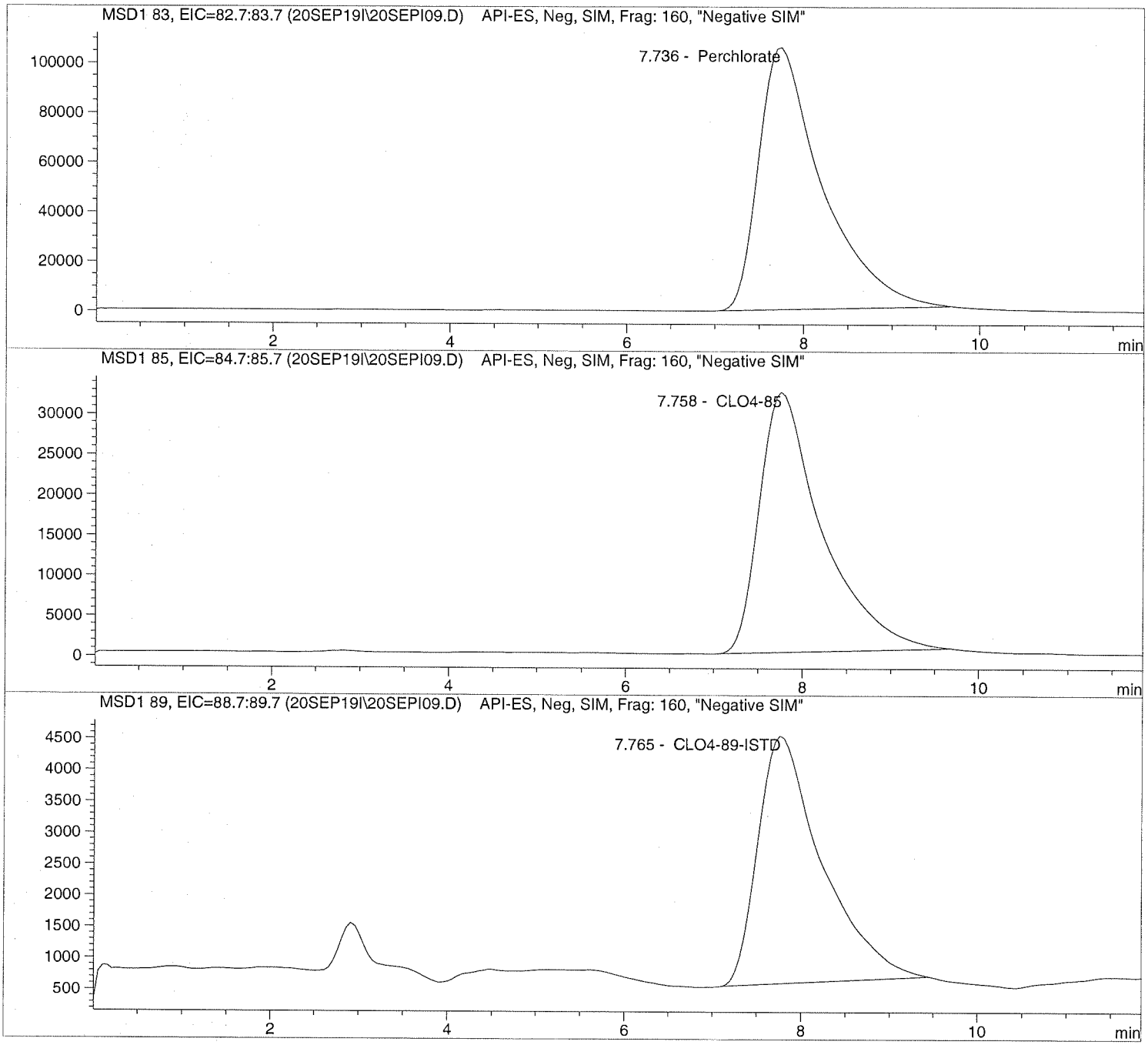
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI09.D Sample Name: CLO4@ 75.ug/L

Injection Date:	9/20/2019 10:47:05	Seq Line:	9
Sample Name:	CLO4@ 75.ug/L	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI09.D Sample Name: CLO4@ 75.ug/L

Injection Date:	9/20/2019 10:47:05	Seq Line:	9
Sample Name:	CLO4@ 75.ug/L	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	75.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.736	PBA	5239145.0	74.7911	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.758	PBA	1580664.2	74.9366	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.765	PBA	197932.5	5.0000	CLO4-89-ISTD

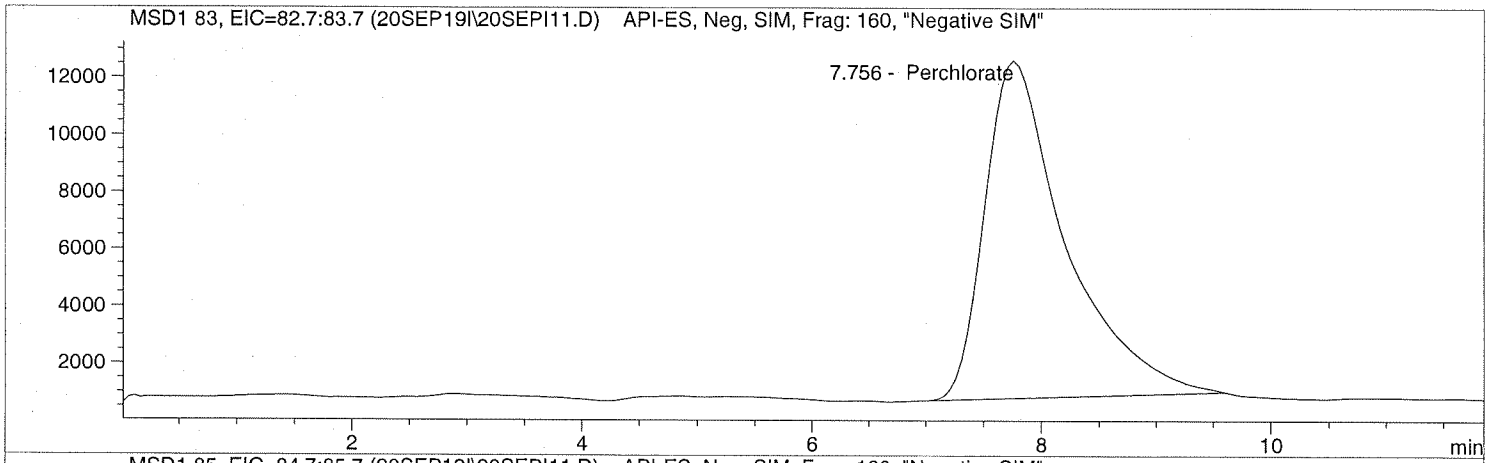
*** End of Report ***

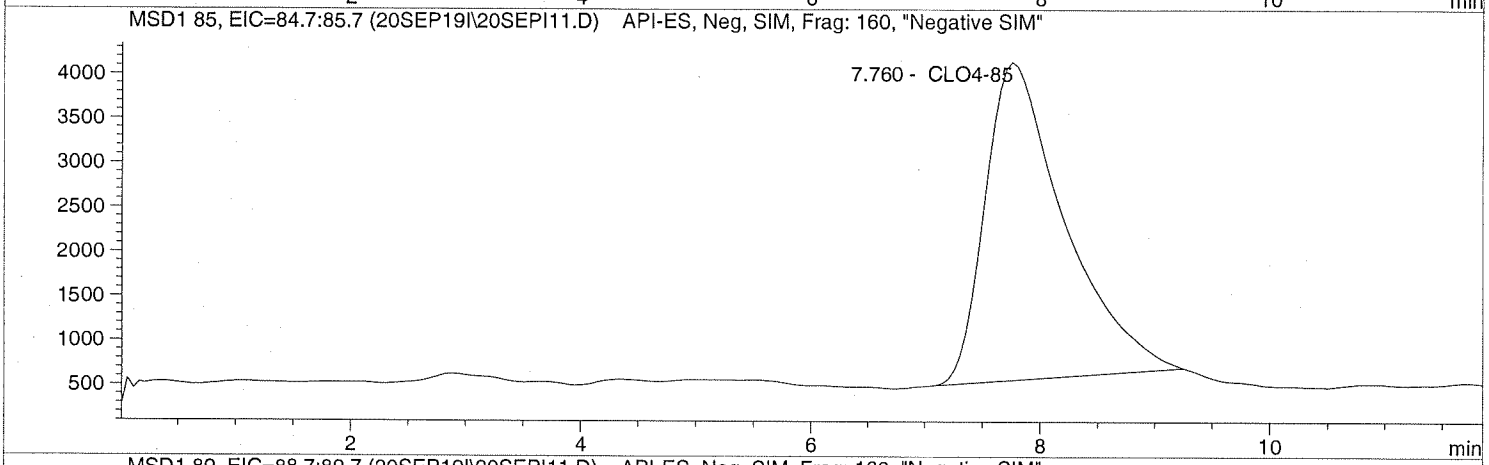
Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI11.D Sample Name: ICAL Verf@10ug/L

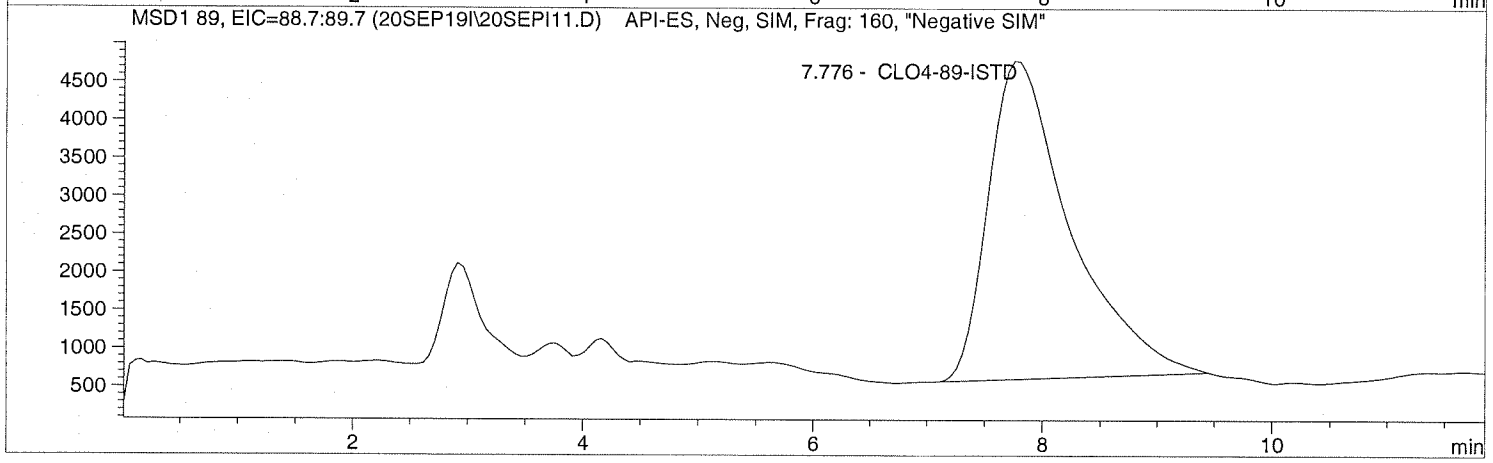
Injection Date:	9/20/2019 11:14:45	Seq Line:	11
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI11.D Sample Name: ICAL Verf@10ug/L

Injection Date:	9/20/2019 11:14:45	Seq Line:	11
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.756	PBA	574879.4	10.1185	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.760	PBA	171000.4	9.7904	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.776	PBA	206243.3	5.0000	CLO4-89-ISTD

*** End of Report ***

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

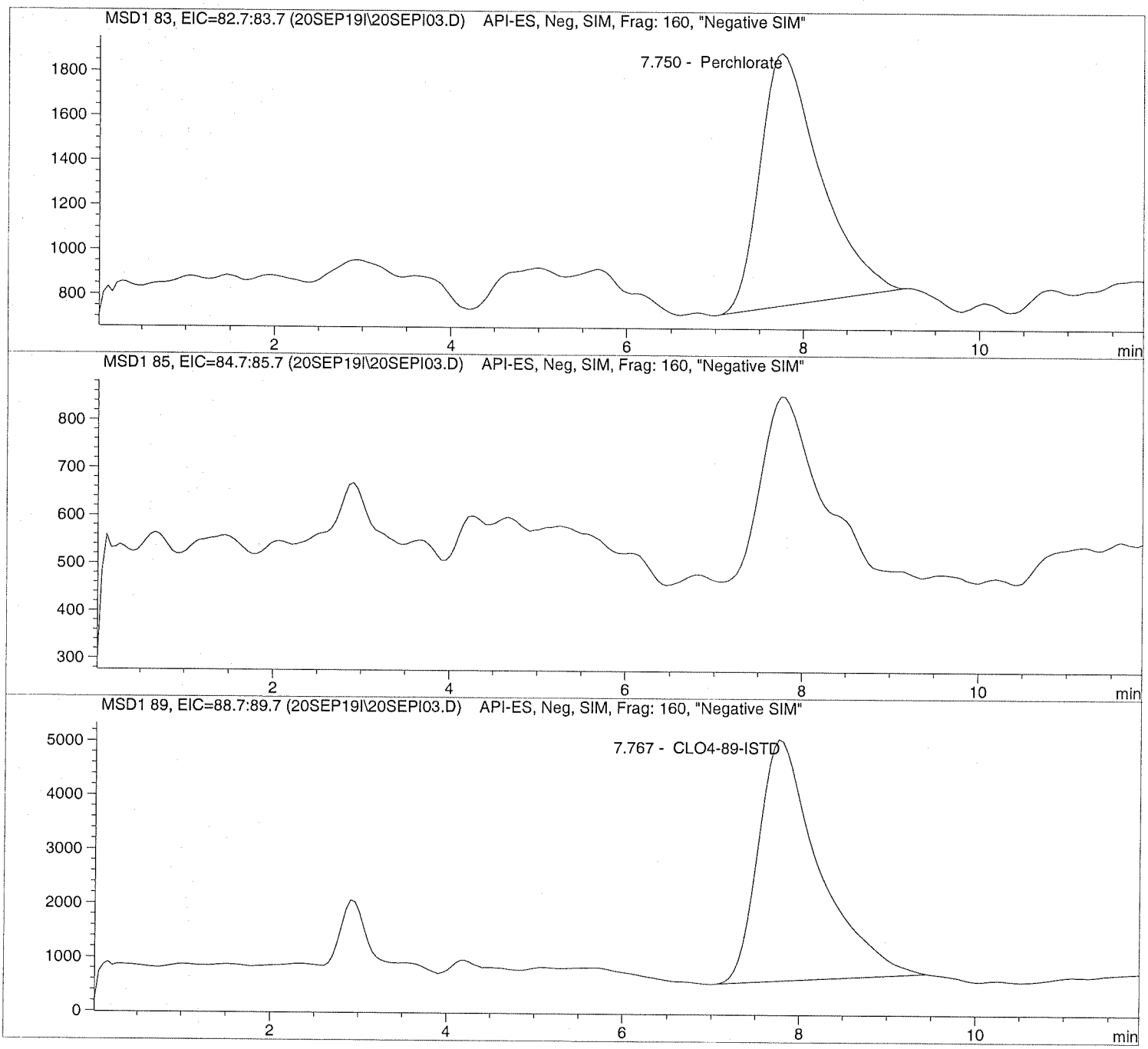
Unmodified

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:27:11

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	9/23/2019 12:27:11

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.750	PBA	53921.8	0.8760	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.767	PBA	214568.1	5.0000	CLO4-89-ISTD

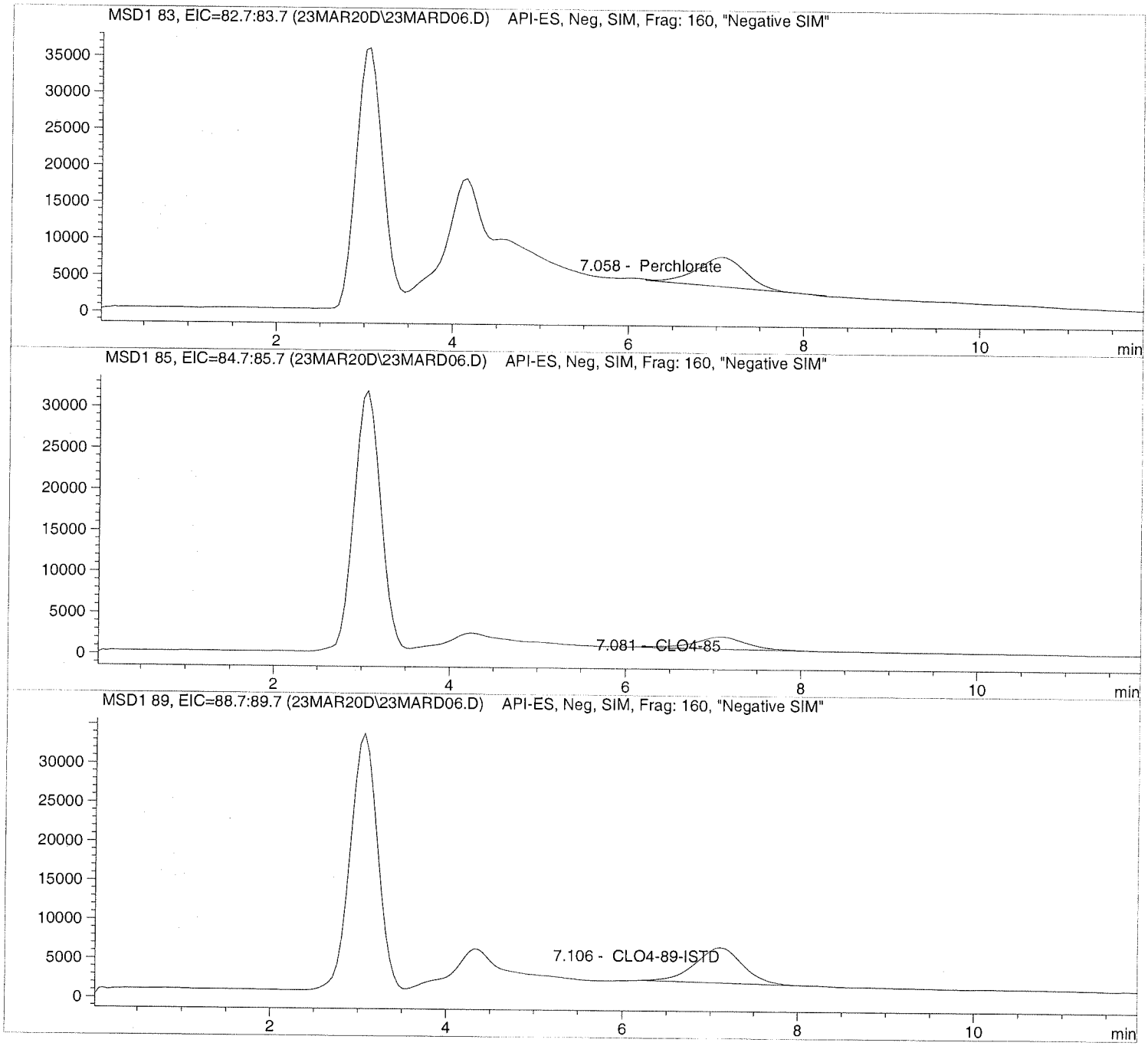
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD06.D Sample Name: 700531 79101MS

Injection Date:	3/23/2020 09:31:23	Seq Line:	6
Sample Name:	700531 79101MS	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD06.D Sample Name: 700531 79101MS

Injection Date:	3/23/2020 09:31:23	Seq Line:	6
Sample Name:	700531 79101MS	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.058	BBA	154695.2	3.3062	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.081	BBA	60755.2	4.1701	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.106	PBA	172346.3	5.0000	CLO4-89-ISTD

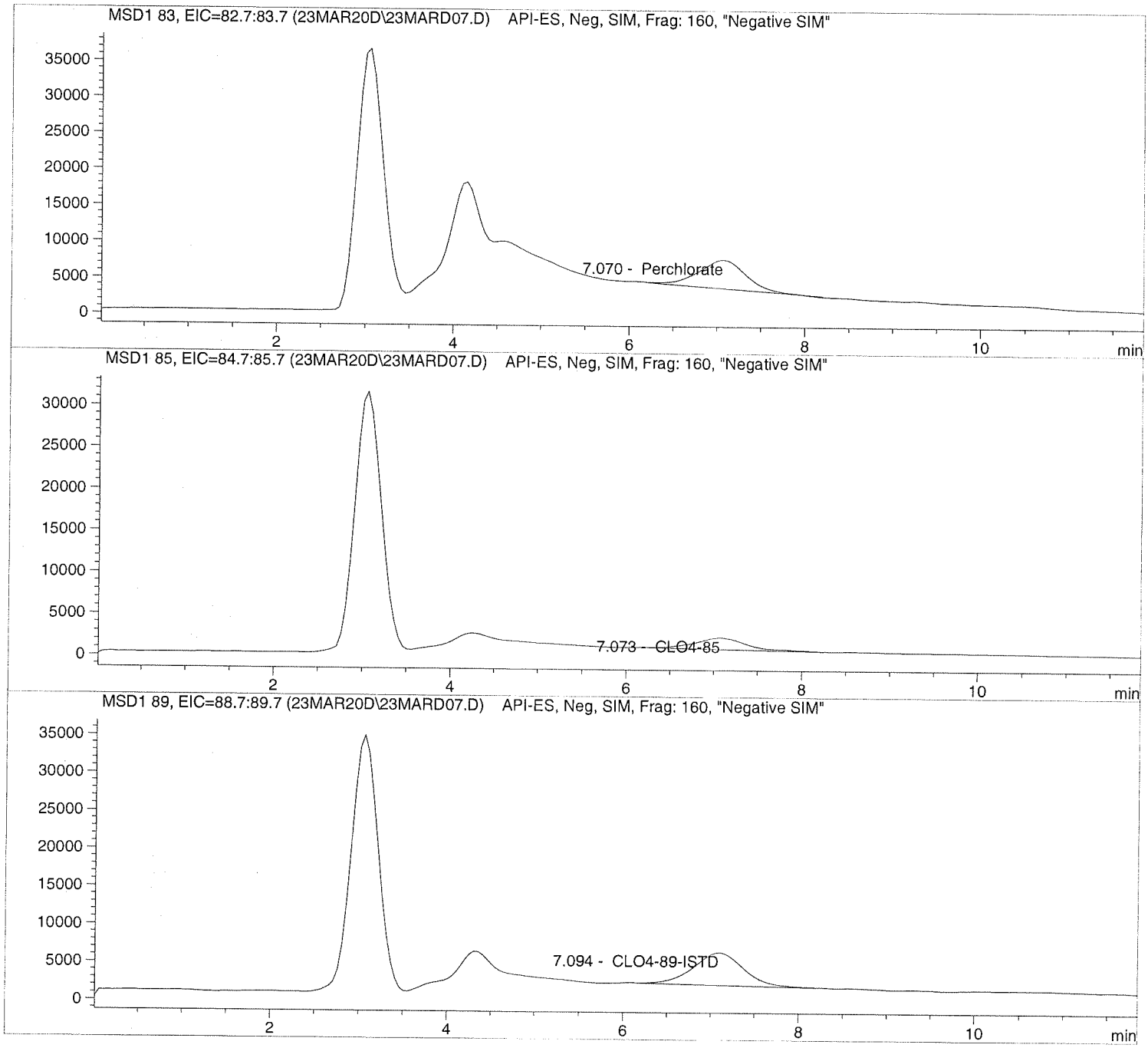
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD07.D Sample Name: 700532 79101SD

Injection Date:	3/23/2020 09:45:23	Seq Line:	7
Sample Name:	700532 79101SD	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD07.D Sample Name: 700532 79101SD

Injection Date:	3/23/2020 09:45:23	Seq Line:	7
Sample Name:	700532 79101SD	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.070	BBA	146805.8	3.1347	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.073	PBA	57104.1	3.9125	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.094	BBA	172409.8	5.0000	CLO4-89-ISTD

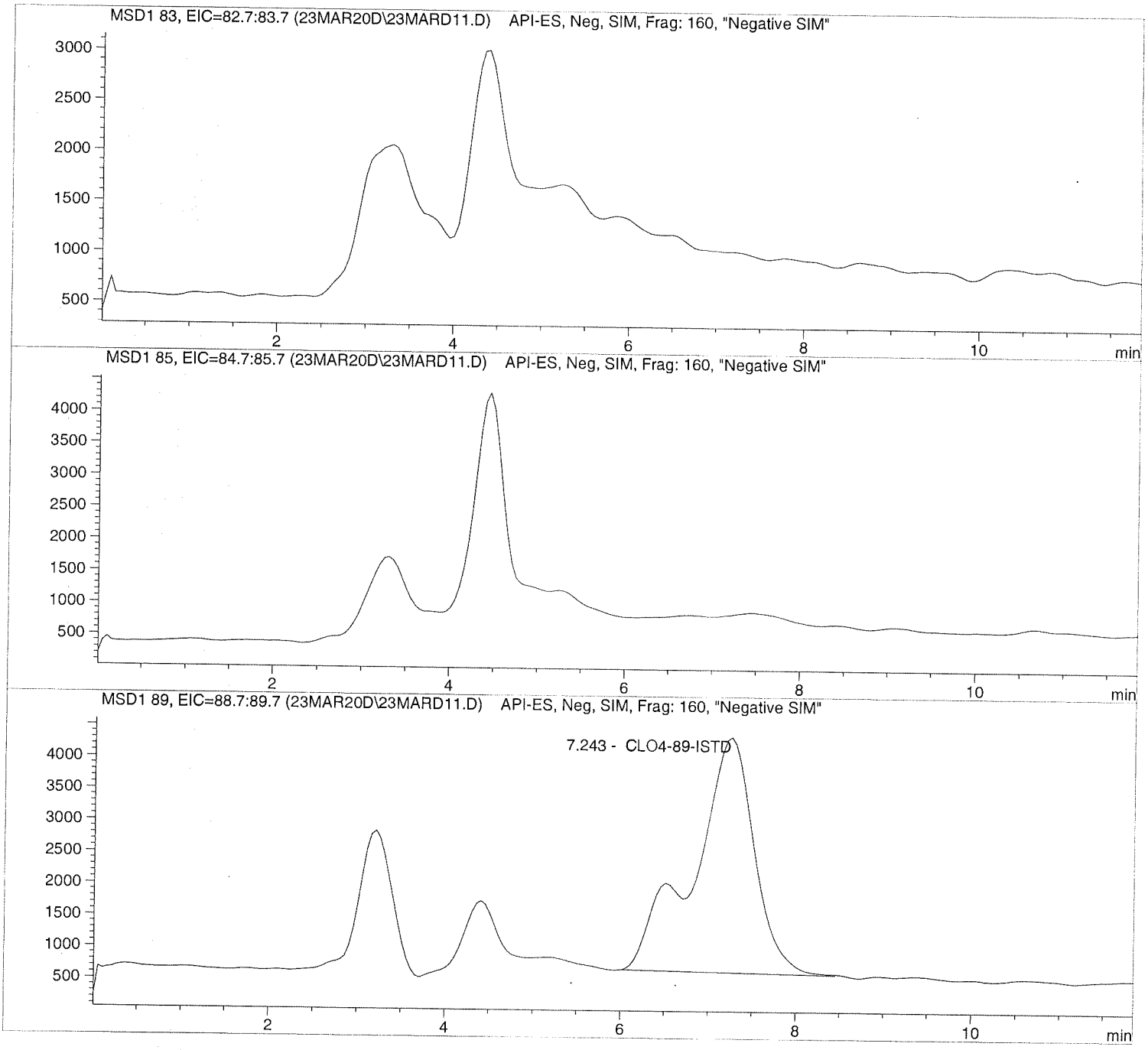
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD11.D Sample Name: 2007910005

Injection Date:	3/23/2020 10:41:21	Seq Line:	11
Sample Name:	2007910005	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\23MAR20D\23MARD11.D Sample Name: 2007910005

Injection Date:	3/23/2020 10:41:21	Seq Line:	11
Sample Name:	2007910005	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.243	PBA	179483.4	5.0000	CLO4-89-ISTD

*** End of Report ***

HS20030621 8260 Raw Data

ALS WO# HS20030621

MSVOA06 -Logbook

Batch: 40066
Date: 03-19-2020
Method: 8260_W
Comments:

Analyst: Devak Giga
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	03-19-2020 11:10 am	1.00	0.00 mL	0.00 mL	X031901.D	Liquid	Y	NA
	Auto find/ purged									
2	VSTD000.25	ICAL1	03-19-2020 11:34 am	1.00	5.00 mL	0.00 mL	X031902.D	Liquid	Y	NA
3	VSTD000.5	ICAL2	03-19-2020 11:58 am	1.00	5.00 mL	0.00 mL	X031903.D	Liquid	Y	NA
4	VSTD001	ICAL3	03-19-2020 12:46 pm	1.00	5.00 mL	0.00 mL	X031904.D	Liquid	Y	NA
5	VSTD002	ICAL4	03-19-2020 01:10 pm	1.00	5.00 mL	0.00 mL	X031905.D	Liquid	Y	NA
6	VSTD005	ICAL5	03-19-2020 01:34 pm	1.00	5.00 mL	0.00 mL	X031906.D	Liquid	Y	NA
7	VSTD020	ICAL6	03-19-2020 01:58 pm	1.00	5.00 mL	0.00 mL	X031907.D	Liquid	Y	NA
8	VSTD050	ICAL7	03-19-2020 02:22 pm	1.00	5.00 mL	0.00 mL	X031908.D	Liquid	Y	NA
9	VSTD100	ICAL8	03-19-2020 02:46 pm	1.00	5.00 mL	0.00 mL	X031909.D	Liquid	Y	NA
10	VSTD150	ICAL9	03-19-2020 03:10 pm	1.00	5.00 mL	0.00 mL	X031910.D	Liquid	Y	NA
11	VSTD200	ICAL	03-19-2020 03:33 pm	1.00	5.00 mL	0.00 mL	X031911.D	Liquid	Y	NA
12	BLANK	SAMP	03-19-2020 03:58 pm	1.00	5.00 mL	0.00 mL	X031912.D	Liquid	Y	NA
13	BLANK	SAMP	03-19-2020 04:22 pm	1.00	5.00 mL	0.00 mL	X031913.D	Liquid	Y	NA
14	BLANK	SAMP	03-19-2020 04:46 pm	1.00	5.00 mL	0.00 mL	X031914.D	Liquid	Y	NA
15	ICV	ICV	03-19-2020 05:09 pm	1.00	5.00 mL	0.00 mL	X031915.D	Liquid	Y	NA
16	BLANK	SAMP	03-19-2020 05:33 pm	1.00	5.00 mL	0.00 mL	X031916.D	Liquid	Y	NA
17	VLCSW-200319	LCS	03-19-2020 05:57 pm	1.00	5.00 mL	0.00 mL	X031917.D	Liquid	Y	NA
18	VLCSDW-200319	LCSD	03-19-2020 06:21 pm	1.00	5.00 mL	0.00 mL	X031918.D	Liquid	Y	NA
19	BLANK	SAMP	03-19-2020 06:45 pm	1.00	5.00 mL	0.00 mL	X031919.D	Liquid	Y	NA
20	BLANK	SAMP	03-19-2020 07:10 pm	1.00	5.00 mL	0.00 mL	X031920.D	Liquid	Y	NA
21	VBLKW1-200319	MBLK	03-19-2020 07:34 pm	1.00	5.00 mL	0.00 mL	X031921.D	Liquid	Y	NA
22	VBLKW2-200319	MBLK	03-19-2020 07:58 pm	1.00	5.00 mL	0.00 mL	X031922.D	Liquid	Y	NA
23	VBLKW3-200319	MBLK	03-19-2020 08:22 pm	1.00	5.00 mL	0.00 mL	X031923.D	Liquid	Y	NA
24	HS20021070-01	SAMP	03-19-2020 08:46 pm	1.00	5.00 mL	0.00 mL	X031924.D	Liquid	Y	NA
25	HS20021070-02	SAMP	03-19-2020 09:10 pm	1.00	5.00 mL	0.00 mL	X031925.D	Liquid	Y	NA
26	HS20021070-03	SAMP	03-19-2020 09:33 pm	1.00	5.00 mL	0.00 mL	X031926.D	Liquid	Y	NA
27	BFB	TUNE	03-19-2020 09:57 pm	1.00	0.00 mL	0.00 mL	Y031901.D	Liquid	Y	NA
	Auto find/ purged									
28	CCV	CCV	03-19-2020 10:21 pm	1.00	5.00 mL	0.00 mL	Y031902a.D	Liquid	Y	NA
29	CCV	CCV	03-19-2020 10:45 pm	1.00	5.00 mL	0.00 mL	Y031903.D	Liquid	Y	NA
30	CCB	SAMP	03-19-2020 11:09 pm	1.00	5.00 mL	0.00 mL	Y031904.D	Liquid	Y	NA
31	VLCSW-200319	LCS	03-19-2020 11:33 pm	1.00	5.00 mL	0.00 mL	Y031905.D	Liquid	Y	NA
32	BLANK	SAMP	03-19-2020 11:57 pm	1.00	5.00 mL	0.00 mL	Y031906.D	Liquid	Y	NA
33	VBLKW1-200319	MBLK	03-20-2020 12:21 am	1.00	5.00 mL	0.00 mL	Y031907.D	Liquid	Y	NA
34	HS20030474-07	SAMP	03-20-2020 12:45 am	1.00	5.00 mL	0.00 mL	Y031908.D	Liquid	Y	NA
35	HS20030498-08	SAMP	03-20-2020 01:09 am	1.00	5.00 mL	0.00 mL	Y031909.D	Liquid	Y	NA
36	HS20030838-02	SAMP	03-20-2020 01:34 am	1.00	5.00 mL	0.00 mL	Y031910.D	Liquid	Y	NA
37	HS20030838-01	SAMP	03-20-2020 01:58 am	1.00	5.00 mL	0.00 mL	Y031911.D	Liquid	Y	NA
38	HS20030474-04	SAMP	03-20-2020 02:22 am	1.00	5.00 mL	0.00 mL	Y031912.D	Liquid	Y	NA
39	HS20030474-05	SAMP	03-20-2020 02:46 am	1.00	5.00 mL	0.00 mL	Y031913.D	Liquid	Y	NA
40	HS20030498-03	SAMP	03-20-2020 03:10 am	1.00	5.00 mL	0.00 mL	Y031914.D	Liquid	Y	NA

MSVOA06 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
41	HS20030498-03MS	MS	03-20-2020 03:34 am	1.00	5.00 mL	0.00 mL	Y031915.D	Liquid	Y	NA
42	HS20030498-03MSD	MSD	03-20-2020 03:58 am	1.00	5.00 mL	0.00 mL	Y031916.D	Liquid	Y	NA
43	HS20030498-03	SAMP	03-20-2020 04:22 am	25.00	5.00 mL	0.00 mL	Y031917.D	Liquid	Y	NA
44	HS20030474-03	SAMP	03-20-2020 04:46 am	1.00	5.00 mL	0.00 mL	Y031918.D	Liquid	Y	NA
45	HS20030474-03	SAMP	03-20-2020 05:10 am	10.00	5.00 mL	0.00 mL	Y031919.D	Liquid	Y	NA
46	HS20030474-06	SAMP	03-20-2020 05:34 am	1.00	5.00 mL	0.00 mL	Y031920.D	Liquid	Y	NA
47	HS20030474-06	SAMP	03-20-2020 05:58 am	25.00	5.00 mL	0.00 mL	Y031921.D	Liquid	Y	NA
48	HS20030498-01	SAMP	03-20-2020 06:22 am	5.00	5.00 mL	0.00 mL	Y031922.D	Liquid	Y	NA
49	HS20030498-01	SAMP	03-20-2020 06:46 am	25.00	5.00 mL	0.00 mL	Y031923.D	Liquid	Y	NA
50	HS20030498-02	SAMP	03-20-2020 07:10 am	5.00	5.00 mL	0.00 mL	Y031924.D	Liquid	Y	NA
51	HS20030498-02	SAMP	03-20-2020 07:34 am	50.00	5.00 mL	0.00 mL	Y031925.D	Liquid	Y	NA
52	HS20030474-01	SAMP	03-20-2020 07:58 am	10.00	5.00 mL	0.00 mL	Y031926.D	Liquid	Y	NA
53	HS20030474-01	SAMP	03-20-2020 08:23 am	100.0(	5.00 mL	0.00 mL	Y031927.D	Liquid	Y	NA
54	HS20030474-02	SAMP	03-20-2020 08:47 am	25.00	5.00 mL	0.00 mL	Y031928.D	Liquid	Y	NA
55	HS20030474-02	SAMP	03-20-2020 09:11 am	250.0(	5.00 mL	0.00 mL	Y031929.D	Liquid	Y	NA
56	CCV-END	CCV	03-20-2020 09:35 am	1.00	5.00 mL	0.00 mL	Y031930.D	Liquid	Y	NA

Chemical	Value
SURR SPK ID	31106-16-03
IS ID	31106-16-04
LCS/MS ID	31105-08-01
CAL STD ID	31106-20-01/02
BFB ID	31106-16-03
pH Paper	634-64-11

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030621

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT (ug/l)	% REC #	QC. LIMITS REC.
cis-1,2-Dichloroethene	50.00	49.94	100	80-120
Vinyl Chloride	50.00	46.97	94	80-120
Methylene Chloride	50.00	51.57	103	80-120
1,1-Dichloroethene	50.00	50.03	100	80-120
1,2-Dichloroethane	50.00	51.86	104	80-120
Trichloroethene	50.00	50.47	101	80-120
1,1,2-Trichloroethane	50.00	49.65	99	80-120
Dibromofluoromethane	50.00	52.34	105	80-120
1,2-Dichloroethane-d4	50.00	52.41	105	80-120
Toluene-d8	50.00	49.94	100	80-120
4-Bromofluorobenzene	50.00	50.93	102	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030621

Lab File ID: X031901 DFTPP Injection Date: 03/19/20

Instrument ID: VOA6 DFTPP Injection Time: 1110

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.4
75	30.0 - 60.0% of mass 95	46.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	79.4
175	5.0 - 9.0% of mass 174	6.2 (7.8)1
176	95.0 - 101.0% of mass 174	77.1 (97.2)1
177	5.0 - 9.0% of mass 176	4.8 (6.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD000.25	VSTD000.25	X031902	03/19/20	1134
02	VSTD000.5	VSTD000.5	X031903	03/19/20	1158
03	VSTD001	VSTD001	X031904	03/19/20	1246
04	VSTD002	VSTD002	X031905	03/19/20	1310
05	VSTD005	VSTD005	X031906	03/19/20	1334
06	VSTD020	VSTD020	X031907	03/19/20	1358
07	VSTD050	VSTD050	X031908	03/19/20	1422
08	VSTD100	VSTD100	X031909	03/19/20	1446
09	VSTD150	VSTD150	X031910	03/19/20	1510
10	VSTD200	VSTD200	X031911	03/19/20	1533
11	ICV	ICV	X031915	03/19/20	1709
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

outputFile debug: C:\tp\envision\results\HS20030621/08bc.01 Lab Code: AL

Lab File ID (Standard): X031903 Date Analyzed: 03/19/20

Instrument ID: VOA6 Time Analyzed: 1158

		IS1 AREA	#	RT	#	IS2(DFB) AREA	#	RT	#	IS3(CBZ) AREA	#	RT	#
	12 HOUR STD	332459		4.18		503603		4.97		451366		7.67	
	UPPER LIMIT	664918		4.68		1007206		5.47		902732		8.17	
	LOWER LIMIT	166230		3.68		251802		4.47		225683		7.17	
	CLIENT SAMPLE NO.												
01	ICV	286433		4.18		444859		4.97		412876		7.67	
02													
03													
04													
05													
06													
07													
08													
09													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

outputFile debug: C:\tp\envision\results\HS20030621/08bc.01 Lab Code: AL

Lab File ID (Standard): X031903 Date Analyzed: 03/19/20

Instrument ID: VOA6 Time Analyzed: 1158

		IS4 (DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	220941	9.67				
	UPPER LIMIT	441882	10.17				
	LOWER LIMIT	110471	9.17				
	CLIENT SAMPLE NO.						
01	ICV	209059	9.66				
02							
03							
04							
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030621

Instrument ID: VOA6 Calibration Date(s): 03/19/20 03/19/20

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1134 1533

LAB FILE ID: RF0.25: X031902 RF0.5: X031903 RF1: X031904
RF2: X031905 RF5: X031906 RF20: X031907

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF5	RF20
Vinyl Chloride		1.013	0.813	0.712	0.728	0.737
Methylene Chloride		5758	6397	10725	22525	70573
1,1-Dichloroethene			0.400	0.446	0.430	0.416
1,2-Dichloroethane		0.487	0.510	0.514	0.548	0.517
Trichloroethene		0.291	0.342	0.344	0.368	0.337
cis-1,2-Dichloroethene		0.482	0.578	0.608	0.642	0.582
1,1,2-Trichloroethane		0.296	0.310	0.293	0.307	0.281
Dibromofluoromethane		1595	2958	5989	17420	61899
1,2-Dichloroethane-d4		3270	4734	9969	20720	80050
Toluene-d8		6812	11874	23746	62955	225397
4-Bromofluorobenzene		3499	8202	12385	22920	85378

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS2003062

Instrument ID: VOA6 Calibration Date(s): 03/19/20 03/19/20

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1134 1533

LAB FILE ID: RF50: X031908 RF100: X031909 RF150: X031910
RF200: X031911

COMPOUND	RF50	RF100	RF150	RF200
Vinyl Chloride	0.708	0.760	0.743	0.769
Methylene Chloride	162281	310528	437081	572059
1,1-Dichloroethene	0.399	0.419	0.406	0.413
1,2-Dichloroethane	0.538	0.538	0.536	0.556
Trichloroethene	0.345	0.364	0.357	0.370
cis-1,2-Dichloroethene	0.544	0.578	0.547	0.567
1,1,2-Trichloroethane	0.277	0.280	0.273	0.277
Dibromofluoromethane	149393	290125	416931	545685
1,2-Dichloroethane-d4	185105	366265	529642	688377
Toluene-d8	537269	1055270	1518049	1981187
4-Bromofluorobenzene	199192	397823	566125	739220

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS2003062

Instrument ID: VOA6 Calibration Date(s): 03/19/20 03/19/20

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1134 1533

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
Vinyl Chloride	AVRG		0.77582348	12.182	15.000
Methylene Chloride	LINR	-3.26e-002	1.93554595	0.9993879	0.9900000
1,1-Dichloroethene	AVRG		0.41618290	3.786	15.000
1,2-Dichloroethane	AVRG		0.52719771	4.107	15.000
Trichloroethene	AVRG		0.34655152	6.956	15.000
cis-1,2-Dichloroethene	AVRG		0.56987978	7.832	15.000
1,1,2-Trichloroethane	AVRG		0.28844951	4.742	15.000
Dibromofluoromethane	LINR	-2.07e-003	2.01718202	0.9996204	0.9900000
1,2-Dichloroethane-d4	LINR	-4.7e-003	1.59780273	0.9996454	0.9900000
Toluene-d8	LINR	-1.42e-003	0.78183893	0.9999537	0.9900000
4-Bromofluorobenzene	LINR	-9.56e-003	2.09896810	0.9999078	0.9900000

FORM VI VOA

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031901.D

Date : 19-MAR-2020 11:10

Client ID: BFB

Instrument: voa6.i

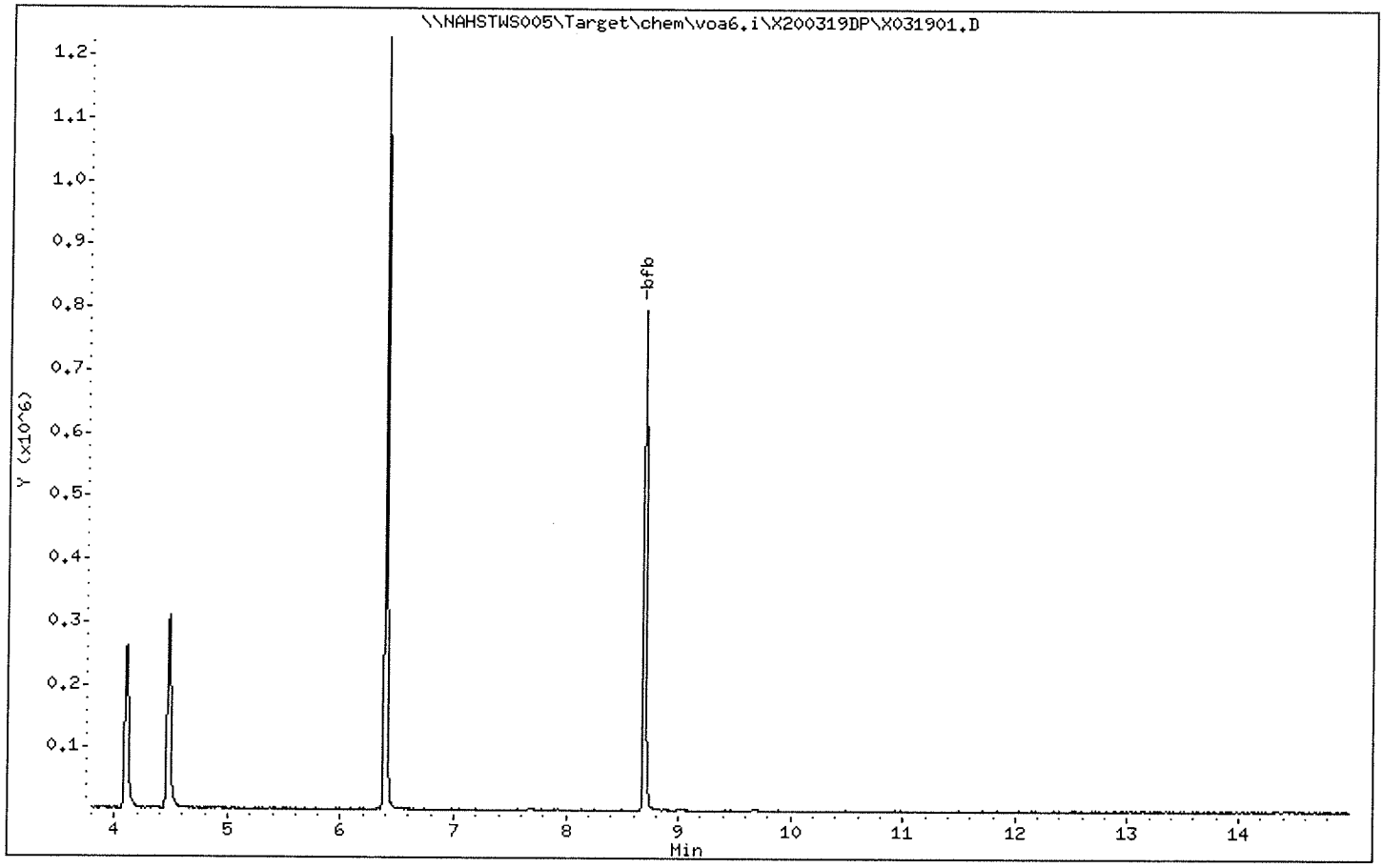
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031901.D

Date : 19-MAR-2020 11:10

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

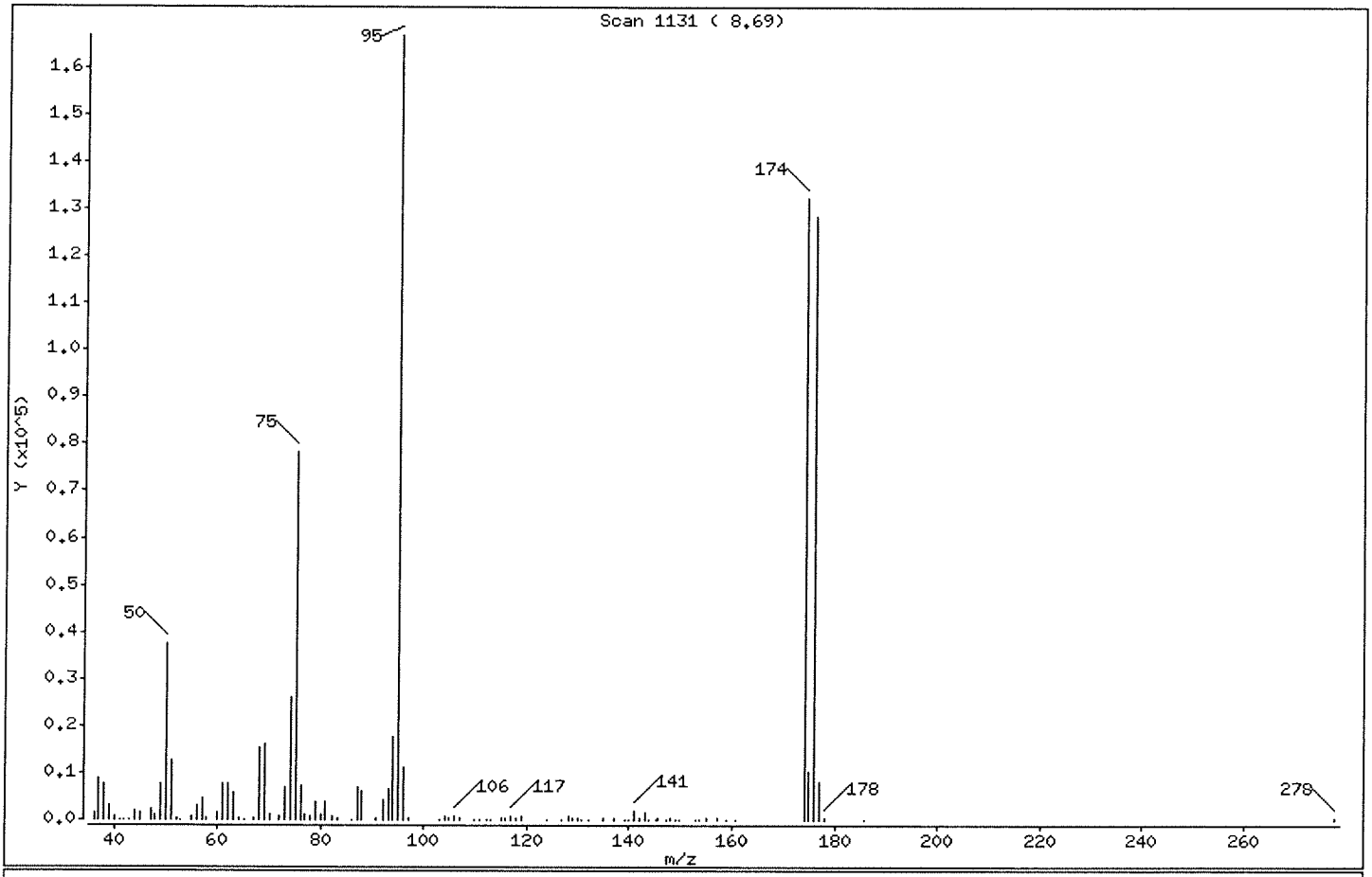
Volume Injected (uL): 2.0

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	22.44
75	30.00 - 60.00% of mass 95	46.84
96	5.00 - 9.00% of mass 95	6.71
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	79.36
175	5.00 - 9.00% of mass 174	6.21 (7.83)
176	95.00 - 101.00% of mass 174	77.12 (97.18)
177	5.00 - 9.00% of mass 176	4.84 (6.28)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031901.D

Date : 19-MAR-2020 11:10

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: X031901.D
Spectrum: Scan 1131 (8.69)
Location of Maximum: 95.00
Number of points: 101

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.10	1360	65.00	163	97.10	263	140.90	1836
37.00	8769	67.10	353	103.20	89	142.00	192
38.00	7670	68.00	15485	104.00	727	142.90	1435
39.10	2999	69.00	16031	104.80	202	143.90	95
40.00	952	70.00	1269	105.80	737	145.10	117
41.20	93	72.00	762	106.90	217	145.60	258
41.90	78	73.00	6729	109.90	88	147.10	75
43.00	168	74.00	26176	110.90	73	148.00	387
44.00	1824	75.00	78128	112.20	62	149.10	83
45.00	1552	76.10	7370	112.80	75	149.80	76
47.00	2478	77.00	1071	115.00	259	153.00	135
47.90	1254	78.00	826	115.90	438	153.80	67
49.00	7676	79.00	3833	117.00	918	155.10	401
50.00	37424	80.00	1180	117.90	502	157.10	297
51.00	12563	80.90	3942	118.90	858	158.90	162
52.00	570	82.00	745	123.90	50	160.80	187
52.90	73	83.10	195	126.90	85	174.00	132352
55.00	621	85.90	140	128.00	809	175.00	10363
56.10	2880	87.00	6928	129.00	384	176.00	128616
57.00	4661	87.90	6204	130.00	465	177.00	8074
57.90	288	90.70	380	130.70	179	178.00	201
60.00	1638	92.00	4234	132.10	55	186.00	57
61.00	7723	93.00	6369	134.80	234	277.90	192
62.00	7841	94.00	17568	136.90	228		
63.00	5744	95.00	166784	139.00	69		
64.00	482	96.10	11193	139.90	141		

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031902.D
Lab Smp Id: VSTD000.25 Client Smp ID: VSTD000.25
Inj Date : 19-MAR-2020 11:34
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.25;VSTD000.25;1;1;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:51 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 15:33 Cal File: X031911.D
Als bottle: 2 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

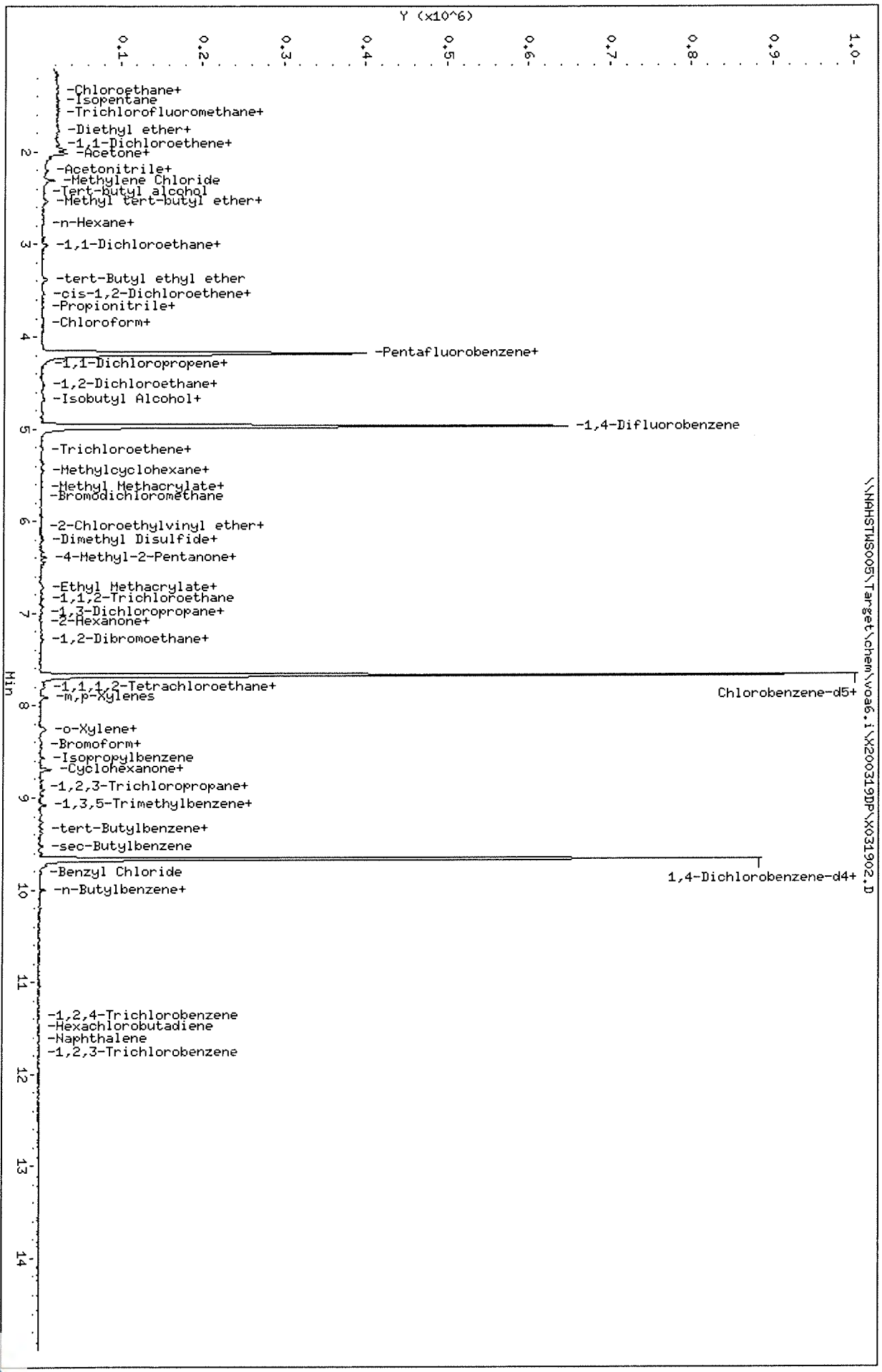
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	334865	50.0000	
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.983)	908	0.25000	0.16(a)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	1143	0.25000	0.11(Ta)
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	508670	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	452074	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	4217	0.25000	0.28(Ta)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	4979	0.25000	0.66(aM)
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	214709	50.0000	

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.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031902.D
Date : 19-MAR-2020 11:34
Client ID: VSTD000.25
Sample Info: VSTD000.25;VSTD000.25;1;1;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031903.D
Lab Smp Id: VSTD000.5 Client Smp ID: VSTD000.5
Inj Date : 19-MAR-2020 11:58
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.5;VSTD000.5;1;2;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:51 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 11:34 Cal File: X031902.D
Als bottle: 3 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

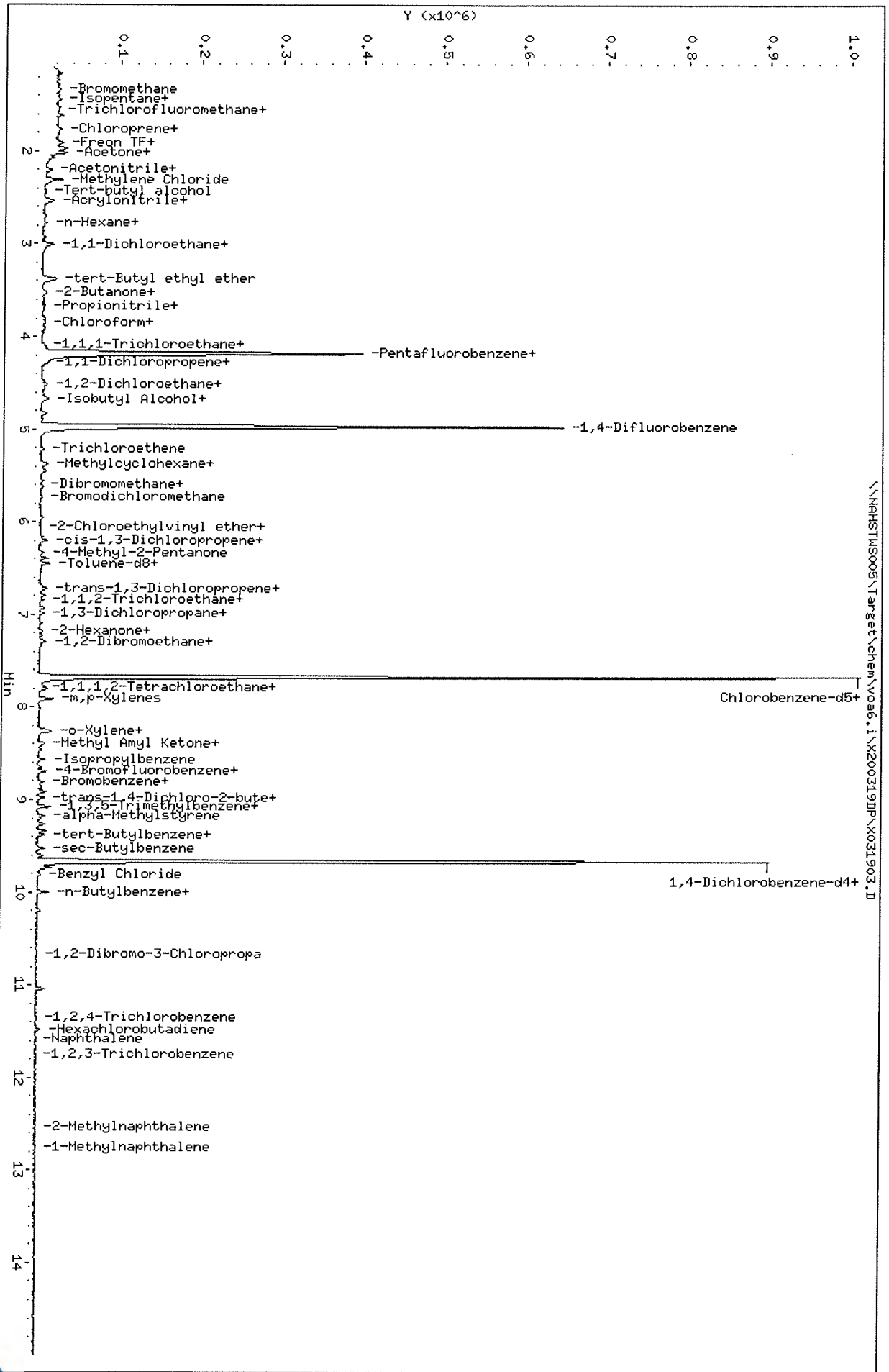
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	332459	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	1595	0.50000	0.37(a)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	2909	0.50000	0.54(TaM)
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	503603	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	451366	50.0000	
$ 48 Toluene-d8	98	6.396	6.396	(0.834)	6812	0.50000	0.51(a)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	3499	0.50000	0.32(a)
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	220941	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	2946	0.50000	0.58(aM)
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	1608	0.50000	0.57(aM)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	1337	0.50000	0.51(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.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031903.D
Date : 19-MAR-2020 11:58
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

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031904.D
Lab Smp Id: VSTD001 Client Smp ID: VSTD001
Inj Date : 19-MAR-2020 12:46
Operator : PC Inst ID: voa6.i
Smp Info : VSTD001;VSTD001;1;3;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:51 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 11:58 Cal File: X031903.D
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

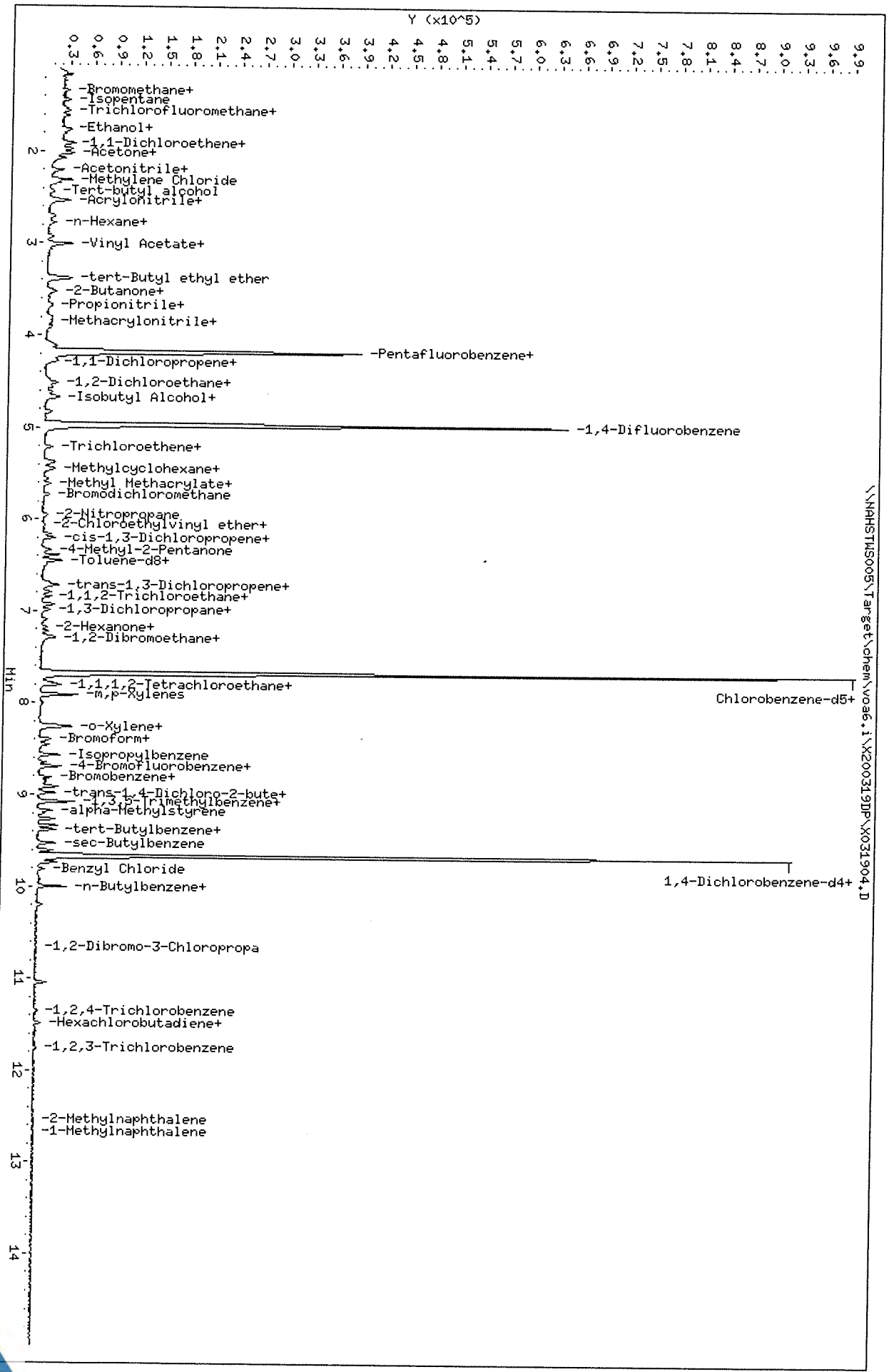
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	323740	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	3028	1.00000	0.83(a)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	4838	1.00000	1.03(a)
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	494081	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	442403	50.0000	
$ 48 Toluene-d8	98	6.396	6.396	(0.834)	12359	1.00000	1.01(a)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	8202	1.00000	1.45(a)
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	218790	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	5267	1.00000	1.06(a)
11 1,1-Dichloroethene	96	1.919	1.919	(0.459)	2593	1.00000	0.94(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	3714	1.00000	1.00(a)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	5041	1.00000	0.96(a)
38 Trichloroethene	130	5.206	5.206	(1.048)	3378	1.00000	0.98(a)
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	2724	1.00000	1.06(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031904.D
Date : 19-MAR-2020 12:46
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

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031905.D
Lab Smp Id: VSTD002 Client Smp ID: VSTD002
Inj Date : 19-MAR-2020 13:10
Operator : PC Inst ID: voa6.i
Smp Info : VSTD002;VSTD002;1;4;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:51 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 12:46 Cal File: X031904.D
Als bottle: 6 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

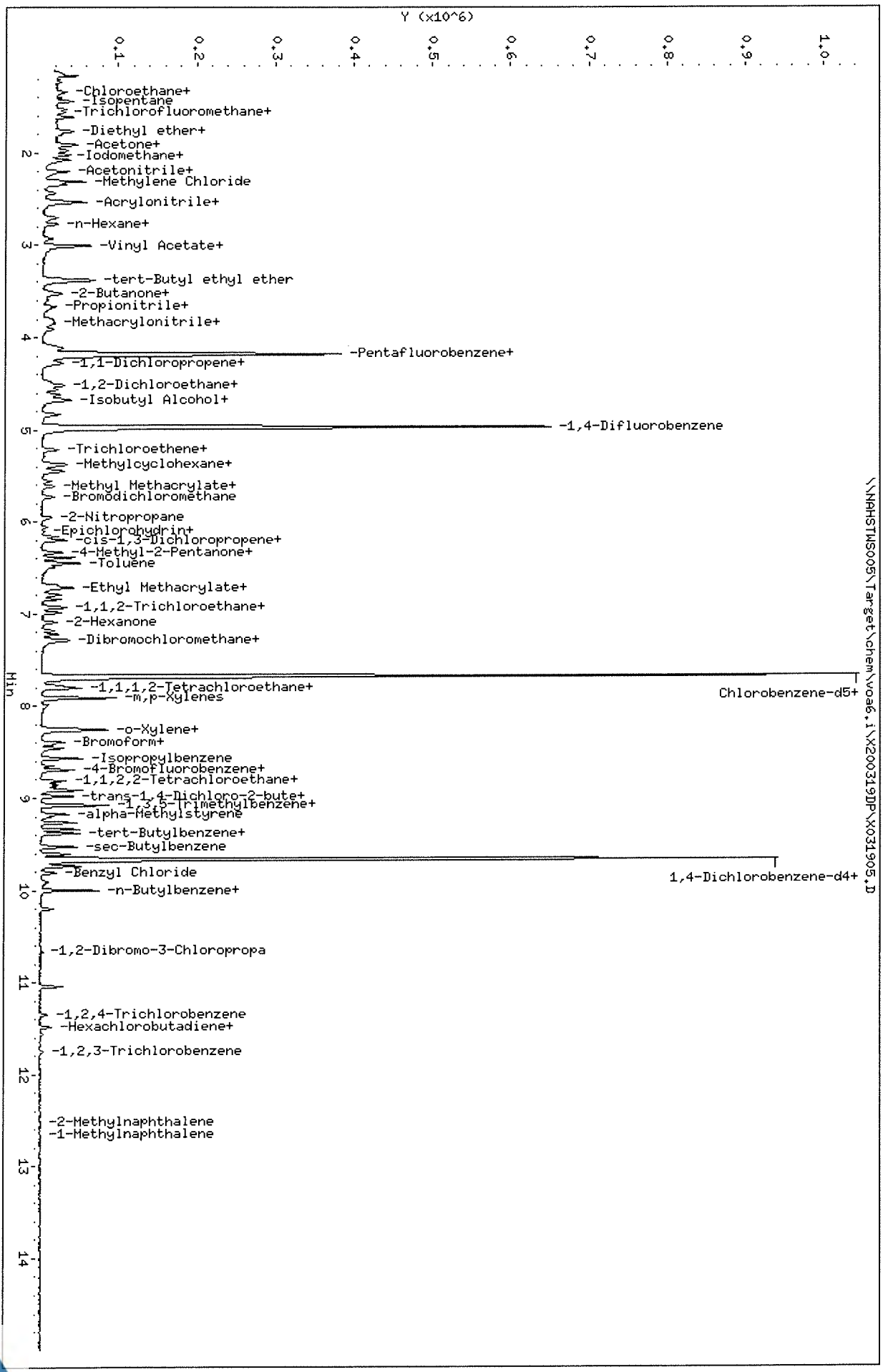
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	4.182	4.182	(1.000)	317561	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	5989	2.00000	1.79(a)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	8567	2.00000	1.99(aM)
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	498211	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	449226	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	23746	2.00000	1.99(a)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	12385	2.00000	2.40(a)
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	221564	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	9040	2.00000	1.86(a)
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	5662	2.00000	2.10(a)
17 Methylene Chloride	84	2.305	2.305	(0.551)	9972	2.00000	1.61(aM)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	7730	2.00000	2.13(a)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	10240	2.00000	1.94(a)
38 Trichloroethene	130	5.214	5.214	(1.049)	6853	2.00000	1.98(a)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	5273	2.00000	2.03(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031905.D
Date : 19-MAR-2020 13:10
Client ID: VSTD002
Sample Info: VSTD002;VSTD002;1;4;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031906.D Page 1
Report Date: 15-Apr-2020 11:51

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031906.D
Lab Smp Id: VSTD005 Client Smp ID: VSTD005
Inj Date : 19-MAR-2020 13:34
Operator : PC Inst ID: voa6.i
Smp Info : VSTD005;VSTD005;1;5;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:51 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 13:10 Cal File: X031905.D
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

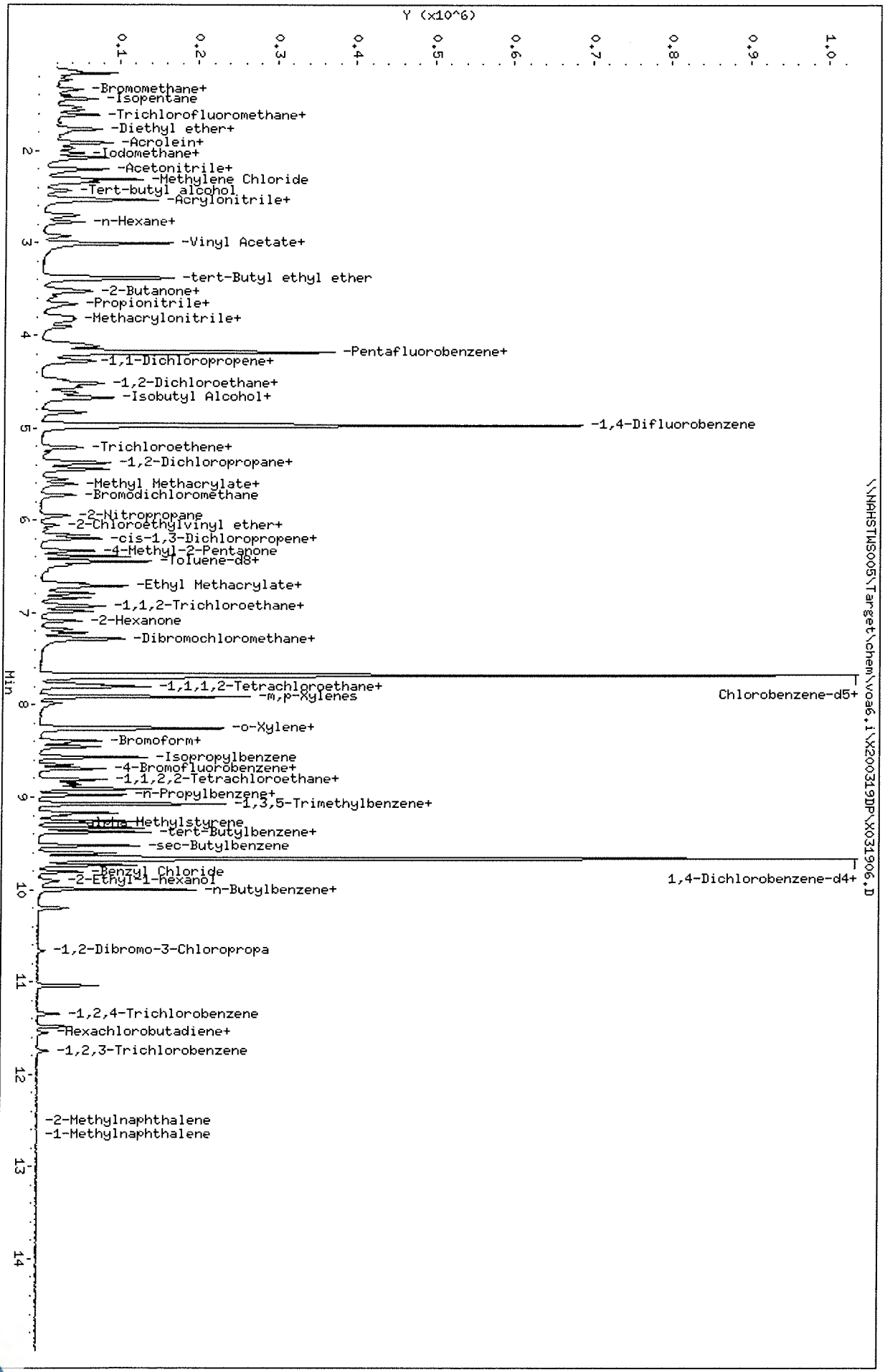
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	309553	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	17420	5.00000	5.56
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	20720	5.00000	5.18
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	486956	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	441541	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	62955	5.00000	5.49
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	22920	5.00000	4.95(a)
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	225770	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	22527	5.00000	4.77(a)
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	13314	5.00000	5.07
17 Methylene Chloride	84	2.306	2.306	(0.551)	22460	5.00000	5.59(M)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	19888	5.00000	5.64
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	26678	5.00000	5.18
38 Trichloroethene	130	5.214	5.214	(1.049)	17942	5.00000	5.31
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	13550	5.00000	5.32

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\MAHSTWS005\Target\chem\voa6.i\X200319DP\X031906.D
Date : 19-MAR-2020 13:34
Client ID: VSTD005
Sample Info: VSTD005;VSTD005;1;5;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

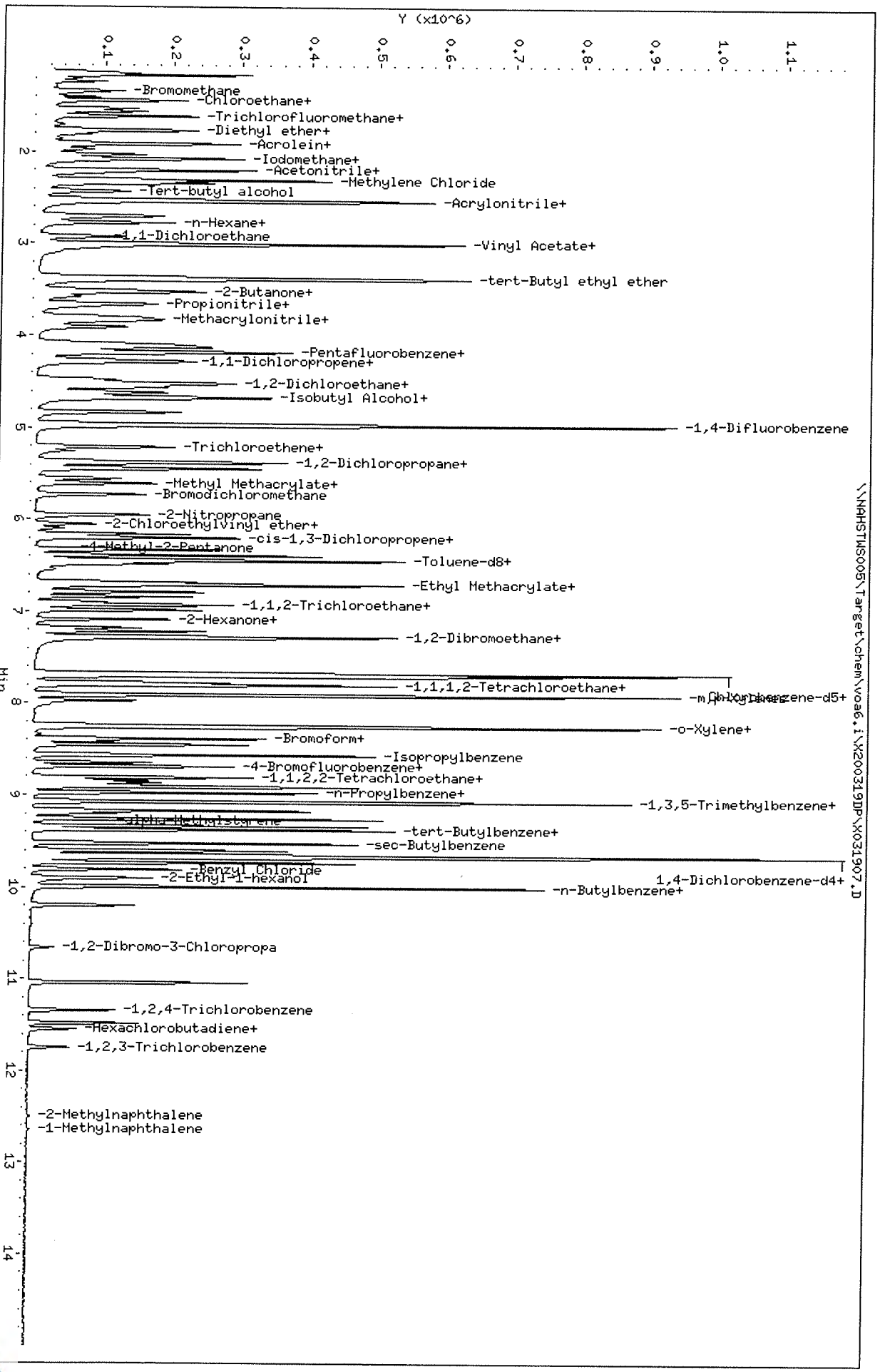
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031907.D
Lab Smp Id: VSTD020 Client Smp ID: VSTD020
Inj Date : 19-MAR-2020 13:58
Operator : PC Inst ID: voa6.i
Smp Info : VSTD020;VSTD020;1;6;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:51 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 13:34 Cal File: X031906.D
Als bottle: 8 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	299061	50.0000	
$ 30 Dibromofluoromethane	113	4.104	4.104	(0.981)	61899	20.0000	20.76
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	80050	20.0000	21.21
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	480908	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	433129	50.0000	
$ 48 Toluene-d8	98	6.389	6.389	(0.833)	225397	20.0000	20.27
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	85378	20.0000	20.19
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	213879	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	88179	20.0000	19.35
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	49791	20.0000	19.64
17 Methylene Chloride	84	2.306	2.306	(0.551)	70573	20.0000	21.38
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	69663	20.0000	20.45
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	99484	20.0000	19.58
38 Trichloroethene	130	5.207	5.207	(1.048)	64841	20.0000	19.45
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	48758	20.0000	19.53



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031907.D
Date : 19-MAR-2020 13:58
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;1;6;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031908.D
Lab Smp Id: VSTD050 Client Smp ID: VSTD050
Inj Date : 19-MAR-2020 14:22
Operator : PC Inst ID: voa6.i
Smp Info : VSTD050;VSTD050;1;7;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:51 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 13:58 Cal File: X031907.D
Als bottle: 9 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

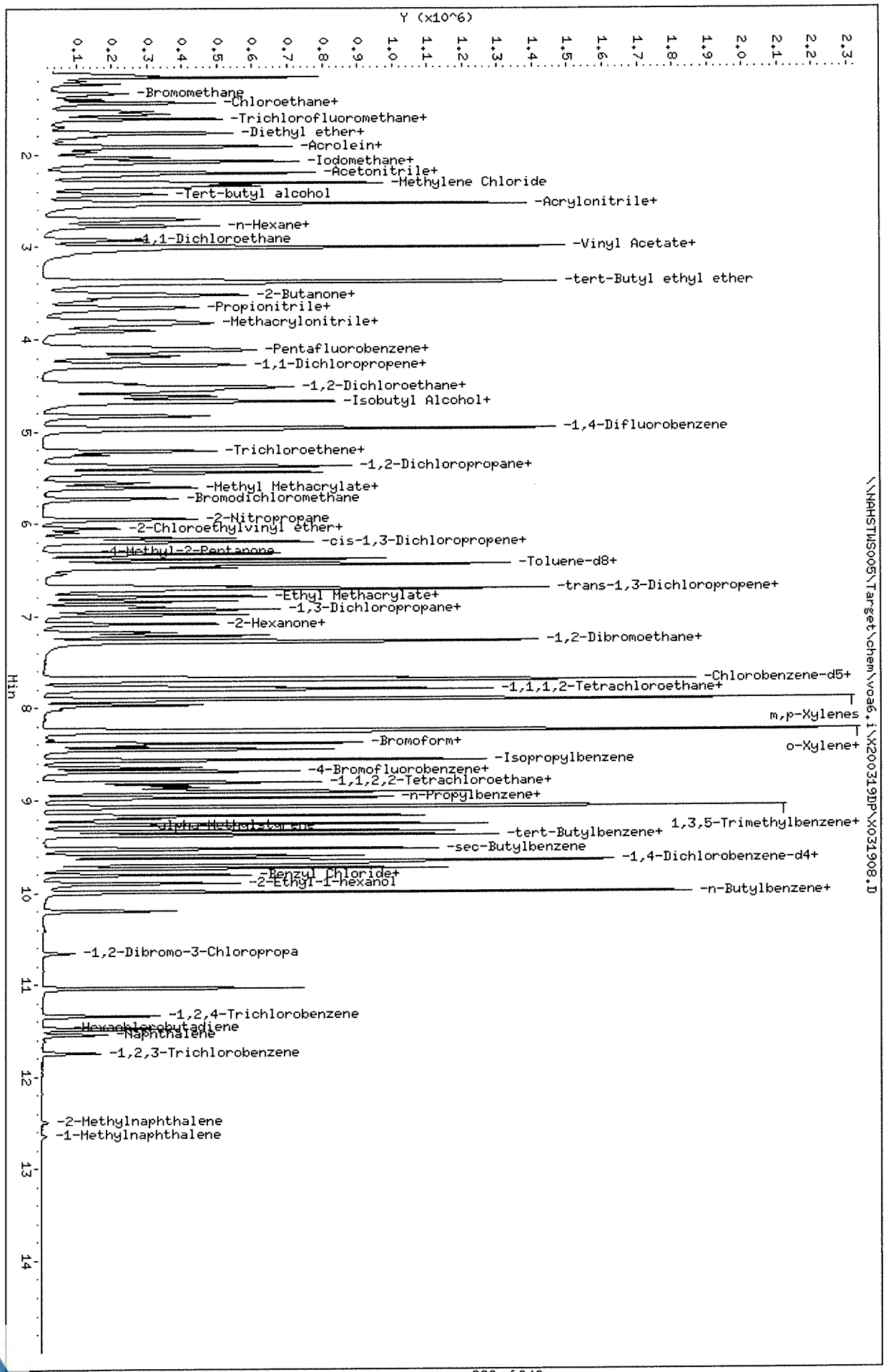
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	308394	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	149393	50.0000	48.75
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	185105	50.0000	47.76
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	463946	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	424365	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	537213	50.0000	49.41
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	199673	50.0000	48.88
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	211624	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	218403	50.0000	46.48
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	123020	50.0000	47.07
17 Methylene Chloride	84	2.305	2.305	(0.551)	162281	50.0000	49.43
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	167789	50.0000	47.77
33 1,2-Dichloroethane	62	4.555	4.555	(0.916)	249570	50.0000	50.91
38 Trichloroethene	130	5.206	5.206	(1.048)	160161	50.0000	49.80
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	117355	50.0000	47.99

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031908.D
Date : 19-MAR-2020 14:22
Client ID: VSTD050
Sample Info: VSTD050;VSTD050;1;7;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031909.D Page 1
Report Date: 15-Apr-2020 11:51

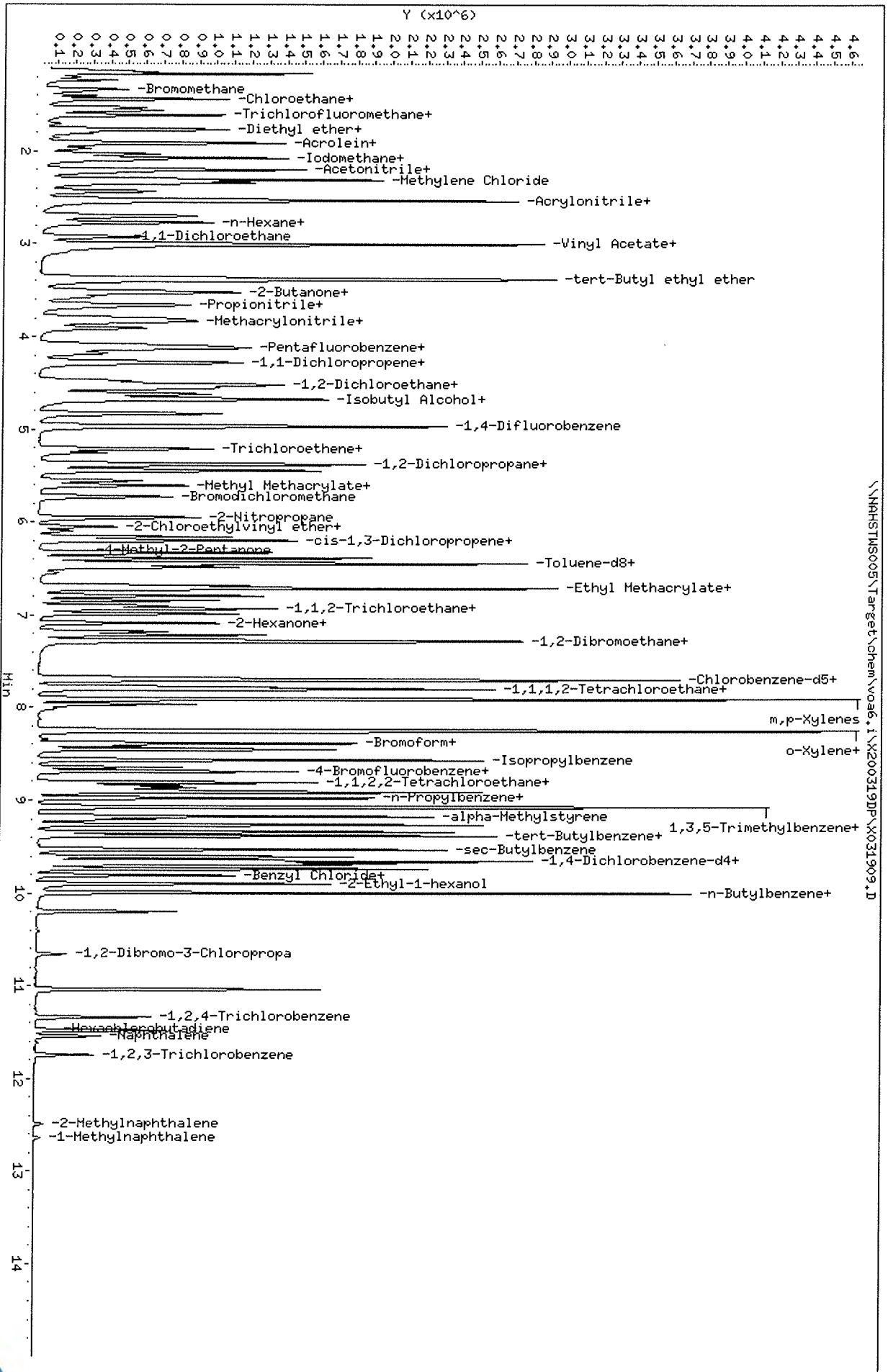
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031909.D
Lab Smp Id: VSTD100 Client Smp ID: VSTD100
Inj Date : 19-MAR-2020 14:46
Operator : PC Inst ID: voa6.i
Smp Info : VSTD100;VSTD100;1;8;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:51 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 10 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	286614	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	290125	100.000	101.98
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	366265	100.000	101.87
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	439703	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	412807	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1054666	100.000	99.81
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	397823	100.000	100.64
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	202255	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	435381	100.000	99.70
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	240131	100.000	98.87
17 Methylene Chloride	84	2.305	2.305	(0.551)	310528	100.000	103.27
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	331114	100.000	101.44
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	481696	100.000	103.69
38 Trichloroethene	130	5.206	5.206	(1.048)	320532	100.000	105.17
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	230846	100.000	97.06



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031909.D
Date : 19-MAR-2020 14:46
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;1;8;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

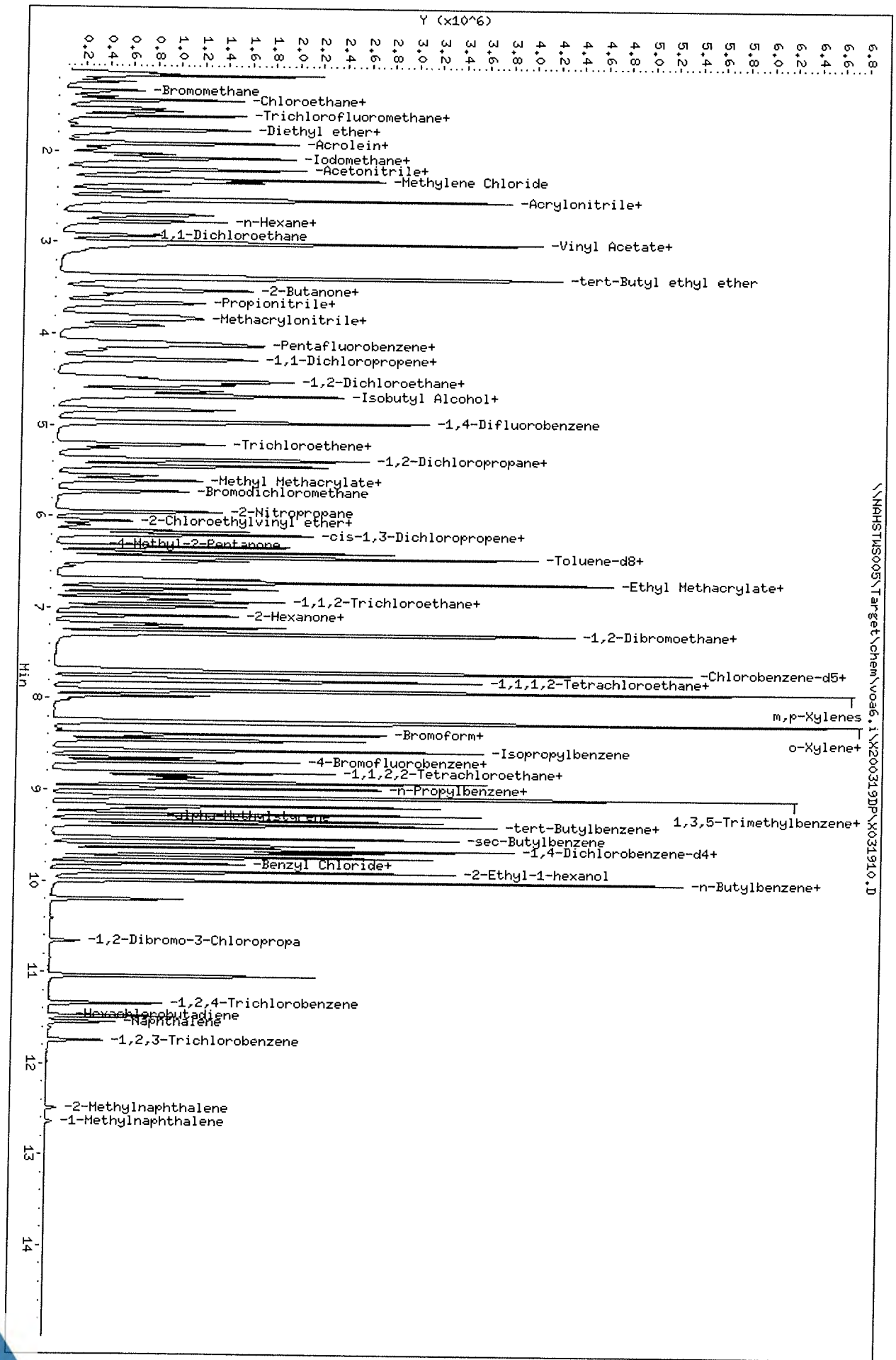
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031910.D
Lab Smp Id: VSTD150 Client Smp ID: VSTD150
Inj Date : 19-MAR-2020 15:10
Operator : PC Inst ID: voa6.i
Smp Info : VSTD150;VSTD150;1;9;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:51 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:46 Cal File: X031909.D
Als bottle: 11 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	285712	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	416931	150.000	147.07
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	529642	150.000	147.86
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	430514	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	397694	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1518049	150.000	149.15
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	566125	150.000	148.90
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	198118	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	636695	150.000	146.27
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	347727	150.000	143.62
17 Methylene Chloride	84	2.306	2.306	(0.551)	437081	150.000	146.41
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	468820	150.000	144.08
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	692218	150.000	152.19
38 Trichloroethene	130	5.207	5.207	(1.048)	461294	150.000	154.59
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	326278	150.000	142.40



Data File: \\NAHSTWS005\Target\chem\voa6,i\X200319DP\X031910,D
Date : 19-MAR-2020 15:10
Client ID: VSTD150
Sample Info: VSTD150;VSTD150;1;9;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031911.D Page 1
Report Date: 15-Apr-2020 11:51

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031911.D
Lab Smp Id: VSTD200 Client Smp ID: VSTD200
Inj Date : 19-MAR-2020 15:33
Operator : PC Inst ID: voa6.i
Smp Info : VSTD200;VSTD200;1;10;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:51 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 15:10 Cal File: X031910.D
Als bottle: 12 Calibration Sample, Level: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

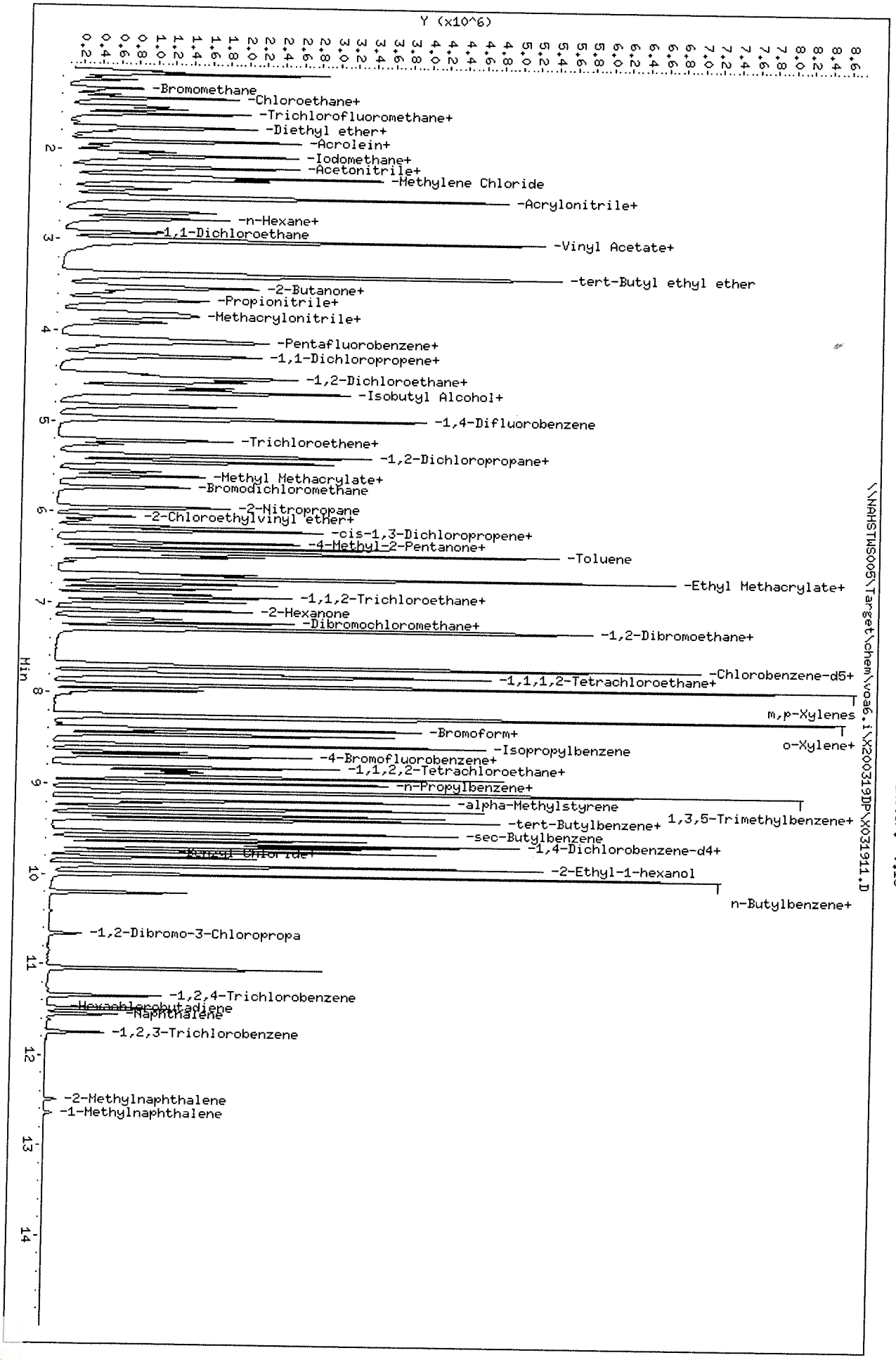
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	273221	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	545685	200.000	201.33(A)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	688377	200.000	201.01(A)
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	408332	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	385556	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1981187	200.000	200.82(A)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	739220	200.000	200.72(A)
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	190770	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	840563	200.000	201.93(A)
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	451814	200.000	195.15
17 Methylene Chloride	84	2.305	2.305	(0.551)	572059	200.000	200.90(A)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	619486	200.000	199.09
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	908572	200.000	210.61(A)
38 Trichloroethene	130	5.207	5.207	(1.048)	603965	200.000	213.40(A)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	427427	200.000	192.42

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031911.D
Date : 19-MAR-2020 15:33
Client ID: VSTD200
Sample Info: VSTD200;VSTD200;1;10;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

\\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031911.D

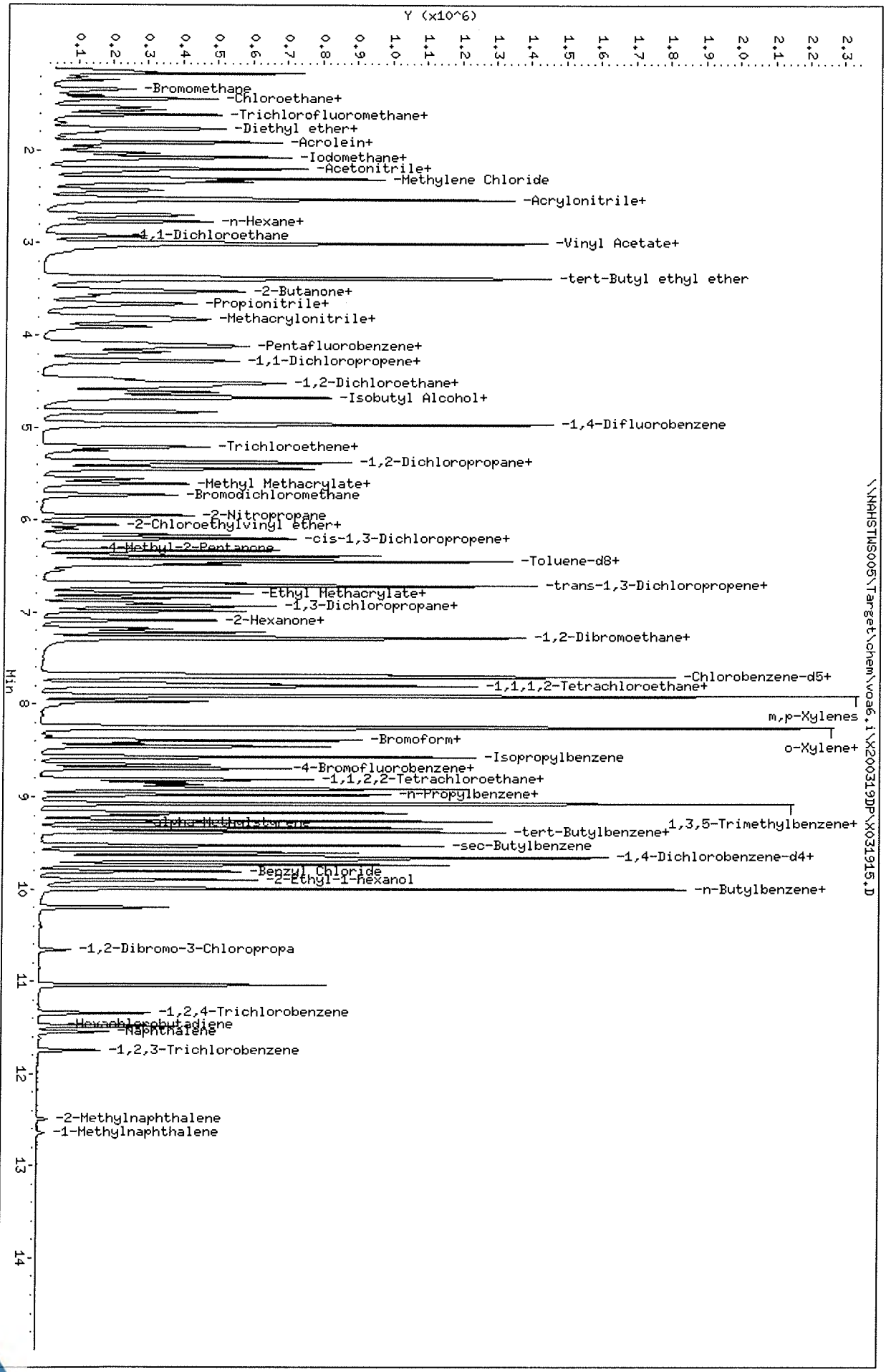
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031915.D
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 19-MAR-2020 17:09
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;;ICV
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:51 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 15:33 Cal File: X031911.D
Als bottle: 16 QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	286433	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	148947	52.3413	52.34
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	188752	52.4596	52.45
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	444859	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	412876	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	528266	49.9474	49.94
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	201904	50.8305	50.83
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	209059	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	208794	47.8466	47.84
11 1,1-Dichloroethene	96	1.911	1.912	(0.457)	119289	49.1482	49.14
17 Methylene Chloride	84	2.305	2.305	(0.551)	157492	51.7167	51.71
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	163069	49.9916	49.99
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	243287	51.7645	51.76
38 Trichloroethene	130	5.206	5.207	(1.048)	155631	50.4744	50.47
53 1,1,2-Trichloroethane	83	6.840	6.847	(0.892)	118115	49.6548	49.65



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031915.D
Date : 19-MAR-2020 17:09
Client ID: ICV
Sample Info: CCV;CCV;2;;;ICV
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

MSVOA06 -Logbook

Batch: 40073
Date: 03-20-2020
Method: 8260
Comments:

Analyst: Presenta Cabascango
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	03-20-2020 10:05 am	1.00	50 mL	50 mL	X032001.D	Liquid	Y	NA
2	*Auto find/ purged* CCV	CCV	03-20-2020 10:29 am	1.00	50 mL	50 mL	X032002a.D	Liquid	Y	NA
3	*10 uL cal std/50 mL DI* CCV	CCV	03-20-2020 10:53 am	1.00	50 mL	50 mL	X032003.D	Liquid	Y	NA
4	*10 uL cal std/50 mL DI* CCB	SAMP	03-20-2020 11:17 am	1.00	50 mL	50 mL	X032004.D	Liquid	Y	NA
5	VLCSW-200320	LCS	03-20-2020 11:41 am	1.00	50 mL	50 mL	X032005.D	Liquid	Y	NA
6	*4.0 uL cal std/50 mL DI* BLANK	SAMP	03-20-2020 12:05 pm	1.00	50 mL	50 mL	X032006.D	Liquid	Y	NA
7	VBLKW1-200320	MBLK	03-20-2020 12:29 pm	1.00	50 mL	50 mL	X032007.D	Liquid	Y	NA
8	VBLKW2-200320	MBLK	03-20-2020 12:53 pm	1.00	50 mL	50 mL	X032008.D	Liquid	Y	NA
9	HS20021070-04	SAMP	03-20-2020 01:17 pm	1.00	50 mL	50 mL	X032009.D	Liquid	Y	NA
10	HS20021070-05	SAMP	03-20-2020 01:41 pm	1.00	50 mL	50 mL	X032010.D	Liquid	Y	NA
11	HS20030848-01	SAMP	03-20-2020 02:05 pm	1.00	50 mL	50 mL	X032011.D	Liquid	Y	<2
12	HS20030521-03	SAMP	03-20-2020 02:29 pm	1.00	50 mL	50 mL	X032012.D	Liquid	Y	<2
13	HS20030498-04	SAMP	03-20-2020 02:53 pm	10.00	5 mL	50 mL	X032013.D	Liquid	Y	<2
14	HS20030848-01MS	MS	03-20-2020 03:17 pm	1.00	50 mL	50 mL	X032014.D	Liquid	Y	<2
15	*3.5 uL cal std/40 mL samp* HS20030848-01MSD	MSD	03-20-2020 03:41 pm	1.00	50 mL	50 mL	X032015.D	Liquid	Y	<2
16	*3.5 uL cal std/40 mL samp* HS20030498-04	SAMP	03-20-2020 04:05 pm	100.0(	500 µL	50 mL	X032016.D	Liquid	Y	<2
17	HS20030498-05	SAMP	03-20-2020 04:29 pm	25.00	2 mL	50 mL	X032017.D	Liquid	Y	<2
18	HS20030498-05	SAMP	03-20-2020 04:53 pm	250.0(	200 µL	50 mL	X032018.D	Liquid	Y	<2
19	HS20030498-06	SAMP	03-20-2020 05:17 pm	25.00	2 mL	50 mL	X032019.D	Liquid	Y	<2
20	HS20030498-06	SAMP	03-20-2020 05:41 pm	250.0(	200 µL	50 mL	X032020.D	Liquid	Y	<2
21	HS20030498-07	SAMP	03-20-2020 06:05 pm	25.00	2 mL	50 mL	X032021.D	Liquid	Y	<2
22	HS20030498-07	SAMP	03-20-2020 06:29 pm	250.0(	200 µL	50 mL	X032022.D	Liquid	Y	<2
23	HS20030701-01	SAMP	03-20-2020 06:53 pm	1.00	50 mL	50 mL	X032023.D	Liquid	Y	<2
24	HS20030701-02	SAMP	03-20-2020 07:17 pm	1.00	50 mL	50 mL	X032024.D	Liquid	Y	<2
25	HS20030701-03	SAMP	03-20-2020 07:41 pm	1.00	50 mL	50 mL	X032025.D	Liquid	Y	<2
26	HS20030701-04	SAMP	03-20-2020 08:05 pm	1.00	50 mL	50 mL	X032026.D	Liquid	Y	<2
27	HS20030701-05	SAMP	03-20-2020 08:30 pm	1.00	50 mL	50 mL	X032027.D	Liquid	Y	<2
28	HS20030701-06	SAMP	03-20-2020 08:54 pm	1.00	50 mL	50 mL	X032028.D	Liquid	Y	<2
29	HS20030701-07	SAMP	03-20-2020 09:18 pm	1.00	50 mL	50 mL	X032029.D	Liquid	Y	<2
30	CCV-END	CCV	03-20-2020 09:42 pm	1.00	50 mL	50 mL	X032030.D	Liquid	Y	na
31	BFB	TUNE	03-20-2020 10:06 pm	1.00	50 mL	50 mL	Y032001.D	Liquid	Y	na
32	*Auto find/ purged* CCV	CCV	03-20-2020 10:29 pm	1.00	50 mL	50 mL	Y032002a.D	Liquid	Y	na
33	*10 uL cal std/50 mL DI* CCV	CCV	03-20-2020 10:53 pm	1.00	50 mL	50 mL	Y032003.D	Liquid	Y	na
34	*10 uL cal std/50 mL DI* CCB	SAMP	03-20-2020 11:17 pm	1.00	50 mL	50 mL	Y032004.D	Liquid	Y	na
35	VLCSW-200320	LCS	03-20-2020 11:41 pm	1.00	50 mL	50 mL	Y032005.D	Liquid	Y	na
36	*4.0 uL cal std/50 mL DI* BLANK	SAMP	03-21-2020 12:05 am	1.00	50 mL	50 mL	Y032006.D	Liquid	Y	na

MSVOA06 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
37	VBLKW1-200320	MBLK	03-21-2020 12:29 am	1.00	50 mL	50 mL	Y032007.D	Liquid	Y	na
38	HS20030621-13	SAMP	03-21-2020 12:54 am	1.00	50 mL	50 mL	Y032008.D	Liquid	Y	<2
39	HS20030733-09	SAMP	03-21-2020 01:18 am	1.00	50 mL	50 mL	Y032009.D	Liquid	Y	<2
40	HS20030621-01	SAMP	03-21-2020 01:42 am	1.00	50 mL	50 mL	Y032010.D	Liquid	Y	<2
41	HS20030621-09	SAMP	03-21-2020 02:06 am	1.00	50 mL	50 mL	Y032011.D	Liquid	Y	<2
42	HS20030621-01MS	MS	03-21-2020 02:30 am	1.00	50 mL	50 mL	Y032012.D	Liquid	Y	<2
43	*3.5 uL cal std/40 mL samp* HS20030621-01MSD	MSD	03-21-2020 02:54 am	1.00	50 mL	50 mL	Y032013.D	Liquid	Y	<2
44	*3.5 uL cal std/40 mL samp* HS20030621-09n/r	SAMP	03-21-2020 03:18 am	5.00	10 mL	50 mL	Y032014.D	Liquid	Y	<2
45	HS20030621-02	SAMP	03-21-2020 03:42 am	1.00	50 mL	50 mL	Y032015.D	Liquid	Y	<2
46	HS20030621-03	SAMP	03-21-2020 04:06 am	1.00	50 mL	50 mL	Y032016.D	Liquid	Y	<2
47	HS20030621-04	SAMP	03-21-2020 04:30 am	1.00	50 mL	50 mL	Y032017.D	Liquid	Y	<2
48	HS20030621-05	SAMP	03-21-2020 04:54 am	1.00	50 mL	50 mL	Y032018.D	Liquid	Y	<2
49	HS20030621-06	SAMP	03-21-2020 05:18 am	1.00	50 mL	50 mL	Y032019.D	Liquid	Y	<2
50	HS20030621-08	SAMP	03-21-2020 05:42 am	1.00	50 mL	50 mL	Y032020.D	Liquid	Y	<2
51	HS20030621-10	SAMP	03-21-2020 06:06 am	1.00	50 mL	50 mL	Y032021.D	Liquid	Y	<2
52	HS20030621-11	SAMP	03-21-2020 06:30 am	1.00	50 mL	50 mL	Y032022.D	Liquid	Y	<2
53	HS20030621-12	SAMP	03-21-2020 06:54 am	1.00	50 mL	50 mL	Y032023.D	Liquid	Y	<2
54	HS20030733-02	SAMP	03-21-2020 07:19 am	1.00	50 mL	50 mL	Y032024.D	Liquid	Y	<2
55	HS20030733-04	SAMP	03-21-2020 07:43 am	1.00	50 mL	50 mL	Y032025.D	Liquid	Y	<2
56	HS20030733-06	SAMP	03-21-2020 08:07 am	1.00	50 mL	50 mL	Y032026.D	Liquid	Y	<2
57	HS20030733-07	SAMP	03-21-2020 08:31 am	1.00	50 mL	50 mL	Y032027.D	Liquid	Y	<2
58	HS20030621-07	SAMP	03-21-2020 08:55 am	5.00	10 mL	50 mL	Y032028.D	Liquid	Y	<2
59	HS20030621-07	SAMP	03-21-2020 09:19 am	50.00	1 mL	50 mL	Y032029.D	Liquid	Y	<2
60	CCV-END	CCV	03-21-2020 09:43 am	1.00	50 mL	50 mL	Y032030.D	Liquid	Y	na

Chemical	Value
SURR SPK ID	31106-21-06
IS ID	31106-21-06
LCS/MS ID	
CAL STD ID	31106-21-01/02
BFB ID	31106-21-06
pH Paper	634-64-11

FORM 2
WATER VOLATILE SURROGATE RECOVERY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030621

	CLIENT SAMPLE NO.	S1 #	S2 (DCE) #	S3 (TOL) #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	CCB	94	90	106	95					0
02	VLCSW-200320	112	110	104	102					0
03	VBLKW1-20032	94	90	106	98					0
04	HS20030621-1	95	90	106	97					0
05	HS20030621-0	95	92	107	96					0
06	HS20030621-0	95	89	105	98					0
07	HS20030621-0	94	93	104	97					0
08	HS20030621-0	94	91	104	97					0
09	HS20030621-0	96	92	107	96					0
10	HS20030621-0	95	91	106	97					0
11	HS20030621-0	94	91	105	98					0
12	HS20030621-0	95	90	106	96					0
13	HS20030621-0	96	91	105	95					0
14	HS20030621-0	95	92	106	95					0
15	HS20030621-1	95	91	105	100					0
16	HS20030621-1	96	91	106	98					0
17	HS20030621-1	94	90	106	100					0
18	HS20030621-0	94	90	106	97					0
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										

		QC LIMITS
S1	= Dibromofluoromethane	(70-130)
S2 (DCE)	= 1,2-Dichloroethane-d4	(70-130)
S3 (TOL)	= Toluene-d8	(70-130)
S4	= 4-Bromofluorobenzene	(70-130)

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKW1-200320

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030621

Lab File ID: Y032007 Lab Sample ID: VBLKW1-200320

Instrument ID: VOA6 Date Extracted:

Matrix: (soil/water) WATER Date Analyzed: 03/21/20

Level: (low/med) LOW Time Analyzed: 0029

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	CCB	CCB	Y032004	03/20/20
02	VLCSW-200320	VLCSW-200320	Y032005	03/20/20
03	HS20030621-1	HS20030621-13	Y032008	03/21/20
04	HS20030621-0	HS20030621-01	Y032010	03/21/20
05	HS20030621-0	HS20030621-09	Y032011	03/21/20
06	HS20030621-0	HS20030621-01M	Y032012	03/21/20
07	HS20030621-0	HS20030621-01M	Y032013	03/21/20
08	HS20030621-0	HS20030621-02	Y032015	03/21/20
09	HS20030621-0	HS20030621-03	Y032016	03/21/20
10	HS20030621-0	HS20030621-04	Y032017	03/21/20
11	HS20030621-0	HS20030621-05	Y032018	03/21/20
12	HS20030621-0	HS20030621-06	Y032019	03/21/20
13	HS20030621-0	HS20030621-08	Y032020	03/21/20
14	HS20030621-1	HS20030621-10	Y032021	03/21/20
15	HS20030621-1	HS20030621-11	Y032022	03/21/20
16	HS20030621-1	HS20030621-12	Y032023	03/21/20
17	HS20030621-0	HS20030621-07	Y032028	03/21/20
18	HS20030621-0	HS20030621-07	Y032029	03/21/20
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030621

Lab File ID: Y032001 DFTPP Injection Date: 03/20/20

Instrument ID: VOA6 DFTPP Injection Time: 2206

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	25.8
75	30.0 - 60.0% of mass 95	48.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.6 (1.0)1
174	Greater than 50.0% of mass 95	60.4
175	5.0 - 9.0% of mass 174	5.2 (8.6)1
176	95.0 - 101.0% of mass 174	59.2 (98.1)1
177	5.0 - 9.0% of mass 176	4.5 (7.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	Y032003	03/20/20	2253
02	CCB	CCB	Y032004	03/20/20	2317
03	VLCSW-200320	VLCSW-200320	Y032005	03/20/20	2341
04	VBLKW1-20032	VBLKW1-200320	Y032007	03/21/20	0029
05	HS20030621-1	HS20030621-13	Y032008	03/21/20	0054
06	HS20030621-0	HS20030621-01	Y032010	03/21/20	0142
07	HS20030621-0	HS20030621-09	Y032011	03/21/20	0206
08	HS20030621-0	HS20030621-01M	Y032012	03/21/20	0230
09	HS20030621-0	HS20030621-01M	Y032013	03/21/20	0254
10	HS20030621-0	HS20030621-02	Y032015	03/21/20	0342
11	HS20030621-0	HS20030621-03	Y032016	03/21/20	0406
12	HS20030621-0	HS20030621-04	Y032017	03/21/20	0430
13	HS20030621-0	HS20030621-05	Y032018	03/21/20	0454
14	HS20030621-0	HS20030621-06	Y032019	03/21/20	0518
15	HS20030621-0	HS20030621-08	Y032020	03/21/20	0542
16	HS20030621-1	HS20030621-10	Y032021	03/21/20	0606
17	HS20030621-1	HS20030621-11	Y032022	03/21/20	0630
18	HS20030621-1	HS20030621-12	Y032023	03/21/20	0654
19	HS20030621-0	HS20030621-07	Y032028	03/21/20	0855
20	HS20030621-0	HS20030621-07	Y032029	03/21/20	0919
21	CCV-END	CCV-END	Y032030	03/21/20	0943
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030621

Instrument ID: VOA6 Calibration Date: 03/20/20 Time: 2253

Lab File ID: Y032003 Init. Calib. Date(s): 03/19/20 03/19/20

Init. Calib. Times: 1134 1533

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Vinyl Chloride	0.7620000	0.7895163	0.7895163	0.1	-3.61	50.00	AVRG
1,1-Dichloroethene	0.4240000	0.4397039	0.4397039	0.1	-3.70	50.00	AVRG
Methylene Chloride	50.332921	50.000000	0.6039676	0.1	-0.66	50.00	LINR
cis-1,2-Dichloroethene	0.5690000	0.6221093	0.6221093	0.1	-9.33	50.00	AVRG
1,2-Dichloroethane	0.5280000	0.5584066	0.5584066	0.1	-5.76	50.00	AVRG
Trichloroethene	0.3460000	0.3558225	0.3558225	0.2	-2.84	50.00	AVRG
1,1,2-Trichloroethane	0.2880000	0.2898709	0.2898709	0.1	-0.65	50.00	AVRG
Dibromofluoromethane	51.754674	50.000000	0.5716971	0.1	-3.51	50.00	LINR
1,2-Dichloroethane-d4	50.092057	50.000000	0.6951615	0.1	-0.18	50.00	LINR
Toluene-d8	50.023224	50.000000	1.3479837	0.1	-0.05	50.00	LINR
4-Bromofluorobenzene	49.796194	50.000000	0.4970487	0.1	0.41	50.00	LINR

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030621

Instrument ID: VOA6 Calibration Date: 03/21/20 Time: 0943

Lab File ID: Y032030 Init. Calib. Date(s): 03/19/20 03/19/20

Init. Calib. Times: 1134 1533

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Vinyl Chloride	0.7620000	0.7895163	0.7895163	0.1	-3.61	50.00	AVRG
1,1-Dichloroethene	0.4240000	0.4397039	0.4397039	0.1	-3.70	50.00	AVRG
Methylene Chloride	56.947251	50.000000	0.6039676	0.1	-13.89	50.00	LINR
cis-1,2-Dichloroethene	0.5690000	0.6221093	0.6221093	0.1	-9.33	50.00	AVRG
1,2-Dichloroethane	0.5280000	0.5584066	0.5584066	0.1	-5.76	50.00	AVRG
Trichloroethene	0.3460000	0.3558225	0.3558225	0.2	-2.84	50.00	AVRG
1,1,2-Trichloroethane	0.2880000	0.2898709	0.2898709	0.1	-0.65	50.00	AVRG
Dibromofluoromethane	57.554904	50.000000	0.5716971	0.1	-15.11	50.00	LINR
1,2-Dichloroethane-d4	55.349095	50.000000	0.6951615	0.1	-10.70	50.00	LINR
Toluene-d8	52.625652	50.000000	1.3479837	0.1	-5.25	50.00	LINR
4-Bromofluorobenzene	51.673240	50.000000	0.4970487	0.1	-3.35	50.00	LINR

FORM VII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

outputFile debug: C:\tp\envision\results\HS20030621/08bc.01 Lab Code: AL

Lab File ID (Standard): Y032003 Date Analyzed: 03/20/20

Instrument ID: VOA6 Time Analyzed: 2253

		IS1 AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	304535	4.18	474839	4.97	434388	7.67
	UPPER LIMIT	609070	4.68	949678	5.47	868776	8.17
	LOWER LIMIT	152268	3.68	237420	4.47	217194	7.17
	CLIENT SAMPLE NO.						
01	CCB	380065	4.18	562840	4.97	486716	7.67
02	VLCSW-200320	299957	4.18	480944	4.97	440920	7.67
03	VBLKW1-20032	394085	4.18	585058	4.97	507145	7.67
04	HS20030621-1	398945	4.18	593716	4.97	511737	7.67
05	HS20030621-0	397960	4.18	591476	4.97	507836	7.67
06	HS20030621-0	397440	4.18	592573	4.97	508163	7.67
07	HS20030621-0	381564	4.18	565201	4.97	491322	7.67
08	HS20030621-0	379651	4.18	565579	4.97	494280	7.67
09	HS20030621-0	392150	4.18	588000	4.97	504160	7.67
10	HS20030621-0	397965	4.18	597797	4.97	513003	7.67
11	HS20030621-0	404027	4.18	597330	4.97	521134	7.67
12	HS20030621-0	382544	4.18	564707	4.97	494516	7.67
13	HS20030621-0	392388	4.18	590627	4.97	514340	7.67
14	HS20030621-0	389074	4.18	582997	4.97	493814	7.67
15	HS20030621-1	397662	4.18	597555	4.97	522793	7.67
16	HS20030621-1	398927	4.18	592990	4.97	514930	7.67
17	HS20030621-1	403822	4.18	599066	4.97	517656	7.67
18	HS20030621-0	406730	4.18	607692	4.97	504266	7.67
19	HS20030621-0	400296	4.18	590664	4.97	504451	7.67
20							

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

outputFile debug: C:\tp\envision\results\HS20030621/08bc.01 Lab Code: AL

Lab File ID (Standard): Y032003 Date Analyzed: 03/20/20

Instrument ID: VOA6 Time Analyzed: 2253

		IS4 (DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	210243	9.67				
	UPPER LIMIT	420486	10.17				
	LOWER LIMIT	105122	9.17				
	CLIENT SAMPLE NO.						
01	CCB	216160	9.67				
02	VLCSW-200320	216321	9.67				
03	VBLKW1-20032	241728	9.67				
04	HS20030621-1	236029	9.67				
05	HS20030621-0	234526	9.67				
06	HS20030621-0	237621	9.67				
07	HS20030621-0	230380	9.66				
08	HS20030621-0	239783	9.67				
09	HS20030621-0	237349	9.67				
10	HS20030621-0	241902	9.67				
11	HS20030621-0	245233	9.67				
12	HS20030621-0	211880	9.67				
13	HS20030621-0	223742	9.67				
14	HS20030621-0	218838	9.67				
15	HS20030621-1	246396	9.66				
16	HS20030621-1	238674	9.67				
17	HS20030621-1	239352	9.67				
18	HS20030621-0	237985	9.67				
19	HS20030621-0	232506	9.67				
20							

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032001.D

Date : 20-MAR-2020 22:06

Client ID: BFB

Instrument: voa6.i

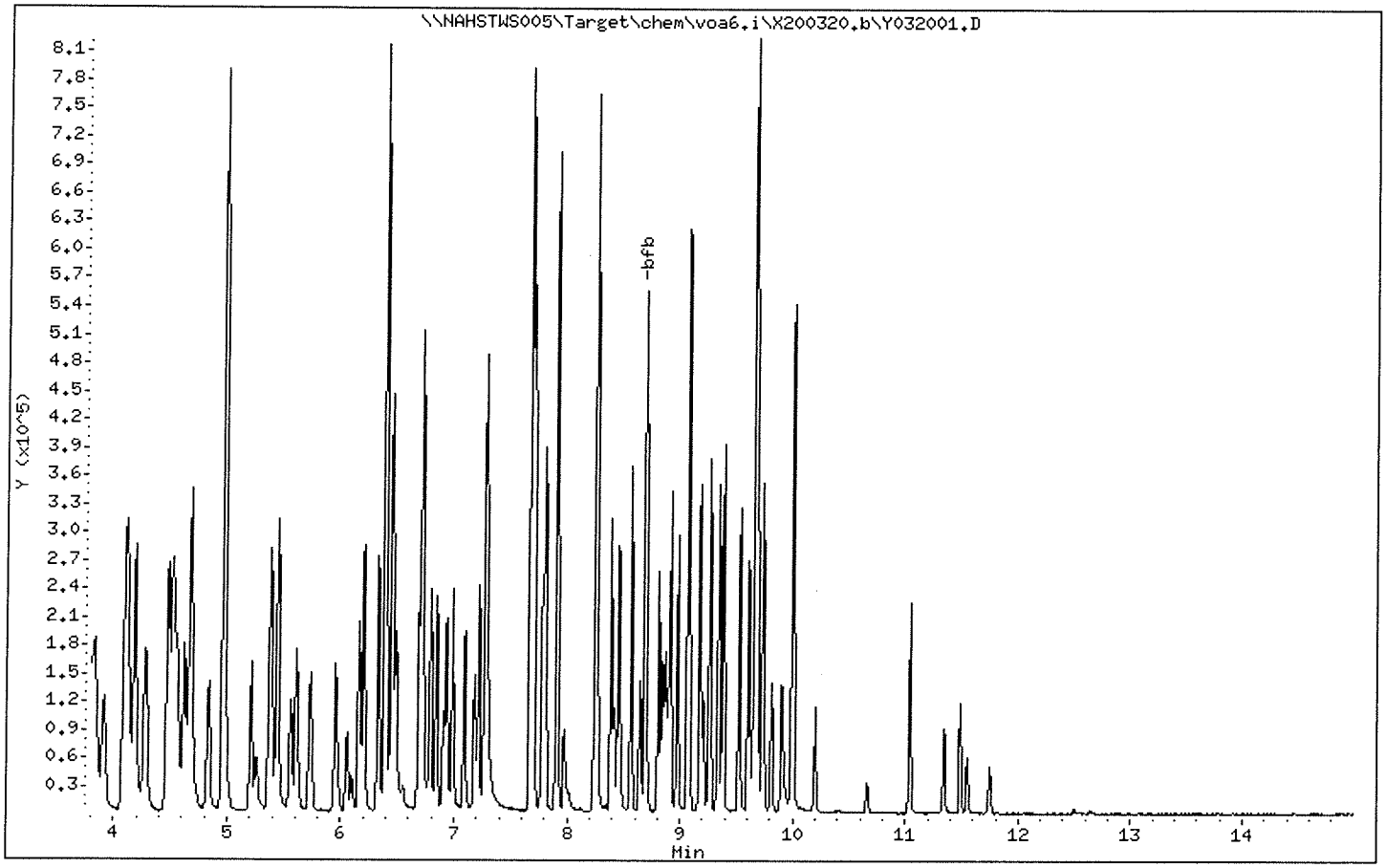
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032001.D

Date : 20-MAR-2020 22:06

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

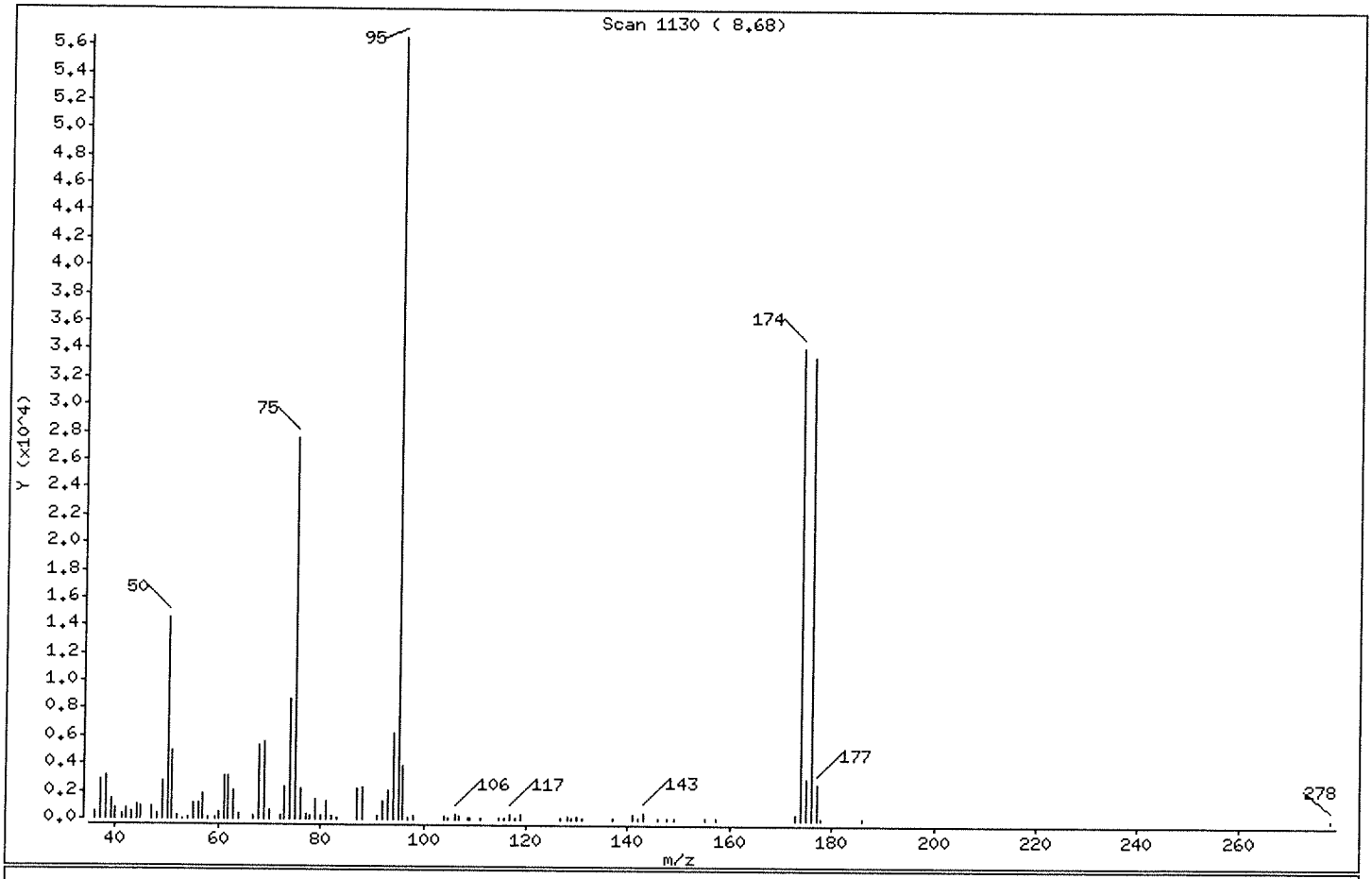
Volume Injected (uL): 2.0

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	25.78
75	30.00 - 60.00% of mass 95	48.79
96	5.00 - 9.00% of mass 95	6.91
173	Less than 2.00% of mass 174	0.59 (0.98)
174	Greater than 50.00% of mass 95	60.42
175	5.00 - 9.00% of mass 174	5.18 (8.57)
176	95.00 - 101.00% of mass 174	59.25 (98.06)
177	5.00 - 9.00% of mass 176	4.55 (7.67)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032001.D

Date : 20-MAR-2020 22:06

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: Y032001.D
Spectrum: Scan 1130 (8.68)
Location of Maximum: 95.00
Number of points: 88

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.90	531	59.90	583	91.00	275	129.80	244
37.10	2880	61.00	3164	92.10	1297	130.90	80
38.00	3129	62.00	3117	92.90	2045	136.90	94
39.10	1412	63.00	2087	94.10	6250	140.90	390
39.90	715	64.00	331	95.00	56536	141.90	185
41.20	390	66.90	197	96.00	3904	142.90	520
42.00	769	68.00	5373	96.90	90	146.00	68
43.10	570	69.00	5628	98.00	195	147.80	148
44.00	1021	70.10	610	103.90	263	148.90	116
45.00	874	72.00	238	104.90	142	155.00	165
47.00	943	73.00	2302	106.00	339	157.10	81
48.00	429	74.00	8763	107.00	218	172.80	336
49.00	2702	75.00	27584	108.70	87	174.00	34160
50.00	14577	76.00	2192	109.10	74	175.00	2929
51.00	4904	77.00	353	111.00	65	176.00	33496
52.00	252	77.90	207	114.80	130	177.00	2570
53.10	51	78.90	1419	115.90	132	177.90	85
53.90	190	79.90	299	116.90	397	186.00	89
55.10	1146	81.00	1287	117.90	177	278.20	76
56.10	1178	82.00	268	118.90	355		
57.00	1763	83.10	77	126.90	120		
58.10	147	87.00	2200	128.00	233		
59.20	157	88.00	2287	129.00	93		

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032003.D Page 1
Report Date: 15-Apr-2020 12:07

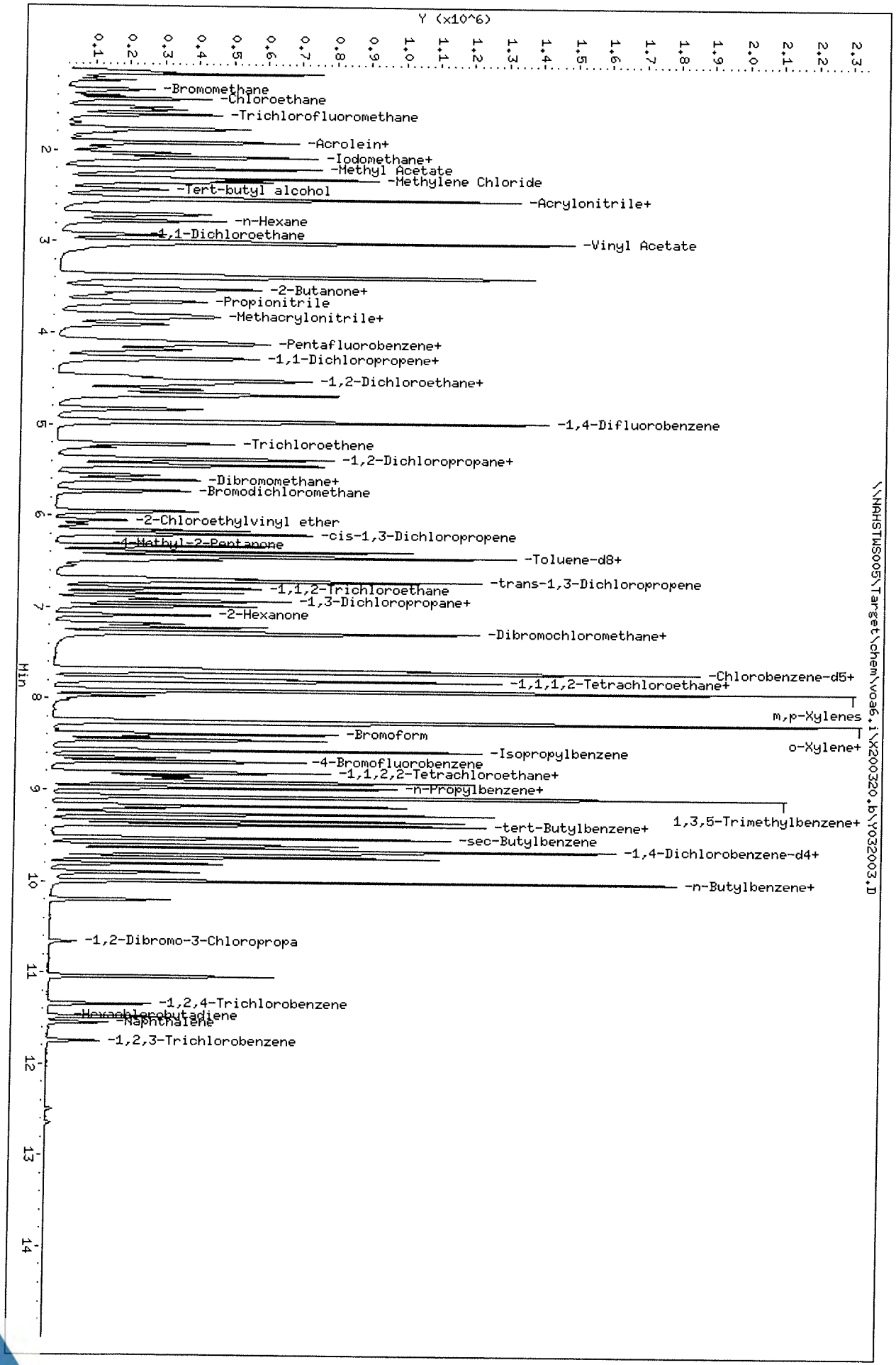
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032003.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 20-MAR-2020 22:53
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 32 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	304535	50.0000	
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	156589	50.0000	51.75
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	191651	50.0000	50.09
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	474839	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	434388	50.0000	
$	48 Toluene-d8	98	6.388	6.388	(0.833)	556633	50.0000	50.02
$	69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	208143	50.0000	49.79
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	210243	50.0000	
	5 Vinyl Chloride	62	1.138	1.138	(0.272)	221860	50.0000	47.81
	11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	123797	50.0000	47.97
	17 Methylene Chloride	84	2.305	2.305	(0.551)	163084	50.0000	50.33
	27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	171710	50.0000	49.51
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	244558	50.0000	48.74
	38 Trichloroethene	130	5.207	5.207	(1.048)	165636	50.0000	50.32
	53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	119764	50.0000	47.85



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Date : 20-MAR-2020 22:53
Client ID: CCV
Sample Info: CCV;CCV;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032004.D Page 1
Report Date: 15-Apr-2020 12:07

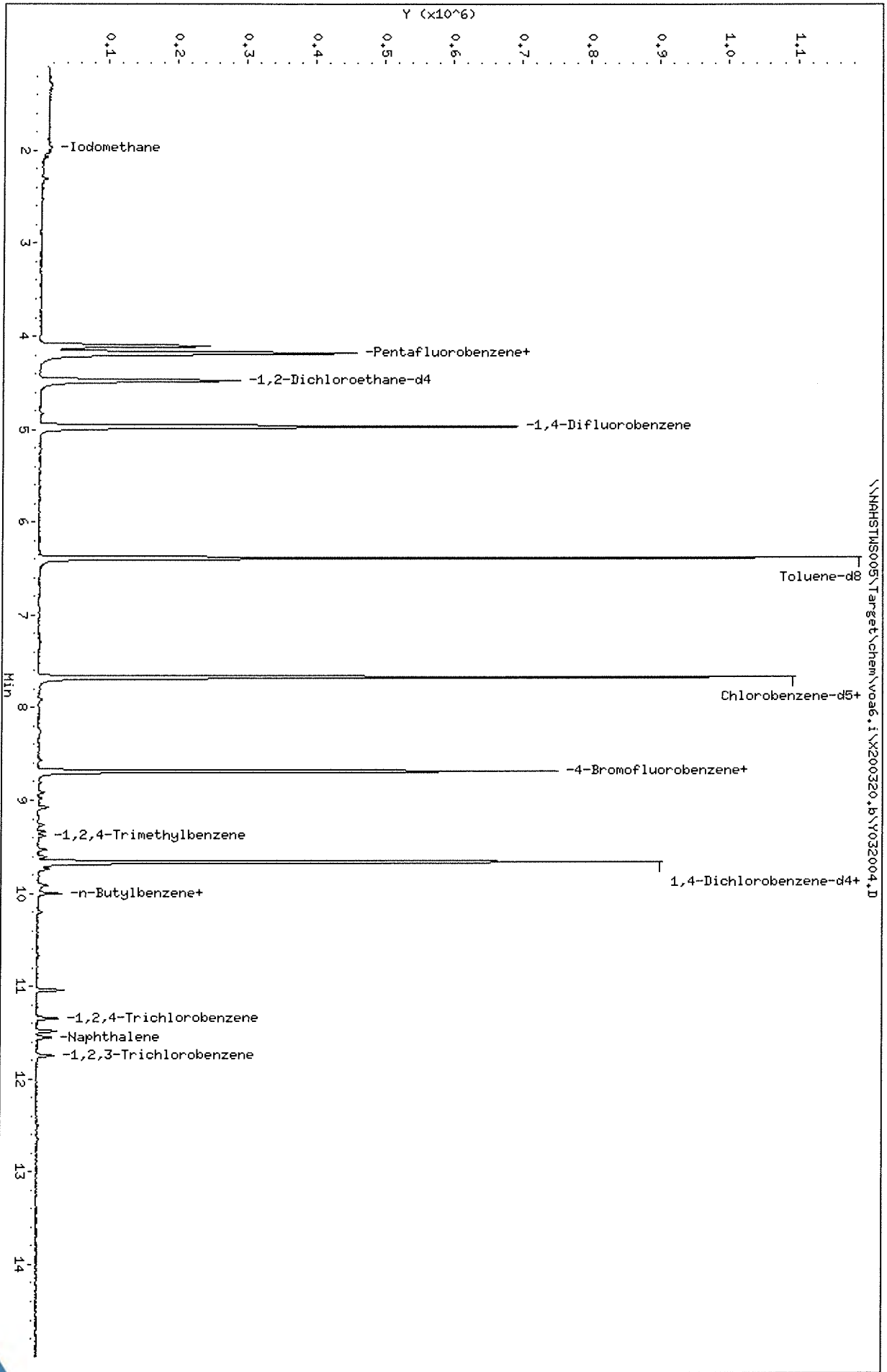
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032004.D
Lab Smp Id: CCB Client Smp ID: CCB
Inj Date : 20-MAR-2020 23:17
Operator : PC Inst ID: voa6.i
Smp Info : CCB;CCB;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 33
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	380065	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	177568	47.0156	47.01
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	214169	44.8367	44.83
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	562840	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	486716	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	664245	53.2811	53.28
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	222062	47.3909	47.39
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	216160	50.0000	



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032004.D
Date : 20-MAR-2020 23:17
Client ID: CCB
Sample Info: CCB;CCB;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

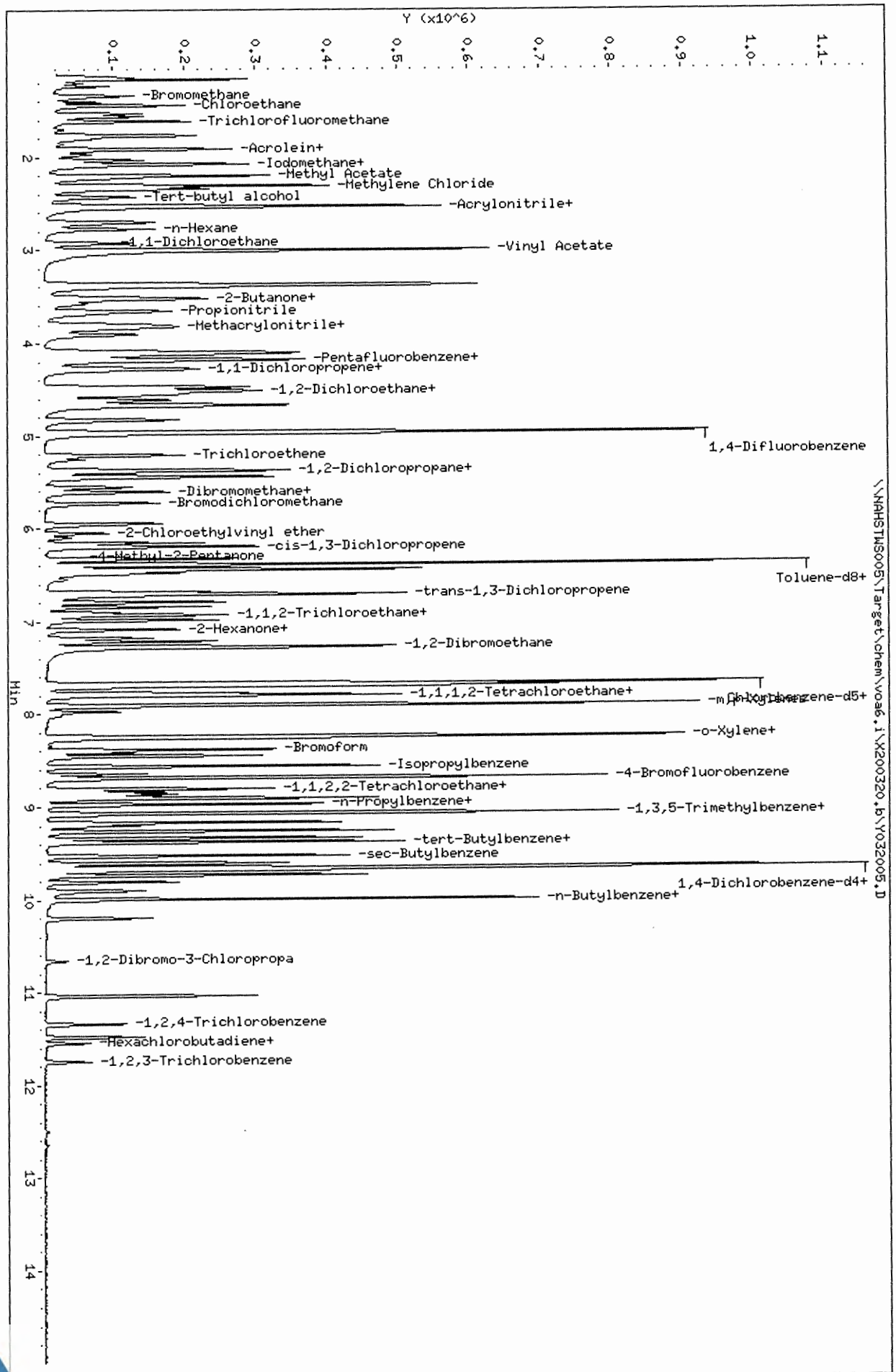
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032005.D
Lab Smp Id: VLCSW-200320 Client Smp ID: VLCSW-200320
Inj Date : 20-MAR-2020 23:41
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-200320;VLCSW-200320;3;;LCS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 34 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	299957	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	167519	56.2215	56.22
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	207135	54.9808	54.98
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	480944	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	440920	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	585022	51.7983	51.79
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	217321	51.2358	51.23
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	216321	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	82662	18.0885	18.08
11 1,1-Dichloroethene	96	1.911	1.912	(0.457)	47585	18.7215	18.72
17 Methylene Chloride	84	2.305	2.305	(0.551)	68463	20.6407	20.64
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	69069	20.2196	20.21
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	100749	19.8281	19.82
38 Trichloroethene	130	5.206	5.207	(1.048)	65300	19.5892	19.58
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	50537	19.8942	19.89



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032005.D
Date : 20-MAR-2020 23:41
Client ID: VLCSW-200320
Sample Info: VLCSW-200320;VLCSW-200320;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032007.D
Lab Smp Id: VBLKW1-200320 Client Smp ID: VBLKW1-200320
Inj Date : 21-MAR-2020 00:29
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW1-200320;VBLKW1-200320;3;;BLANK
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 36 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

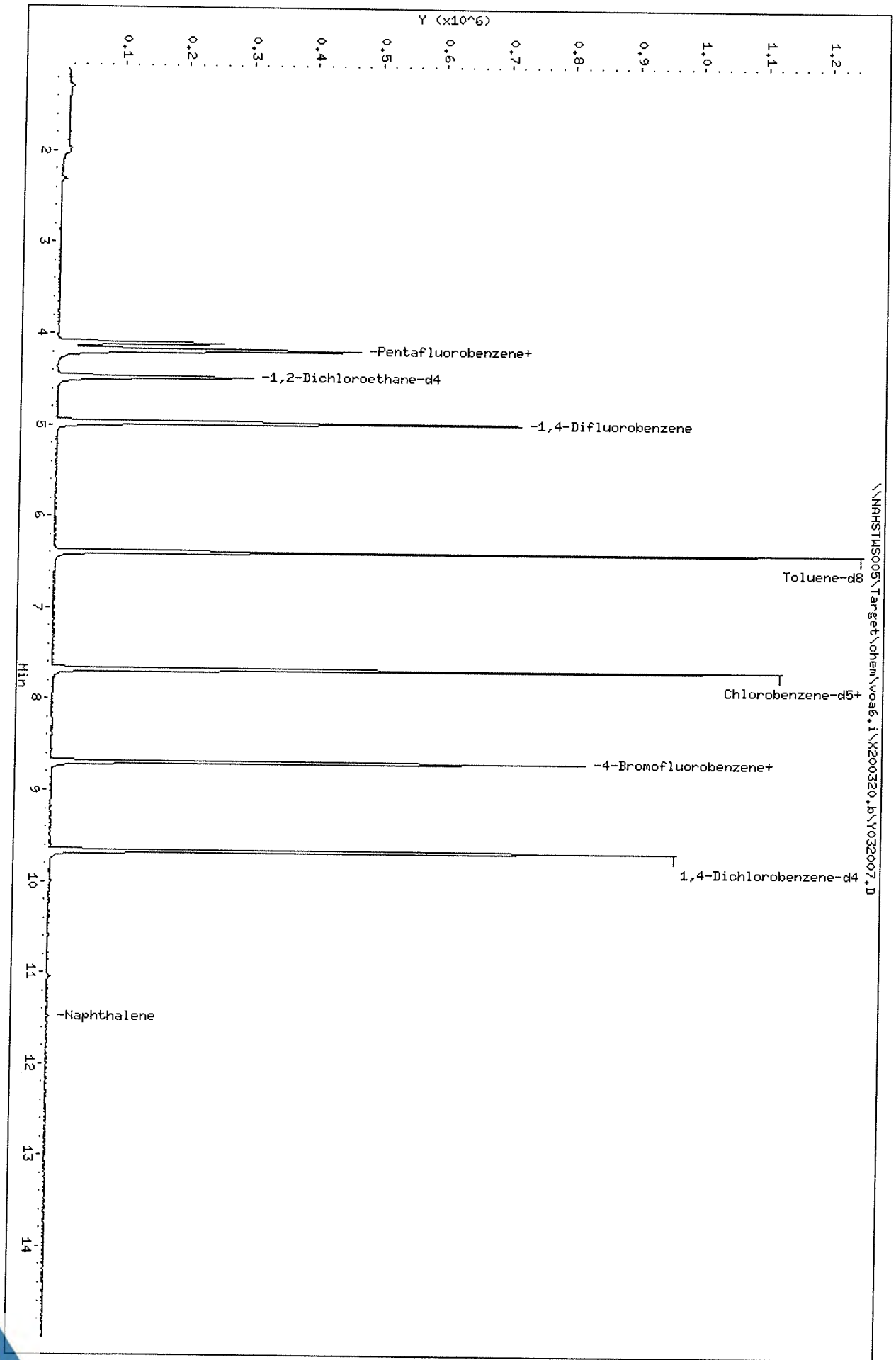
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	394085	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	184522	47.1189	47.11
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	222628	44.9499	44.94
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	585058	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	507145	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	690327	53.1425	53.14
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	239410	49.0521	49.05
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	241728	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6,i\X200320,b\Y032007.D
Date : 21-MAR-2020 00:29
Client ID: VBLKW1-200320
Sample Info: VBLKW1-200320;VBLKW1-200320;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18



ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032008.D
Lab Smp Id: HS20030621-13 Client Smp ID: HS20030621-13
Inj Date : 21-MAR-2020 00:54
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-13;HS20030621-13;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 37
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	398945	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	188071	47.4408	47.44
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	226498	45.1749	45.17
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	593716	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	511737	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	694735	53.0017	53.00
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	239343	48.5938	48.59
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	236029	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032008.D

Date : 21-MAR-2020 00:54

Client ID: HS20030621-13

Sample Info: HS20030621-13;HS20030621-13;;;

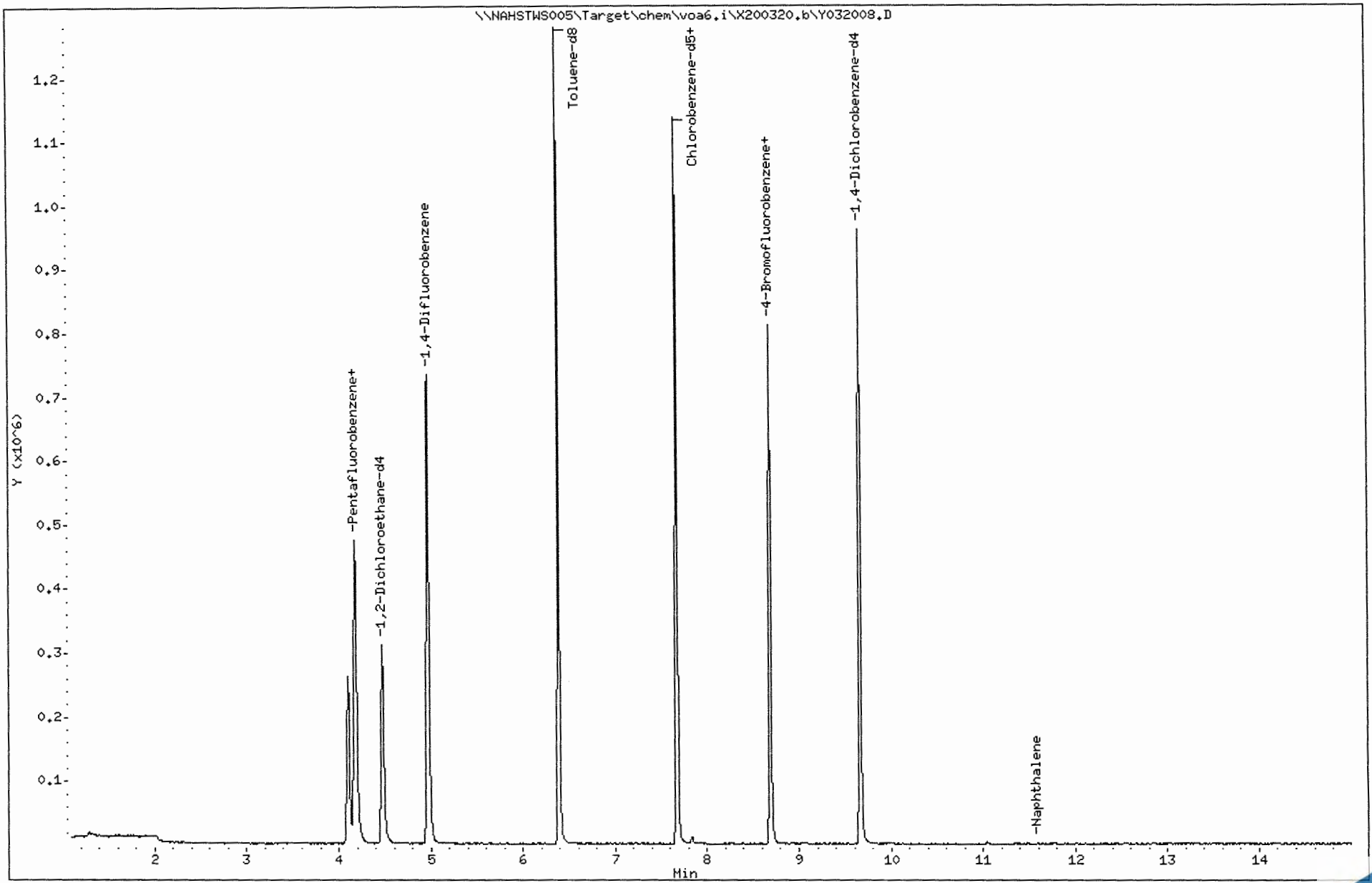
Purge Volume: 5.0

Column phase: DB624

Instrument: voa6.i

Operator: PC

Column diameter: 0.18



ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032010.D
Lab Smp Id: HS20030621-01 Client Smp ID: HS20030621-01
Inj Date : 21-MAR-2020 01:42
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-01;HS20030621-01;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 39
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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

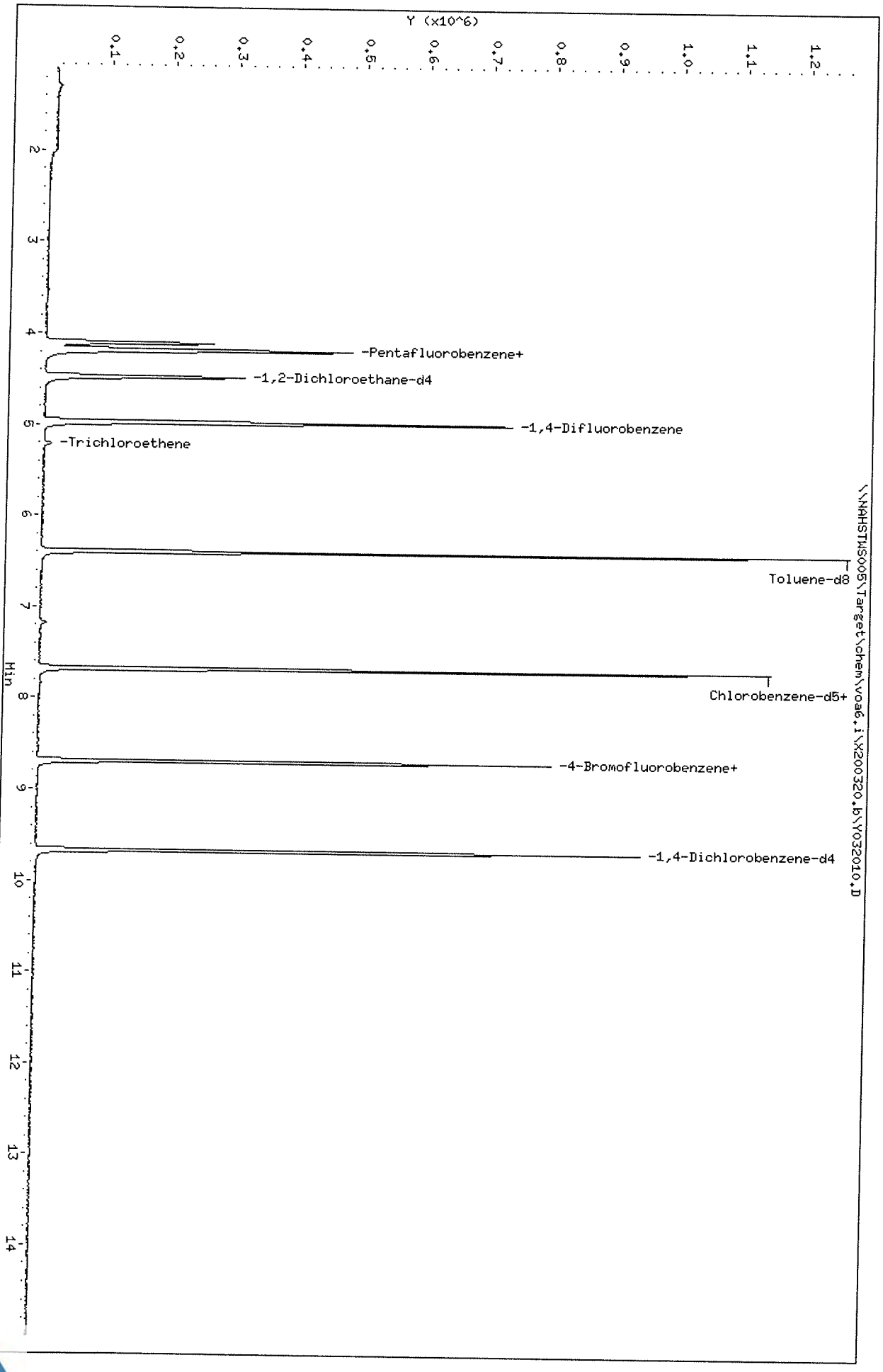
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	397960	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	188707	47.7197	47.71
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	230177	46.0253	46.02
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	591476	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	507836	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	696242	53.5254	53.52
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	235101	48.0942	48.09
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	234526	50.0000	
38 Trichloroethene	130	5.214	5.207	(1.049)	4582	1.11767	1.11(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032010.D
Date : 21-MAR-2020 01:42
Client ID: HS20030621-01
Sample Info: HS20030621-01;HS20030621-01;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032010.D

Date : 21-MAR-2020 01:42

Client ID: HS20030621-01

Instrument: voa6.i

Sample Info: HS20030621-01;HS20030621-01;;;

Purge Volume: 5.0

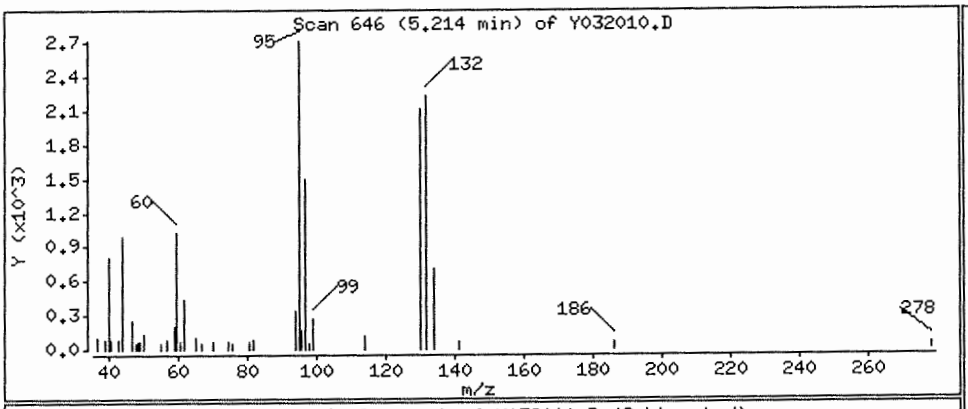
Operator: PC

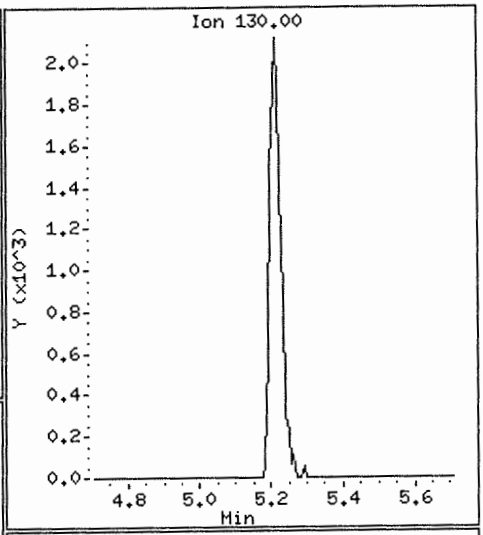
Column phase: DB624

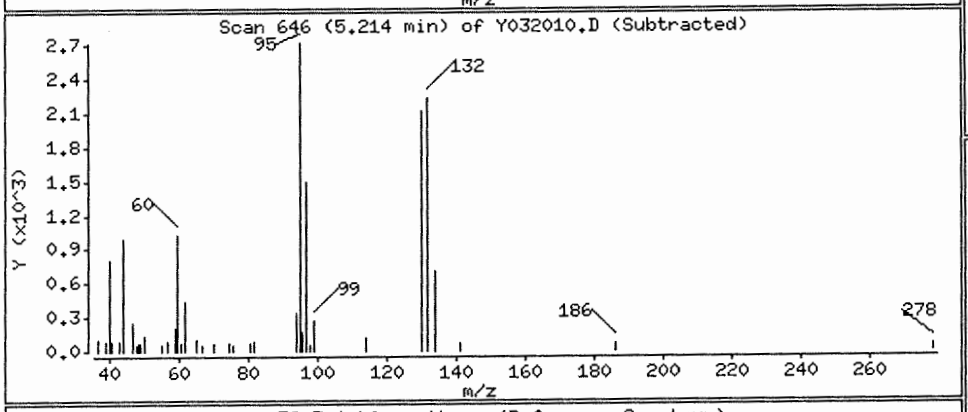
Column diameter: 0.18

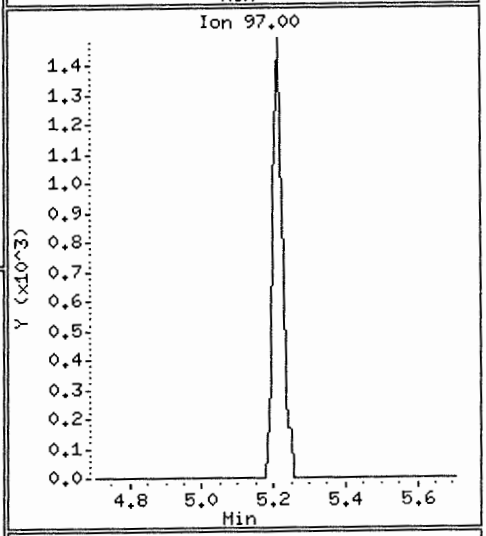
38 Trichloroethene

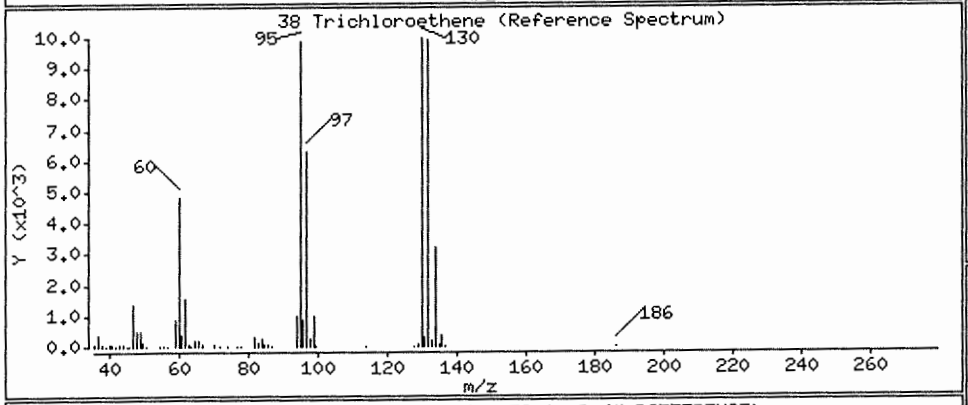
Concentration: 1.11 ug/l

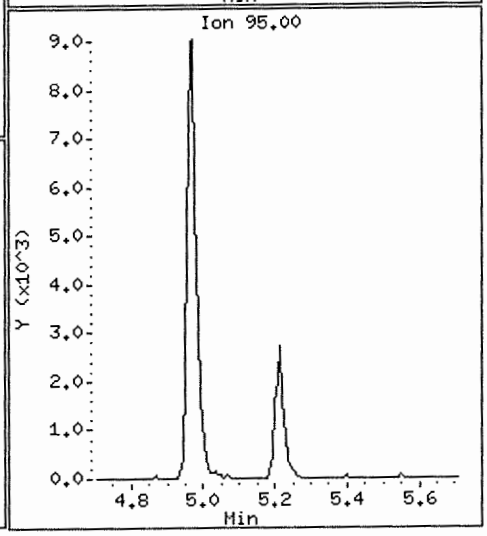


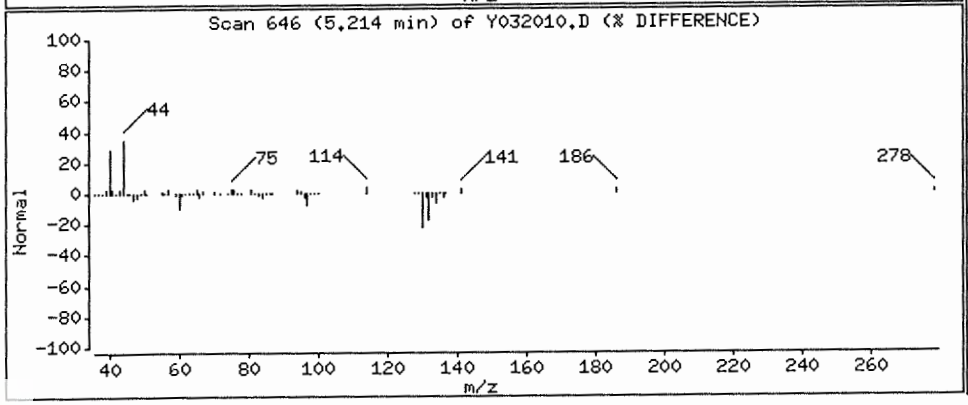












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032011.D Page 1
Report Date: 15-Apr-2020 12:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032011.D
Lab Smp Id: HS20030621-09 Client Smp ID: HS20030621-09
Inj Date : 21-MAR-2020 02:06
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-09;HS20030621-09;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 40
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

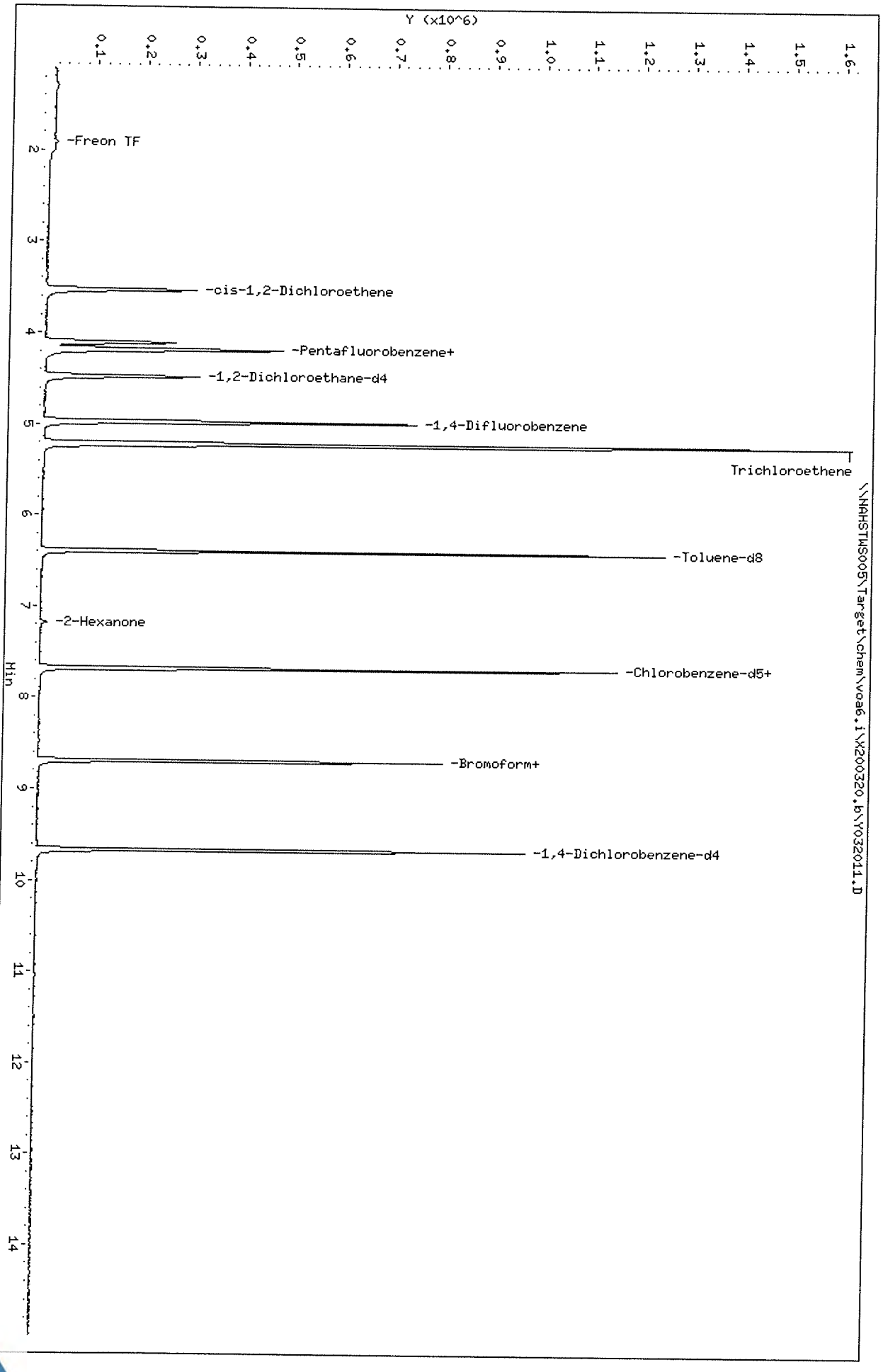
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	397440	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	187337	47.4346	47.43
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	222774	44.5984	44.59
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	592573	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	508163	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	683747	52.5296	52.52
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	240340	49.1449	49.14
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	237621	50.0000	
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	138540	30.6092	30.60
38 Trichloroethene	130	5.207	5.207	(1.048)	516167	125.674	125.67

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032011.D
Date : 21-MAR-2020 02:06
Client ID: HS200306Z1-09
Sample Info: HS200306Z1-09;HS200306Z1-09;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032011.D

Date : 21-MAR-2020 02:06

Client ID: HS20030621-09

Instrument: voa6.i

Sample Info: HS20030621-09;HS20030621-09;;;

Purge Volume: 5.0

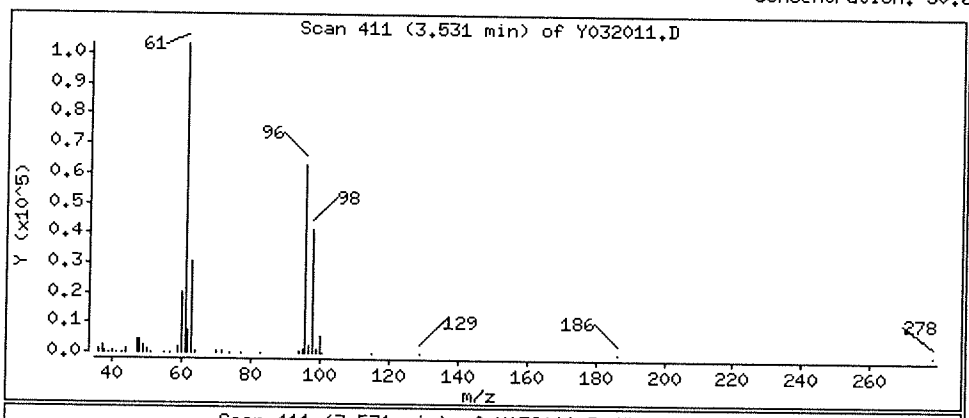
Operator: PC

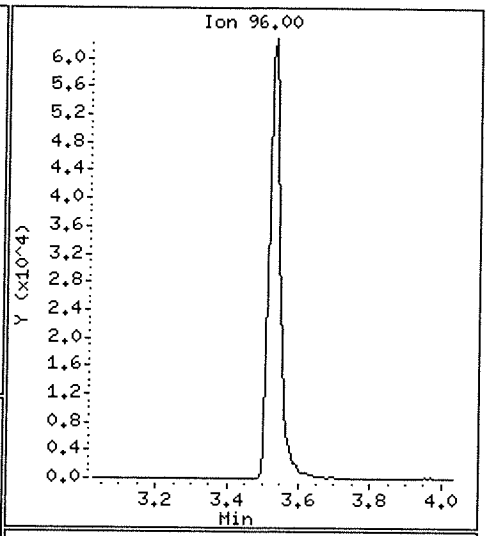
Column phase: DB624

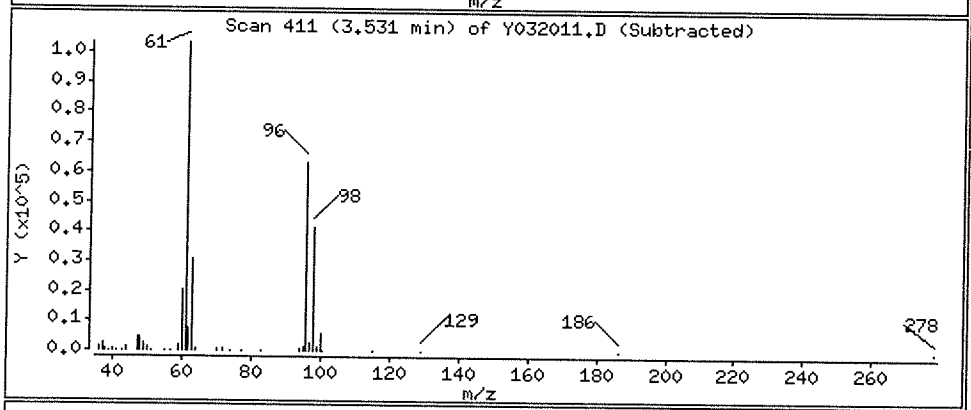
Column diameter: 0.18

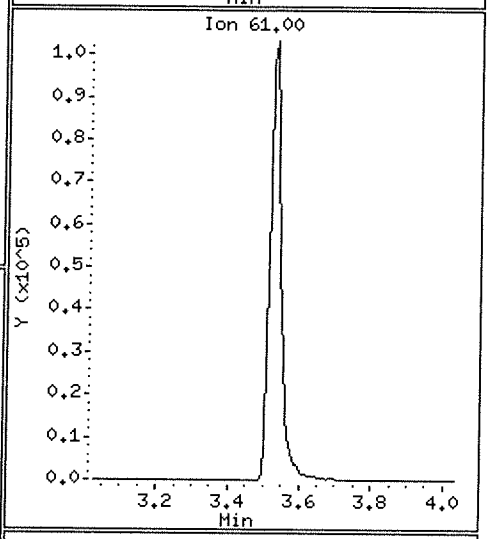
27 cis-1,2-Dichloroethene

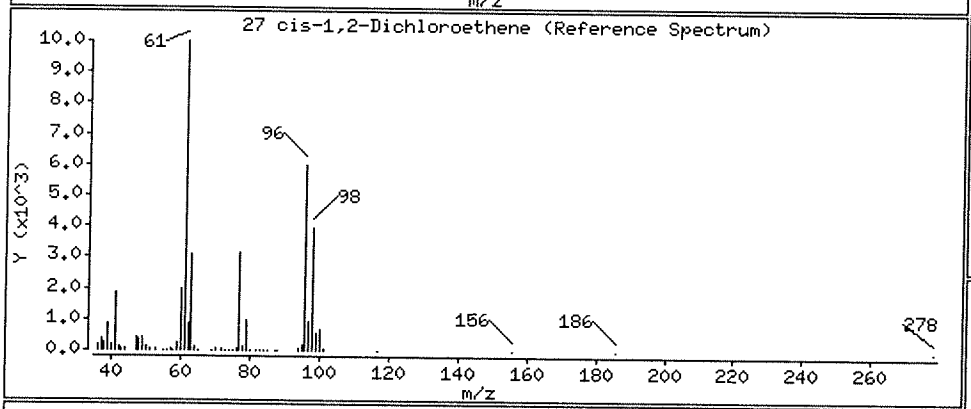
Concentration: 30.60 ug/l

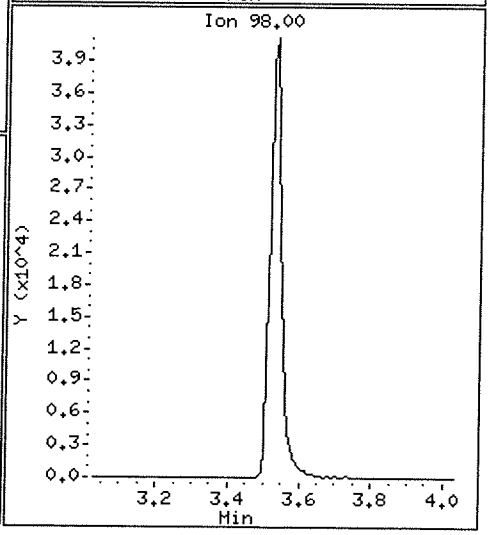


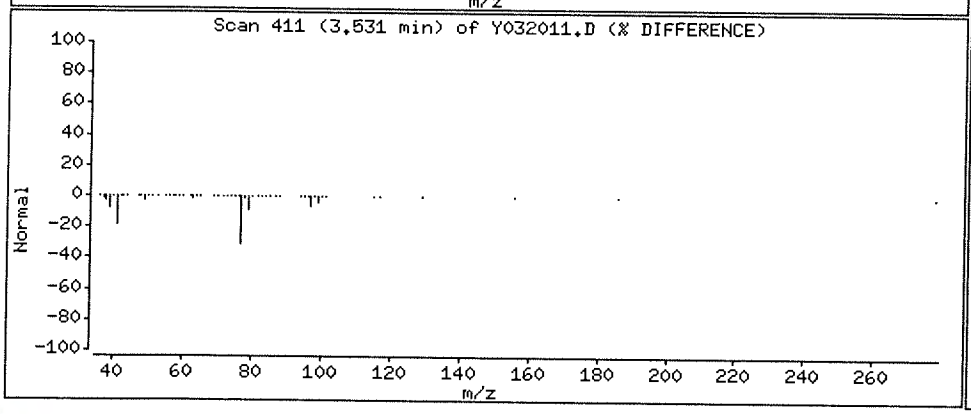












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032011.D

Date : 21-MAR-2020 02:06

Client ID: HS20030621-09

Instrument: voa6.i

Sample Info: HS20030621-09;HS20030621-09;;;

Purge Volume: 5.0

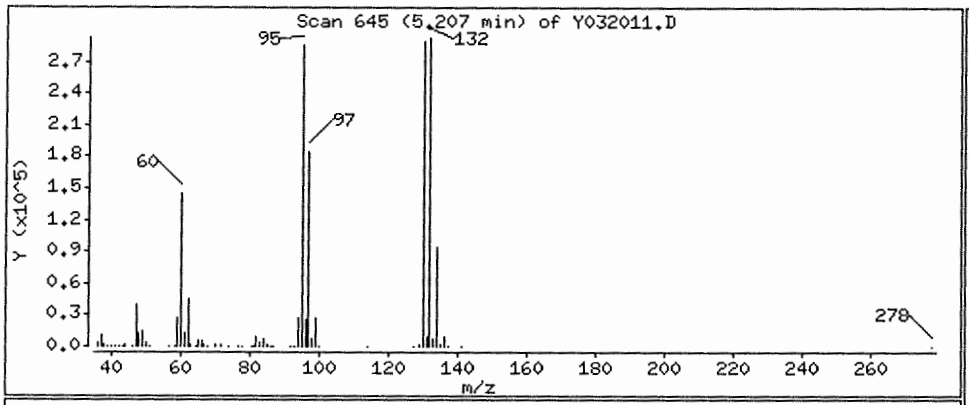
Operator: PC

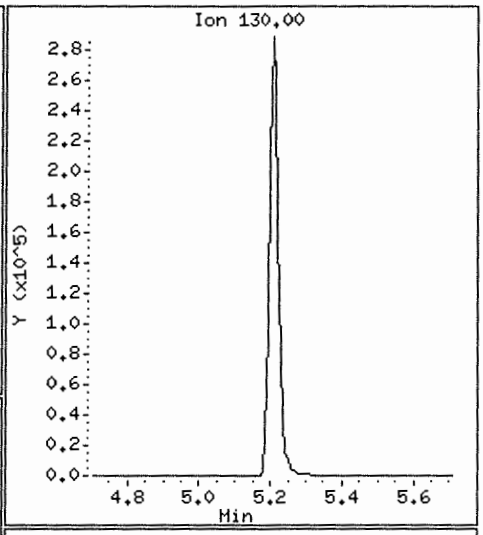
Column phase: DB624

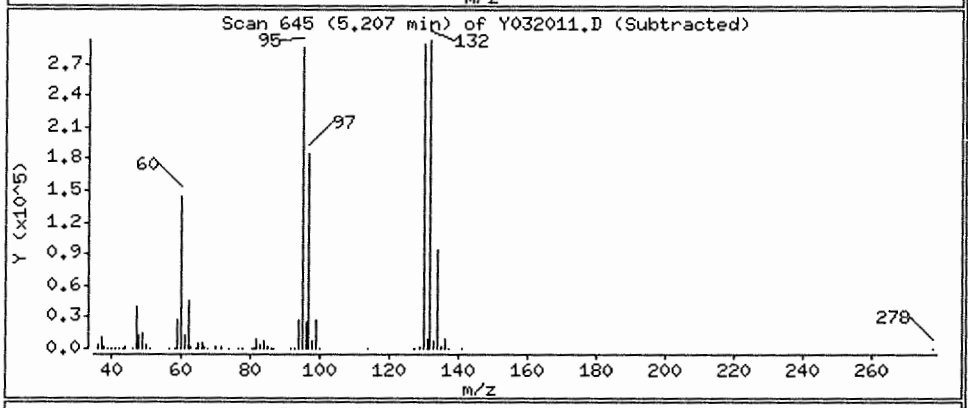
Column diameter: 0.18

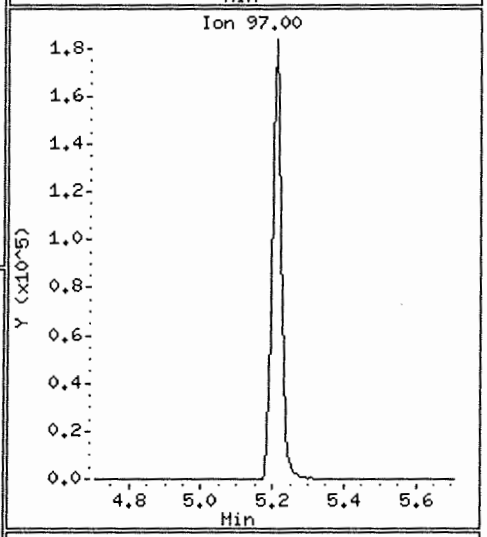
38 Trichloroethene

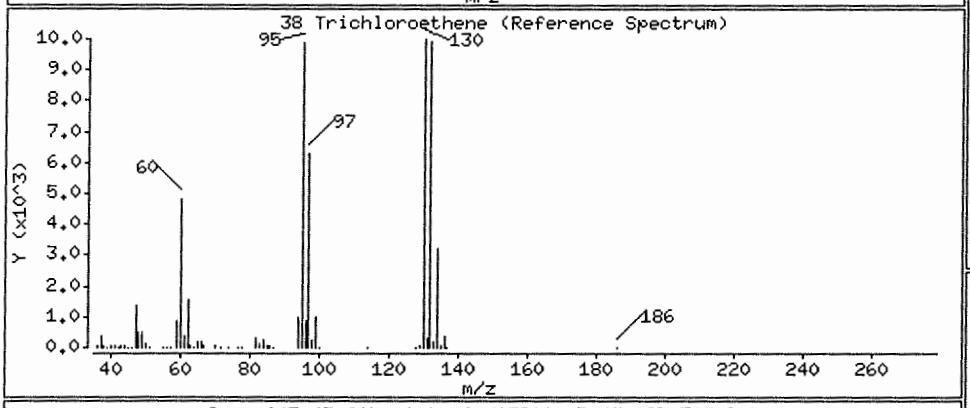
Concentration: 125.67 ug/l

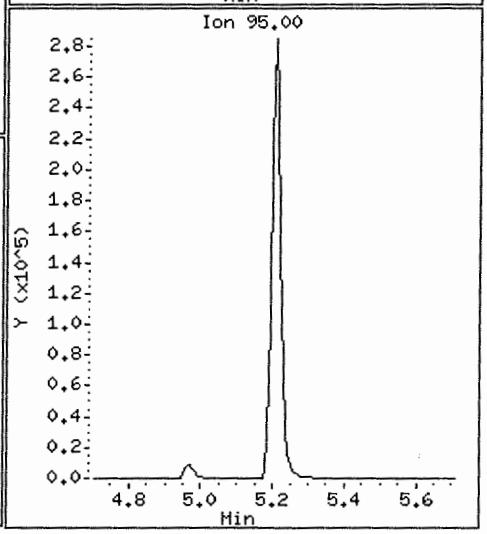


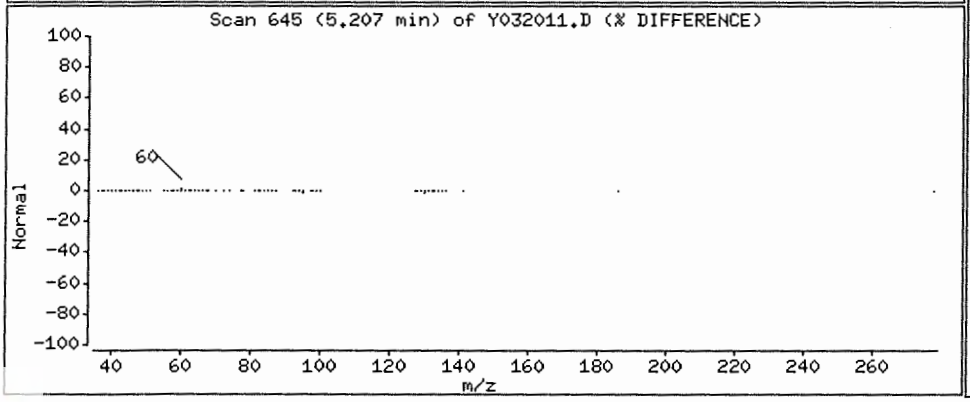












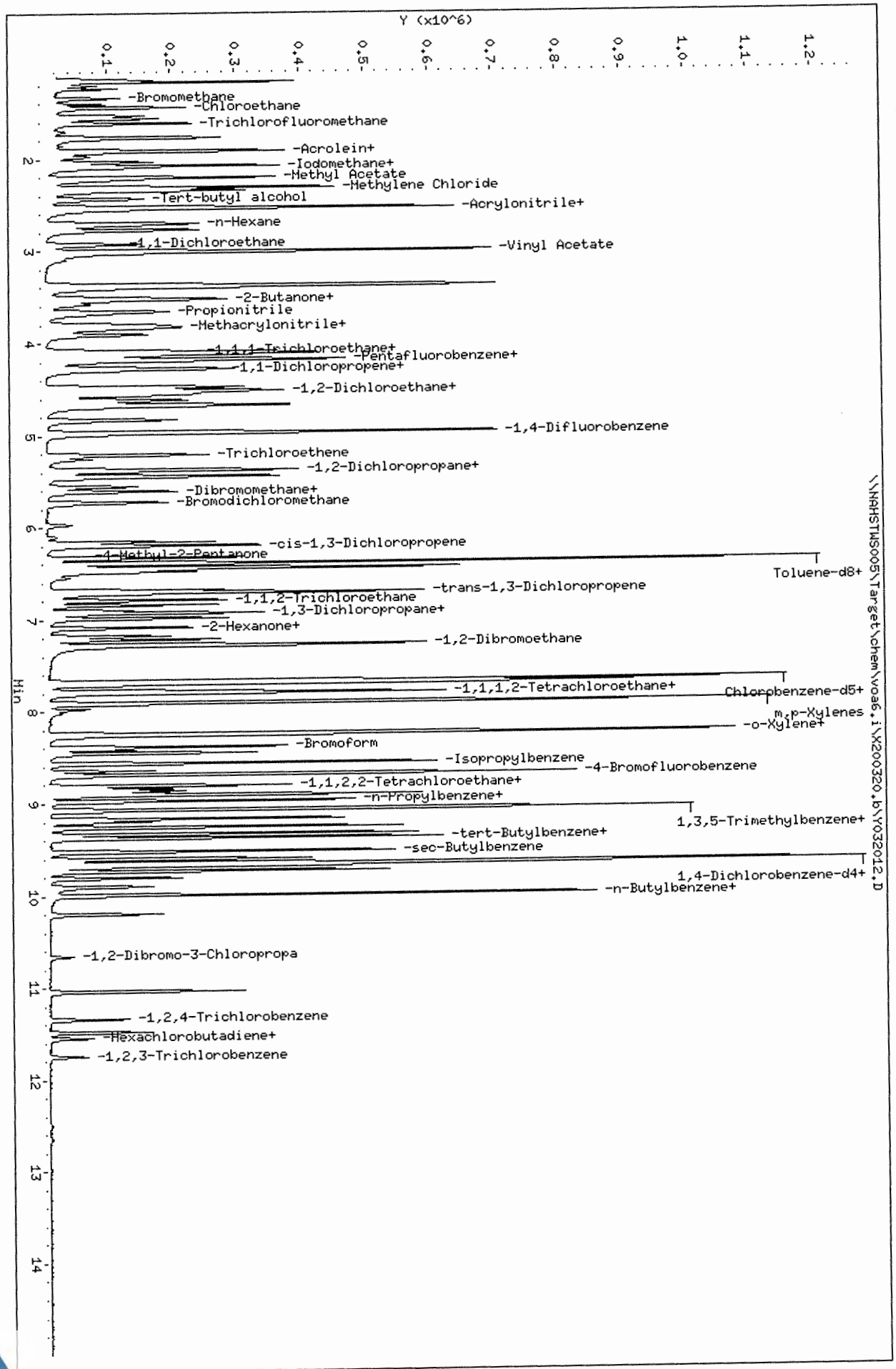
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032012.D
Lab Smp Id: HS20030621-01MS Client Smp ID: HS20030621-01MS
Inj Date : 21-MAR-2020 02:30
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-01MS;HS20030621-01MS;3;;MS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 41 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	381564	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	179086	47.2317	47.23
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	222732	46.4519	46.45
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	565201	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	491322	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	658084	52.2906	52.29
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	230333	48.7088	48.70
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	230380	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	112987	19.4364	19.43
11 1,1-Dichloroethene	96	1.911	1.912	(0.457)	60997	18.8656	18.86
17 Methylene Chloride	84	2.305	2.305	(0.551)	79404	18.6944	18.69
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	85955	19.7812	19.78
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	114988	19.2568	19.25
38 Trichloroethene	130	5.206	5.207	(1.048)	82290	21.0059	21.00
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	56680	20.0235	20.02



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032012.D
Date : 21-MAR-2020 02:30
Client ID: HS20030621-01MS
Sample Info: HS20030621-01MS;HS20030621-01MS;3;;MS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032013.D Page 1
Report Date: 15-Apr-2020 12:07

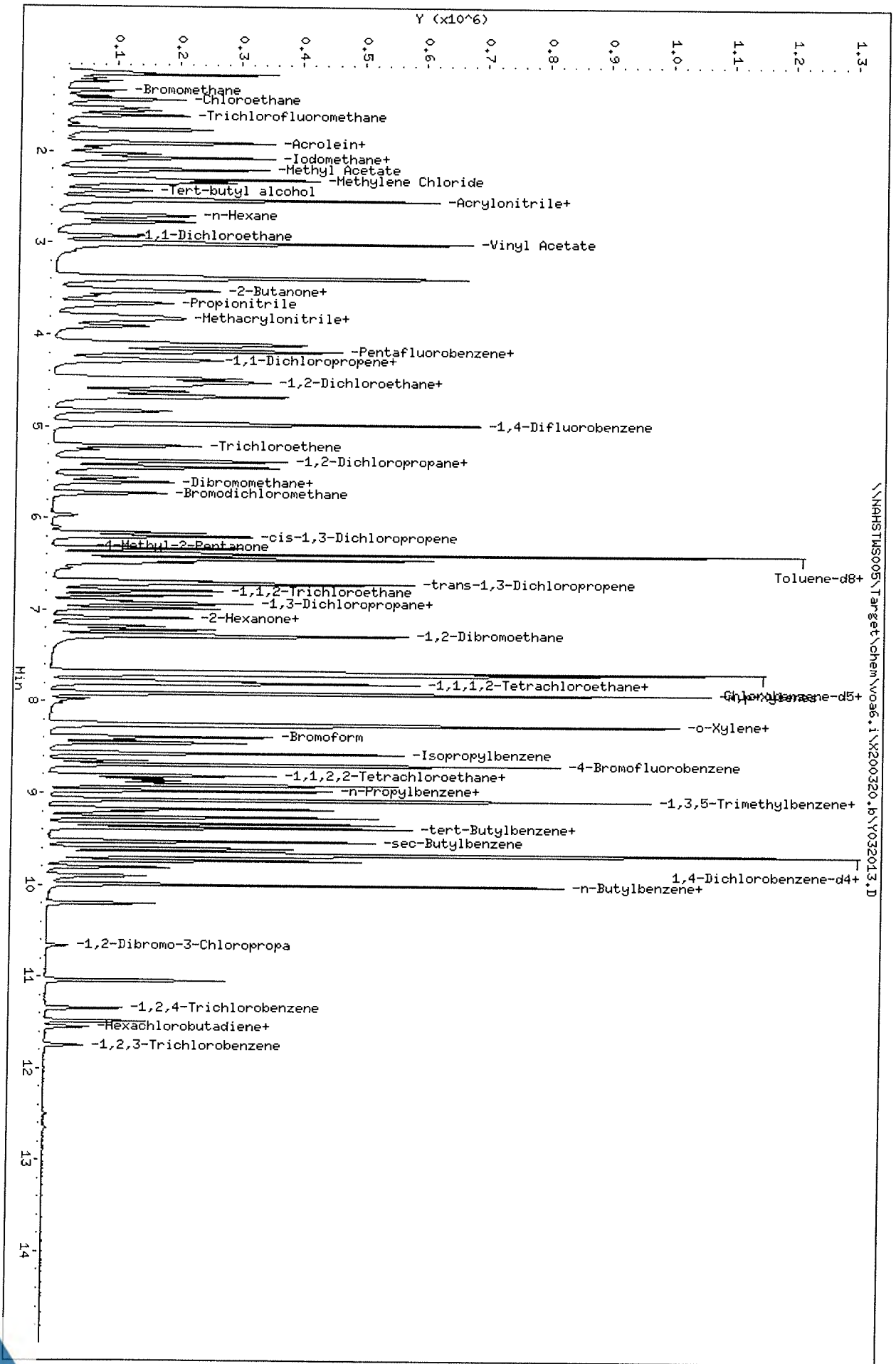
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032013.D
Lab Smp Id: HS20030621-01MSD Client Smp ID: HS20030621-01MSD
Inj Date : 21-MAR-2020 02:54
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-01MSD;HS20030621-01MSD;3;;MSD
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 41 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	379651	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	177780	47.1233	47.12
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	218099	45.7123	45.71
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	565579	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	494280	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	661242	52.2270	52.22
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	231786	48.7228	48.72
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	239783	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	100992	17.4606	17.46
11 1,1-Dichloroethene	96	1.911	1.912	(0.457)	56809	17.6589	17.65
17 Methylene Chloride	84	2.305	2.305	(0.551)	74541	17.5580	17.55
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	80706	18.6668	18.66
33 1,2-Dichloroethane	62	4.555	4.562	(0.916)	116598	19.5134	19.51
38 Trichloroethene	130	5.206	5.207	(1.048)	77581	19.7906	19.79
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	56173	19.7256	19.72



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032013.D
Date : 21-MAR-2020 02:54
Client ID: HS20030621-01MSD
Sample Info: HS20030621-01MSD;HS20030621-01MSD;3;;MSD
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032015.D Page 1
Report Date: 15-Apr-2020 12:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032015.D
Lab Smp Id: HS20030621-02 Client Smp ID: HS20030621-02
Inj Date : 21-MAR-2020 03:42
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-02;HS20030621-02;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 43
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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

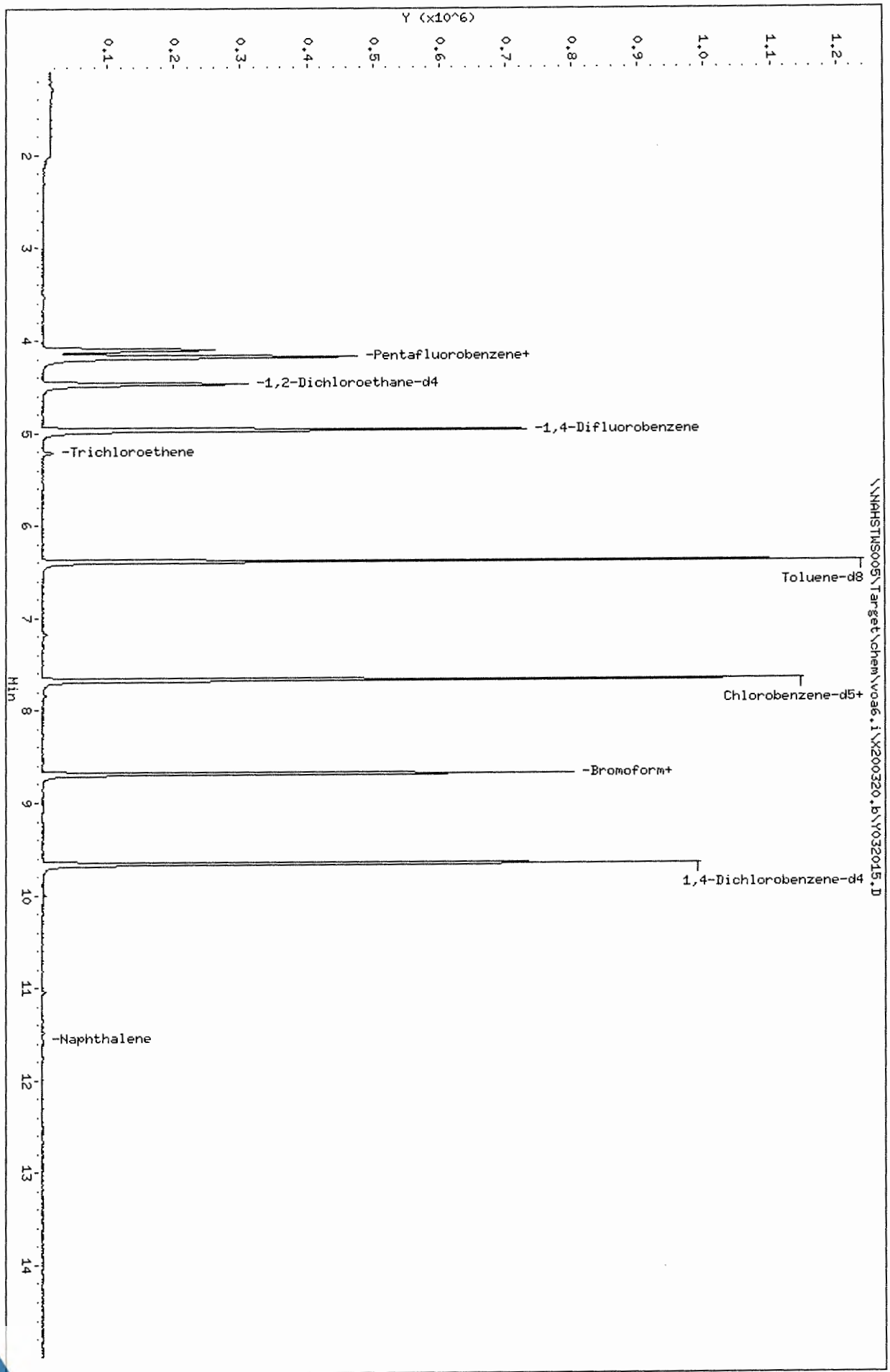
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	392150	50.0000	
$ 30 Dibromofluoromethane	113	4.104	4.103	(0.981)	186493	47.8589	47.85
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	226332	45.9267	45.92
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	588000	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	504160	50.0000	
$ 48 Toluene-d8	98	6.389	6.388	(0.833)	689366	53.3830	53.38
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	233322	48.0781	48.07
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	237349	50.0000	
38 Trichloroethene	130	5.214	5.207	(1.049)	5269	1.29285	1.29(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032015.D
Date : 21-MAR-2020 03:42
Client ID: HS20030621-02
Sample Info: HS20030621-02;HS20030621-02;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032015.D

Date : 21-MAR-2020 03:42

Client ID: HS20030621-02

Instrument: voa6.i

Sample Info: HS20030621-02;HS20030621-02;;;

Purge Volume: 5.0

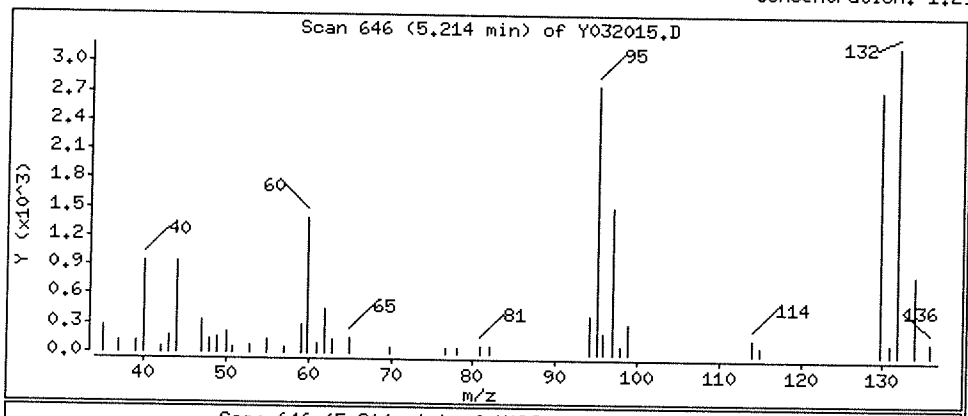
Operator: PC

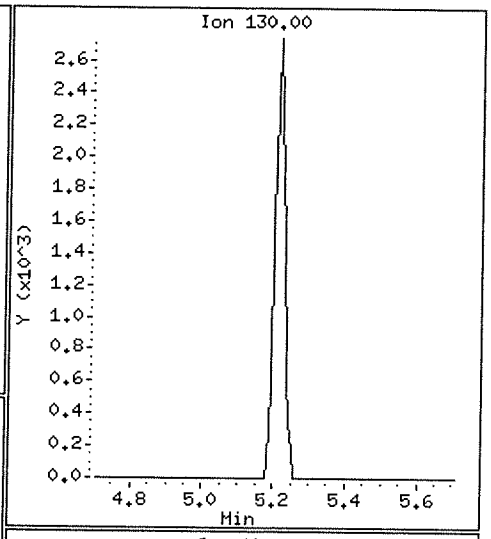
Column phase: DB624

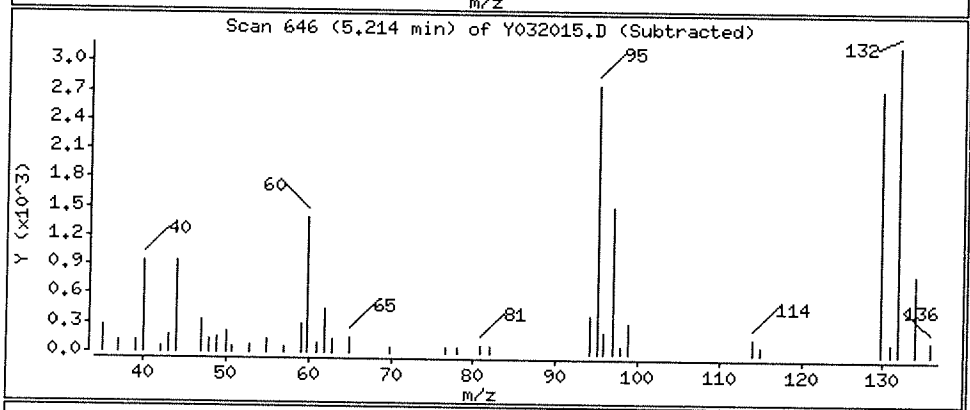
Column diameter: 0.18

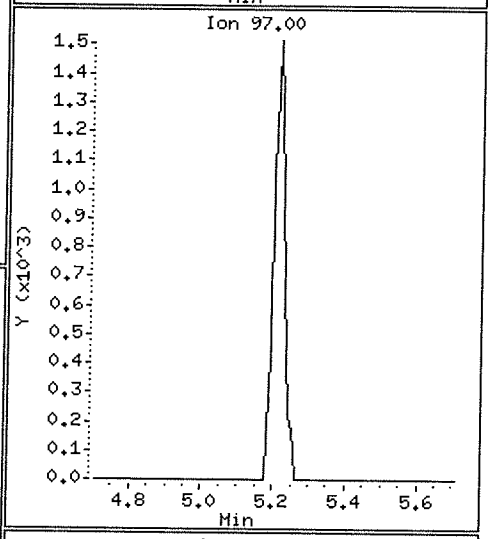
38 Trichloroethene

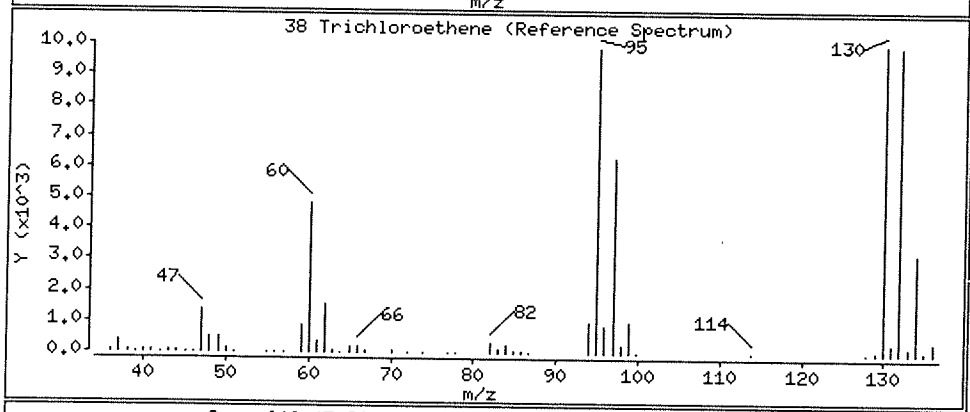
Concentration: 1.29 ug/l

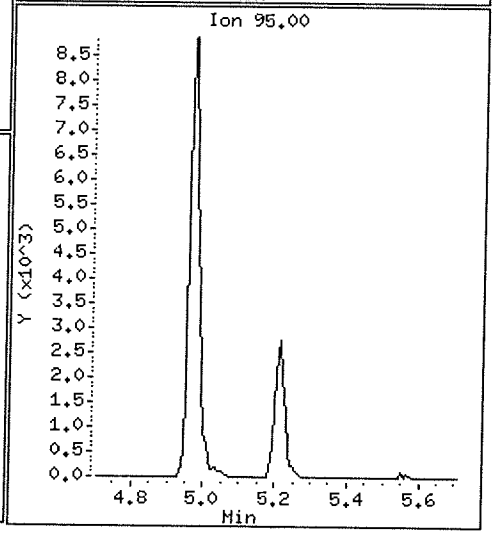


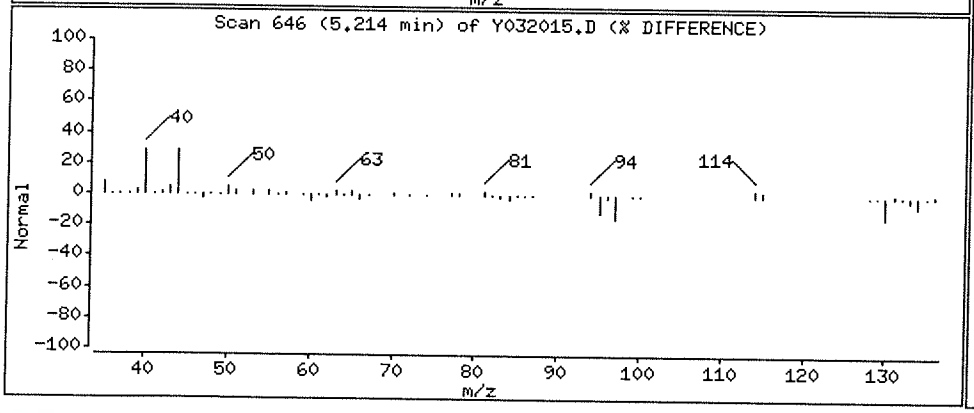












ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032016.D
Lab Smp Id: HS20030621-03 Client Smp ID: HS20030621-03
Inj Date : 21-MAR-2020 04:06
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-03;HS20030621-03;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 44
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	397965	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	187858	47.5040	47.50
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	227391	45.4658	45.46
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	597797	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	513003	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	698278	53.1407	53.14
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	239315	48.4669	48.46
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	241902	50.0000	
38 Trichloroethene	130	5.214	5.207	(1.049)	2521	0.60844	0.60(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032016.D

Date : 21-MAR-2020 04:06

Client ID: HS20030621-03

Instrument: voa6.i

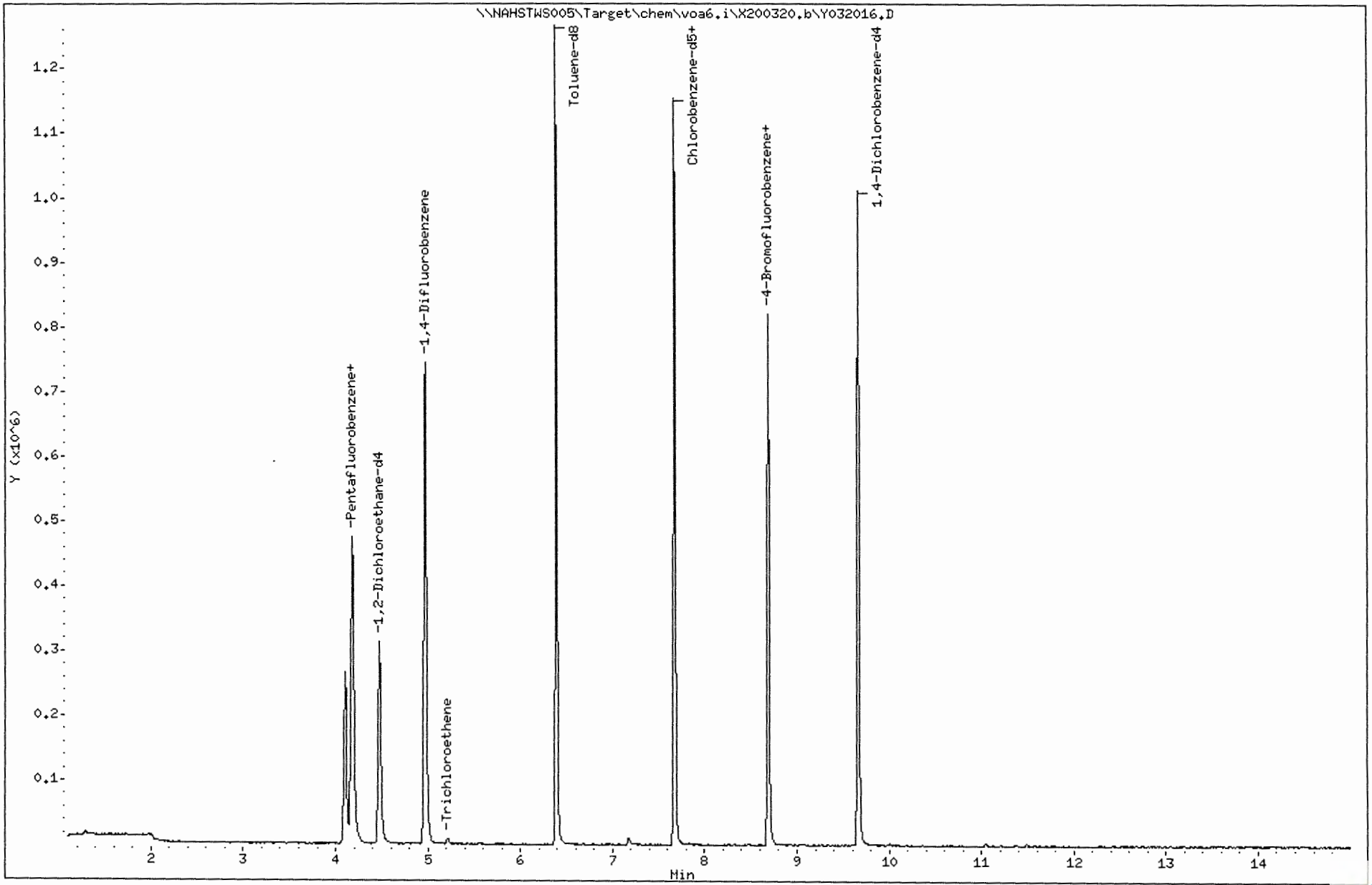
Sample Info: HS20030621-03;HS20030621-03;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032016.D

Date : 21-MAR-2020 04:06

Client ID: HS20030621-03

Instrument: voa6.i

Sample Info: HS20030621-03;HS20030621-03;;;

Purge Volume: 5.0

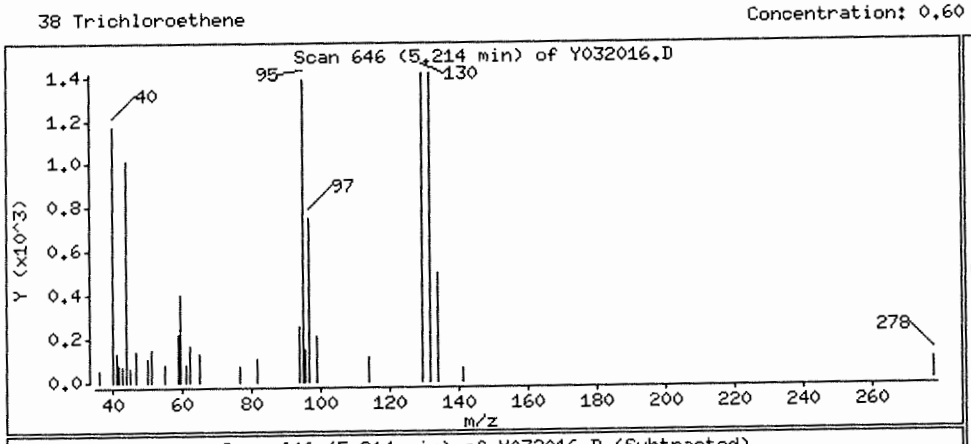
Operator: PC

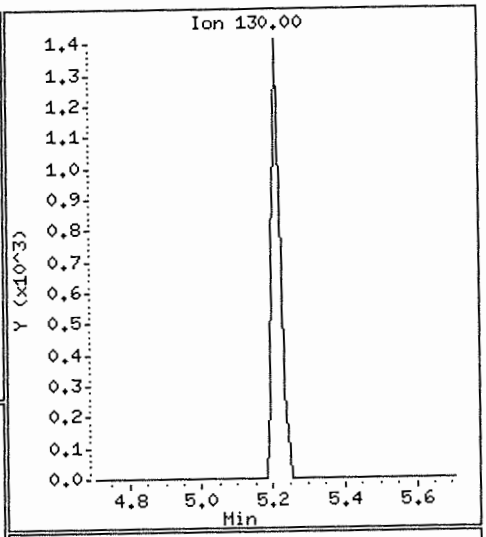
Column phase: DB624

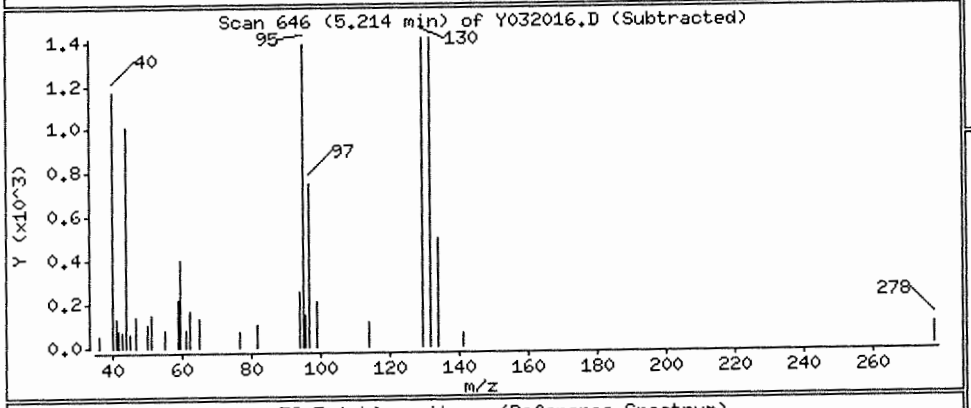
Column diameter: 0.18

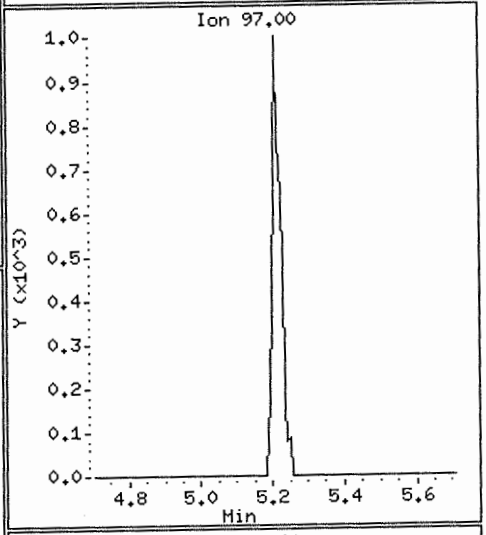
38 Trichloroethene

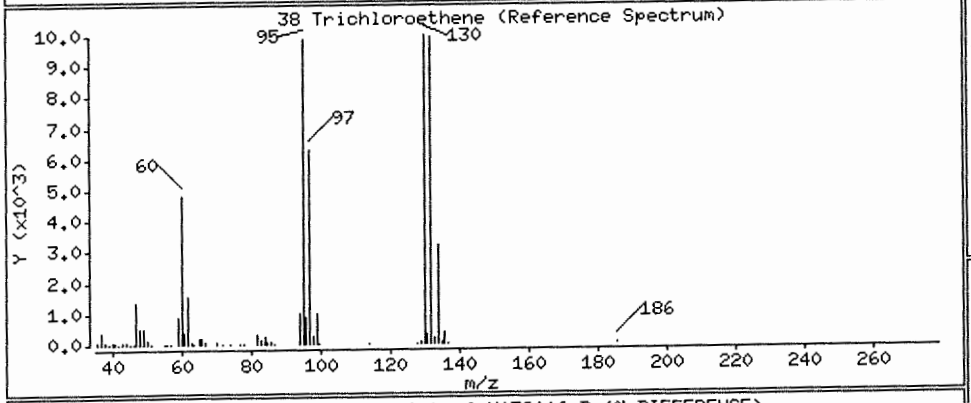
Concentration: 0.60 ug/l

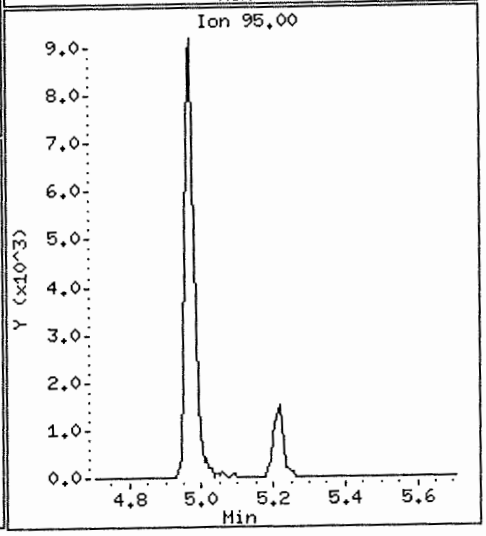


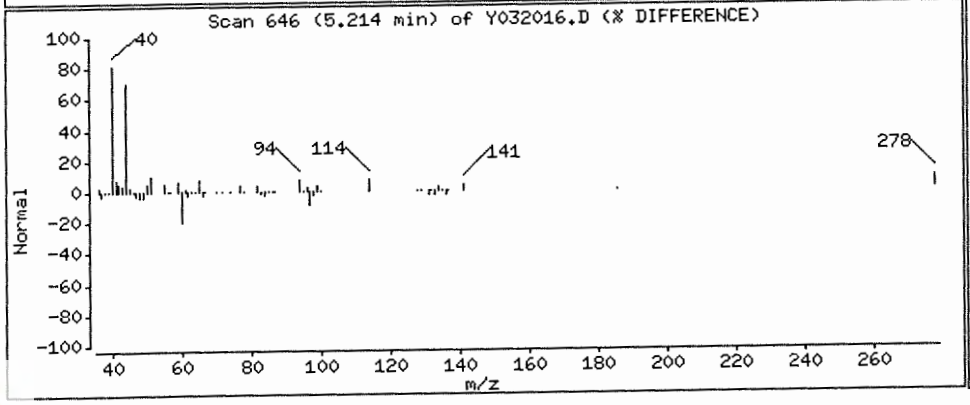












ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032017.D
Lab Smp Id: HS20030621-04 Client Smp ID: HS20030621-04
Inj Date : 21-MAR-2020 04:30
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-04;HS20030621-04;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 45
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

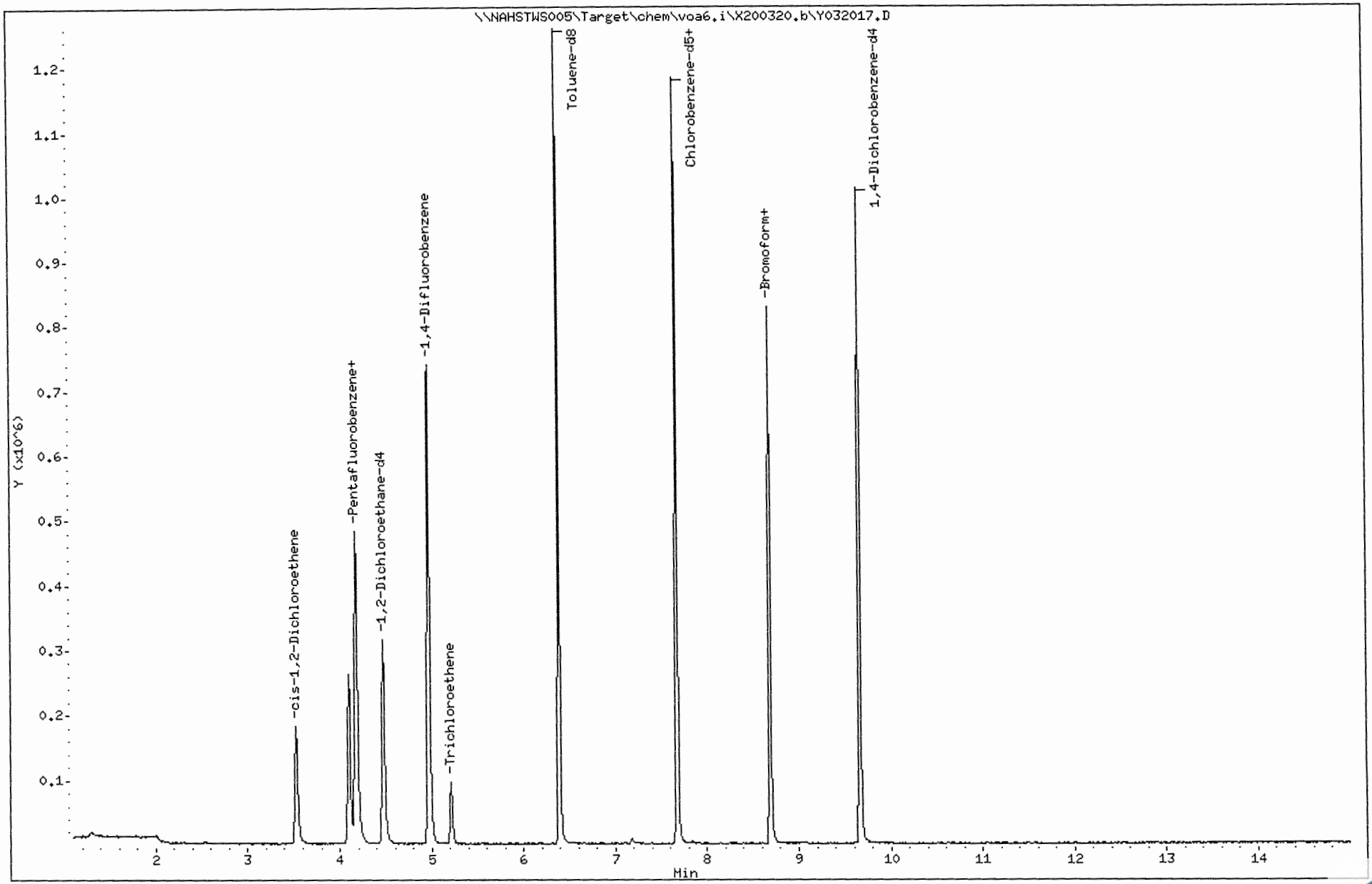
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	404027	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	187783	46.7709	46.77
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	231403	45.5741	45.57
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	597330	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	521134	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	702979	52.6631	52.66
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	245998	49.0489	49.04
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	245233	50.0000	
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	84101	18.2785	18.27
38 Trichloroethene	130	5.206	5.207	(1.048)	31221	7.54101	7.54

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032017.D
Date : 21-MAR-2020 04:30
Client ID: HS20030621-04
Sample Info: HS20030621-04;HS20030621-04;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032017.D

Date : 21-MAR-2020 04:30

Client ID: HS20030621-04

Instrument: voa6.i

Sample Info: HS20030621-04;HS20030621-04;;;

Purge Volume: 5.0

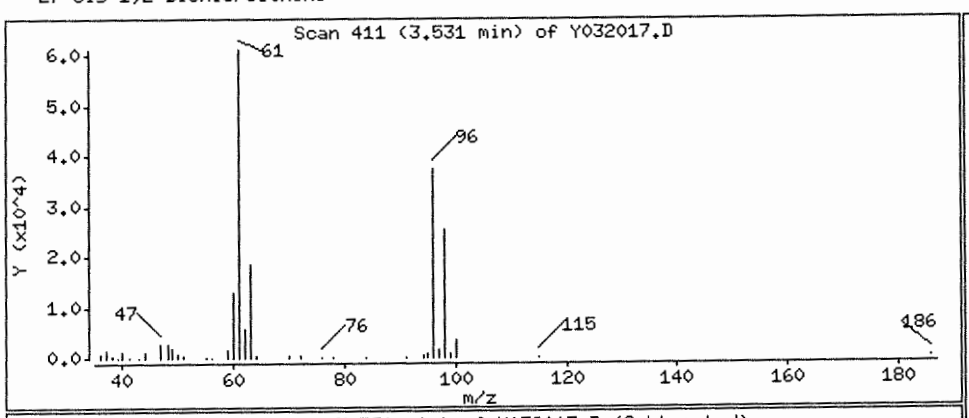
Operator: PC

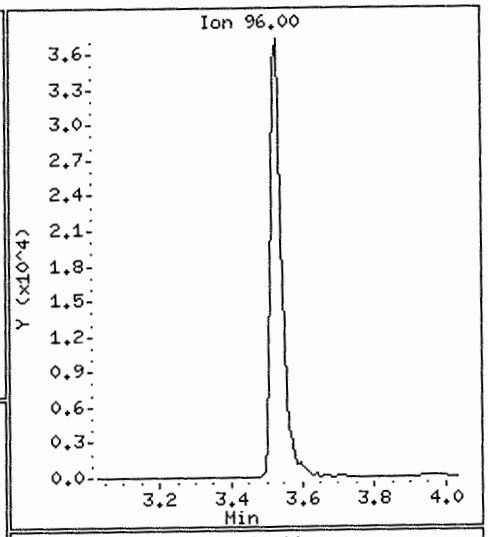
Column phase: DB624

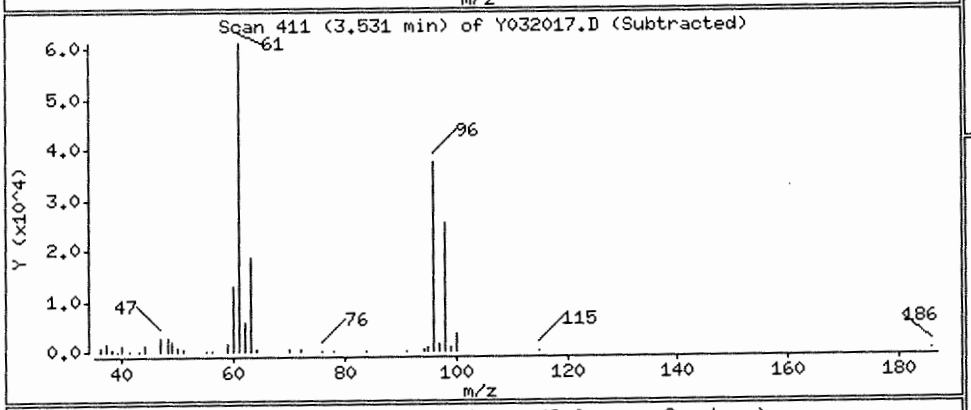
Column diameter: 0.18

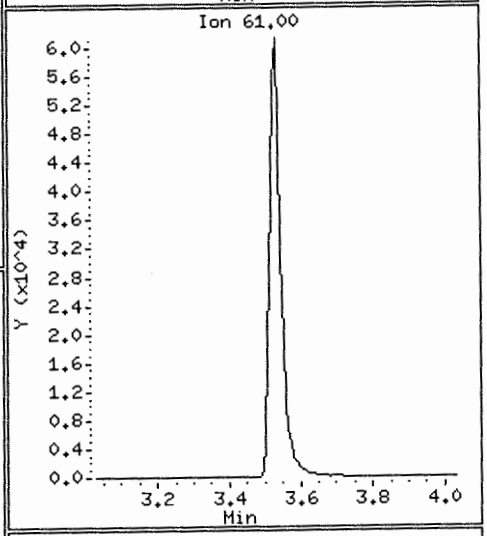
27 cis-1,2-Dichloroethene

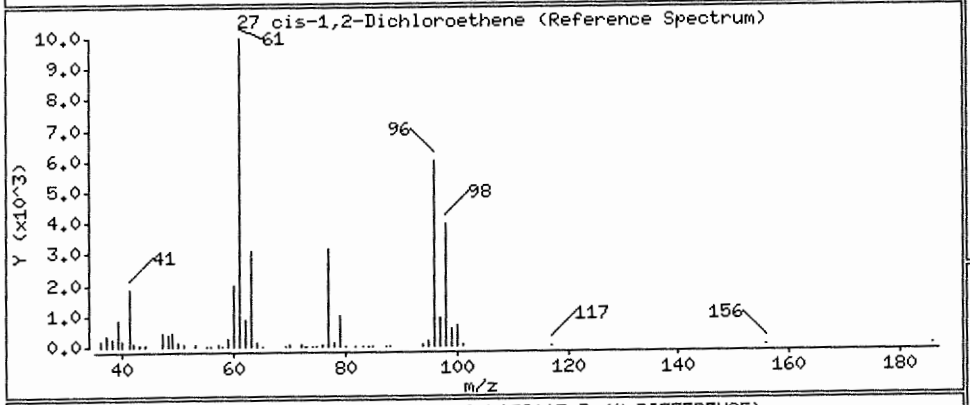
Concentration: 18.27 ug/l

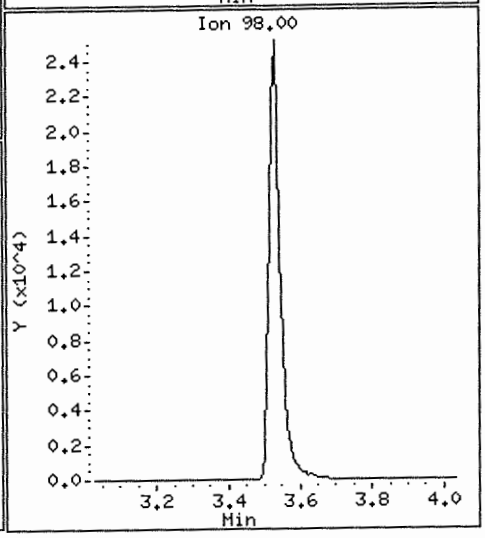


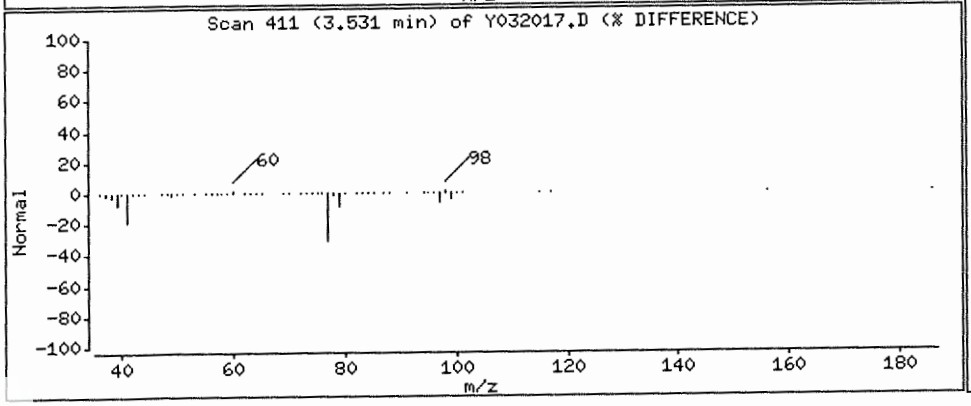












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032017.D

Date : 21-MAR-2020 04:30

Client ID: HS20030621-04

Instrument: voa6.i

Sample Info: HS20030621-04;HS20030621-04;;;

Purge Volume: 5.0

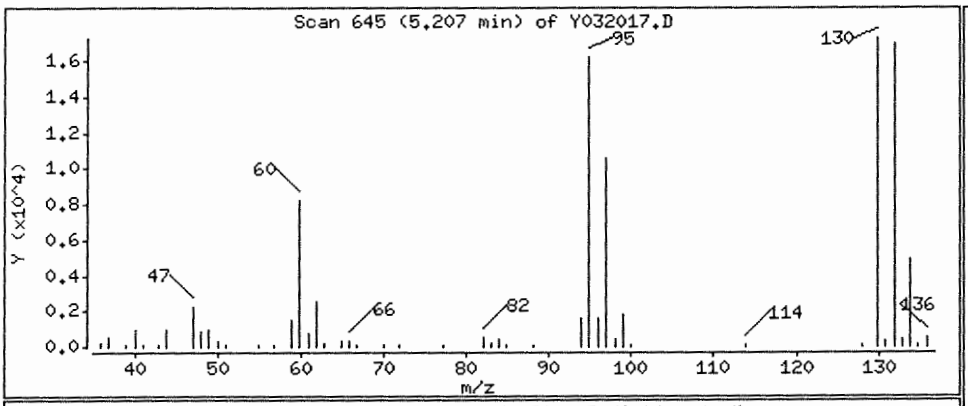
Operator: PC

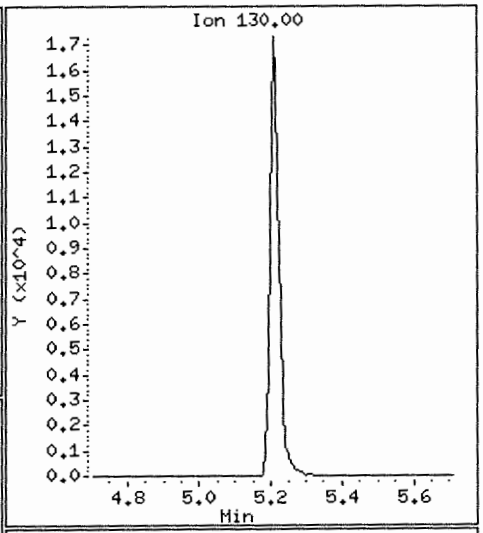
Column phase: DB624

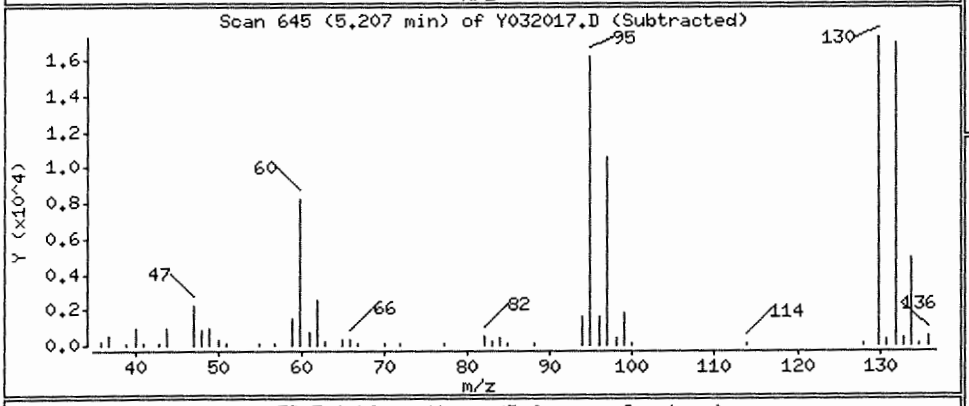
Column diameter: 0.18

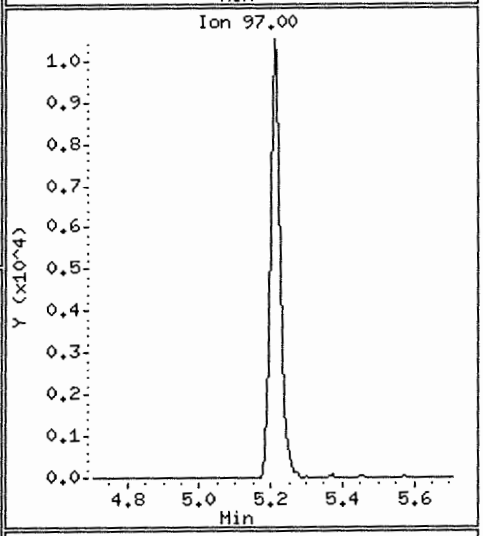
38 Trichloroethene

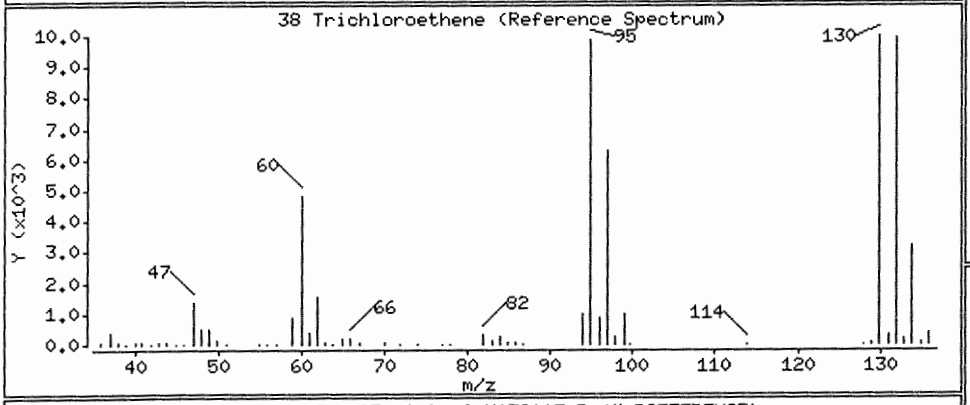
Concentration: 7.54 ug/l

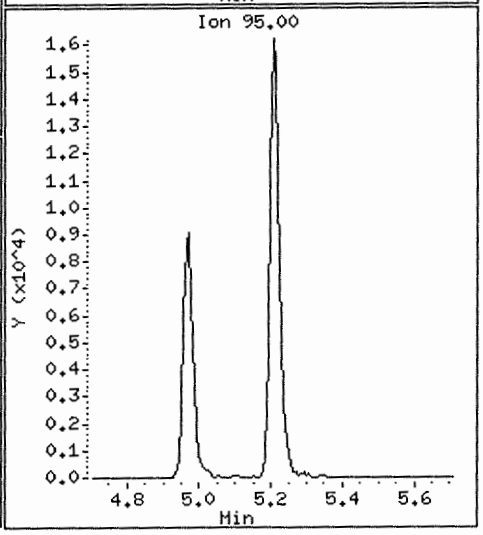


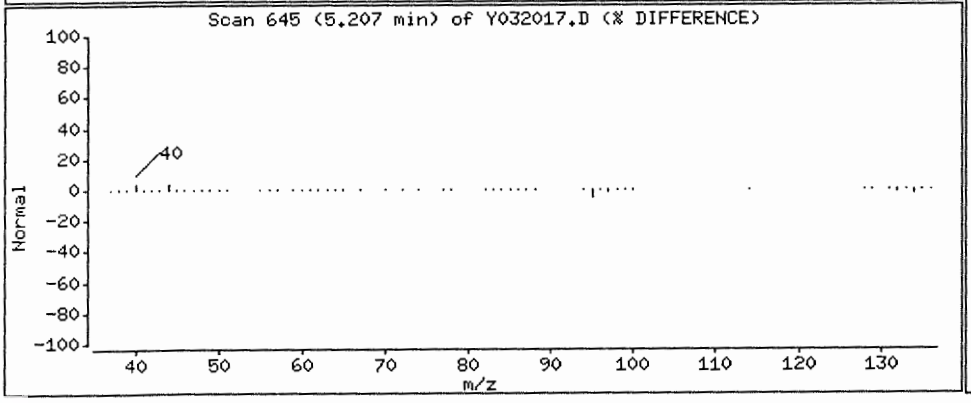












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032018.D Page 1
Report Date: 15-Apr-2020 12:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032018.D
Lab Smp Id: HS20030621-05 Client Smp ID: HS20030621-05
Inj Date : 21-MAR-2020 04:54
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-05;HS20030621-05;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 46
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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

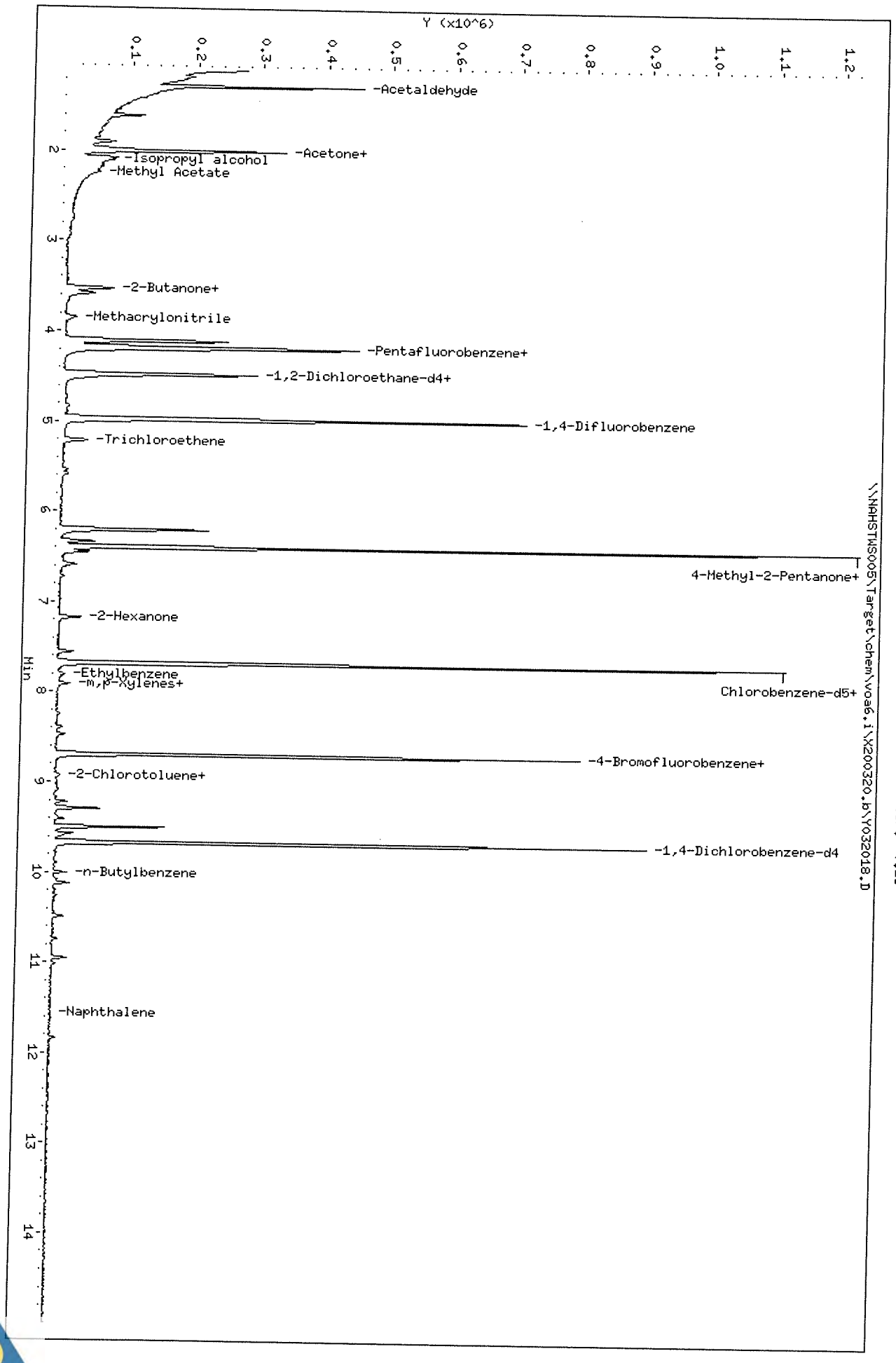
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	382544	50.0000	
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	180443	47.4682	47.46
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	216412	45.0133	45.01
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	564707	50.0000	
*	47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	494516	50.0000	
$	48 Toluene-d8	98	6.388	6.388	(0.833)	670114	52.9035	52.90
$	69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	227403	47.7691	47.76
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	211880	50.0000	
	27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	33972	7.79810	7.79
	38 Trichloroethene	130	5.206	5.207	(1.048)	11776	3.00865	3.00(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032018.D
Date : 21-MAR-2020 04:54
Client ID: HS20030621-05
Sample Info: HS20030621-05;HS20030621-05;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032018.D

Date : 21-MAR-2020 04:54

Client ID: HS20030621-05

Instrument: voa6.i

Sample Info: HS20030621-05;HS20030621-05;;;

Purge Volume: 5.0

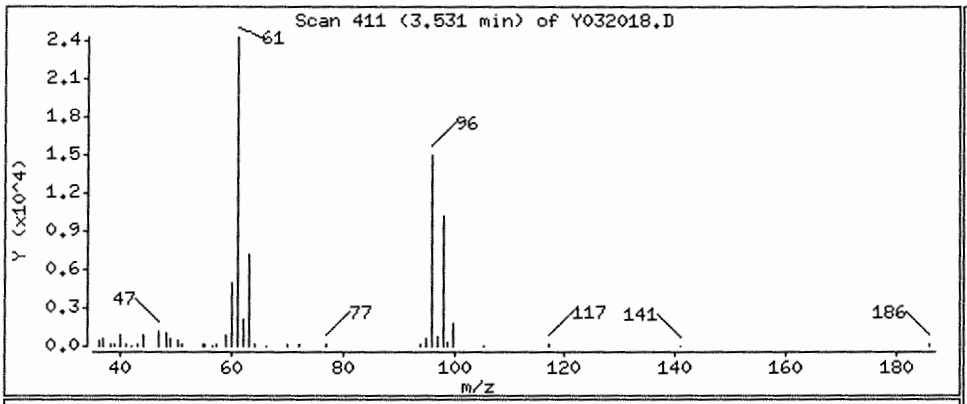
Operator: PC

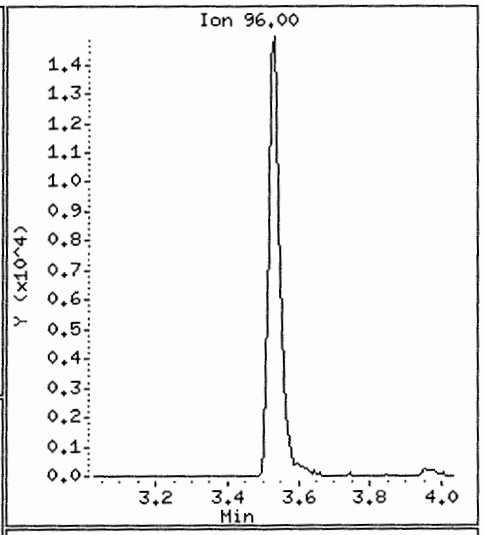
Column phase: DB624

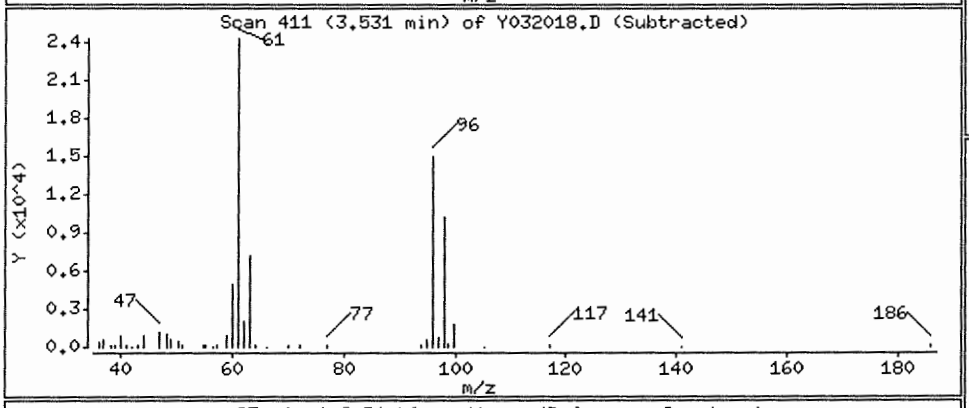
Column diameter: 0.18

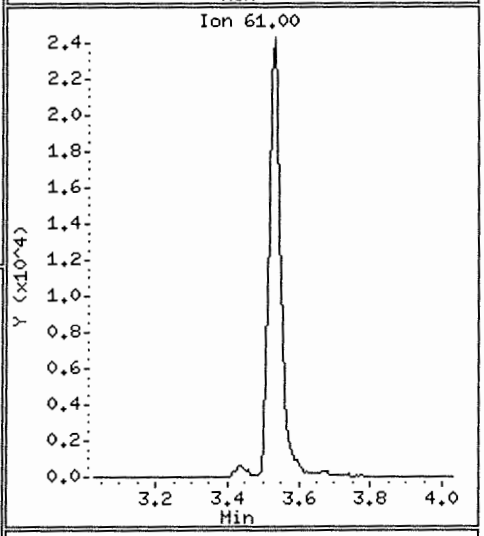
27 cis-1,2-Dichloroethene

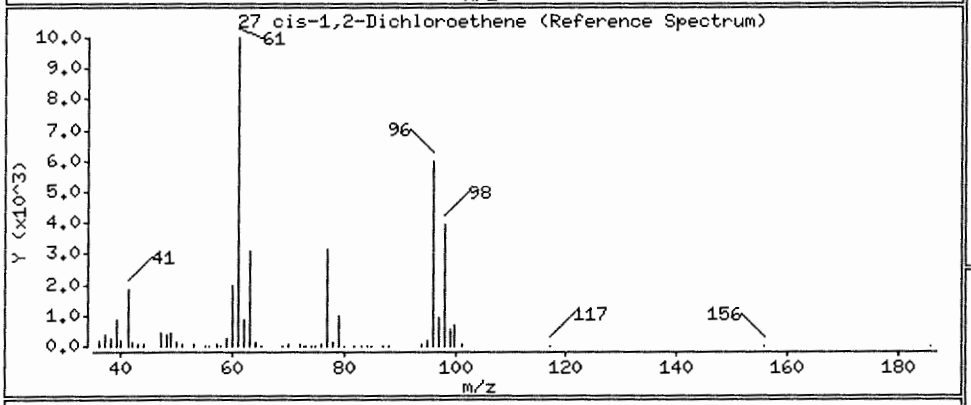
Concentration: 7.79 ug/l

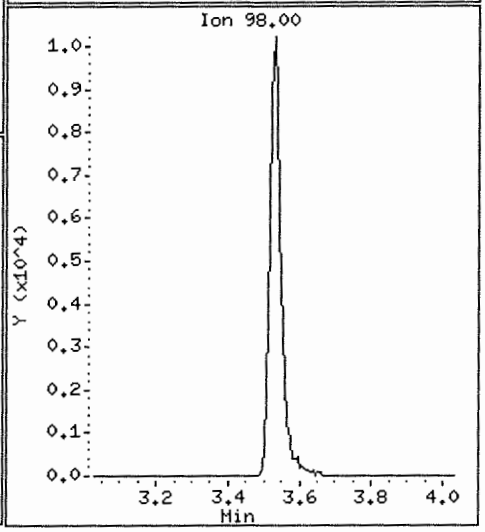


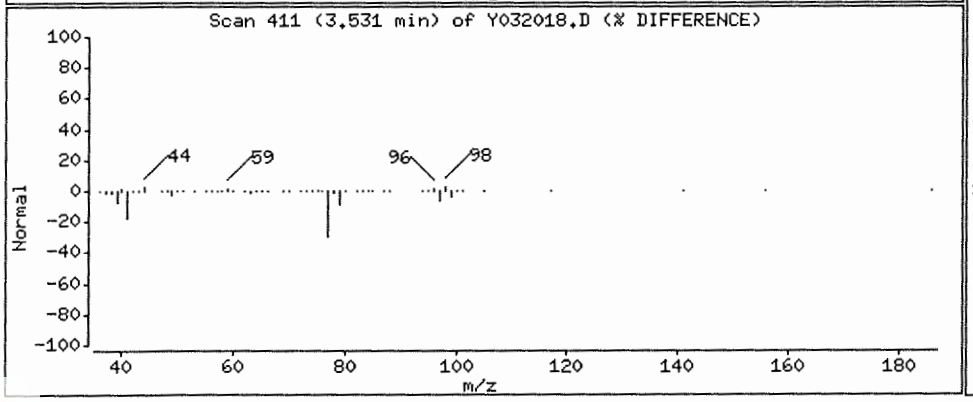












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032018.D

Date : 21-MAR-2020 04:54

Client ID: HS20030621-05

Instrument: voa6.i

Sample Info: HS20030621-05;HS20030621-05;;;

Purge Volume: 5.0

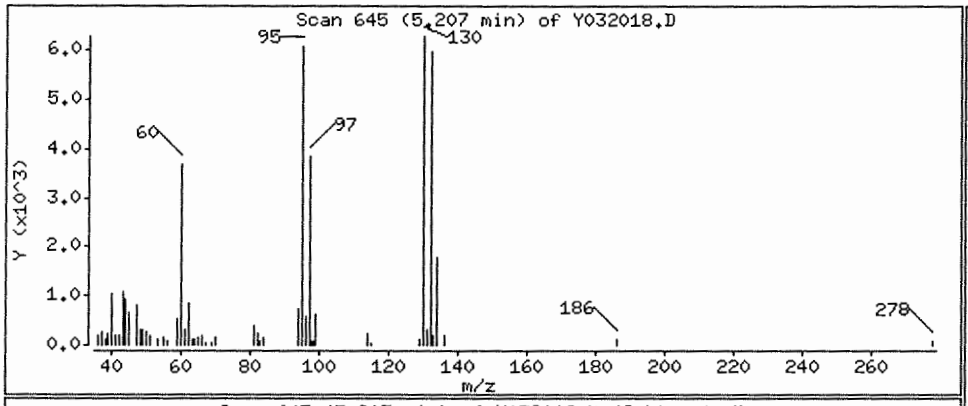
Operator: PC

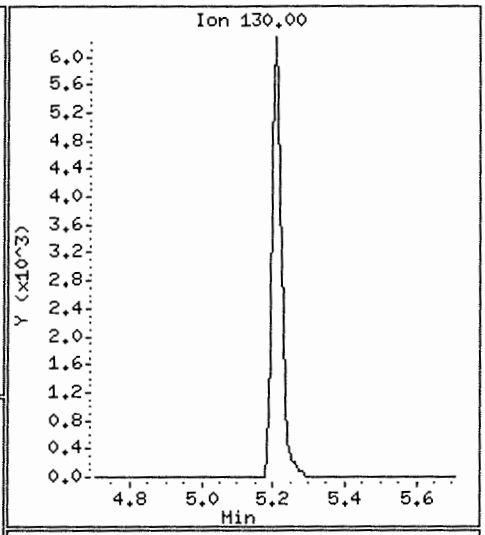
Column phase: DB624

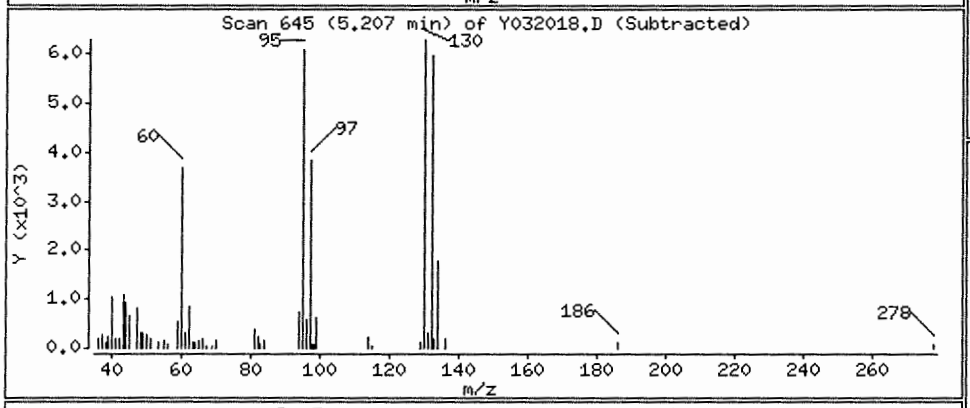
Column diameter: 0.18

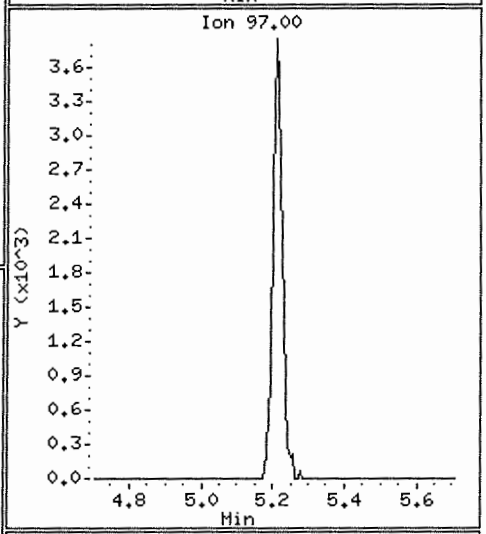
38 Trichloroethene

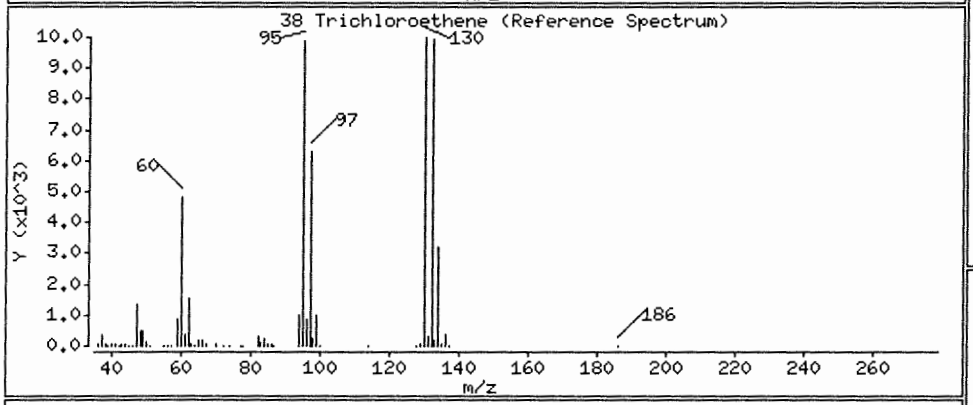
Concentration: 3.00 ug/l

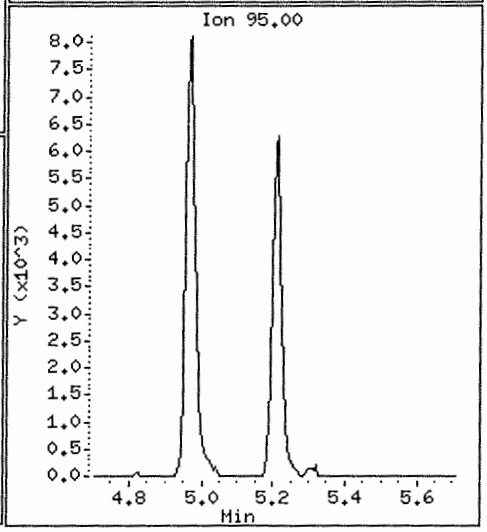


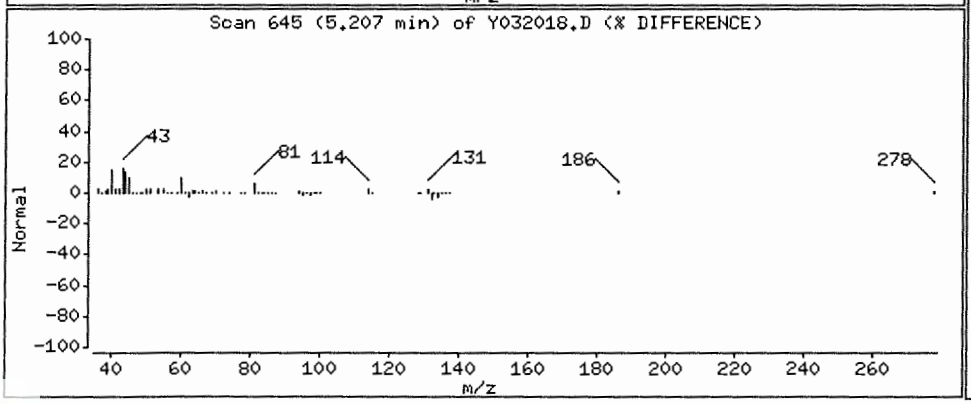












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032019.D Page 1
Report Date: 15-Apr-2020 12:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032019.D
Lab Smp Id: HS20030621-06 Client Smp ID: HS20030621-06
Inj Date : 21-MAR-2020 05:18
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-06;HS20030621-06;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 47
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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

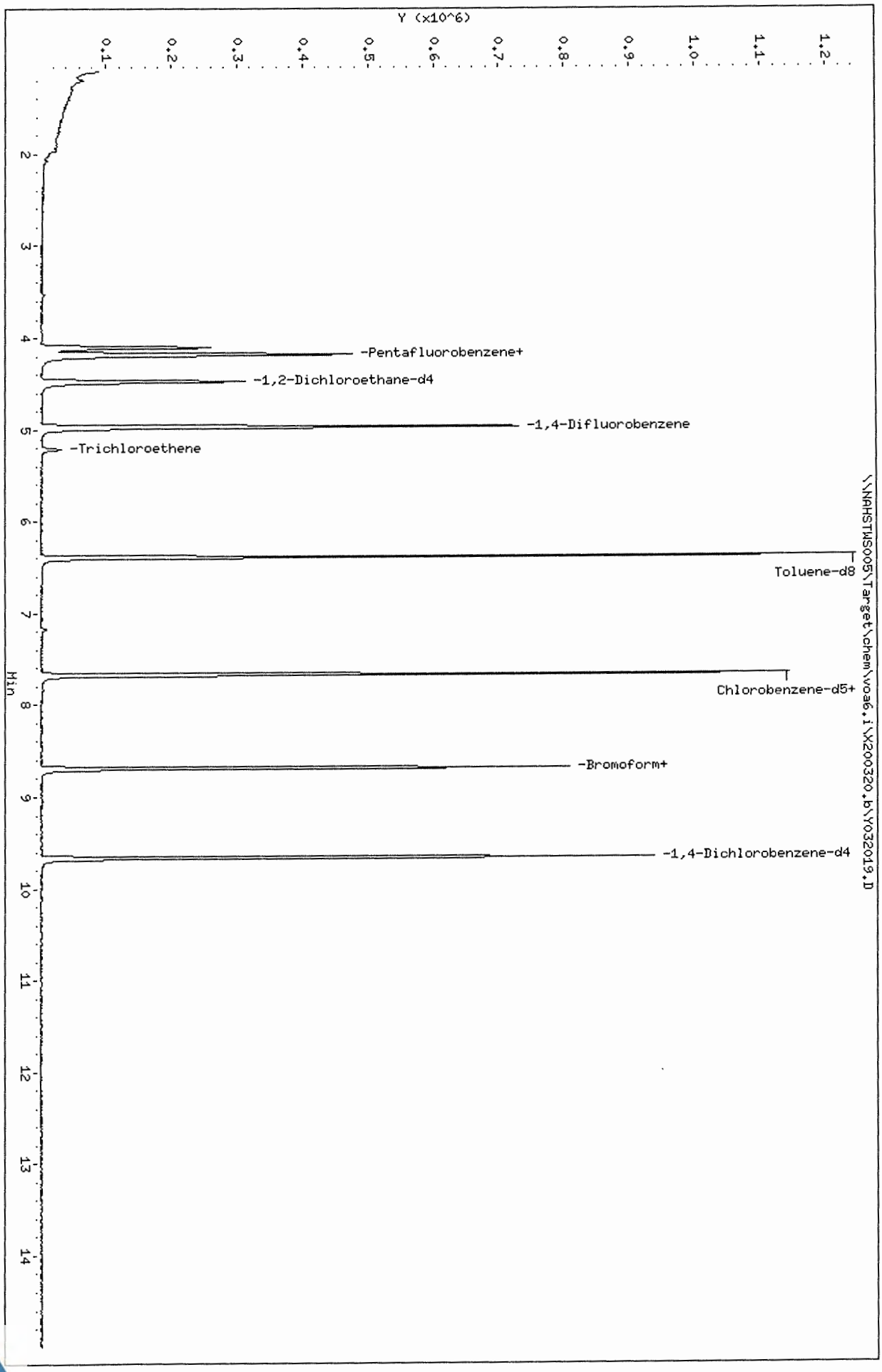
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	392388	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	187324	48.0434	48.04
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	225472	45.7237	45.72
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	590627	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	514340	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	692079	52.5312	52.53
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	234800	47.4184	47.41
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	223742	50.0000	
38 Trichloroethene	130	5.206	5.207	(1.048)	9240	2.25713	2.25(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032019.D
Date : 21-MAR-2020 05:18
Client ID: HS200330621-06
Sample Info: HS200330621-06;HS200330621-06;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032019.D

Date : 21-MAR-2020 05:18

Client ID: HS20030621-06

Instrument: voa6.i

Sample Info: HS20030621-06;HS20030621-06;;;

Purge Volume: 5.0

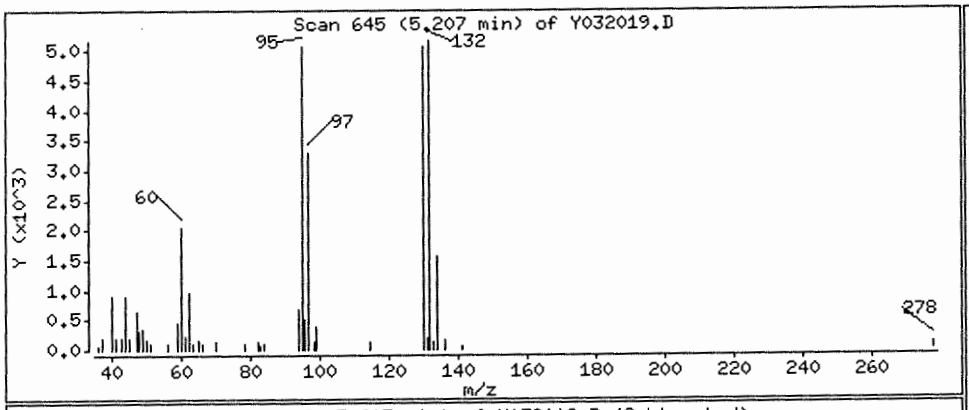
Operator: PC

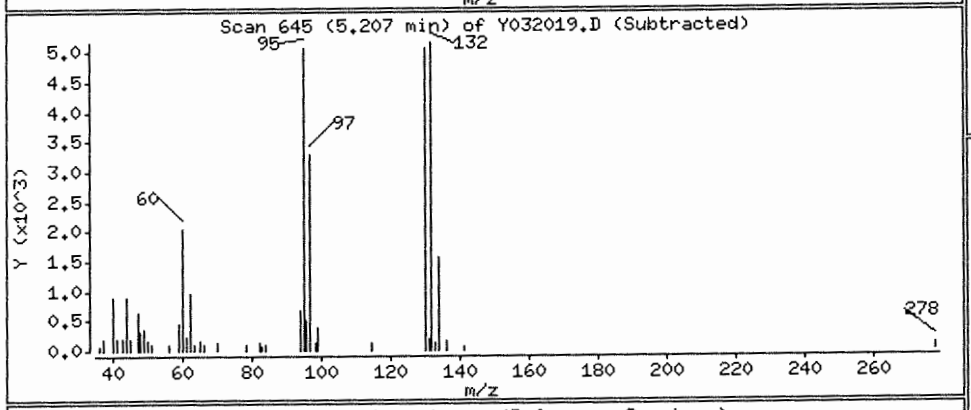
Column phase: DB624

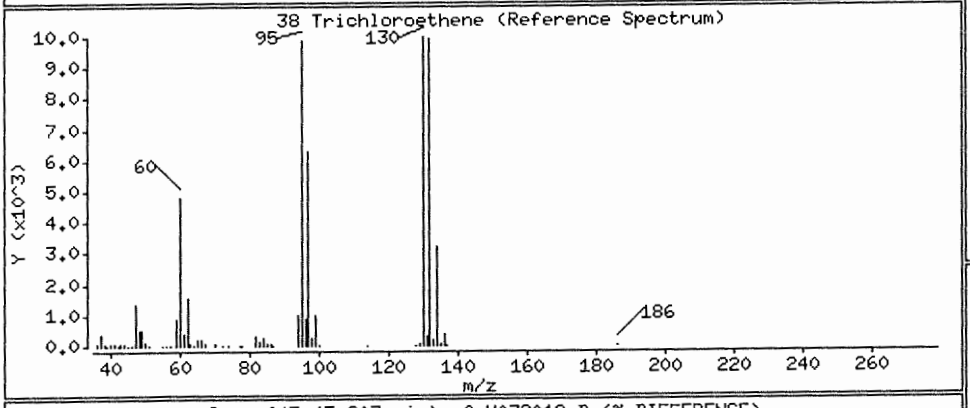
Column diameter: 0.18

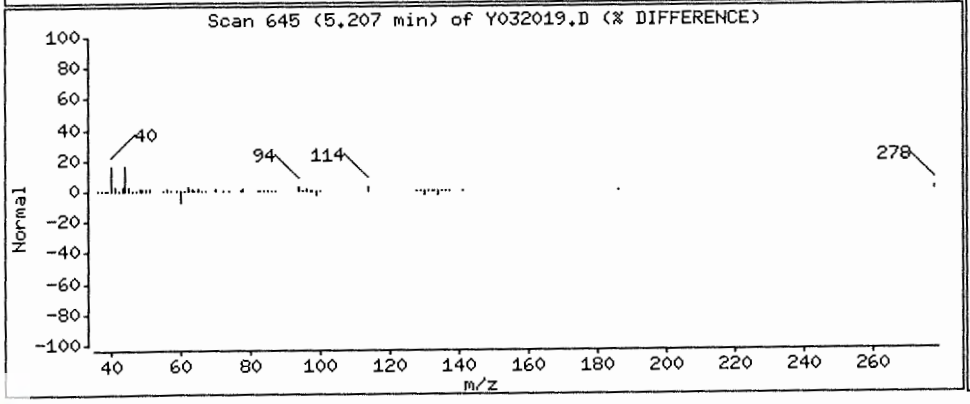
38 Trichloroethene

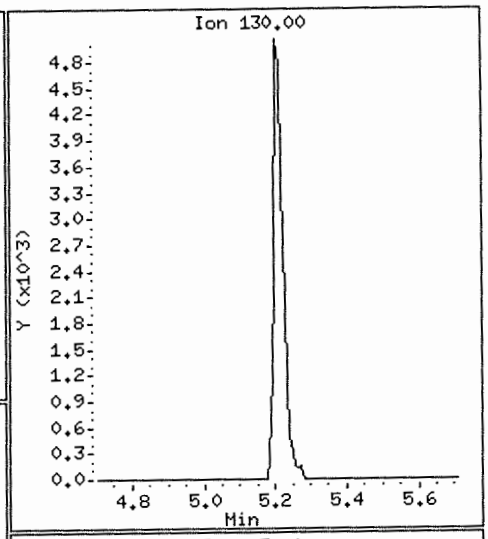
Concentration: 2.25 ug/l

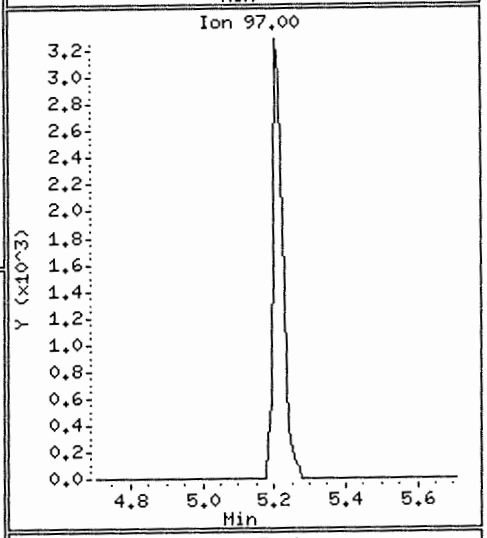


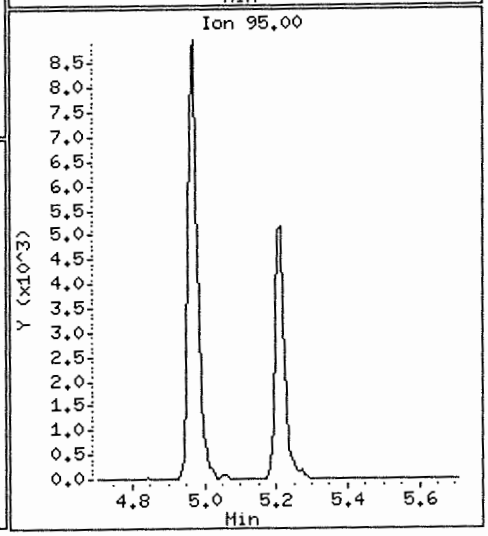












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032020.D Page 1
Report Date: 15-Apr-2020 12:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032020.D
Lab Smp Id: HS20030621-08 Client Smp ID: HS20030621-08
Inj Date : 21-MAR-2020 05:42
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-08;HS20030621-08;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 48
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	389074	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	183641	47.4988	47.49
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	226078	46.2389	46.23
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	582997	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	493814	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	672654	53.1799	53.17
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	225208	47.3712	47.37
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	218838	50.0000	
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	56220	12.6884	12.68
38 Trichloroethene	130	5.207	5.207	(1.048)	317258	78.5113	78.51

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032020.D

Date : 21-MAR-2020 05:42

Client ID: HS20030621-08

Instrument: voa6.i

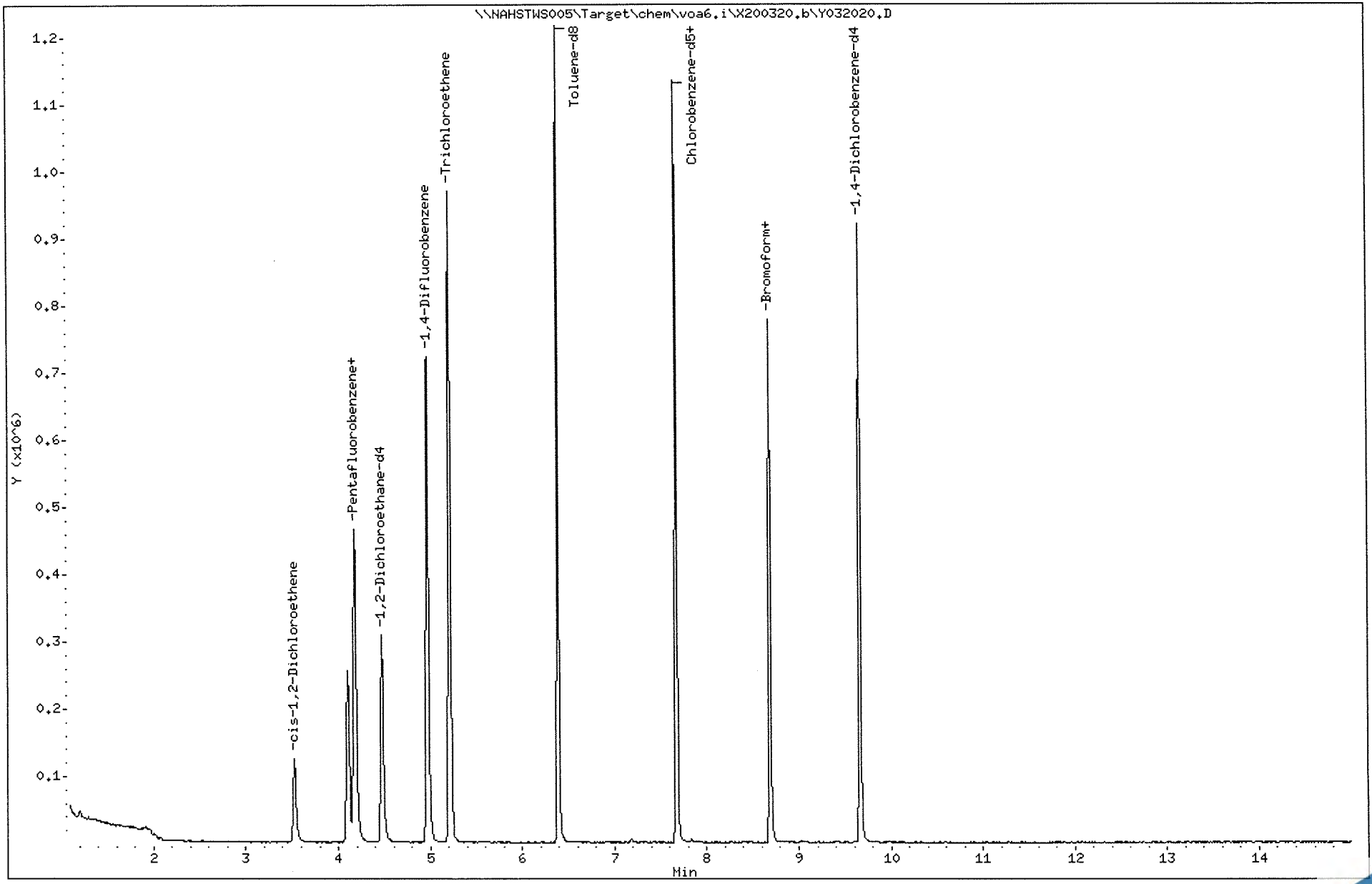
Sample Info: HS20030621-08;HS20030621-08;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032020.D

Date : 21-MAR-2020 05:42

Client ID: HS20030621-08

Instrument: voa6.i

Sample Info: HS20030621-08;HS20030621-08;;;

Purge Volume: 5.0

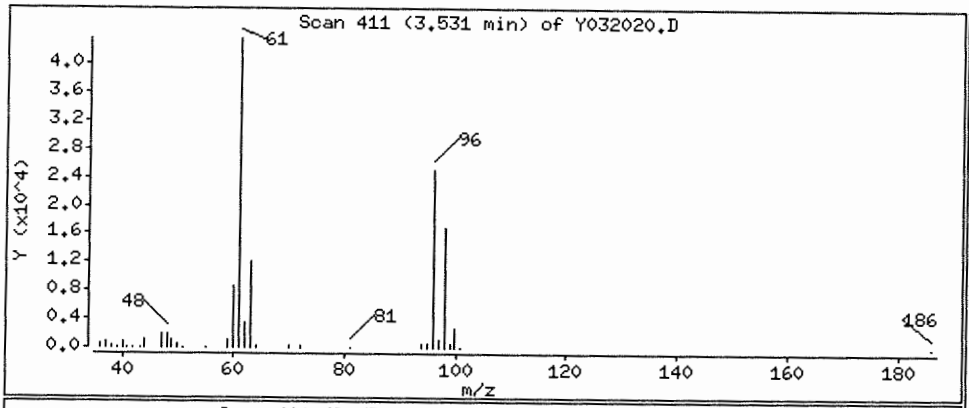
Operator: PC

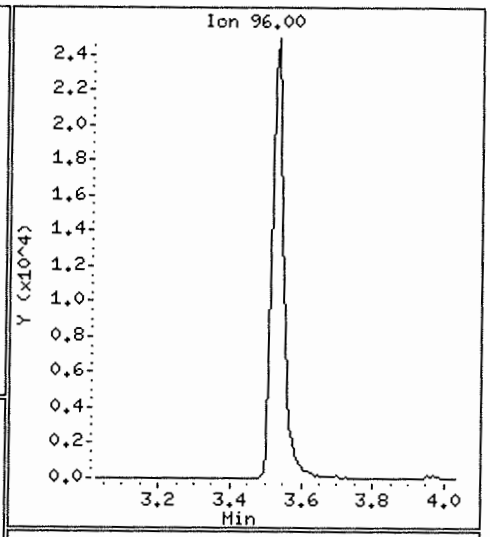
Column phase: DB624

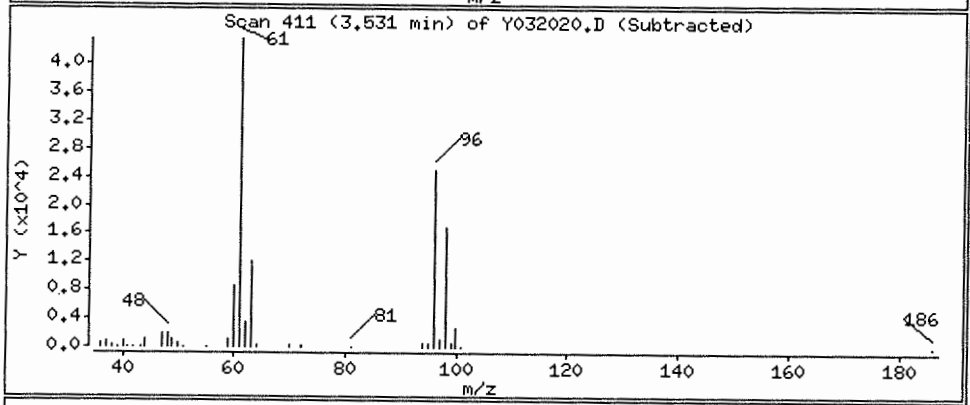
Column diameter: 0.18

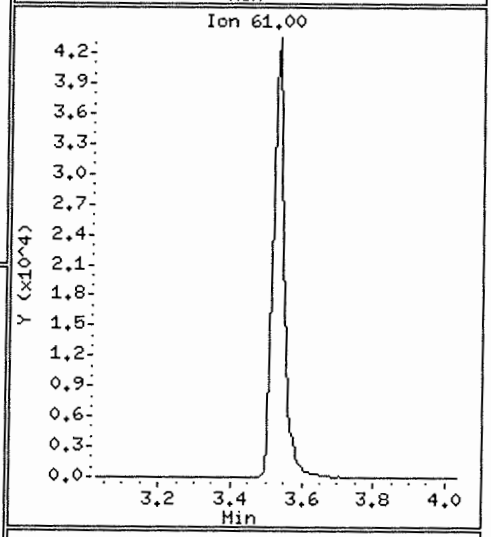
27 cis-1,2-Dichloroethene

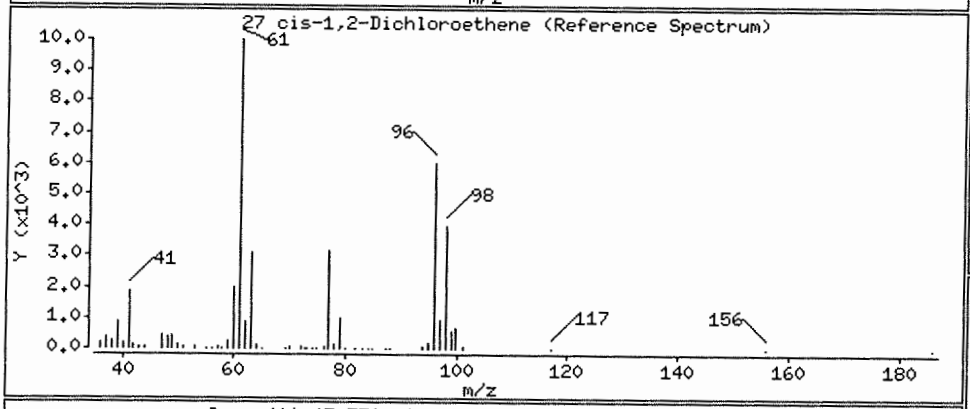
Concentration: 12.68 ug/l

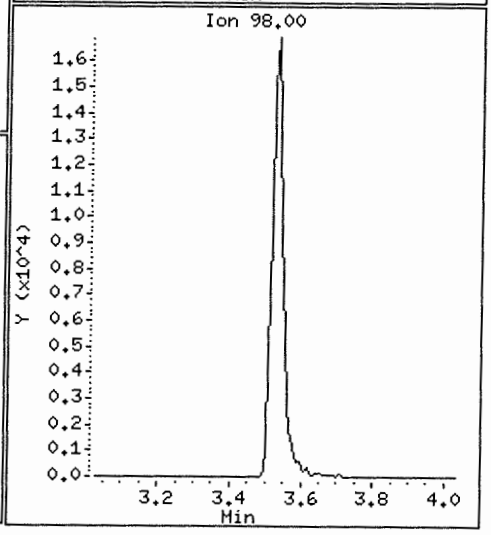


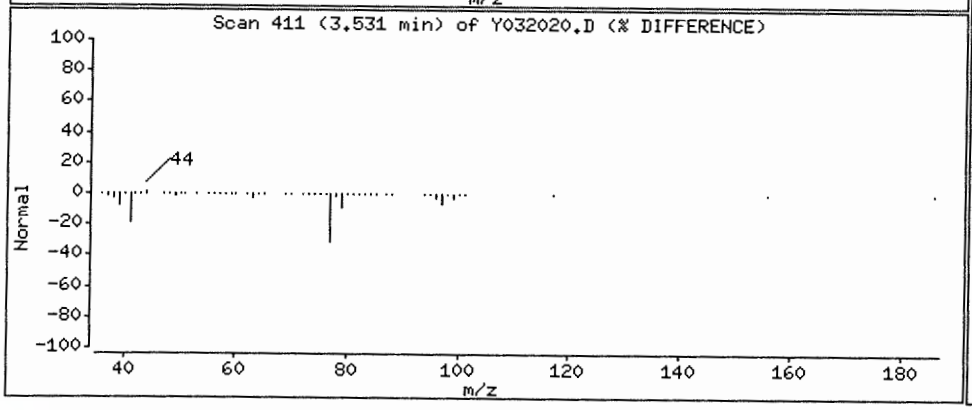












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032020.D

Date : 21-MAR-2020 05:42

Client ID: HS20030621-08

Instrument: voa6.i

Sample Info: HS20030621-08;HS20030621-08;;;

Purge Volume: 5.0

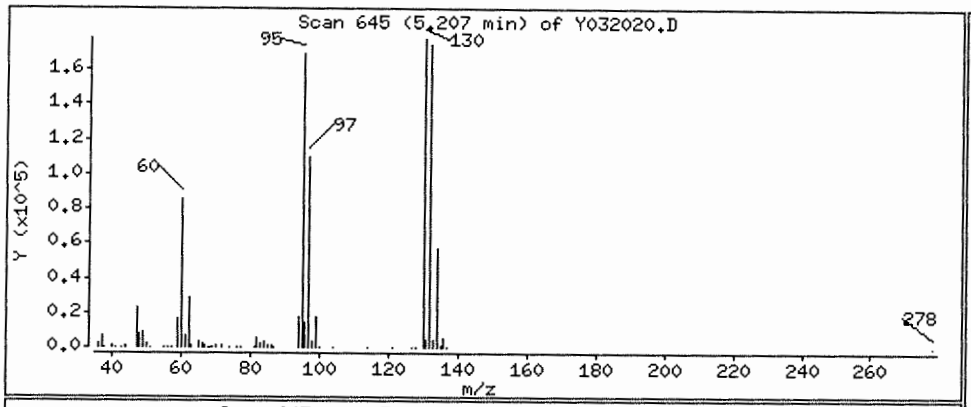
Operator: PC

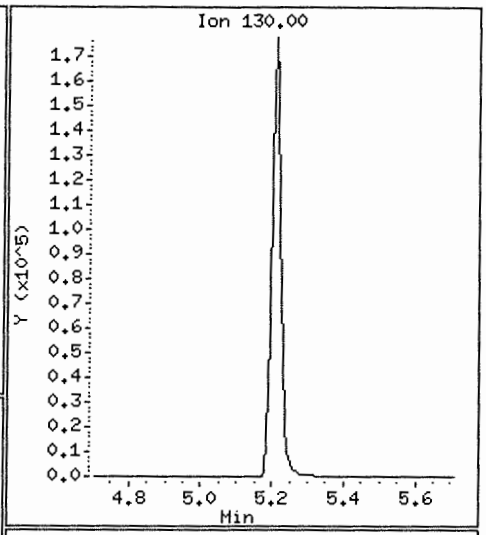
Column phase: DB624

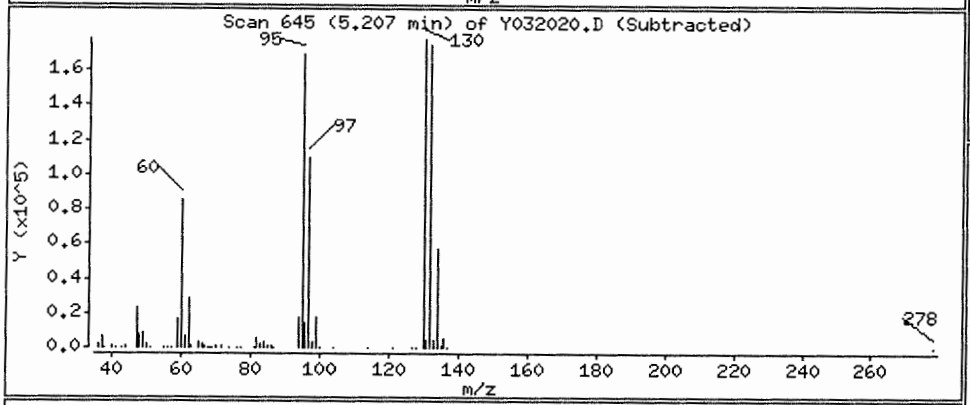
Column diameter: 0.18

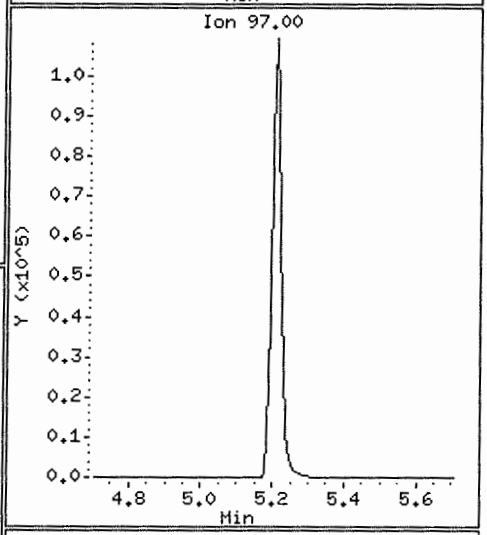
38 Trichloroethene

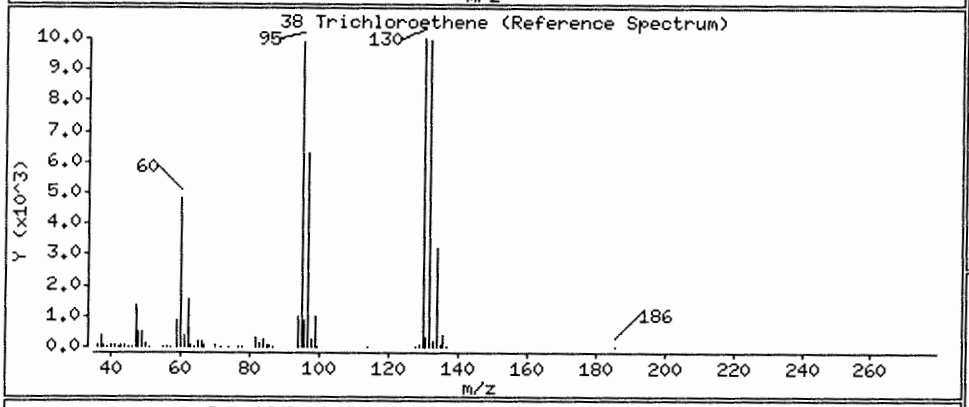
Concentration: 78.51 ug/l

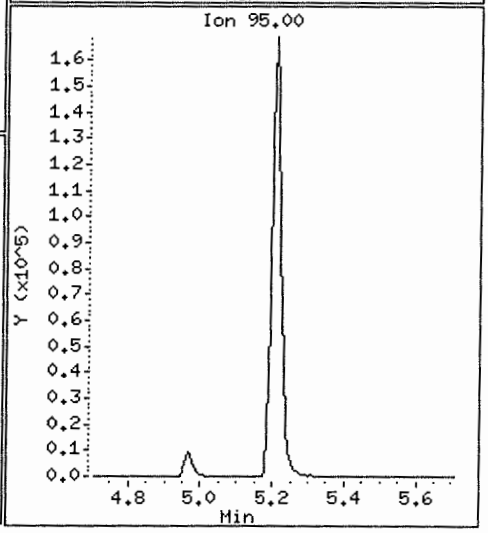


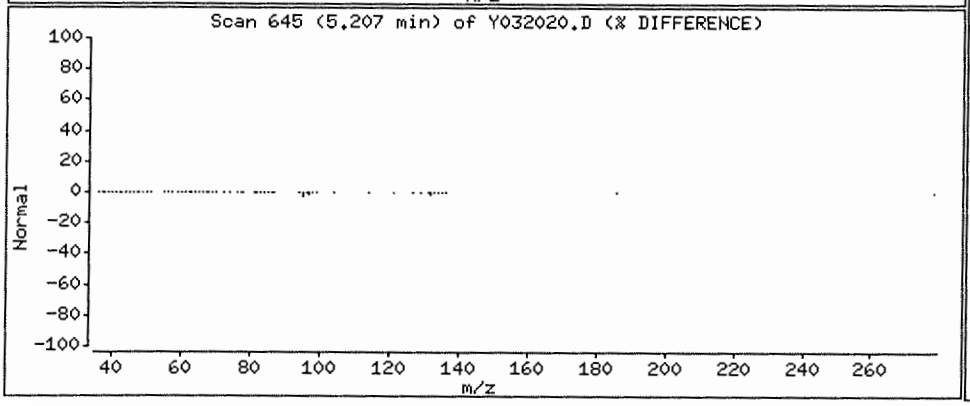












ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032021.D
Lab Smp Id: HS20030621-10 Client Smp ID: HS20030621-10
Inj Date : 21-MAR-2020 06:06
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-10;HS20030621-10;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 49
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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

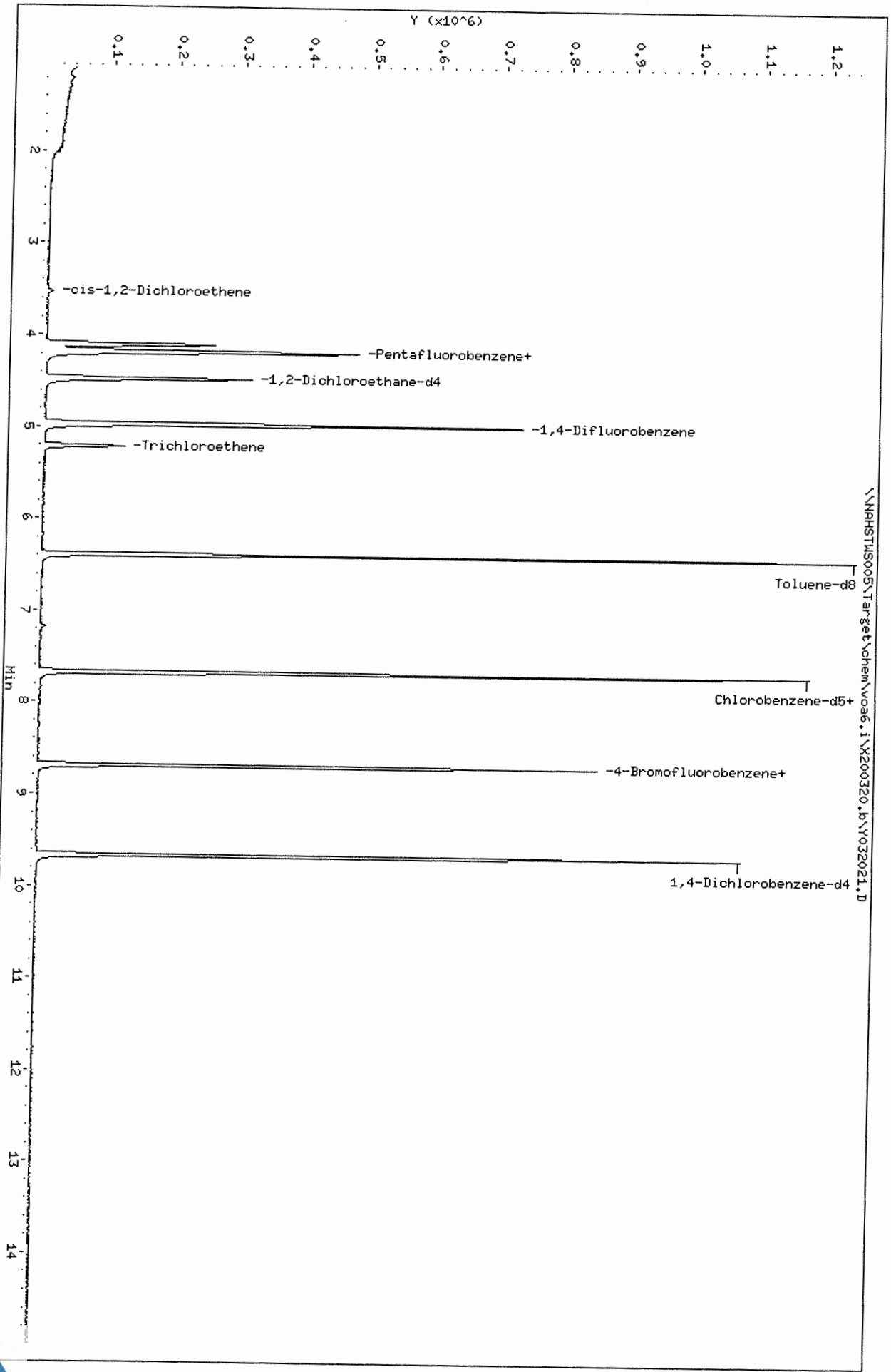
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	397662	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	187391	47.4218	47.42
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	226905	45.4029	45.40
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	597555	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	522793	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	701827	52.4096	52.40
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	251442	49.9846	49.98
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	246396	50.0000	
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	3602	0.79539	0.79(a)
38 Trichloroethene	130	5.214	5.207	(1.049)	41005	9.90048	9.90

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032021.D
Date : 21-MAR-2020 06:06
Client ID: HS200330621-10
Sample Info: HS200330621-10;HS200330621-10;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032021.D

Date : 21-MAR-2020 06:06

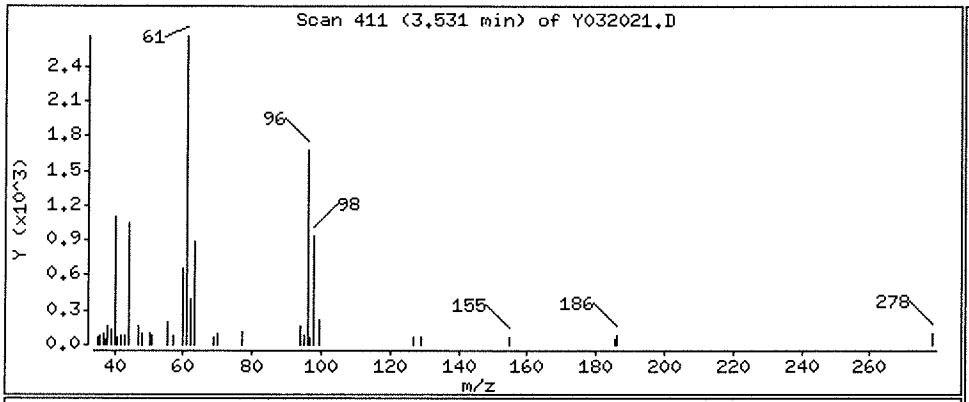
Client ID: HS20030621-10 Instrument: voa6.i

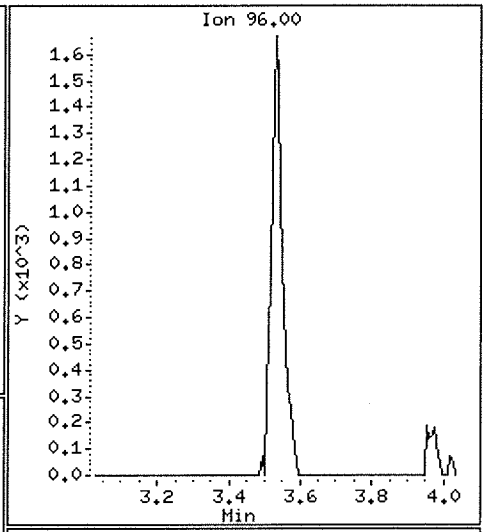
Sample Info: HS20030621-10;HS20030621-10;;;

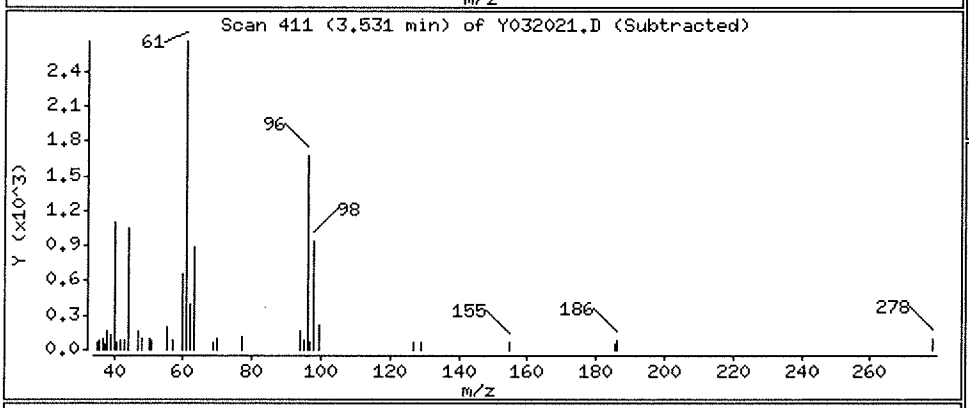
Purge Volume: 5.0 Operator: PC

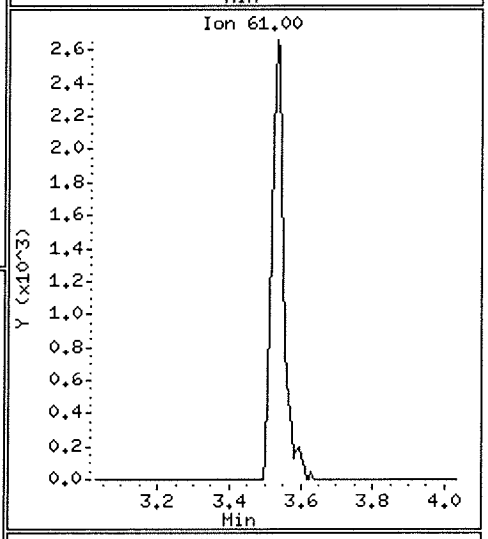
Column phase: DB624 Column diameter: 0.18

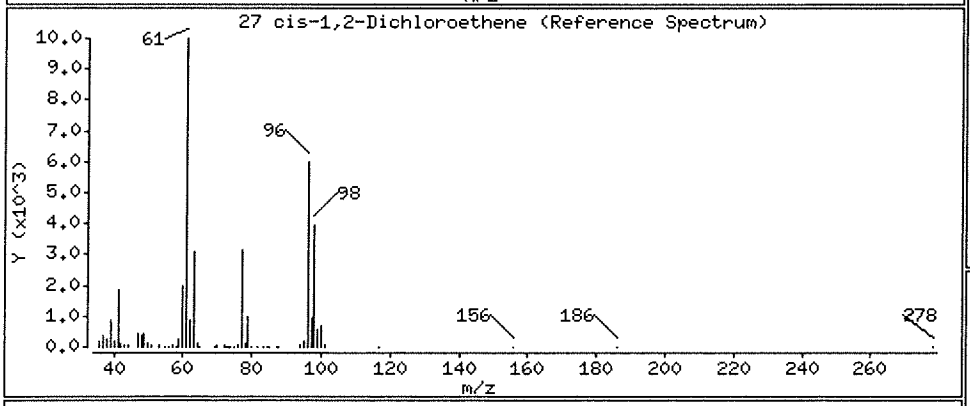
27 cis-1,2-Dichloroethene Concentration: 0.79 ug/l

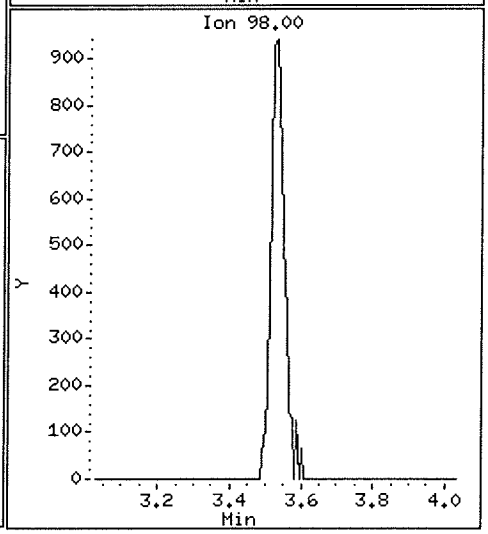


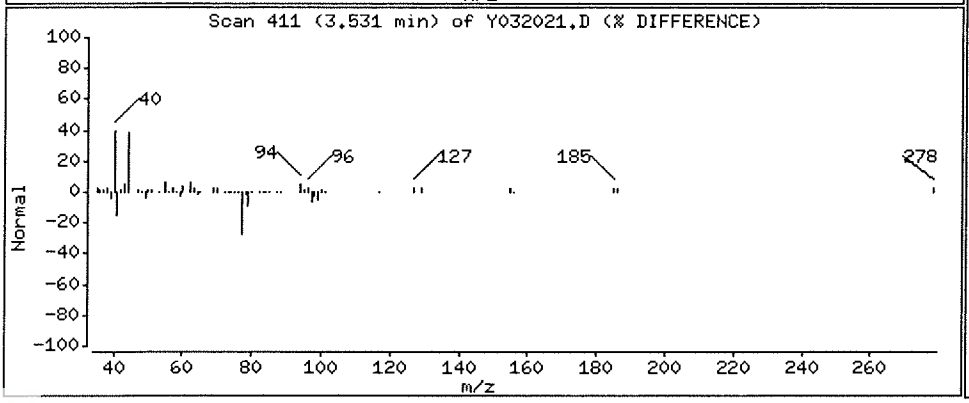












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032021.D

Date : 21-MAR-2020 06:06

Client ID: HS20030621-10

Instrument: voa6.i

Sample Info: HS20030621-10;HS20030621-10;;;

Purge Volume: 5.0

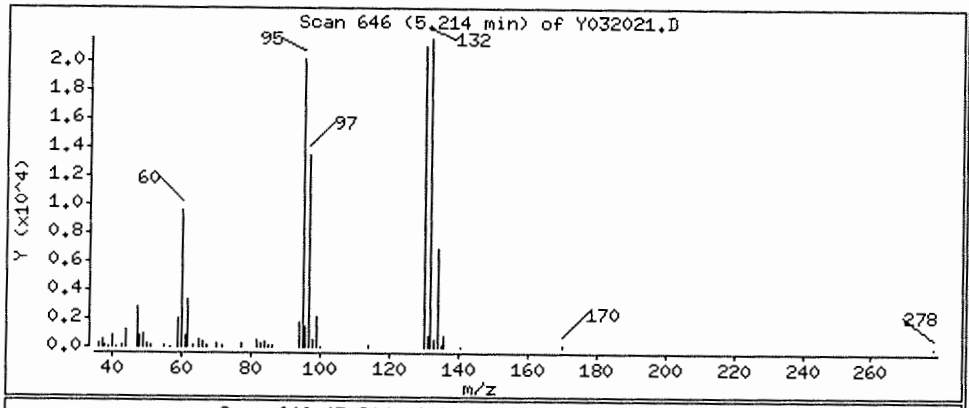
Operator: PC

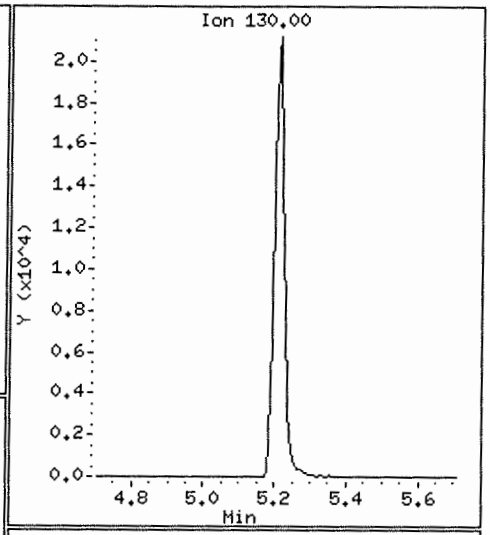
Column phase: DB624

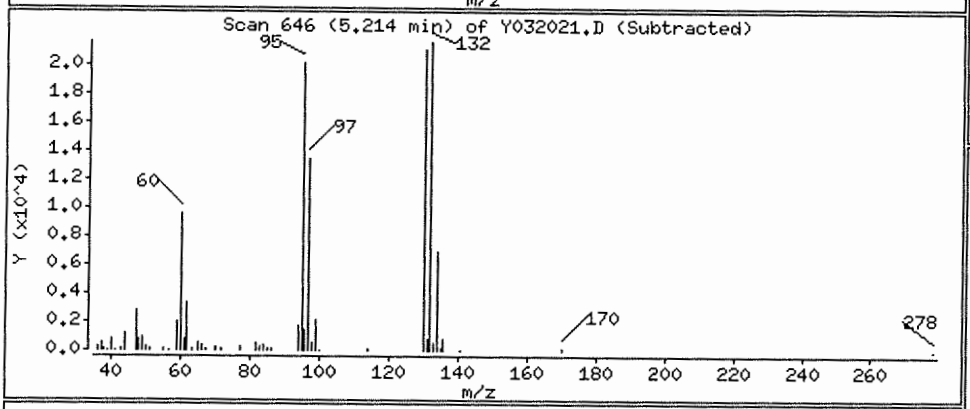
Column diameter: 0.18

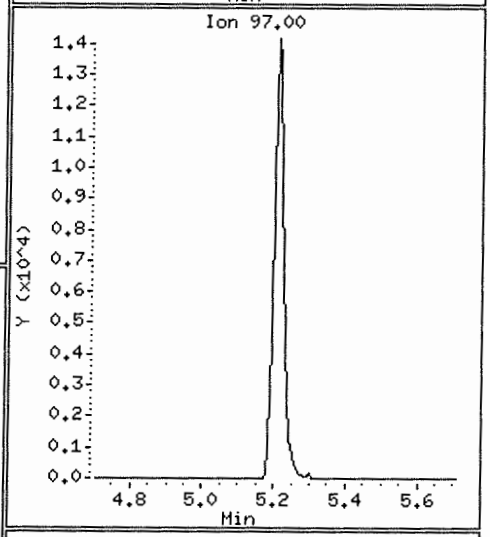
38 Trichloroethene

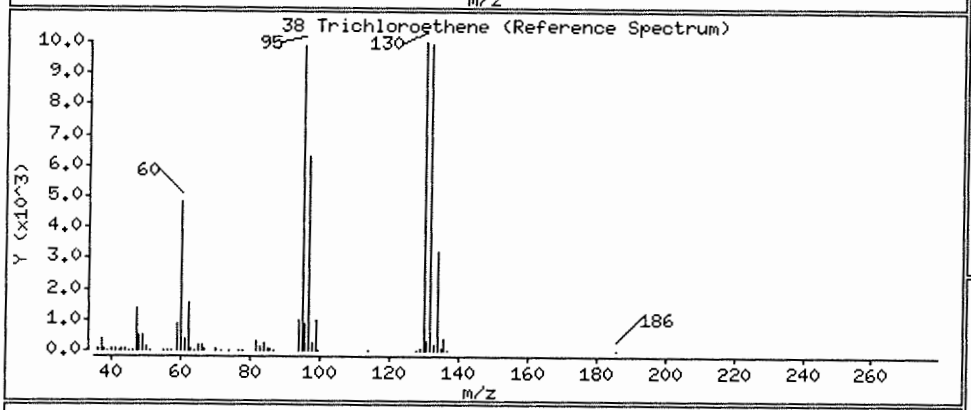
Concentration: 9.90 ug/l

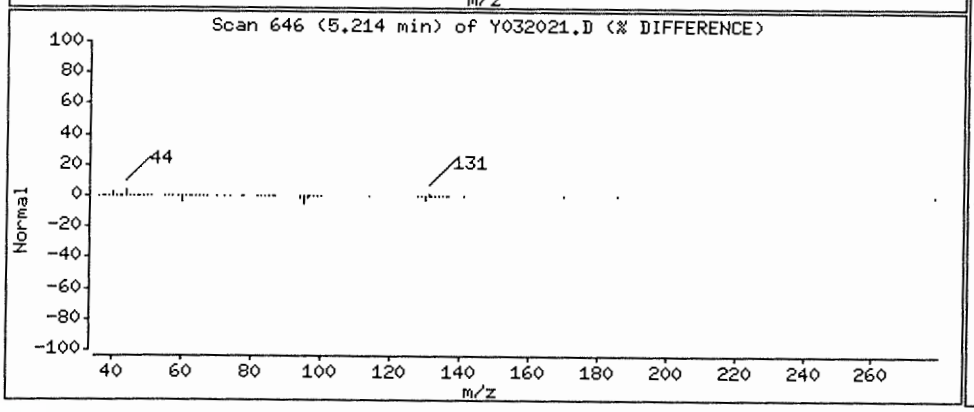


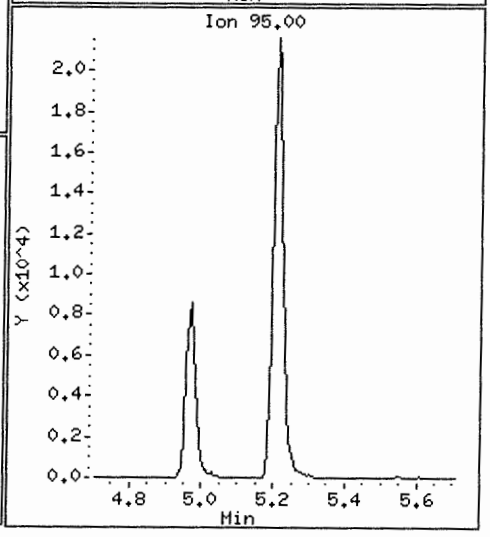












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032022.D Page 1
Report Date: 15-Apr-2020 12:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032022.D
Lab Smp Id: HS20030621-11 Client Smp ID: HS20030621-11
Inj Date : 21-MAR-2020 06:30
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-11;HS20030621-11;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 50
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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

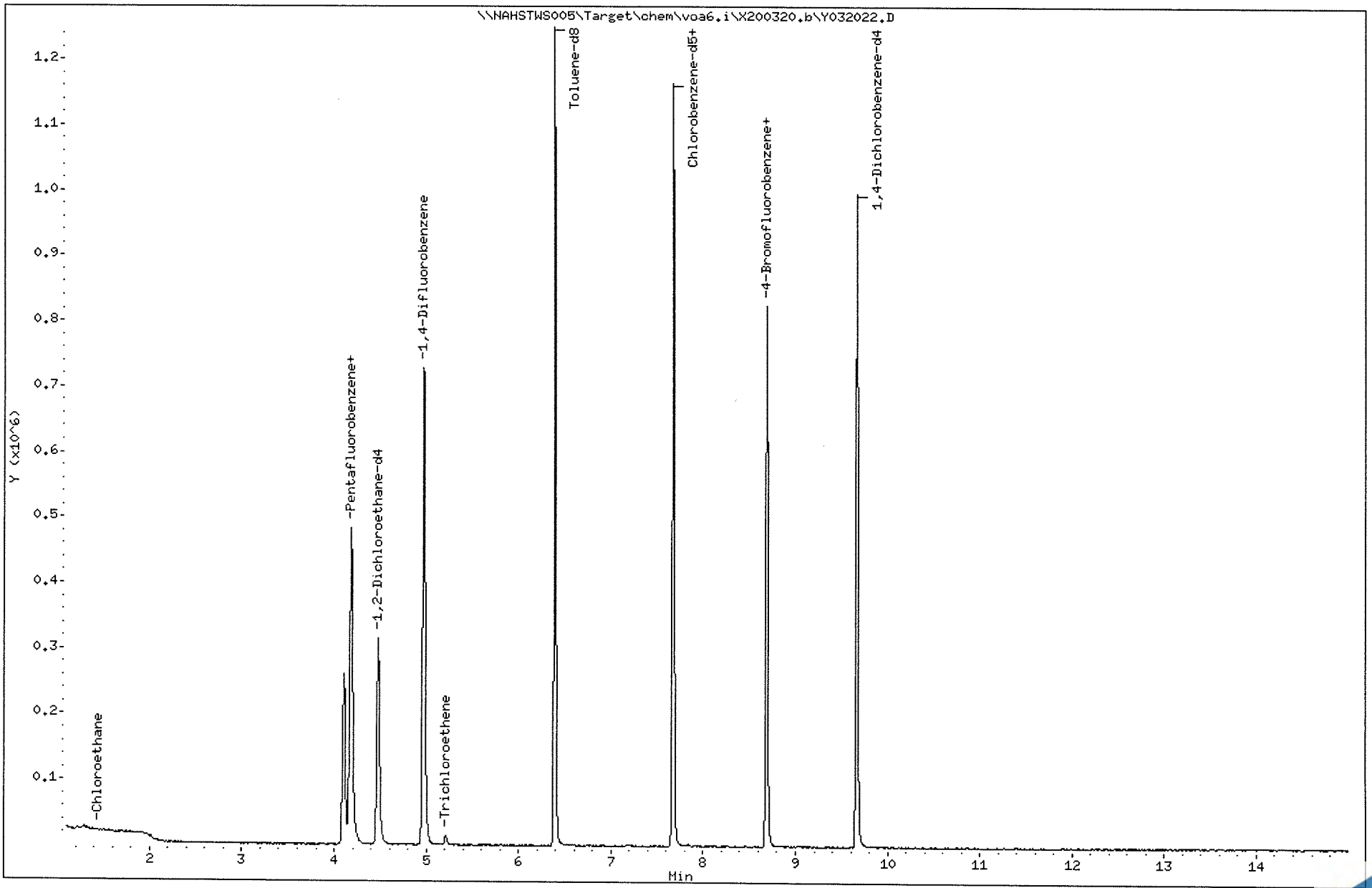
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	398927	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	190363	48.0225	48.02
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	228868	45.6514	45.65
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	592990	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	514930	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	696703	52.8220	52.82
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	243093	49.0537	49.05
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	238674	50.0000	
38 Trichloroethene	130	5.206	5.207	(1.048)	4665	1.13501	1.13(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032022.D
Date : 21-MAR-2020 06:30
Client ID: HS20030621-11
Sample Info: HS20030621-11;HS20030621-11;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032022.D

Date : 21-MAR-2020 06:30

Client ID: HS20030621-11

Instrument: voa6.i

Sample Info: HS20030621-11;HS20030621-11;;;

Purge Volume: 5.0

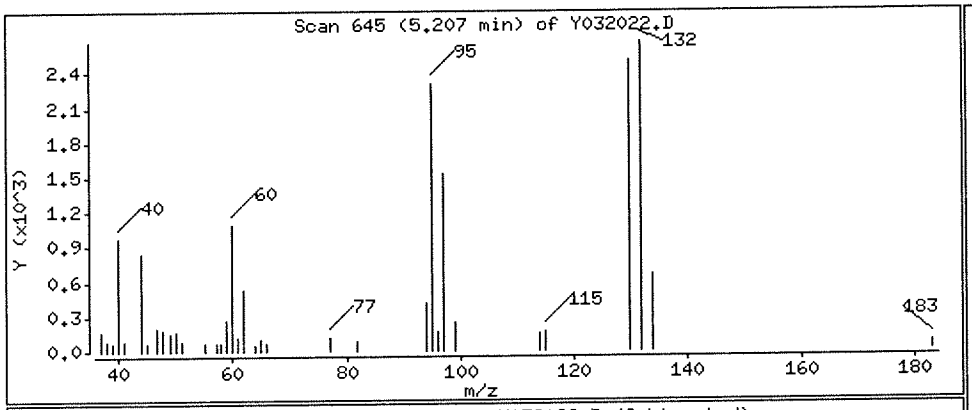
Operator: PC

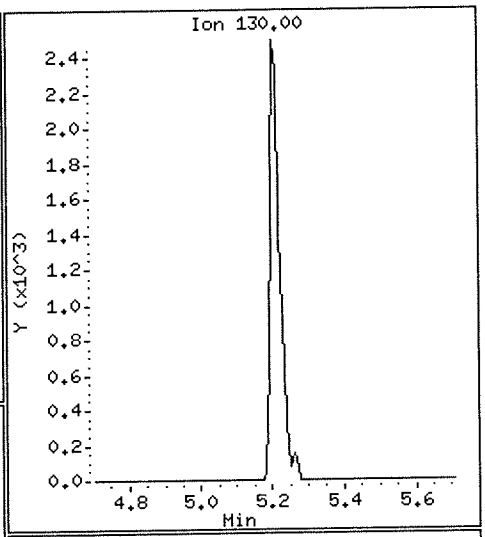
Column phase: DB624

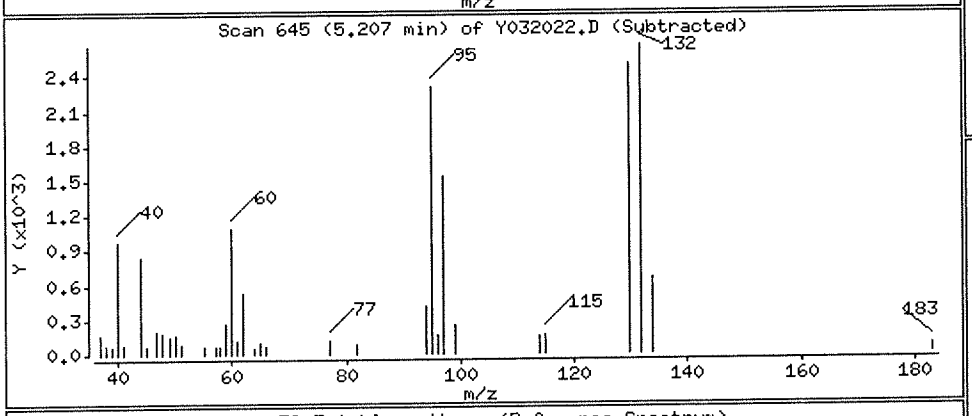
Column diameter: 0.18

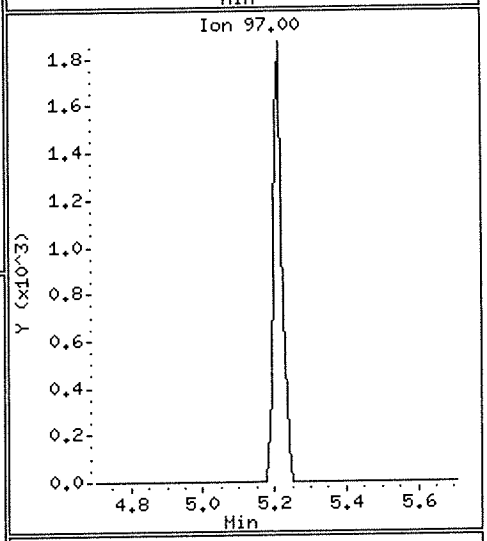
38 Trichloroethene

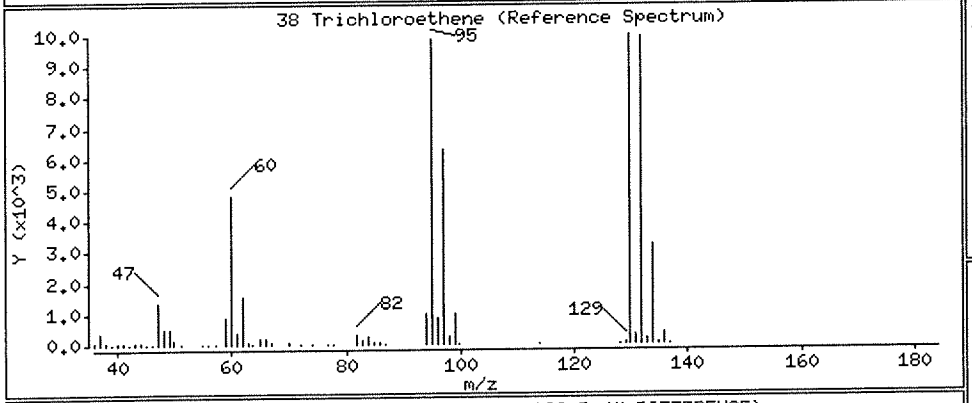
Concentration: 1.13 ug/l

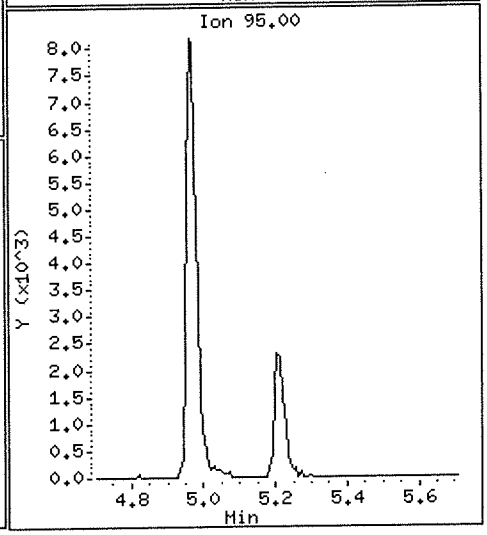


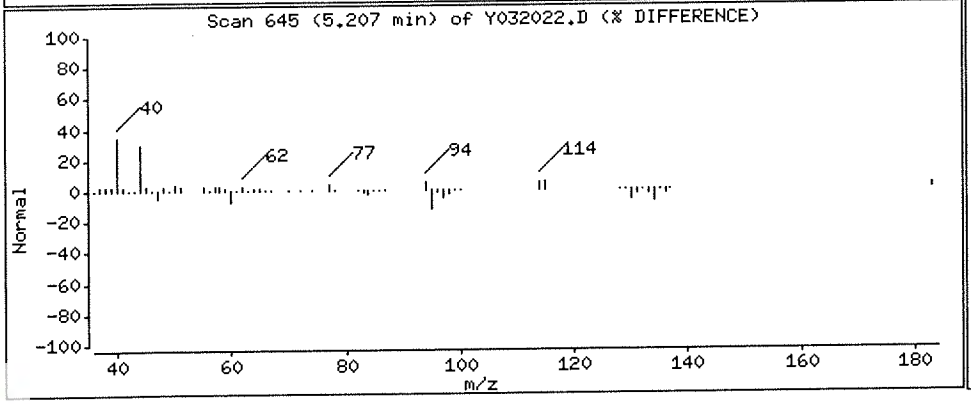












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032023.D Page 1
Report Date: 15-Apr-2020 12:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032023.D
Lab Smp Id: HS20030621-12 Client Smp ID: HS20030621-12
Inj Date : 21-MAR-2020 06:54
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-12;HS20030621-12;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 51
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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

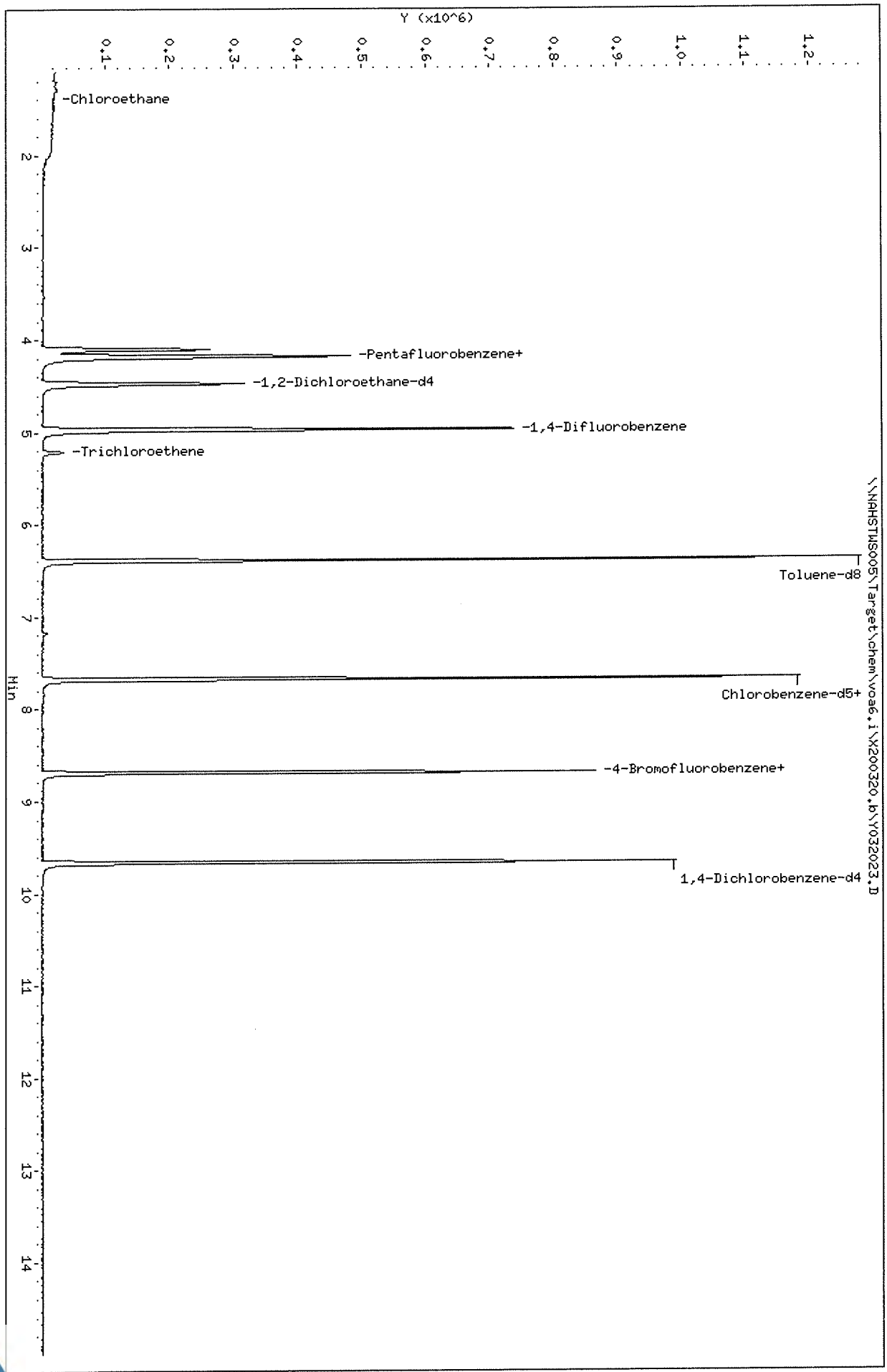
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	403822	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	188315	46.9275	46.92
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	228807	45.0840	45.08
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	599066	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	517656	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	699687	52.7688	52.76
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	248226	49.8335	49.83
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	239352	50.0000	
38 Trichloroethene	130	5.206	5.207	(1.048)	11271	2.71447	2.71(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032023.D
Date : 21-MAR-2020 06:54
Client ID: HS20030621-12
Sample Info: HS20030621-12;HS20030621-12;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032023.D

Date : 21-MAR-2020 06:54

Client ID: HS20030621-12

Instrument: voa6.i

Sample Info: HS20030621-12;HS20030621-12;;;

Purge Volume: 5.0

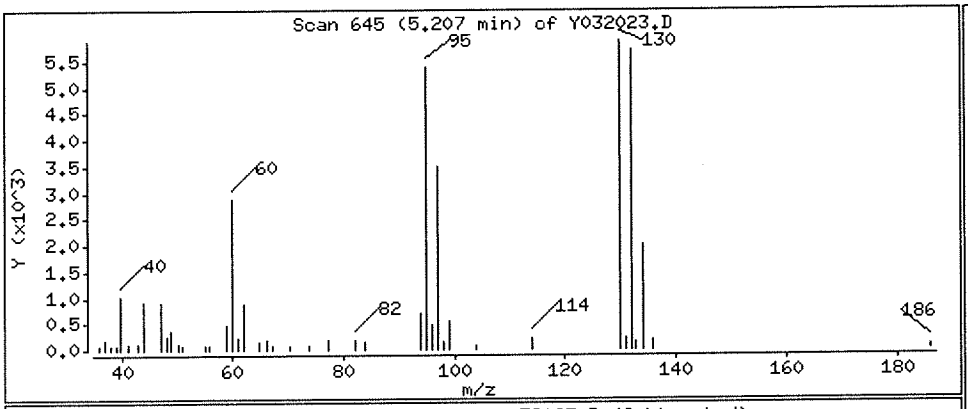
Operator: PC

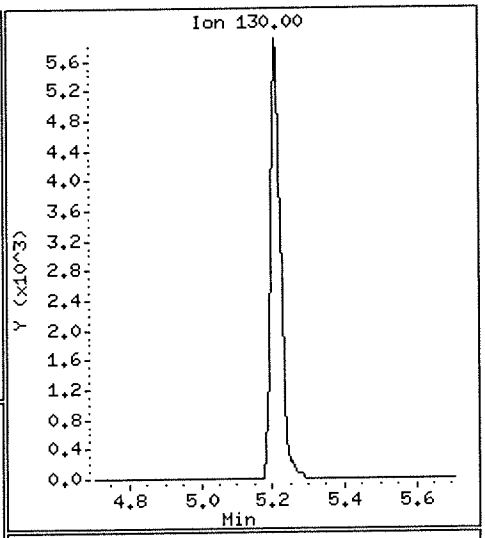
Column phase: DB624

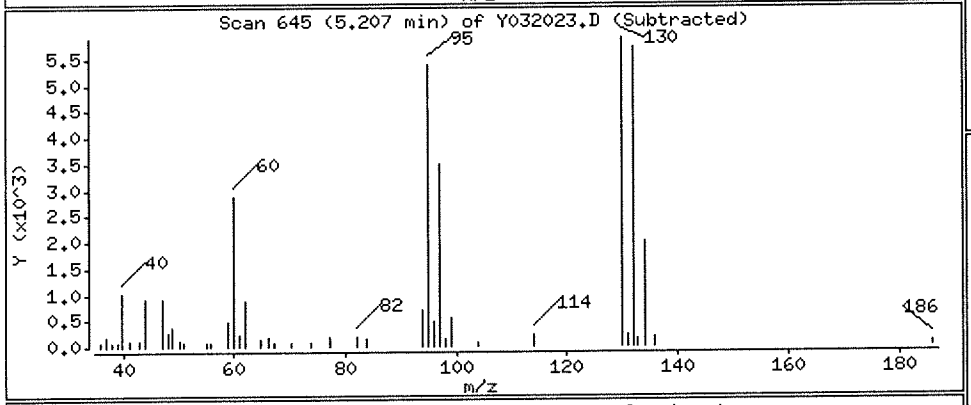
Column diameter: 0.18

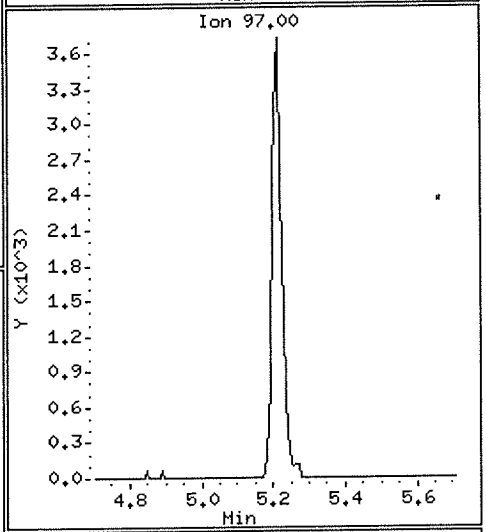
38 Trichloroethene

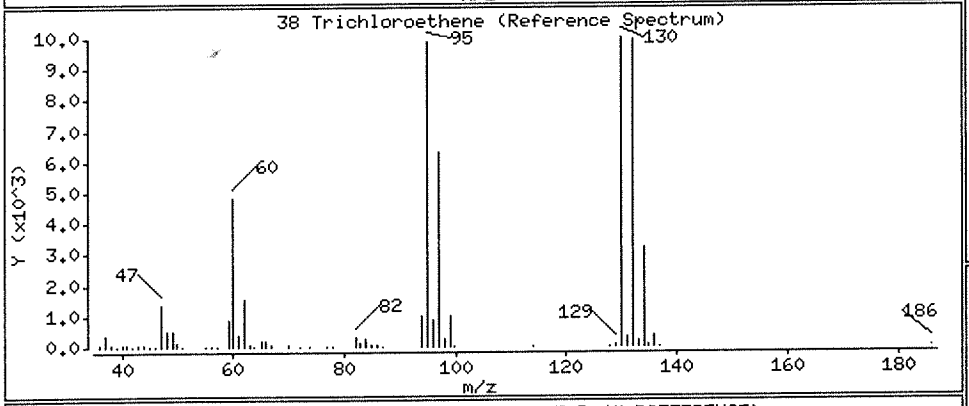
Concentration: 2.71 ug/l

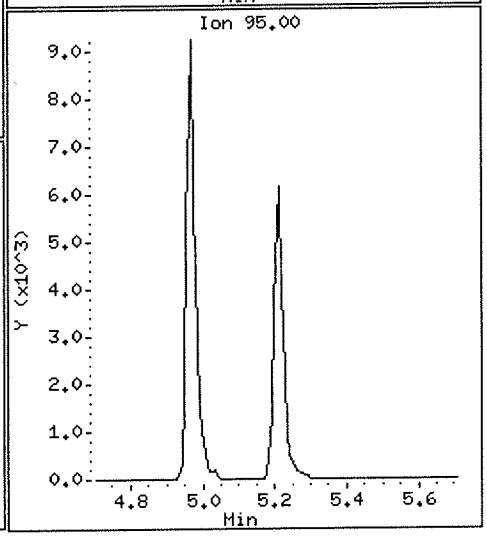


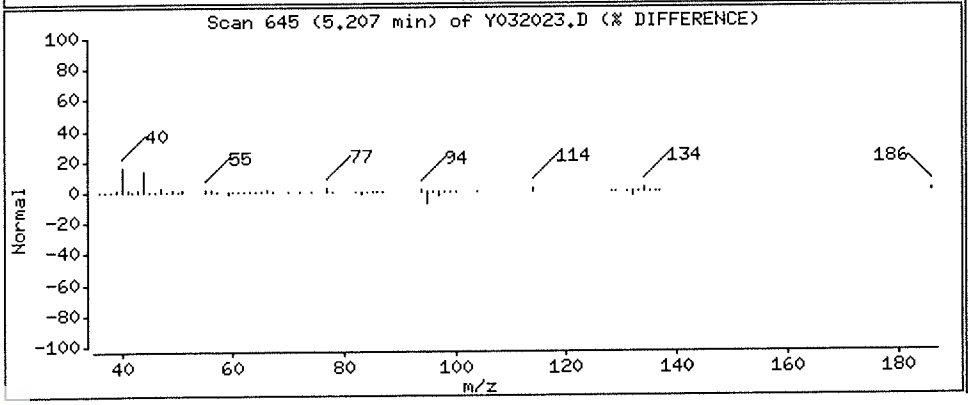












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032028.D Page 1
Report Date: 15-Apr-2020 12:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032028.D
Lab Smp Id: HS20030621-07 Client Smp ID: HS20030621-07
Inj Date : 21-MAR-2020 08:55
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-07;HS20030621-07;;;
Misc Info : HS18090001;WATER;0;5;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 56
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	5.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

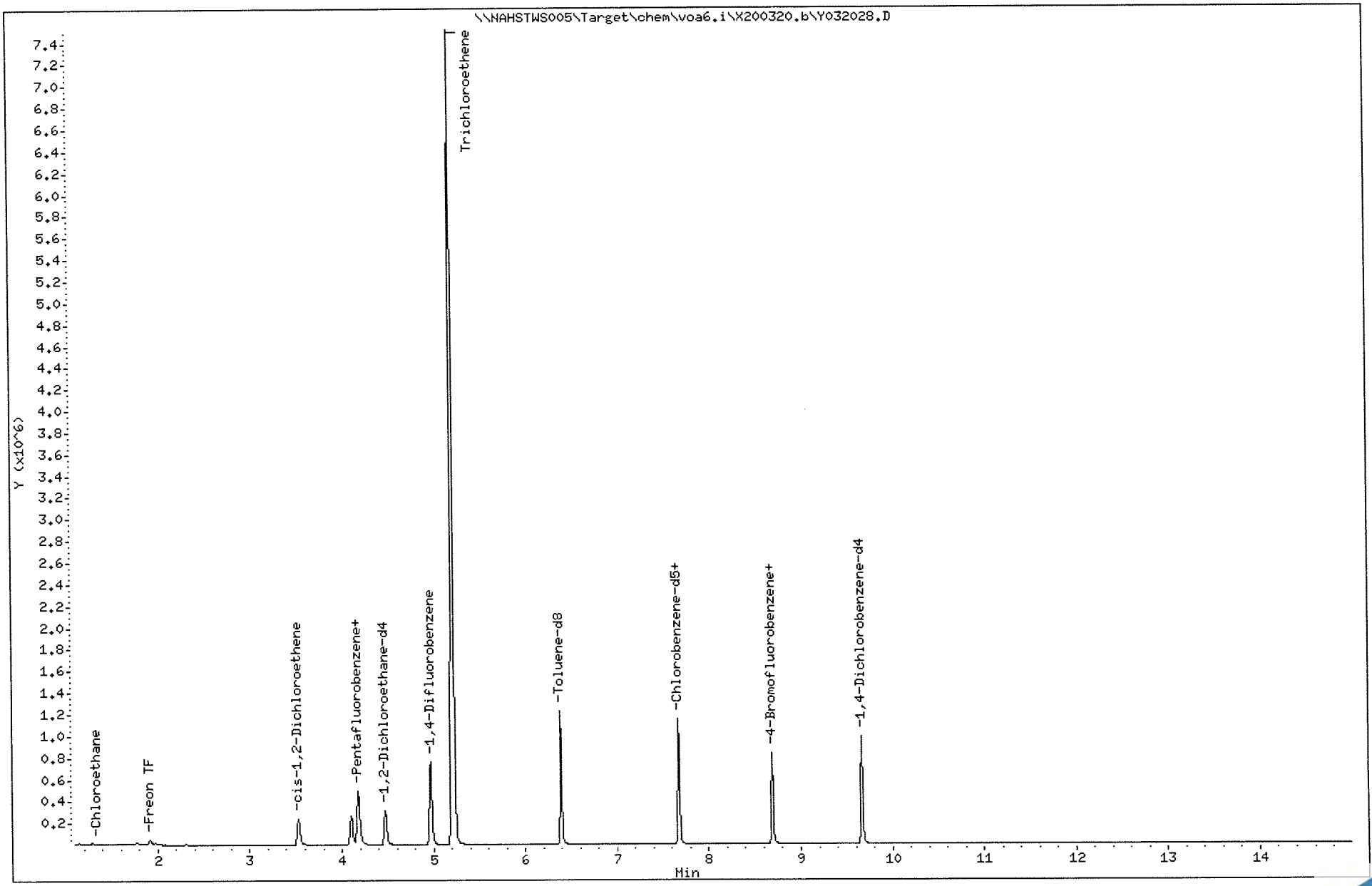
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	406730	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	190498	47.1326	47.13
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	230317	45.0570	45.05
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	607692	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	504266	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	683117	52.8873	52.88
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	235949	48.6147	48.61
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	237985	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	4907	0.79189	3.95(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	113756	24.5594	122.79
38 Trichloroethene	130	5.207	5.207	(1.048)	2415278	573.430	2867.15(A)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032028.D
Date : 21-MAR-2020 08:55
Client ID: HS20030621-07
Sample Info: HS20030621-07;HS20030621-07;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032028.D

Date : 21-MAR-2020 08:55

Client ID: HS20030621-07

Instrument: voa6.i

Sample Info: HS20030621-07;HS20030621-07;;;

Purge Volume: 5.0

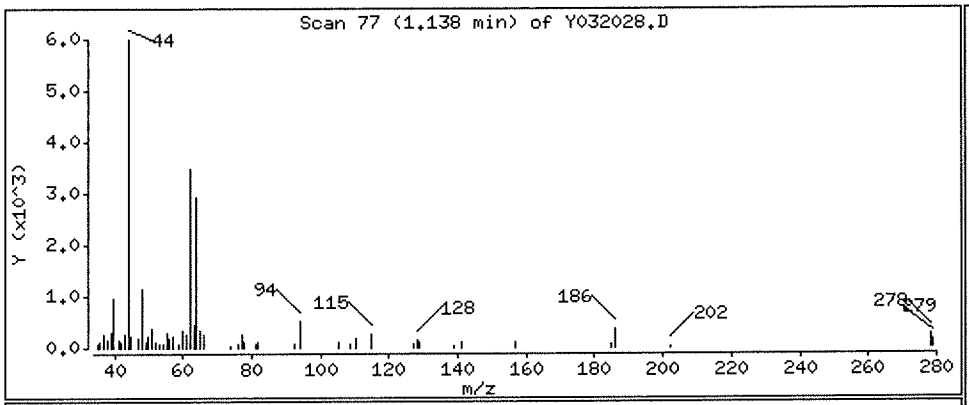
Operator: PC

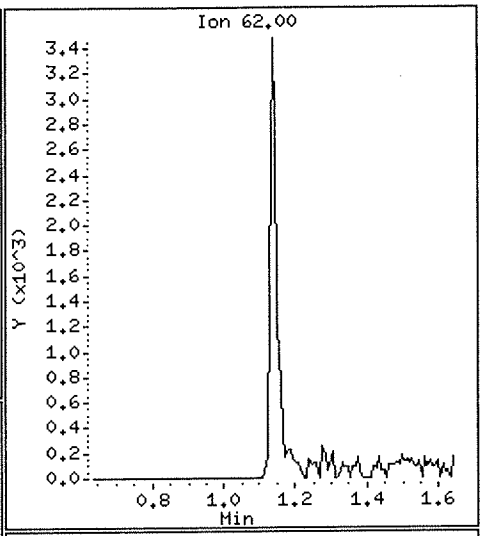
Column phase: DB624

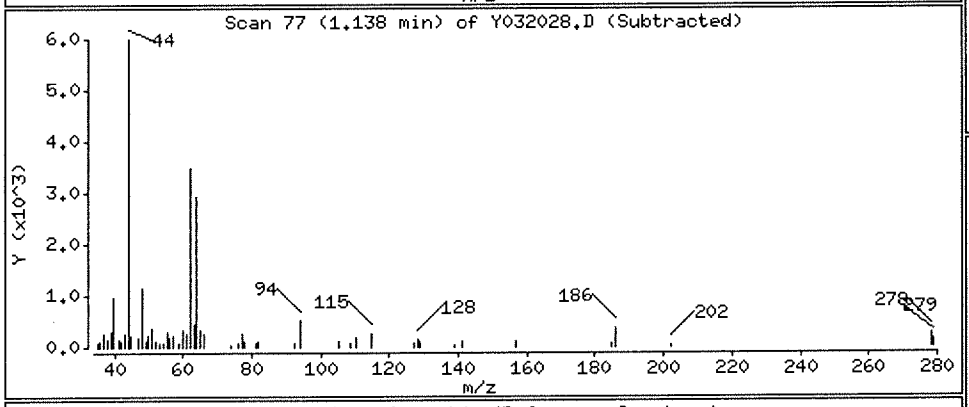
Column diameter: 0.18

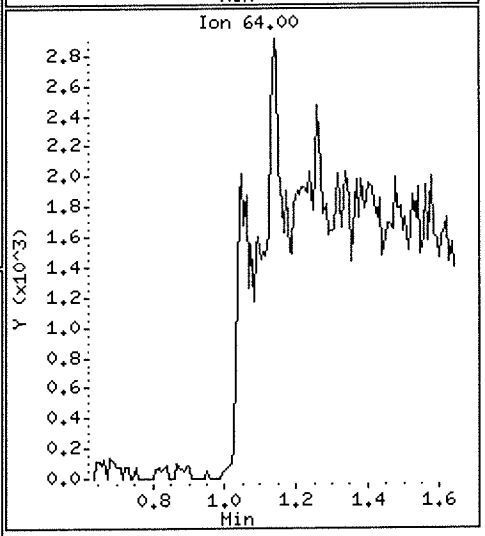
5 Vinyl Chloride

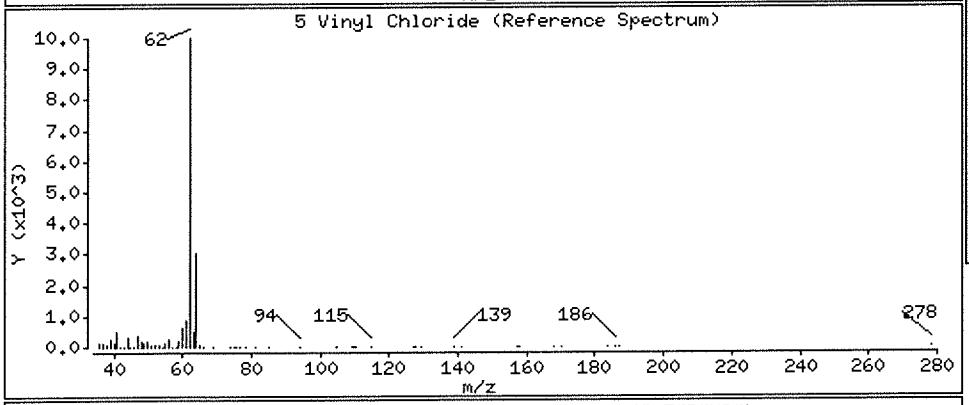
Concentration: 3.95 ug/l

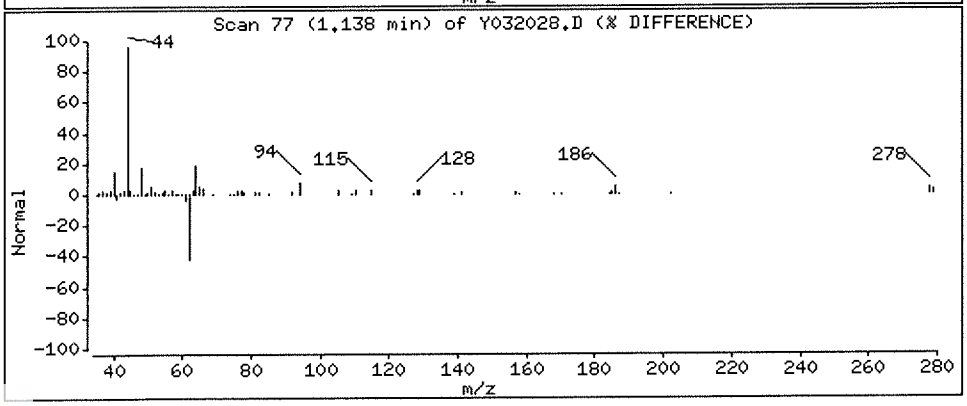












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032028.D

Date : 21-MAR-2020 08:55

Client ID: HS20030621-07

Instrument: voa6.i

Sample Info: HS20030621-07;HS20030621-07;;;

Purge Volume: 5.0

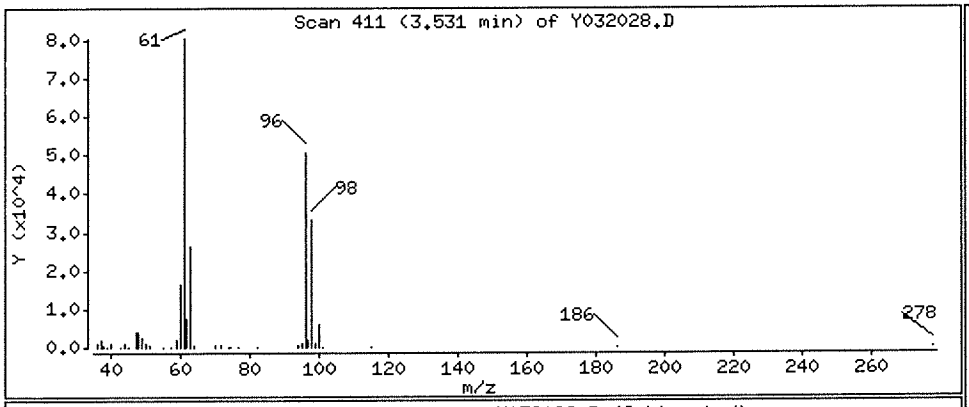
Operator: PC

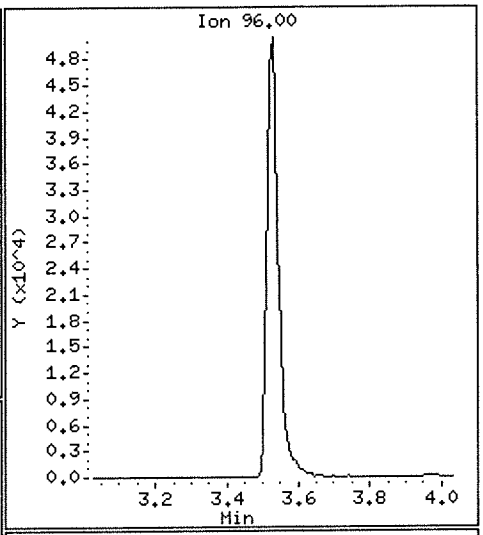
Column phase: DB624

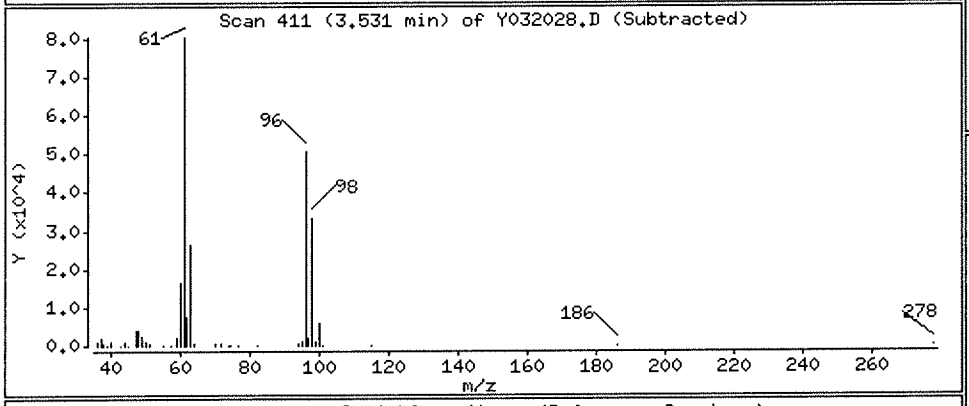
Column diameter: 0.18

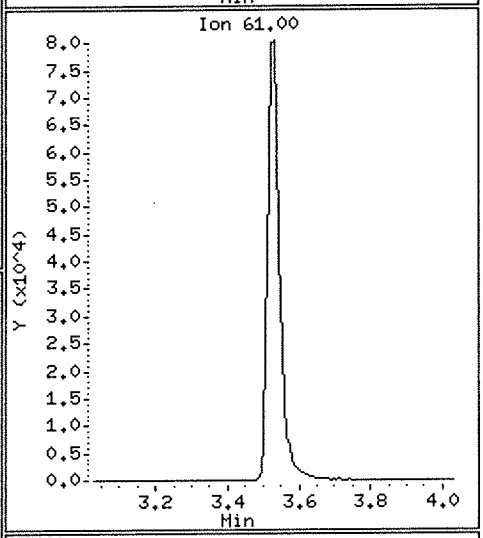
27 cis-1,2-Dichloroethene

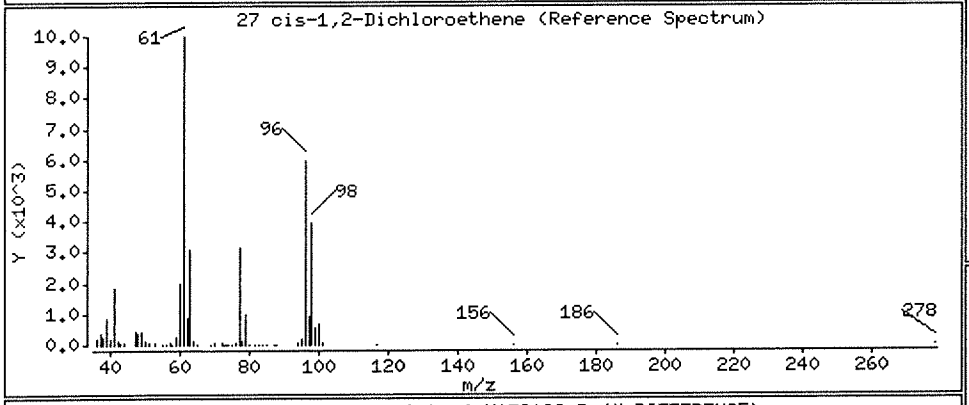
Concentration: 122.79 ug/l

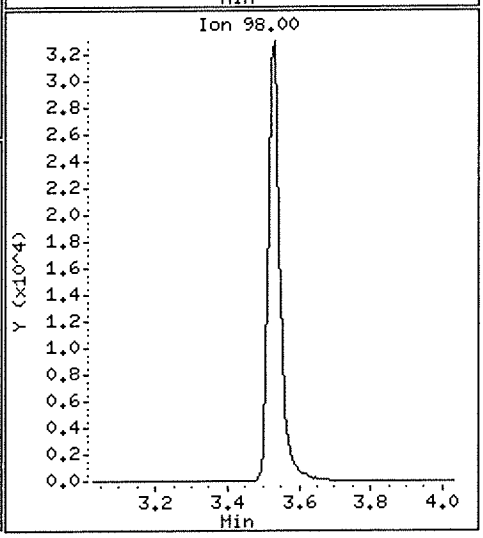


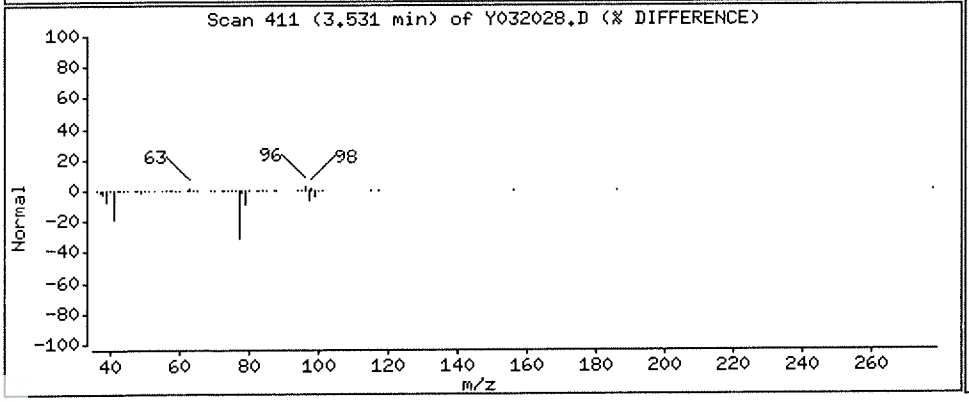












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032028.D

Date : 21-MAR-2020 08:55

Client ID: HS20030621-07

Instrument: voa6.i

Sample Info: HS20030621-07;HS20030621-07;;;

Purge Volume: 5.0

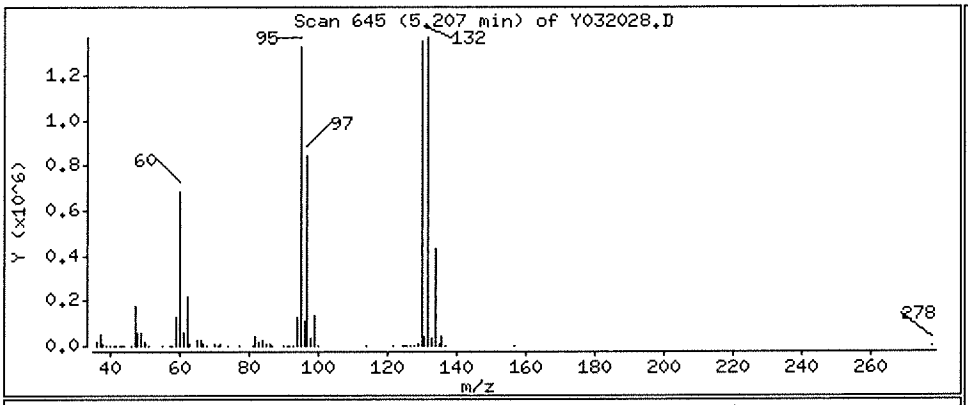
Operator: PC

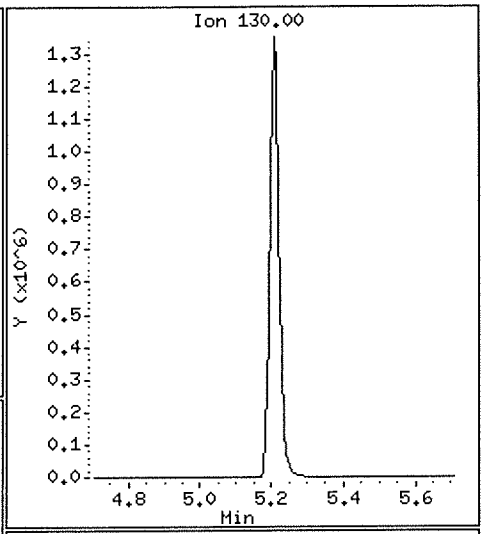
Column phase: DB624

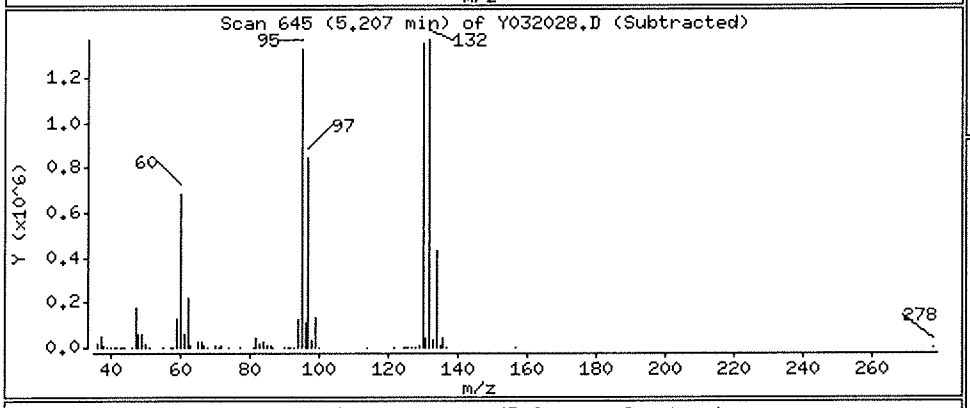
Column diameter: 0.18

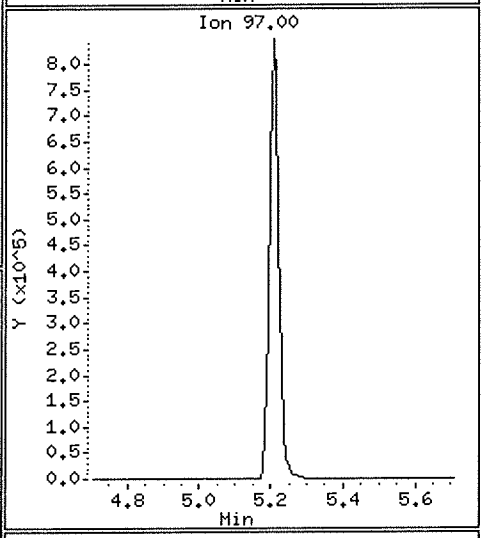
38 Trichloroethene

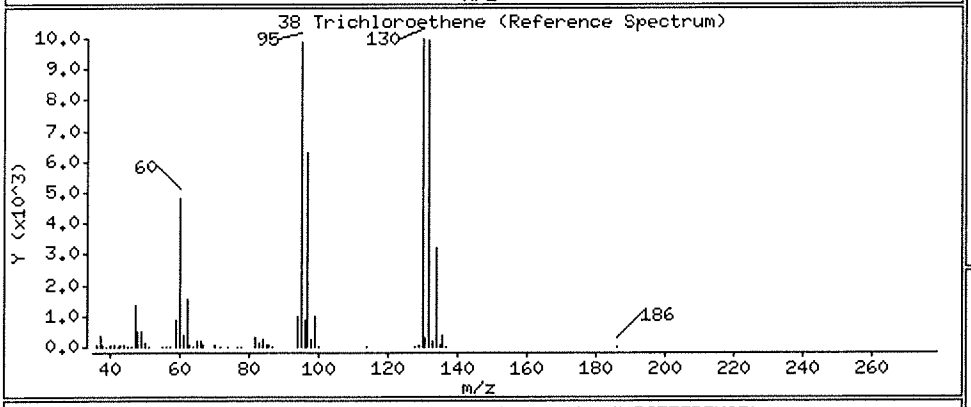
Concentration: 2867.15 ug/l

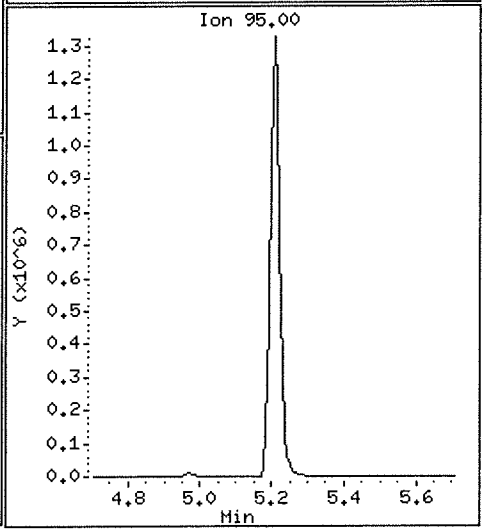


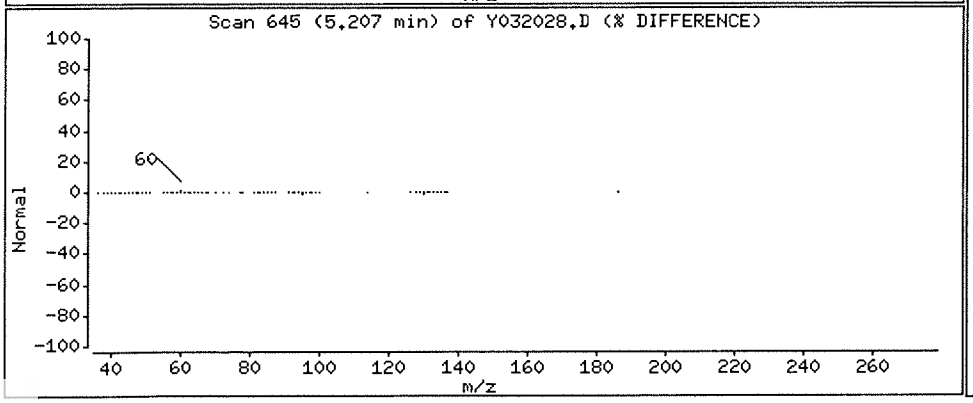












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032029.D Page 1
Report Date: 15-Apr-2020 12:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032029.D
Lab Smp Id: HS20030621-07 Client Smp ID: HS20030621-07
Inj Date : 21-MAR-2020 09:19
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-07;HS20030621-07;;;
Misc Info : HS18090001;WATER;0;50;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:07 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 57
Dil Factor: 50.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	50.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

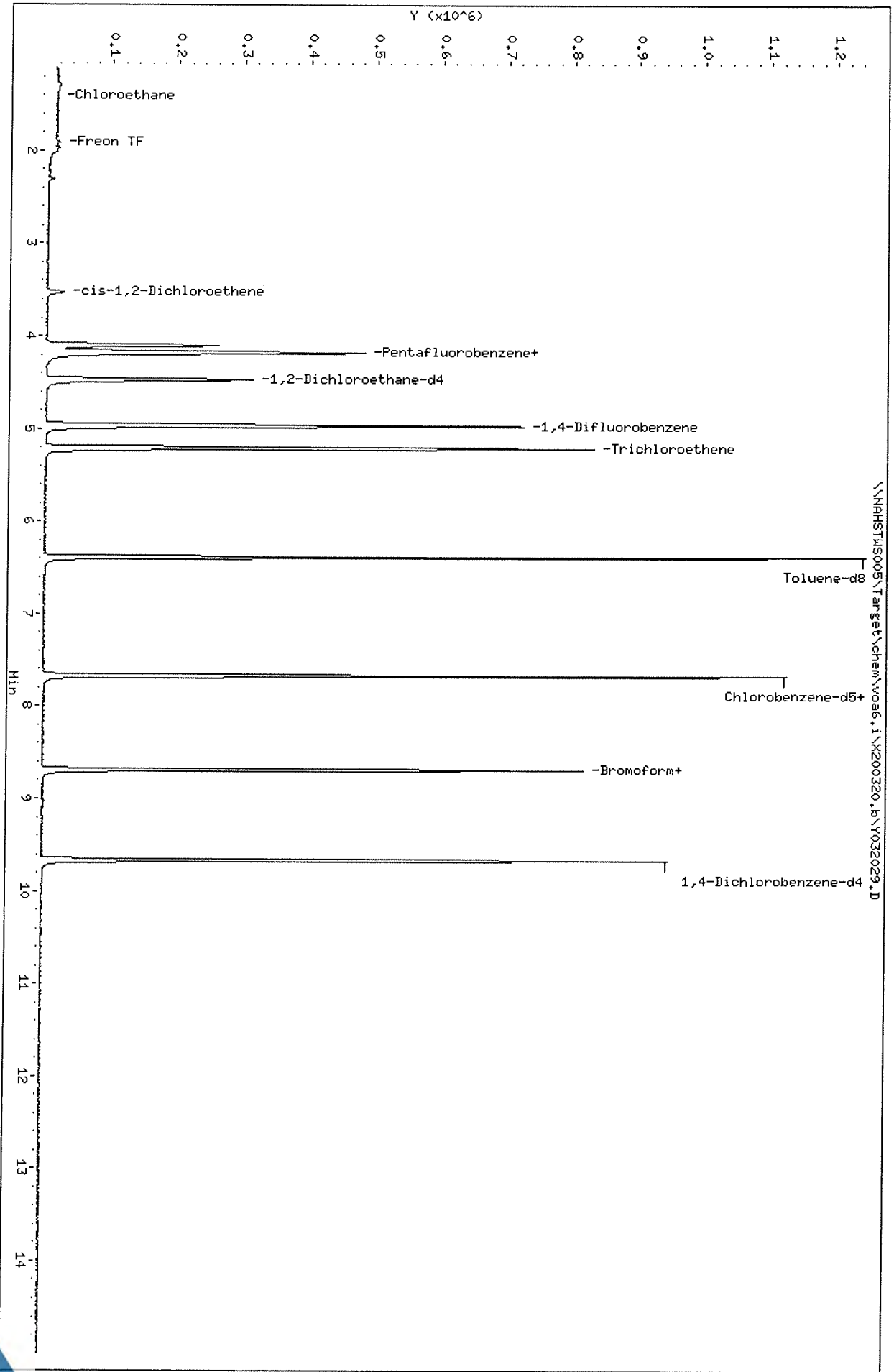
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	400296	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	183409	46.1057	46.10
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	226074	44.9374	44.93
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	590664	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	504451	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	690901	53.4711	53.47
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	239983	49.4359	49.43
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	232506	50.0000	
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	12564	2.75610	137.80(a)
38 Trichloroethene	130	5.206	5.207	(1.048)	267294	65.2899	3264.49

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032029.D
Date : 21-MAR-2020 09:19
Client ID: HS20030621-07
Sample Info: HS20030621-07;HS20030621-07;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032029.D

Date : 21-MAR-2020 09:19

Client ID: HS20030621-07

Instrument: voa6.i

Sample Info: HS20030621-07;HS20030621-07;;;

Purge Volume: 5.0

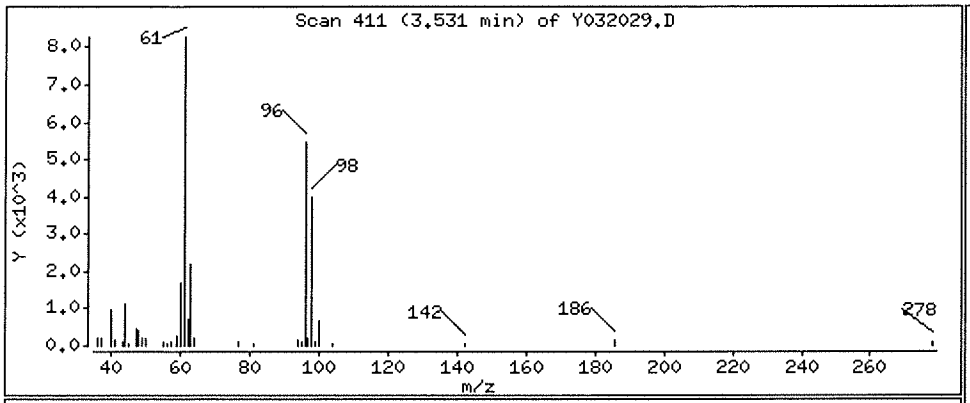
Operator: PC

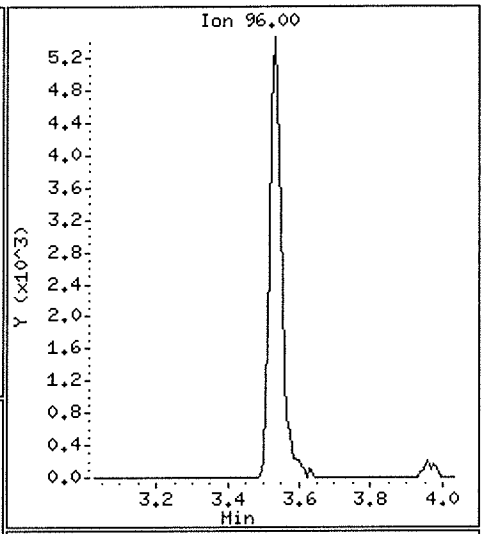
Column phase: DB624

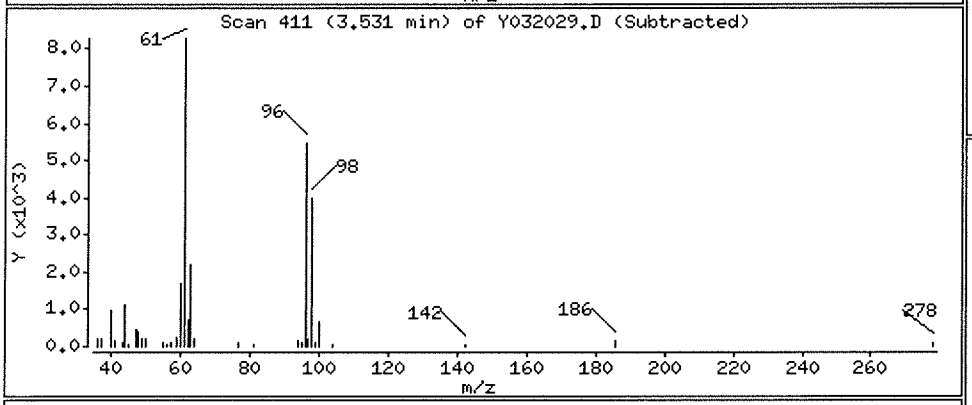
Column diameter: 0.18

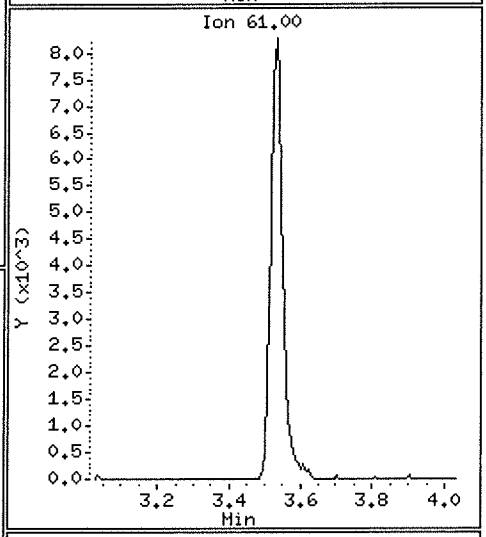
27 cis-1,2-Dichloroethene

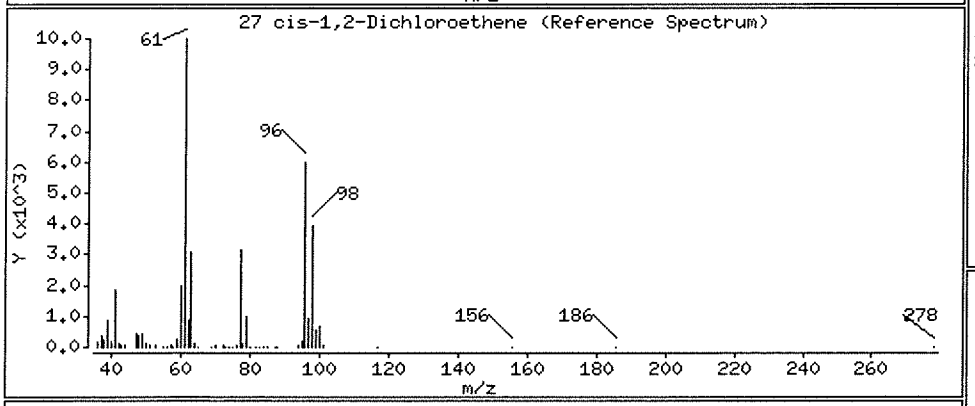
Concentration: 137.80 ug/l

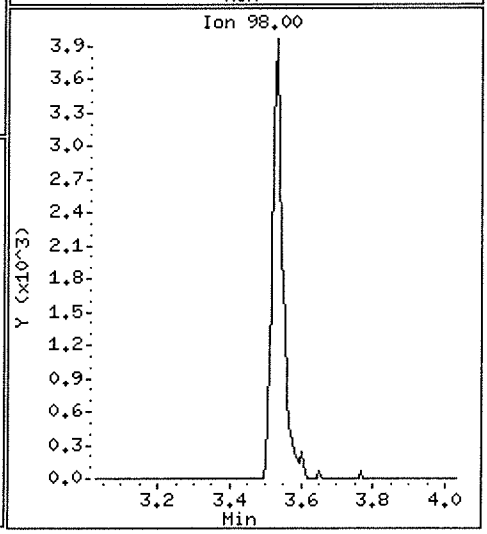


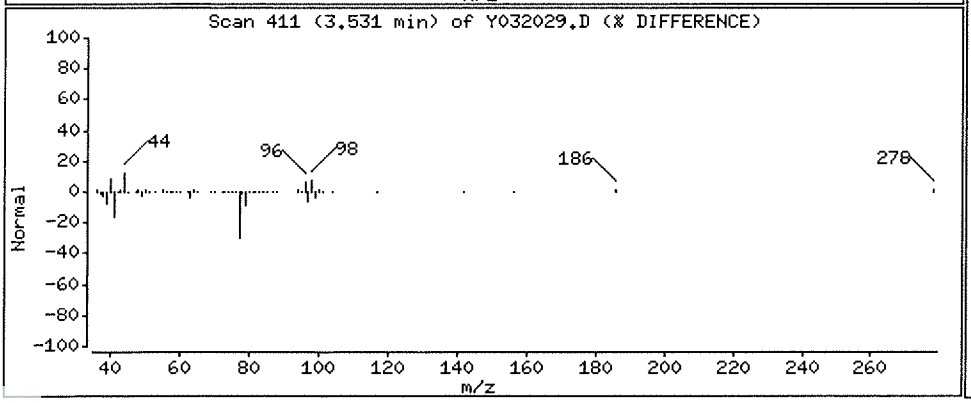












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032029.D

Date : 21-MAR-2020 09:19

Client ID: HS20030621-07

Instrument: voa6.i

Sample Info: HS20030621-07;HS20030621-07;;;

Purge Volume: 5.0

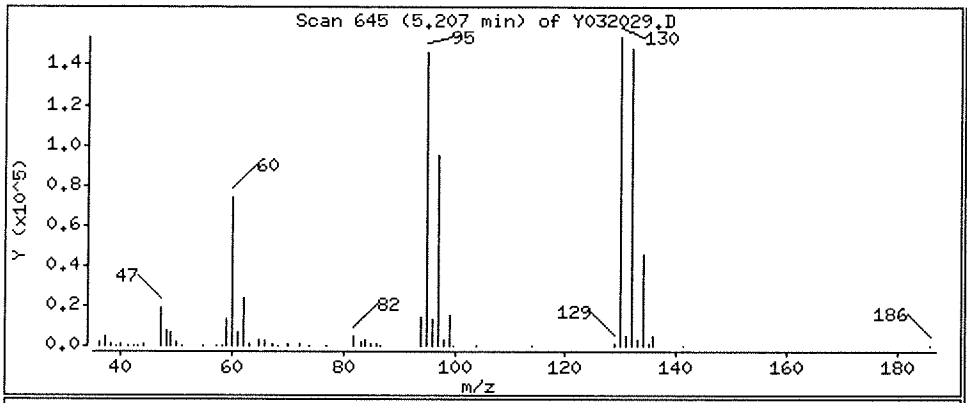
Operator: PC

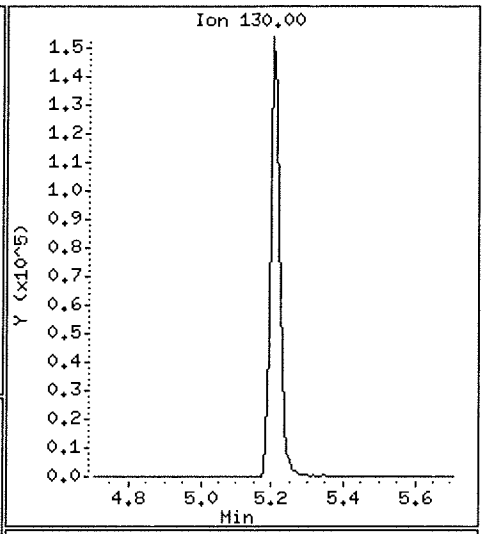
Column phase: DB624

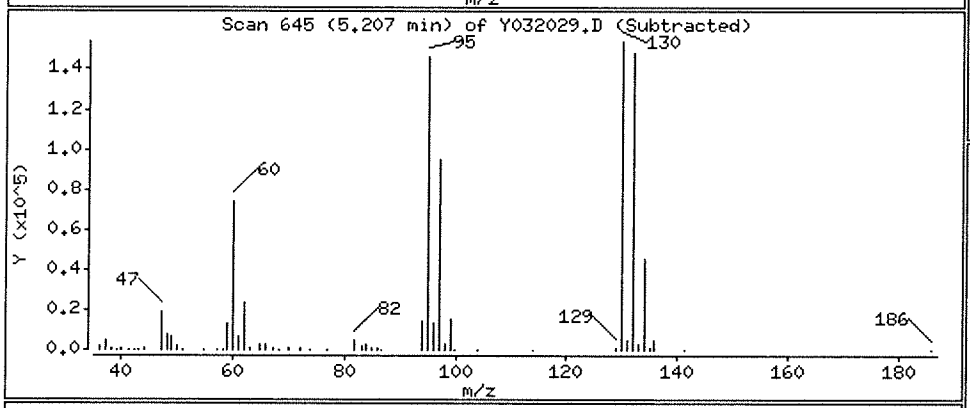
Column diameter: 0.18

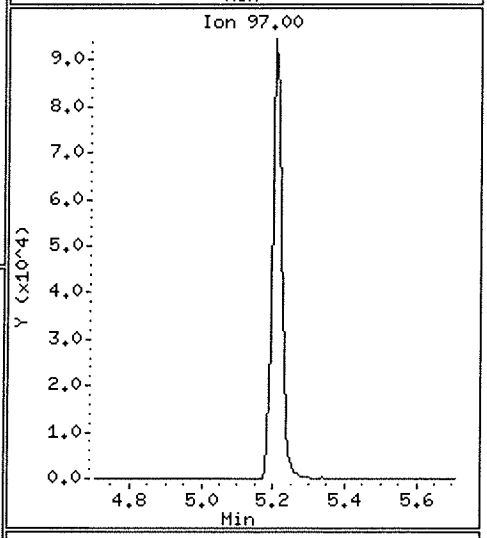
38 Trichloroethene

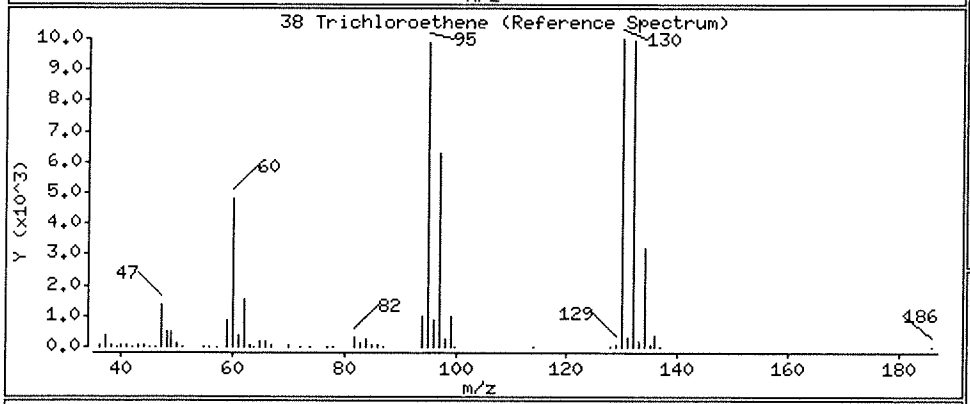
Concentration: 3264.49 ug/l

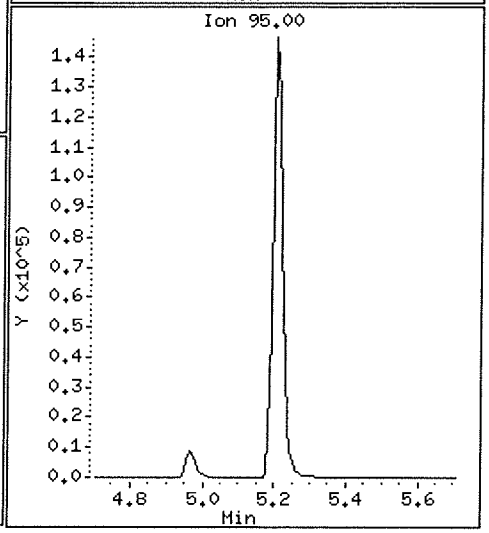


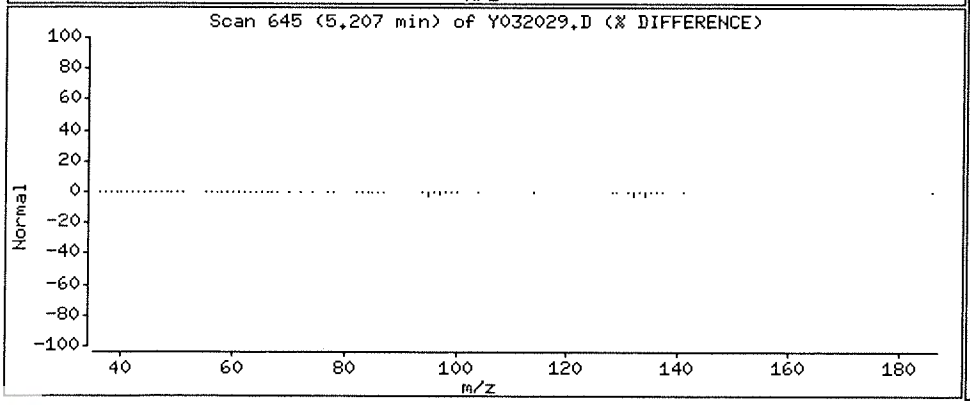












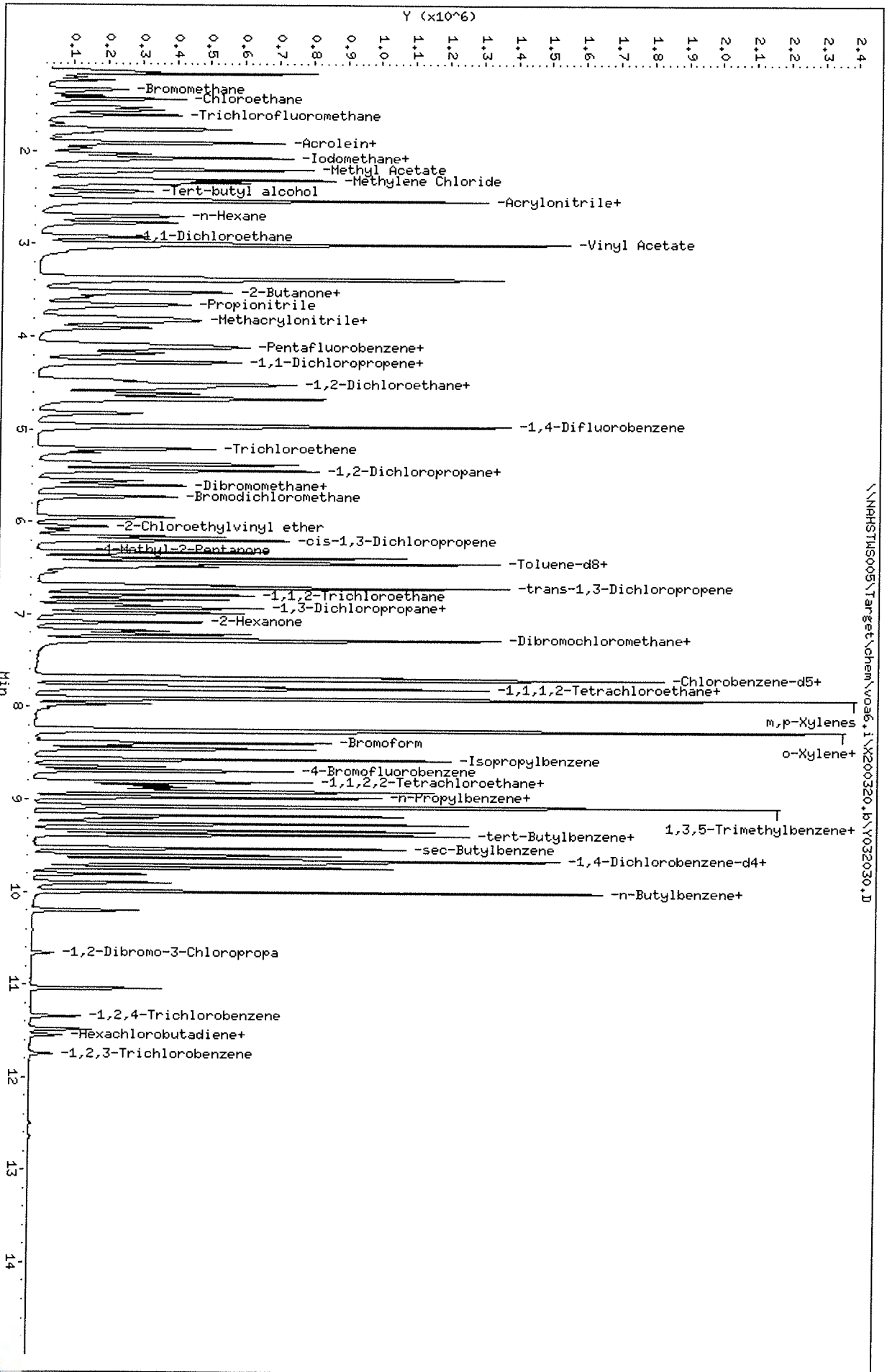
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032030.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 21-MAR-2020 09:43
Operator : PC Inst ID: voa6.i
Smp Info : CCV-END;CCV-END;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:08 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 58 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	284098	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	162418	50.0000	57.55
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	197494	50.0000	55.34
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	466848	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	426928	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	575492	50.0000	52.62
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	212204	50.0000	51.67
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	201436	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	224300	50.0000	51.82
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	124919	50.0000	51.89
17 Methylene Chloride	84	2.305	2.305	(0.551)	171586	50.0000	56.94
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	176740	50.0000	54.62
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	260691	50.0000	52.85
38 Trichloroethene	130	5.206	5.206	(1.048)	166115	50.0000	51.33
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	123754	50.0000	50.31



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032030.D
Date : 21-MAR-2020 09:43
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

HS20030621 Wet Chem Raw Data (IC)

ALS WO# HS20030621

Sequence: 032420
Last Update Operator: alshs.nouser

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	Processing Method	Volume	Status	Inject Time
	STD1	2970209205	Calibration	GA1	1.0000	1	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 7:39:11 PM -06:00
	STD2	NEW PRGM	Calibration	GA2	1.0000	2	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 7:57:16 PM -06:00
	STD3		Calibration	GA3	1.0000	3	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 8:15:24 PM -06:00
	STD4		Calibration	GA4	1.0000	4	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 8:33:31 PM -06:00
	STD5	NO2/PO4	Calibration	GA5	1.0000	5	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 8:51:36 PM -06:00
	STD6	MAX 10PPM	Calibration	GA6	1.0000	6	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 9:09:41 PM -06:00
	ICV	2970209123	Unknown	GA7	1.0000		Anions Prog	Anions Proce	5.0	Finished	2/5/2020 9:27:48 PM -06:00
	ICB		Unknown	GA8	1.0000		Anions Prog	Anions Proce	5.0	Finished	2/5/2020 9:45:53 PM -06:00
	CCV	8	Unknown	BA1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 7:01:57 PM -05:00
	CCB		Unknown	BA2	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 7:20:03 PM -05:00
	MBLK-03.26.20	NEW BATCH	Unknown	RA1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 7:38:15 PM -05:00
	LCS-03.26.20		Unknown	RA2	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 7:56:21 PM -05:00
	LCSD-03.26.20		Unknown	RA3	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 8:14:29 PM -05:00
	CCV1		Unknown	BA3	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 11:18:48 PM -05:00
	CCB		Unknown	BA4	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 11:36:58 PM -05:00
	HS20031162-08	HS20031162-05	Unknown	BB8	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 12:31:14 AM -05:00
	HS20031162-08MS		Unknown	BC4	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 1:43:39 AM -05:00
	HS20031162-08MSD		Unknown	BC5	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 2:01:45 AM -05:00
	HS200301147-01DF10		Unknown	BC6	10.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 2:19:49 AM -05:00
	HS200301147-01MSDF10		Unknown	BC7	10.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 2:37:56 AM -05:00
	CCV	8	Unknown	BA1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 2:56:04 AM -05:00
	CCB		Unknown	BA2	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 3:14:08 AM -05:00
	HS200301147-01MSDDF10		Unknown	BC8	10.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 3:32:14 AM -05:00
	CCV1		Unknown	BA3	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 6:33:13 AM -05:00
	CCB		Unknown	BA4	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 6:51:19 AM -05:00
	CCV	8	Unknown	BA1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 10:10:31 AM -05:00
	CCB		Unknown	BA2	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 10:28:37 AM -05:00
	CCV1		Unknown	BA3	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 1:47:49 PM -05:00
	CCB		Unknown	BA4	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 2:05:55 PM -05:00

Sequence: 032420
Last Update Operator: alshs.nouser

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	Processing Method	Volume	Status	Inject Time
	HS20030621-05	20030621-05	Unknown	RC3	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 2:24:01 PM -05:00
	HS20030621-05DF10	20030621-05	Unknown	RC4	10.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 2:42:06 PM -05:00
	CCV	8	Unknown	BA1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 4:49:03 PM -05:00
	CCB		Unknown	BA2	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/27/2020 5:07:09 PM -05:00

Sequence: 033020A
Injection #6: STD6

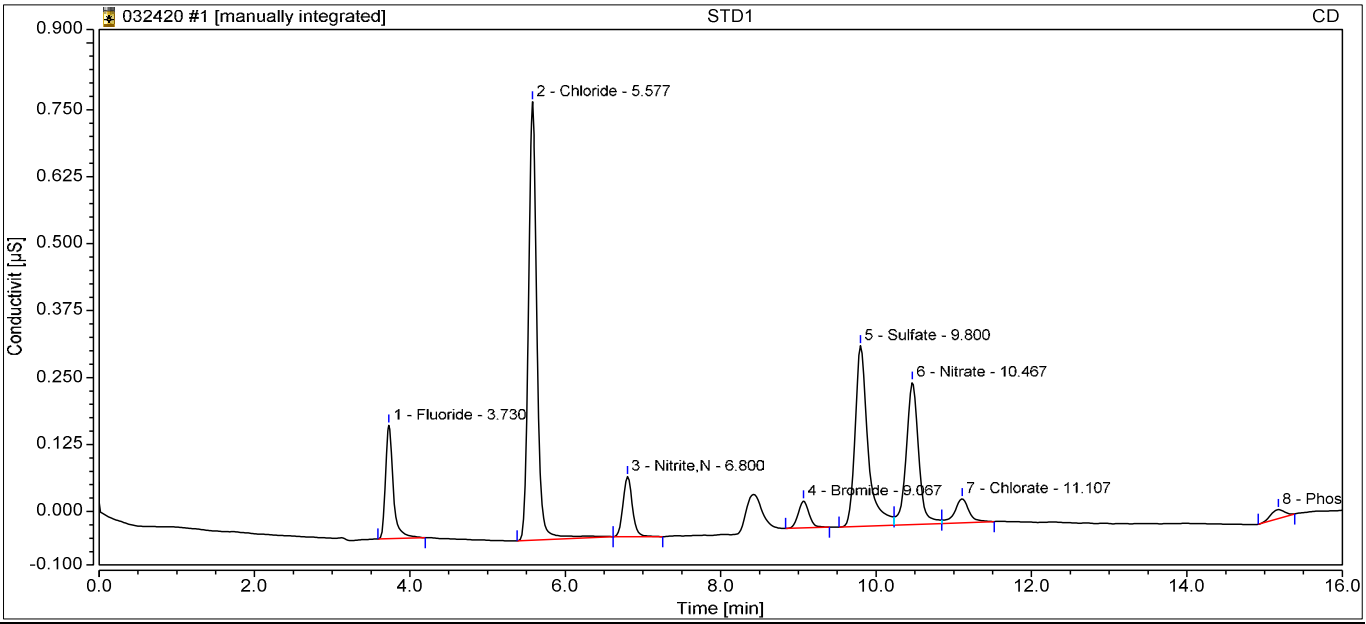
Calibration

Peak No.	Peak Name	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	*Fluoride*	*Lin, WithOffset, 1/*	*Area*	*6*	*13.4314*	*0.99915*	*-0.0083*	*0.3414*	*0.0000*
2	Chloride	Lin, WithOffset, 1/	Area	6	2.2020	0.99998	-0.0141	0.2320	0.0000
3	Nitrite,N	Lin, WithOffset, 1/	Area	6	30.0137	0.99594	-0.0159	0.4671	0.0000
4	Bromide	Lin, WithOffset, 1/	Area	6	12.1436	0.99933	-0.0033	0.0991	0.0000
5	Sulfate	Lin, WithOffset, 1/	Area	6	4.2312	0.99991	-0.0170	0.1679	0.0000
6	Nitrate	Lin, WithOffset, 1/	Area	6	2.3081	0.99997	-0.0076	0.5843	0.0000
7	Chlorate	Lin, WithOffset, 1/	Area	6	9.7729	0.99945	0.0017	0.0949	0.0000
8	Phosphate	Lin, WithOffset, 1/	Area	6	20.6471	0.99870	-0.0235	0.2186	0.0000
Maximum					**30.0137**	0.99998			
Minimum					2.2020	**0.99594**			

1 STD1

Sample Name:	**STD1**	*Injection Volume:*	**5.00**
Vial Number:	**GA1**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 19:39**	*Sample Weight:*	**1.0000**

Run Time:



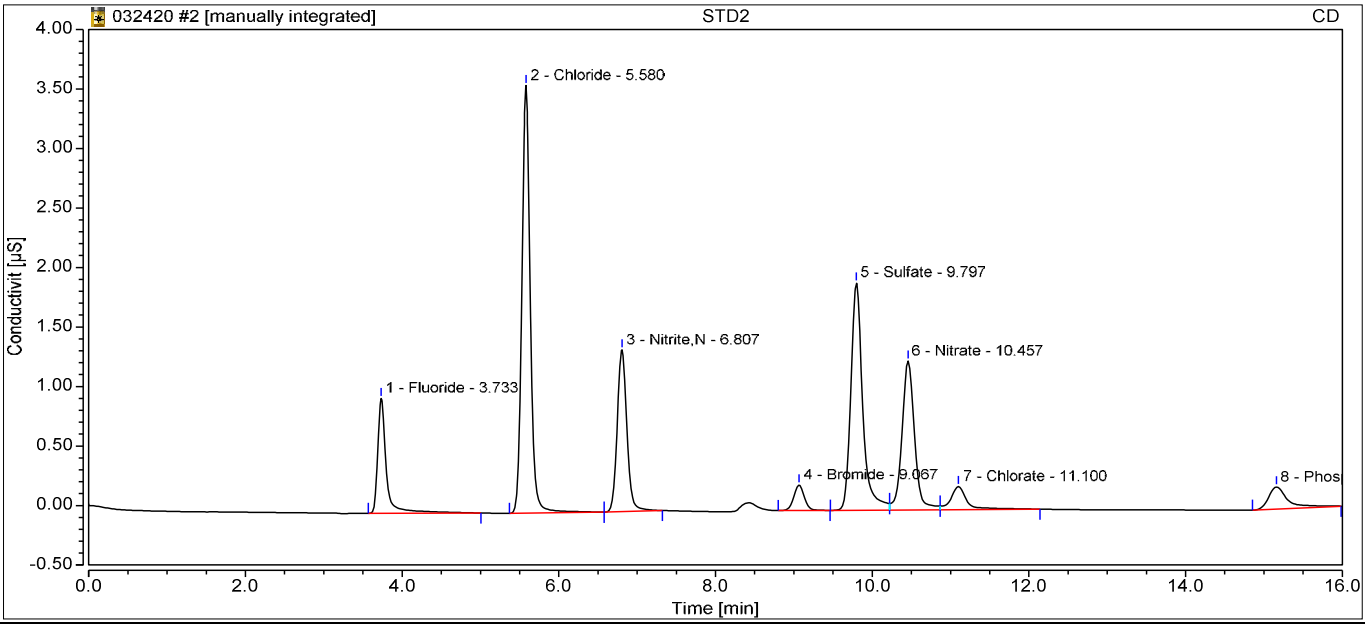
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.024	0.0955	0.0955	1.0000
2	5.58	Chloride	BMB	0.103	0.5065	0.5065	1.0000
3	6.80	Nitrite,N	BMB	0.016	0.0673	0.0673	1.0000
4	9.07	Bromide	BMB	0.008	0.1156	0.1156	1.0000
5	9.80	Sulfate	BM	0.065	0.4885	0.4885	1.0000
6	10.47	Nitrate	M	0.049	0.0974	0.0974	1.0000
7	11.11	Chlorate	MB	0.010	0.0834	0.0834	1.0000
8	15.18	Phosphate	BMB*	0.003	0.1235	0.1235	1.0000
Total:			**0.000**	**0.279**		**1.58**	

2 STD2

Sample Name:	**STD2**	*Injection Volume:*	**5.00**
Vial Number:	**GA2**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 19:57**	*Sample Weight:*	**1.0000**

Run Time:



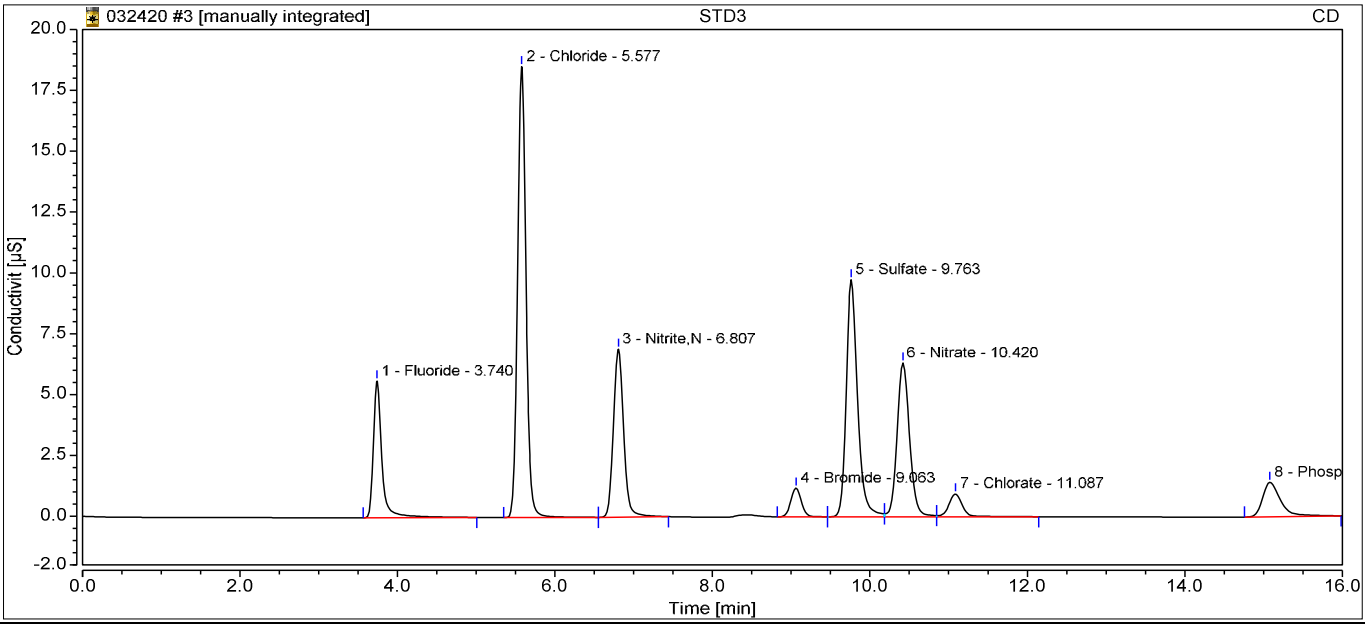
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.123	0.3833	0.3833	1.0000
2	5.58	Chloride	BMb*	0.449	1.9963	1.9963	1.0000
3	6.81	Nitrite,N	bMB*	0.194	0.4500	0.4500	1.0000
4	9.07	Bromide	BMB	0.034	0.3722	0.3722	1.0000
5	9.80	Sulfate	BM	0.335	2.0973	2.0973	1.0000
6	10.46	Nitrate	M	0.232	0.4103	0.4103	1.0000
7	11.10	Chlorate	MB	0.047	0.4759	0.4759	1.0000
8	15.16	Phosphate	BMB	0.053	0.3508	0.3508	1.0000
Total:			**0.000**	**1.467**		**6.54**	

3 STD3

Sample Name:	**STD3**	*Injection Volume:*	**5.00**
Vial Number:	**GA3**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 20:15**	*Sample Weight:*	**1.0000**

Run Time:



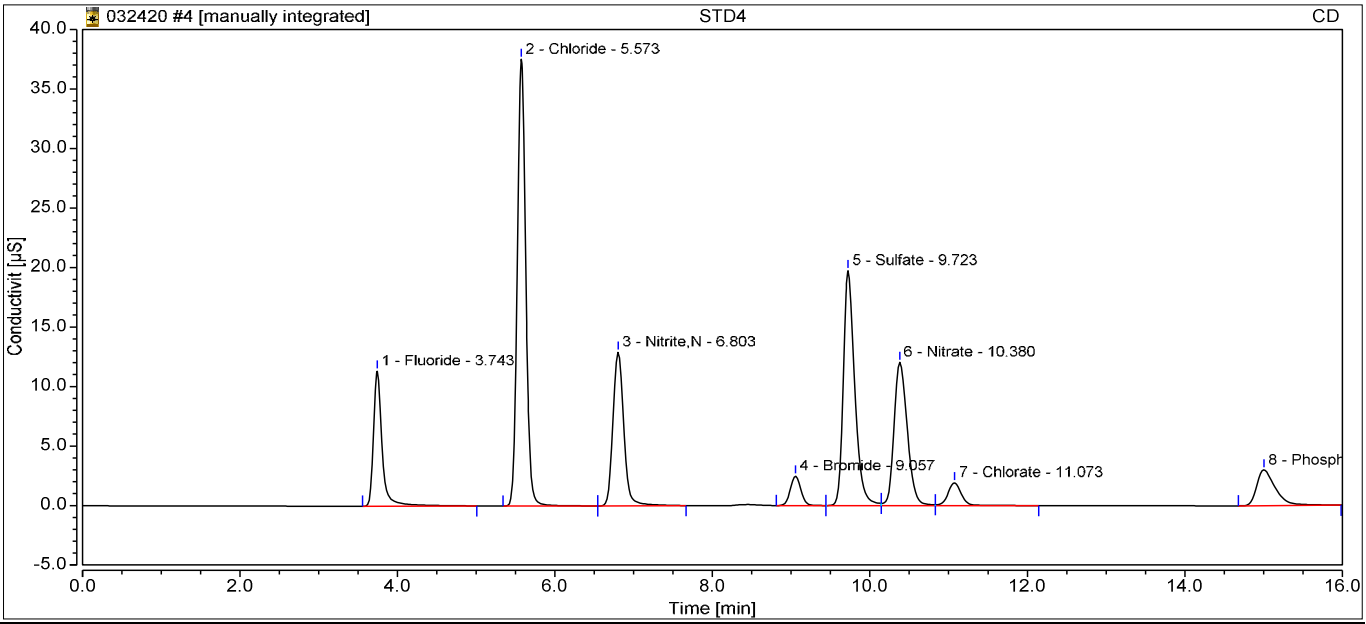
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.701	2.0769	2.0769	1.0000
2	5.58	Chloride	BMb*	2.284	9.9073	9.9073	1.0000
3	6.81	Nitrite,N	bMB*	1.029	2.2369	2.2369	1.0000
4	9.06	Bromide	BM	0.182	1.8657	1.8657	1.0000
5	9.76	Sulfate	M	1.624	9.7730	9.7730	1.0000
6	10.42	Nitrate	M	1.160	1.9980	1.9980	1.0000
7	11.09	Chlorate	MB	0.189	1.9689	1.9689	1.0000
8	15.08	Phosphate	BMB	0.374	1.8187	1.8187	1.0000
Total:			**0.000**	**7.542**		**31.65**	

4 STD4

Sample Name:	**STD4**	*Injection Volume:*	**5.00**
Vial Number:	**GA4**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 20:33**	*Sample Weight:*	**1.0000**

Run Time:



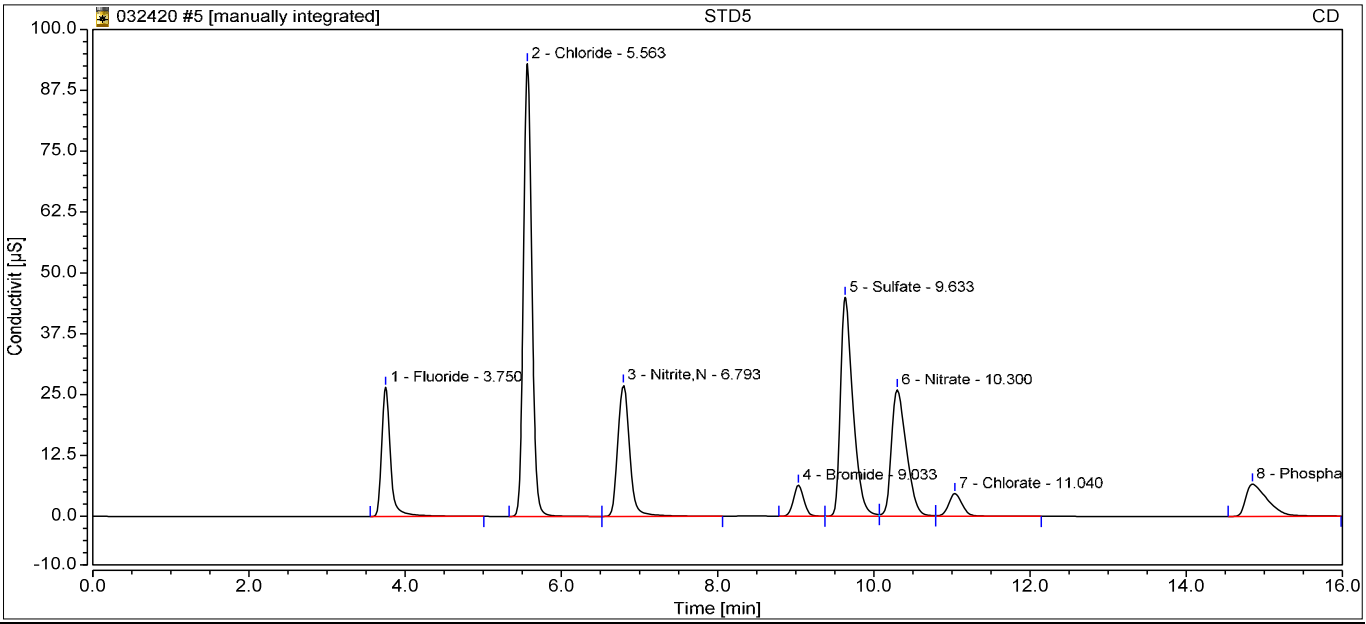
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.428	4.2080	4.2080	1.0000
2	5.57	Chloride	BMb*	4.627	20.0069	20.0069	1.0000
3	6.80	Nitrite,N	bMB*	2.046	4.4146	4.4146	1.0000
4	9.06	Bromide	BM	0.382	3.8871	3.8871	1.0000
5	9.72	Sulfate	M	3.337	19.9713	19.9713	1.0000
6	10.38	Nitrate	M	2.343	4.0228	4.0228	1.0000
7	11.07	Chlorate	MB	0.380	3.9830	3.9830	1.0000
8	15.00	Phosphate	BMB	0.824	3.8745	3.8745	1.0000
Total:			**0.000**	**15.366**		**64.37**	

5 STD5

Sample Name:	**STD5**	*Injection Volume:*	**5.00**
Vial Number:	**GA5**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 20:51**	*Sample Weight:*	**1.0000**

Run Time:



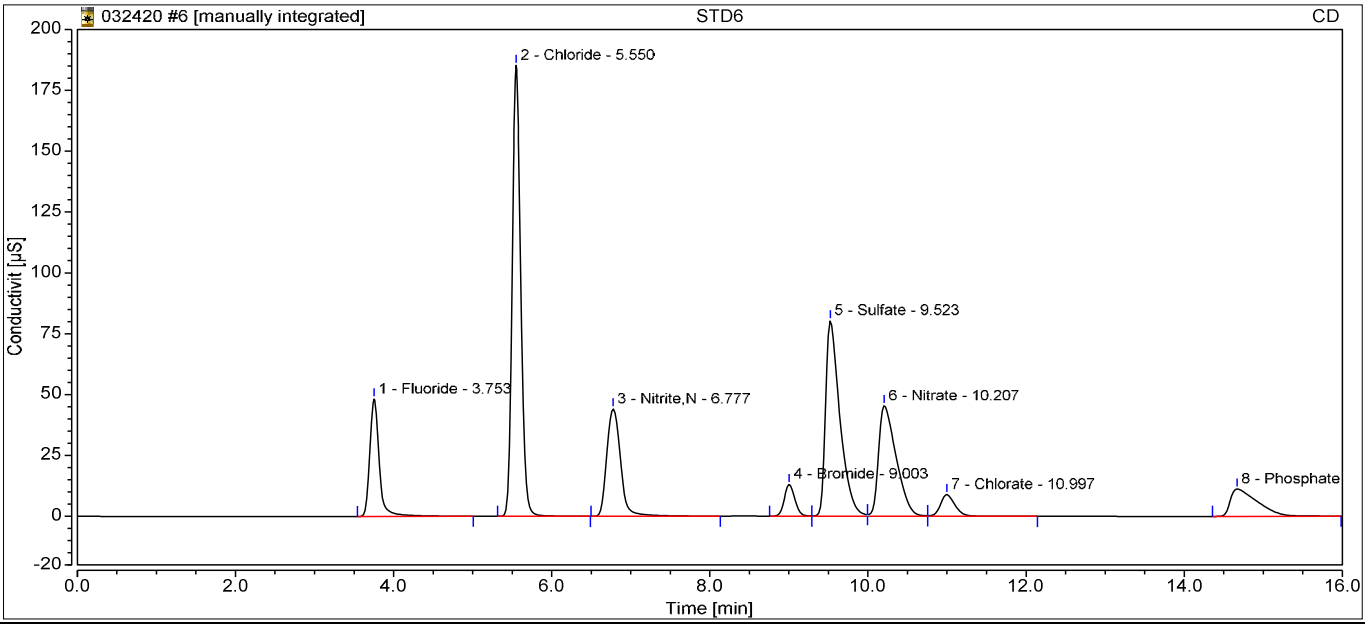
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	3.472	10.1940	10.1940	1.0000
2	5.56	Chloride	BMB	11.516	49.7057	49.7057	1.0000
3	6.79	Nitrite,N	BMB*	4.776	10.2593	10.2593	1.0000
4	9.03	Bromide	BM	0.981	9.9279	9.9279	1.0000
5	9.63	Sulfate	M	8.325	49.6811	49.6811	1.0000
6	10.30	Nitrate	M	5.799	9.9382	9.9382	1.0000
7	11.04	Chlorate	MB	0.944	9.9252	9.9252	1.0000
8	14.85	Phosphate	BMB	2.135	9.8737	9.8737	1.0000
Total:			**0.000**	**37.949**		**159.51**	

6 STD6

Sample Name:	**STD6**	*Injection Volume:*	**5.00**
Vial Number:	**GA6**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 21:09**	*Sample Weight:*	**1.0000**

Run Time:



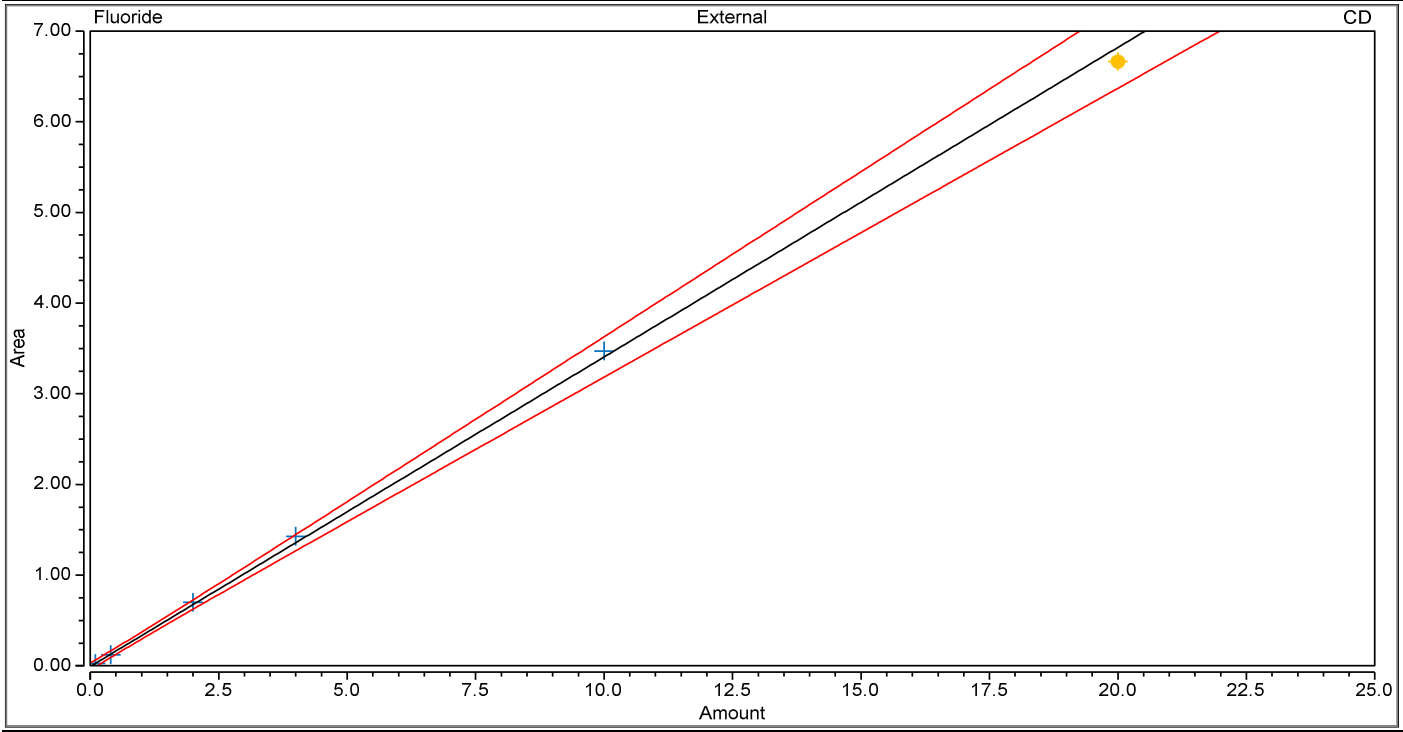
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	6.664	19.5424	19.5424	1.0000
2	5.55	Chloride	BMB	23.270	100.3774	100.3774	1.0000
3	6.78	Nitrite,N	BMB*	8.893	19.0718	19.0718	1.0000
4	9.00	Bromide	BM	2.012	20.3316	20.3316	1.0000
5	9.52	Sulfate	M	16.857	100.4888	100.4888	1.0000
6	10.21	Nitrate	M	11.698	20.0333	20.0333	1.0000
7	11.00	Chlorate	MB	1.906	20.0635	20.0635	1.0000
8	14.67	Phosphate	BMB	4.450	20.4589	20.4589	1.0000
Total:			**0.000**	**75.750**		**320.37**	

Calibration

Calibration Details	Fluoride		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0083
Evaluation Type	Area	*Slope (C1)*	0.3414
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9991

Calibration Plot **Fluoride**



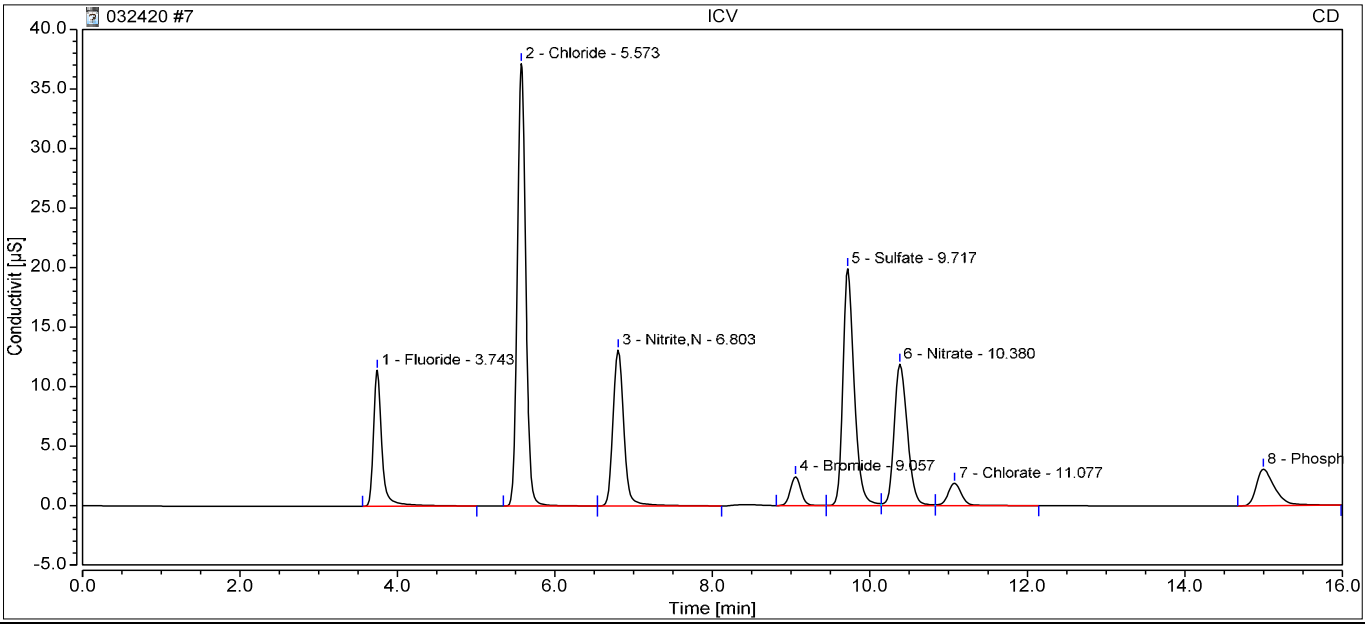
Calibration Results **Fluoride**

No.	Injection Name	Calibration Level	X Value CD Fluoride	Y Value CD Fluoride	Y Value CD Fluoride	Area µS*min CD Fluoride	Height µS CD Fluoride
1	STD1	1	0.1000	0.0243	0.0243	0.024	0.212
2	STD2	2	0.4000	0.1226	0.1226	0.123	0.964
3	STD3	3	2.0000	0.7008	0.7008	0.701	5.614
4	STD4	4	4.0000	1.4284	1.4284	1.428	11.345
5	STD5	5	10.0000	3.4723	3.4723	3.472	26.547
6	STD6	6	20.0000	6.6641	6.6641	6.664	48.233

7 ICV

Sample Name:	**ICV**	*Injection Volume:*	**5.00**
Vial Number:	**GA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 21:27**	*Sample Weight:*	**1.0000**

Run Time:



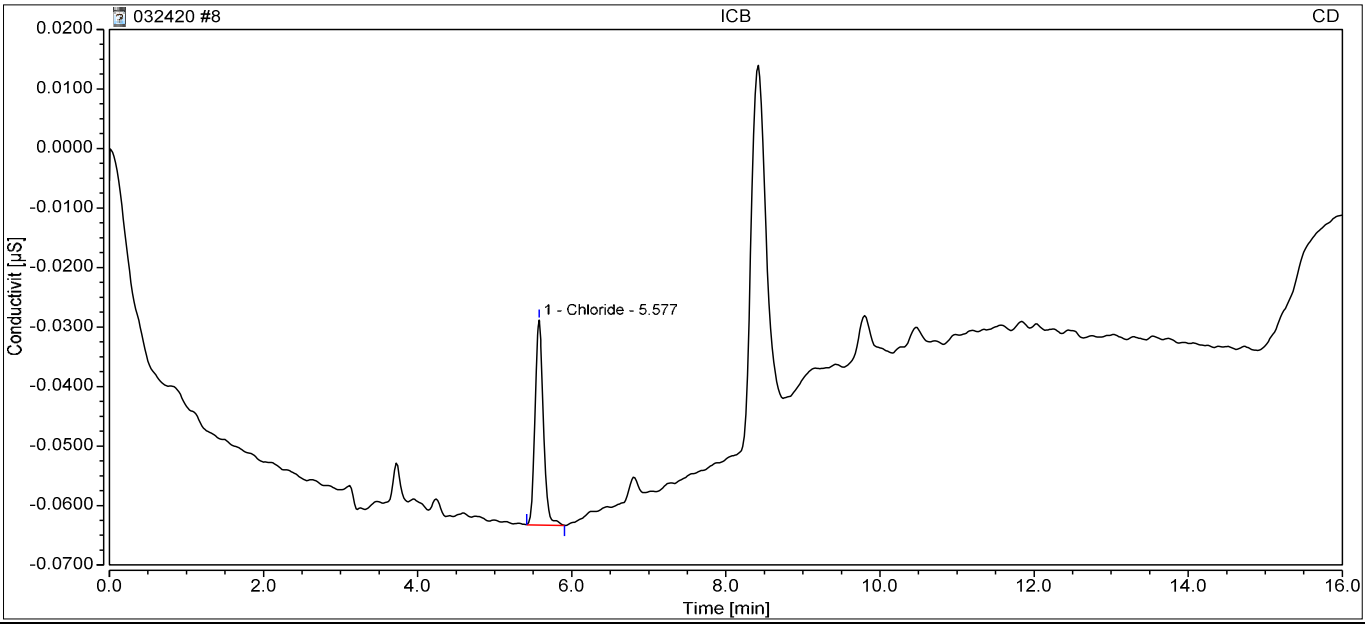
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.412	4.1607	4.1607	1.0000
2	5.57	Chloride	BMB	4.570	19.7627	19.7627	1.0000
3	6.80	Nitrite,N	BMB	2.081	4.4887	4.4887	1.0000
4	9.06	Bromide	BM	0.374	3.8104	3.8104	1.0000
5	9.72	Sulfate	M	3.327	19.9126	19.9126	1.0000
6	10.38	Nitrate	M	2.299	3.9478	3.9478	1.0000
7	11.08	Chlorate	MB	0.379	3.9799	3.9799	1.0000
8	15.00	Phosphate	BMB	0.835	3.9271	3.9271	1.0000
Total:			**0.000**	**15.278**		**63.99**	

8 ICB

Sample Name:	**ICB**	*Injection Volume:*	**5.00**
Vial Number:	**GA8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 21:45**	*Sample Weight:*	**1.0000**

Run Time:



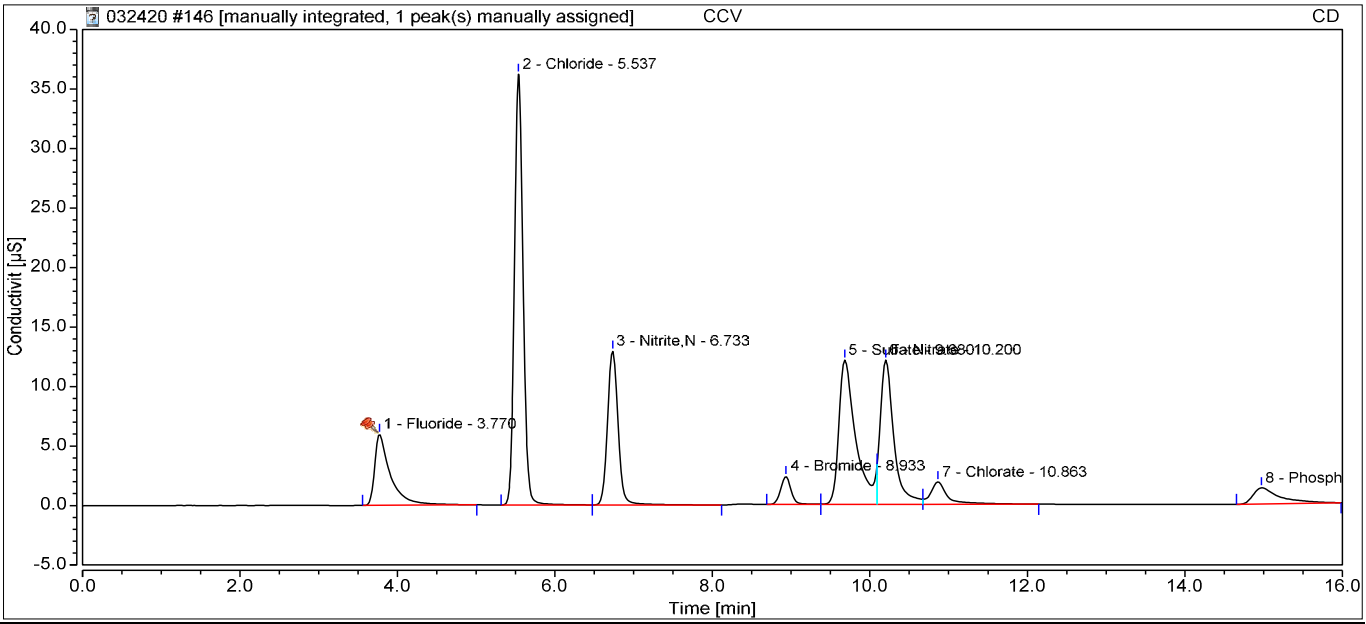
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.58	Chloride	BMB	0.004	0.0794	0.0794	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.004**		**0.08**	

146 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2020 19:01**	*Sample Weight:*	**1.0000**

Run Time:



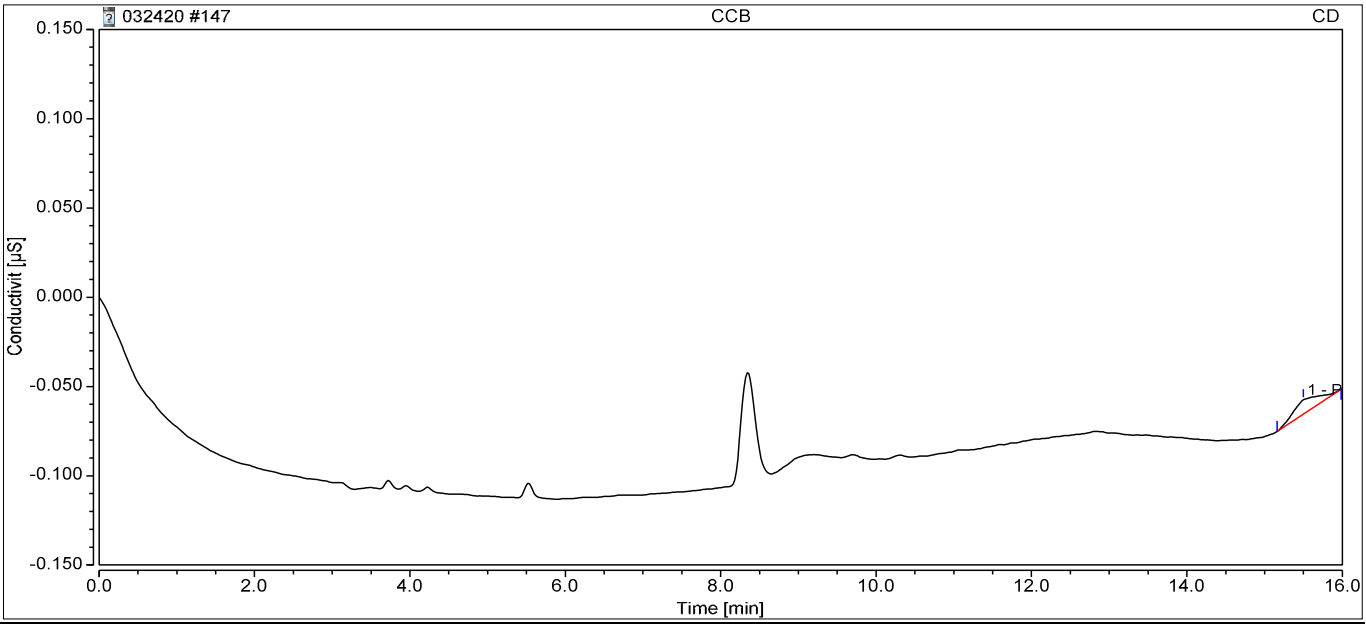
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.77	Fluoride	BMB^	1.380	4.0663	4.0663	1.0000
2	5.54	Chloride	BMB	4.546	19.6607	19.6607	1.0000
3	6.73	Nitrite,N	BMB	2.032	4.3843	4.3843	1.0000
4	8.93	Bromide	BM	0.362	3.6851	3.6851	1.0000
5	9.68	Sulfate	M *	3.042	18.2186	18.2186	1.0000
6	10.20	Nitrate	M *	2.389	4.1012	4.1012	1.0000
7	10.86	Chlorate	MB	0.475	4.9897	4.9897	1.0000
8	14.97	Phosphate	BMB	0.542	2.5888	2.5888	1.0000
Total:			**0.000**	**14.769**		**61.69**	

147 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2020 19:20**	*Sample Weight:*	**1.0000**

Run Time:



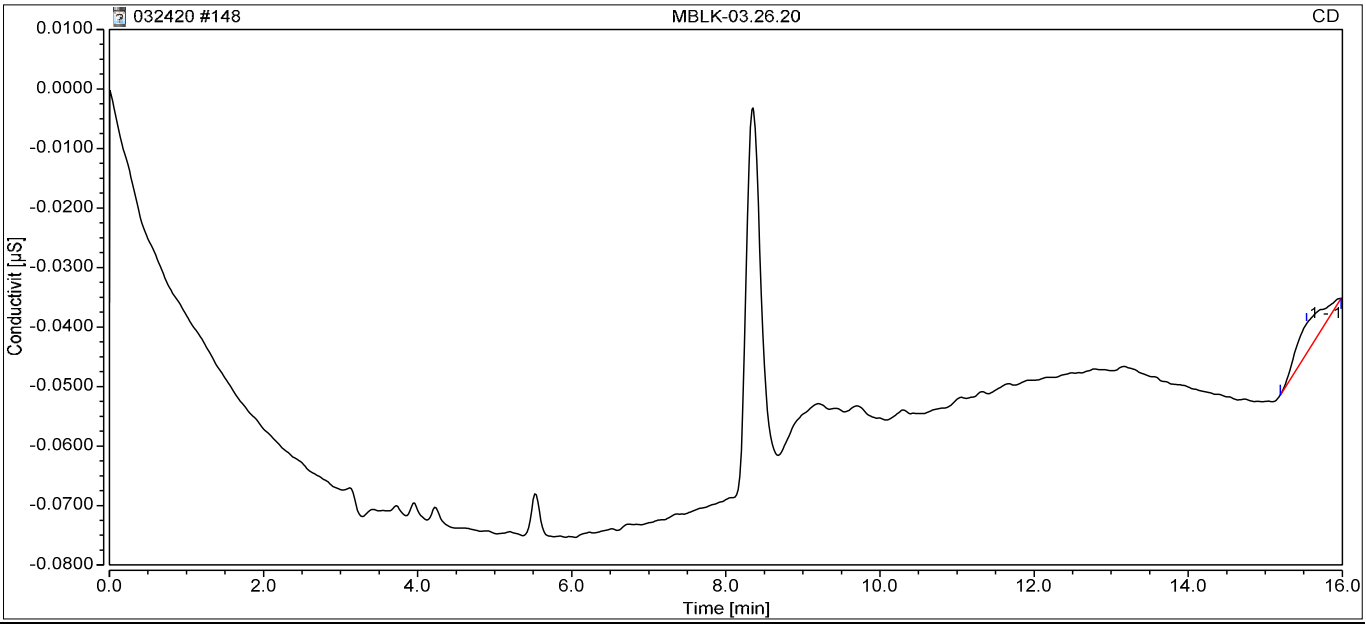
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
1	15.50	Phosphate	BMB	0.003	0.1215	0.1215	1.0000
Total:			**0.000**	**0.003**		**0.12**	

148 MBLK-03.26.20

Sample Name:	**MBLK-03.26.20**	*Injection Volume:*	**5.00**
Vial Number:	**RA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2020 19:38**	*Sample Weight:*	**1.0000**

Run Time:



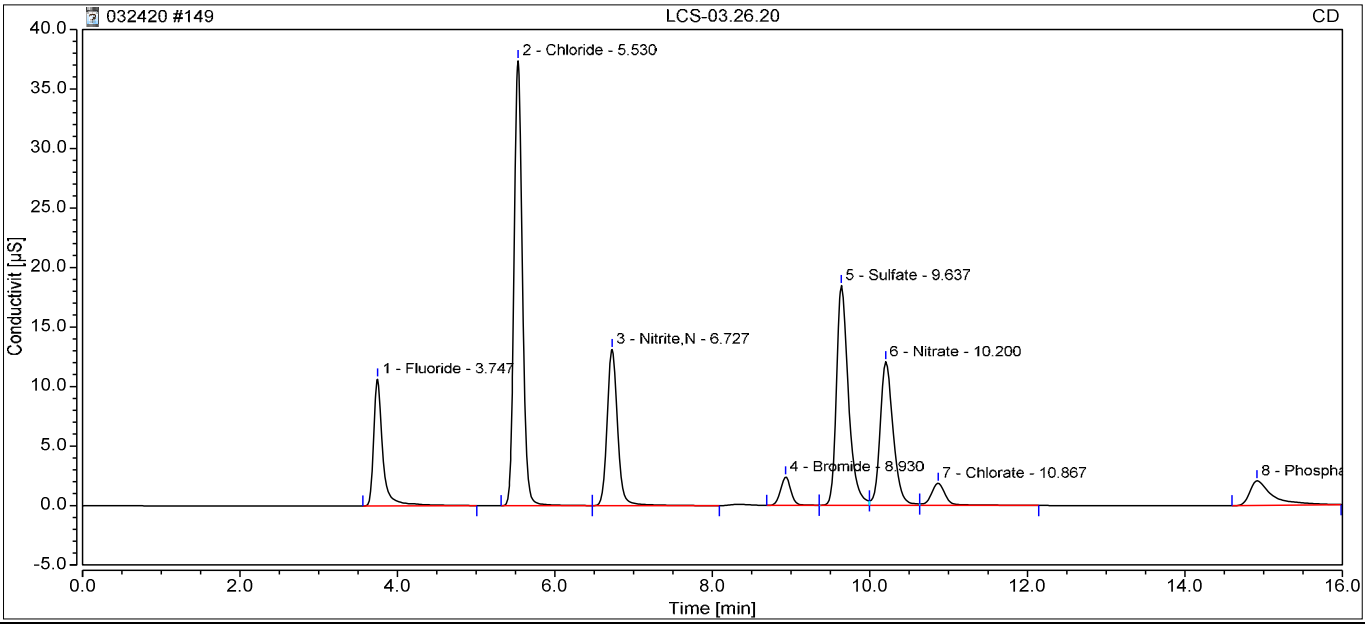
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

149 LCS-03.26.20

Sample Name:	**LCS-03.26.20**	*Injection Volume:*	**5.00**
Vial Number:	**RA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2020 19:56**	*Sample Weight:*	**1.0000**

Run Time:



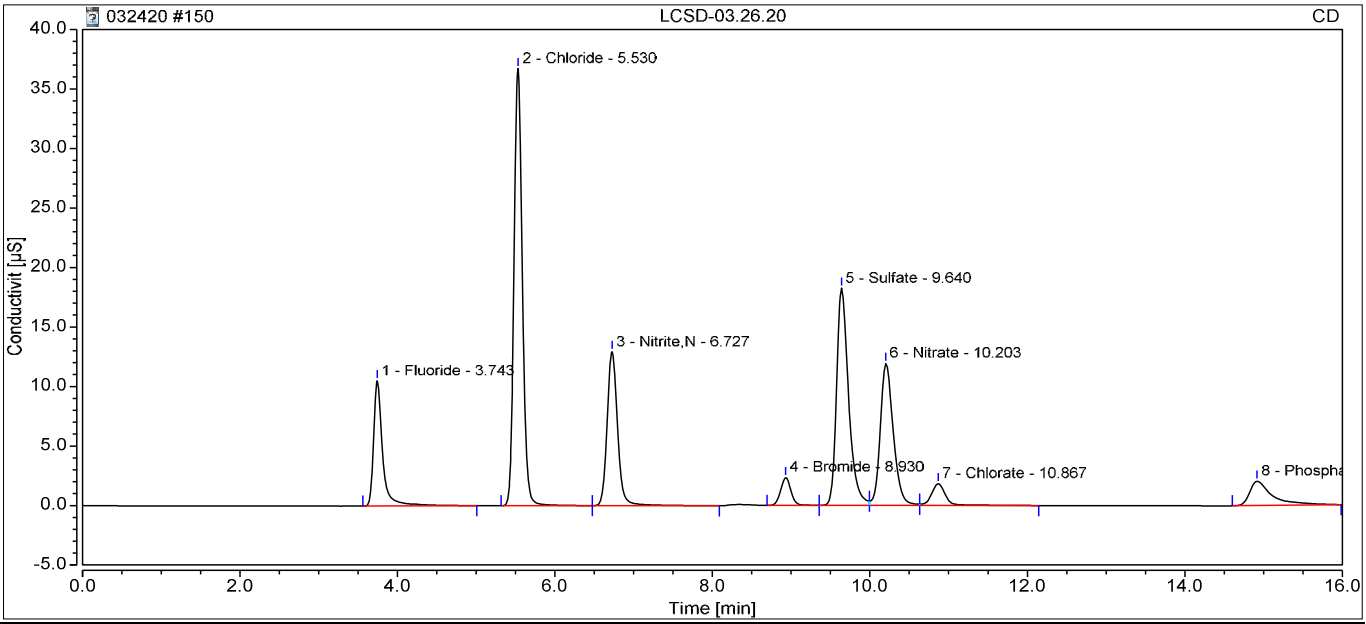
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	1.424	4.1943	4.1943	1.0000
2	5.53	Chloride	BMB	4.551	19.6813	19.6813	1.0000
3	6.73	Nitrite,N	BMB	2.034	4.3883	4.3883	1.0000
4	8.93	Bromide	BM	0.365	3.7113	3.7113	1.0000
5	9.64	Sulfate	M	3.252	19.4694	19.4694	1.0000
6	10.20	Nitrate	M	2.330	4.0013	4.0013	1.0000
7	10.87	Chlorate	MB	0.391	4.0988	4.0988	1.0000
8	14.92	Phosphate	BMB	0.690	3.2652	3.2652	1.0000
Total:			**0.000**	**15.037**		**62.81**	

150 LCSD-03.26.20

Sample Name:	**LCSD-03.26.20**	*Injection Volume:*	**5.00**
Vial Number:	**RA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2020 20:14**	*Sample Weight:*	**1.0000**

Run Time:



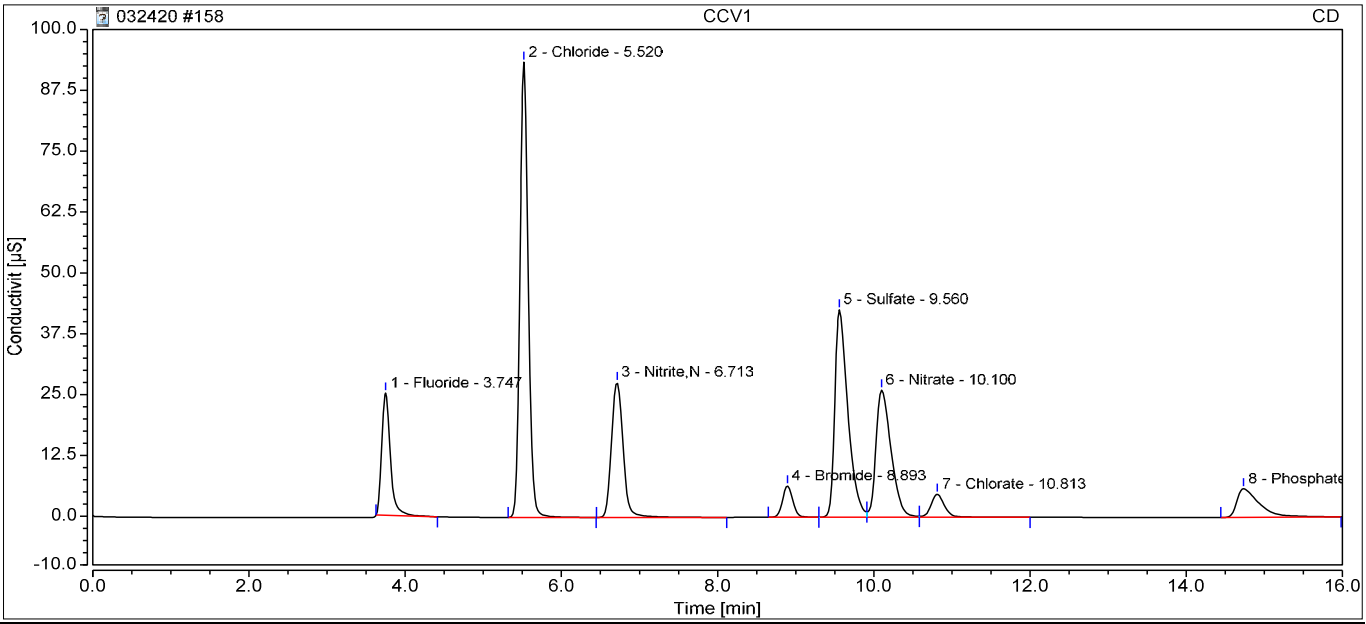
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.390	4.0958	4.0958	1.0000
2	5.53	Chloride	BMB	4.472	19.3410	19.3410	1.0000
3	6.73	Nitrite,N	BMB	2.005	4.3262	4.3262	1.0000
4	8.93	Bromide	BM	0.358	3.6432	3.6432	1.0000
5	9.64	Sulfate	M	3.217	19.2579	19.2579	1.0000
6	10.20	Nitrate	M	2.297	3.9440	3.9440	1.0000
7	10.87	Chlorate	MB	0.382	4.0109	4.0109	1.0000
8	14.92	Phosphate	BMB	0.681	3.2208	3.2208	1.0000
Total:			**0.000**	**14.802**		**61.84**	

158 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2020 23:18**	*Sample Weight:*	**1.0000**

Run Time:



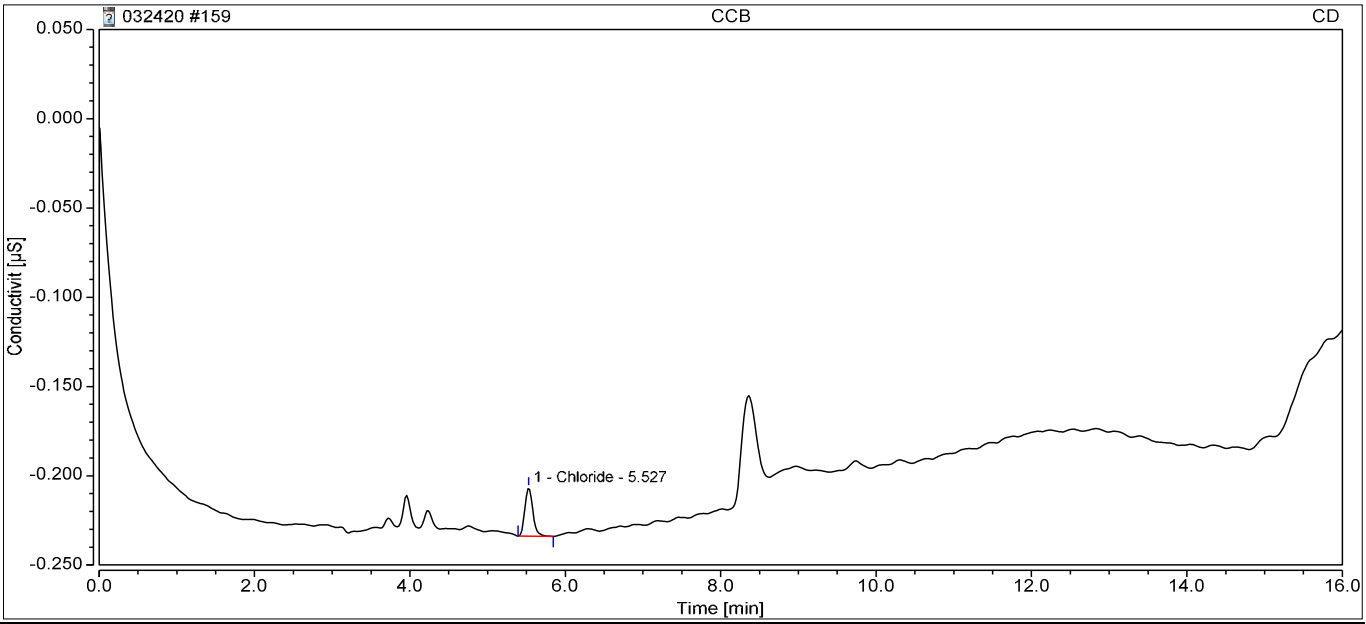
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	3.206	9.4144	9.4144	1.0000
2	5.52	Chloride	BMB	11.526	49.7513	49.7513	1.0000
3	6.71	Nitrite,N	BMB	4.821	10.3544	10.3544	1.0000
4	8.89	Bromide	BM	0.980	9.9248	9.9248	1.0000
5	9.56	Sulfate	M	8.275	49.3797	49.3797	1.0000
6	10.10	Nitrate	M	5.858	10.0384	10.0384	1.0000
7	10.81	Chlorate	MB	0.959	10.0890	10.0890	1.0000
8	14.74	Phosphate	BMB	1.971	9.1233	9.1233	1.0000
Total:			**0.000**	**37.597**		**158.08**	

159 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2020 23:36**	*Sample Weight:*	**1.0000**

Run Time:



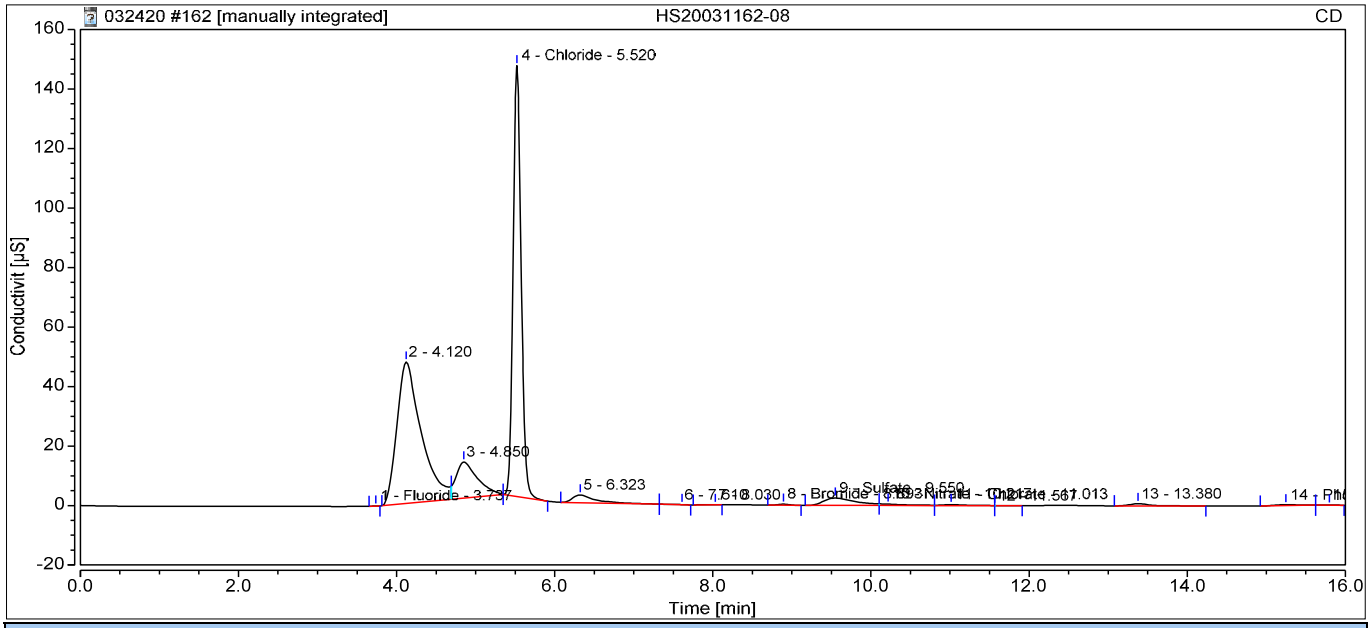
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.53	Chloride	BMB	0.003	0.0750	0.0750	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.003**		**0.07**	

162 HS20031162-08

Sample Name:	**HS20031162-08**	*Injection Volume:*	**5.00**
Vial Number:	**BB8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/27/2020 00:31**	*Sample Weight:*	**1.0000**

Run Time:



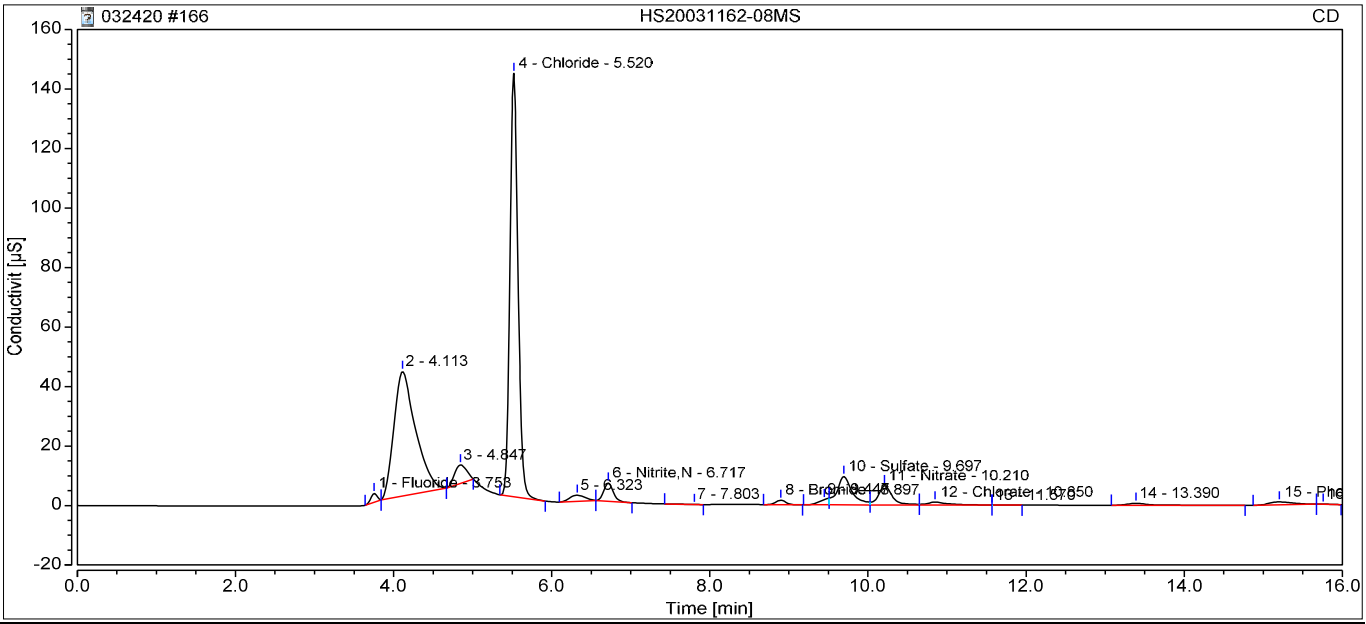
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.004	0.0352	0.0352	1.0000
4	5.52	Chloride	bMB*	17.199	74.2062	74.2062	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
8	8.89	Bromide	BMB	0.054	0.5820	0.5820	1.0000
9	9.55	Sulfate	BM	1.146	6.9240	6.9240	1.0000
10	10.22	Nitrate	M	0.182	0.3246	0.3246	1.0000
11	11.01	Chlorate	M	0.106	1.1039	1.1039	1.0000
14	15.25	Phosphate	BMB	0.107	0.5957	0.5957	1.0000
Total:			**0.000**	**18.798**		**83.77**	

166 HS20031162-08MS

Sample Name:	**HS20031162-08MS**	*Injection Volume:*	**5.00**
Vial Number:	**BC4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/27/2020 01:43**	*Sample Weight:*	**1.0000**

Run Time:



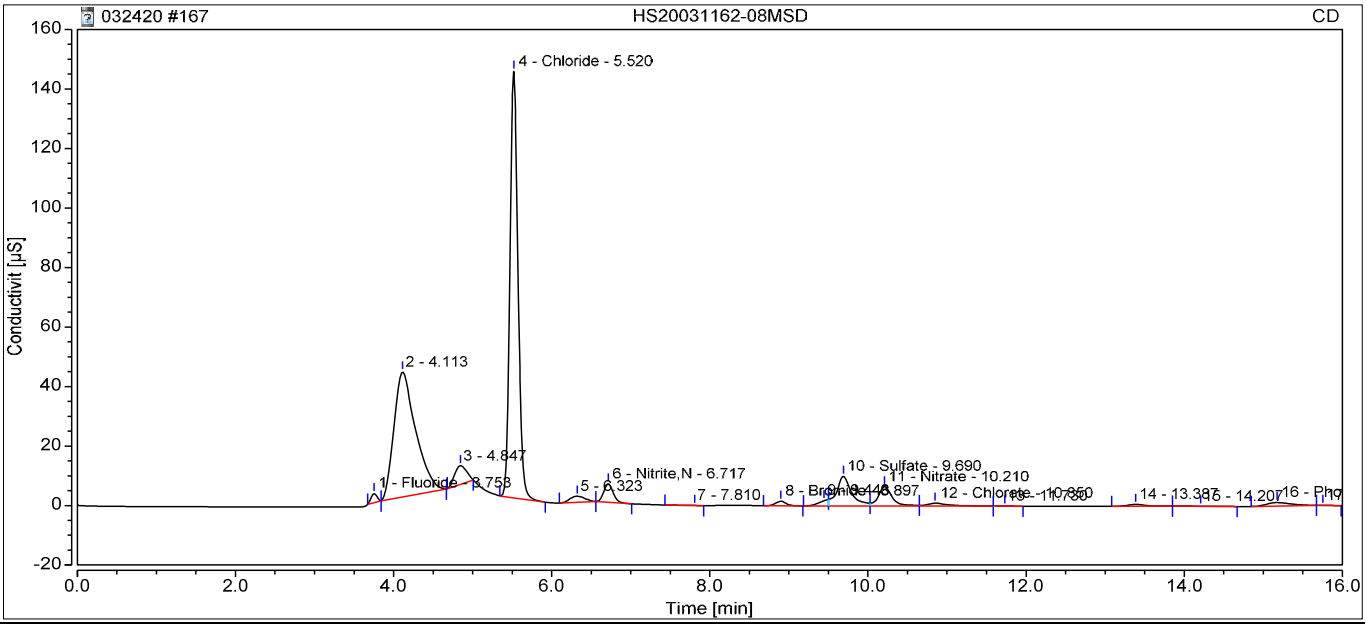
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	0.274	0.8281	0.8281	1.0000
4	5.52	Chloride	BMB	17.024	73.4501	73.4501	1.0000
6	6.72	Nitrite,N	BMB	0.840	1.8317	1.8317	1.0000
8	8.90	Bromide	BMB	0.228	2.3350	2.3350	1.0000
10	9.70	Sulfate	M	2.135	12.8180	12.8180	1.0000
11	10.21	Nitrate	M	1.313	2.2601	2.2601	1.0000
12	10.85	Chlorate	M	0.301	3.1569	3.1569	1.0000
15	15.20	Phosphate	BMB	0.350	1.7085	1.7085	1.0000
Total:			**0.000**	**22.466**		**98.39**	

167 HS20031162-08MSD

Sample Name:	**HS20031162-08MSD**	*Injection Volume:*	**5.00**
Vial Number:	**BC5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/27/2020 02:01**	*Sample Weight:*	**1.0000**

Run Time:



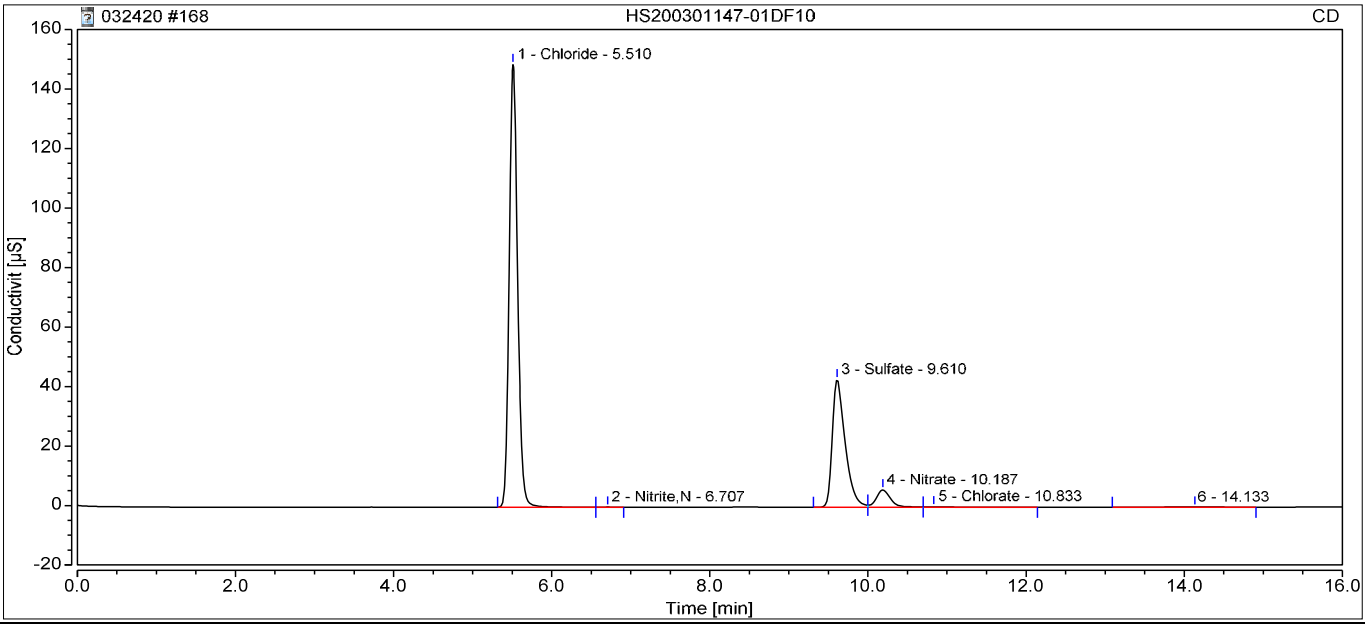
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	0.267	0.8067	0.8067	1.0000
4	5.52	Chloride	BMB	17.108	73.8139	73.8139	1.0000
6	6.72	Nitrite,N	BMB	0.845	1.8423	1.8423	1.0000
8	8.90	Bromide	BMB	0.229	2.3447	2.3447	1.0000
10	9.69	Sulfate	M	2.185	13.1163	13.1163	1.0000
11	10.21	Nitrate	M	1.315	2.2630	2.2630	1.0000
12	10.85	Chlorate	M	0.307	3.2214	3.2214	1.0000
16	15.17	Phosphate	BMB	0.413	1.9987	1.9987	1.0000
Total:			**0.000**	**22.670**		**99.41**	

168 HS200301147-01DF10

Sample Name:	**HS200301147-01DF10**	*Injection Volume:*	**5.00**
Vial Number:	**BC6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**10.0000**
Recording Time:	**03/27/2020 02:19**	*Sample Weight:*	**1.0000**

Run Time:



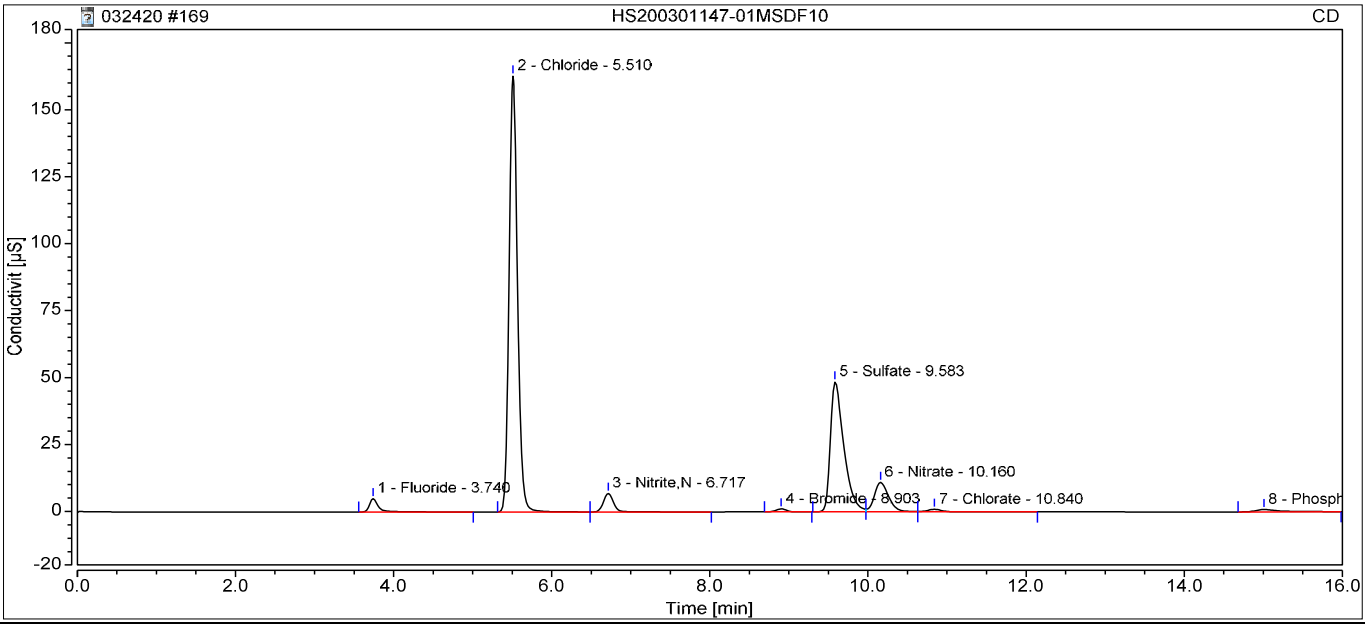
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	10.0000
1	5.51	Chloride	BMB	18.499	79.8081	798.0808	10.0000
2	6.71	Nitrite,N	BMB	0.010	0.0545	0.5450	10.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	10.0000
3	9.61	Sulfate	BM	8.148	48.6230	486.2298	10.0000
4	10.19	Nitrate	M	1.213	2.0886	20.8856	10.0000
5	10.83	Chlorate	MB	0.048	0.4911	4.9107	10.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	10.0000
Total:			**0.000**	**27.917**		**1310.65**	

169 HS200301147-01MSDF10

Sample Name:	**HS200301147-01MSDF10**	*Injection Volume:*	**5.00**
Vial Number:	**BC7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**10.0000**
Recording Time:	**03/27/2020 02:37**	*Sample Weight:*	**1.0000**

Run Time:



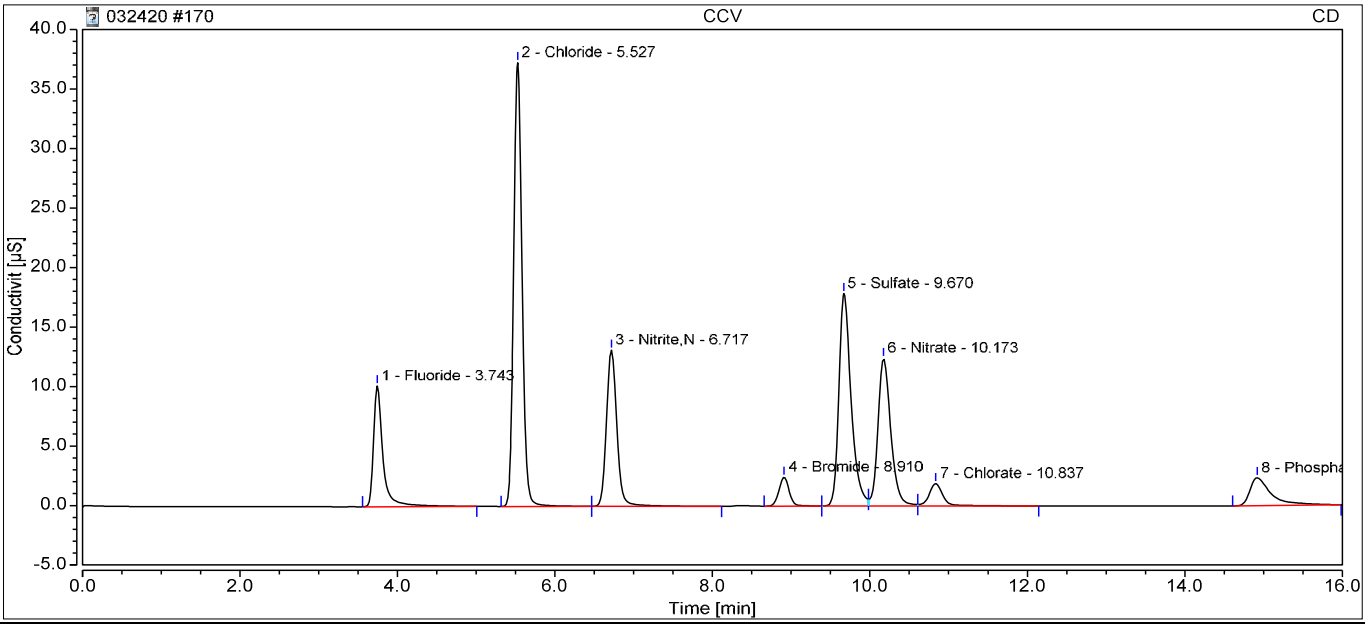
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.688	2.0388	20.3885	10.0000
2	5.51	Chloride	BMB	20.274	87.4597	874.5971	10.0000
3	6.72	Nitrite,N	BMB	1.027	2.2326	22.3256	10.0000
4	8.90	Bromide	BMB	0.169	1.7358	17.3582	10.0000
5	9.58	Sulfate	BM	9.608	57.3198	573.1984	10.0000
6	10.16	Nitrate	M	2.321	3.9851	39.8508	10.0000
7	10.84	Chlorate	MB	0.223	2.3284	23.2839	10.0000
8	15.01	Phosphate	BMB	0.320	1.5705	15.7045	10.0000
Total:			**0.000**	**34.629**		**1586.71**	

170 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/27/2020 02:56**	*Sample Weight:*	**1.0000**

Run Time:



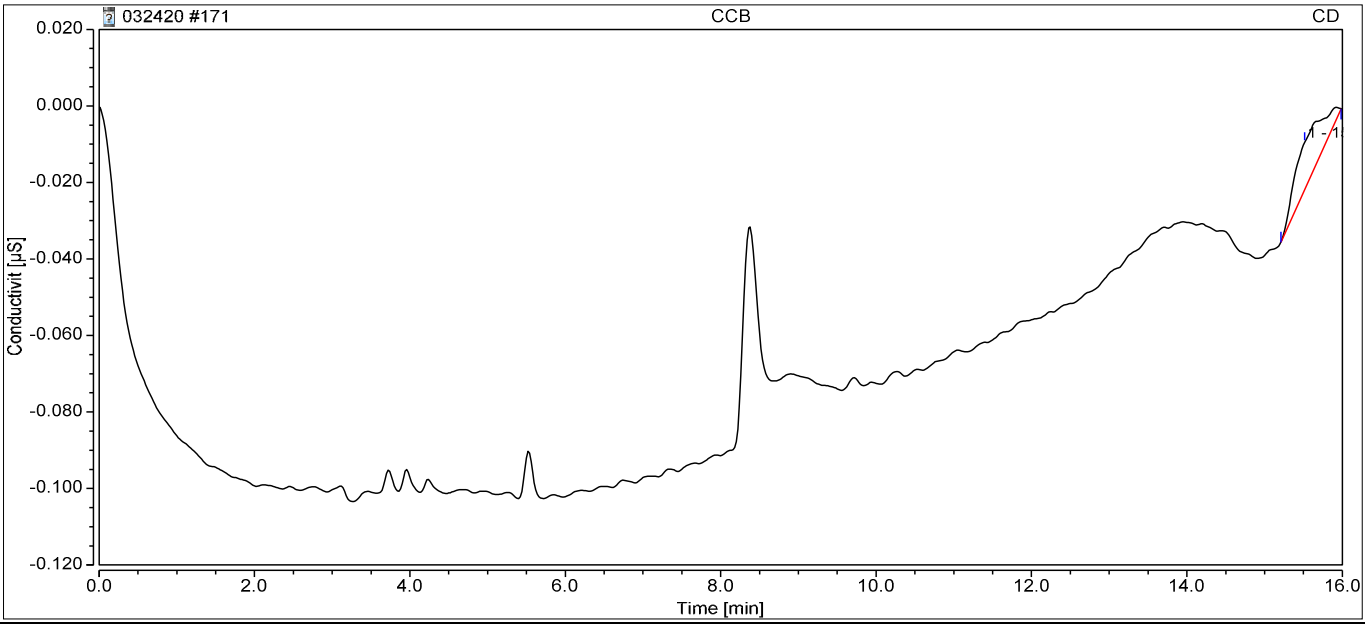
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.405	4.1389	4.1389	1.0000
2	5.53	Chloride	BMB	4.544	19.6500	19.6500	1.0000
3	6.72	Nitrite,N	BMB	2.039	4.3987	4.3987	1.0000
4	8.91	Bromide	BM	0.372	3.7817	3.7817	1.0000
5	9.67	Sulfate	M	3.220	19.2760	19.2760	1.0000
6	10.17	Nitrate	M	2.345	4.0264	4.0264	1.0000
7	10.84	Chlorate	MB	0.393	4.1211	4.1211	1.0000
8	14.92	Phosphate	BMB	0.742	3.5031	3.5031	1.0000
Total:			**0.000**	**15.059**		**62.90**	

171 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/27/2020 03:14**	*Sample Weight:*	**1.0000**

Run Time:



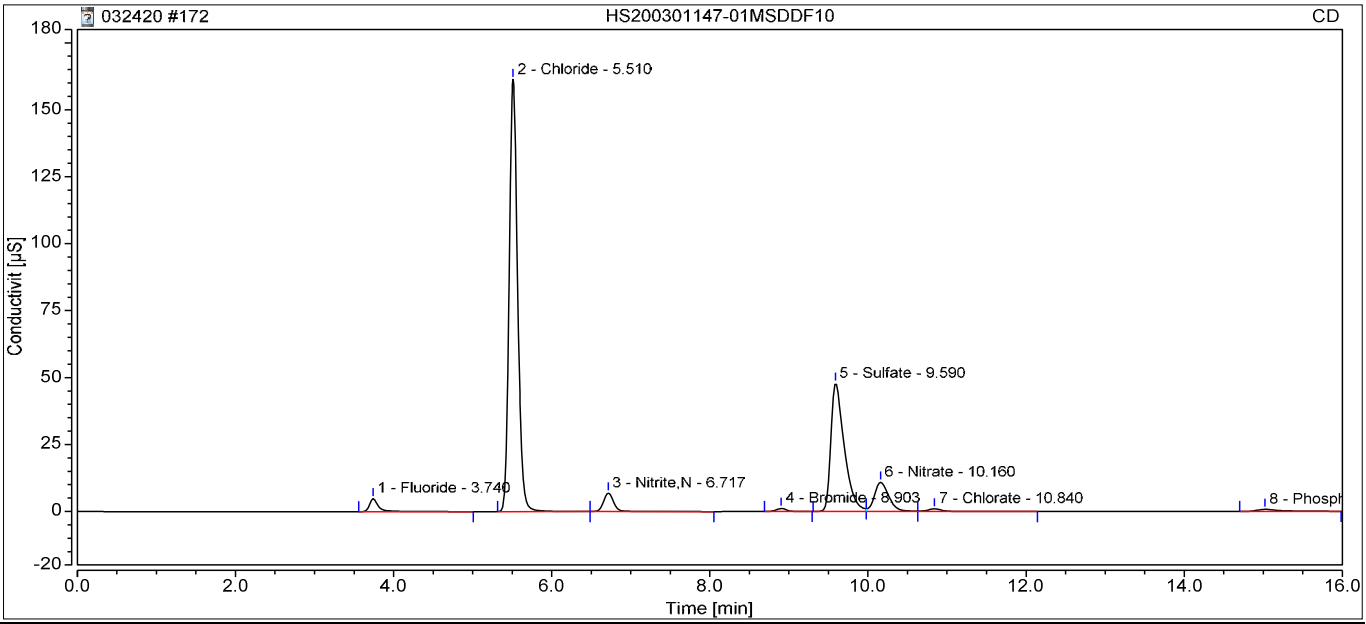
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

172 HS200301147-01MSDDF10

Sample Name:	**HS200301147-01MSDDF10**	*Injection Volume:*	**5.00**
Vial Number:	**BC8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**10.0000**
Recording Time:	**03/27/2020 03:32**	*Sample Weight:*	**1.0000**

Run Time:



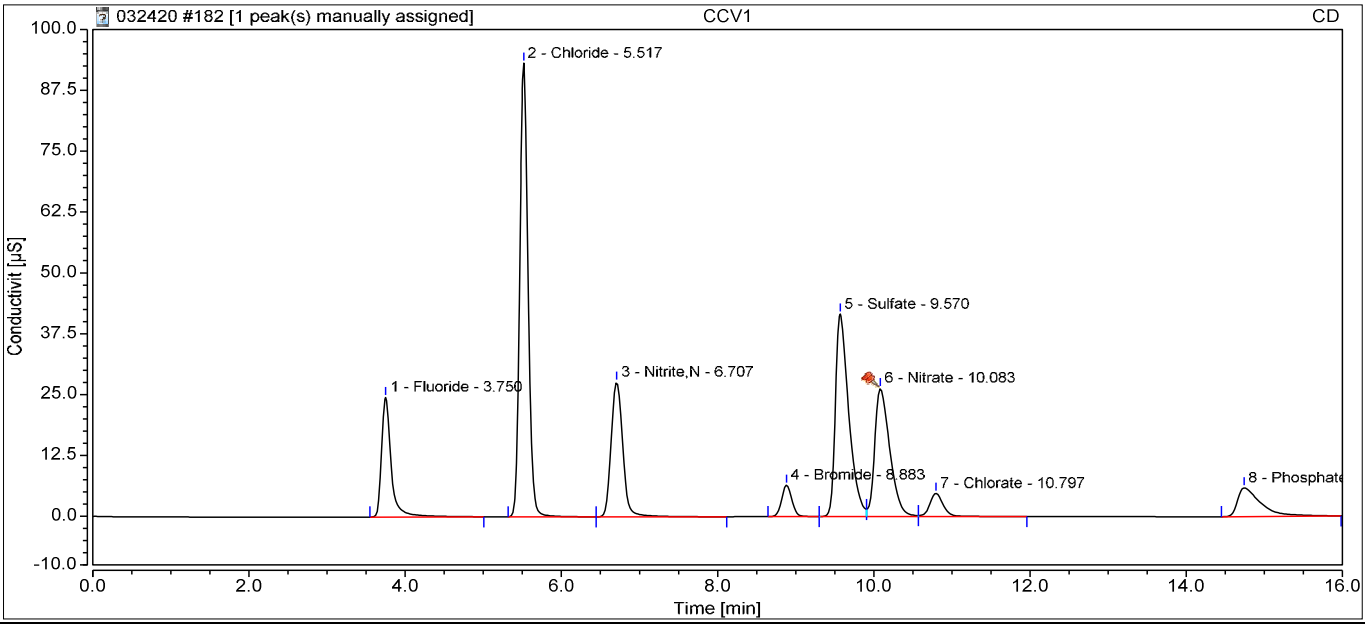
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.670	1.9871	19.8710	10.0000
2	5.51	Chloride	BMB	20.112	86.7612	867.6117	10.0000
3	6.72	Nitrite,N	BMB	1.021	2.2205	22.2048	10.0000
4	8.90	Bromide	BMB	0.166	1.7106	17.1056	10.0000
5	9.59	Sulfate	BM	9.471	56.5062	565.0620	10.0000
6	10.16	Nitrate	M	2.301	3.9502	39.5020	10.0000
7	10.84	Chlorate	MB	0.220	2.3001	23.0006	10.0000
8	15.02	Phosphate	BMB	0.294	1.4507	14.5069	10.0000
Total:			**0.000**	**34.255**		**1568.86**	

182 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/27/2020 06:33**	*Sample Weight:*	**1.0000**

Run Time:



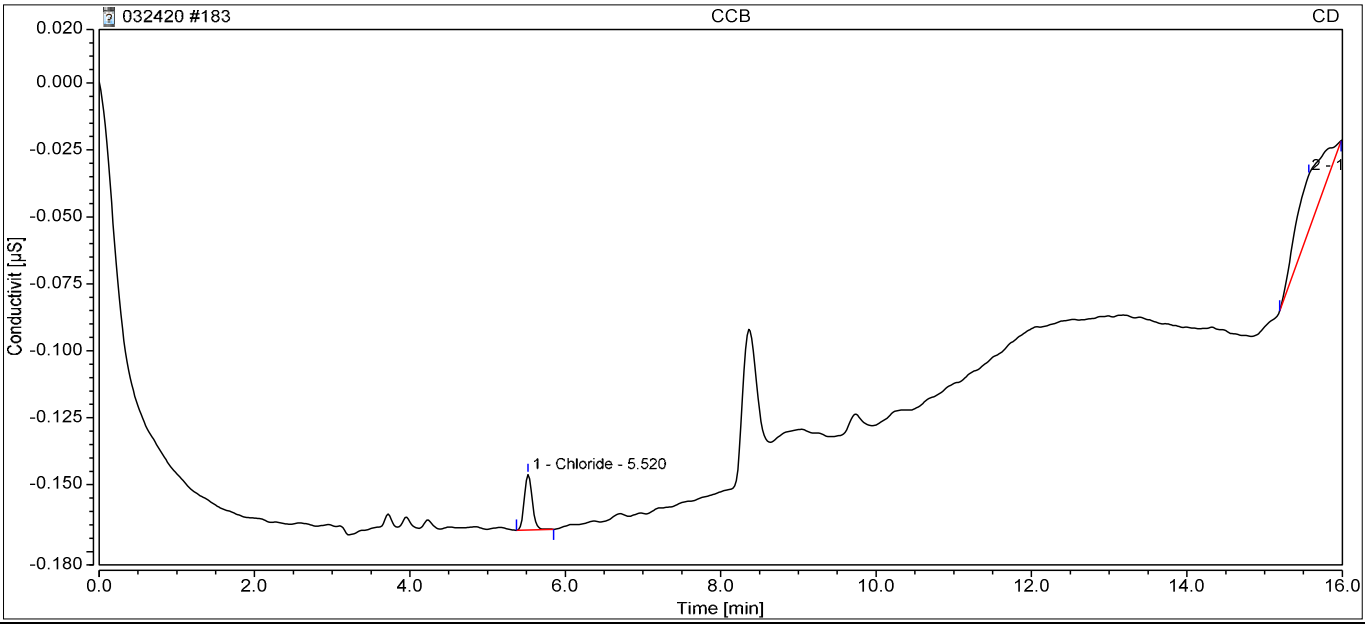
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	3.502	10.2824	10.2824	1.0000
2	5.52	Chloride	BMB	11.497	49.6262	49.6262	1.0000
3	6.71	Nitrite,N	BMB	4.814	10.3397	10.3397	1.0000
4	8.88	Bromide	BM	0.977	9.8926	9.8926	1.0000
5	9.57	Sulfate	M	8.239	49.1694	49.1694	1.0000
6	10.08	Nitrate	M ^	5.886	10.0857	10.0857	1.0000
7	10.80	Chlorate	MB	0.962	10.1175	10.1175	1.0000
8	14.74	Phosphate	BMB	2.040	9.4360	9.4360	1.0000
Total:			**0.000**	**37.918**		**158.95**	

183 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/27/2020 06:51**	*Sample Weight:*	**1.0000**

Run Time:



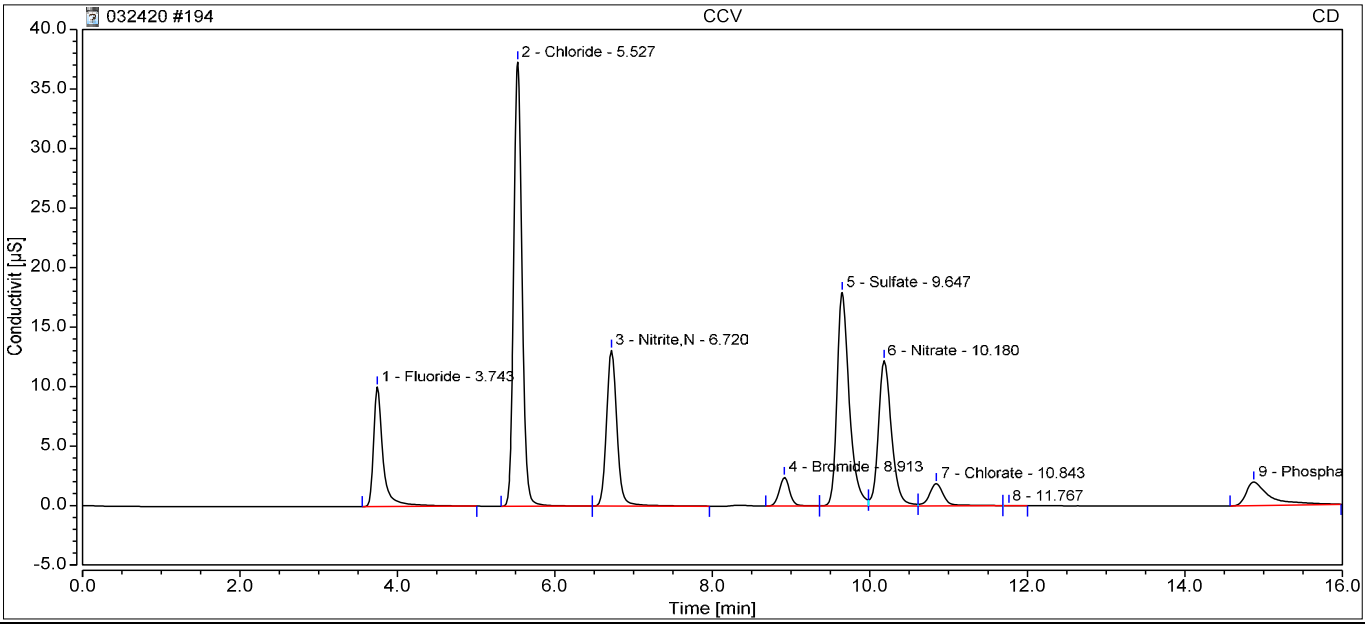
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.52	Chloride	BMB	0.002	0.0715	0.0715	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.002**		**0.07**	

194 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/27/2020 10:10**	*Sample Weight:*	**1.0000**

Run Time:



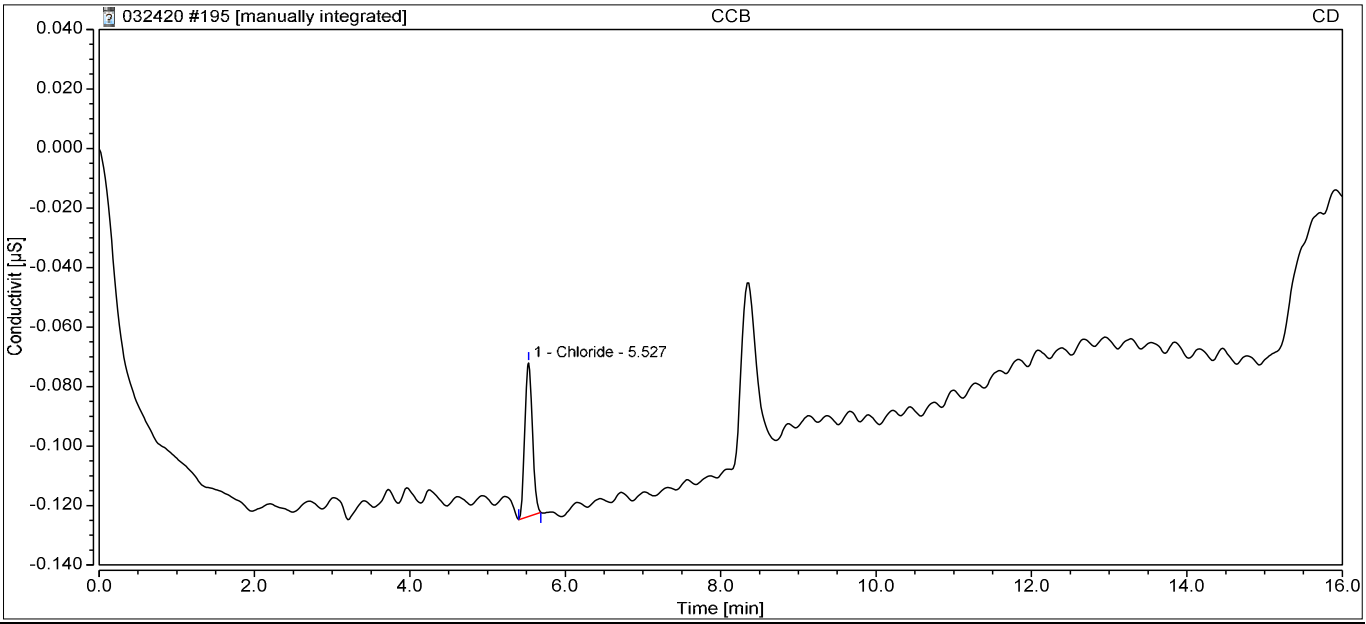
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.402	4.1307	4.1307	1.0000
2	5.53	Chloride	BMB	4.547	19.6644	19.6644	1.0000
3	6.72	Nitrite,N	BMB	2.036	4.3921	4.3921	1.0000
4	8.91	Bromide	BM	0.372	3.7832	3.7832	1.0000
5	9.65	Sulfate	M	3.228	19.3224	19.3224	1.0000
6	10.18	Nitrate	M	2.349	4.0333	4.0333	1.0000
7	10.84	Chlorate	M	0.395	4.1473	4.1473	1.0000
9	14.87	Phosphate	BMB	0.689	3.2581	3.2581	1.0000
Total:			**0.000**	**15.018**		**62.73**	

195 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/27/2020 10:28**	*Sample Weight:*	**1.0000**

Run Time:



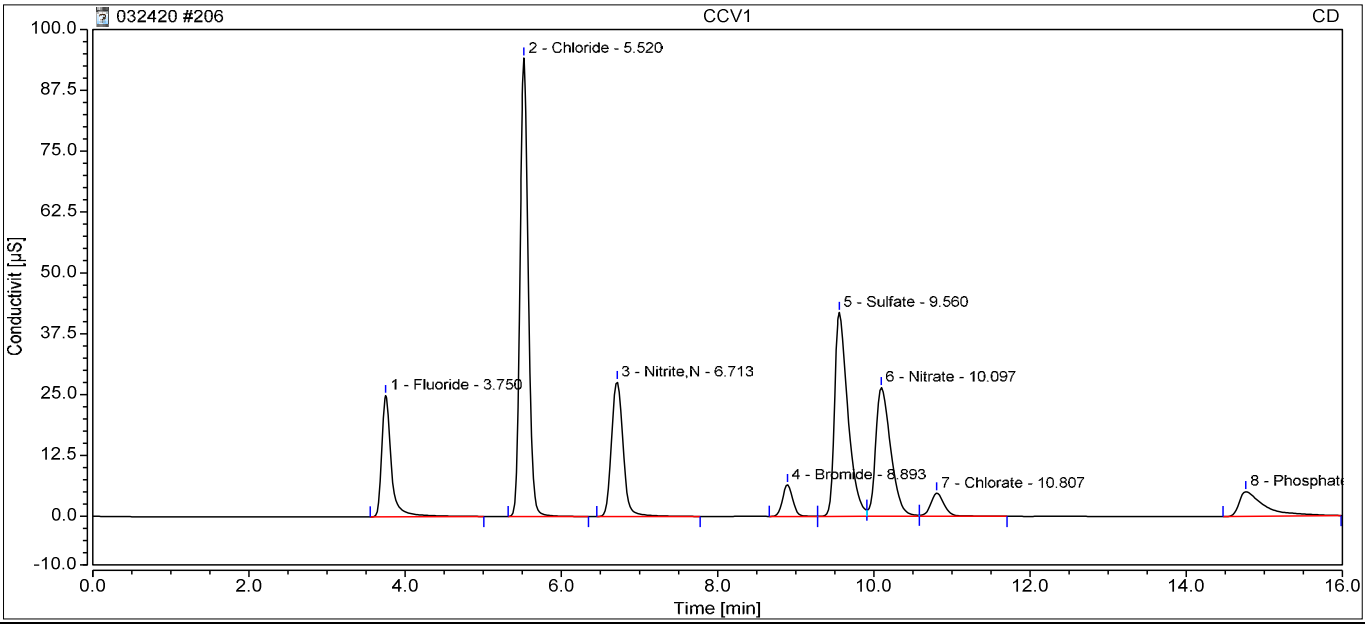
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.53	Chloride	BMB*	0.006	0.0861	0.0861	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.006**		**0.09**	

206 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/27/2020 13:47**	*Sample Weight:*	**1.0000**

Run Time:



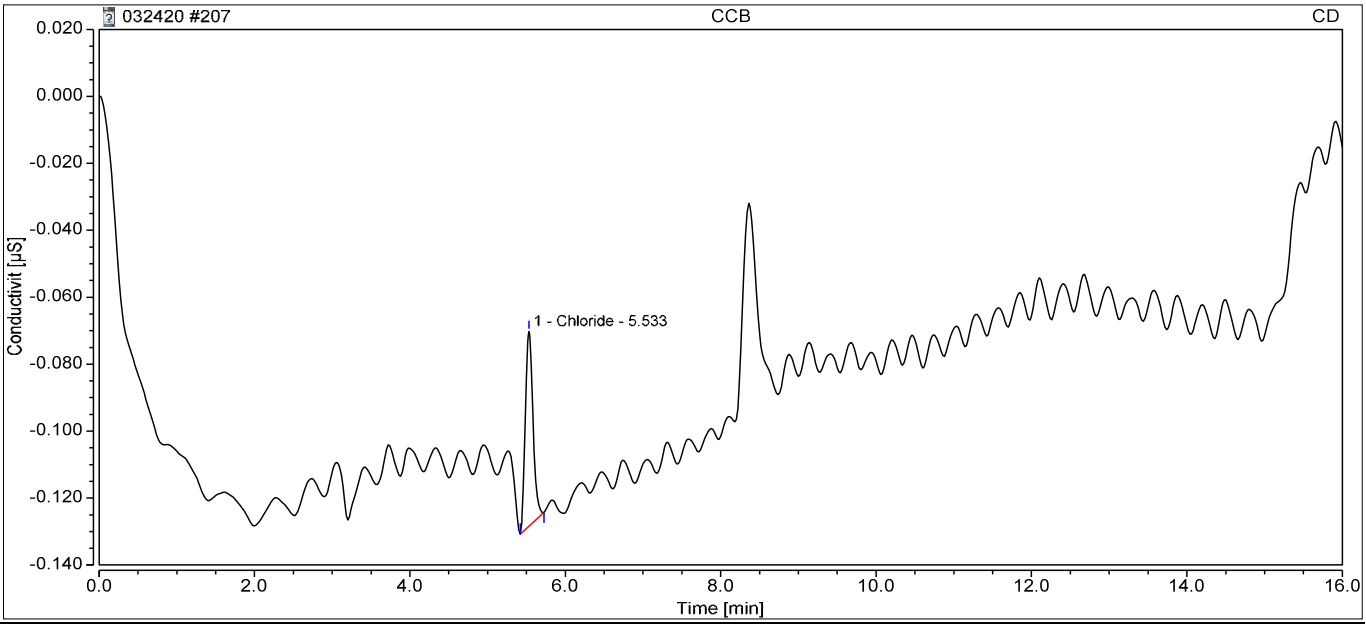
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	3.529	10.3601	10.3601	1.0000
2	5.52	Chloride	BMB	11.514	49.6988	49.6988	1.0000
3	6.71	Nitrite,N	BMB	4.805	10.3197	10.3197	1.0000
4	8.89	Bromide	BM	0.982	9.9435	9.9435	1.0000
5	9.56	Sulfate	M	8.282	49.4254	49.4254	1.0000
6	10.10	Nitrate	M	5.908	10.1235	10.1235	1.0000
7	10.81	Chlorate	MB	0.968	10.1736	10.1736	1.0000
8	14.76	Phosphate	BMB	1.921	8.8950	8.8950	1.0000
Total:			**0.000**	**37.909**		**158.94**	

207 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/27/2020 14:05**	*Sample Weight:*	**1.0000**

Run Time:



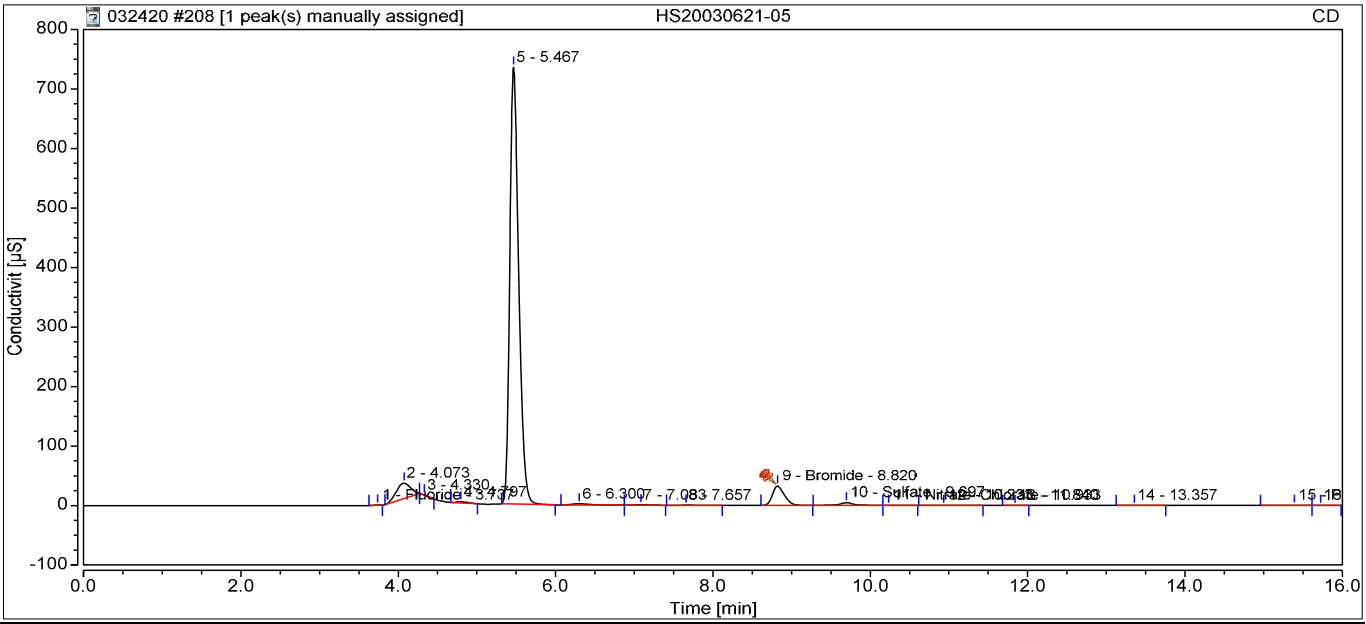
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.53	Chloride	BMB	0.007	0.0893	0.0893	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.007**		**0.09**	

208 HS20030621-05

Sample Name:	**HS20030621-05**	*Injection Volume:*	**5.00**
Vial Number:	**RC3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/27/2020 14:24**	*Sample Weight:*	**1.0000**

Run Time:



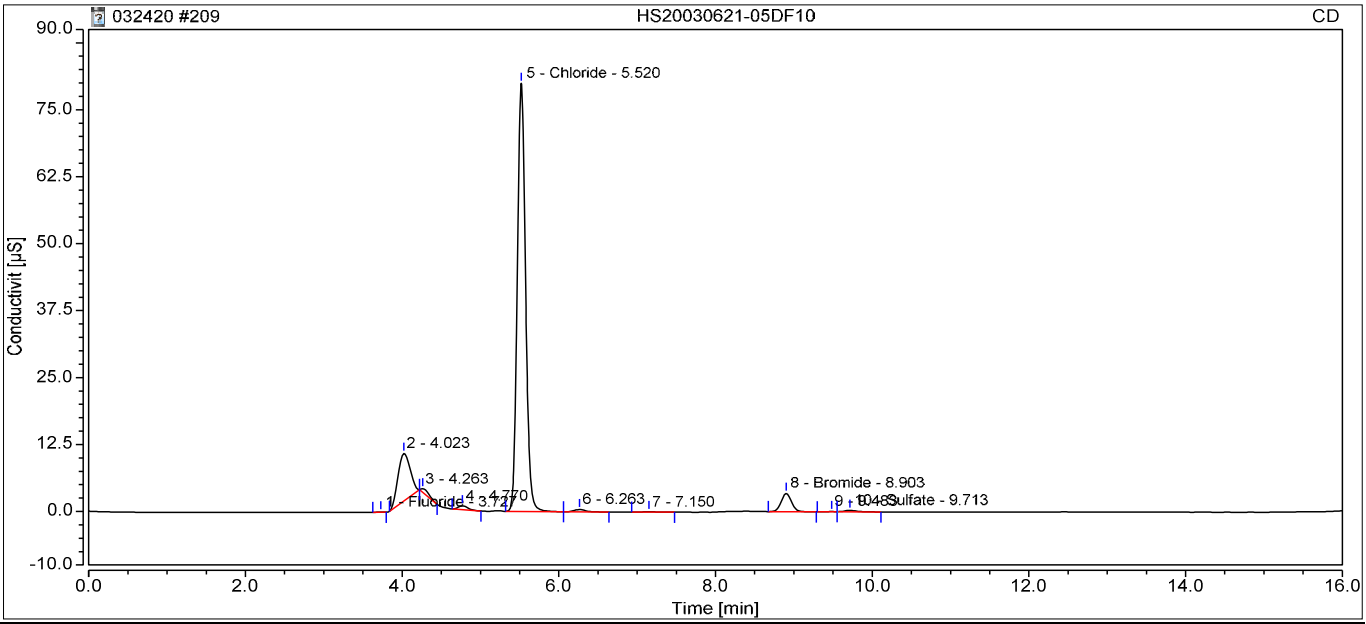
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.035	0.1258	0.1258	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
9	8.82	Bromide	BMB^	5.674	57.2732	57.2732	1.0000
10	9.70	Sulfate	BM	0.940	5.7020	5.7020	1.0000
11	10.23	Nitrate	MB	0.011	0.0325	0.0325	1.0000
12	10.93	Chlorate	BMB	0.033	0.3285	0.3285	1.0000
15	15.39	Phosphate	BMB	0.066	0.4107	0.4107	1.0000
Total:			**0.000**	**6.760**		**63.87**	

209 HS20030621-05DF10

Sample Name:	**HS20030621-05DF10**	*Injection Volume:*	**5.00**
Vial Number:	**RC4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**10.0000**
Recording Time:	**03/27/2020 14:42**	*Sample Weight:*	**1.0000**

Run Time:



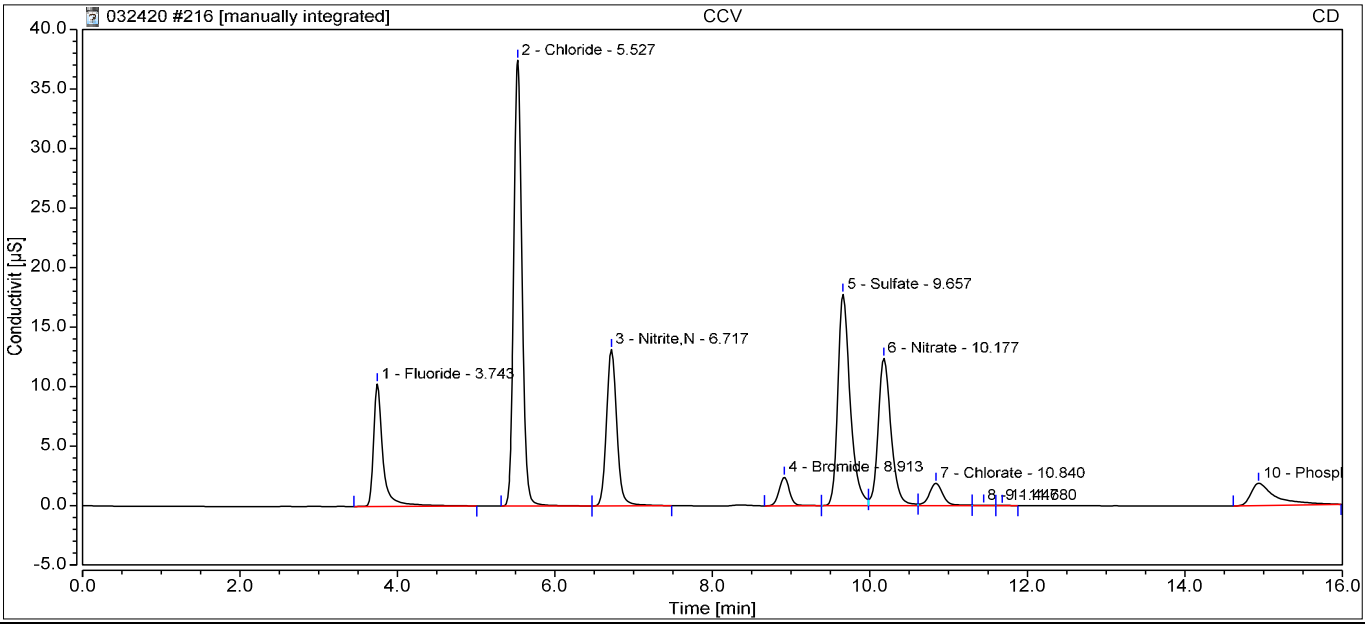
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.005	0.0399	0.3991	10.0000
5	5.52	Chloride	BMB	9.694	41.8533	418.5326	10.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	10.0000
8	8.90	Bromide	BMB	0.520	5.2771	52.7711	10.0000
10	9.71	Sulfate	MB	0.058	0.4465	4.4645	10.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	10.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	10.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	10.0000
Total:			**0.000**	**10.277**		**476.17**	

216 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/27/2020 16:49**	*Sample Weight:*	**1.0000**

Run Time:



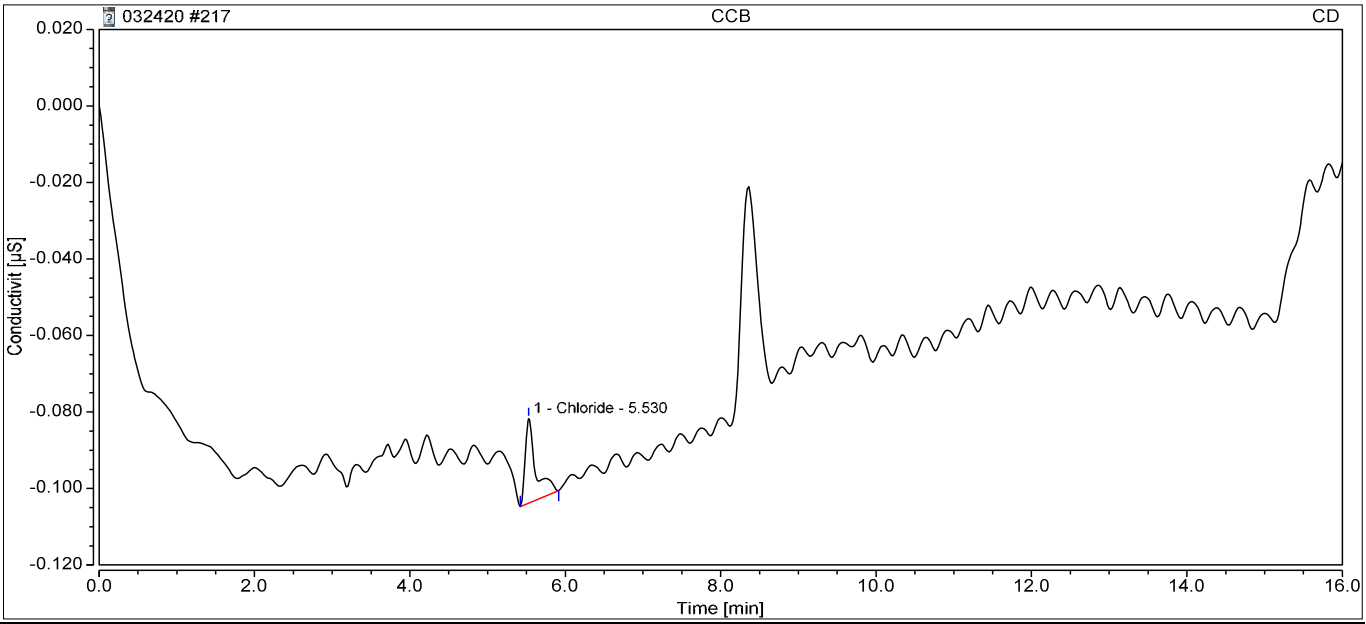
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.412	4.1598	4.1598	1.0000
2	5.53	Chloride	BMb*	4.538	19.6221	19.6221	1.0000
3	6.72	Nitrite,N	bMB*	2.018	4.3539	4.3539	1.0000
4	8.91	Bromide	BM	0.372	3.7831	3.7831	1.0000
5	9.66	Sulfate	M	3.221	19.2859	19.2859	1.0000
6	10.18	Nitrate	M	2.347	4.0303	4.0303	1.0000
7	10.84	Chlorate	M	0.380	3.9889	3.9889	1.0000
10	14.94	Phosphate	BMB	0.676	3.2016	3.2016	1.0000
Total:			**0.000**	**14.965**		**62.43**	

217 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/27/2020 17:07**	*Sample Weight:*	**1.0000**

Run Time:



Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.53	Chloride	BMB	0.003	0.0758	0.0758	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.003**		**0.08**	

10450 Stancliff Rd. Suite 210
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April 01, 2020

Susan Huang
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS20030733**

Laboratory Results for: **Longhorn Army Ammunition Plant - 16**

Dear Susan,

ALS Environmental received 9 sample(s) on Mar 17, 2020 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
RJ Modashia
Project Manager

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Work Order: HS20030733

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20030733-01	16WW56-200316	Groundwater		16-Mar-2020 08:15	17-Mar-2020 09:20	☐
HS20030733-02	16WW22-200316	Groundwater		16-Mar-2020 09:10	17-Mar-2020 09:20	☐
HS20030733-03	16WW41-200316	Groundwater		16-Mar-2020 10:05	17-Mar-2020 09:20	☐
HS20030733-04	16WW21-200316	Groundwater		16-Mar-2020 10:55	17-Mar-2020 09:20	☐
HS20030733-05	16WW39-200316	Groundwater		16-Mar-2020 10:50	17-Mar-2020 09:20	☐
HS20030733-06	16WW25-200316	Groundwater		16-Mar-2020 12:55	17-Mar-2020 09:20	☐
HS20030733-07	16WW21-200316-FD	Groundwater		16-Mar-2020 10:55	17-Mar-2020 09:20	☐
HS20030733-08	16WW49-200316	Groundwater		16-Mar-2020 13:55	17-Mar-2020 09:20	☐
HS20030733-09	Trip Blank	Water	CG 021720 -02	16-Mar-2020 00:00	17-Mar-2020 09:20	☐

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
Project: Longhorn Army Ammunition Plant - 16
Work Order: HS20030733

Work Order Comments

• The analysis for Perchlorate was subcontracted to ALS Salt Lake City, UT. Final report attached.

Work Order Comments

• The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.

GC Semivolatiles by Method RSK-175

Batch ID: R358625

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GCMS Volatiles by Method SW8260

Batch ID: R358659,R358682

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R358997

Sample ID: 16WW25-200316 (HS20030733-06)

• The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Bromide)

Batch ID: R358987

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SM2320B

Batch ID: R358569

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW56-200316
Collection Date: 16-Mar-2020 08:15

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	22-Mar-2020 15:32
1,1-Dichloroethene	**2.9**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 15:32
1,2-Dichloroethane	**3.4**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 15:32
cis-1,2-Dichloroethene	**44**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 15:32
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	22-Mar-2020 15:32
Trichloroethene	**520**		**2.0**	**5.0**	**10**	**UG/L**	10	22-Mar-2020 16:44
Vinyl chloride	**6.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 15:32
Surr: 1,2-Dichloroethane-d4	*91.8*			**0**	*81-118*	*%REC*	*1*	*22-Mar-2020 15:32*
Surr: 1,2-Dichloroethane-d4	*90.3*			**0**	*81-118*	*%REC*	*10*	*22-Mar-2020 16:44*
Surr: 4-Bromofluorobenzene	*98.3*			**0**	*85-114*	*%REC*	*1*	*22-Mar-2020 15:32*
Surr: 4-Bromofluorobenzene	*98.5*			**0**	*85-114*	*%REC*	*10*	*22-Mar-2020 16:44*
Surr: Dibromofluoromethane	*94.8*			**0**	*80-119*	*%REC*	*1*	*22-Mar-2020 15:32*
Surr: Dibromofluoromethane	*93.3*			**0**	*80-119*	*%REC*	*10*	*22-Mar-2020 16:44*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*1*	*22-Mar-2020 15:32*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*10*	*22-Mar-2020 16:44*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	**0.000417**	J	**0.000144**	**0.000500**	**0.00100**	**mg/L**	1	20-Mar-2020 10:09
Ethene	**0.00517**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	20-Mar-2020 10:09
Methane	**0.00494**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	20-Mar-2020 10:09
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**389**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	20-Mar-2020 09:55
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**3.19**		**0.150**	**0.500**	**0.500**	**mg/L**	5	17-Mar-2020 20:46
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	17-Mar-2020 20:46
Sulfate	**2,090**		**10.0**	**25.0**	**25.0**	**mg/L**	50	17-Mar-2020 21:58
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW22-200316
Collection Date: 16-Mar-2020 09:10

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 07:19
1,1-Dichloroethene	**0.65**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 07:19
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 07:19
cis-1,2-Dichloroethene	**4.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 07:19
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 07:19
Trichloroethene	**52**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 07:19
Vinyl chloride	**0.69**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 07:19
Surr: 1,2-Dichloroethane-d4	*90.2*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 07:19*
Surr: 4-Bromofluorobenzene	*98.2*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 07:19*
Surr: Dibromofluoromethane	*95.0*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 07:19*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 07:19*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	**0.000288**	J	**0.000144**	**0.000500**	**0.00100**	**mg/L**	1	20-Mar-2020 10:27
Ethene	**0.00168**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	20-Mar-2020 10:27
Methane	**0.00298**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	20-Mar-2020 10:27
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**168**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	20-Mar-2020 10:23
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**4.00**		**0.150**	**0.500**	**0.500**	**mg/L**	5	17-Mar-2020 21:04
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	17-Mar-2020 21:04
Sulfate	**368**		**1.00**	**2.50**	**2.50**	**mg/L**	5	17-Mar-2020 21:04
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW41-200316
Collection Date: 16-Mar-2020 10:05

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	2.5	U	1.5	2.5	5.0	UG/L	5	22-Mar-2020 17:56
1,1-Dichloroethene	**14**		**1.0**	**2.5**	**5.0**	**UG/L**	5	22-Mar-2020 17:56
1,2-Dichloroethane	**4.0**	J	**1.0**	**2.5**	**5.0**	**UG/L**	5	22-Mar-2020 17:56
cis-1,2-Dichloroethene	**2,000**		**10**	**25**	**50**	**UG/L**	50	22-Mar-2020 18:20
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	22-Mar-2020 17:56
Trichloroethene	**6,400**		**10**	**25**	**50**	**UG/L**	50	22-Mar-2020 18:20
Vinyl chloride	**120**		**1.0**	**2.5**	**5.0**	**UG/L**	5	22-Mar-2020 17:56
Surr: 1,2-Dichloroethane-d4	*91.7*			**0**	*81-118*	*%REC*	*50*	*22-Mar-2020 18:20*
Surr: 1,2-Dichloroethane-d4	*91.6*			**0**	*81-118*	*%REC*	*5*	*22-Mar-2020 17:56*
Surr: 4-Bromofluorobenzene	*99.9*			**0**	*85-114*	*%REC*	*5*	*22-Mar-2020 17:56*
Surr: 4-Bromofluorobenzene	*97.8*			**0**	*85-114*	*%REC*	*50*	*22-Mar-2020 18:20*
Surr: Dibromofluoromethane	*94.7*			**0**	*80-119*	*%REC*	*5*	*22-Mar-2020 17:56*
Surr: Dibromofluoromethane	*95.3*			**0**	*80-119*	*%REC*	*50*	*22-Mar-2020 18:20*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*5*	*22-Mar-2020 17:56*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*50*	*22-Mar-2020 18:20*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	**0.000374**	J	**0.000144**	**0.000500**	**0.00100**	**mg/L**	1	20-Mar-2020 10:36
Ethene	**0.00996**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	20-Mar-2020 10:36
Methane	**0.0163**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	20-Mar-2020 10:36
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**1,010**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	20-Mar-2020 10:31
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	0.500	U	0.150	0.500	0.500	mg/L	5	17-Mar-2020 21:22
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	17-Mar-2020 21:22
Sulfate	**8,060**		**100**	**250**	**250**	**mg/L**	500	25-Mar-2020 16:40
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW21-200316
Collection Date: 16-Mar-2020 10:55

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 07:43
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 07:43
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 07:43
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 07:43
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 07:43
Trichloroethene	**1.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 07:43
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 07:43
Surr: 1,2-Dichloroethane-d4	*89.0*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 07:43*
Surr: 4-Bromofluorobenzene	*98.0*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 07:43*
Surr: Dibromofluoromethane	*94.3*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 07:43*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 07:43*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**0.206**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	25-Mar-2020 15:28
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW39-200316
Collection Date: 16-Mar-2020 10:50

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	22-Mar-2020 17:08
1,1-Dichloroethene	**2.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 17:08
1,2-Dichloroethane	**1.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 17:08
cis-1,2-Dichloroethene	**98**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 17:08
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	22-Mar-2020 17:08
Trichloroethene	**1,100**		**5.0**	**12**	**25**	**UG/L**	25	22-Mar-2020 17:32
Vinyl chloride	**5.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 17:08
Surr: 1,2-Dichloroethane-d4	*91.4*			**0**	*81-118*	*%REC*	*1*	*22-Mar-2020 17:08*
Surr: 1,2-Dichloroethane-d4	*90.6*			**0**	*81-118*	*%REC*	*25*	*22-Mar-2020 17:32*
Surr: 4-Bromofluorobenzene	*98.5*			**0**	*85-114*	*%REC*	*1*	*22-Mar-2020 17:08*
Surr: 4-Bromofluorobenzene	*96.5*			**0**	*85-114*	*%REC*	*25*	*22-Mar-2020 17:32*
Surr: Dibromofluoromethane	*94.1*			**0**	*80-119*	*%REC*	*1*	*22-Mar-2020 17:08*
Surr: Dibromofluoromethane	*95.4*			**0**	*80-119*	*%REC*	*25*	*22-Mar-2020 17:32*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*22-Mar-2020 17:08*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*25*	*22-Mar-2020 17:32*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**4.84**		**0.300**	**1.00**	**1.00**	**mg/L**	10	25-Mar-2020 15:46
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW25-200316
Collection Date: 16-Mar-2020 12:55

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 08:07
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 08:07
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 08:07
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 08:07
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 08:07
Trichloroethene	**0.85**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 08:07
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 08:07
Surr: 1,2-Dichloroethane-d4	*89.6*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 08:07*
Surr: 4-Bromofluorobenzene	*97.7*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 08:07*
Surr: Dibromofluoromethane	*93.5*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 08:07*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 08:07*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	**0.000371**	J	**0.000144**	**0.000500**	**0.00100**	**mg/L**	1	20-Mar-2020 10:46
Ethene	**0.00226**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	20-Mar-2020 10:46
Methane	**0.0221**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	20-Mar-2020 10:46
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**32.4**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	20-Mar-2020 10:36
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**3.71**	J	**1.50**	**5.00**	**5.00**	**mg/L**	50	17-Mar-2020 23:29
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	17-Mar-2020 21:40
Sulfate	**5,000**		**100**	**250**	**250**	**mg/L**	500	25-Mar-2020 16:59
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW21-200316-FD
Collection Date: 16-Mar-2020 10:55

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 08:31
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 08:31
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 08:31
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 08:31
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 08:31
Trichloroethene	**1.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 08:31
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 08:31
Surr: 1,2-Dichloroethane-d4	*92.0*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 08:31*
Surr: 4-Bromofluorobenzene	*97.0*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 08:31*
Surr: Dibromofluoromethane	*93.9*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 08:31*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 08:31*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**0.209**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	25-Mar-2020 16:04
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW49-200316
Collection Date: 16-Mar-2020 13:55

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	22-Mar-2020 15:08
1,1-Dichloroethene	**0.77**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 15:08
1,2-Dichloroethane	**0.85**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 15:08
cis-1,2-Dichloroethene	**270**		**1.0**	**2.5**	**5.0**	**UG/L**	5	22-Mar-2020 21:32
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	22-Mar-2020 15:08
Trichloroethene	**8.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 15:08
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 15:08
Surr: 1,2-Dichloroethane-d4	*92.2*			**0**	*81-118*	*%REC*	*1*	*22-Mar-2020 15:08*
Surr: 1,2-Dichloroethane-d4	*91.2*			**0**	*81-118*	*%REC*	*5*	*22-Mar-2020 21:32*
Surr: 4-Bromofluorobenzene	*99.0*			**0**	*85-114*	*%REC*	*1*	*22-Mar-2020 15:08*
Surr: 4-Bromofluorobenzene	*96.1*			**0**	*85-114*	*%REC*	*5*	*22-Mar-2020 21:32*
Surr: Dibromofluoromethane	*95.8*			**0**	*80-119*	*%REC*	*1*	*22-Mar-2020 15:08*
Surr: Dibromofluoromethane	*95.6*			**0**	*80-119*	*%REC*	*5*	*22-Mar-2020 21:32*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*1*	*22-Mar-2020 15:08*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*5*	*22-Mar-2020 21:32*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**2.16**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	25-Mar-2020 16:22
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: Trip Blank
Collection Date: 16-Mar-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-09
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 01:18
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:18
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:18
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:18
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 01:18
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:18
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:18
Surr: 1,2-Dichloroethane-d4	*90.5*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 01:18*
Surr: 4-Bromofluorobenzene	*95.4*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 01:18*
Surr: Dibromofluoromethane	*94.0*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 01:18*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 01:18*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R358569 (0)	**Test Name :** ALKALINITY BY SM2320B				**Matrix:** Groundwater	
HS20030733-01	16WW56-200316	16 Mar 2020 08:15			20 Mar 2020 09:55	1
HS20030733-02	16WW22-200316	16 Mar 2020 09:10			20 Mar 2020 10:23	1
HS20030733-03	16WW41-200316	16 Mar 2020 10:05			20 Mar 2020 10:31	1
HS20030733-06	16WW25-200316	16 Mar 2020 12:55			20 Mar 2020 10:36	1
Batch ID: R358625 (0)	**Test Name :** DISSOLVED GASES BY RSK-175				**Matrix:** Groundwater	
HS20030733-01	16WW56-200316	16 Mar 2020 08:15			20 Mar 2020 10:09	1
HS20030733-02	16WW22-200316	16 Mar 2020 09:10			20 Mar 2020 10:27	1
HS20030733-03	16WW41-200316	16 Mar 2020 10:05			20 Mar 2020 10:36	1
HS20030733-06	16WW25-200316	16 Mar 2020 12:55			20 Mar 2020 10:46	1
Batch ID: R358659 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20030733-09	Trip Blank	16 Mar 2020 00:00			21 Mar 2020 01:18	1
Batch ID: R358659 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20030733-02	16WW22-200316	16 Mar 2020 09:10			21 Mar 2020 07:19	1
HS20030733-04	16WW21-200316	16 Mar 2020 10:55			21 Mar 2020 07:43	1
HS20030733-06	16WW25-200316	16 Mar 2020 12:55			21 Mar 2020 08:07	1
HS20030733-07	16WW21-200316-FD	16 Mar 2020 10:55			21 Mar 2020 08:31	1
Batch ID: R358682 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20030733-01	16WW56-200316	16 Mar 2020 08:15			22 Mar 2020 16:44	10
HS20030733-01	16WW56-200316	16 Mar 2020 08:15			22 Mar 2020 15:32	1
HS20030733-03	16WW41-200316	16 Mar 2020 10:05			22 Mar 2020 18:20	50
HS20030733-03	16WW41-200316	16 Mar 2020 10:05			22 Mar 2020 17:56	5
HS20030733-05	16WW39-200316	16 Mar 2020 10:50			22 Mar 2020 17:32	25
HS20030733-05	16WW39-200316	16 Mar 2020 10:50			22 Mar 2020 17:08	1
HS20030733-08	16WW49-200316	16 Mar 2020 13:55			22 Mar 2020 21:32	5
HS20030733-08	16WW49-200316	16 Mar 2020 13:55			22 Mar 2020 15:08	1
Batch ID: R358878 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Groundwater	
HS20030733-01	16WW56-200316	16 Mar 2020 08:15			25 Mar 2020 14:54	1
HS20030733-02	16WW22-200316	16 Mar 2020 09:10			25 Mar 2020 14:54	1
HS20030733-03	16WW41-200316	16 Mar 2020 10:05			25 Mar 2020 14:54	1
HS20030733-04	16WW21-200316	16 Mar 2020 10:55			25 Mar 2020 14:54	1
HS20030733-05	16WW39-200316	16 Mar 2020 10:50			25 Mar 2020 14:54	1
HS20030733-06	16WW25-200316	16 Mar 2020 12:55			25 Mar 2020 14:54	1
HS20030733-07	16WW21-200316-FD	16 Mar 2020 10:55			25 Mar 2020 14:54	1
HS20030733-08	16WW49-200316	16 Mar 2020 13:55			25 Mar 2020 14:54	1

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R358987 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20030733-03	16WW41-200316	16 Mar 2020 10:05			25 Mar 2020 16:40	500
HS20030733-04	16WW21-200316	16 Mar 2020 10:55			25 Mar 2020 15:28	1
HS20030733-05	16WW39-200316	16 Mar 2020 10:50			25 Mar 2020 15:46	10
HS20030733-06	16WW25-200316	16 Mar 2020 12:55			25 Mar 2020 16:59	500
HS20030733-07	16WW21-200316-FD	16 Mar 2020 10:55			25 Mar 2020 16:04	1
HS20030733-08	16WW49-200316	16 Mar 2020 13:55			25 Mar 2020 16:22	1
Batch ID: R358997 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20030733-01	16WW56-200316	16 Mar 2020 08:15			17 Mar 2020 21:58	50
HS20030733-01	16WW56-200316	16 Mar 2020 08:15			17 Mar 2020 20:46	5
HS20030733-02	16WW22-200316	16 Mar 2020 09:10			17 Mar 2020 21:04	5
HS20030733-03	16WW41-200316	16 Mar 2020 10:05			17 Mar 2020 21:22	5
HS20030733-06	16WW25-200316	16 Mar 2020 12:55			17 Mar 2020 23:29	50
HS20030733-06	16WW25-200316	16 Mar 2020 12:55			17 Mar 2020 21:40	5
Batch ID: R359317 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20030733-01	16WW56-200316	16 Mar 2020 08:15			01 Apr 2020 14:16	1
HS20030733-02	16WW22-200316	16 Mar 2020 09:10			01 Apr 2020 14:16	1
HS20030733-03	16WW41-200316	16 Mar 2020 10:05			01 Apr 2020 14:16	1
HS20030733-04	16WW21-200316	16 Mar 2020 10:55			01 Apr 2020 14:16	1
HS20030733-05	16WW39-200316	16 Mar 2020 10:50			01 Apr 2020 14:16	1
HS20030733-06	16WW25-200316	16 Mar 2020 12:55			01 Apr 2020 14:16	1
HS20030733-07	16WW21-200316-FD	16 Mar 2020 10:55			01 Apr 2020 14:16	1
HS20030733-08	16WW49-200316	16 Mar 2020 13:55			01 Apr 2020 14:16	1

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358625 (0) **Instrument: FID-4** **Method: DISSOLVED GASES BY RSK-175**

MBLK Sample ID: **MBLK-200320** Units: **mg/L** Analysis Date: **20-Mar-2020 09:55**
Client ID: Run ID: **FID-4_358625** SeqNo: **5523535** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.000500	0.00100								U
Ethene	0.000500	0.00100								U
Methane	0.000500	0.000500								U

LCS Sample ID: **LCS-200320** Units: **mg/L** Analysis Date: **20-Mar-2020 09:31**
Client ID: Run ID: **FID-4_358625** SeqNo: **5523533** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0157	0.00100	0.01804	0	87.0	75 - 125				
Ethene	0.0148	0.00100	0.0168	0	88.0	75 - 125				
Methane	0.00845	0.000500	0.009647	0	87.6	75 - 125				

LCSD Sample ID: **LCSD-200320** Units: **mg/L** Analysis Date: **20-Mar-2020 09:42**
Client ID: Run ID: **FID-4_358625** SeqNo: **5523534** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0158	0.00100	0.01804	0	87.7	75 - 125	0.01571	0.741	30	
Ethene	0.0154	0.00100	0.0168	0	91.4	75 - 125	0.01479	3.75	30	
Methane	0.00893	0.000500	0.009647	0	92.6	75 - 125	0.008450	5.55	30	

DUP Sample ID: **HS20030733-01DUP** Units: **mg/L** Analysis Date: **20-Mar-2020 10:18**
Client ID: **16WW56-200316** Run ID: **FID-4_358625** SeqNo: **5523537** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.000391	0.00100					0.0004170	0	30	J
Ethene	0.00475	0.00100					0.005168	8.36	30	
Methane	0.00472	0.000500					0.004943	4.61	30	

The following samples were analyzed in this batch: HS20030733-01 HS20030733-02 HS20030733-03 HS20030733-06

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358659 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW1-200320** Units: **UG/L** Analysis Date: **21-Mar-2020 00:29**
Client ID: Run ID: **VOA6_358659** SeqNo: **5524279** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*44.95*	*1.0*	*50*	*0*	*89.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.05*	*1.0*	*50*	*0*	*98.1*	*85 - 114*				
Surr: Dibromofluoromethane	*47.12*	*1.0*	*50*	*0*	*94.2*	*80 - 119*				
Surr: Toluene-d8	*53.14*	*1.0*	*50*	*0*	*106*	*89 - 112*				

LCS Sample ID: **VLCSW-200320** Units: **UG/L** Analysis Date: **20-Mar-2020 23:41**
Client ID: Run ID: **VOA6_358659** SeqNo: **5524278** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.89	1.0	20	0	99.5	80 - 119				
1,1-Dichloroethene	18.72	1.0	20	0	93.6	71 - 131				
1,2-Dichloroethane	19.83	1.0	20	0	99.1	73 - 128				
cis-1,2-Dichloroethene	20.22	1.0	20	0	101	78 - 123				
Methylene chloride	20.64	2.0	20	0	103	74 - 124				
Trichloroethene	19.59	1.0	20	0	97.9	79 - 123				
Vinyl chloride	18.09	1.0	20	0	90.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*54.98*	*1.0*	*50*	*0*	*110*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.24*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*56.22*	*1.0*	*50*	*0*	*112*	*80 - 119*				
Surr: Toluene-d8	*51.8*	*1.0*	*50*	*0*	*104*	*89 - 112*				

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358659 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20030621-01MS** Units: **UG/L** Analysis Date: **21-Mar-2020 02:30**
Client ID: Run ID: **VOA6_358659** SeqNo: **5524284** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	20.02	1.0	20	0	100	80 - 119				
1,1-Dichloroethene	18.87	1.0	20	0	94.3	71 - 131				
1,2-Dichloroethane	19.26	1.0	20	0	96.3	73 - 128				
cis-1,2-Dichloroethene	19.78	1.0	20	0	98.9	78 - 123				
Methylene chloride	18.69	2.0	20	0	93.5	74 - 124				
Trichloroethene	21.01	1.0	20	1.118	99.4	79 - 123				
Vinyl chloride	19.44	1.0	20	0	97.2	58 - 137				
Surr: 1,2-Dichloroethane-d4	*46.45*	*1.0*	*50*	*0*	*92.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.71*	*1.0*	*50*	*0*	*97.4*	*85 - 114*				
Surr: Dibromofluoromethane	*47.23*	*1.0*	*50*	*0*	*94.5*	*80 - 119*				
Surr: Toluene-d8	*52.29*	*1.0*	*50*	*0*	*105*	*89 - 112*				

MSD Sample ID: **HS20030621-01MSD** Units: **UG/L** Analysis Date: **21-Mar-2020 02:54**
Client ID: Run ID: **VOA6_358659** SeqNo: **5524285** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.73	1.0	20	0	98.6	80 - 119	20.02	1.5	20	
1,1-Dichloroethene	17.66	1.0	20	0	88.3	71 - 131	18.87	6.61	20	
1,2-Dichloroethane	19.51	1.0	20	0	97.6	73 - 128	19.26	1.32	20	
cis-1,2-Dichloroethene	18.67	1.0	20	0	93.3	78 - 123	19.78	5.8	20	
Methylene chloride	17.56	2.0	20	0	87.8	74 - 124	18.69	6.27	20	
Trichloroethene	19.79	1.0	20	1.118	93.4	79 - 123	21.01	5.96	20	
Vinyl chloride	17.46	1.0	20	0	87.3	58 - 137	19.44	10.7	20	
Surr: 1,2-Dichloroethane-d4	*45.71*	*1.0*	*50*	*0*	*91.4*	*81 - 118*	*46.45*	*1.6*	*20*	
Surr: 4-Bromofluorobenzene	*48.72*	*1.0*	*50*	*0*	*97.4*	*85 - 114*	*48.71*	*0.0289*	*20*	
Surr: Dibromofluoromethane	*47.12*	*1.0*	*50*	*0*	*94.2*	*80 - 119*	*47.23*	*0.23*	*20*	
Surr: Toluene-d8	*52.23*	*1.0*	*50*	*0*	*104*	*89 - 112*	*52.29*	*0.122*	*20*	

The following samples were analyzed in this batch: HS20030733-02 HS20030733-04 HS20030733-06 HS20030733-07 HS20030733-09

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358682 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW1-200322** Units: **UG/L** Analysis Date: **22-Mar-2020 13:55**
Client ID: Run ID: **VOA6_358682** SeqNo: **5524950** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*45.31*	*1.0*	*50*	*0*	*90.6*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.37*	*1.0*	*50*	*0*	*96.7*	*85 - 114*				
Surr: Dibromofluoromethane	*47.15*	*1.0*	*50*	*0*	*94.3*	*80 - 119*				
Surr: Toluene-d8	*52.17*	*1.0*	*50*	*0*	*104*	*89 - 112*				

LCS Sample ID: **VLCSW-200322** Units: **UG/L** Analysis Date: **22-Mar-2020 13:07**
Client ID: Run ID: **VOA6_358682** SeqNo: **5524949** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	18.87	1.0	20	0	94.3	80 - 119				
1,1-Dichloroethene	18.61	1.0	20	0	93.0	71 - 131				
1,2-Dichloroethane	19.63	1.0	20	0	98.1	73 - 128				
cis-1,2-Dichloroethene	20.16	1.0	20	0	101	78 - 123				
Methylene chloride	19.54	2.0	20	0	97.7	74 - 124				
Trichloroethene	19.83	1.0	20	0	99.1	79 - 123				
Vinyl chloride	18.08	1.0	20	0	90.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.29*	*1.0*	*50*	*0*	*105*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.64*	*1.0*	*50*	*0*	*99.3*	*85 - 114*				
Surr: Dibromofluoromethane	*51.88*	*1.0*	*50*	*0*	*104*	*80 - 119*				
Surr: Toluene-d8	*50.26*	*1.0*	*50*	*0*	*101*	*89 - 112*				

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358682 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20030888-01MS** Units: **UG/L** Analysis Date: **22-Mar-2020 15:56**
Client ID: Run ID: **VOA6_358682** SeqNo: **5524955** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.7	1.0	20	0	98.5	80 - 119				
1,1-Dichloroethene	19.41	1.0	20	0	97.0	71 - 131				
1,2-Dichloroethane	19.71	1.0	20	0	98.6	73 - 128				
cis-1,2-Dichloroethene	19.39	1.0	20	0	96.9	78 - 123				
Methylene chloride	18.18	2.0	20	0	90.9	74 - 124				
Trichloroethene	21.91	1.0	20	0	110	79 - 123				
Vinyl chloride	19.26	1.0	20	0	96.3	58 - 137				
Surr: 1,2-Dichloroethane-d4	*45.31*	*1.0*	*50*	*0*	*90.6*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.99*	*1.0*	*50*	*0*	*98.0*	*85 - 114*				
Surr: Dibromofluoromethane	*47.73*	*1.0*	*50*	*0*	*95.5*	*80 - 119*				
Surr: Toluene-d8	*51.65*	*1.0*	*50*	*0*	*103*	*89 - 112*				

MSD Sample ID: **HS20030888-01MSD** Units: **UG/L** Analysis Date: **22-Mar-2020 16:20**
Client ID: Run ID: **VOA6_358682** SeqNo: **5524956** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.83	1.0	20	0	99.1	80 - 119	19.7	0.625	20	
1,1-Dichloroethene	18.26	1.0	20	0	91.3	71 - 131	19.41	6.08	20	
1,2-Dichloroethane	19.55	1.0	20	0	97.7	73 - 128	19.71	0.835	20	
cis-1,2-Dichloroethene	18.67	1.0	20	0	93.4	78 - 123	19.39	3.76	20	
Methylene chloride	17.4	2.0	20	0	87.0	74 - 124	18.18	4.36	20	
Trichloroethene	20.18	1.0	20	0	101	79 - 123	21.91	8.25	20	
Vinyl chloride	18.09	1.0	20	0	90.4	58 - 137	19.26	6.3	20	
Surr: 1,2-Dichloroethane-d4	*45.14*	*1.0*	*50*	*0*	*90.3*	*81 - 118*	*45.31*	*0.37*	*20*	
Surr: 4-Bromofluorobenzene	*48.67*	*1.0*	*50*	*0*	*97.3*	*85 - 114*	*48.99*	*0.656*	*20*	
Surr: Dibromofluoromethane	*47.96*	*1.0*	*50*	*0*	*95.9*	*80 - 119*	*47.73*	*0.482*	*20*	
Surr: Toluene-d8	*52.32*	*1.0*	*50*	*0*	*105*	*89 - 112*	*51.65*	*1.29*	*20*	

The following samples were analyzed in this batch: HS20030733-01 HS20030733-03 HS20030733-05 HS20030733-08

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358569 (0) **Instrument: ManTech01** **Method: ALKALINITY BY SM2320B**

MBLK Sample ID: **WBLKW1-032020** Units: **mg/L** Analysis Date: **20-Mar-2020 08:48**
Client ID: Run ID: **ManTech01_358569** SeqNo: **5522482** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	5.00	5.00								U

LCS Sample ID: **WLCS1-032020** Units: **mg/L** Analysis Date: **20-Mar-2020 08:57**
Client ID: Run ID: **ManTech01_358569** SeqNo: **5522483** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1009	5.00	1000	0	101	85 - 115				

LCSD Sample ID: **WLCSD1-032020** Units: **mg/L** Analysis Date: **20-Mar-2020 09:05**
Client ID: Run ID: **ManTech01_358569** SeqNo: **5522484** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1005	5.00	1000	0	100	85 - 115	1009	0.46	20	

DUP Sample ID: **HS20030586-02DUP** Units: **mg/L** Analysis Date: **20-Mar-2020 09:21**
Client ID: Run ID: **ManTech01_358569** SeqNo: **5522486** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	600.2	5.00					601.9	0.286	20	

The following samples were analyzed in this batch: HS20030733-01 HS20030733-02 HS20030733-03 HS20030733-06

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358987 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK-03.24.20 W** Units: **mg/L** Analysis Date: **25-Mar-2020 15:10**
Client ID: Run ID: **ICS-Integrion_358987** SeqNo: **5532207** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS-03.24.20** Units: **mg/L** Analysis Date: **25-Mar-2020 18:29**
Client ID: Run ID: **ICS-Integrion_358987** SeqNo: **5532216** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.742	0.100	4	0	93.5	80 - 120				
Sulfate	18.26	0.500	20	0	91.3	80 - 120				

LCSD Sample ID: **LCSD-03.24.20** Units: **mg/L** Analysis Date: **25-Mar-2020 18:47**
Client ID: Run ID: **ICS-Integrion_358987** SeqNo: **5532217** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.767	0.100	4	0	94.2	80 - 120	3.742	0.679	20	
Sulfate	19.82	0.500	20	0	99.1	80 - 120	18.26	8.2	20	

MS Sample ID: **HS20030877-01MS** Units: **mg/L** Analysis Date: **26-Mar-2020 15:25**
Client ID: Run ID: **ICS-Integrion_358987** SeqNo: **5532566** PrepDate: DF: **500**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	835.7	50.0	1000	0	83.6	80 - 120				
Sulfate	14340	250	5000	10070	85.3	80 - 120				

MS Sample ID: **HS20030838-01MS** Units: **mg/L** Analysis Date: **26-Mar-2020 00:20**
Client ID: Run ID: **ICS-Integrion_358987** SeqNo: **5532313** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.554	0.100	2	0.7681	89.3	80 - 120				
Sulfate	42.57	0.500	10	32.76	98.1	80 - 120				

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358987 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MSD Sample ID: **HS20030877-01MSD** Units: **mg/L** Analysis Date: **26-Mar-2020 15:43**
Client ID: Run ID: **ICS-Integrion_358987** SeqNo: **5532567** PrepDate: DF: **500**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	837.2	50.0	1000	0	83.7	80 - 120	835.7	0.185	20	
Sulfate	14550	250	5000	10070	89.7	80 - 120	14340	1.5	20	

MSD Sample ID: **HS20030838-01MSD** Units: **mg/L** Analysis Date: **26-Mar-2020 00:38**
Client ID: Run ID: **ICS-Integrion_358987** SeqNo: **5532314** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.609	0.100	2	0.7681	92.1	80 - 120	2.554	2.17	20	
Sulfate	41.66	0.500	10	32.76	89.0	80 - 120	42.57	2.17	20	

The following samples were analyzed in this batch: HS20030733-03 HS20030733-04 HS20030733-05 HS20030733-06 HS20030733-07 HS20030733-08

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358997 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **17-Mar-2020 19:51**
Client ID: Run ID: **ICS-Integrion_358997** SeqNo: **5532381** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U
Nitrogen, Nitrate (As N)	0.100	0.100								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **17-Mar-2020 20:10**
Client ID: Run ID: **ICS-Integrion_358997** SeqNo: **5532382** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.76	0.100	4	0	94.0	80 - 120				
Nitrogen, Nitrate (As N)	4.01	0.100	4	0	100	80 - 120				
Sulfate	19.35	0.500	20	0	96.8	80 - 120				

LCSD Sample ID: **LCSD** Units: **mg/L** Analysis Date: **17-Mar-2020 20:28**
Client ID: Run ID: **ICS-Integrion_358997** SeqNo: **5532383** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.814	0.100	4	0	95.4	80 - 120	3.76	1.44	20	
Nitrogen, Nitrate (As N)	4.094	0.100	4	0	102	80 - 120	4.01	2.07	20	
Sulfate	19.86	0.500	20	0	99.3	80 - 120	19.35	2.57	20	

The following samples were analyzed in this batch: HS20030733-01 HS20030733-02 HS20030733-03 HS20030733-06

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: **HS20030733**

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: 01-Apr-20

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-19-25	30-Apr-2020

ALS Houston, US Date: 01-Apr-20

Sample Receipt Checklist

Client Name: CBI-Houston
Work Order: HS20030733
Date/Time Received: **17-Mar-2020 09:20**
Received by: **JRM**

Checklist completed by: *Jared R. Makan* eSignature 17-Mar-2020 Date
Reviewed by: *RJ Modashia* eSignature 18-Mar-2020 Date

Matrices: **Water**
Carrier name: **FedEx Priority Overnight**

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):	2.1°C/2.1°C UC/C	IR11
Cooler(s)/Kit(s):	45563	
Date/Time sample(s) sent to storage:	03/17/2020 17:30	

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:

APTIM

Page 1 of ____

COC ID: LHAAP16 March 2020__-ALS | TURNAROUND TIME: Normal | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	Longhorn AAP			Lab Name	ALS Laboratories			Email Invoice To	FedInvoices@aptim.com		
Project Number	501032			Lab Contact	RJ Modashia						
	LHAAP-16			Email	RJ.Modashia@alsglobal.com			Email Report To	Susan.Huang@aptim.com		
Address	1203-B East Grand Avenue			Address	10450 Stanciff Rd., Suite 210			Mail Reports To	Susan Huang		
	PMB 202							Address	4005 Port Chicago Highway, Suite 200		
City	Marshall	State	TX	City	Houston	State	TX	City	Concord	State	CA
Postal Code	75670	Country	USA	Postal Code	77099	Country	USA	Postal Code	94520	Country	USA
Phone Number	713.243.7264			Phone Number	281.575.2279 or 281.530.5656						
Project Manager	Praveen Srivastav							Shipping Company			

SAMPLE DETAILS / ANALYSIS REQUESTED

Sample ID	Location	Start Depth	End Depth	Depth Unit	Field Matrix	Date	Time (24hr)	# Of Cont.	ANALYSIS: Sample Container and Preservatives	3-40 ml VOA/HCL — VOCs by SW8260B	3-40 ml VOA/HCL — MEE by RSK175	2-40ml Amber/H2SO4 — TOC by SM5310C	1-250 ml PE/HNO3 — Metals (arsenic, chromium, manganese, nickel, and thallium) by SW6020	1-250ml PE/Ice — Anions (sulfate/nitrate/bromide) by SW9056	1-250ml PE /Ice — Anions (bromide only) by SW9056	1-250ml PE/Ice — Alkalinity by SM2320	1-125ml PE/Ice — Perchlorate by SW6850		
16WW56-200316	LHAAP16				W6	3/16/20	0815	11		X	X	X		X		X	X		
16WW22-200316	LHAAP16				W6	3/16/20	0910	11		X	X	X		X		X	X		
16WW41-200316	LHAAP16				W6	3/16/20	1005	11		X	X	X		X		X	X		
16WW21-200316	LHAAP16				W6	3/16/20	1055	7		X		X			X		X		
16WW39-200316	LHAAP16				W6	3/16/20	1050	7		X		X			X		X		
16WW25-200316	LHAAP16				W6	3/16/20	1255	11		X	X	X		X	SB	X	X		
16WW21-200316-FD	LHAAP16				W6	3/16/20	1055	7		X		X			X		X		
16WW49-200316	LHAAP16				W6	3/16/20	1355	7		X		X			X		X		
TRIP BLANK	LHAAP16				W6	3/16/20		2		X									

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	[illegible] / BHAJ	3/16/20 1430	JIC / ALS	3-17-20 09:20

HS20030733

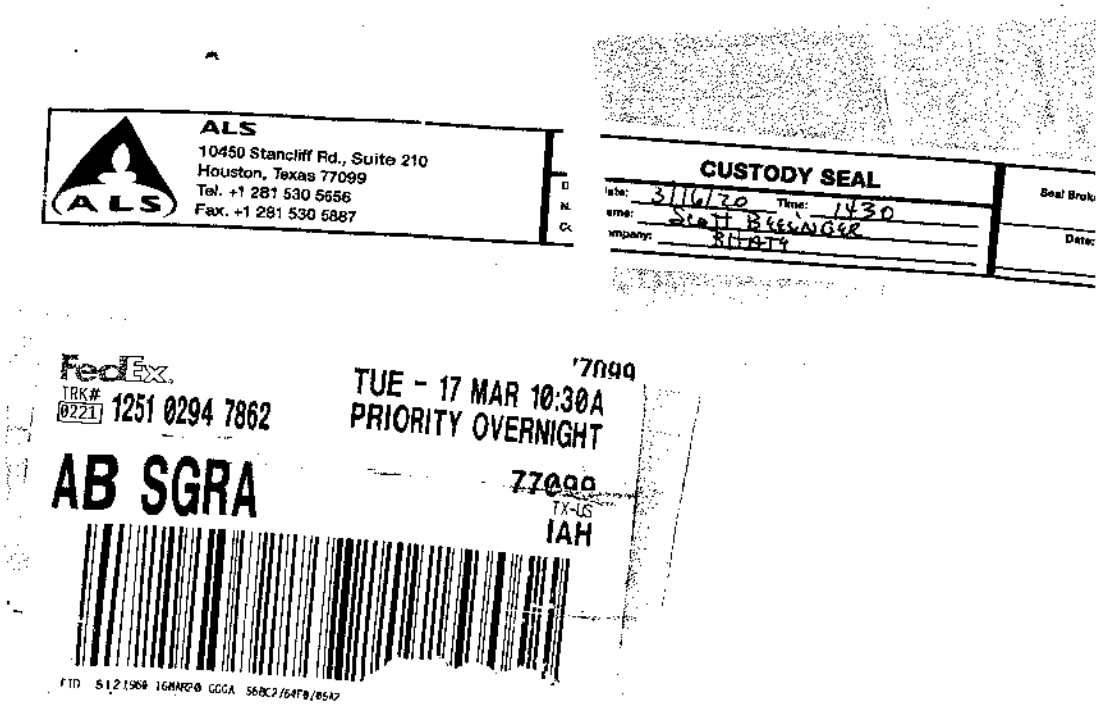
Aptim Environmental & Infrastucture, Inc.

Longhorn Army Ammunition Plant - 16

Temp: 2.1 IR # 11

45563

CAO



ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL
Date: 3/16/20 Time: 1430
Name: Scott Beesinger
Company: ALS
Seal Broke
Date:

FedEx
TRK# 0221 1251 0294 7862
TUE - 17 MAR 10:30A
PRIORITY OVERNIGHT
77099
AB SGRA
TX-US
IAH

ALS Environmental
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March 25, 2020

Analytical Report for Service Request No: K2002412

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: HS20030733

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory March 19, 2020
For your reference, these analyses have been assigned our service request number **K2002412.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

RIGHT SOLUTIONS | RIGHT PARTNER

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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
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.
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.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
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1317 South 13th Ave, Kelso, WA 98626 | 1-360-577-7222 | www.alsglobal.com

Client: ALS Environmental - US
Project: HS20030733
Sample Matrix: Ground Water

Service Request: K2002412
Date Received: 03/19/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Eight ground water samples were received for analysis at ALS Environmental on 03/19/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 03/25/2020

Chain of Custody

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K2003412

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13537**

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626 **Phone:** +1 360 501 3312

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@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:	HS20030733
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20030733-01**	**16WW56-200316**	**Groundwater**	**16 Mar 2020 08:15**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			25 Mar 2020
2.	**HS20030733-02**	**16WW22-200316**	**Groundwater**	**16 Mar 2020 09:10**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			25 Mar 2020
3.	**HS20030733-03**	**16WW41-200316**	**Groundwater**	**16 Mar 2020 10:05**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			25 Mar 2020
4.	**HS20030733-04**	**16WW21-200316**	**Groundwater**	**16 Mar 2020 10:55**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			25 Mar 2020
5.	**HS20030733-05**	**16WW39-200316**	**Groundwater**	**16 Mar 2020 10:50**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			25 Mar 2020
6.	**HS20030733-06**	**16WW25-200316**	**Groundwater**	**16 Mar 2020 12:55**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			25 Mar 2020
7.	**HS20030733-07**	**16WW21-200316-FD**	**Groundwater**	**16 Mar 2020 10:55**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			25 Mar 2020
8.	**HS20030733-08**	**16WW49-200316**	**Groundwater**	**16 Mar 2020 13:55**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			25 Mar 2020

Received: 3/19/2020 0920

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13537**

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By:	J. [illegible]	Date/Time:	3/18/20 18:00
Received By:	[signature]	Date/Time:	3/19/2020 0920
Cooler ID(s):		Temperature(s):	

PC KL

Cooler Receipt and Preservation Form

Client ALS Houston Service Request *K20* 02412

Received: 3/19/2020 Opened: 3/19/2020 By: CG Unloaded: 3/19/2020 By: CG

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 2, front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Temp Blank	Sample 1	Sample 2	Sample 3	Sample 4	IR GUN	Cooler / COC ID NA	Tracking Number NA	Filed
0.7	~				3900H88WS	13537	1251 0295 5459	

4. Packing material: *Inserts* (*Baggies*) (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA (Y) N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

General Chemistry

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2002412
Project:	HS20030733	**Date Collected:**	03/16/20
Sample Matrix:	Ground Water	**Date Received:**	03/19/20
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
16WW56-200316	K2002412-001	**10.7**	0.50	0.20	0.07	1	03/22/20 02:59	
16WW22-200316	K2002412-002	**2.35**	0.50	0.20	0.07	1	03/22/20 03:27	
16WW41-200316	K2002412-003	**44.8**	0.50	0.20	0.07	1	03/22/20 03:55	
16WW21-200316	K2002412-004	**1.20**	0.50	0.20	0.07	1	03/22/20 04:23	
16WW39-200316	K2002412-005	**4.57**	0.50	0.20	0.07	1	03/22/20 05:50	
16WW25-200316	K2002412-006	**31.2**	0.50	0.20	0.07	1	03/22/20 06:18	
16WW21-200316-FD	K2002412-007	**0.78**	0.50	0.20	0.07	1	03/22/20 06:46	
16WW49-200316	K2002412-008	**5.22**	0.50	0.20	0.07	1	03/22/20 07:14	
Method Blank	K2002412-MB	**0.29 J**	0.50	0.20	0.07	1	03/21/20 20:07	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2002412
Project	HS20030733	**Date Collected:**	03/16/20
Sample Matrix:	Ground Water	**Date Received:**	03/19/20
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Carbon, Total Organic

Sample Name:	Lab Code:	LOQ	LOD	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
16WW56-200316	K2002412-001DUP	0.50	0.20	0.07	10.7	10.3	10.5	4	10	03/22/20
16WW22-200316	K2002412-002DUP	0.50	0.20	0.07	2.35	2.15	2.25	9	10	03/22/20
16WW41-200316	K2002412-003DUP	0.50	0.20	0.07	44.8	44.5	44.7	<1	10	03/22/20
16WW21-200316	K2002412-004DUP	0.50	0.20	0.07	1.20	0.91	1.05	27 #	10	03/22/20
16WW39-200316	K2002412-005DUP	0.50	0.20	0.07	4.57	4.41	4.49	4	10	03/22/20
16WW25-200316	K2002412-006DUP	0.50	0.20	0.07	31.2	30.7	31.0	2	10	03/22/20
16WW21-200316-FD	K2002412-007DUP	0.50	0.20	0.07	0.78	0.58	0.682	30 #	10	03/22/20
16WW49-200316	K2002412-008DUP	0.50	0.20	0.07	5.22	5.27	5.24	<1	10	03/22/20

Results flagged with an asterisk (*) indicate values outside control criteria.

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

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2002412
Project:	HS20030733	**Date Analyzed:**	03/21/20
Sample Matrix:	Ground Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	674205

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2002412-LCS	24.9	25.0	100	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2002412
Project: HS20030733

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C **Units:** mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	674205	KQ2003999-01	03/21/20 19:52	25.0	26.3	105	90-110
CCV2	674205	KQ2003999-02	03/21/20 23:40	25.0	26.3	105	90-110
CCV3	674205	KQ2003999-03	03/22/20 04:51	25.0	26.5	106	90-110
CCV4	674205	KQ2003999-30	03/22/20 09:35	25.0	25.8	103	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2002412
Project: HS20030733

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C **Units:**mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	674205	KQ2003999-04	03/21/20 19:37	0.50	0.20	0.07	ND	U
CCB2	674205	KQ2003999-05	03/21/20 23:55	0.50	0.20	0.07	0.12	J
CCB3	674205	KQ2003999-06	03/22/20 05:06	0.50	0.20	0.07	ND	U
CCB4	674205	KQ2003999-31	03/22/20 09:49	0.50	0.20	0.07	ND	U

Raw Data

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General Chemistry

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Work Request # Original ( ) K2062276, 2337, 2353, 2365, 2412, 2434, 2416, 2424, 2434, 2462, 2470, 2471, 2489, 2492, 2496
IV II IV II IV I IV IV I II IV IV II I II
2432, 2457, 2456, 2422
IV I IV II

Tier:

Date Analyzed: 3/21/20

Analyst: RD

Analysis: TOC/DOC

Run # TOC: 674205, 674225, 674226 DOC: 674227

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1.	Is the method name and number correct and appropriate?	yes/no/NA
2.	Holding times met for all analyses and for all samples?	yes/no/NA
3.	Are calculations correct?	yes/no/NA
4.	Is the reporting basis correct? (Dry Weight)	yes/no/NA
5.	All quality control criteria met?	yes/no
6.	Is the calibration curve correlation coefficient ≥ 0.995?	yes/no/NA
7.	MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency?	yes/no/NA
8.	Are ICVs, CCVs, and CCBs all within acceptance limits?	yes/no/NA
9.	Are results for methods blanks all ND?	yes/no/NA
10.	Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.)	yes/no/NA
11.	Are all exceptions explained?	yes/no/NA
12.	Have all applicable service requests been reviewed?	yes/no/NA
13.	Are all samples labeled correctly?	yes/no/NA
14.	Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V)	yes/no/NA
15.	Are detection limits and units reported correctly?	yes/no/NA
16.	Is the unused space on the benchsheet crossed out?	yes/no/NA
17.	Was analysis turned in by the due date? (n-2) (If not record SR#)	yes/no/NA

COMMENTS: K2002416-3/3rd/2412-4/4th, 2412-7/7th report a high %RSD. However, these samples are less than 5x the MRL

Final Approved by: _____ Date: 3/24/20

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674205 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002276-001	Carbon, Total Organic	N/A		Ground Water	5.85 mg/L	10 mL	58.5 mg/L	10	0.7	5.0			3/22/20 01:06:00	N	IV
K2002337-001	Carbon, Total Organic	N/A		Water	0.92 mg/L	10 mL	0.92 mg/L	1	0.07	0.50			3/21/20 20:51:00	N	II
K2002337-002	Carbon, Total Organic	N/A		Water	0.85 mg/L	10 mL	0.85 mg/L	1	0.07	0.50			3/21/20 21:48:00	N	II
K2002337-003	Carbon, Total Organic	N/A		Water	0.77 mg/L	10 mL	0.77 mg/L	1	0.07	0.50			3/21/20 22:16:00	N	II
K2002337-004	Carbon, Total Organic	N/A		Water	0.68 mg/L	10 mL	0.68 mg/L	1	0.07	0.50			3/21/20 22:44:00	N	II
K2002337-005	Carbon, Total Organic	N/A		Water	0.45 mg/L	10 mL	0.45 mg/L J	1	0.07	0.50			3/21/20 23:12:00	N	II
K2002337-006	Carbon, Total Organic	N/A		Water	1.87 mg/L	10 mL	1.87 mg/L	1	0.07	0.50			3/22/20 00:10:00	N	II
K2002337-007	Carbon, Total Organic	N/A		Water	0.63 mg/L	10 mL	0.63 mg/L	1	0.07	0.50			3/22/20 00:38:00	N	II
K2002353-001	Carbon, Total Organic	N/A		Ground Water	1.25 mg/L	10 mL	500 mg/L	400	30	200			3/22/20 02:03:00	N	IV
K2002365-001	Carbon, Total Organic	N/A		Water	6.75 mg/L	10 mL	6.75 mg/L	1	0.07	0.50			3/22/20 01:34:00	N	II
K2002412-001	Carbon, Total Organic	N/A		Ground Water	10.68 mg/L	10 mL	10.7 mg/L	1	0.07	0.50			3/22/20 02:59:00	N	IV
K2002412-002	Carbon, Total Organic	N/A		Ground Water	2.35 mg/L	10 mL	2.35 mg/L	1	0.07	0.50			3/22/20 03:27:00	N	IV
K2002412-003	Carbon, Total Organic	N/A		Ground Water	44.83 mg/L	10 mL	44.8 mg/L	1	0.07	0.50			3/22/20 03:55:00	N	IV
K2002412-004	Carbon, Total Organic	N/A		Ground Water	1.20 mg/L	10 mL	1.20 mg/L	1	0.07	0.50			3/22/20 04:23:00	N	IV
K2002412-005	Carbon, Total Organic	N/A		Ground Water	4.57 mg/L	10 mL	4.57 mg/L	1	0.07	0.50			3/22/20 05:50:00	N	IV
K2002412-006	Carbon, Total Organic	N/A		Ground Water	31.25 mg/L	10 mL	31.2 mg/L	1	0.07	0.50			3/22/20 06:18:00	N	IV
K2002412-007	Carbon, Total Organic	N/A		Ground Water	0.78 mg/L	10 mL	0.78 mg/L	1	0.07	0.50			3/22/20 06:46:00	N	IV
K2002412-008	Carbon, Total Organic	N/A		Ground Water	5.22 mg/L	10 mL	5.22 mg/L	1	0.07	0.50			3/22/20 07:14:00	N	IV
K2002434-001	Carbon, Total Organic	N/A		Water	0.24 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 07:42:00	N	I
K2002434-002	Carbon, Total Organic	N/A		Water	0.61 mg/L	10 mL	0.61 mg/L	1	0.07	0.50			3/22/20 08:10:00	N	I
KQ2003999-01	Carbon, Total Organic	CCV		Water	26.33 mg/L	10 mL	26.3 mg/L	1					3/21/20 19:52:00	N	II
KQ2003999-02	Carbon, Total Organic	CCV		Water	26.30 mg/L	10 mL	26.3 mg/L	1					3/21/20 23:40:00	N	II
KQ2003999-03	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	II
KQ2003999-04	Carbon, Total Organic	CCB		Water	-0.03 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/21/20 19:37:00	N	II
KQ2003999-05	Carbon, Total Organic	CCB		Water	0.12 mg/L	10 mL	0.12 mg/L J	1	0.07	0.50			3/21/20 23:55:00	N	II
KQ2003999-06	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	II
KQ2003999-07	Carbon, Total Organic	MB		Water	0.29 mg/L	10 mL	0.29 mg/L J	1	0.07	0.50			3/21/20 20:07:00	N	II
KQ2003999-08	Carbon, Total Organic	LCS		Water	24.88 mg/L	10 mL	24.9 mg/L	1	0.07	0.50	100		3/21/20 20:21:00	N	II
KQ2003999-09	Carbon, Total Organic	MS	K2002337-001	Water	29.48 mg/L	10 mL	29.5 mg/L	1	0.07	0.50	114		3/21/20 21:19:00	N	II
KQ2003999-10	Carbon, Total Organic	DUP	K2002276-001	Ground Water	5.92 mg/L	10 mL	59.2 mg/L	10	0.7	5.0		1	3/22/20 01:06:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674205 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2003999-11	Carbon, Total Organic	DUP	K2002337-001	Water	0.91 mg/L	10 mL	0.91 mg/L	1	0.07	0.50		1	3/21/20 20:51:00	N	II
KQ2003999-12	Carbon, Total Organic	DUP	K2002337-002	Water	0.79 mg/L	10 mL	0.79 mg/L	1	0.07	0.50		7	3/21/20 21:48:00	N	II
KQ2003999-13	Carbon, Total Organic	DUP	K2002337-003	Water	0.70 mg/L	10 mL	0.70 mg/L	1	0.07	0.50		10	3/21/20 22:16:00	N	II
KQ2003999-14	Carbon, Total Organic	DUP	K2002337-004	Water	0.67 mg/L	10 mL	0.67 mg/L	1	0.07	0.50		2	3/21/20 22:44:00	N	II
KQ2003999-15	Carbon, Total Organic	DUP	K2002337-005	Water	0.46 mg/L	10 mL	0.46 mg/L J	1	0.07	0.50		3	3/21/20 23:12:00	N	II
KQ2003999-16	Carbon, Total Organic	DUP	K2002337-006	Water	1.85 mg/L	10 mL	1.85 mg/L	1	0.07	0.50		1	3/22/20 00:10:00	N	II
KQ2003999-17	Carbon, Total Organic	DUP	K2002337-007	Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50		9	3/22/20 00:38:00	N	II
KQ2003999-18	Carbon, Total Organic	DUP	K2002353-001	Ground Water	1.19 mg/L	10 mL	480 mg/L	400	30	200		4	3/22/20 02:03:00	N	IV
KQ2003999-19	Carbon, Total Organic	DUP	K2002365-001	Water	6.74 mg/L	10 mL	6.74 mg/L	1	0.07	0.50		<1	3/22/20 01:34:00	N	II
KQ2003999-20	Carbon, Total Organic	DUP	K2002434-001	Water	0.19 mg/L	10 mL	0.19 mg/L J	1	0.07	0.50		NC	3/22/20 07:42:00	N	I
KQ2003999-21	Carbon, Total Organic	DUP	K2002434-002	Water	0.60 mg/L	10 mL	0.60 mg/L	1	0.07	0.50		2	3/22/20 08:10:00	N	I
KQ2003999-22	Carbon, Total Organic	DUP	K2002412-002	Ground Water	2.15 mg/L	10 mL	2.15 mg/L	1	0.07	0.50		9	3/22/20 03:27:00	N	IV
KQ2003999-23	Carbon, Total Organic	DUP	K2002412-001	Ground Water	10.27 mg/L	10 mL	10.3 mg/L	1	0.07	0.50		4	3/22/20 02:59:00	N	IV
KQ2003999-24	Carbon, Total Organic	DUP	K2002412-003	Ground Water	44.51 mg/L	10 mL	44.5 mg/L	1	0.07	0.50		<1	3/22/20 03:55:00	N	IV
KQ2003999-25	Carbon, Total Organic	DUP	K2002412-004	Ground Water	0.91 mg/L	10 mL	0.91 mg/L	1	0.07	0.50		27*	3/22/20 04:23:00	N	IV
KQ2003999-26	Carbon, Total Organic	DUP	K2002412-005	Ground Water	4.41 mg/L	10 mL	4.41 mg/L	1	0.07	0.50		4	3/22/20 05:50:00	N	IV
KQ2003999-27	Carbon, Total Organic	DUP	K2002412-006	Ground Water	30.72 mg/L	10 mL	30.7 mg/L	1	0.07	0.50		2	3/22/20 06:18:00	N	IV
KQ2003999-28	Carbon, Total Organic	DUP	K2002412-007	Ground Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50		30*	3/22/20 06:46:00	N	IV
KQ2003999-29	Carbon, Total Organic	DUP	K2002412-008	Ground Water	5.27 mg/L	10 mL	5.27 mg/L	1	0.07	0.50		<1	3/22/20 07:14:00	N	IV
KQ2003999-30	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	II
KQ2003999-31	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674225 **Method/Testcode:** 415.1/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002416-001	Carbon, Total Organic	N/A		Ground Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:07:00	Y	IV
K2002416-002	Carbon, Total Organic	N/A		Ground Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 10:33:00	N	IV
K2002416-003	Carbon, Total Organic	N/A		Ground Water	0.19 mg/L	10 mL	0.19 mg/L J	1	0.07	0.50			3/22/20 11:01:00	N	IV
K2002416-004	Carbon, Total Organic	N/A		Ground Water	0.54 mg/L	10 mL	0.54 mg/L	1	0.07	0.50			3/22/20 11:29:00	N	IV
K2002421-001	Carbon, Total Organic	N/A		Water	1.53 mg/L	10 mL	1.53 mg/L	1	0.07	0.50			3/22/20 15:45:00	N	IV
K2002421-002	Carbon, Total Organic	N/A		Water	0.79 mg/L	10 mL	0.79 mg/L	1	0.07	0.50			3/22/20 16:14:00	N	IV
K2002421-003	Carbon, Total Organic	N/A		Water	1.69 mg/L	10 mL	1.69 mg/L	1	0.07	0.50			3/22/20 16:42:00	N	IV
K2002421-004	Carbon, Total Organic	N/A		Water	0.82 mg/L	10 mL	0.82 mg/L	1	0.07	0.50			3/22/20 17:10:00	N	IV
K2002434-003	Carbon, Total Organic	N/A		Water	0.11 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 08:39:00	N	I
K2002462-001	Carbon, Total Organic	N/A		Water	2.96 mg/L	10 mL	2.96 mg/L	1	0.07	0.50			3/22/20 11:58:00	N	II
K2002470-001	Carbon, Total Organic	N/A		Water	2.07 mg/L	10 mL	2.07 mg/L	1	0.07	0.50			3/22/20 12:26:00	N	IV
K2002471-001	Carbon, Total Organic	N/A		Ground Water	4.43 mg/L	10 mL	4.43 mg/L	1	0.07	0.50			3/22/20 12:54:00	N	IV
K2002489-001	Carbon, Total Organic	N/A		Water	4.72 mg/L	10 mL	4.72 mg/L	1	0.07	0.50			3/22/20 13:22:00	N	II
K2002492-002	Carbon, Total Organic	N/A		Drinking Water	0.37 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 13:50:00	N	I
K2002496-001	Carbon, Total Organic	N/A		Water	14.38 mg/L	10 mL	14.4 mg/L	1	0.07	0.50			3/22/20 15:17:00	N	II
KQ2004008-01	Carbon, Total Organic	MS	K2002416-001	Ground Water	27.78 mg/L	10 mL	27.8 mg/L	1	0.07	0.50	111		3/22/20 10:04:00	N	IV
KQ2004008-02	Carbon, Total Organic	DUP	K2002416-001	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 09:07:00	N	IV
KQ2004008-03	Carbon, Total Organic	DUP	K2002416-002	Ground Water	0.01 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 10:33:00	N	IV
KQ2004008-04	Carbon, Total Organic	DUP	K2002416-003	Ground Water	0.16 mg/L	10 mL	0.16 mg/L J	1	0.07	0.50		21*	3/22/20 11:01:00	N	IV
KQ2004008-05	Carbon, Total Organic	DUP	K2002416-004	Ground Water	0.53 mg/L	10 mL	0.53 mg/L	1	0.07	0.50		2	3/22/20 11:29:00	N	IV
KQ2004008-06	Carbon, Total Organic	DUP	K2002421-001	Water	1.47 mg/L	10 mL	1.47 mg/L	1	0.07	0.50		4	3/22/20 15:45:00	N	IV
KQ2004008-07	Carbon, Total Organic	DUP	K2002421-002	Water	0.76 mg/L	10 mL	0.76 mg/L	1	0.07	0.50		3	3/22/20 16:14:00	N	IV
KQ2004008-08	Carbon, Total Organic	DUP	K2002421-003	Water	1.71 mg/L	10 mL	1.71 mg/L	1	0.07	0.50		1	3/22/20 16:42:00	N	IV
KQ2004008-09	Carbon, Total Organic	DUP	K2002421-004	Water	0.78 mg/L	10 mL	0.78 mg/L	1	0.07	0.50		5	3/22/20 17:10:00	N	IV
KQ2004008-10	Carbon, Total Organic	DUP	K2002434-003	Water	0.18 mg/L	10 mL	0.18 mg/L J	1	0.07	0.50		NC	3/22/20 08:39:00	N	I
KQ2004008-11	Carbon, Total Organic	DUP	K2002462-001	Water	2.96 mg/L	10 mL	2.96 mg/L	1	0.07	0.50		<1	3/22/20 11:58:00	N	II
KQ2004008-12	Carbon, Total Organic	DUP	K2002470-001	Water	1.98 mg/L	10 mL	1.98 mg/L	1	0.07	0.50		4	3/22/20 12:26:00	N	IV
KQ2004008-13	Carbon, Total Organic	DUP	K2002471-001	Ground Water	4.30 mg/L	10 mL	4.30 mg/L	1	0.07	0.50		3	3/22/20 12:54:00	N	IV
KQ2004008-14	Carbon, Total Organic	DUP	K2002489-001	Water	4.65 mg/L	10 mL	4.65 mg/L	1	0.07	0.50		2	3/22/20 13:22:00	N	II
KQ2004008-15	Carbon, Total Organic	DUP	K2002492-002	Drinking Water	0.40 mg/L	10 mL	0.40 mg/L J	1	0.07	0.50		NC	3/22/20 13:50:00	N	I

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674225 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2004008-16	Carbon, Total Organic	DUP	K2002496-001	Water	13.50 mg/L	10 mL	13.5 mg/L	1	0.07	0.50		6	3/22/20 15:17:00	N	II
KQ2004008-17	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	I
KQ2004008-17	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	I
KQ2004008-18	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	I
KQ2004008-18	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	I
KQ2004008-19	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	I
KQ2004008-19	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	I
KQ2004008-20	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	I
KQ2004008-20	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	I
KQ2004008-21	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	I
KQ2004008-21	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	I
KQ2004008-22	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	I
KQ2004008-22	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	I
KQ2004008-23	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	I
KQ2004008-23	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	I
KQ2004008-24	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	I
KQ2004008-24	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	I
KQ2004008-25	Carbon, Total Organic	MB		Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:21:00	N	I
KQ2004008-25	Carbon, Total Organic	MB		Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:21:00	N	I
KQ2004008-26	Carbon, Total Organic	LCS		Water	24.62 mg/L	10 mL	24.6 mg/L	1	0.07	0.50	98		3/22/20 05:35:00	N	I
KQ2004008-26	Carbon, Total Organic	LCS		Water	24.62 mg/L	10 mL	24.6 mg/L	1	0.07	0.50	98		3/22/20 05:35:00	N	I
KQ2004008-27	Carbon, Total Organic	N/A		Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:07:00	N	IV
KQ2004008-28	Carbon, Total Organic	MS	KQ2004008-27	Water	27.78 mg/L	10 mL	27.8 mg/L	1	0.07	0.50	111		3/22/20 10:04:00	N	IV
KQ2004008-29	Carbon, Total Organic	DUP	KQ2004008-27	Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 09:07:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674226 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002432-001	Carbon, Total Organic	N/A		Water	0.03 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 17:38:00	N	IV
K2002437-001	Carbon, Total Organic	N/A		Water	1.83 mg/L	10 mL	1.83 mg/L	1	0.07	0.50			3/22/20 19:04:00	N	I
K2002437-002	Carbon, Total Organic	N/A		Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			3/22/20 19:33:00	N	I
K2002437-003	Carbon, Total Organic	N/A		Water	3.10 mg/L	10 mL	3.10 mg/L	1	0.07	0.50			3/22/20 20:00:00	N	I
K2002437-004	Carbon, Total Organic	N/A		Water	0.71 mg/L	10 mL	0.71 mg/L	1	0.07	0.50			3/22/20 20:29:00	N	I
K2002437-005	Carbon, Total Organic	N/A		Water	0.59 mg/L	10 mL	0.59 mg/L	1	0.07	0.50			3/22/20 20:57:00	N	I
K2002456-001	Carbon, Total Organic	N/A		Water	1.07 mg/L	10 mL	1.07 mg/L	1	0.07	0.50			3/22/20 21:25:00	N	IV
K2002456-002	Carbon, Total Organic	N/A		Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			3/22/20 21:53:00	N	IV
K2002456-003	Carbon, Total Organic	N/A		Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50			3/22/20 22:21:00	N	IV
K2002456-004	Carbon, Total Organic	N/A		Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50			3/22/20 22:49:00	N	IV
KQ2004009-01	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	IV
KQ2004009-02	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	IV
KQ2004009-03	Carbon, Total Organic	CCV		Water	25.05 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	IV
KQ2004009-04	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	IV
KQ2004009-05	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	IV
KQ2004009-06	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	IV
KQ2004009-07	Carbon, Total Organic	MB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:48:00	N	IV
KQ2004009-08	Carbon, Total Organic	LCS		Water	24.66 mg/L	10 mL	24.7 mg/L	1	0.07	0.50	99		3/22/20 15:03:00	N	IV
KQ2004009-09	Carbon, Total Organic	MS	K2002432-001	Water	26.30 mg/L	10 mL	26.3 mg/L	1	0.07	0.50	105		3/22/20 18:06:00	N	IV
KQ2004009-10	Carbon, Total Organic	DUP	K2002432-001	Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 17:38:00	N	IV
KQ2004009-11	Carbon, Total Organic	DUP	K2002437-001	Water	1.78 mg/L	10 mL	1.78 mg/L	1	0.07	0.50		3	3/22/20 19:04:00	N	I
KQ2004009-12	Carbon, Total Organic	DUP	K2002437-002	Water	0.71 mg/L	10 mL	0.71 mg/L	1	0.07	0.50		2	3/22/20 19:33:00	N	I
KQ2004009-13	Carbon, Total Organic	DUP	K2002437-003	Water	3.13 mg/L	10 mL	3.13 mg/L	1	0.07	0.50		<1	3/22/20 20:00:00	N	I
KQ2004009-14	Carbon, Total Organic	DUP	K2002437-004	Water	0.64 mg/L	10 mL	0.64 mg/L	1	0.07	0.50		10	3/22/20 20:29:00	N	I
KQ2004009-15	Carbon, Total Organic	DUP	K2002437-005	Water	0.56 mg/L	10 mL	0.56 mg/L	1	0.07	0.50		4	3/22/20 20:57:00	N	I
KQ2004009-16	Carbon, Total Organic	DUP	K2002456-001	Water	1.04 mg/L	10 mL	1.04 mg/L	1	0.07	0.50		2	3/22/20 21:25:00	N	IV
KQ2004009-17	Carbon, Total Organic	DUP	K2002456-002	Water	0.66 mg/L	10 mL	0.66 mg/L	1	0.07	0.50		9	3/22/20 21:53:00	N	IV
KQ2004009-18	Carbon, Total Organic	DUP	K2002456-003	Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50		<1	3/22/20 22:21:00	N	IV
KQ2004009-19	Carbon, Total Organic	DUP	K2002456-004	Water	1.30 mg/L	10 mL	1.30 mg/L	1	0.07	0.50		4	3/22/20 22:49:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674227 **Method/Testcode:** SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002422-001	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	9.45 mg/L	10 mL	9.45 mg/L	1	0.07	0.50			3/23/20 02:23:00	N	III
K2002462-002	Carbon, Dissolved Organic	N/A		Water	4.12 mg/L	10 mL	4.12 mg/L	1	0.07	0.50			3/23/20 01:11:00	N	II
KQ2004010-01	Carbon, Dissolved Organic	CCV		Water	25.13 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	II
KQ2004010-01	Carbon, Dissolved Organic (DOC)	CCV		Water	25.13 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	II
KQ2004010-02	Carbon, Dissolved Organic	CCV		Water	25.06 mg/L	10 mL	25.1 mg/L	1					3/23/20 03:20:00	N	II
KQ2004010-02	Carbon, Dissolved Organic (DOC)	CCV		Water	25.06 mg/L	10 mL	25.1 mg/L	1					3/23/20 03:20:00	N	II
KQ2004010-03	Carbon, Dissolved Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	II
KQ2004010-03	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	II
KQ2004010-04	Carbon, Dissolved Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 03:35:00	N	II
KQ2004010-04	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 03:35:00	N	II
KQ2004010-05	Carbon, Dissolved Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:42:00	N	II
KQ2004010-05	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:42:00	N	II
KQ2004010-06	Carbon, Dissolved Organic	LCS		Water	24.20 mg/L	10 mL	24.2 mg/L	1	0.07	0.50	97		3/23/20 00:57:00	N	II
KQ2004010-06	Carbon, Dissolved Organic (DOC)	LCS		Water	24.20 mg/L	10 mL	24.2 mg/L	1	0.07	0.50	97		3/23/20 00:57:00	N	II
KQ2004010-07	Carbon, Dissolved Organic	MS	K2002462-002	Water	32.05 mg/L	10 mL	32.0 mg/L	1	0.07	0.50	112		3/23/20 01:40:00	N	II
KQ2004010-08	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	4.12 mg/L	10 mL	4.12 mg/L	1	0.07	0.50			3/23/20 01:11:00	N	III
KQ2004010-09	Carbon, Dissolved Organic (DOC)	MS	KQ2004010-08	Surface Water	32.05 mg/L	10 mL	32.0 mg/L	1	0.07	0.50	112		3/23/20 01:40:00	N	III
KQ2004010-10	Carbon, Dissolved Organic (DOC)	DUP	K2002422-001	Surface Water	9.61 mg/L	10 mL	9.61 mg/L	1	0.07	0.50		2	3/23/20 02:23:00	N	III
KQ2004010-11	Carbon, Dissolved Organic	DUP	K2002462-002	Water	4.07 mg/L	10 mL	4.07 mg/L	1	0.07	0.50		1	3/23/20 01:11:00	N	II
KQ2004010-12	Carbon, Dissolved Organic (DOC)	DUP	KQ2004010-08	Surface Water	4.07 mg/L	10 mL	4.07 mg/L	1	0.07	0.50		1	3/23/20 01:11:00	N	III

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

0.043	0.043			OBSERVATIONS	12	0.0432
0.366				STD Deviation	0.11429	ABOVE
0.200				AVERAGE	0.06658	ABOVE
0.055	0.055	0.055	######	UCL	0.18087	0.0545
0.136	0.136			LCL	-0.04772	0.1357
0.000						0
0.000						0
0.000				OBSERVATIONS	3	0
0.000				STD Deviation	0.02578	0
0.000				AVERAGE	0.07780	0
0.000				UCL	0.10358	0
0.000				LCL	0.05202	0
						0
						0
				OBSERVATIONS	1	0
				STD Deviation	#DIV/0!	0
				AVERAGE	0.05450	0
				UCL	#DIV/0!	0
				LCL	#DIV/0!	0
						0
						0
				OBSERVATIONS	0	0
				STD Deviation	#DIV/0!	0
				AVERAGE	#DIV/0!	0
						0
						0
						0
						0
						0

BLP 3/24/20

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccb	1	0.043	0.0778	-0.0346	-0.0346	<0.5	3/21/2020
3	ccv	1	26.406	0.0778	26.3280	26.328	26.3	3/21/2020
4	mb	1	0.366	0.0778	0.2878	0.2878	<0.5	3/21/2020
5	lcs	1	24.954	0.0778	24.8758	24.8758	24.9	3/21/2020
6	K2002337-001	1	0.994	0.0778	0.9162	0.9162	0.92	3/21/2020
7	K2002337-001	1	0.983	0.0778	0.9055	0.9055	0.9	3/21/2020
8	KQ2003999-09	1	29.561	0.0778	29.4834	29.4834	29	3/21/2020
9	K2002337-002	1	0.927	0.0778	0.8490	0.849	0.85	3/21/2020
10	K2002337-002	1	0.868	0.0778	0.7902	0.7902	0.79	3/21/2020
11	K2002337-003	1	0.851	0.0778	0.7733	0.7733	0.8	3/21/2020
12	K2002337-003	1	0.778	0.0778	0.6997	0.6997	0.70	3/21/2020
13	K2002337-004	1	0.759	0.0778	0.6814	0.6814	0.68	3/21/2020
14	K2002337-004	1	0.748	0.0778	0.6704	0.6704	0.67	3/21/2020
15	K2002337-005	1	0.530	0.0778	0.4518	0.4518	<0.5	3/21/2020
16	K2002337-005	1	0.543	0.0778	0.4649	0.4649	<0.5	3/21/2020
17	ccv	1	26.379	0.0778	26.3014	26.3014	26.30	3/21/2020
18	ccb	1	0.200	0.0778	0.1221	0.1221	<0.5	3/21/2020
19	K2002337-006	1	1.952	0.0778	1.8738	1.8738	1.9	3/22/2020
20	K2002337-006	1	1.929	0.0778	1.8513	1.8513	1.85	3/22/2020
21	K2002337-007	1	0.710	0.0778	0.6317	0.6317	0.63	3/22/2020
22	K2002337-007	1	0.658	0.0778	0.5798	0.5798	0.6	3/22/2020
23	K2002276-001	10	5.931	0.0778	5.8531	58.531	58.5	3/22/2020
24	K2002276-001	10	5.997	0.0778	5.9193	59.193	59.19	3/22/2020
25	K2002365-001	1	6.825	0.0778	6.7471	6.7471	6.75	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

	date	time
Analyzed By: KD	Date Analyzed 3/21/20	
Reviewed By:	Date Reviewed	

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ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002365-001	1	6.814	0.0778	6.7366	6.7366	6.74	3/22/2020
27	K2002353-001	400	1.325	0.0778	1.2473	498.92	498.92	3/22/2020
28	K2002353-001	400	1.272	0.0778	1.1941	477.64	477.6	3/22/2020
29	K2002412-001	1	10.758	0.0778	10.6798	10.6798	10.7	3/22/2020
30	K2002412-001	1	10.352	0.0778	10.2738	10.2738	10.3	3/22/2020
31	K2002412-002	1	2.431	0.0778	2.3535	2.3535	2.4	3/22/2020
32	K2002412-002	1	2.226	0.0778	2.1484	2.1484	2.1	3/22/2020
33	K2002412-003	1	44.908	0.0778	44.8304	44.8304	44.8	3/22/2020
34	K2002412-003	1	44.589	0.0778	44.5114	44.5114	44.5	3/22/2020
35	K2002412-004	1	1.276	0.0778	1.1981	1.1981	1.2	3/22/2020
36	K2002412-004	1	0.987	0.0778	0.9096	0.9096	0.9	3/22/2020
37	ccv	1	26.538	0.0778	26.4599	26.4599	26.5	3/22/2020
38	ccb	1	0.055	0.0778	-0.0233	-0.0233	<0.5	3/22/2020
39	K2002412-005	1	4.650	0.0778	4.5720	4.572	4.6	3/22/2020
40	K2002412-005	1	4.487	0.0778	4.4096	4.4096	4.4	3/22/2020
41	K2002412-006	1	31.326	0.0778	31.2482	31.2482	31.2	3/22/2020
42	K2002412-006	1	30.802	0.0778	30.7243	30.7243	30.7	3/22/2020
43	K2002412-007	1	0.861	0.0778	0.7828	0.7828	0.8	3/22/2020
44	K2002412-007	1	0.659	0.0778	0.5810	0.581	0.6	3/22/2020
45	K2002412-008	1	5.297	0.0778	5.2192	5.2192	5.2	3/22/2020
46	K2002412-008	1	5.349	0.0778	5.2707	5.2707	5.3	3/22/2020
47	K2002434-001	1	0.318	0.0778	0.2402	0.2402	<0.5	3/22/2020
48	K2002434-001	1	0.271	0.0778	0.1933	0.1933	<0.5	3/22/2020
49	K2002434-002	1	0.689	0.0778	0.6116	0.6116	0.6	3/22/2020
50	K2002434-002	1	0.674	0.0778	0.5965	0.5965	0.6	3/22/2020

Analyzed By: BCD	Date Analyzed 3/24/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
51	ccv	1	25.843	0.0778	25.7647	25.7647	25.76	3/22/2020
52	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
53		1		0.0000	0.0000	0	<0.5	
54		1		0.0000	0.0000	0	<0.5	
55		1		0.0000	0.0000	0	<0.5	
56		1		0.0000	0.0000	0	<0.5	
57		1		0.0000	0.0000	0	<0.5	
58		1		0.0000	0.0000	0	<0.5	
59		1		0.0000	0.0000	0	<0.5	
60		1		0.0000	0.0000	0	<0.5	
61		1		0.0000	0.0000	0	<0.5	
62		1		0.0000	0.0000	0	<0.5	
63		1		0.0000	0.0000	0	<0.5	
64		1		0.0000	0.0000	0	<0.5	
65		1		0.0000	0.0000	0	<0.5	
66		1		0.0000	0.0000	0	<0.5	
67		1		0.0000	0.0000	0	<0.5	
68		1		0.0000	0.0000	0	<0.5	
69		1		0.0000	0.0000	0	<0.5	
70		1		0.0000	0.0000	0	<0.5	
71		1		0.0000	0.0000	0	<0.5	
72		1		0.0000	0.0000	0	<0.5	
73		1		0.0000	0.0000	0	<0.5	
74		1		0.0000	0.0000	0	<0.5	
75		1		0.0000	0.0000	0	<0.5	

Analyzed By: BKP	Date Analyzed 3/24/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	26.538	0.0778	26.4599	26.4599	26.5	3/22/2020
3	ccb	1	0.055	0.0778	-0.0233	-0.0233	<0.5	3/22/2020
4	mb	1	0.136	0.0778	0.0579	0.0579	<0.5	3/22/2020
5	lcs	1	24.698	0.0778	24.6205	24.6205	24.6	3/22/2020
6	K2002434-003	1	0.192	0.0778	0.1139	0.1139	<0.5	3/22/2020
7	K2002434-003	1	0.258	0.0778	0.1797	0.1797	<0.5	3/22/2020
8	K2002416-001	1	0.099	0.0778	0.0207	0.0207	<0.5	3/22/2020
9	K2002416-001	1	0.083	0.0778	0.0048	0.0048	<0.5	3/22/2020
10	ccv	1	25.843	0.0778	25.7647	25.7647	25.76	3/22/2020
11	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
12	KQ2004008-01	1	27.862	0.0778	27.7842	27.7842	27.78	3/22/2020
13	K2002416-002	1	0.099	0.0778	0.0210	0.021	<0.5	3/22/2020
14	K2002416-002	1	0.085	0.0778	0.0067	0.0067	<0.5	3/22/2020
15	K2002416-003	1	0.271	0.0778	0.1932	0.1932	<0.5	3/22/2020
16	K2002416-003	1	0.235	0.0778	0.1572	0.1572	<0.5	3/22/2020
17	K2002416-004	1	1.615	0.0778	1.5370	1.537	1.54	3/22/2020
18	K2002416-004	1	1.605	0.0778	1.5267	1.5267	1.5	3/22/2020
19	K2002462-001	1	3.041	0.0778	2.9627	2.9627	3.0	3/22/2020
20	K2002462-001	1	3.038	0.0778	2.9600	2.96	2.96	3/22/2020
21	K2002470-001	1	2.148	0.0778	2.0704	2.0704	2.07	3/22/2020
22	K2002470-001	1	2.061	0.0778	1.9828	1.9828	2.0	3/22/2020
23	K2002471-001	1	4.509	0.0778	4.4308	4.4308	4.4	3/22/2020
24	K2002471-001	1	4.381	0.0778	4.3030	4.303	4.30	3/22/2020
25	K2002489-001	1	4.801	0.0778	4.7227	4.7227	4.72	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

date time

Analyzed By: [signature]	Date Analyzed 3/21/20
Reviewed By:	Date Reviewed

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ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002489-001	1	4.724	0.0778	4.6460	4.646	4.65	3/22/2020
27	K2002492-002	1	0.452	0.0778	0.3746	0.3746	<0.5	3/22/2020
28	K2002492-002	1	0.479	0.0778	0.4014	0.4014	<0.5	3/22/2020
29	ccv	1	25.695	0.0778	25.6168	25.6168	25.6	3/22/2020
30	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
31	K2002496-001	1	14.459	0.0778	14.3812	14.3812	14.4	3/22/2020
32	K2002496-001	1	13.578	0.0778	13.5000	13.5	13.5	3/22/2020
33	K2002421-001	1	1.605	0.0778	1.5272	1.5272	1.5	3/22/2020
34	K2002421-001	1	1.548	0.0778	1.4705	1.4705	1.5	3/22/2020
35	K2002421-002	1	0.866	0.0778	0.7878	0.7878	0.8	3/22/2020
36	K2002421-002	1	0.842	0.0778	0.7645	0.7645	0.8	3/22/2020
37	K2002421-003	1	1.766	0.0778	1.6881	1.6881	1.7	3/22/2020
38	K2002421-003	1	1.790	0.0778	1.7125	1.7125	1.7	3/22/2020
39	K2002421-004	1	0.896	0.0778	0.8180	0.818	0.8	3/22/2020
40	K2002421-004	1	0.859	0.0778	0.7812	0.7812	0.8	3/22/2020
41	ccv	1	25.418	0.0778	25.3398	25.3398	25.3	3/22/2020
42	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By:	Date Analyzed 3/22/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.695	0.0778	25.6168	25.6168	25.6	3/22/2020
3	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
4	mb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
5	lcs	1	24.742	0.0778	24.6645	24.6645	24.7	3/22/2020
6	K2002432-001	1	0.108	0.0778	0.0305	0.0305	<0.5	3/22/2020
7	K2002432-001	1	0.143	0.0778	0.0649	0.0649	<0.5	3/22/2020
8	KQ2004009-09	1	26.380	0.0778	26.3020	26.302	26	3/22/2020
9	ccv	1	25.418	0.0778	25.3398	25.3398	25.34	3/22/2020
10	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
11	K2002437-001	1	1.911	0.0778	1.8331	1.8331	1.8	3/22/2020
12	K2002437-001	1	1.853	0.0778	1.7754	1.7754	1.78	3/22/2020
13	K2002437-002	1	0.802	0.0778	0.7246	0.7246	0.72	3/22/2020
14	K2002437-002	1	0.788	0.0778	0.7099	0.7099	0.71	3/22/2020
15	K2002437-003	1	3.181	0.0778	3.1028	3.1028	3.1	3/22/2020
16	K2002437-003	1	3.208	0.0778	3.1306	3.1306	3.1	3/22/2020
17	K2002437-004	1	0.783	0.0778	0.7056	0.7056	0.71	3/22/2020
18	K2002437-004	1	0.715	0.0778	0.6372	0.6372	0.6	3/22/2020
19	K2002437-005	1	0.665	0.0778	0.5874	0.5874	0.6	3/22/2020
20	K2002437-005	1	0.641	0.0778	0.5633	0.5633	0.56	3/22/2020
21	K2002456-001	1	1.145	0.0778	1.0675	1.0675	1.07	3/22/2020
22	K2002456-001	1	1.122	0.0778	1.0438	1.0438	1.0	3/22/2020
23	K2002456-002	1	0.794	0.0778	0.7165	0.7165	0.7	3/22/2020
24	K2002456-002	1	0.735	0.0778	0.6568	0.6568	0.66	3/22/2020
25	K2002456-003	1	1.431	0.0778	1.3528	1.3528	1.35	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

date time

Analyzed By: BW	Date Analyzed 3/12/20
Reviewed By:	Date Reviewed

Revision 1, 2010 R:\WET\ANALYSES\TOC\TEMPLATE\TOCwaterLIMS

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002456-003	1	1.431	0.0778	1.3528	1.3528	1.35	3/22/2020
27	K2002456-004	1	1.433	0.0778	1.3548	1.3548	1.35	3/22/2020
28	K2002456-004	1	1.375	0.0778	1.2971	1.2971	1.3	3/22/2020
29	ccv	1	25.130	0.0778	25.0525	25.0525	25.1	3/23/2020
30	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
31		1		0.0000	0.0000	0	<0.5	
32		1		0.0000	0.0000	0	<0.5	
33		1		0.0000	0.0000	0	<0.5	
34		1		0.0000	0.0000	0	<0.5	
35		1		0.0000	0.0000	0	<0.5	
36		1		0.0000	0.0000	0	<0.5	
37		1		0.0000	0.0000	0	<0.5	
38		1		0.0000	0.0000	0	<0.5	
39		1		0.0000	0.0000	0	<0.5	
40		1		0.0000	0.0000	0	<0.5	
41		1		0.0000	0.0000	0	<0.5	
42		1		0.0000	0.0000	0	<0.5	
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: BCP	Date Analyzed 3/21/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.130	0.0778	25.0525	25.0525	25.1	3/23/2020
3	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
4	mb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
5	lcs	1	24.199	0.0778	24.1209	24.1209	24.1	3/23/2020
6	K2002462-002	1	4.117	0.0778	4.0393	4.0393	4.04	3/23/2020
7	K2002462-002	1	4.067	0.0778	3.9892	3.9892	4.0	3/23/2020
8	KQ2004010-07	1	32.047	0.0778	31.9695	31.9695	32	3/23/2020
9	K2002422-001	1	9.445	0.0778	9.3675	9.3675	9.37	3/23/2020
10	K2002422-001	1	9.612	0.0778	9.5338	9.5338	9.53	3/23/2020
11	ccv	1	25.060	0.0778	24.9820	24.982	25.0	3/23/2020
12	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
13		1		0.0000	0.0000	0	<0.5	
14		1		0.0000	0.0000	0	<0.5	
15		1		0.0000	0.0000	0	<0.5	
16		1		0.0000	0.0000	0	<0.5	
17		1		0.0000	0.0000	0	<0.5	
18		1		0.0000	0.0000	0	<0.5	
19		1		0.0000	0.0000	0	<0.5	
20		1		0.0000	0.0000	0	<0.5	
21		1		0.0000	0.0000	0	<0.5	
22		1		0.0000	0.0000	0	<0.5	
23		1		0.0000	0.0000	0	<0.5	
24		1		0.0000	0.0000	0	<0.5	
25		1		0.0000	0.0000	0	<0.5	

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

date time

Analyzed By: BCP	Date Analyzed 3/21/20
Reviewed By:	Date Reviewed

Revision 1, 2010 R:\WET\ANALYSES\TOC\TEMPLATE\TOCwaterLIMS

TOC: 674205, 674225, 674226
DOC: 674227

Schedule: 03212020

Version: 4
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2020/03/21 21:07 - Saturday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
74	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K2002337-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
4	Sample	K2002337-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
5	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
6	Sample	K2002337-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
7	Sample	K2002337-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
8	Sample	K2002337-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
9	Sample	K2002337-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
10	Sample	K2002337-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	K2002337-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	K2002276-001.01 10x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	K2002365-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
14	Sample	K2002353-001.01 400x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
15	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
16	Sample	K2002412-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
17	Sample	K2002412-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
18	Sample	K2002412-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
19	Sample	K2002412-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
21	Sample	K2002412-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K2002412-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
23	Sample	K2002412-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
24	Sample	K2002412-008.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
25	Sample	K2002434-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K2002434-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K2002434-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K2002416-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
29	Sample	K2002416-001.02 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
30	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
31	Sample	K2002416-002.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
32	Sample	K2002416-003.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
33	Sample	K2002416-004.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
34	Sample	K2002462-001.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
35	Sample	K2002470-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
36	Sample	K2002471-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
37	Sample	K2002489-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
38	Sample	K2002492-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready

Schedule: 03212020

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
39	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
40	Sample	K2002496-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
41	Sample	K2002421-001.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
42	Sample	K2002421-002.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
43	Sample	K2002421-003.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
44	Sample	K2002421-004.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
45	Sample	K2002432-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
46	Sample	K2002432-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
47	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
48	Sample	K2002437-001.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
49	Sample	K2002437-002.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
50	Sample	K2002437-003.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
51	Sample	K2002437-004.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
52	Sample	K2002437-005.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
53	Sample	K2002456-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
54	Sample	K2002456-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
55	Sample	K2002456-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
56	Sample	K2002456-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
57	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
58	Sample	MB4	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
59	Sample	K2002462-002.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
60	Sample	K2002462-002.04 ms doc	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
61	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
62	Sample	FB 3/19/20 1619	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
63	Sample	K2002422-001.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
64	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
					False	

Fusion Report - 03212020
Saturday, March 21, 2020 04:44 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/03/24 09:26 - Tuesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	03212020	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v2) Fusion1 (Fusion1) (v3) Fusion1 (Fusion1) (v4)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◈	(clean)		Clean	2020/03/21 16:44

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	12.01	16.15	4.14	49.81	08:01
2	TC Clean	18.09	21.86	3.77	49.56	07:17
3	TC Clean	6.93	10.79	3.86	49.61	07:02
4	TC Clean	5.02	8.90	3.88	49.63	07:01

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	74	TOC	RB	0.4528 ppm	0.0533 ppm	11.7700%	2020/03/21 17:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4804	4.8037	10.62	14.37	3.75	49.71	10:29
2	TOC	0.4973	4.9732	10.74	14.56	3.82	49.67	10:29
3	TOC	0.4567	4.5672	10.46	14.14	3.68	49.67	10:27
4	TOC	0.3769	3.7687	9.93	13.76	3.83	49.65	10:29

Dilution **Blank Contribution** **Method** **Calibration**

1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/03/21 18:14

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	9.17	13.91	4.74	49.79	07:59
2	TC Clean	6.79	10.62	3.83	49.55	07:20
3	TC Clean	4.32	8.23	3.91	49.61	07:00
4	TC Clean	3.54	7.40	3.86	49.60	07:01

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/03/21 18:48

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.92	4.73	3.81	49.82	07:59
2	TC Clean	8.57	12.40	3.83	49.62	07:17
3	TC Clean	4.30	8.10	3.80	49.63	07:00
4	TC Clean	3.55	7.36	3.81	49.65	07:03

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	D	TOC	RB	0.2621 ppm	0.0000 ppm	0.0000%	2020/03/21 19:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2621	2.6207	9.15	12.95	3.80	49.69	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCB — From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time

◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0432 ppm (PASS)	0.0000 ppm	0%	2020/03/21 19:37

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0432	0.4318	8.11	11.92	3.82	49.72	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.4058 ppm (PASS)	0.0000 ppm	0%	2020/03/21 19:52

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.4058	264.0582	185.40	189.22	3.82	49.75	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Sample — From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	1	TOC	MB1	0.3656 ppm	0.0000 ppm	0.0000%	2020/03/21 20:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3656	3.6557	9.85	13.62	3.77	49.76	10:35

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS — From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	24.9536 ppm (PASS)	0.0000 ppm	0%	2020/03/21 20:21

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.9536	249.5362	175.63	179.68	4.05	49.79	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	2	TOC	ICS	2.0813 ppm	0.0000 ppm	0.0000%	2020/03/21 20:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.0813	20.8126	21.39	25.32	3.93	49.83	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	3	TOC	K2002337-001.01	0.9886 ppm	0.0076 ppm	0.7700%	2020/03/21 20:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9940	9.9397	14.08	17.85	3.78	49.85	10:28
2	TOC	0.9833	9.8327	14.00	17.80	3.80	49.88	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	4	TOC	K2002337-001.01 ms	29.5612 ppm	0.0000 ppm	0.0000%	2020/03/21 21:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	29.5612	295.6123	206.19	209.98	3.79	49.90	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	5	TOC	RB	0.2728 ppm	0.0000 ppm	0.0000%	2020/03/21 21:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2728	2.7278	9.23	12.95	3.72	49.94	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	6	TOC	K2002337-002.01	0.8974 ppm	0.0415 ppm	4.6300%	2020/03/21 21:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9268	9.2676	13.62	17.26	3.63	49.95	10:26
2	TOC	0.8680	8.6802	13.23	17.12	3.89	49.98	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	7	TOC	K2002337-003.01	0.8143 ppm	0.0520 ppm	6.3900%	2020/03/21 22:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8511	8.5107	13.12	16.70	3.59	49.97	10:27
2	TOC	0.7775	7.7747	12.62	16.55	3.93	50.00	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	8	TOC	K2002337-004.01	0.7537 ppm	0.0078 ppm	1.0300%	2020/03/21 22:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7592	7.5918	12.50	16.55	4.05	50.01	10:30
2	TOC	0.7482	7.4817	12.42	16.32	3.90	50.00	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	9	TOC	K2002337-005.01	0.5361 ppm	0.0093 ppm	1.7300%	2020/03/21 23:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5296	5.2958	10.95	14.68	3.72	49.98	10:30
2	TOC	0.5427	5.4267	11.04	14.79	3.75	49.99	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.3792 ppm	0.0000 ppm	0%	2020/03/21 23:40

							(PASS)			

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.3792	263.7921	185.22	188.92	3.71	50.01	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.1999 ppm (PASS)	0.0000 ppm	0%	2020/03/21 23:55

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.1999	1.9991	9.16	12.96	3.80	50.00	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	10	TOC	K2002337-006.01	1.9404 ppm	0.0159 ppm	0.8200%	2020/03/22 00:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9516	19.5160	20.52	24.28	3.76	50.01	10:33
2	TOC	1.9291	19.2914	20.37	24.25	3.89	49.98	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	11	TOC	K2002337-007.01	0.6836 ppm	0.0367 ppm	5.3700%	2020/03/22 00:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7095	7.0951	12.16	15.91	3.75	49.97	10:25
2	TOC	0.6576	6.5762	11.81	15.68	3.87	49.95	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis	Sample ID	Result (ppmC)	Std. Dev.	RSD	Start Time

		Type			(ppmC)		
◈	12	TOC	K2002276-001.01 10x	5.9640 ppm	0.0468 ppm	0.7800%	2020/03/22 01:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.9309	59.3095	47.28	51.18	3.91	49.95	10:27
2	TOC	5.9971	59.9712	47.72	51.51	3.79	49.96	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	13	TOC	K2002365-001.01	6.8196 ppm	0.0075 ppm	0.1100%	2020/03/22 01:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.8249	68.2493	53.29	57.25	3.96	49.94	10:26
2	TOC	6.8144	68.1437	53.22	57.13	3.91	49.94	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	14	TOC	K2002353-001.01 400x	1.2985 ppm	0.0376 ppm	2.9000%	2020/03/22 02:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3251	13.2513	16.30	20.20	3.90	49.93	10:28
2	TOC	1.2719	12.7189	15.94	19.92	3.97	49.90	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	15	TOC	RB	0.0981 ppm	0.0036 ppm	3.6500%	2020/03/22 02:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1006	1.0059	8.07	11.84	3.77	49.88	10:26
2	TOC	0.0955	0.9553	8.03	12.08	4.05	49.88	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	16	TOC	K2002412-001.01	10.5546 ppm	0.2870 ppm	2.7200%	2020/03/22 02:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	10.7576	107.5758	79.74	83.68	3.95	49.85	10:29
2	TOC	10.3516	103.5163	77.01	80.95	3.94	49.85	10:26

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	17	TOC	K2002412-002.01	2.3288 ppm	0.1450 ppm	6.2300%	2020/03/22 03:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4313	24.3130	23.74	27.73	3.98	49.85	10:28
2	TOC	2.2262	22.2625	22.36	26.60	4.24	49.85	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	18	TOC	K2002412-003.01	44.7487 ppm	0.2255 ppm	0.5000%	2020/03/22 03:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	44.9082	449.0821	309.40	313.24	3.84	49.85	10:30
2	TOC	44.5892	445.8925	307.25	311.28	4.03	49.85	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	19	TOC	K2002412-004.01	1.1317 ppm	0.2040 ppm	18.0300%	2020/03/22 04:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2759	12.7591	15.97	20.08	4.10	49.87	10:27
2	TOC	0.9874	9.8743	14.03	18.07	4.04	49.92	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.5377 ppm (PASS)	0.0000 ppm	0%	2020/03/22 04:51

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.5377	265.3772	186.28	190.22	3.94	49.88	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	50 ppmC

met.	(v4)	(v32)

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0545 ppm (PASS)	0.0000 ppm	0%	2020/03/22 05:06

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0545	0.5449	8.18	12.24	4.06	49.92	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	20	TOC	MB2	0.1357 ppm	0.0000 ppm	0.0000%	2020/03/22 05:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1357	1.3568	8.30	12.27	3.97	49.92	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	24.6983 ppm (PASS)	0.0000 ppm	0%	2020/03/22 05:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.6983	246.9831	173.91	177.85	3.94	49.91	10:35

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

◈	21	TOC	K2002412-005.01	4.5686 ppm	0.1148 ppm	2.5100%	2020/03/22 05:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.6498	46.4975	38.66	42.58	3.92	49.92	10:28
2	TOC	4.4874	44.8737	37.57	41.59	4.02	49.93	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	22	TOC	K2002412-006.01	31.0641 ppm	0.3704 ppm	1.1900%	2020/03/22 06:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	31.3260	313.2600	218.06	222.06	4.00	49.92	10:27
2	TOC	30.8021	308.0213	214.54	218.63	4.09	49.93	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	23	TOC	K2002412-007.01	0.7597 ppm	0.1427 ppm	18.7800%	2020/03/22 06:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8606	8.6059	13.18	17.31	4.14	49.93	10:28
2	TOC	0.6588	6.5880	11.82	15.93	4.11	49.94	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	24	TOC	K2002412-008.01	5.3228 ppm	0.0364 ppm	0.6800%	2020/03/22 07:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.2970	52.9704	43.01	47.07	4.06	49.93	10:27
2	TOC	5.3485	53.4849	43.36	47.40	4.04	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	25	TOC	K2002434-001.01	0.2946 ppm	0.0331 ppm	11.2400%	2020/03/22 07:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3180	3.1799	9.53	13.49	3.96	49.96	10:27
2	TOC	0.2711	2.7115	9.22	13.14	3.93	49.95	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	26	TOC	K2002434-002.01	0.6819 ppm	0.0107 ppm	1.5700%	2020/03/22 08:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6894	6.8944	12.03	15.93	3.91	49.95	10:31
2	TOC	0.6743	6.7427	11.93	15.87	3.94	49.94	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	27	TOC	K2002434-003.01	0.2246 ppm	0.0465 ppm	20.6900%	2020/03/22 08:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1917	1.9174	8.68	12.65	3.97	49.94	10:25
2	TOC	0.2575	2.5746	9.12	13.14	4.02	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	28	TOC	K2002416-001.02	0.0905 ppm	0.0113 ppm	12.4200%	2020/03/22 09:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0985	0.9850	8.05	11.97	3.92	49.94	10:26
2	TOC	0.0826	0.8259	7.95	11.91	3.97	49.95	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8425 ppm (PASS)	0.0000 ppm	0%	2020/03/22 09:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8425	258.4255	181.61	185.65	4.04	49.95	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	50 ppmC

met.	(v4)	(v32)

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 09:49

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.06	10.95	3.89	49.94	10:28

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	29	TOC	K2002416-001.02 ms	27.8620 ppm	0.0000 ppm	0.0000%	2020/03/22 10:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.8620	278.6204	194.76	198.67	3.91	49.95	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	30	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 10:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.09	11.09	4.00	49.95	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	31	TOC	K2002416-002.02	0.0917 ppm	0.0101 ppm	11.0100%	2020/03/22 10:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0988	0.9880	8.06	12.13	4.08	49.96	10:26
2	TOC	0.0845	0.8453	7.96	12.11	4.15	49.97	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	32	TOC	K2002416-003.02	0.2530 ppm	0.0254 ppm	10.0600%	2020/03/22 11:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2710	2.7100	9.21	13.27	4.06	49.93	10:29
2	TOC	0.2350	2.3501	8.97	12.92	3.95	49.92	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	33	TOC	K2002416-004.02	1.6097 ppm	0.0073 ppm	0.4500%	2020/03/22 11:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6148	16.1479	18.25	22.09	3.84	49.94	10:26
2	TOC	1.6045	16.0453	18.18	22.08	3.90	49.92	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	34	TOC	K2002462-001.06	3.0392 ppm	0.0019 ppm	0.0600%	2020/03/22 11:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.0405	30.4052	27.84	31.73	3.89	49.91	10:31
2	TOC	3.0378	30.3785	27.82	31.60	3.78	49.91	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	35	TOC	K2002470-001.01	2.1044 ppm	0.0619 ppm	2.9400%	2020/03/22 12:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1482	21.4818	21.84	25.60	3.76	49.92	10:27
2	TOC	2.0606	20.6059	21.25	25.19	3.94	49.92	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	36	TOC	K2002471-001.01	4.4447 ppm	0.0904 ppm	2.0300%	2020/03/22 12:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.5086	45.0863	37.71	41.74	4.03	49.90	10:29

2	TOC	4.3808	43.8075	36.85	40.81	3.96	49.89	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	37	TOC	K2002489-001.01	4.7622 ppm	0.0543 ppm	1.1400%	2020/03/22 13:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.8005	48.0053	39.67	43.66	3.99	49.91	10:29
2	TOC	4.7238	47.2380	39.16	43.00	3.84	49.91	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	38	TOC	K2002492-002.01	0.4658 ppm	0.0189 ppm	4.0600%	2020/03/22 13:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4524	4.5241	10.43	14.40	3.97	49.90	10:27
2	TOC	0.4792	4.7918	10.61	14.28	3.66	49.89	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.6946 ppm (PASS)	0.0000 ppm	0%	2020/03/22 14:19

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.6946	256.9459	180.61	184.49	3.88	49.89	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 14:33

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.32	10.16	3.85	49.87	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	39	TOC	MB3	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 14:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.92	9.75	3.83	49.87	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.7423 ppm (PASS)	0.0000 ppm	0%	2020/03/22 15:03

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.7423	247.4232	174.21	178.06	3.85	49.87	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	40	TOC	K2002496-001.01	14.0184 ppm	0.6231 ppm	4.4400%	2020/03/22 15:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.4590	144.5901	104.63	108.44	3.81	49.85	10:28
2	TOC	13.5778	135.7782	98.70	102.54	3.83	49.84	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	41	TOC	K2002421-001.12	1.5767 ppm	0.0401 ppm	2.5400%	2020/03/22 15:45

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6050	16.0498	18.18	22.01	3.83	49.82	10:28
2	TOC	1.5483	15.4833	17.80	21.76	3.95	49.80	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	42	TOC	K2002421-002.12	0.8540 ppm	0.0165 ppm	1.9300%	2020/03/22 16:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8656	8.6565	13.21	17.17	3.96	49.80	10:29
2	TOC	0.8423	8.4230	13.06	16.87	3.81	49.81	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	43	TOC	K2002421-003.12	1.7781 ppm	0.0172 ppm	0.9700%	2020/03/22 16:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.7659	17.6587	19.27	23.22	3.95	49.79	10:29
2	TOC	1.7903	17.9026	19.43	23.24	3.81	49.77	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	44	TOC	K2002421-004.12	0.8774 ppm	0.0261 ppm	2.9700%	2020/03/22 17:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8958	8.9583	13.42	17.18	3.76	49.77	10:27
2	TOC	0.8590	8.5895	13.17	16.92	3.75	49.78	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	45	TOC	K2002432-001.01	0.1255 ppm	0.0243 ppm	19.3500%	2020/03/22 17:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1083	1.0832	8.12	11.94	3.82	49.80	10:28

2	TOC	0.1427	1.4267	8.35	12.16	3.81	49.84	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	46	TOC	K2002432-001.01 ms	26.3798 ppm	0.0000 ppm	0.0000%	2020/03/22 18:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	26.3798	263.7980	184.80	188.75	3.96	49.85	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	47	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 18:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.97	9.86	3.88	49.86	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.4176 ppm (PASS)	0.0000 ppm	0%	2020/03/22 18:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.4176	254.1757	178.75	182.64	3.89	49.88	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 18:50

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time

D	TOC	0 ppm	1	0.0000	0.0000	6.08	9.82	3.74	49.92	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	48	TOC	K2002437-001.03	1.8820 ppm	0.0408 ppm	2.1700%	2020/03/22 19:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9109	19.1085	20.24	24.02	3.78	49.93	10:29
2	TOC	1.8532	18.5316	19.85	23.57	3.71	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	49	TOC	K2002437-002.03	0.7951 ppm	0.0104 ppm	1.3100%	2020/03/22 19:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8024	8.0245	12.79	16.50	3.71	50.00	10:24
2	TOC	0.7877	7.8773	12.69	16.46	3.77	49.99	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	50	TOC	K2002437-003.03	3.1945 ppm	0.0197 ppm	0.6200%	2020/03/22 20:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.1806	31.8060	28.78	32.47	3.69	50.00	10:30
2	TOC	3.2084	32.0841	28.97	32.65	3.68	50.00	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	51	TOC	K2002437-004.03	0.7492 ppm	0.0484 ppm	6.4600%	2020/03/22 20:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7834	7.8341	12.66	16.42	3.76	50.00	10:32
2	TOC	0.7150	7.1501	12.20	15.91	3.71	50.03	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC)	CAS_salt_010711	CAS_salt_010711

(v1364) (v4) (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	52	TOC	K2002437-005.03	0.6532 ppm	0.0170 ppm	2.6100%	2020/03/22 20:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6652	6.6520	11.86	15.62	3.76	50.00	10:25
2	TOC	0.6411	6.4111	11.70	15.67	3.96	50.03	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	53	TOC	K2002456-001.01	1.1335 ppm	0.0168 ppm	1.4800%	2020/03/22 21:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1453	11.4535	15.09	18.93	3.84	50.00	10:25
2	TOC	1.1216	11.2156	14.93	18.88	3.94	50.02	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	54	TOC	K2002456-002.01	0.7645 ppm	0.0422 ppm	5.5200%	2020/03/22 21:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7943	7.9427	12.73	16.72	3.99	50.05	10:29
2	TOC	0.7346	7.3464	12.33	16.17	3.83	50.01	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	55	TOC	K2002456-003.01	1.4306 ppm	0.0000 ppm	0.0000%	2020/03/22 22:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4306	14.3056	17.01	21.07	4.05	50.03	10:28
2	TOC	1.4306	14.3056	17.01	20.90	3.89	50.04	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	56	TOC	K2002456-004.01	1.4038 ppm	0.0408 ppm	2.9100%	2020/03/22 22:49

Rep	Base	ppm	µg	Adjusted	NDIR (Abs)	Baseline	Pressure	Run

#	Analysis Type			(Abs)		(Abs)	(psig)	Time
1	TOC	1.4326	14.3264	17.03	21.09	4.07	50.03	10:26
2	TOC	1.3749	13.7494	16.64	20.59	3.96	50.03	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	57	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 23:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.12	9.08	3.96	50.08	10:29
2	TOC	0.0000	0.0000	5.08	8.91	3.83	50.03	10:26
3	TOC	0.0000	0.0000	4.92	8.74	3.82	50.02	10:27
4	TOC	0.0000	0.0000	4.82	8.59	3.76	50.04	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.1303 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:13

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.1303	251.3028	176.82	180.56	3.74	50.04	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:27

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.42	9.22	3.80	50.03	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	58	TOC	MB4	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 00:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.04	8.76	3.72	50.03	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.1987 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:57

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.1987	241.9868	170.55	174.42	3.87	50.01	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	59	TOC	K2002462-002.04 doc	4.0921 ppm	0.0354 ppm	0.8700%	2020/03/23 01:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.1171	41.1711	35.08	38.88	3.80	50.00	10:29
2	TOC	4.0670	40.6700	34.74	38.61	3.87	50.04	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	60	TOC	K2002462-002.04 ms doc	32.0473 ppm	0.0000 ppm	0.0000%	2020/03/23 01:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	32.0473	320.4734	222.91	226.80	3.89	50.01	10:31

Dilution	Blank Contribution	Method	Calibration

1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	61	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 01:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.10	10.11	4.00	50.00	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	62	TOC	FB 3/19/20 1619	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 02:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.24	9.23	4.00	49.99	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	63	TOC	K2002422-001.04 doc	9.5284 ppm	0.1176 ppm	1.2300%	2020/03/23 02:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.4453	94.4531	70.91	74.94	4.03	50.01	10:29
2	TOC	9.6116	96.1156	72.03	75.73	3.70	49.98	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	64	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 02:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.59	9.48	3.89	49.99	10:29
2	TOC	0.0000	0.0000	5.25	9.15	3.90	49.99	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25	0 / infinity	25.0598	0.0000	0%	2020/03/23 03:20

					ppm [25 ppm]	(NA / NA)	ppm (PASS)	ppm		

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.0598	250.5980	176.34	180.27	3.92	49.97	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/23 03:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.46	9.42	3.96	50.00	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1364	1.7787	1.3950	0.0000	0.0000	0.0000	2020/03/19 15:10	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v32	Calibration curve formula:	TOC: y = 6.725x + 7.818
Ver Creation:	2020/03/11 15:55	r^2 value:	TOC: r^2 = 0.99921
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	5.8640	0.0000		2020/03/11 14:28
0.500 ppm	9.5210	0.5000		2020/03/11 14:42
1.0 ppm	12.5930	1.0000		2020/03/11 14:56
5.0 ppm	40.5270	5.0000		2020/03/11 15:10
10 ppm	79.5310	10.0000		2020/03/11 15:25
25 ppm	181.4610	25.0000		2020/03/11 15:39
50 ppm	340.5610	50.0000		2020/03/11 15:53

Methods

Name: CAS_salt_010711 (TOC)

Version: v4 Operator: Fusion1 (Fusion1)

Ver Creation: 2019/02/21 17:57

Comment:

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/03/23 03:50

ALS Environmental

StarLIMS Run: 674205, 674225, 674226, 674227

Analysis: DOC/TOC

Method: SM 5310 C, 9060A, 415.1, 9060

CCV: 11-GEN-05-82C 50 ppm LCS: 11-GEN-05-79J 25.0 ppm

ICAL Date: 3/11/2020

ICAL ID: 19-GEN-8-7-E->J

ICS ID: 11-GEN-05-78M

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 11-GEN-05-82C 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 19-GEN-08-9-H

21 % H3PO4: 19-GEN-08-8-K

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

Analyzed By: BKP	Date Analyzed: 3/24/20
Reviewed By:	Date Reviewed: 3/24/20

21 BKP 3/24/20

Case Narrative

Method: 6850
Analysis: Perchlorate
Analysis SOP: LC-MS-CLO4
ALS WO ID(s): 2008062; 2008310

Client: ALS Laboratories (Houston, TX)
Matrix: Water
ELMS Batch (HBN): 2362 (259687)

General Set Information: There were twenty field samples in these Work Orders. The samples were analyzed for perchlorate.

Method Summary: Each sample was prepared as noted below and analyzed using an Agilent 1100 LC/MSD system in select ion monitoring (SIM) mode at m/z 83 and 85, which corresponds to the loss of one oxygen atom from the perchlorate molecule. ChemStation software was used for instrument control and data analysis. The ion ratio of m/z 83 to 85 was used to positively identify the response peak as perchlorate. Quantitation was performed using the m/z 83 peak area. An internal standard (ISTD) of ^{18}O labeled perchlorate was added to each sample to establish the perchlorate peak retention time and used in quantitation.

Sample Preparation: A 10.0mL aliquot of each sample was transferred into a 15-mL centrifuge tube. 50µL of an ^{18}O labeled perchlorate solution was added to each sample as an internal standard. The samples were then capped, vortexed, and filtered into autosampler vial using Phenex PES membrane 0.45µm Syringe filters.

Holding Times: Holding times were met for all analyses.

Dilutions: NA

Method QC data: The method blank (LMB 701041) was less than 1/2 the CRDL. The recovery for the LCS (701038) was within acceptable parameters.

MS/MSD Analysis: MS/MSD was performed on samples 2008310002/03 (Client ID: 16WW44-200317). 3.0µL of Working Standard Solution Horizon ID 49947 was added to 10.0mL of sample preparation. The spike target was 3.µg/L. The MS/MSD percent recoveries and relative percent difference (RPD) were within the performance limits.

Instrument QC: Instrument initial and continuing calibrations were performed in accordance with published procedures.

NC/CAR(s): NA

Sample Calculation: Samples were reported in µg/L. Results were calculated in µg/L by the equation (A)x(B),

where: A = Analyte concentration from the standard curve (µg/L)
B = Dilution performed at time of analysis

Miscellaneous Comments: These samples were analyzed in accordance with the requirements found in the DOD QSM Version 5.1.1. Field sample 2008062001 had a positive result for perchlorate. However, because the 83/85 ion ratio failed, the result was not reported. The Reporting Limit Verification Standard (RLVS – 701039) is reported from the analysis of the Laboratory Control Sample (LCS – 701038) at a level of 3.0µg/L. Due to limitations of the Chemstation Software, some of the chromatographic peaks may require manual integrations. A manual integration was performed for one of the Initial Calibration analyses (datafile: 20SEPI03) along with datafiles 26MARD07.

Thomas Bosch — Analyst
March 29, 2020 — Date

ANALYTICAL REPORT

Report Date: March 31, 2020

RJ Modashia
ALS Environmental (Houston)
10450 Stancliff Road
Suite 210
Houston, TX 77099

Phone: 281 530-5656

E-mail: RJ.Modashia@ALSGlobal.com

Workorder: **34-2008062**
Project ID: HS20030733
Purchase Order: HS20030733
Project Manager Kevin W. Griffiths

Client Sample ID	Lab ID	Collect Date	Receive Date	Sampling Site
16WW56-200316	2008062001	03/16/20	03/19/20	
16WW22-200316	2008062002	03/16/20	03/19/20	
16WW41-200316	2008062003	03/16/20	03/19/20	
16WW21-200316	2008062004	03/16/20	03/19/20	
16WW39-200316	2008062005	03/16/20	03/19/20	
16WW25-200316	2008062006	03/16/20	03/19/20	
16WW21-200316-FD	2008062007	03/16/20	03/19/20	
16WW49-200316	2008062008	03/16/20	03/19/20	

ANALYTICAL REPORT

Workorder: 34-2008062
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **16WW56-200316** | Sampling Site: NA | Collected: 03/16/2020
Lab ID: 2008062001 | Media: 125 mL Nalgene | Received: 03/19/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 09:16 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW22-200316** | Sampling Site: NA | Collected: 03/16/2020
Lab ID: 2008062002 | Media: 125 mL Nalgene | Received: 03/19/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 09:30 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW41-200316** | Sampling Site: NA | Collected: 03/16/2020
Lab ID: 2008062003 | Media: 125 mL Nalgene | Received: 03/19/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 14:24 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	**310**	10	20	40	10	

Sample ID: **16WW21-200316** | Sampling Site: NA | Collected: 03/16/2020
Lab ID: 2008062004 | Media: 125 mL Nalgene | Received: 03/19/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 09:58 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

ANALYTICAL REPORT

Workorder: 34-2008062
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **16WW39-200316** | Sampling Site: NA | Collected: 03/16/2020
Lab ID: 2008062005 | Media: 125 mL Nalgene | Received: 03/19/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 10:12 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	**62**	1.0	2.0	4.0	1	

Sample ID: **16WW25-200316** | Sampling Site: NA | Collected: 03/16/2020
Lab ID: 2008062006 | Media: 125 mL Nalgene | Received: 03/19/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 10:26 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW21-200316-FD** | Sampling Site: NA | Collected: 03/16/2020
Lab ID: 2008062007 | Media: 125 mL Nalgene | Received: 03/19/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 10:40 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW49-200316** | Sampling Site: NA | Collected: 03/16/2020
Lab ID: 2008062008 | Media: 125 mL Nalgene | Received: 03/19/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 10:54 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

ANALYTICAL REPORT

Workorder: 34-2008062
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method	Analyst	Peer Review
EPA 6850, DoD QSM	/S/ Thomas Bosch 03/27/2020 11:27	/S/ Stephen Brose 03/31/2020 15:31

Laboratory Contact Information

ALS Environmental
960 W Levoy Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: alslt.lab@ALSGlobal.com
Web: www.alsslc.com

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
The following was provided by the client: Sample ID, Collection Date, Sampling Location, Media Type, Sampling Parameter.
Collection Date, Media Type, and Sampling Parameter can potentially affect the validity of the results.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	PJLA (DoD ELAP)	L17-506	http://www.pjlabs.com
	PJLA (ISO 17025)	L17-507-R1	http://www.pjlabs.com
	Utah (TNI)	UT00953	http://lams.nelac-institute.org/search
	Iowa (TNI)	IA# 376	http://www.shl.uiowa.edu/labcert/idnr/
	Kansas	E-10416	http://www.kdheks.gov/envlab/disclaimer.html
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP)	101574	http://www.aihaaccreditedlabs.org
	DOECAP-AP	L18-606	http://www.pjlabs.com
	Washington	C596	https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Laboratory-Accreditation
Dietary Supplements	PJLA (ISO 17025)	L17-507-R1	http://www.pjlabs.com

ANALYTICAL REPORT

Workorder: 34-2008062
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Result Symbol Definitions

MDL = Method Detection Limit, a statistical estimate of method/media/instrument sensitivity.
RL = Reporting Limit, a verified value of method/media/instrument sensitivity.
CRDL = Contract Required Detection Limit
Reg. Limit = Regulatory Limit.
ND = Not Detected, testing result not detected above the MDL or RL.
< Means this testing result is less than the numerical value.
** No result could be reported, see sample comments for details.

Qualifier Symbol Definitions

U = Qualifier indicates that the analyte was not detected above the MDL.
J = Qualifier Indicates that the analyte value is between the MDL and the RL. It is also used to indicate an estimated value for tentatively identified compounds in mass spectrometry where a 1:1 response is assumed.
B = Qualifier indicates that the analyte was detected in the blank.
E = Qualifier indicates that the analyte result exceeds calibration range.
P = Qualifier indicates that the RPD between the two columns is greater than 40%.

Quality Control Sample Batch Report

Analysis Information

Workorder: 2008062

Limits:	Client SOW/Contract Specified	**Preparation:**	NA	**Analysis:**	EPA 6850, DoD QSM
Basis:	DoD QSM	**Batch:**	NA	**Batch:**	ELMS/2362 (HBN: 259687)
		Prepared By:	NA	**Analyzed By:**	Thomas Bosch

Blank

LMB: 701041
Analyzed: 03/26/2020 09:02
Units: ug/L

Analyte	Result	MDL	RL
Perchlorate	ND	1	2.00

Laboratory Control Sample

LCS: 701038
Analyzed: 03/26/2020 08:34
Dilution: 1
Units: ug/L

Analyte	Result	Target	% Rec	QC Limits	
Perchlorate	3.07	3.00	102	78.8	123.8

Matrix Spike - Matrix Spike Duplicate

Sample:	2008310001	**MS:**	2008310002	**MSD:**	2008310003
Analyzed:	03/26/2020 11:08	**Analyzed:**	03/26/2020 11:22	**Analyzed:**	03/26/2020 11:50
Dilution:	1	**Dilution:**	1	**Dilution:**	1
Units:	ug/L	**Units:**	ug/L	**Units:**	ug/L

Analyte	Result	Result	Target	% Rec	QC Limits		Result	% Rec	RPD	QC Limits	
Perchlorate	ND	3.03	3	101	78.8	123.8	3	100	0.991	0.0	20.0

QC Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Analyst	Peer Review
/S/ Thomas Bosch	/S/ Stephen Brose
03/29/2020 11:11	03/31/2020 15:31

Symbols and Definitions

- * - Analyte above reporting limit or outside of control limits
- ▲ - Sample result is greater than 4 times the spike added
- ◆ - Sample and Matrix Duplicate less than 5 times the reporting limit
- ● - Result is above the calibration range
- # - The Matrix Spike, Matrix Spike duplicate or Matrix Duplicate is reported for your information only. The sample matrix may be inappropriate for the method selected.

RPD - Relative % Difference (Spike / Spike Duplicate)
ND - Not Detected (U - Qualifier also flags analyte as not detected)
NA - Not Applicable
QC results are not adjusted for moisture correction, where applicable

2008062

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18698 #2

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13536**

SUBCONTRACT TO:

ALS Laboratory Group
960 LeVoy Dr
Salt Lake City, UT 84123

Phone: +1 801 266 7700

CUSTOMER INFORMATION:

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INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20030733
TSR:	Sonia West

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
1.	**HS20030733-01**	**16WW56-200316**	**Groundwater**	**16 Mar 2020 08:15**
	SUB_Perch-6850			25 Mar 2020
2.	**HS20030733-02**	**16WW22-200316**	**Groundwater**	**16 Mar 2020 09:10**
	SUB_Perch-6850			25 Mar 2020
3.	**HS20030733-03**	**16WW41-200316**	**Groundwater**	**16 Mar 2020 10:05**
	SUB_Perch-6850			25 Mar 2020
4.	**HS20030733-04**	**16WW21-200316**	**Groundwater**	**16 Mar 2020 10:55**
	SUB_Perch-6850			25 Mar 2020
5.	**HS20030733-05**	**16WW39-200316**	**Groundwater**	**16 Mar 2020 10:50**
	SUB_Perch-6850			25 Mar 2020
6.	**HS20030733-06**	**16WW25-200316**	**Groundwater**	**16 Mar 2020 12:55**
	SUB_Perch-6850			25 Mar 2020
7.	**HS20030733-07**	**16WW21-200316-FD**	**Groundwater**	**16 Mar 2020 10:55**
	SUB_Perch-6850			25 Mar 2020
8.	**HS20030733-08**	**16WW49-200316**	**Groundwater**	**16 Mar 2020 13:55**
	SUB_Perch-6850			25 Mar 2020

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13536**

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 3/18/2020 1800

Received By: _____ Date/Time: 3-19-20 9:54

Cooler ID(s): _____ Temperature(s): _____

ALS Environmental

CHAIN-OF-CUSTODY

Project / Job / Task: HS20030733	***Split:***	**Workorder ID:** 2008062	**Level:** ENV_LVL4	**Requested Analysis**
Client: ALS Environmental (Houston)		**Account:** 8101	**Type:** 125Poly	
Comments:			**Preservatives** COOL	EPA 6850, DoD QSM

Item	Collect Date/Time	Sample ID	Lab ID	QC	Matrix	Containers ID(s)	Count	Requested Analysis
1	03/16/2020 08:15	16WW56-200316	2008062001		Water	A	1	A
2	03/16/2020 09:10	16WW22-200316	2008062002		Water	A	1	A
3	03/16/2020 10:05	16WW41-200316	2008062003		Water	A	1	A
4	03/16/2020 10:55	16WW21-200316	2008062004		Water	A	1	A
5	03/16/2020 10:50	16WW39-200316	2008062005		Water	A	1	A
6	03/16/2020 12:55	16WW25-200316	2008062006		Water	A	1	A
7	03/16/2020 10:55	16WW21-200316-FD	2008062007	FLDDUP	Water	A	1	A
8	03/16/2020 13:55	16WW49-200316	2008062008		Water	A	1	A

ORIGINAL FIELD SAMPLE CHAIN-OF-CUSTODY

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location
Wrath, Julie	03/19/2020 09:54	ALS Sample Receiving	Sample Login
R.33.1	03.19.20 1130 03.24.20/12:35	14C T. Booth	Storage cl04 analysis

SAMPLE PREPARATION / ANALYSIS CHAIN-OF-CUSTODY

Sample Prep / Analysis for: _____ Lab Notebook No.: _____

Prepared / Analyzed by: _____ Date / Time: _____

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location

01095388

ALS-SALT LAKE CITY-RELATED INFORMATION REPORT (CRIR)

COOLER OR CONTAINER INFORMATION CHECKLIST (Fill In or Circle)

Client Name: ALS Houston

Project/Task/Site: 2088862

Date/Time of Receipt: 03-19-20 9:54

Number of Coolers Received: 1

Condition of Coolers:	Acceptable/Unacceptable	Temperature Control:	Present/Not Included
Cooler Custody Seals:	Present/Absent/NA Intact/Broken/NA	Location Temp Taken:	Control/Between Samples
Container Custody Seals:	Present/Absent/NA Intact/Broken/NA	Are all temperatures within project specific guidelines?	Yes/No/NA
Ice Present:	Yes/No/NA Frozen/Melted/NA	VOA Headspace Present?	Yes/No/NA

pH Check Performed:							
	Metals	Yes/No/NA	Total Phenolics	Yes/No/NA	NO3/NO2	Yes/No/NA
	Cyanide	Yes/No/NA	TPH – 418.1	Yes/No/NA	Oil & Grease	Yes/No/NA
	Sulfide	Yes/No/NA	COD	Yes/No/NA	Total Phosphorous	Yes/No/NA
	Ammonia	Yes/No/NA	TKN	Yes/No/NA	Gross A.B, Gamma Spec	Yes/No/NA

Cooler Received	Cooler Condition	Temp.	Cooler Received	Cooler Condition	Temp.	Cooler Received	Cooler Condition	Temp.
1	Good	2 °C	4		°C	7		°C
2		°C	5		°C	8		°C
3		°C	6		°C	9		°C

Taken By: Jan VanRussell (Signature) T. VanRussell (Printed Name) 03-19-20 (Date)

CLIENT-RELATED INFORMATION

☐ Missing Cooler	☐ Missing Samples/Bottles	☐ Incorrect Preservation	☐ Insufficient Sample Volume
☐ Cooler Conditions	☐ Broken/Leaking Samples	☐ pH Criteria Not Met	☐ Chain of Custody Problems
☐ Missing Paperwork	☐ Incorrect Bottle Type	☐ Residual Chlorine Present	☐ Other:
☐ Missing/Incorrect Bottle Labels	☐ Cooler Temperatures Out of Range	☐ Head Space in Bottles	

BRIEFLY DESCRIBE THE PROBLEM AND THE ACTION TAKEN:

Client Notified? YES ☐ NO ☐

Response Required Within 24 Hours

PROJECT MANAGEMENT

PROJECT MANAGER COMMENTS:

ALS Project Manager: _____ (Printed Name) Returned to Sample Receipt by: _____ (Signature) Date: _____

01095389

Must Deliver Next Business Day
Time and Tempature Sensitive!

Part # 159469-4434 RIT2 EXP 12/20 *

ORIGIN ID:SGRA (281) 530-5656
SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD
SUITE 210
HOUSTON, TX 77099
UNITED STATES US

SHIP DATE: 18MAR20
ACTWGT: 15.25 LB
CAD: 300130/CAFE3211
DIMS: 14x11x10 IN

BILL THIRD PARTY

551C2/64E0/104C

TO SAMPLE RECEIVING
ALS ENVIRONMENTAL
960 W. LEVOY DRIVE

SALT LAKE CITY UT 84123
(801) 266-7700
REF: HS20030733 - RJ

FedEx Express

J131106050811131

THU - 19 MAR 3:00P
STANDARD OVERNIGHT

TRK# 0201 1251 0295 5448

AX BTFA

84123
UT-US SLC

Batch Worklist

Batch: ELMS/ 2362 Created: 3/26/2020 08:10 Instrument: HBN: 259687

Rule: EPA 6850, DoD QSM Water Analyst: T. Bosch Status: WP

Workorder: 2008062 [ENV_LVL4]

Workorder: 2008310 [ENV_LVL4]

Pos	Lab ID	Sample ID	Prep Initial	Prep Final	Dust Weight	Type	Mx	Container	Procedure	Mgr	Expire Date	Due Date	Run Date
1	701037	CCV for HBN 259687 [ELMS/2362]				CCV	3		E685041C3Q	5311		4/1/2020	
2	701038	LCS for HBN 259687 [ELMS/2362]				LCS	3		E6850Q413Q	5311		4/1/2020	
3	701039	RLVS for HBN 259687 [ELMS/2362				RLVS	3		E685041C3Q	5311		4/1/2020	
4	701040	ICS for HBN 259687 [ELMS/2362]				ICS	3		E6850..D3Q	5311		4/1/2020	
5	701041	LMB for HBN 259687 [ELMS/2362]				LMB	3		E6850Q413Q	5311		4/1/2020	
6	2008062001	16WW56-200316				SAMPLE	3	2008062001-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
7	2008062002	16WW22-200316				SAMPLE	3	2008062002-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
8	2008062003	16WW41-200316				SAMPLE	3	2008062003-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
9	2008062004	16WW21-200316				SAMPLE	3	2008062004-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
10	2008062005	16WW39-200316				SAMPLE	3	2008062005-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
11	2008062006	16WW25-200316				SAMPLE	3	2008062006-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
12	2008062007	16WW21-200316-FD				FLDDUP	3	2008062007-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
13	2008062008	16WW49-200316				SAMPLE	3	2008062008-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
14	2008310001	16WW44-200317				SAMPLE	3	2008310001-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
15	2008310002	16WW44-200317MS				MS	3	2008310002-A	E6850Q413Q	5480		4/1/2020	
16	701042	CCV for HBN 259687 [ELMS/2362]				CCV	3		E685041C3Q	5311		4/1/2020	
17	2008310003	16WW44-200317MSD				MSD	3	2008310003-A	E6850Q413Q	5480		4/1/2020	
18	2008310004	16WW37-200317				SAMPLE	3	2008310004-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
19	2008310005	16WW38-200317				SAMPLE	3	2008310005-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
20	2008310006	16WW14-200317				SAMPLE	3	2008310006-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
21	2008310007	16RW06-200317				SAMPLE	3	2008310007-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
22	2008310008	16PM03-200317				SAMPLE	3	2008310008-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
23	2008310009	16PM02-200317				SAMPLE	3	2008310009-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
24	2008310010	16RW07-200317				SAMPLE	3	2008310010-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
25	2008310011	16RW11-200317				SAMPLE	3	2008310011-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
26	2008310012	16WW51-200317				SAMPLE	3	2008310012-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
27	701043	CCV for HBN 259687 [ELMS/2362]				CCV	3		E685041C3Q	5311		4/1/2020	
28	701102	CCV for HBN 259687 [ELMS/2362]				CCV	3		E685041C3Q	5311		4/1/2020	

01095391

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Analytical Documentation

Analyst Write-up

ALS Work Order #'s & Sample #( )'s: 2008062 (001-08); 2008310 (001-12)
ELMS Batch/HBN ID: 2362 (259687)
Prep Date: 03/24,25/2020 Analysis Date: 03/26/2020 Analyst: Tom Bosch
Analyte: **Perchlorate** Matrix: **Water** Method: **6850**
Sequence: \\HPCHEM\1\SEQUENCE\CLO4\2020\MAR\26MAR0D.s
Reported DL: **1.0µg/L** Reported LOD: **2.0µg/L** Reported LOQ: **4.0µg/L**

SAMPLE PREPARATION/ANALYSIS:

Water: Samples were prepared by Tom Bosch. 10.0mL of each sample was pipetted into a 15-mL centrifuge tube, and 50µL of an oxygen-18 labeled perchlorate solution was added as an internal standard. The samples were capped, vortexed, and filtered with Phenex PES membrane 0.45µm Syringe filters prior to analysis.

REAGENTS: Eluent A1: 95% ASTM Type II water (ALS)/5%ACN (B&J Lot DU461-US)/0.1% glacial acetic acid (JT-Baker Lot 122550).
Eluent B1: 95% ACN (B&J Lot DU461-US)/5% ASTM Type II water (ALS)/0.1% glacial acetic acid (JT-Baker Lot 122550).

STANDARDS: Internal Standard Spiking Solution Horizon# 47863. Dilutions of Working Standards (Horizon: 49947/48) used for ICAL, CCV's, RLVS and ICS.

CALIBRATION CURVE: Used curve from 09/20/2019, sequence 20SEP19D.s Offline Quantitation Method: CLO4-DP3.M

INSTRUMENT CONDITIONS: Samples were analyzed with an Agilent 1100 LC/MSD system, in negative SIM mode, monitoring m/z 83, 85, and 89.
Instrument ID: LCMS04 Online Acquisition Method: CLO4-AQN.M Fragmentor: 160 Output Gain: 10 Injection Volume: 40µL
Column: KP-RPPX C8 separator, 250mm Mobile Phase: 70% Eluent A1; 30% Eluent B1 Run time: 12.0min.

FLOW GRADIENT:

Time (min.)	Flow (mL/min)
0	0.65
5.8	0.65
5.9	0.25
10.3	0.25
10.5	0.65
12.0	0.65

QC DATA: 3.0µL of QC Solution Horizon ID 47516 was used for LCS 701038; Target = 3.0µg/L. ASTM type II water was used for LMB 701041.

MS/MSD: The Matrix Spike and duplicate (MS/MSD) was performed on samples 2008310002/03 (Client ID: 16WW44-200317). 3.0µl of Working Standard Solution Horizon ID 49947 was added to 10.0mL of sample preparation. Spike target = 3.0µg/L.

COMMENTS:

1) Results reported in µg/L.
2) All QC, Blank, CCV, and MS/MSD results were within method parameters. Field sample 2008062001 had a positive result for perchlorate. However, because the 83/85 ion ratio failed, the result was not reported.
3) Sample data can be viewed at two directories within the ALS system: \\ALSLTWS013\LCMS\LCMS04\2020\MAR\HBN# or through NuGenesis\Tree\PrintData\LCMS\DefaultView.
4) Notebook: \\alsltws013\ORGANIC\BOSCH\LCMS\Perchlorates\Waters\2020\DOD\259687-DoD-ALS-Hstn LCMS4 or through \\ALSLTWS013\DATAREVIEW\HBN#
5) The Reporting Limit Verification Standard (RLVS – 701039) is reported from the analysis of the Laboratory Control Sample (LCS – 701038) at a level of 3.0µg/L.
6) Due to limitations of the Chemstation Software, some of the chromatographic peaks require manual integration. Manual Integrations were performed for one of the Initial Calibration analyses (datafile: 20SEP103) along with datafile 26MARD07.

5.5 Chromatography (GC, HPLC and LC/MS) Technical Review

Note: It is the peer reviewer's responsibility to ensure that appropriate criteria are used as defined in the HORIZON PROFILE. The evaluation criteria are prioritized as per Section 2.2 of this SOP. These items must be checked for all projects. The following checklist will be completed by both the analyst and the peer reviewer and scanned into the HBN folder with the raw data.

Chromatography (GC, HPLC, LC/MS) Technical Review Criteria **Batch(es)/SDG:** ELMS: 2362 HBN: 259687 **Sample Set IDs if Applicable:** 2008062 / 2008310	**Analyst Initials**	**Reviewer Initials**
Sample positions on autosampler verified against instrument sequence	TB	NA
Calibration standards analyzed and meets criteria	TB	SB
Standards traceability checked and meets criteria	TB	SB
Standard curve coefficients evaluated and meet criteria	TB	SB
ICVs analyzed and meet acceptance criteria	TB	SB
CCVs analyzed and meet acceptance criteria	TB	SB
Retention Time Windows checked	TB	SB
For method 8081A, Endrin/DDT Breakdown is checked for compliance	—	—
Surrogate recoveries checked and appropriately addressed	—	—
Method Preparation Blanks analyzed and meet acceptance criteria	TB	SB
MSs, MSDs, and/or MDs analyzed and calculations checked; applicable	TB	SB
RLVS analyzed	TB	SB
Preparation and analysis hold times met	TB	SB
Preparation deviations and re-preparations noted when performed	TB	SB
Analysis deviations and re-analyses noted when performed	TB	SB
Sample dilution factors noted on reports	TB	SB
Electronic records in HBN transcription accuracy and completeness	TB	SB
Preparation and analysis calculations checked	TB	SB
NCRs are completed as necessary NC/CAR#_____	TB	SB
Report forms are complete and accurate	TB	SB
Manual integrations checked	TB	SB

STANDARD REPORT

Working Standard - CLO4ISTDWRK

CLO4ISTDWRK		Description - Perchlorate ISTD Wrk 1,000ug/L
Standard: 49946	**Created By:** Thomas Bosch	**Amount:** 25 mL
MFG: ALS/SLC	**Create Date:** 09/23/2019 03:09PM	**Expires:** 09/19/2020
MFG Lot: TNB: 09/20/2019	**Verified By:** Thomas Bosch	**Usable:** Yes
Pipette ID: Not Provided	**Verify Date:**	**Lab Lot:** CLO4ISTDWRK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	1000 ug/L
2	14797-73-0-89	Perchlorate 89	1000 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
47863	CLO4ISTDSTK	Perchlorate ISTD Stock	CLO4ISTDSTK	0.25 mL	12/05/2028

STANDARD REPORT

Constituent

Stock Standard - CLO4ISTDSTK

CLO4ISTDSTK		Description - Perchlorate ISTD Stock
Standard: 47863	**Created By:** Thomas Bosch	**Amount:** 1 mL
MFG: Cambridge Isotope	**Create Date:** 05/23/2019 10:05AM	**Expires:** 12/05/2028
MFG Lot: SDIH-016	**Verified By:** Thomas Bosch	**Usable:** Yes
Part ID: OLM-7310-S	**Verify Date:**	**Lab Lot:** CLO4ISTDSTK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	100 ug/mL
2	14797-73-0-89	Perchlorate 89	100 ug/mL

STANDARD REPORT

Working Standard - CLO4 WRK

CLO4 WRK — **Description - 6850 WKG Std 100.ug/L**

Standard: 49948
MFG: ALS/SLC
MFG Lot: TNB: 09/20/2019
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 09/20/2019 03:09PM

Amount: 10 mL
Expires: 07/25/2020
Usable: Yes
Lab Lot: CLO4 WRK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	0.1 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	0.1 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
49947	CLO4 INT	6850 Intermdt AccStd 10.ug/mL	CLO4 INT	0.1 mL	07/25/2020

STANDARD REPORT

Constituent

Stock Standard - CLO4 STOCK

CLO4 STOCK		Description - 6850 Stock AccStd 1,000ug/mL
Standard: 43659	**Created By:** Thomas Bosch	**Amount:** 100 mL
MFG: AccuStandard	**Create Date:** 09/17/2018 09:09AM	**Expires:** 07/25/2020
MFG Lot: 218065075		**Usable:** Yes
Part ID: IC-PER-10X-1		**Lab Lot:** CLO4 STOCK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	1000 ug/mL

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O		**Description - ASTM Type II Water**
Standard: 109	**Created By:** ALS Support (Lims)	**Amount:** 1000 L
MFG: DCL In House	**Create Date:** 10/06/2005 09:10AM	**Expires:** 11/07/2025
MFG Lot: Not Provided		**Usable:** Yes
Part ID: Not Provided		**Lab Lot:** LAB 109

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Working Standard - CLO4 INT

CLO4 INT	Description - 6850 Intermdt AccStd 10.ug/mL

Standard: 49947
MFG: ALS/SLC
MFG Lot: TNB: 09/20/2019
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 09/23/2019 03:09PM

Amount: 10 mL
Expires: 07/25/2020
Usable: Yes
Lab Lot: CLO4 INT

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
43659	CLO4 STOCK	6850 Stock AccStd 1,000ug/mL	CLO4 STOCK	0.1 mL	07/25/2020

STANDARD REPORT

Working Standard - CLO4 QC WRK

CLO4 QC WRK		Description - 6850 QC WKG STD 100ug/L
Standard: 47516	**Created By:** Thomas Bosch	**Amount:** 10 mL
MFG: ALS/SLC	**Create Date:** 05/06/2019 03:05PM	**Expires:** 03/31/2020
MFG Lot: TNB: 05/06/2019		**Usable:** Yes
Pipette ID: Not Provided		**Lab Lot:** CLO4 QC WRK 100.ug/L

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	100 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
47515	CLO4 QC INT	6850 QC Intrmdt Std-QC 10ug/mL	CLO4 QC INT 10.ug/mL	0.1 mL	03/31/2020

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O			**Description - ASTM Type II Water**
Standard: 109	**Created By:** ALS Support (Lims)	**Amount:** 1000 L	
MFG: DCL In House	**Create Date:** 10/06/2005 09:10AM	**Expires:** 11/07/2025	
MFG Lot: Not Provided		**Usable:** Yes	
Part ID: Not Provided		**Lab Lot:** LAB 109	

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Stock Standard - CLO4 QCSTOCK

CLO4 QCSTOCK		**Description - 6850 QC Stock STD 1,000ug/mL**
Standard: 36748	**Created By:** Thomas Bosch	**Amount:** 100 mL
MFG: Ultra Scientific	**Create Date:** 05/11/2017 01:05PM	**Expires:** 03/31/2020
MFG Lot: CP-0860		**Usable:** Yes
Part ID: ICC-013		**Lab Lot:** CLO4 QC STOCK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL

STANDARD REPORT

Constituent

Working Standard - CLO4 QC INT

CLO4 QC INT	Description - 6850 QC Intrmdt Std-QC 10ug/mL

Standard:	**47515**	**Created By:**	Thomas Bosch	**Amount:**	10 mL
MFG:	ALS/SLC	**Create Date:**	05/06/2019 03:05PM	**Expires:**	03/31/2020
MFG Lot:	TNB: 05/06/2019			**Usable:**	Yes
Pipette ID:	Not Provided			**Lab Lot:**	CLO4 QC INT 10.ug/mL

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
36748	CLO4 QCSTOCK	6850 QC Stock STD 1,000ug/mL	CLO4 QC STOCK	0.1 mL	03/31/2020

125 Market Street
New Haven, CT 06513
USA

AccuStandard®

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

S 43659

AccuTrace™ Reference Standard

Catalog No: IC-PER-10X-1
Description: Perchlorate Standard
Element: Perchlorate (ClO_4)
SRM: Ind. Std.
Lot: 218065075
Matrix: Water
Hazards: *Refer to SDS for complete safety information*

Signal Word: None

Date Certified: Jun 25, 2018
Expiration: Jul 25, 2020
Sample Size: 100 mL
Components: 1
Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO 17034 Scope of Accreditation: Yes

Component		SRM #	Prepared Concentration (µg/mL)
ClO_4	Perchlorate	Ind. Std.	1000

The gravimetric uncertainty for this product is ±0.24%.

The final solution was checked against an independent standard to verify its concentration.

We use the highest purity raw materials available to minimize impurity levels in the final solution. Typically 99.999%+ pure starting materials are used as well as ASTM Type I 18 megohm deionized water.

All solutions are filtered through a 0.2 µm filter prior to being bottled.

All glassware used in preparation is Class A and calibrated regularly.

All weights are traceable through NIST, Test No. 822-275872-11

All bottles are triple rinsed with deionized water prior to use.

Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware.

We certify the accuracy of this standard to be ±0.5% of the stated value until its expiration date provided it is kept tightly capped and stored under the conditions stated above.

Certified By: Meigan O'Leary

Meigan O'Leary, Inorganic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO 17034, ISO/IEC 17025 and certified to ISO 9001:2015

AccuStandard

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: ICC-013
Lot Number: CP-0860

S 36748

Lot Issue Date: 29-Feb 2016
Expiration Date: 31-Mar 2020

Product Name: Perchlorate IC Standard

Description:
This Reference Material (RM) was gravimetrically prepared in accordance with ISO Guide 34 and under ULTRA Scientific's ISO 9001 registered quality system. The neat materials used for this product have been verified by ULTRA's ISO 17025 laboratory and under ULTRA's ISO Guide 34 accreditation. The analyte concentrations were verified by ULTRA's ISO 17025 accredited laboratory. For each analyte, the true value, with its uncertainty value calculated at the 95% confidence level, is reported below.

Analyte	Starting Material	Lot Number	Purity (%)	Calculated Value	True Value	Traceability & Method
perchlorate	potassium perchlorate	RM07987	100	1001 ± 5 µg/mL	976 ± 6 µg/mL	NIST SRM 3141A; ICP-OES

Solvent: water (low TOC, < 50 ppb)

Storage: Store at Room Temperature (15° to 30°C).

Traceability:
Traceability has been established through an unbroken chain of comparisons, each having stated uncertainties. Comparisons are based on appropriate physical or chemical measurements, including gravimetric or volumetric dilution, where the mass or volume of a solution before and after dilution is measured. The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1, ISO 9001, ISO 17025, and ISO Guide 34. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 819.

Estimation of Uncertainties:
The true value is reported, with its uncertainty value calculated at the 95% confidence level.

Homogeneity:
This RM was formulated and unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening and should be processed without delay for the true value to be valid within the stated uncertainties. Do not pipet from the bottle. Do not return any material removed for pipetting to the bottle. Tightly cap the bottle after removing any material and store according to the instructions noted above.

Hazards:
Refer to the Safety Data Sheet for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid, within the measurement uncertainty specified, until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 9001 Registered Quality System – TUV USA

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

TRIPLE ISO CERTIFICATION ULTRA ISO 9001 ISO GUIDE 34 ISO 17025

ISO Guide 34 Reference Material

Product Number: ICC-013 **Lot Issue Date:** 29-Feb 2016
Lot Number: CP-0860 **Expiration Date:** 31-Mar 2020

Maintenance of Certification:
The real-time, long term stability of the RM may be monitored over the lifetime of the certification. If substantive changes occur that affect the certification before the expiration of this certificate, ULTRA Scientific will notify the purchaser.

Peter A. King, Ph.D.
VP, Technical Operations

Daniel J. Lamendola
Director of QA/RA

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

Cambridge Isotope Laboratories, Inc. Certificate of Analysis

S 47863

Product Name: PERCHLORIC ACID, SODIUM SALT
(Isotopic Label & Enrichment Specification) (18O4, 90%+) 100 UG/ML IN WATER

Lot Number: SDIH-016

Catalog Number: OLM-7310-S

Product Information

Chemical Purity Specification:	≥ 98%
MW*: ** For isotopically labeled compounds, MW listed is for the fully enriched product.*	130.44
Labeled CAS Number:	NA
Unlabeled CAS Number:	7601-89-0
Chemical Formula:	NaCl*O4
Storage:	Store at room temperature away from light and moisture.
Stability:	See storage and expiration date.

$NaCl^{18}O_4$

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number . Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Sashi Sivendran-Basak

Sashi Sivendran-Basak, Ph.D., Quality Review

Quality Control Tests and Results

QC Release Date	12/05/2018
Expiration Date	12/05/2028
Concentration Based on Gravimetry	100.0 ± 1.0 µg/mL (k=2)
Chemical Purity of Neat Material(s)	98%
LC/MS for Concentration	105.4 ± 1.1 µg/mL (k=2)

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

Batch Report: C:\HPCHEM\1\DATA\26MAR20D\26MAR20S.B

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DP3.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#*	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorat RT	Perchlorate Amount
*	701037 CCV@25	Vial 71	1	Control	1	1.31519e6	7.596	24.50269
*	701038 LCS@3.	Vial 72	1	Control	2	1.66008e5	7.469	3.07012
*	701040 ICS@3.0	Vial 73	1	Control	3	9.99850e4	7.425	2.96673
*	701041 LMB	Vial 74	1	Control	4	0.00000	0.000	0.00000
*	2008062001	Vial 75	1	Sample	5	1.09960e5	6.921	2.23127
*	2008062002	Vial 76	1	Sample	6	0.00000	0.000	0.00000
*	2008062003	Vial 77	1	Sample	7	1.17976e7	6.021	147.31769 DIL
*	2008062004	Vial 78	1	Sample	8	0.00000	0.000	0.00000
*	2008062005	Vial 79	1	Sample	9	3.68639e6	7.063	61.54884
*	2008062006	Vial 80	1	Sample	10	0.00000	0.000	0.00000
*	2008062007	Vial 81	1	Sample	11	0.00000	0.000	0.00000
*	2008062008	Vial 82	1	Sample	12	0.00000	0.000	0.00000
*	2008310001	Vial 83	1	Sample	13	0.00000	0.000	0.00000
*	2008310002 MS	Vial 84	1	Sample	14	1.61579e5	7.624	3.03065
*	701042 CCV@25	Vial 71	1	Control	15	1.25770e6	7.542	25.04210
*	2008310003 MSD	Vial 85	1	Sample	16	1.56764e5	7.529	3.00067
*	2008310004	Vial 86	1	Sample	17	0.00000	0.000	0.00000
*	2008310005	Vial 87	1	Sample	18	0.00000	0.000	0.00000
*	2008310006	Vial 88	1	Sample	19	0.00000	0.000	0.00000
*	2008310007	Vial 89	1	Sample	20	0.00000	0.000	0.00000
*	2008310008 10X	Vial 90	1	Sample	21	2.26474e6	7.461	396.52335
*	2008310009	Vial 91	1	Sample	22	0.00000	0.000	0.00000
*	2008310010	Vial 92	1	Sample	23	2.13687e5	7.243	4.87047
*	2008310011	Vial 93	1	Sample	24	0.00000	0.000	0.00000
*	2008310012	Vial 94	1	Sample	25	0.00000	0.000	0.00000
*	701043 CCV@25	Vial 71	1	Control	26	1.23305e6	7.642	25.29232
*	2008062003 10X	Vial 95	1	Sample	27	1.66187e6	7.172	308.79978
*	701102 CCV@25	Vial 71	1	Control	28	1.21579e6	7.568	25.02152

#*	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-IS RT	CLO4-89-ISTD Amount
*	701037 CCV@25	Vial 71	1	Control	1	1.83781e5	7.637	5.00000
*	701038 LCS@3.	Vial 72	1	Control	2	1.99015e5	7.478	5.00000
*	701040 ICS@3.0	Vial 73	1	Control	3	1.23987e5	7.431	5.00000
*	701041 LMB	Vial 74	1	Control	4	1.77630e5	7.646	5.00000
*	2008062001	Vial 75	1	Sample	5	1.80290e5	6.911	5.00000
*	2008062002	Vial 76	1	Sample	6	2.21066e5	7.204	5.00000
*	2008062003	Vial 77	1	Sample	7	1.80433e5	5.955	5.00000
*	2008062004	Vial 78	1	Sample	8	2.38862e5	7.519	5.00000
*	2008062005	Vial 79	1	Sample	9	1.77448e5	7.086	5.00000
*	2008062006	Vial 80	1	Sample	10	1.94128e5	8.130	5.00000
*	2008062007	Vial 81	1	Sample	11	1.72495e5	7.483	5.00000
*	2008062008	Vial 82	1	Sample	12	2.20984e5	7.241	5.00000
*	2008310001	Vial 83	1	Sample	13	2.23497e5	7.586	5.00000
*	2008310002 MS	Vial 84	1	Sample	14	1.96195e5	7.631	5.00000
*	701042 CCV@25	Vial 71	1	Control	15	1.71580e5	7.576	5.00000
*	2008310003 MSD	Vial 85	1	Sample	16	1.92226e5	7.553	5.00000
*	2008310004	Vial 86	1	Sample	17	1.66041e5	7.125	5.00000
*	2008310005	Vial 87	1	Sample	18	1.63139e5	7.338	5.00000
*	2008310006	Vial 88	1	Sample	19	1.67930e5	7.299	5.00000
*	2008310007	Vial 89	1	Sample	20	1.37320e5	7.249	5.00000
*	2008310008 10X	Vial 90	1	Sample	21	1.83925e5	7.486	50.00000
*	2008310009	Vial 91	1	Sample	22	2.26093e5	7.401	5.00000
*	2008310010	Vial 92	1	Sample	23	1.61722e5	7.250	5.00000
*	2008310011	Vial 93	1	Sample	24	1.41774e5	7.091	5.00000
*	2008310012	Vial 94	1	Sample	25	1.86602e5	7.252	5.00000

Batch Report: C:\HPCHEM\1\DATA\26MAR20D\26MAR20S.B

#	*	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-IS RT	CLO4-89-ISTD Amount
	*	701043 CCV@25	Vial 71	1	Control	26	1.66381e5	7.665	5.00000
	*	2008062003 10X	Vial 95	1	Sample	27	1.79512e5	7.187	50.00000
	*	701102 CCV@25	Vial 71	1	Control	28	1.66012e5	7.575	5.00000

#	*	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
	*	701037 CCV@25	Vial 71	1	Control	1	4.23244e5	7.613	25.73518
	*	701038 LCS@3.	Vial 72	1	Control	2	5.75315e4	7.501	3.40153
	*	701040 ICS@3.0	Vial 73	1	Control	3	3.96560e4	7.435	3.77484
	*	701041 LMB	Vial 74	1	Control	4	0.00000	0.000	0.00000
	*	2008062001	Vial 75	1	Sample	5	1.31311e4	6.920	7.42428e-1
	*	2008062002	Vial 76	1	Sample	6	0.00000	0.000	0.00000
	*	2008062003	Vial 77	1	Sample	7	3.62321e6	6.035	150.65418
	*	2008062004	Vial 78	1	Sample	8	0.00000	0.000	0.00000
	*	2008062005	Vial 79	1	Sample	9	1.09785e6	7.077	60.87616
	*	2008062006	Vial 80	1	Sample	10	0.00000	0.000	0.00000
	*	2008062007	Vial 81	1	Sample	11	0.00000	0.000	0.00000
	*	2008062008	Vial 82	1	Sample	12	0.00000	0.000	0.00000
	*	2008310001	Vial 83	1	Sample	13	0.00000	0.000	0.00000
	*	2008310002 MS	Vial 84	1	Sample	14	5.55387e4	7.622	3.32853
	*	701042 CCV@25	Vial 71	1	Control	15	4.03497e5	7.547	26.23064
	*	2008310003 MSD	Vial 85	1	Sample	16	5.07657e4	7.527	3.09739
	*	2008310004	Vial 86	1	Sample	17	0.00000	0.000	0.00000
	*	2008310005	Vial 87	1	Sample	18	0.00000	0.000	0.00000
	*	2008310006	Vial 88	1	Sample	19	0.00000	0.000	0.00000
	*	2008310007	Vial 89	1	Sample	20	0.00000	0.000	0.00000
	*	2008310008 10X	Vial 90	1	Sample	21	7.08209e5	7.477	407.04413
	*	2008310009	Vial 91	1	Sample	22	0.00000	0.000	0.00000
	*	2008310010	Vial 92	1	Sample	23	6.45639e4	7.251	4.73281
	*	2008310011	Vial 93	1	Sample	24	0.00000	0.000	0.00000
	*	2008310012	Vial 94	1	Sample	25	0.00000	0.000	0.00000
	*	701043 CCV@25	Vial 71	1	Control	26	3.91623e5	7.660	26.25206
	*	2008062003 10X	Vial 95	1	Sample	27	4.89002e5	7.190	299.63811
	*	701102 CCV@25	Vial 71	1	Control	28	3.97063e5	7.579	26.63751

*** End of Report ***

Sequence: C:\HPCHEM\1\SEQUENCE\CLO4\2020\MAR\26MAR20D.S

Sequence Table:

Method and Injection Info Part:

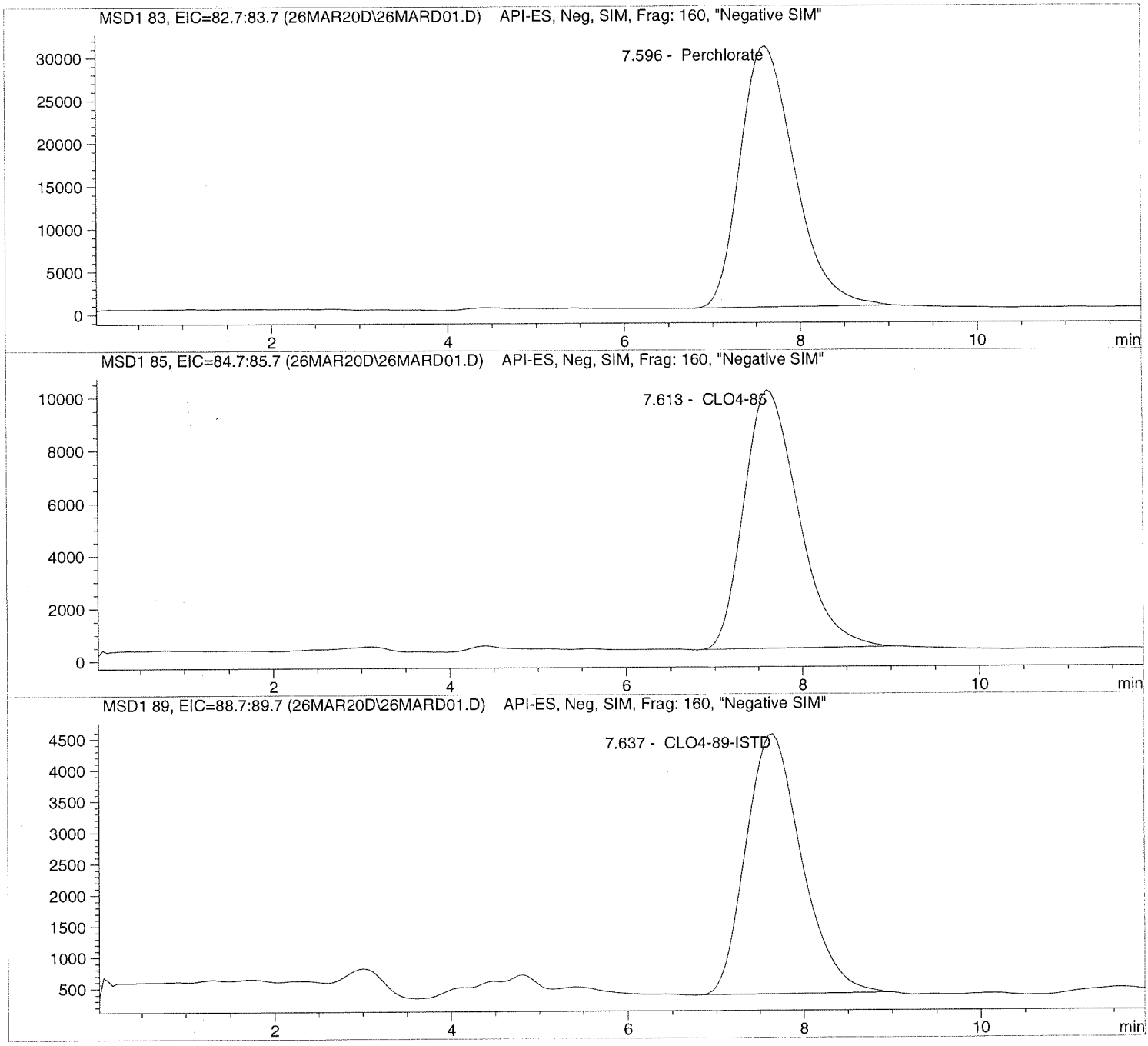
Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 71	701037 CCV@25	CLO4-AQN	1	Ctrl Samp		
2	Vial 72	701038 LCS@3.	CLO4-AQN	1	Ctrl Samp		
3	Vial 73	701040 ICS@3.0	CLO4-AQN	1	Ctrl Samp		
4	Vial 74	701041 LMB	CLO4-AQN	1	Ctrl Samp		
5	Vial 75	2008062001	CLO4-AQN	1	Sample		
6	Vial 76	2008062002	CLO4-AQN	1	Sample		
7	Vial 77	2008062003	CLO4-AQN	1	Sample		
8	Vial 78	2008062004	CLO4-AQN	1	Sample		
9	Vial 79	2008062005	CLO4-AQN	1	Sample		
10	Vial 80	2008062006	CLO4-AQN	1	Sample		
11	Vial 81	2008062007	CLO4-AQN	1	Sample		
12	Vial 82	2008062008	CLO4-AQN	1	Sample		
13	Vial 83	2008310001	CLO4-AQN	1	Sample		
14	Vial 84	2008310002 MS	CLO4-AQN	1	Sample		
15	Vial 71	701042 CCV@25	CLO4-AQN	1	Ctrl Samp		
16	Vial 85	2008310003 MSD	CLO4-AQN	1	Sample		
17	Vial 86	2008310004	CLO4-AQN	1	Sample		
18	Vial 87	2008310005	CLO4-AQN	1	Sample		
19	Vial 88	2008310006	CLO4-AQN	1	Sample		
20	Vial 89	2008310007	CLO4-AQN	1	Sample		
21	Vial 90	2008310008 10X	CLO4-AQN	1	Sample		
22	Vial 91	2008310009	CLO4-AQN	1	Sample		
23	Vial 92	2008310010	CLO4-AQN	1	Sample		
24	Vial 93	2008310011	CLO4-AQN	1	Sample		
25	Vial 94	2008310012	CLO4-AQN	1	Sample		
26	Vial 71	701043 CCV@25	CLO4-AQN	1	Ctrl Samp		
27	Vial 95	2008062003 10X	CLO4-AQN	1	Sample		
28	Vial 71	701102 CCV@25	CLO4-AQN	1	Ctrl Samp		

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD01.D Sample Name: 701037 CCV@25

Injection Date:	3/26/2020 08:19:01	Seq Line:	1
Sample Name:	701037 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD01.D Sample Name: 701037 CCV@25

Injection Date:	3/26/2020 08:19:01	Seq Line:	1
Sample Name:	701037 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.596	PBA	1315193.4	24.5027	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.613	PBA	423244.0	25.7352	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.637	PBA	183780.9	5.0000	CLO4-89-ISTD

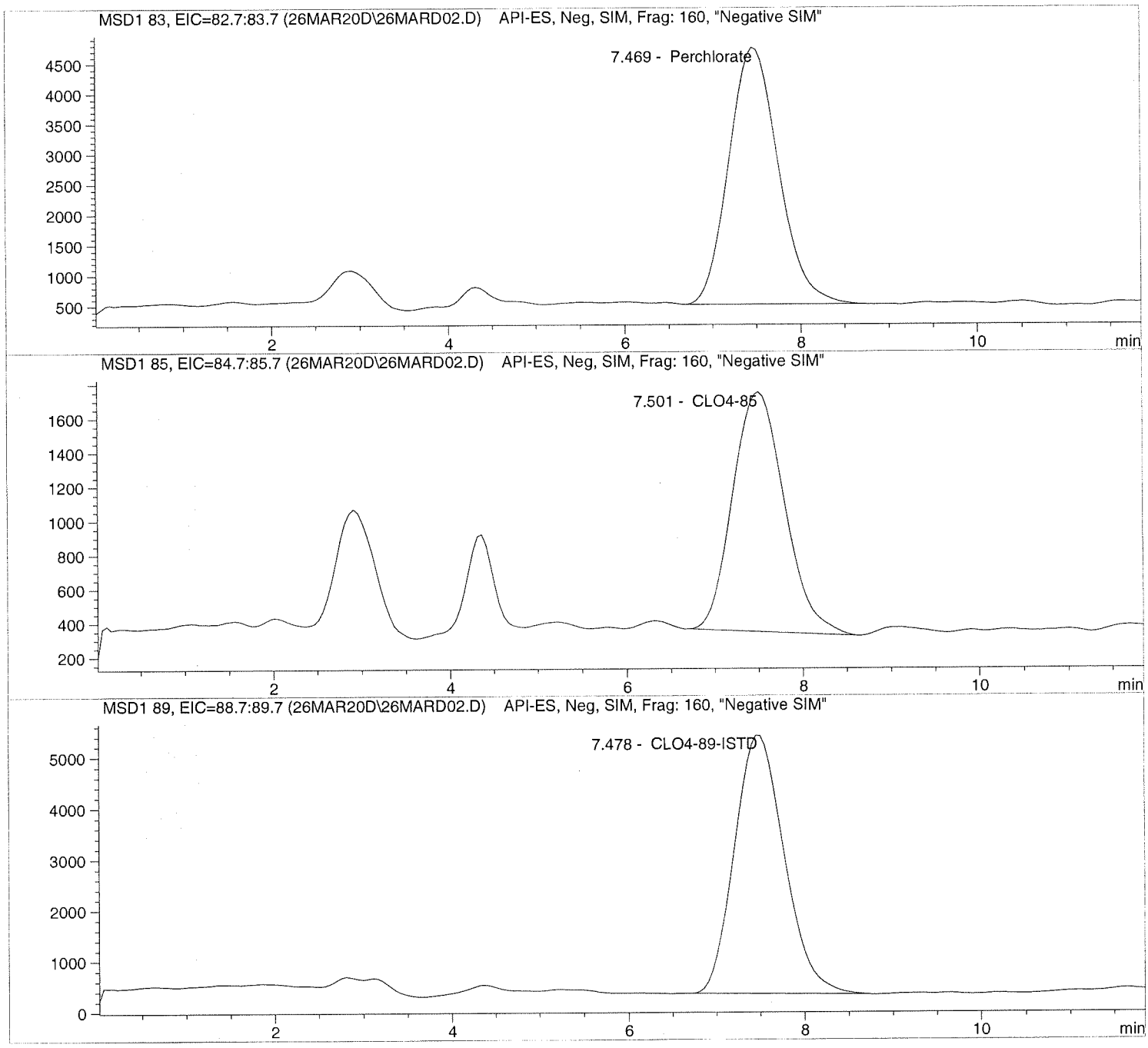
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD02.D Sample Name: 701038 LCS@3.

Injection Date:	3/26/2020 08:34:46	Seq Line:	2
Sample Name:	701038 LCS@3.	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD02.D Sample Name: 701038 LCS@3.

Injection Date:	3/26/2020 08:34:46	Seq Line:	2
Sample Name:	701038 LCS@3.	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	3.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.469	PBA	166008.5	3.0701	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.501	PBA	57531.5	3.4015	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.478	PBA	199014.8	5.0000	CLO4-89-ISTD

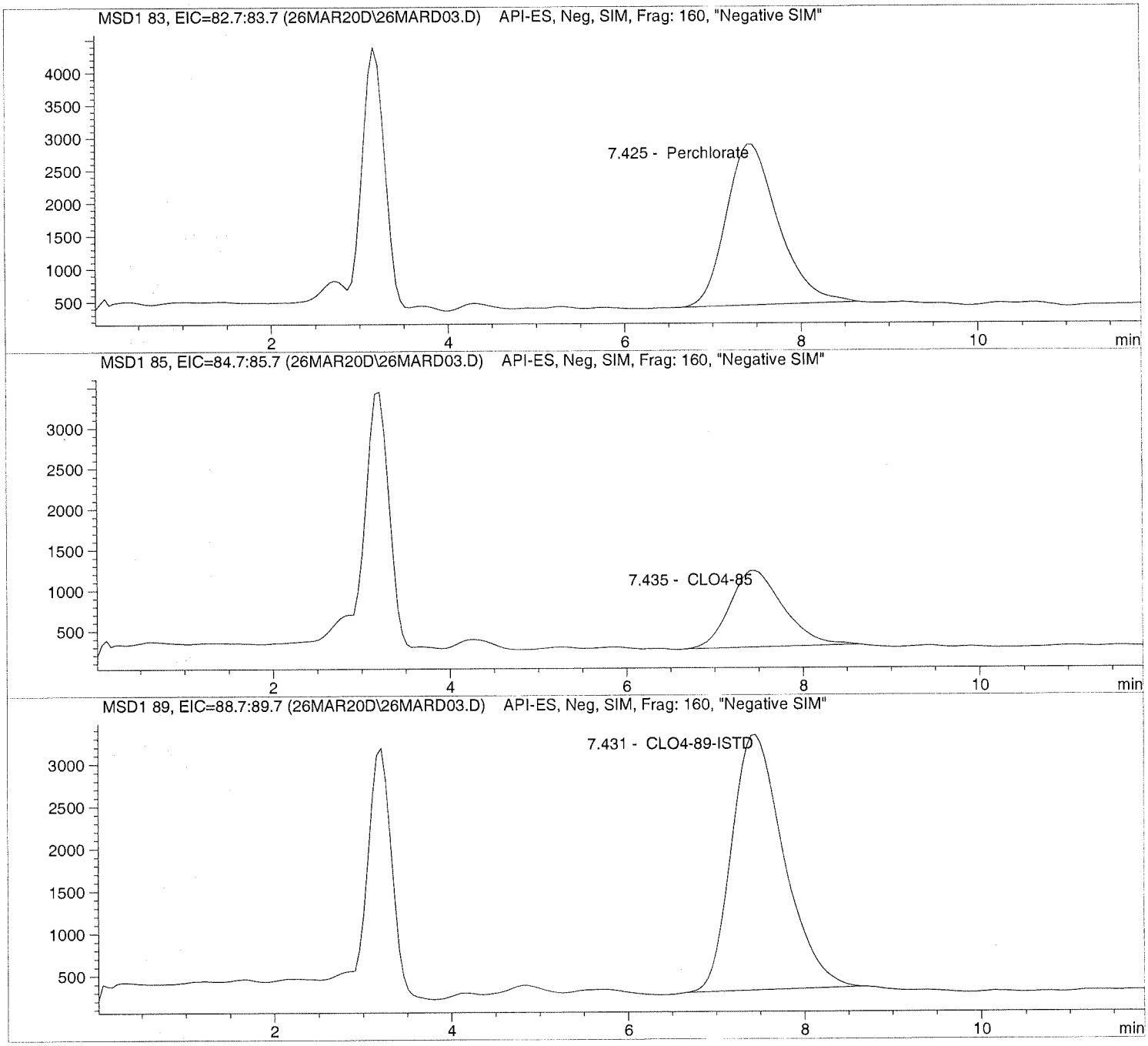
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD03.D Sample Name: 701040 ICS@3.0

Injection Date:	3/26/2020 08:48:42	Seq Line:	3
Sample Name:	701040 ICS@3.0	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD03.D Sample Name: 701040 ICS@3.0

Injection Date:	3/26/2020 08:48:42	Seq Line:	3
Sample Name:	701040 ICS@3.0	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	3.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.425	PBA	99985.0	2.9667	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.435	PBA	39656.0	3.7748	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.431	PBA	123986.5	5.0000	CLO4-89-ISTD

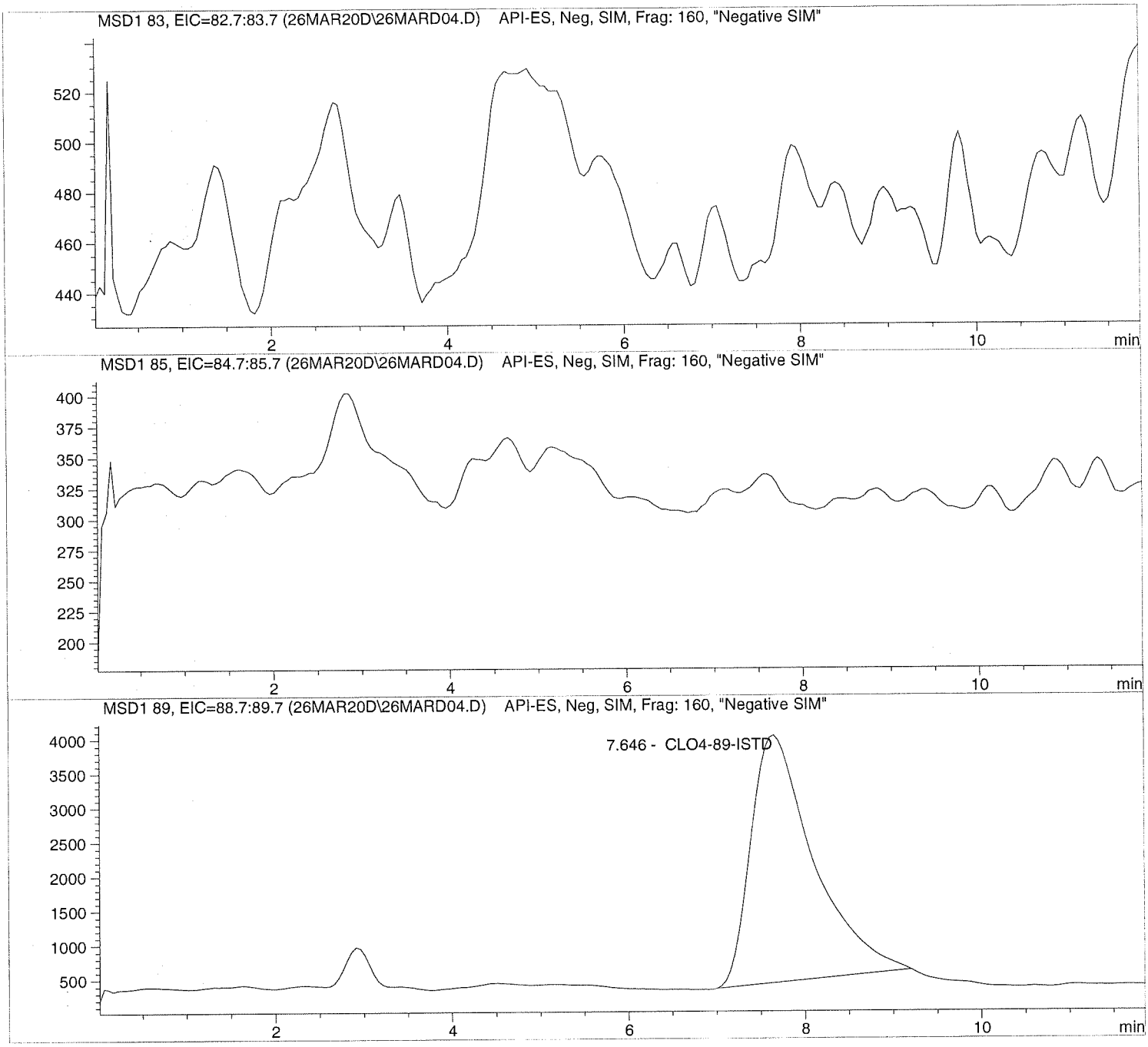
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD04.D Sample Name: 701041 LMB

Injection Date:	3/26/2020 09:02:43	Seq Line:	4
Sample Name:	701041 LMB	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD04.D Sample Name: 701041 LMB

Injection Date:	3/26/2020 09:02:43	Seq Line:	4
Sample Name:	701041 LMB	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.646	PBA	177629.6	5.0000	CLO4-89-ISTD

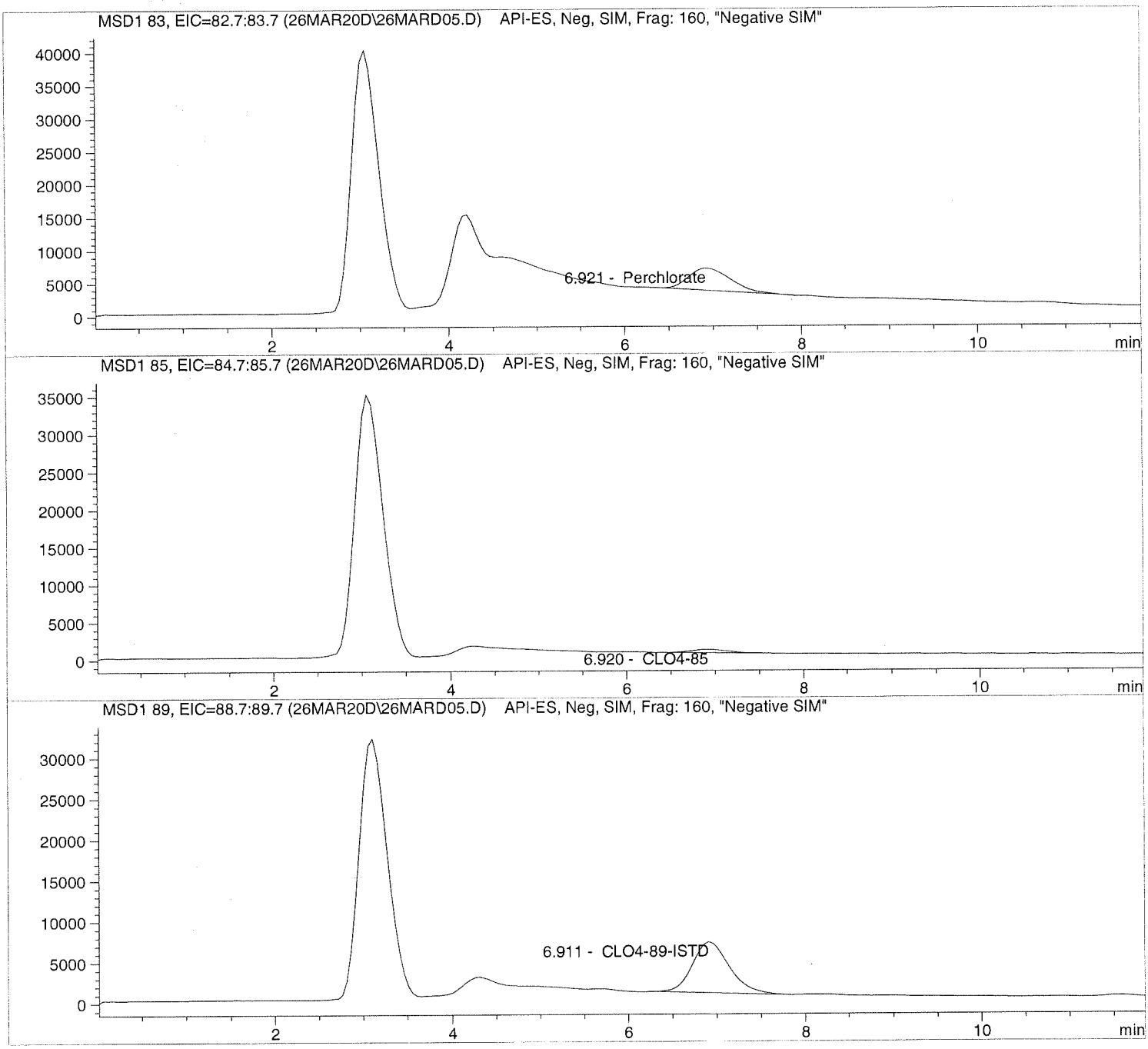
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD05.D Sample Name: 2008062001

Injection Date:	3/26/2020 09:16:42	Seq Line:	5
Sample Name:	2008062001	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD05.D Sample Name: 2008062001

Injection Date:	3/26/2020 09:16:42	Seq Line:	5
Sample Name:	2008062001	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.921	PBA	109960.3	2.2313	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.920	PBA	13131.1	0.7424	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.911	PBA	180290.0	5.0000	CLO4-89-ISTD

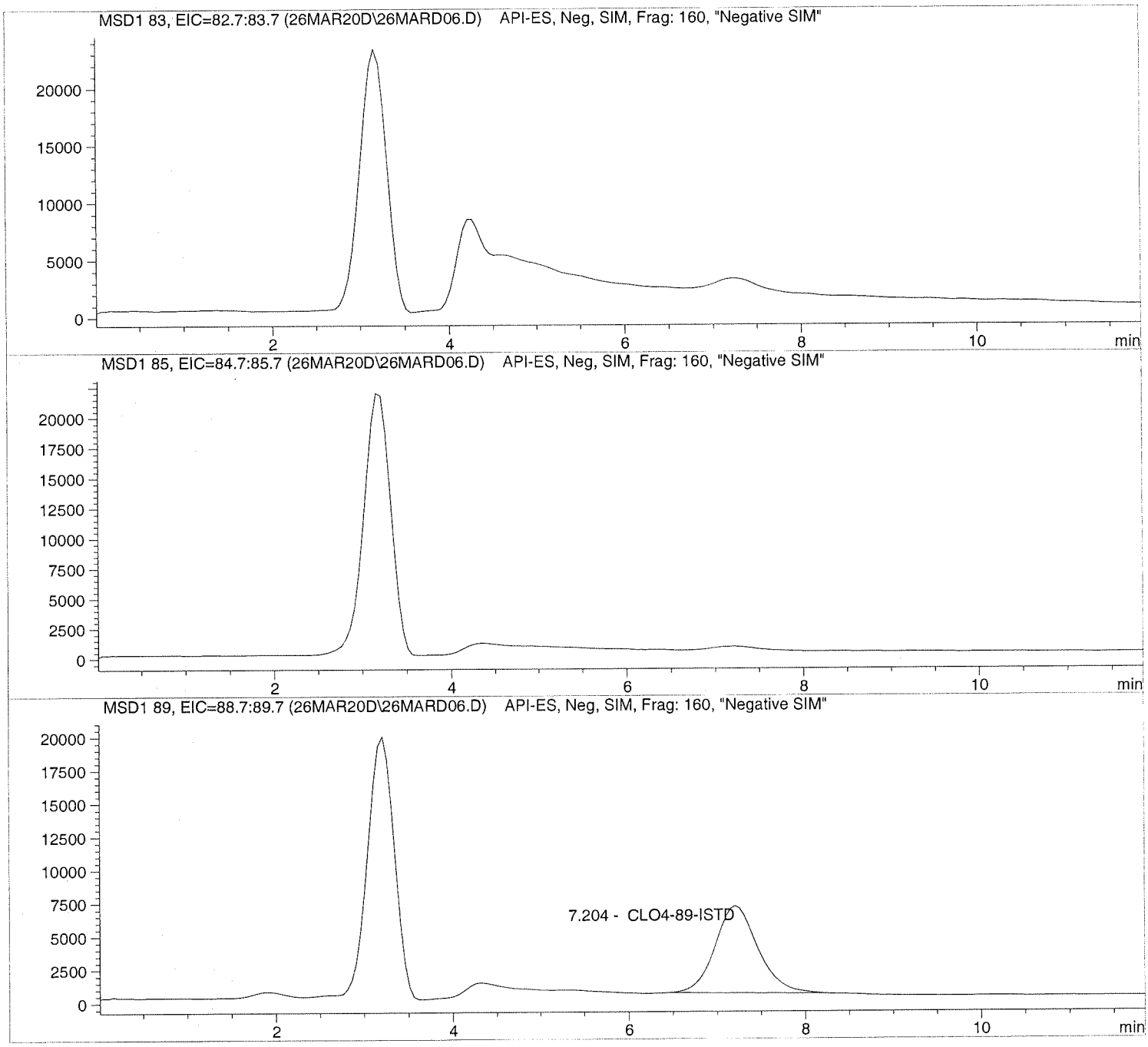
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD06.D Sample Name: 2008062002

Injection Date:	3/26/2020 09:30:41	Seq Line:	6
Sample Name:	2008062002	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD06.D Sample Name: 2008062002

Injection Date:	3/26/2020 09:30:41	Seq Line:	6
Sample Name:	2008062002	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.204	PBA	221065.7	5.0000	CLO4-89-ISTD

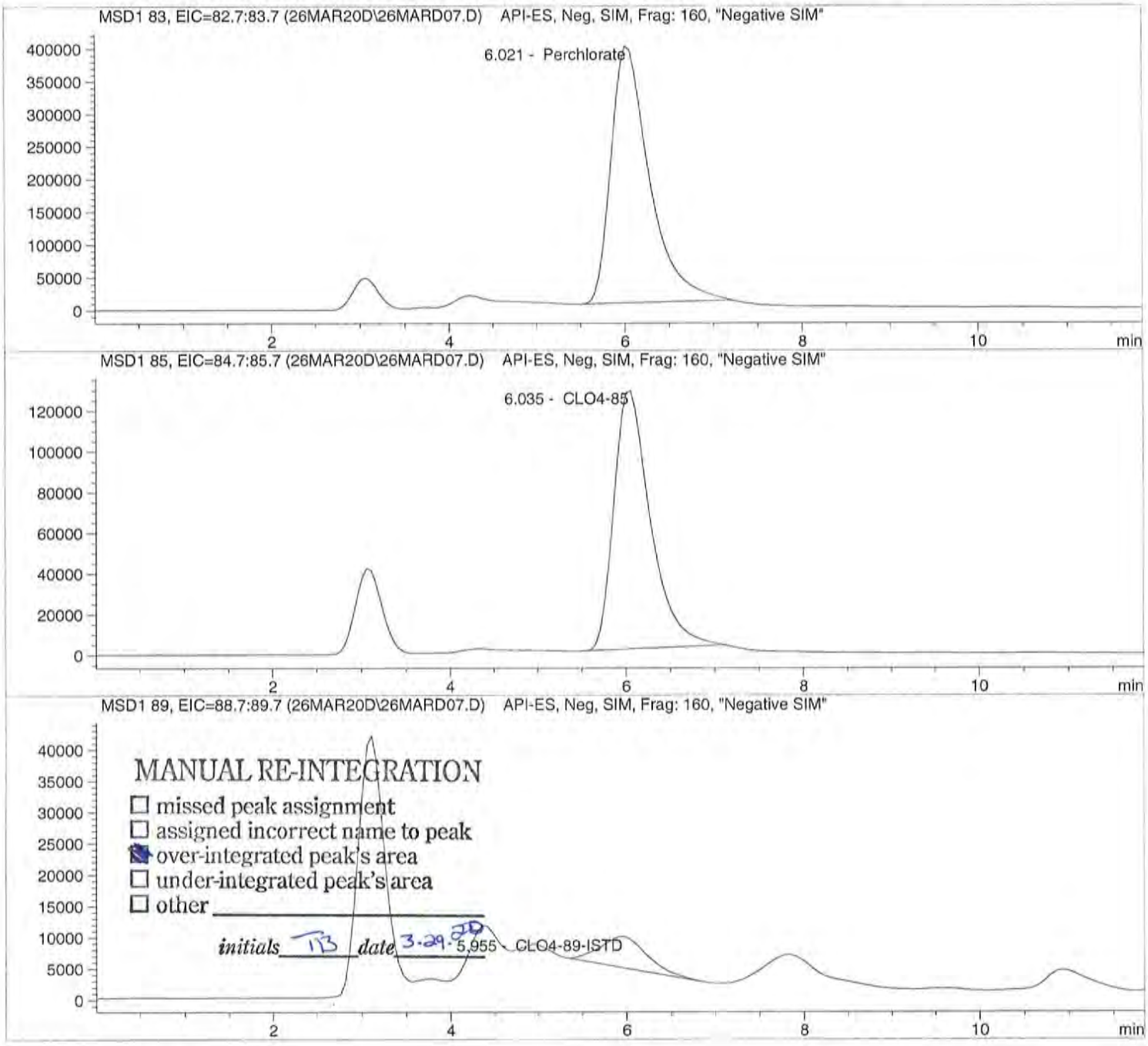
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD07.D Sample Name: 2008062003

Injection Date:	3/26/2020 09:44:40	Seq Line:	7
Sample Name:	2008062003	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD07.D Sample Name: 2008062003

Injection Date:	3/26/2020 09:44:40	Seq Line:	7
Sample Name:	2008062003	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.021	PBA	11797552.0	147.3177	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.035	PBA	3623208.0	150.6542	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
5.955	MM	180433.5	5.0000	CLO4-89-ISTD

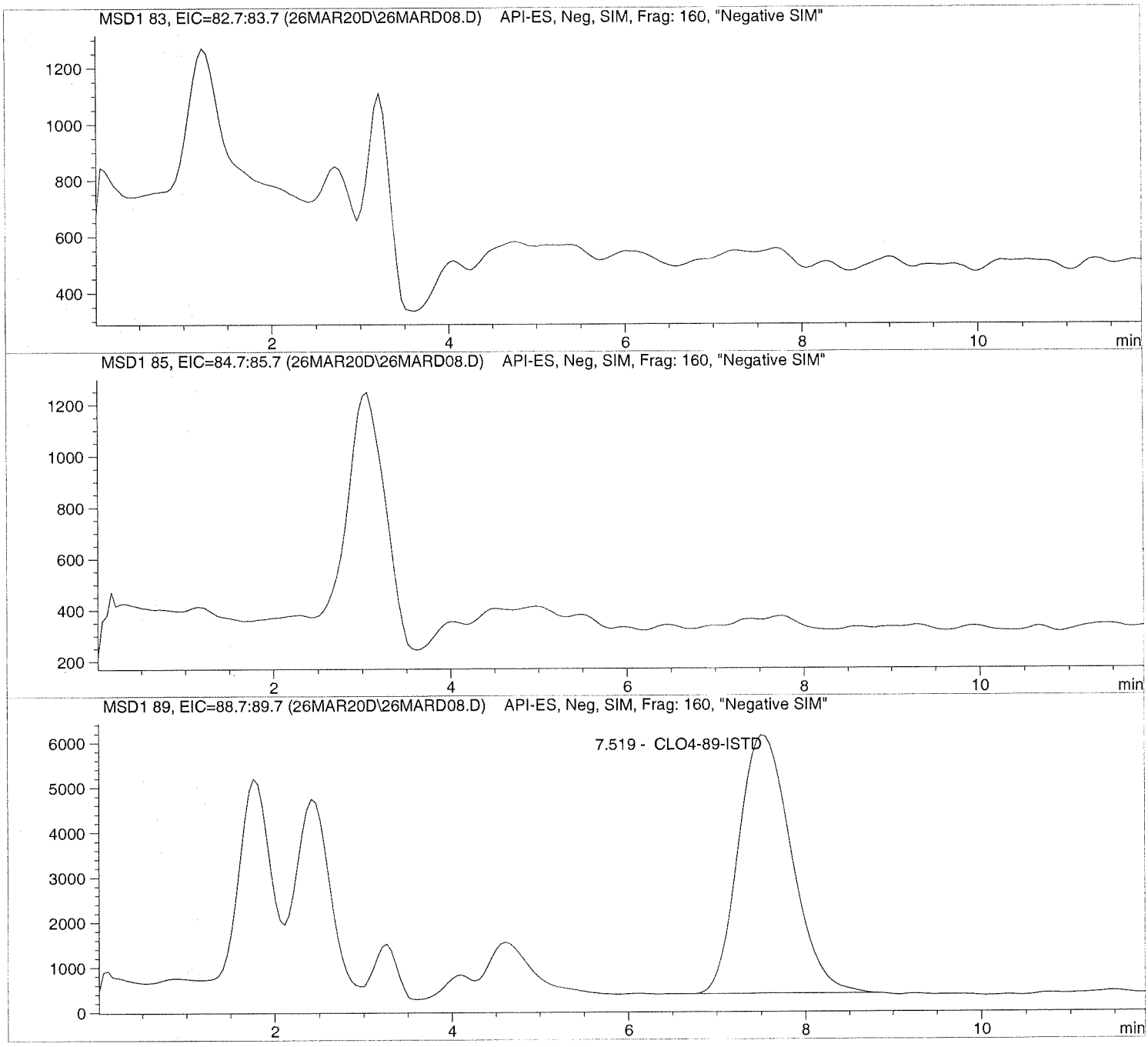
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD08.D Sample Name: 2008062004

Injection Date:	3/26/2020 09:58:39	Seq Line:	8
Sample Name:	2008062004	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD08.D Sample Name: 2008062004

Injection Date:	3/26/2020 09:58:39	Seq Line:	8
Sample Name:	2008062004	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.519	PBA	238862.2	5.0000	CLO4-89-ISTD

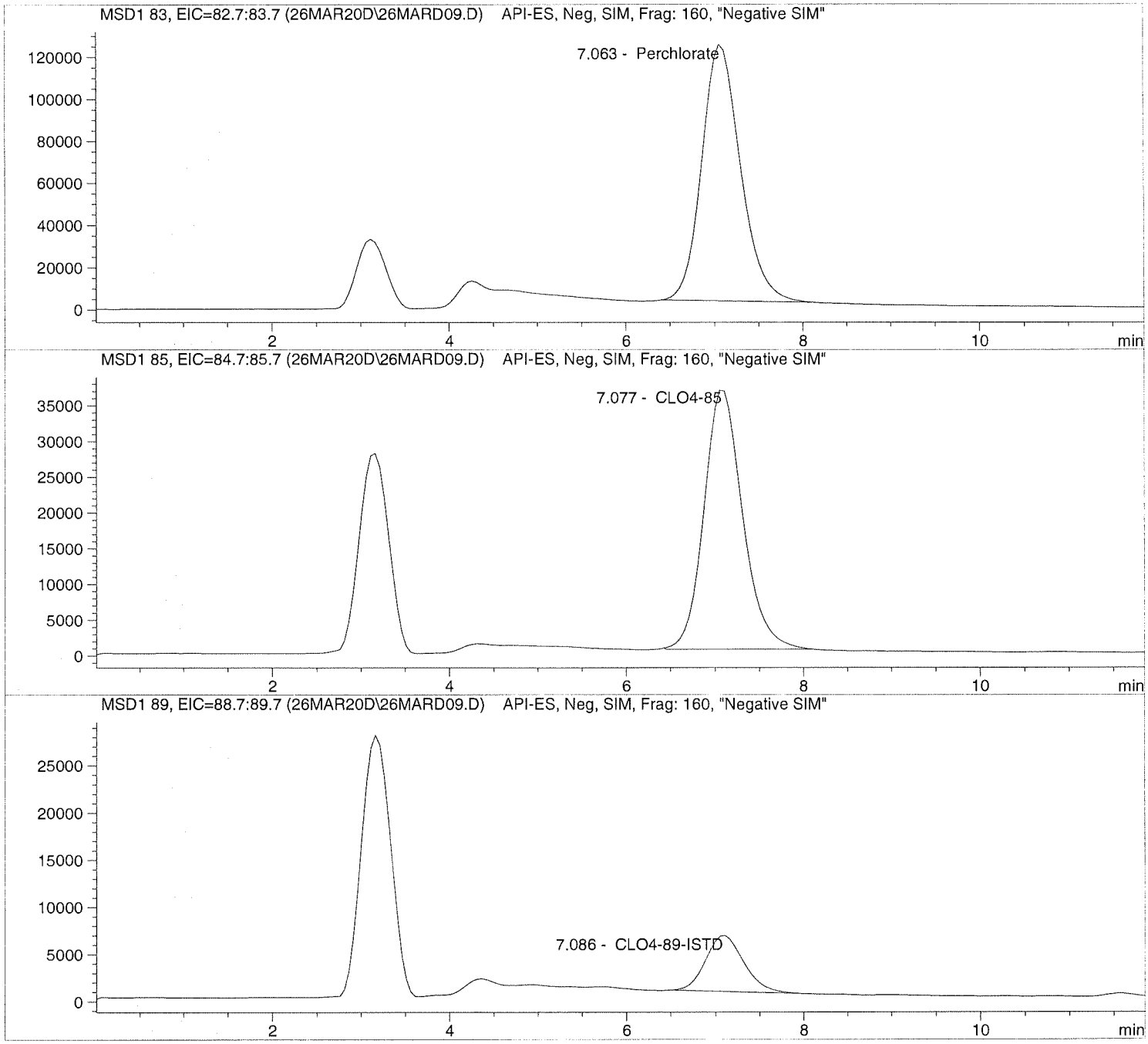
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD09.D Sample Name: 2008062005

Injection Date:	3/26/2020 10:12:38	Seq Line:	9
Sample Name:	2008062005	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD09.D Sample Name: 2008062005

Injection Date:	3/26/2020 10:12:38	Seq Line:	9
Sample Name:	2008062005	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.063	BBA	3686393.8	61.5488	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.077	BBA	1097853.7	60.8762	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.086	PBA	177447.9	5.0000	CLO4-89-ISTD

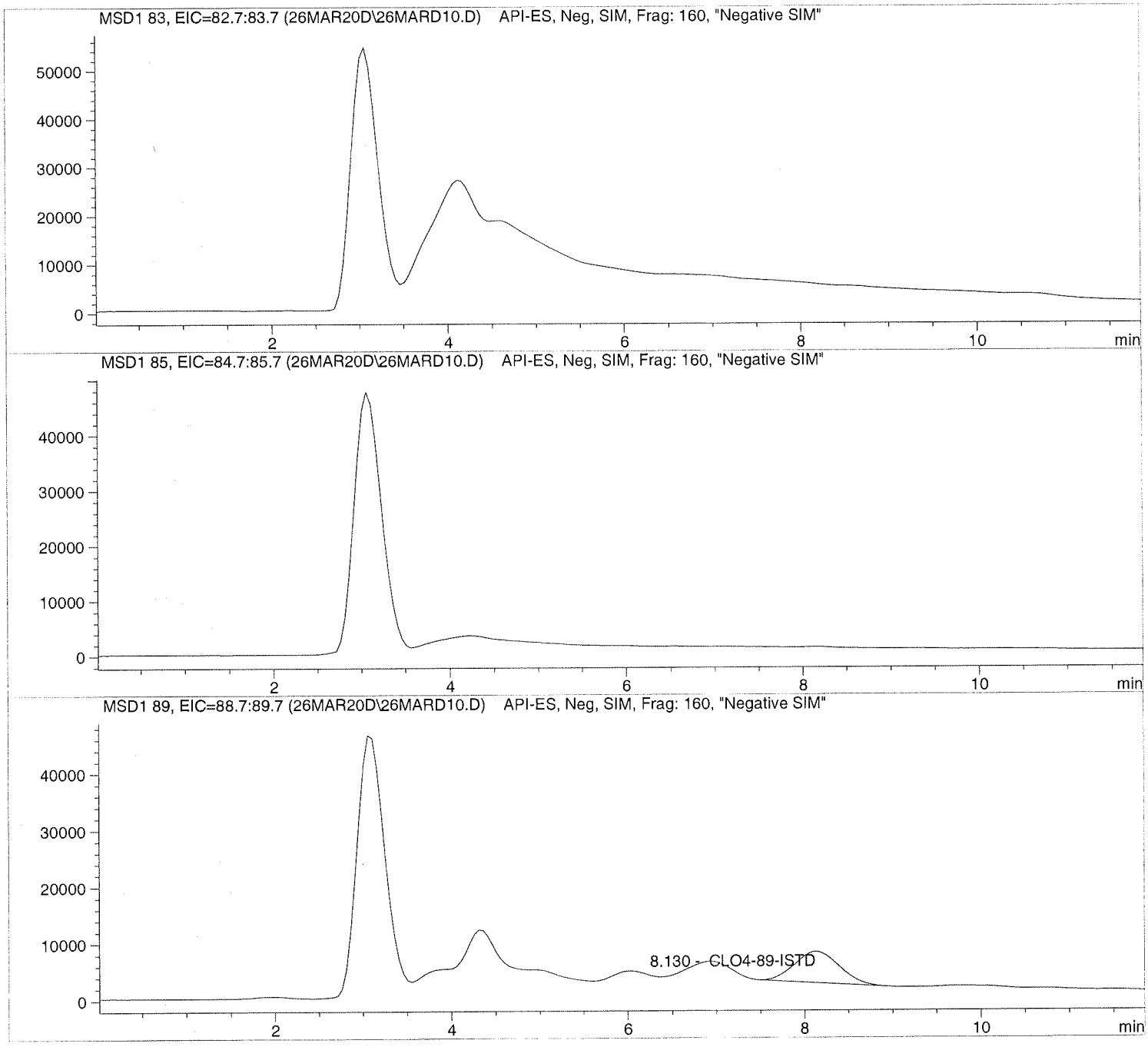
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD10.D Sample Name: 2008062006

Injection Date:	3/26/2020 10:26:37	Seq Line:	10
Sample Name:	2008062006	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD10.D Sample Name: 2008062006

Injection Date:	3/26/2020 10:26:37	Seq Line:	10
Sample Name:	2008062006	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.130	VBA	194127.8	5.0000	CLO4-89-ISTD

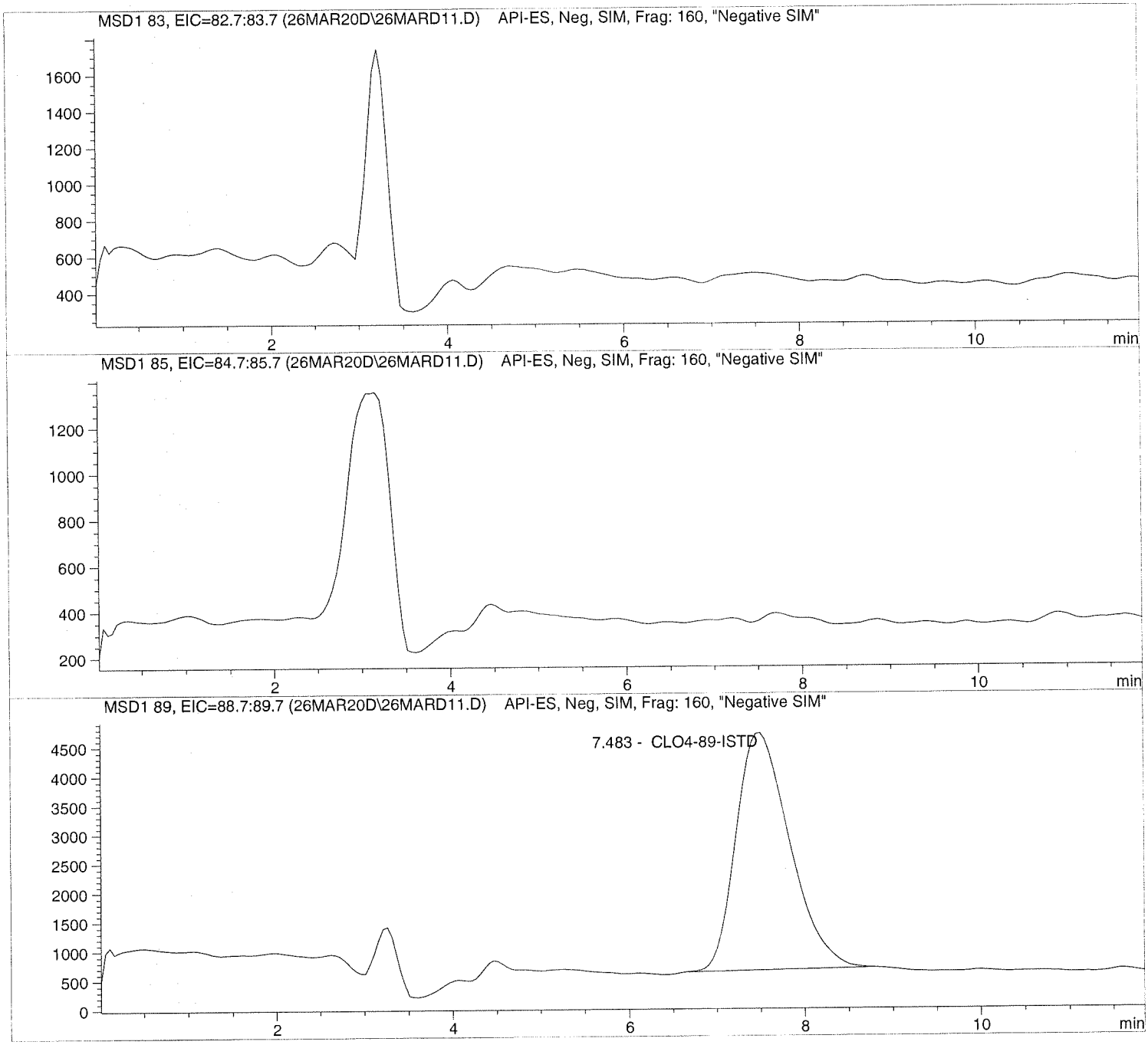
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD11.D Sample Name: 2008062007

Injection Date:	3/26/2020 10:40:42	Seq Line:	11
Sample Name:	2008062007	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD11.D Sample Name: 2008062007

Injection Date:	3/26/2020 10:40:42	Seq Line:	11
Sample Name:	2008062007	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.483	BBA	172495.2	5.0000	CLO4-89-ISTD

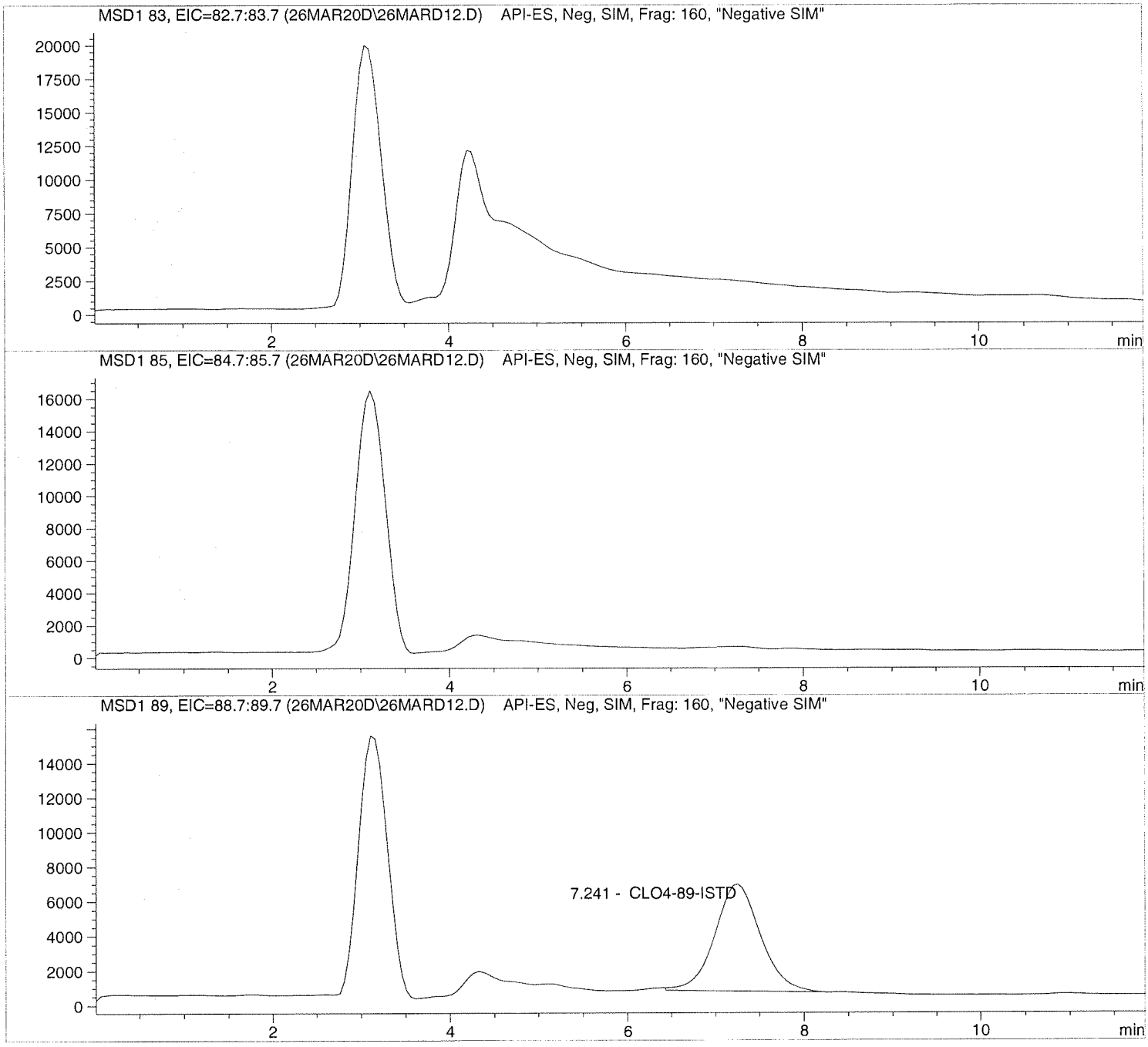
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD12.D Sample Name: 2008062008

Injection Date:	3/26/2020 10:54:39	Seq Line:	12
Sample Name:	2008062008	Location:	Vial 82
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD12.D Sample Name: 2008062008

Injection Date:	3/26/2020 10:54:39	Seq Line:	12
Sample Name:	2008062008	Location:	Vial 82
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.241	BBA	220984.2	5.0000	CLO4-89-ISTD

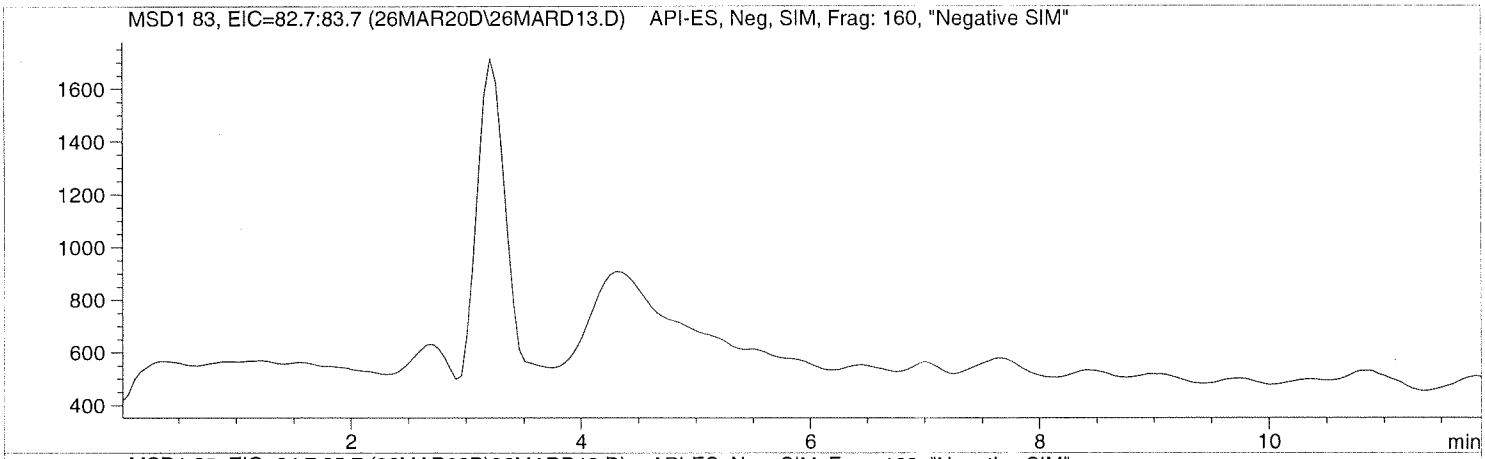
*** End of Report ***

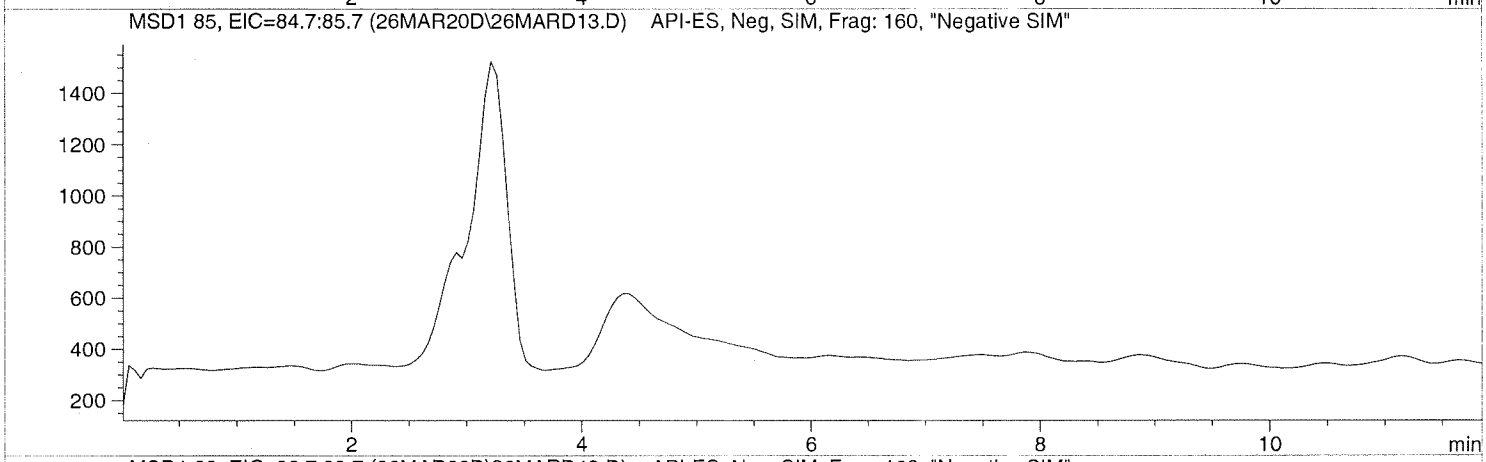
Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD13.D Sample Name: 2008310001

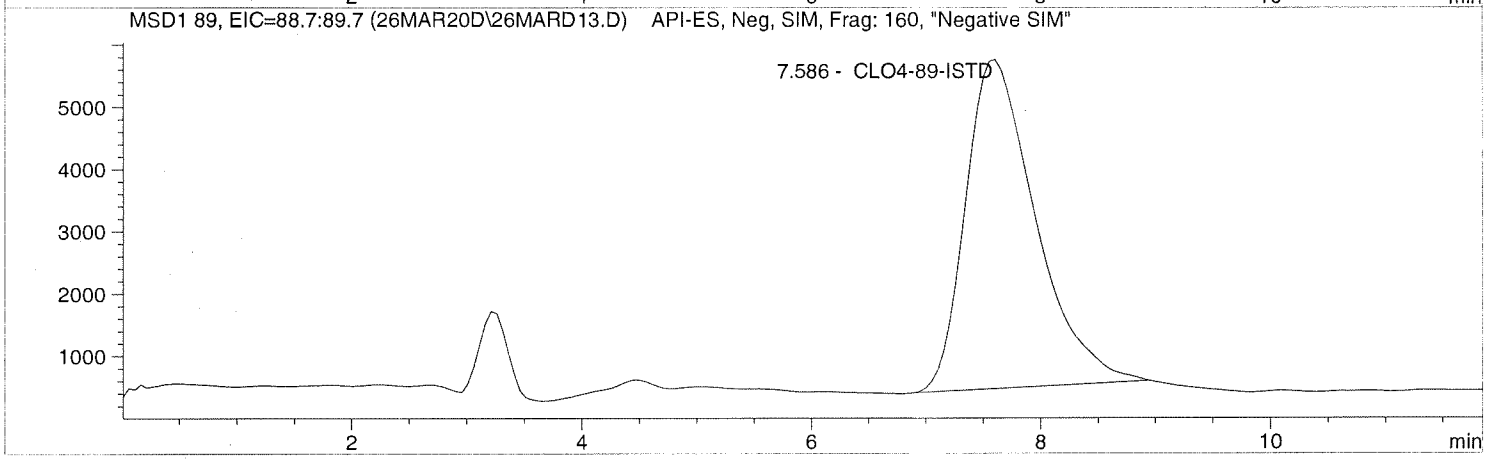
Injection Date:	3/26/2020 11:08:35	Seq Line:	13
Sample Name:	2008310001	Location:	Vial 83
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD13.D Sample Name: 2008310001

Injection Date:	3/26/2020 11:08:35	Seq Line:	13
Sample Name:	2008310001	Location:	Vial 83
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.586	PBA	223497.3	5.0000	CLO4-89-ISTD

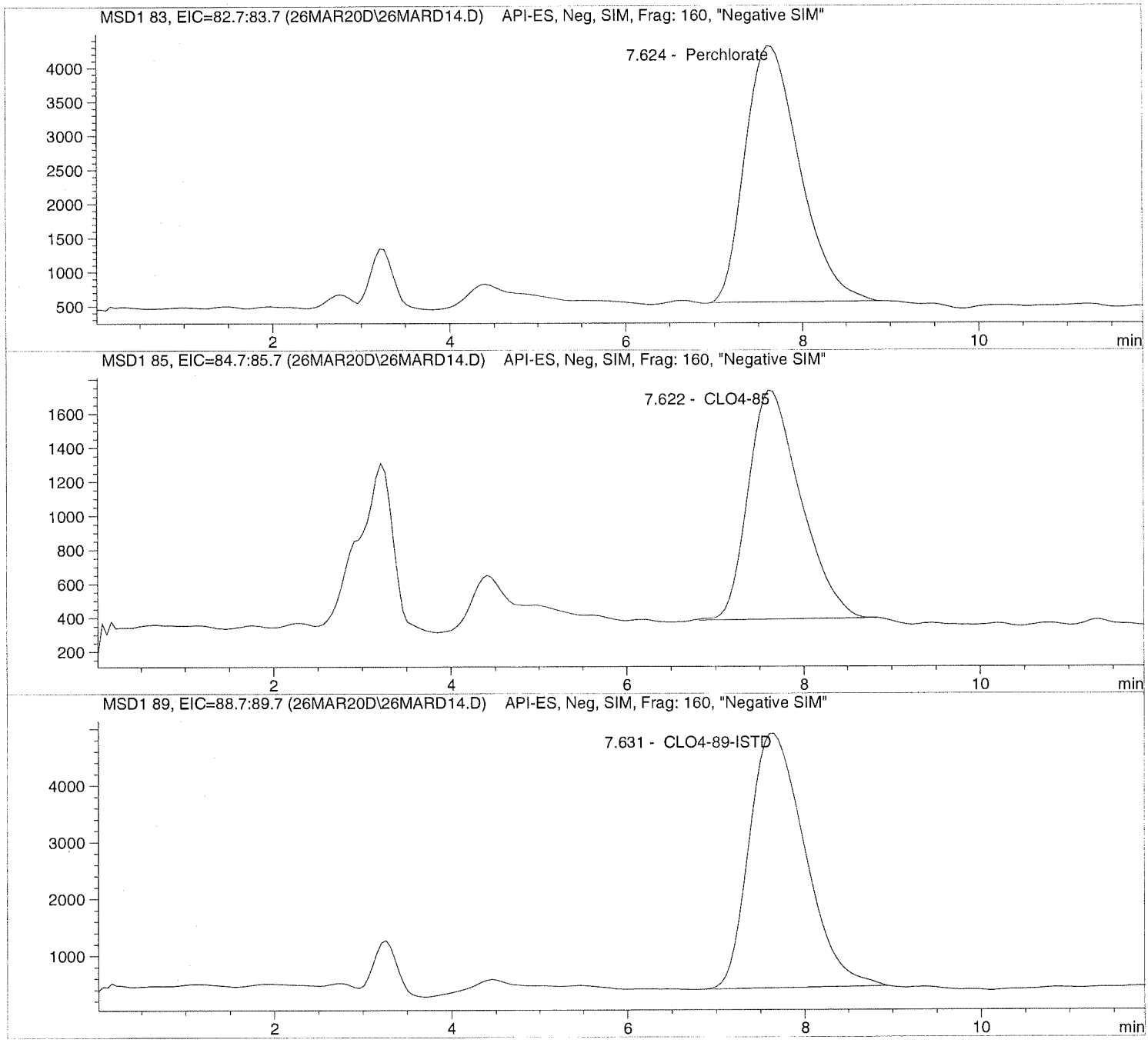
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD14.D Sample Name: 2008310002 MS

Injection Date:	3/26/2020 11:22:32	Seq Line:	14
Sample Name:	2008310002 MS	Location:	Vial 84
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD14.D Sample Name: 2008310002 MS

Injection Date:	3/26/2020 11:22:32	Seq Line:	14
Sample Name:	2008310002 MS	Location:	Vial 84
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.624	PBA	161578.6	3.0306	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.622	BBA	55538.7	3.3285	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.631	PBA	196195.3	5.0000	CLO4-89-ISTD

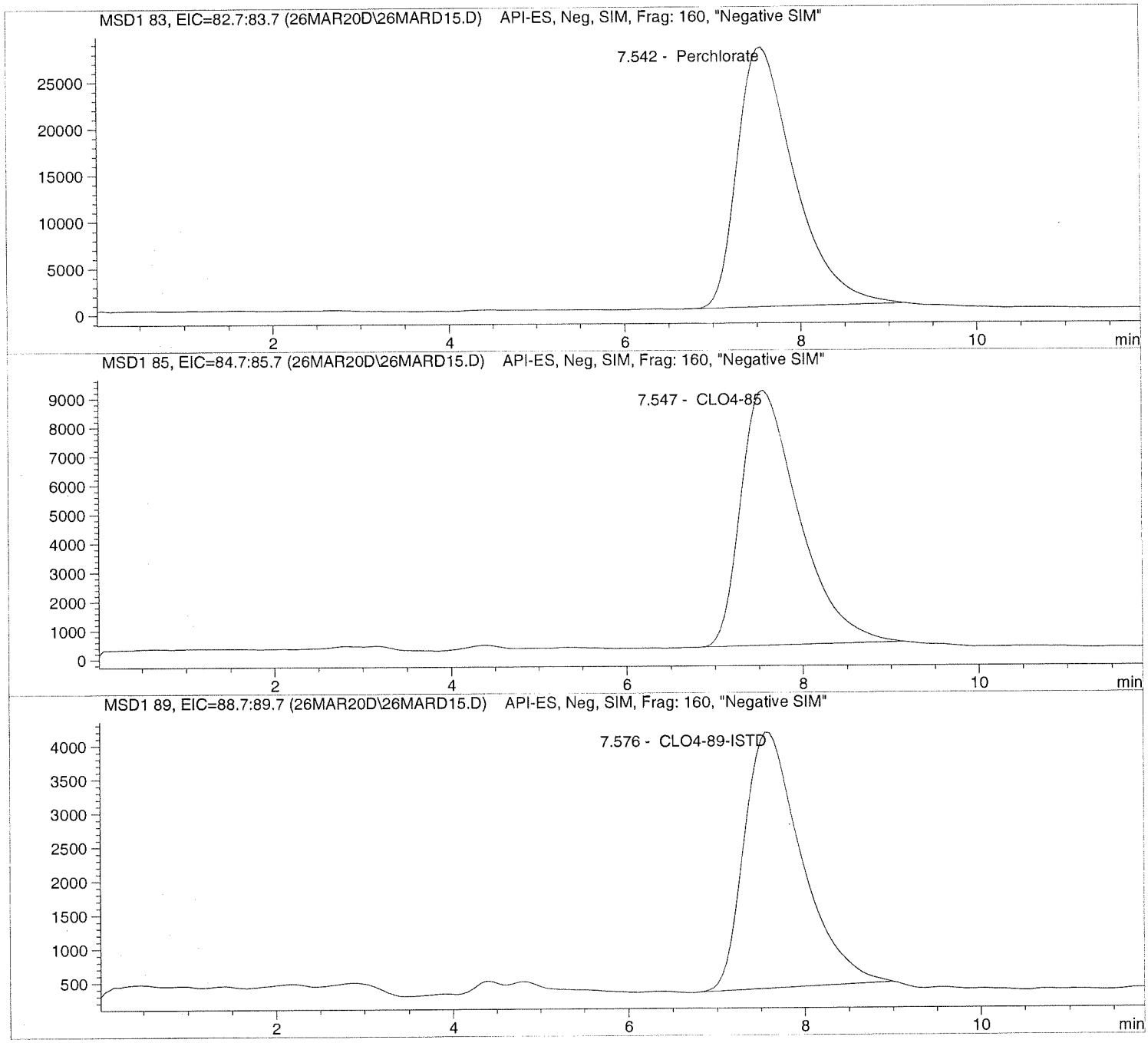
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD15.D Sample Name: 701042 CCV@25

Injection Date:	3/26/2020 11:36:32	Seq Line:	15
Sample Name:	701042 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD15.D Sample Name: 701042 CCV@25

Injection Date:	3/26/2020 11:36:32	Seq Line:	15
Sample Name:	701042 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.542	PBA	1257703.0	25.0421	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.547	PBA	403497.3	26.2306	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.576	PBA	171579.5	5.0000	CLO4-89-ISTD

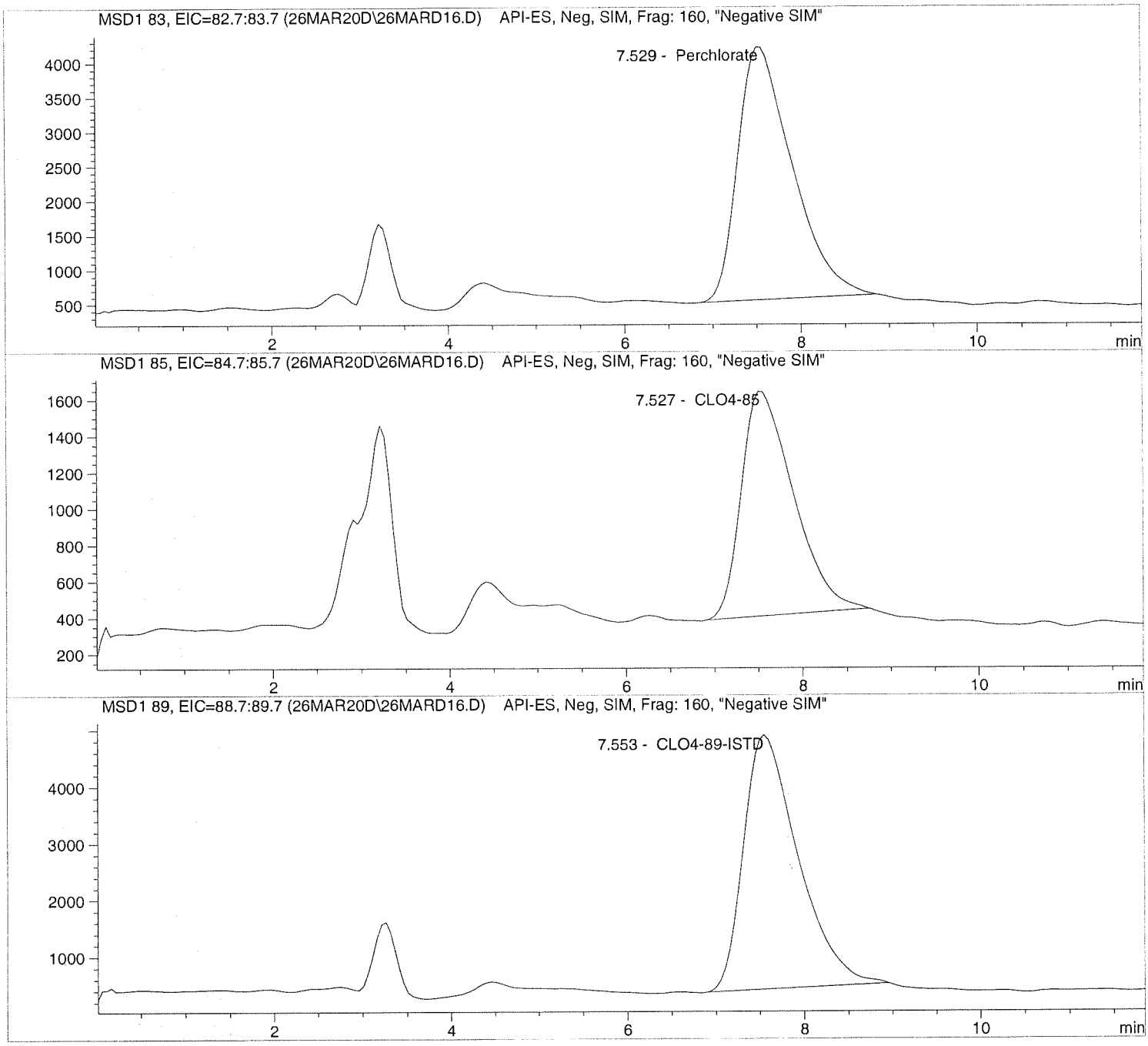
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD16.D Sample Name: 2008310003 MSD

Injection Date:	3/26/2020 11:50:32	Seq Line:	16
Sample Name:	2008310003 MSD	Location:	Vial 85
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD16.D Sample Name: 2008310003 MSD

Injection Date:	3/26/2020 11:50:32	Seq Line:	16
Sample Name:	2008310003 MSD	Location:	Vial 85
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.529	PBA	156764.3	3.0007	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.527	PBA	50765.7	3.0974	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.553	PBA	192226.0	5.0000	CLO4-89-ISTD

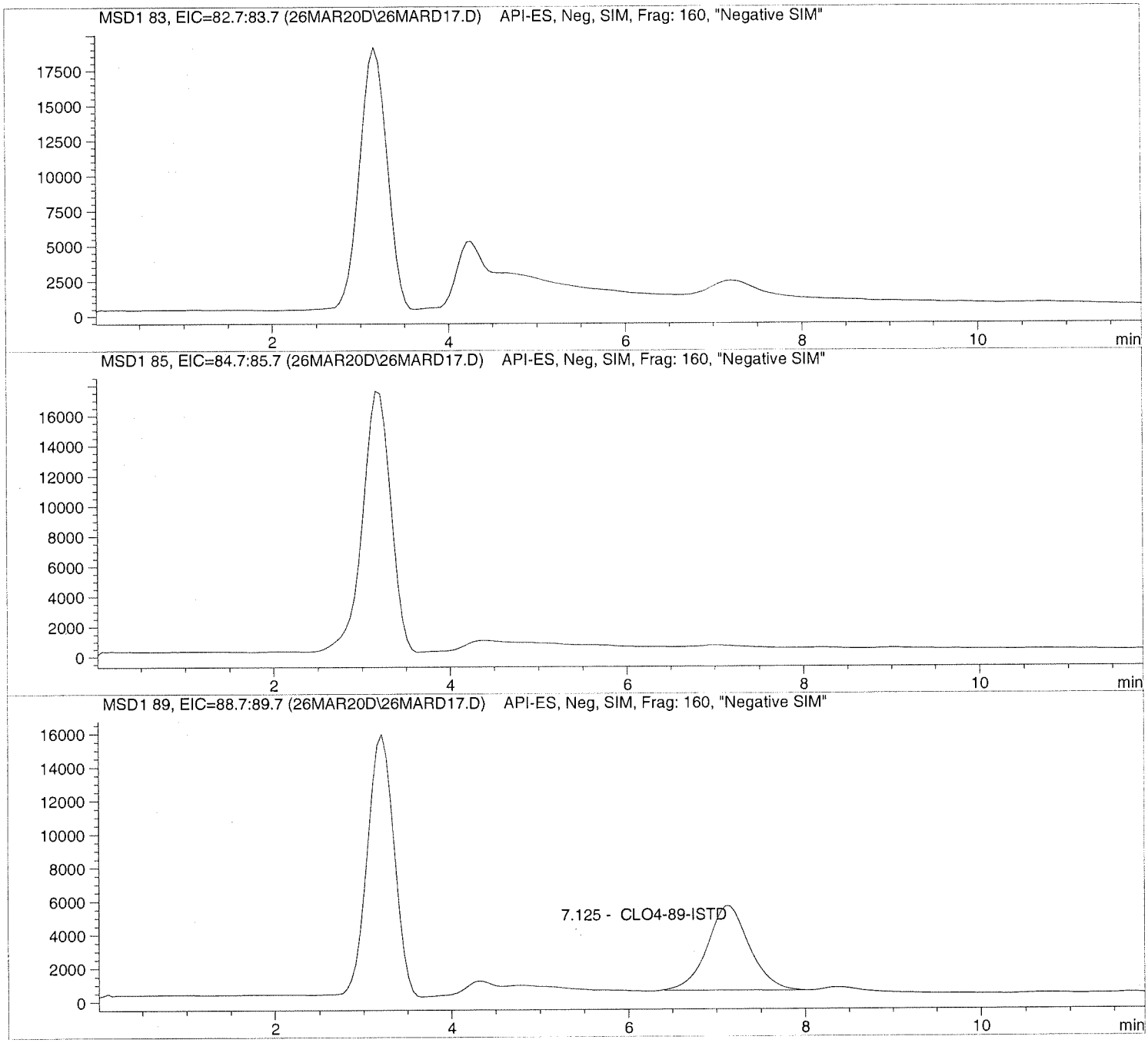
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD17.D Sample Name: 2008310004

Injection Date:	3/26/2020 12:04:29	Seq Line:	17
Sample Name:	2008310004	Location:	Vial 86
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD17.D Sample Name: 2008310004

Injection Date:	3/26/2020 12:04:29	Seq Line:	17
Sample Name:	2008310004	Location:	Vial 86
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.125	PBA	166041.3	5.0000	CLO4-89-ISTD

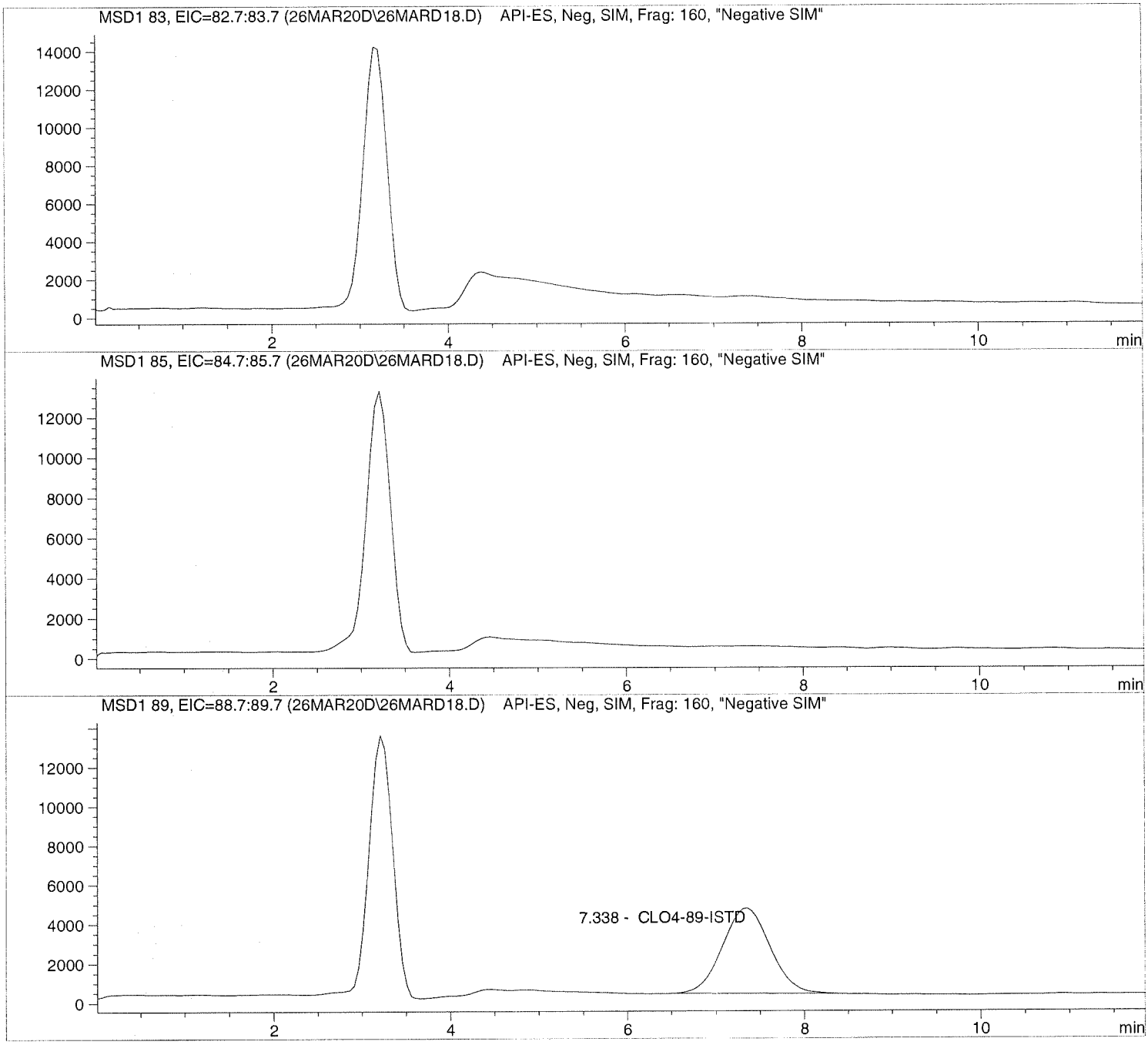
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD18.D Sample Name: 2008310005

Injection Date:	3/26/2020 12:18:26	Seq Line:	18
Sample Name:	2008310005	Location:	Vial 87
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD18.D Sample Name: 2008310005

Injection Date:	3/26/2020 12:18:26	Seq Line:	18
Sample Name:	2008310005	Location:	Vial 87
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.338	PBA	163139.4	5.0000	CLO4-89-ISTD

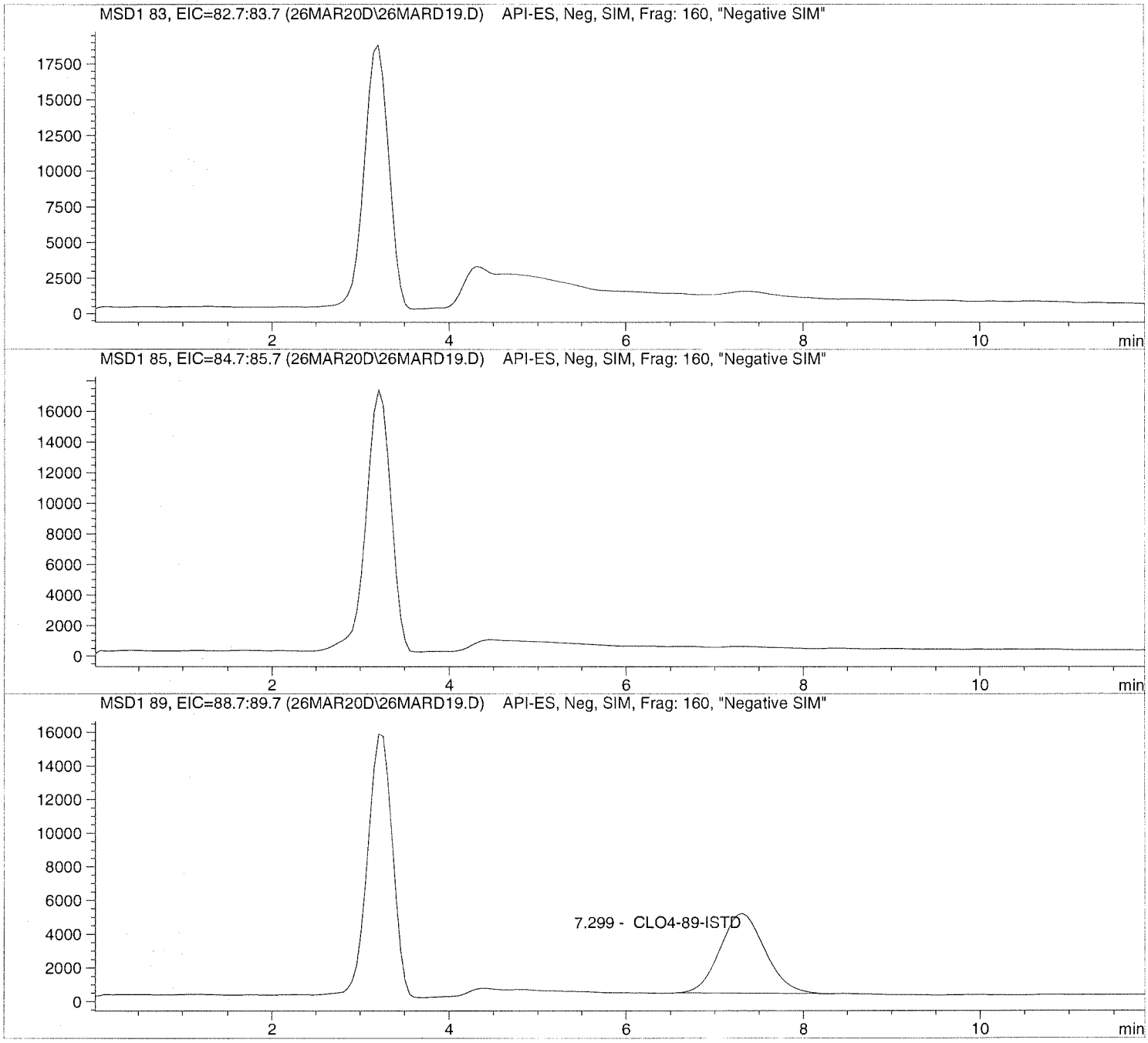
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD19.D Sample Name: 2008310006

Injection Date:	3/26/2020 12:32:24	Seq Line:	19
Sample Name:	2008310006	Location:	Vial 88
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD19.D Sample Name: 2008310006

Injection Date:	3/26/2020 12:32:24	Seq Line:	19
Sample Name:	2008310006	Location:	Vial 88
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.299	PBA	167930.1	5.0000	CLO4-89-ISTD

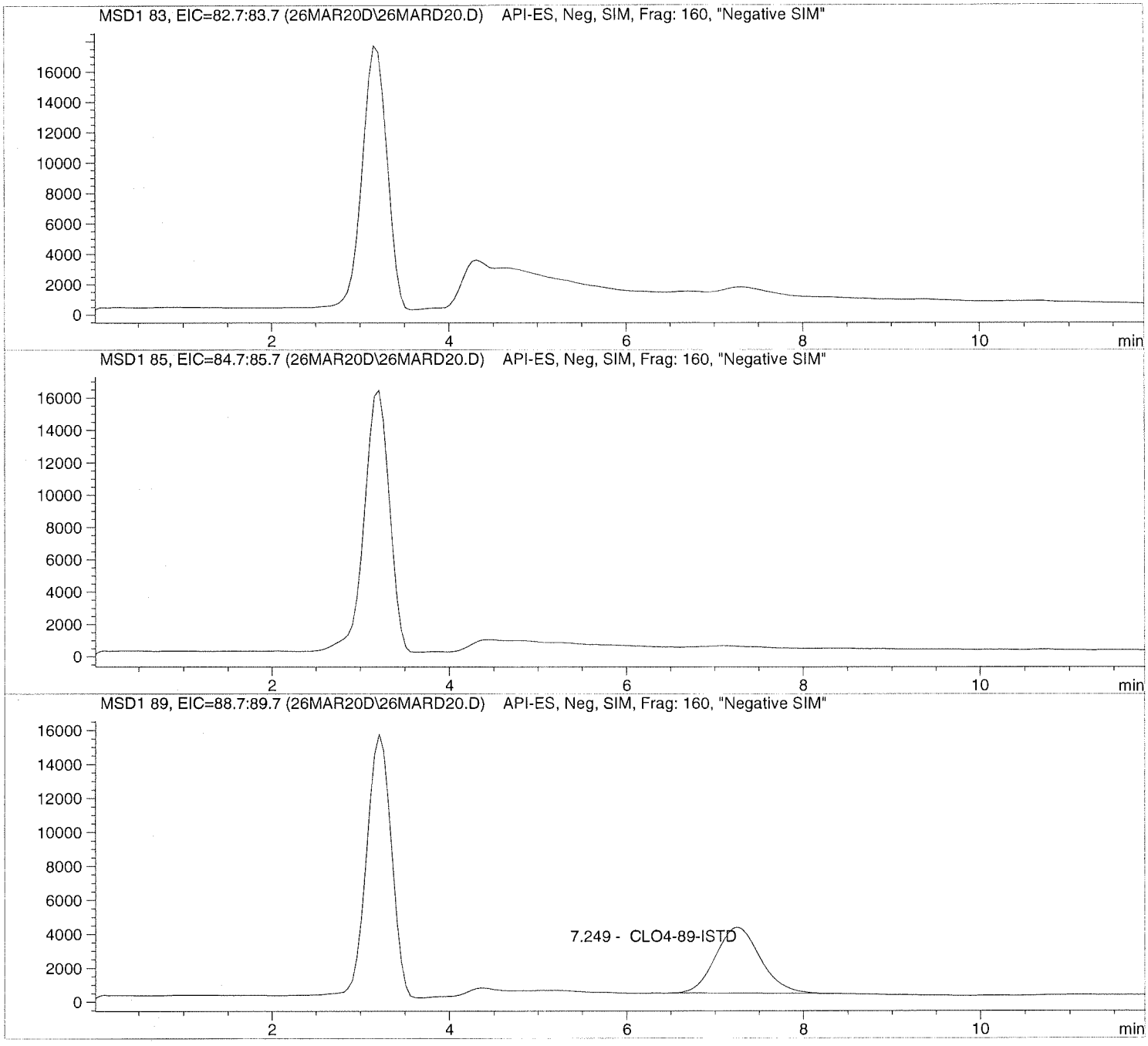
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD20.D Sample Name: 2008310007

Injection Date:	3/26/2020 12:46:26	Seq Line:	20
Sample Name:	2008310007	Location:	Vial 89
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD20.D Sample Name: 2008310007

Injection Date:	3/26/2020 12:46:26	Seq Line:	20
Sample Name:	2008310007	Location:	Vial 89
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.249	PBA	137319.5	5.0000	CLO4-89-ISTD

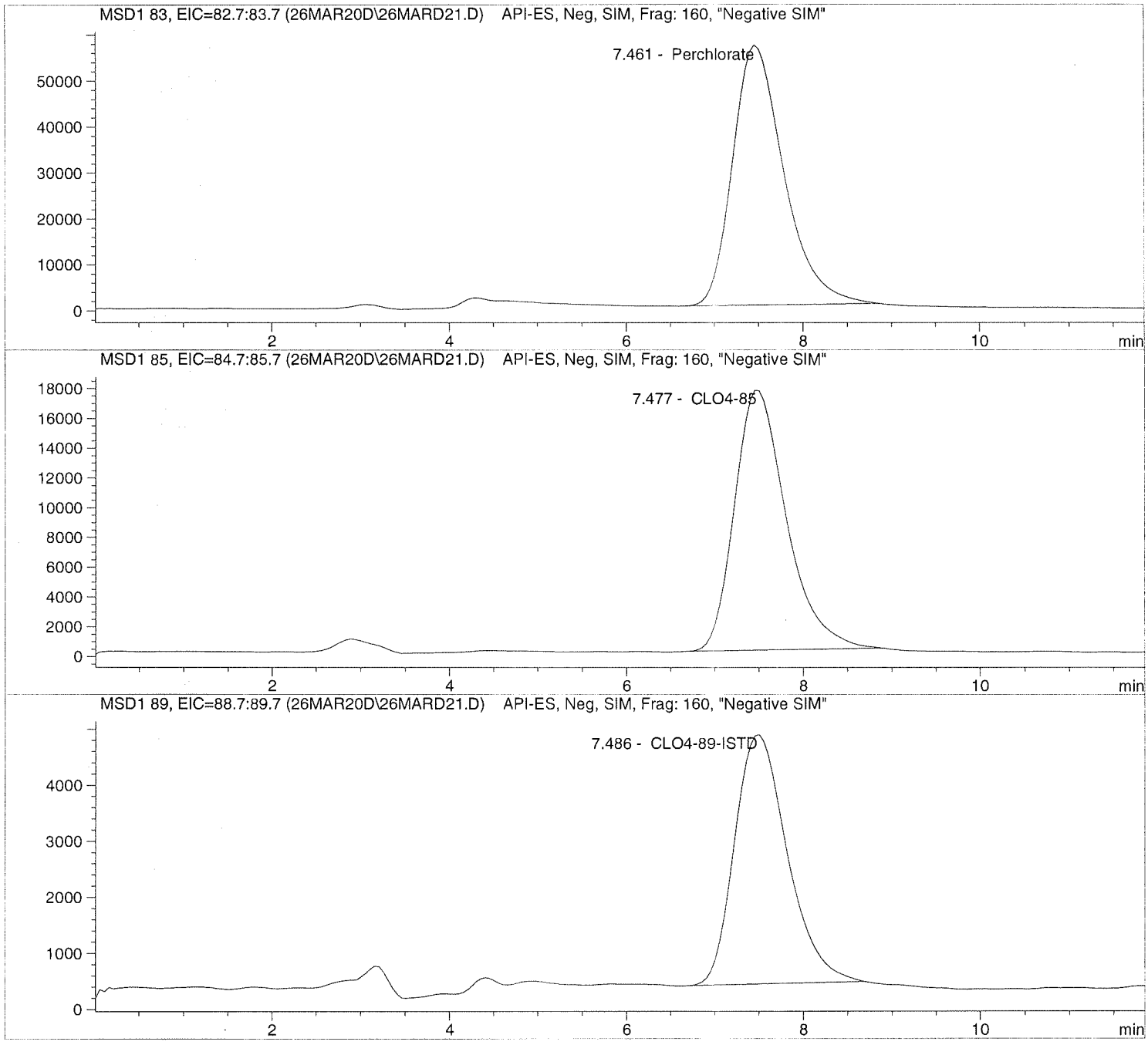
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD21.D Sample Name: 2008310008 10X

Injection Date:	3/26/2020 13:00:24	Seq Line:	21
Sample Name:	2008310008 10X	Location:	Vial 90
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD21.D Sample Name: 2008310008 10X

Injection Date:	3/26/2020 13:00:24	Seq Line:	21
Sample Name:	2008310008 10X	Location:	Vial 90
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	10.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.461	PBA	2264742.3	396.5233	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.477	PBA	708208.9	407.0441	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.486	PBA	183925.3	50.0000	CLO4-89-ISTD

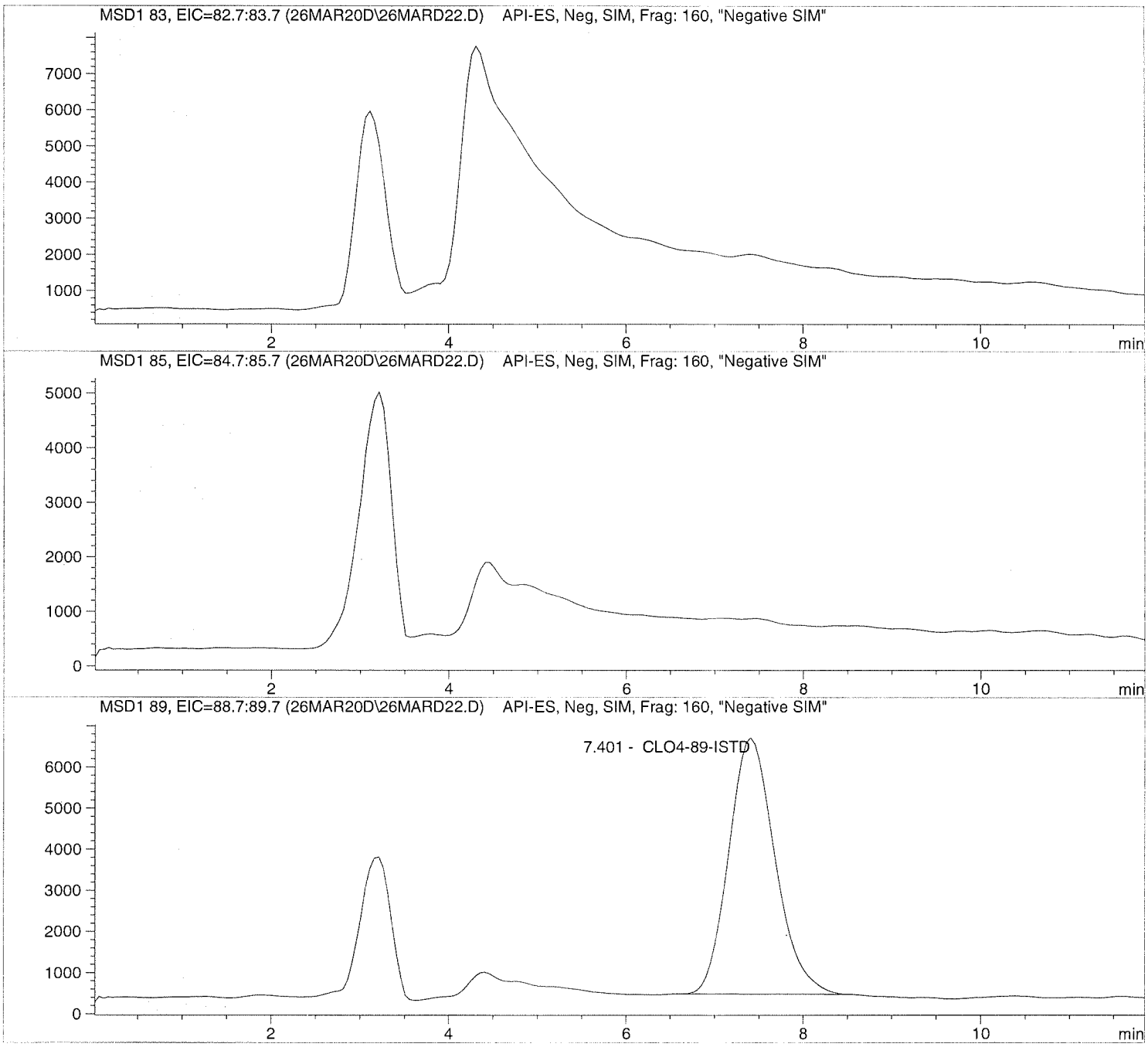
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD22.D Sample Name: 2008310009

Injection Date:	3/26/2020 13:14:36	Seq Line:	22
Sample Name:	2008310009	Location:	Vial 91
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD22.D Sample Name: 2008310009

Injection Date:	3/26/2020 13:14:36	Seq Line:	22
Sample Name:	2008310009	Location:	Vial 91
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.401	PBA	226092.7	5.0000	CLO4-89-ISTD

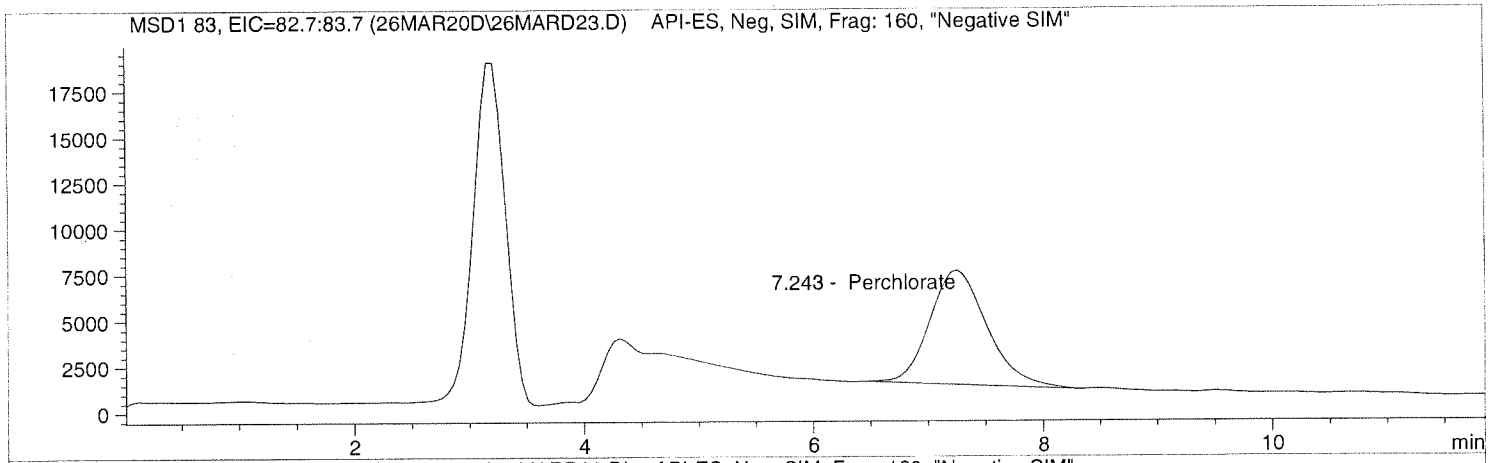
*** End of Report ***

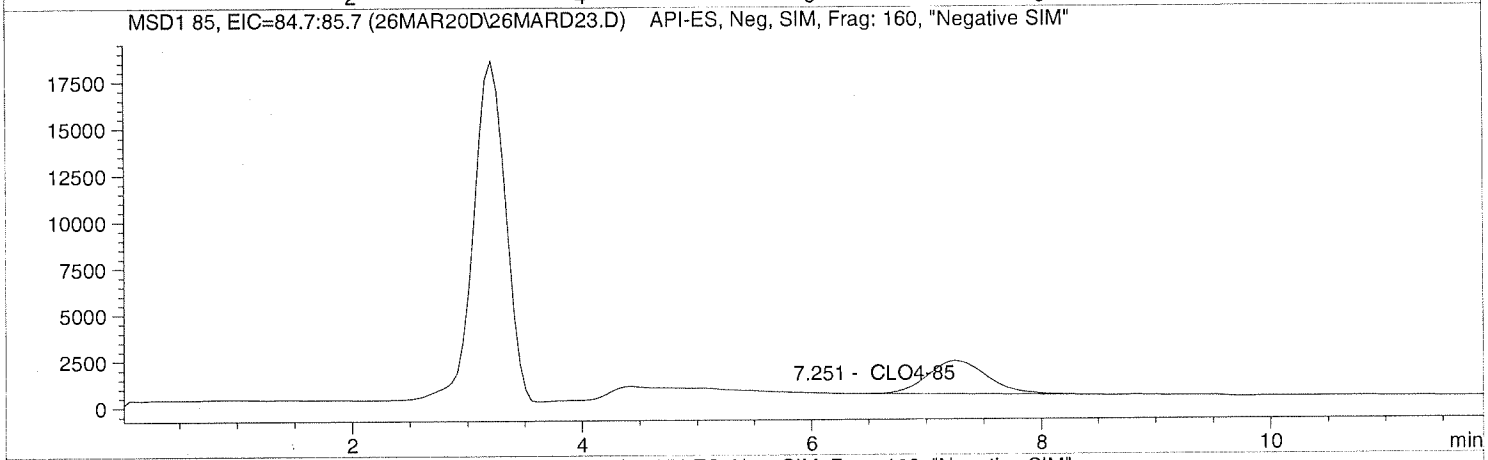
Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD23.D Sample Name: 2008310010

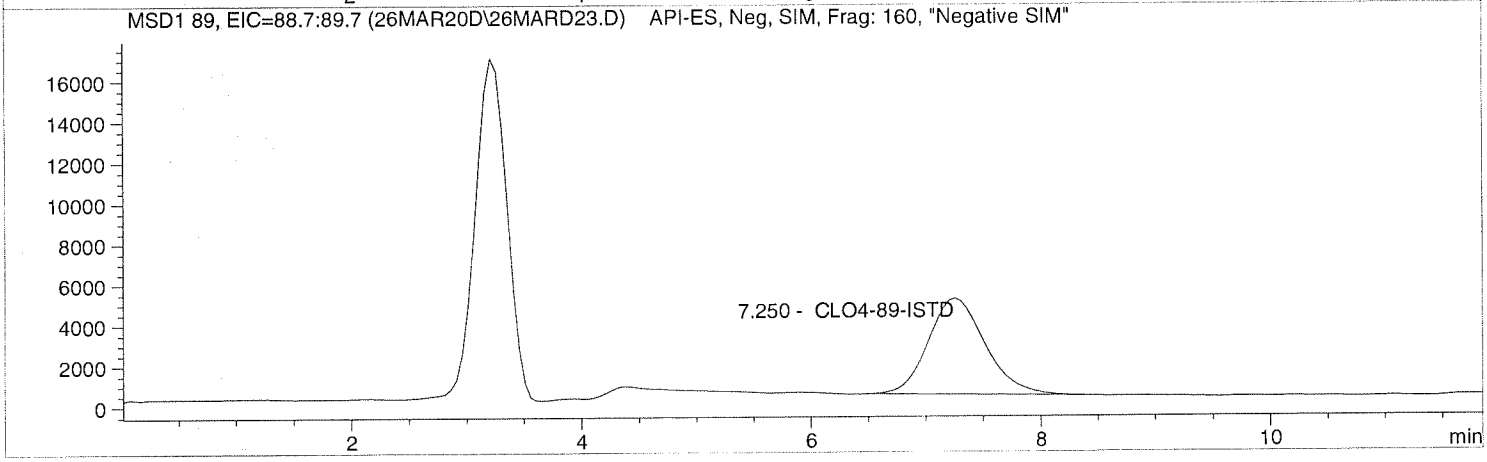
Injection Date:	3/26/2020 13:28:31	Seq Line:	23
Sample Name:	2008310010	Location:	Vial 92
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD23.D Sample Name: 2008310010

Injection Date:	3/26/2020 13:28:31	Seq Line:	23
Sample Name:	2008310010	Location:	Vial 92
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.243	BBA	213687.0	4.8705	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.251	PBA	64563.9	4.7328	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.250	PBA	161722.0	5.0000	CLO4-89-ISTD

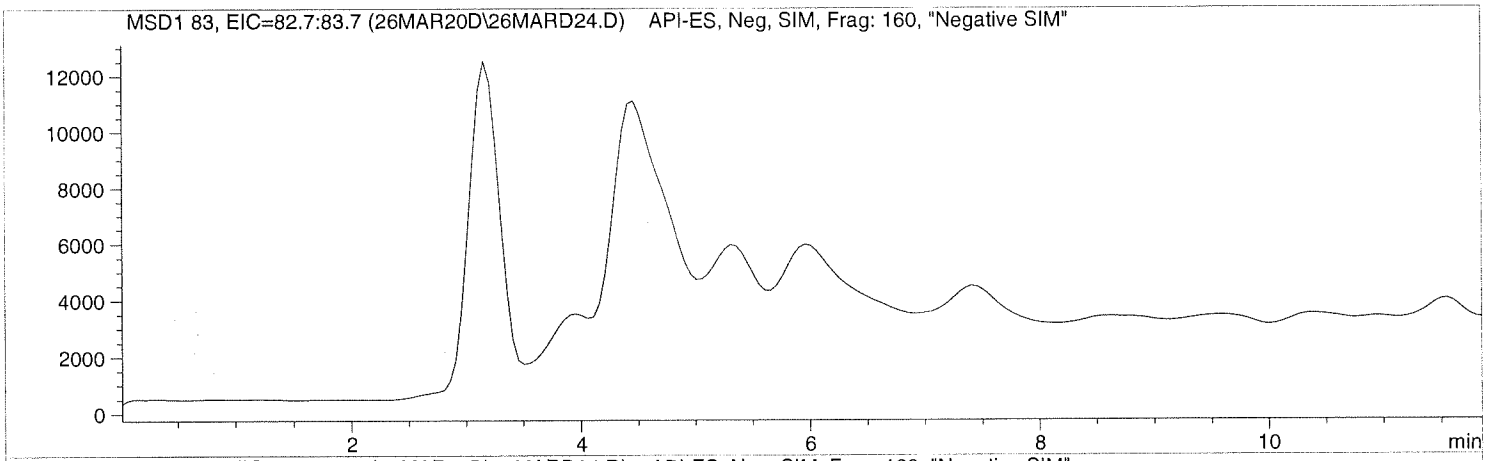
*** End of Report ***

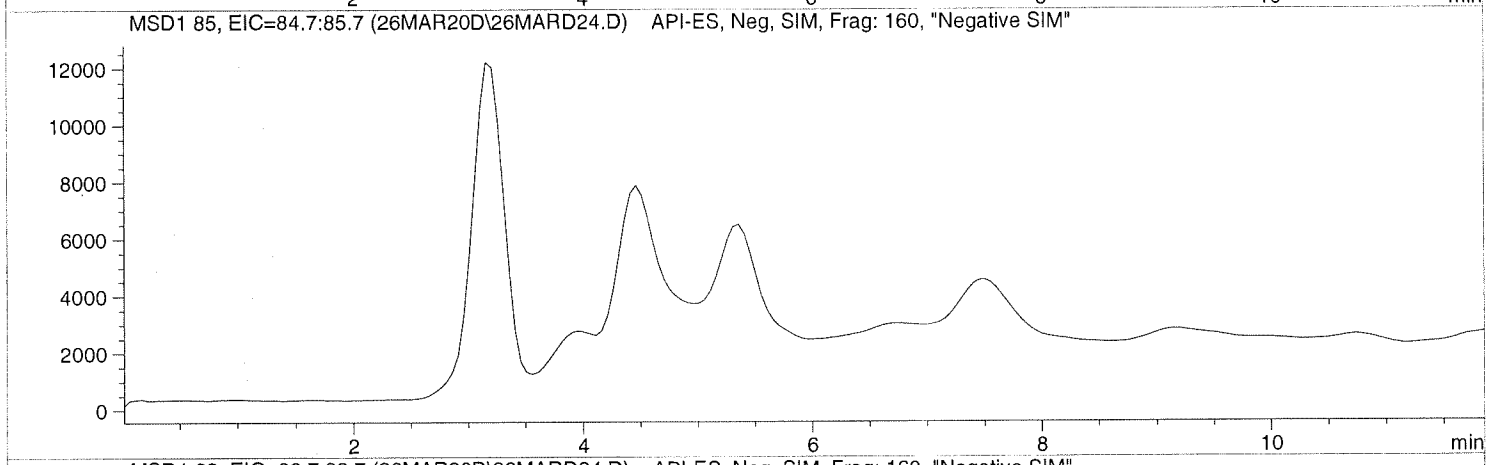
Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD24.D Sample Name: 2008310011

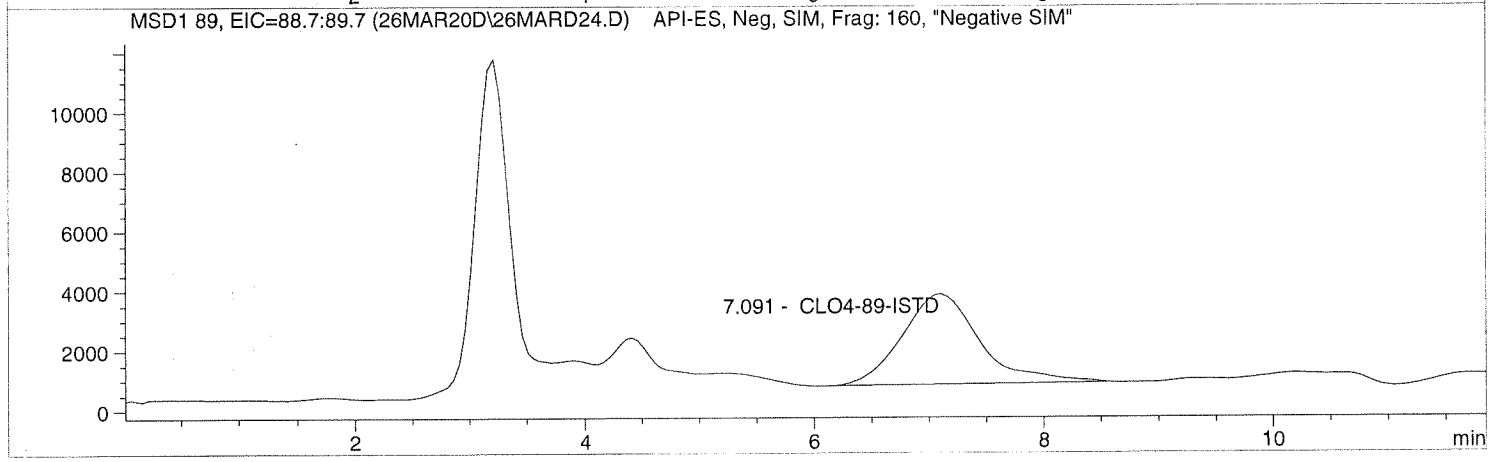
Injection Date:	3/26/2020 13:42:47	Seq Line:	24
Sample Name:	2008310011	Location:	Vial 93
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD24.D Sample Name: 2008310011

Injection Date:	3/26/2020 13:42:47	Seq Line:	24
Sample Name:	2008310011	Location:	Vial 93
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.091	PBA	141774.2	5.0000	CLO4-89-ISTD

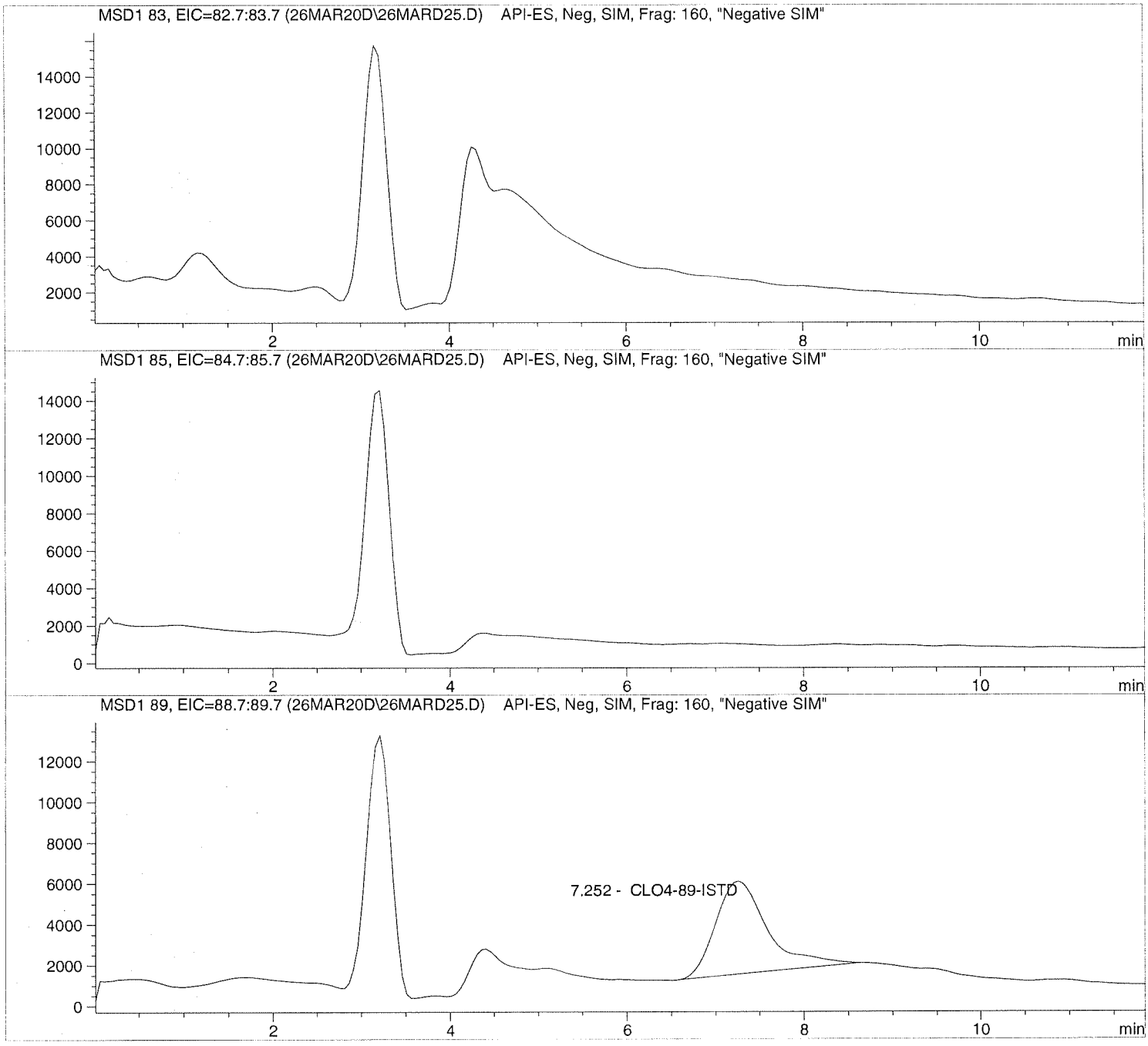
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD25.D Sample Name: 2008310012

Injection Date:	3/26/2020 13:56:46	Seq Line:	25
Sample Name:	2008310012	Location:	Vial 94
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD25.D Sample Name: 2008310012

Injection Date:	3/26/2020 13:56:46	Seq Line:	25
Sample Name:	2008310012	Location:	Vial 94
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.252	PBA	186601.9	5.0000	CLO4-89-ISTD

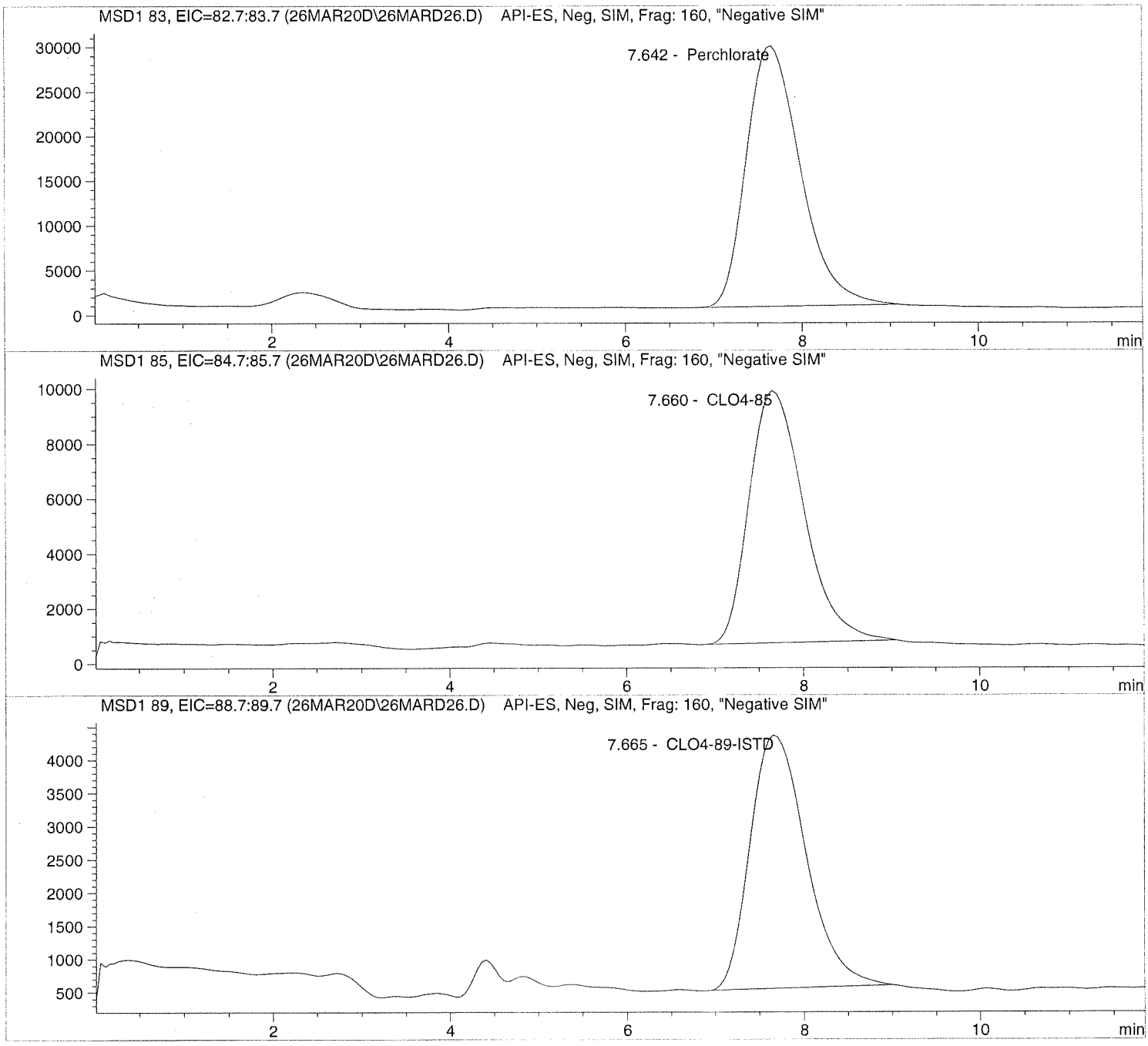
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD26.D Sample Name: 701043 CCV@25

Injection Date:	3/26/2020 14:10:42	Seq Line:	26
Sample Name:	701043 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD26.D Sample Name: 701043 CCV@25

Injection Date:	3/26/2020 14:10:42	Seq Line:	26
Sample Name:	701043 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.642	PBA	1233054.6	25.2923	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.660	PBA	391623.1	26.2521	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.665	PBA	166381.0	5.0000	CLO4-89-ISTD

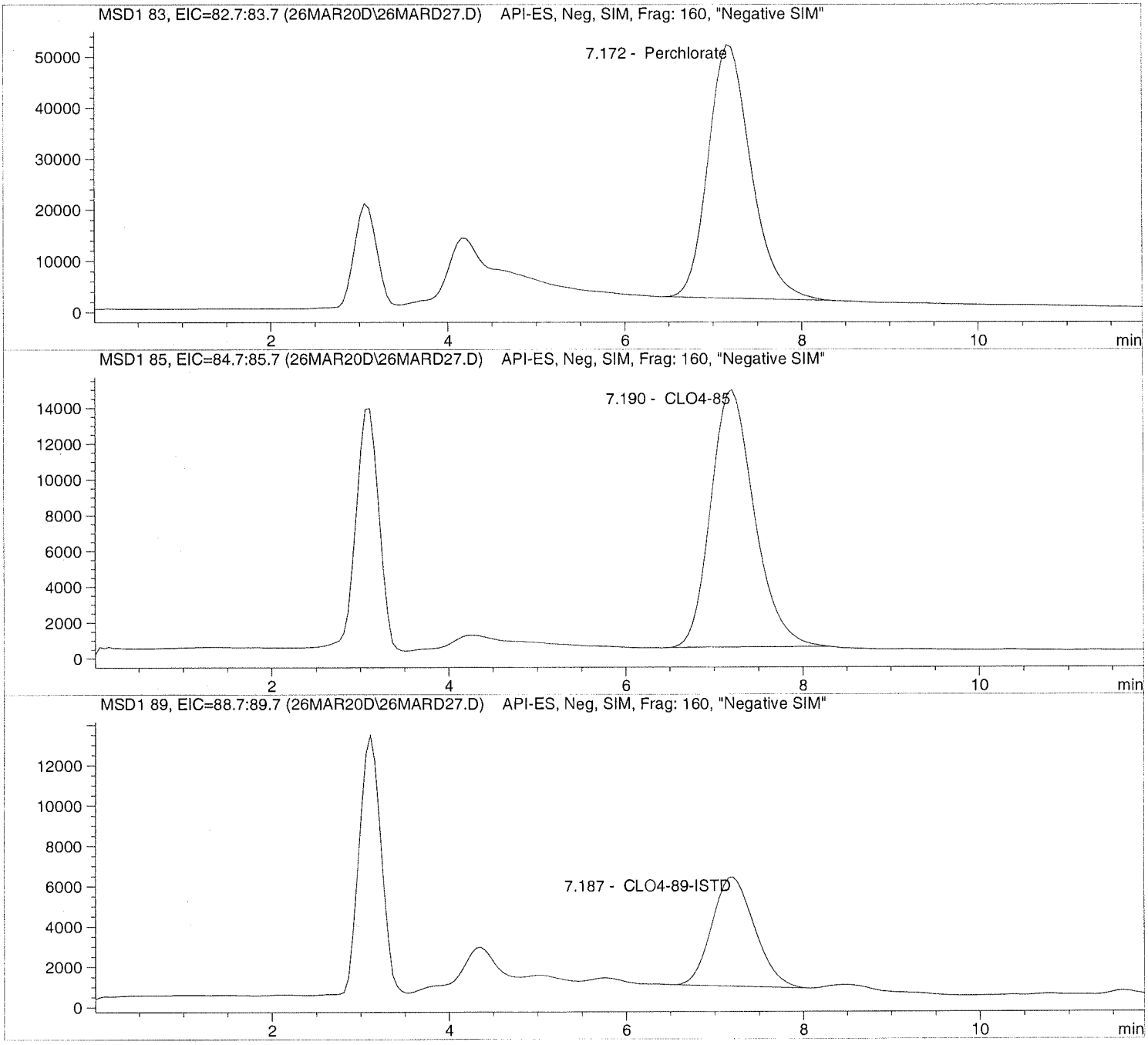
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD27.D Sample Name: 2008062003 10X

Injection Date:	3/26/2020 14:24:42	Seq Line:	27
Sample Name:	2008062003 10X	Location:	Vial 95
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD27.D Sample Name: 2008062003 10X

Injection Date:	3/26/2020 14:24:42	Seq Line:	27
Sample Name:	2008062003 10X	Location:	Vial 95
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	10.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.172	BBA	1661872.5	308.7998	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.190	PBA	489002.0	299.6381	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.187	PBA	179512.0	50.0000	CLO4-89-ISTD

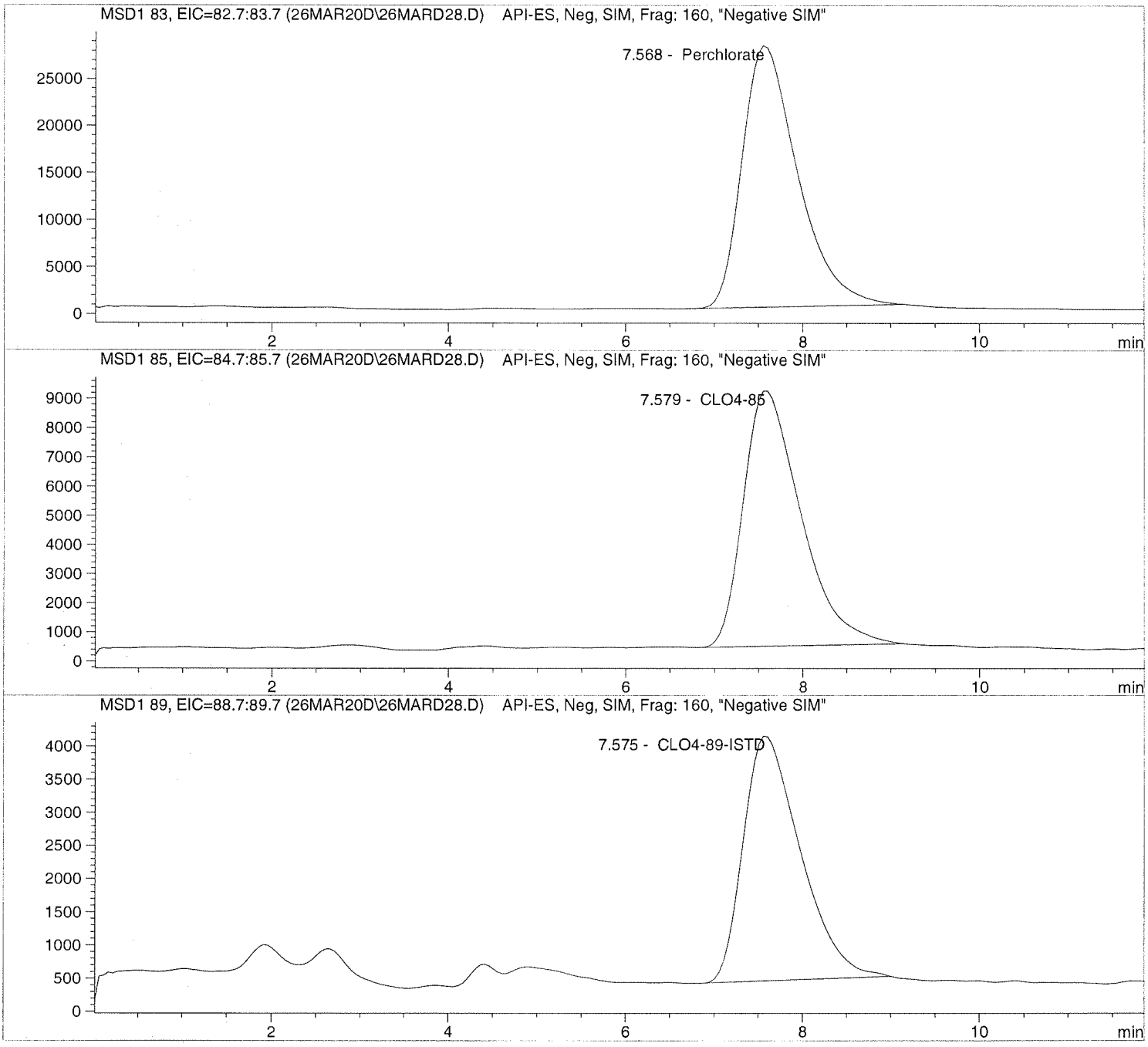
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD28.D Sample Name: 701102 CCV@25

Injection Date:	3/26/2020 14:38:44	Seq Line:	28
Sample Name:	701102 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD28.D Sample Name: 701102 CCV@25

Injection Date:	3/26/2020 14:38:44	Seq Line:	28
Sample Name:	701102 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.568	PBA	1215789.9	25.0215	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.579	PBA	397063.1	26.6375	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.575	PBA	166012.1	5.0000	CLO4-89-ISTD

*** End of Report ***

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

Initial Calibration

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

Calibration Table

Perchlorate

Calib. Data Modified : 9/23/2019 12:20:59 PM

Calculate : Internal Standard
Based on : Peak Area

Rel. Reference Window : 20.000 %
Abs. Reference Window : 0.000 min
Rel. Non-ref. Window : 20.000 %
Abs. Non-ref. Window : 0.000 min
Use Multiplier & Dilution Factor with ISTDs
Uncalibrated Peaks : not reported
Partial Calibration : No recalibration if peaks missing

Curve Type : Quadratic (some peaks differ, see below)
Origin : Ignored (some peaks differ, see below)
Weight : Linear (Amnt) (some peaks differ, see below)

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Default Sample ISTD Information (if not set in sample table):

ISTD #	ISTD Amount	Name
1	5.00000	CLO4-89-ISTD

Signal 1: MSD1 83, EIC=82.7:83.7
Signal 2: MSD1 85, EIC=84.7:85.7
Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Lvl Sig		Amount	Area	Amt/Area	Ref	Grp	Name
7.750	1	3	1.00000	5.39218e4	1.85454e-5		1	Perchlorate
		4	2.00000	1.32825e5	1.50574e-5			
		5	5.00000	2.76271e5	1.80982e-5			
		6	10.00000	5.61298e5	1.78159e-5			
		7	25.00000	1.51820e6	1.64669e-5			
		8	50.00000	3.31156e6	1.50986e-5			
		9	75.00000	5.23914e6	1.43153e-5			
7.767	3	3	5.00000	2.14568e5	2.33026e-5	+I1		CLO4-89-ISTD
		4	5.00000	2.04758e5	2.44190e-5			
		5	5.00000	2.13407e5	2.34294e-5			
		6	5.00000	2.09246e5	2.38953e-5			
		7	5.00000	2.07403e5	2.41077e-5			
		8	5.00000	2.02929e5	2.46391e-5			
		9	5.00000	1.97933e5	2.52611e-5			
7.778	2	3	1.00000	1.70436e4	5.86732e-5		1	CLO4-85
		4	2.00000	4.20754e4	4.75337e-5			
		5	5.00000	9.24707e4	5.40712e-5			
		6	10.00000	1.68622e5	5.93041e-5			
		7	25.00000	4.63724e5	5.39114e-5			
		8	50.00000	9.95933e5	5.02042e-5			

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

RetTime [min]	Sig	Lvl	Amount	Area	Amt/Area	Ref	Grp	Name
		9	75.00000	1.58066e6	4.74484e-5			

More compound-specific settings:

Compound: Perchlorate
- Time Window : From 3.581 min To 11.899 min
- Curve Type : Quadratic
- Origin : Ignored
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 0.5
  - Level 5 : 0.2
  - Level 6 : 0.1
  - Level 7 : 0.04
  - Level 8 : 0.02
  - Level 9 : 0.013333

Compound: CLO4-89-ISTD
- Time Window : From 3.581 min To 11.896 min
- Curve Type : Linear
- Origin : Included
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 1
  - Level 5 : 1
  - Level 6 : 1
  - Level 7 : 1
  - Level 8 : 1
  - Level 9 : 1

Compound: CLO4-85
- Time Window : From 3.601 min To 11.913 min
- Curve Type : Quadratic
- Origin : Ignored
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 0.5
  - Level 5 : 0.2
  - Level 6 : 0.1
  - Level 7 : 0.04
  - Level 8 : 0.02
  - Level 9 : 0.013333

==========

Peak Sum Table

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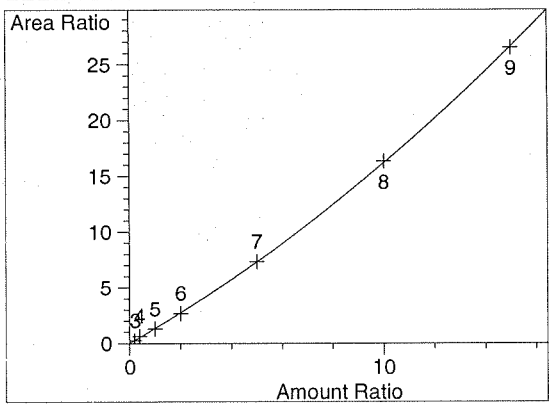
No Entries in table

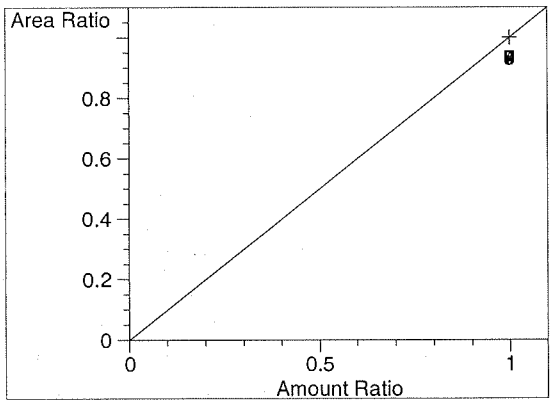
==========

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

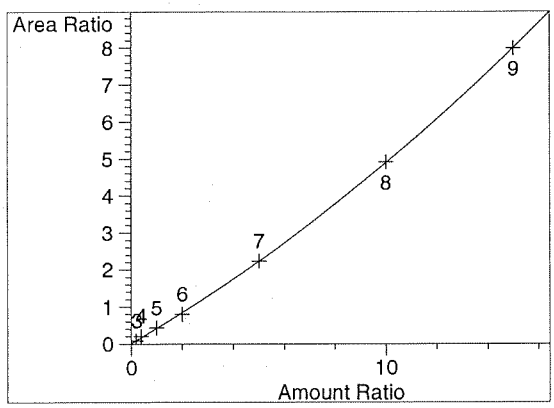
Calibration Curves



Perchlorate at exp. RT: 7.750
MSD1 83, EIC=82.7:83.7
Correlation: 0.99975
Residual Std. Dev.: 0.10284
Formula: $y = ax^2 + bx + c$
a: 3.10463e-2
b: 1.30369
c: 2.19496e-2
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 0.5
Level 5 : 0.2
Level 6 : 0.1
Level 7 : 0.04
Level 8 : 0.02
Level 9 : 0.013333



CLO4-89-ISTD at exp. RT: 7.767
MSD1 89, EIC=88.7:89.7
Correlation: 1.00000
Residual Std. Dev.: 0.00000
Formula: $y = mx + b$
m: 1.00000
b: 0.00000
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 1
Level 5 : 1
Level 6 : 1
Level 7 : 1
Level 8 : 1
Level 9 : 1



CLO4-85 at exp. RT: 7.778
MSD1 85, EIC=84.7:85.7
Correlation: 0.99969
Residual Std. Dev.: 0.02601
Formula: $y = ax^2 + bx + c$
a: 8.85207e-3
b: 3.99283e-1
c: 1.33505e-2
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 0.5
Level 5 : 0.2
Level 6 : 0.1
Level 7 : 0.04
Level 8 : 0.02
Level 9 : 0.013333

Batch Report: C:\HPCHEM\1\DATA\20SEP19I\20SEP19D.B

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DP3.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorat RT	Perchlorate Amount
#*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	5.39218e4	7.750	8.75982e-1
#*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	1.32825e5	7.797	2.37682
#*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	2.76271e5	7.770	4.77237
#*	CLO4@ 10.ug/L	Vial 76	1	Control	6	5.61298e5	7.785	9.75097
#*	CLO4@ 25.ug/L	Vial 77	1	Control	7	1.51820e6	7.741	25.01082
#*	CLO4@ 50.ug/L	Vial 78	1	Control	8	3.31156e6	7.775	50.40300
#*	CLO4@ 75.ug/L	Vial 79	1	Control	9	5.23914e6	7.736	74.79107
#*	ICAL Verf@10ug/L	Vial 80	1	Control	11	5.74879e5	7.756	10.11855

#	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-IS RT	CLO4-89-ISTD Amount
#*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	2.14568e5	7.767	5.00000
#*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	2.04758e5	7.816	5.00000
#*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	2.13407e5	7.793	5.00000
#*	CLO4@ 10.ug/L	Vial 76	1	Control	6	2.09246e5	7.798	5.00000
#*	CLO4@ 25.ug/L	Vial 77	1	Control	7	2.07403e5	7.763	5.00000
#*	CLO4@ 50.ug/L	Vial 78	1	Control	8	2.02929e5	7.800	5.00000
#*	CLO4@ 75.ug/L	Vial 79	1	Control	9	1.97933e5	7.765	5.00000
#*	ICAL Verf@10ug/L	Vial 80	1	Control	11	2.06243e5	7.776	5.00000

#	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
#*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	1.70436e4	7.778	8.24488e-1
#*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	4.20754e4	7.805	2.38090
#*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	9.24707e4	7.787	5.14166
#*	CLO4@ 10.ug/L	Vial 76	1	Control	6	1.68622e5	7.781	9.52209
#*	CLO4@ 25.ug/L	Vial 77	1	Control	7	4.63724e5	7.760	25.04916
#*	CLO4@ 50.ug/L	Vial 78	1	Control	8	9.95933e5	7.793	50.14223
#*	CLO4@ 75.ug/L	Vial 79	1	Control	9	1.58066e6	7.758	74.93659
#*	ICAL Verf@10ug/L	Vial 80	1	Control	11	1.71000e5	7.760	9.79043

*** End of Report ***

Sequence: C:\HPCHEM\1\SEQUENCE\CLO4\2019\SEP\20SEP19I.S

Sequence Table:

Method and Injection Info Part:

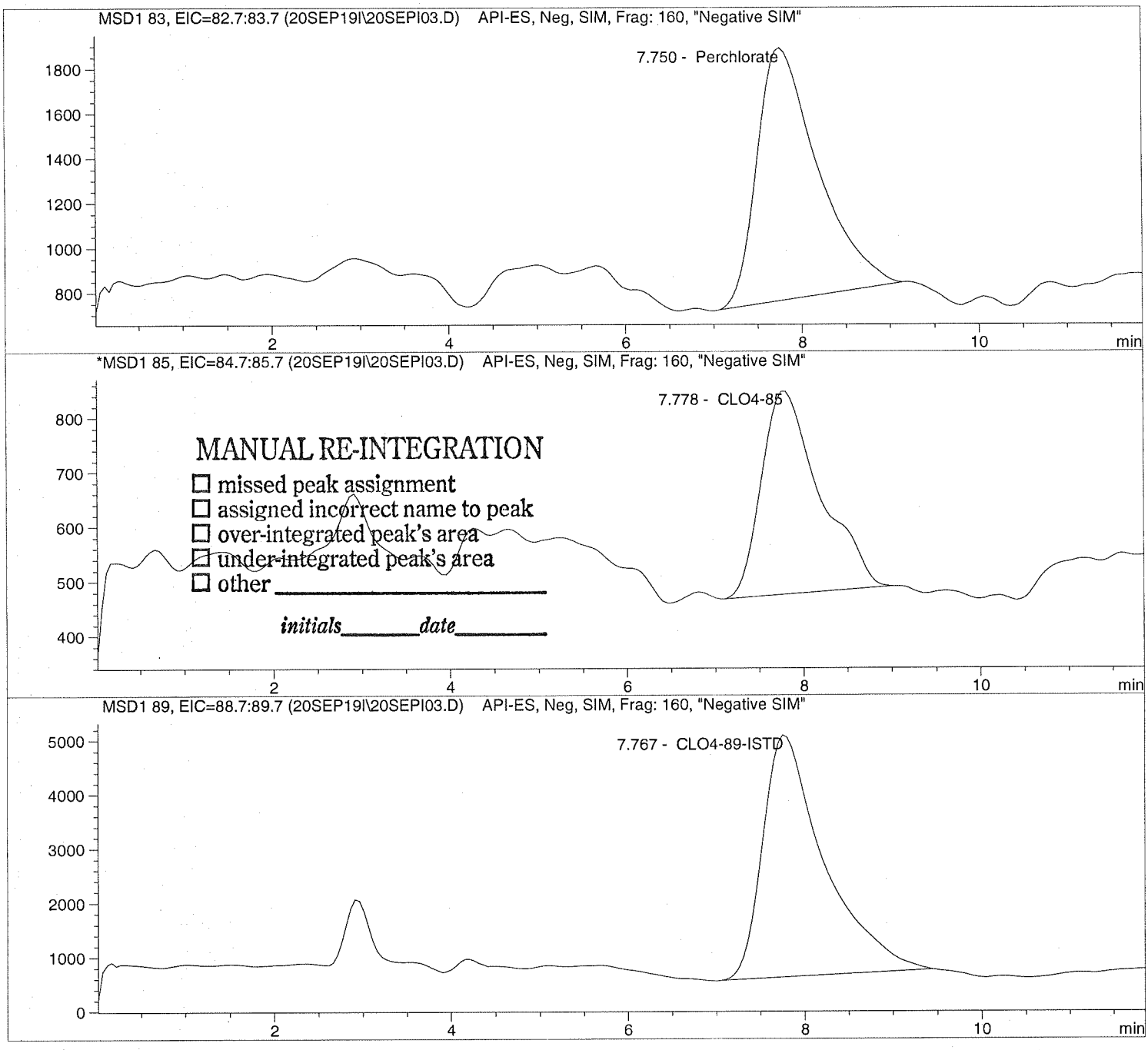
Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 71	CLO4@ 0.2ug/L	CLO4-AQN	1	Ctrl Samp		
2	Vial 72	CLO4@ 0.5ug/L	CLO4-AQN	1	Ctrl Samp		
3	Vial 73	CLO4@ 1.0ug/L	CLO4-AQN	1	Ctrl Samp		
4	Vial 74	CLO4@ 2.0ug/L	CLO4-AQN	1	Ctrl Samp		
5	Vial 75	CLO4@ 5.0ug/L	CLO4-AQN	1	Ctrl Samp		
6	Vial 76	CLO4@ 10.ug/L	CLO4-AQN	1	Ctrl Samp		
7	Vial 77	CLO4@ 25.ug/L	CLO4-AQN	1	Ctrl Samp		
8	Vial 78	CLO4@ 50.ug/L	CLO4-AQN	1	Ctrl Samp		
9	Vial 79	CLO4@ 75.ug/L	CLO4-AQN	1	Ctrl Samp		
10	Vial 71	CLO4@ 0.2ug/L	CLO4-AQN	1	Ctrl Samp		
11	Vial 80	ICAL Verf@10ug/L	CLO4-AQN	1	Ctrl Samp		

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.750	PBA	53921.8	0.8760	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.778	MM	17043.6	0.8245	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.767	PBA	214568.1	5.0000	CLO4-89-ISTD

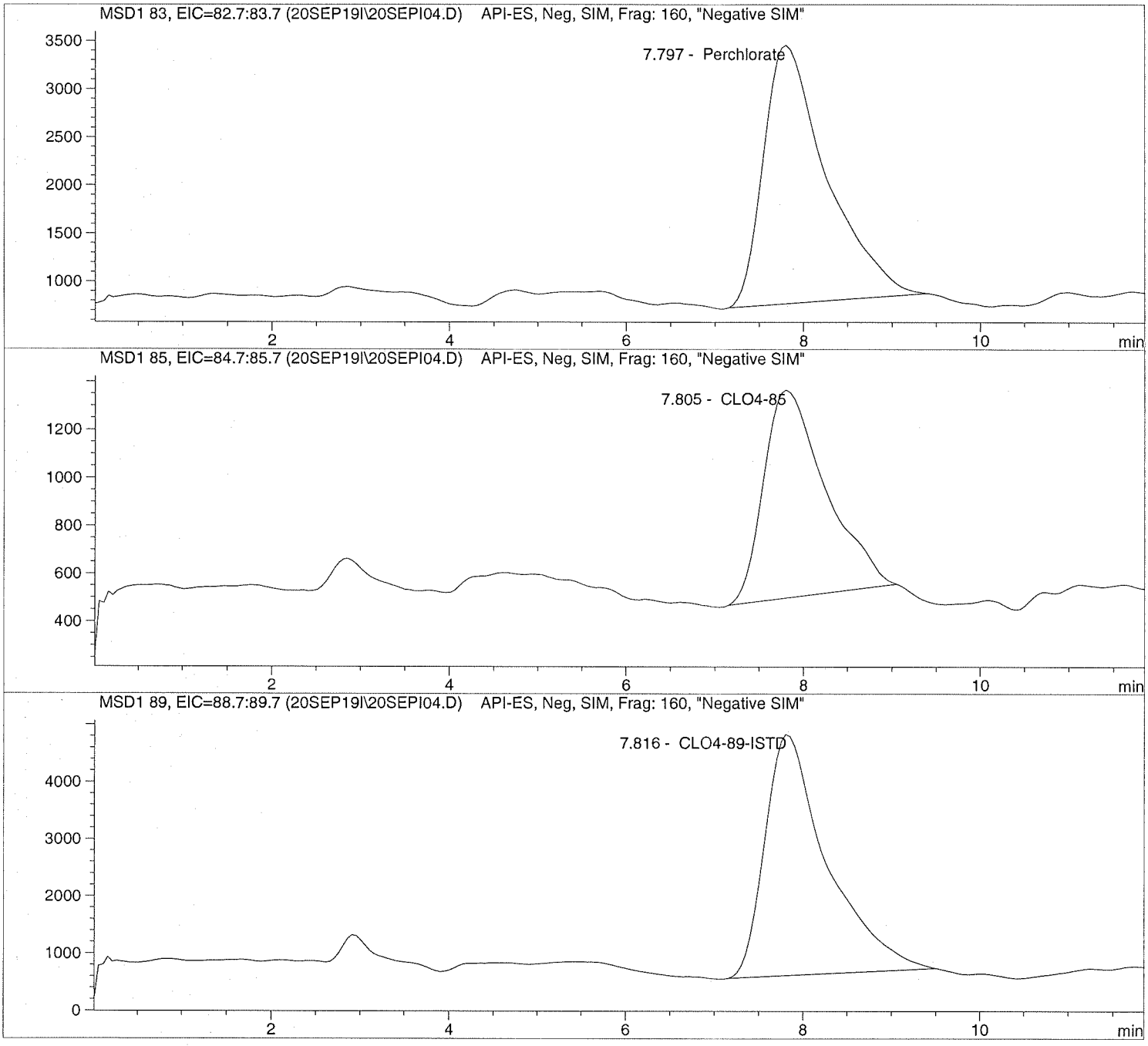
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI04.D Sample Name: CLO4@ 2.0ug/L

Injection Date:	9/20/2019 09:37:58	Seq Line:	4
Sample Name:	CLO4@ 2.0ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI04.D Sample Name: CLO4@ 2.0ug/L

Injection Date:	9/20/2019 09:37:58	Seq Line:	4
Sample Name:	CLO4@ 2.0ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	2.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.797	PBA	132825.2	2.3768	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.805	PBA	42075.4	2.3809	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.816	PBA	204758.3	5.0000	CLO4-89-ISTD

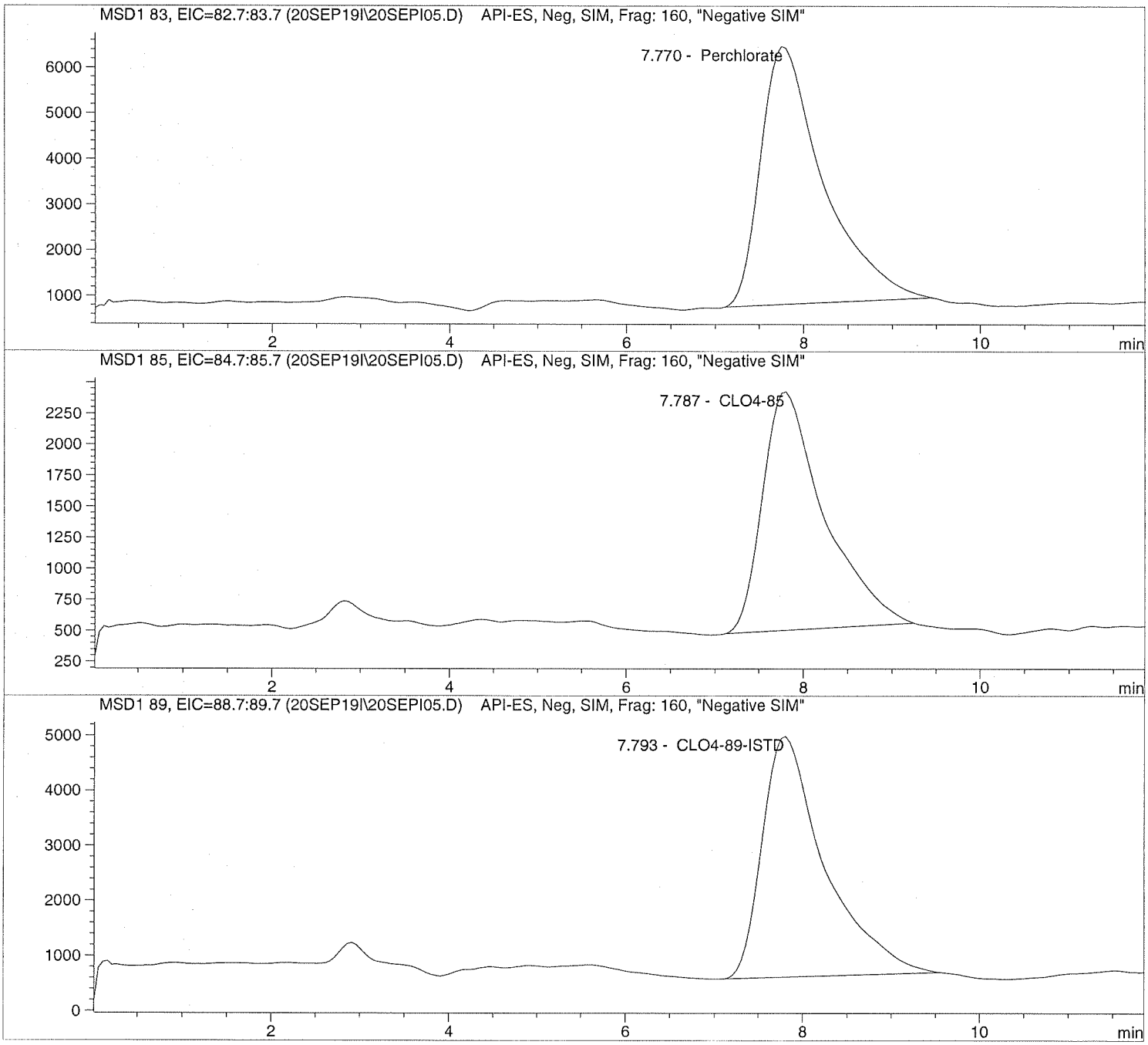
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI05.D Sample Name: CLO4@ 5.0ug/L

Injection Date:	9/20/2019 09:51:49	Seq Line:	5
Sample Name:	CLO4@ 5.0ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI05.D Sample Name: CLO4@ 5.0ug/L

Injection Date:	9/20/2019 09:51:49	Seq Line:	5
Sample Name:	CLO4@ 5.0ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	5.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.770	PBA	276270.7	4.7724	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.787	PBA	92470.7	5.1417	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.793	PBA	213407.0	5.0000	CLO4-89-ISTD

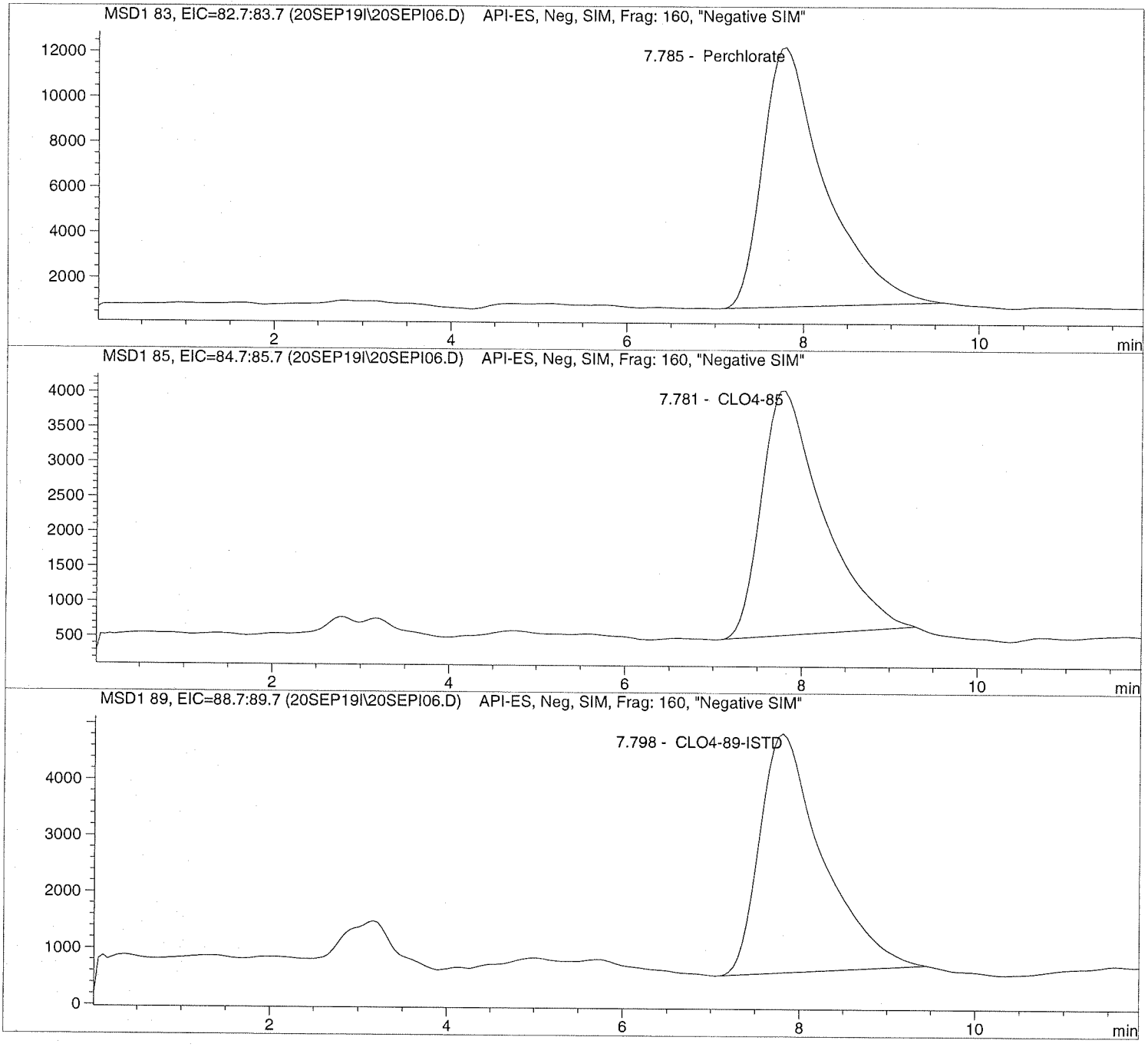
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI06.D Sample Name: CLO4@ 10.ug/L

Injection Date:	9/20/2019 10:05:36	Seq Line:	6
Sample Name:	CLO4@ 10.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI06.D Sample Name: CLO4@ 10.ug/L

Injection Date:	9/20/2019 10:05:36	Seq Line:	6
Sample Name:	CLO4@ 10.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.785	PBA	561297.7	9.7510	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.781	PBA	168622.4	9.5221	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.798	PBA	209246.3	5.0000	CLO4-89-ISTD

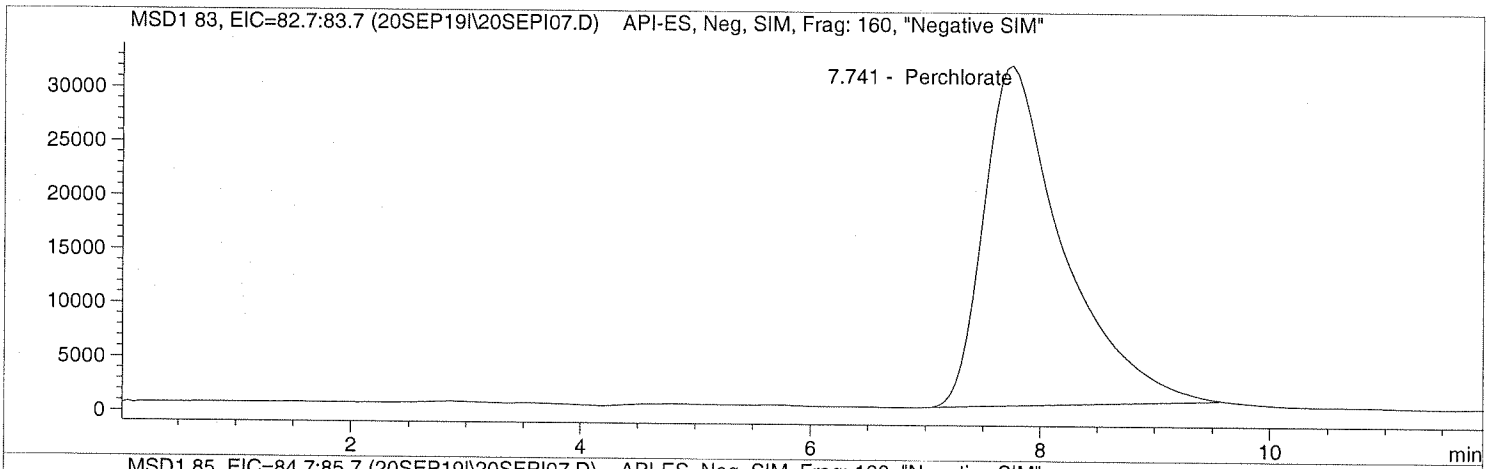
*** End of Report ***

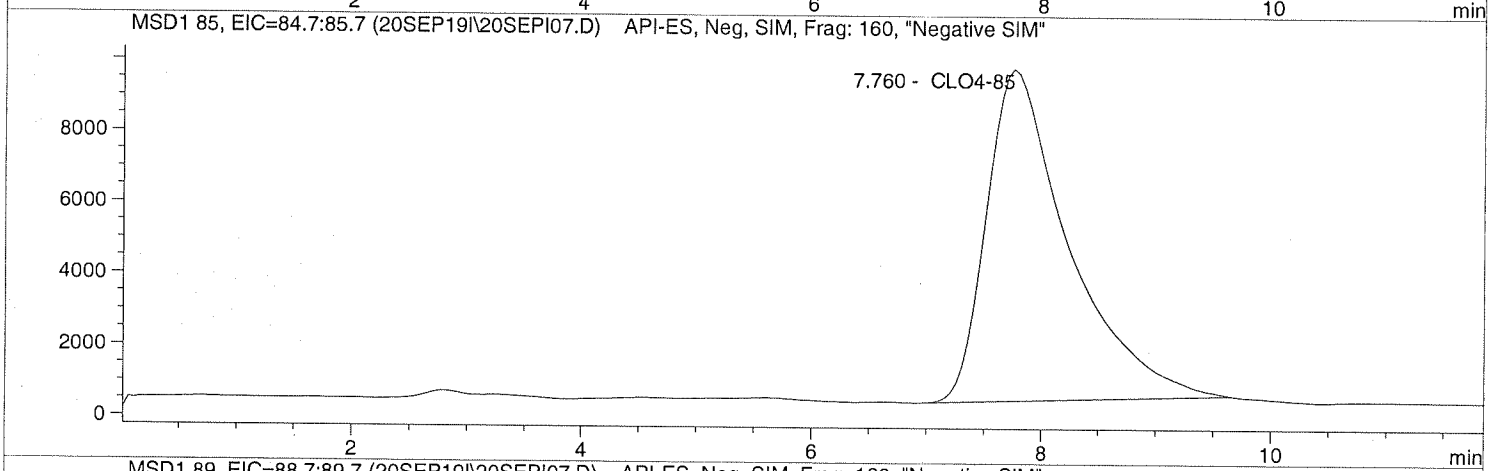
Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI07.D Sample Name: CLO4@ 25.ug/L

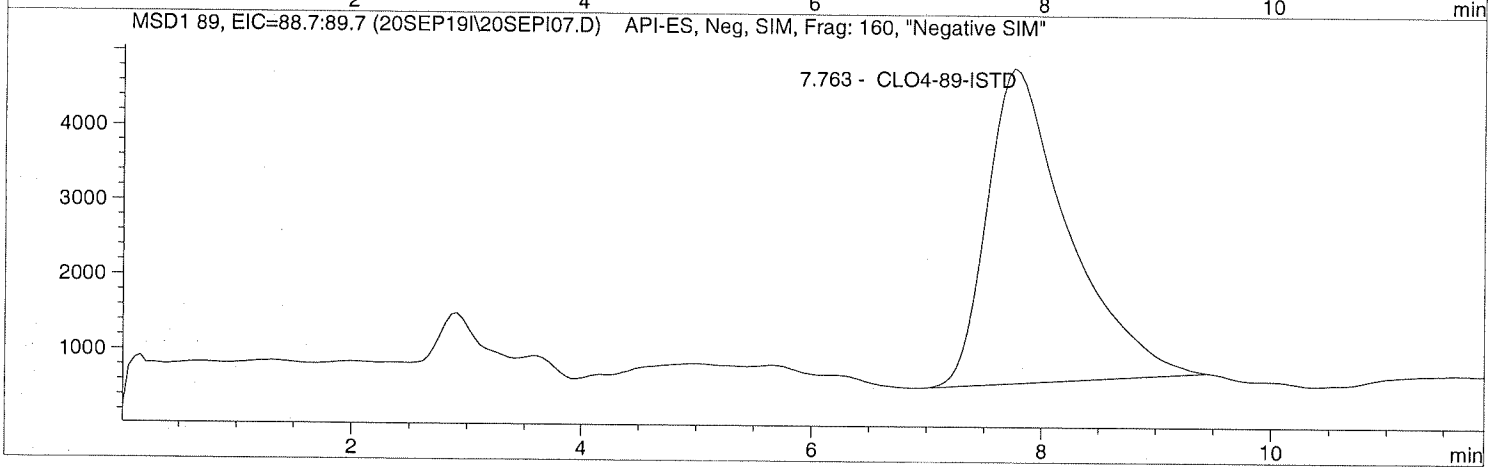
Injection Date:	9/20/2019 10:19:23	Seq Line:	7
Sample Name:	CLO4@ 25.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI07.D Sample Name: CLO4@ 25.ug/L

Injection Date:	9/20/2019 10:19:23	Seq Line:	7
Sample Name:	CLO4@ 25.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.741	PBA	1518197.9	25.0108	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.760	PBA	463724.0	25.0492	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.763	PBA	207402.8	5.0000	CLO4-89-ISTD

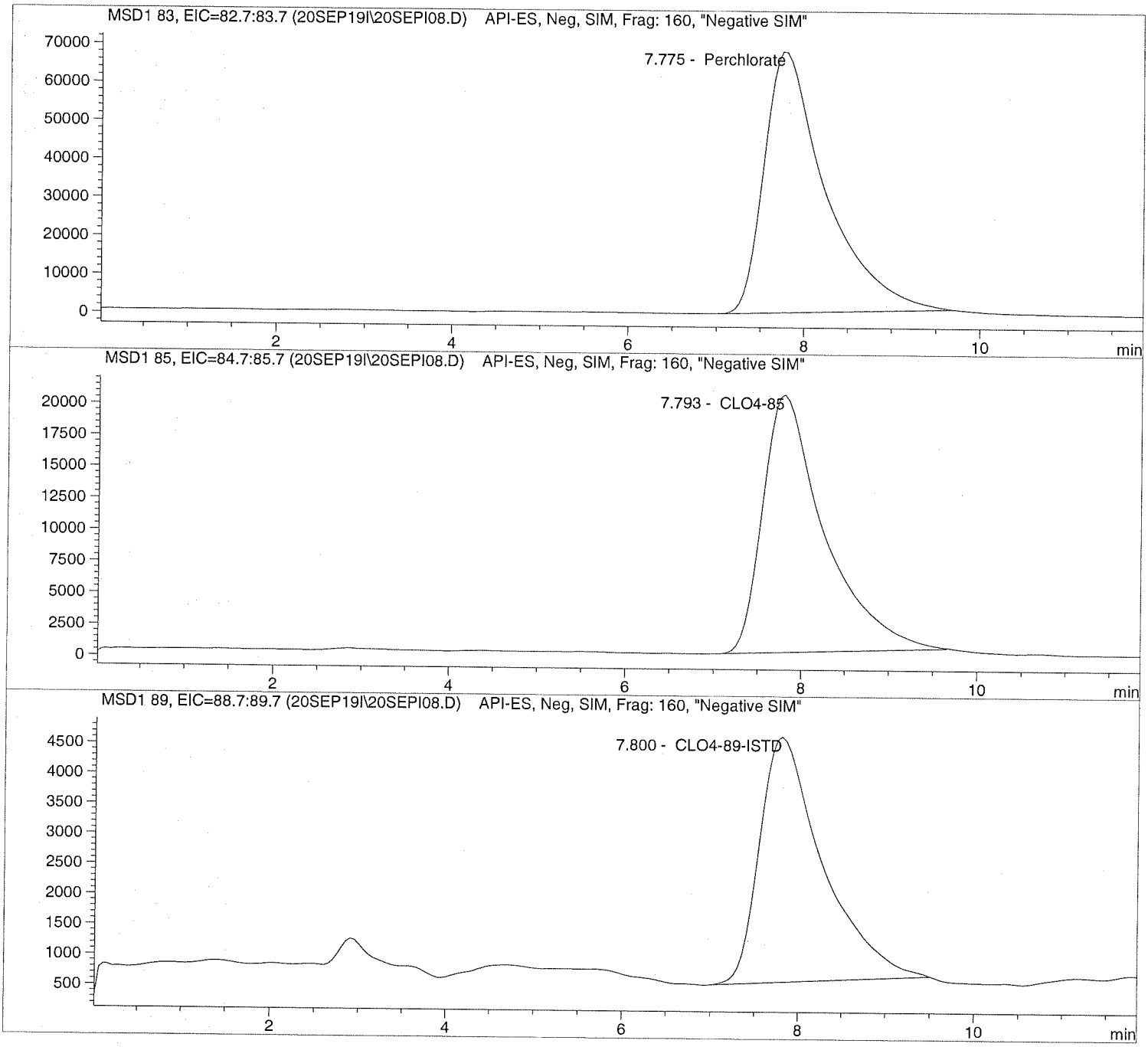
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI08.D Sample Name: CLO4@ 50.ug/L

Injection Date:	9/20/2019 10:33:18	Seq Line:	8
Sample Name:	CLO4@ 50.ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI08.D Sample Name: CLO4@ 50.ug/L

Injection Date:	9/20/2019 10:33:18	Seq Line:	8
Sample Name:	CLO4@ 50.ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	50.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.775	PBA	3311559.2	50.4030	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.793	PBA	995933.0	50.1422	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.800	PBA	202929.2	5.0000	CLO4-89-ISTD

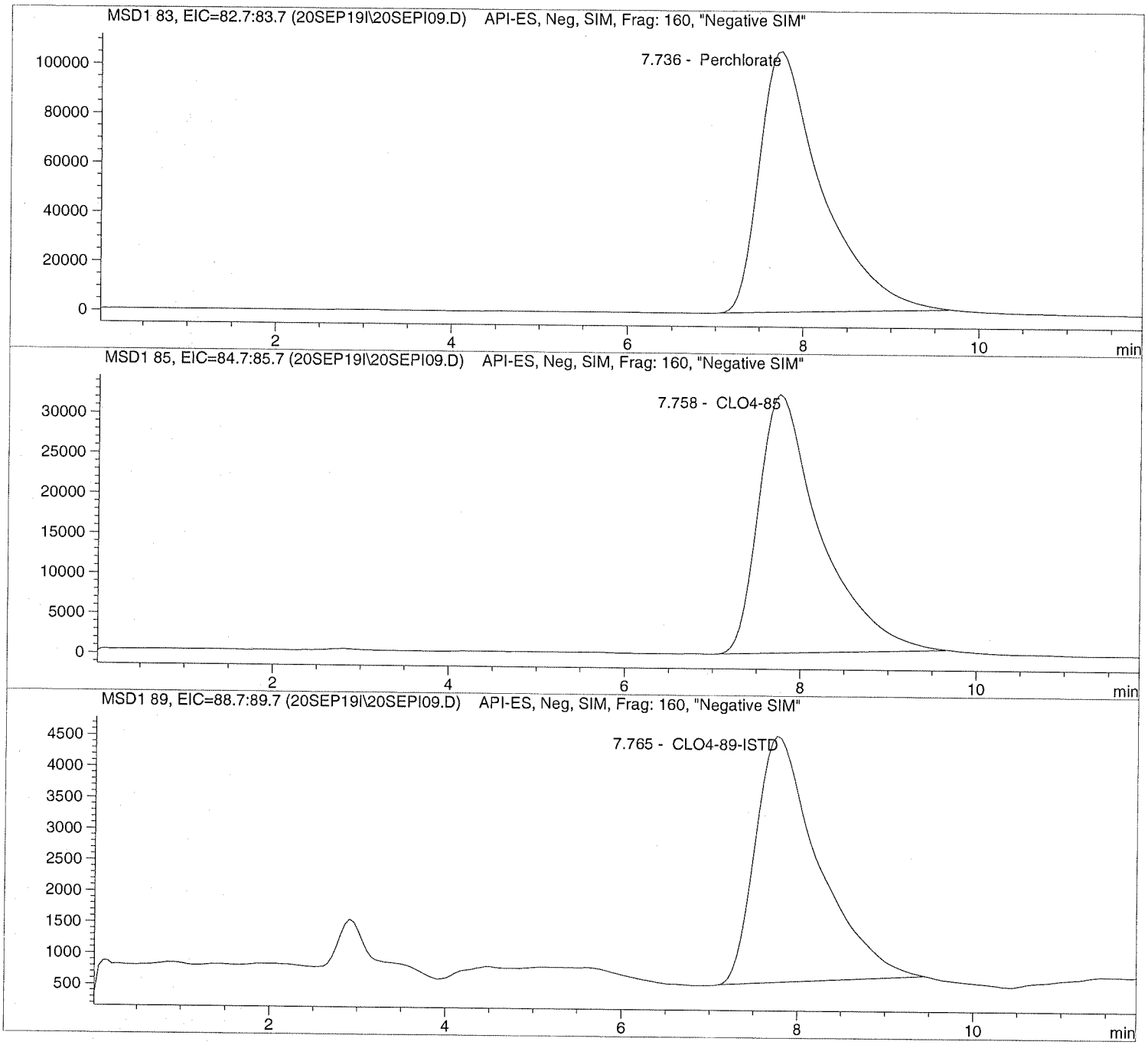
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI09.D Sample Name: CLO4@ 75.ug/L

Injection Date:	9/20/2019 10:47:05	Seq Line:	9
Sample Name:	CLO4@ 75.ug/L	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI09.D Sample Name: CLO4@ 75.ug/L

Injection Date:	9/20/2019 10:47:05	Seq Line:	9
Sample Name:	CLO4@ 75.ug/L	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	75.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.736	PBA	5239145.0	74.7911	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.758	PBA	1580664.2	74.9366	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.765	PBA	197932.5	5.0000	CLO4-89-ISTD

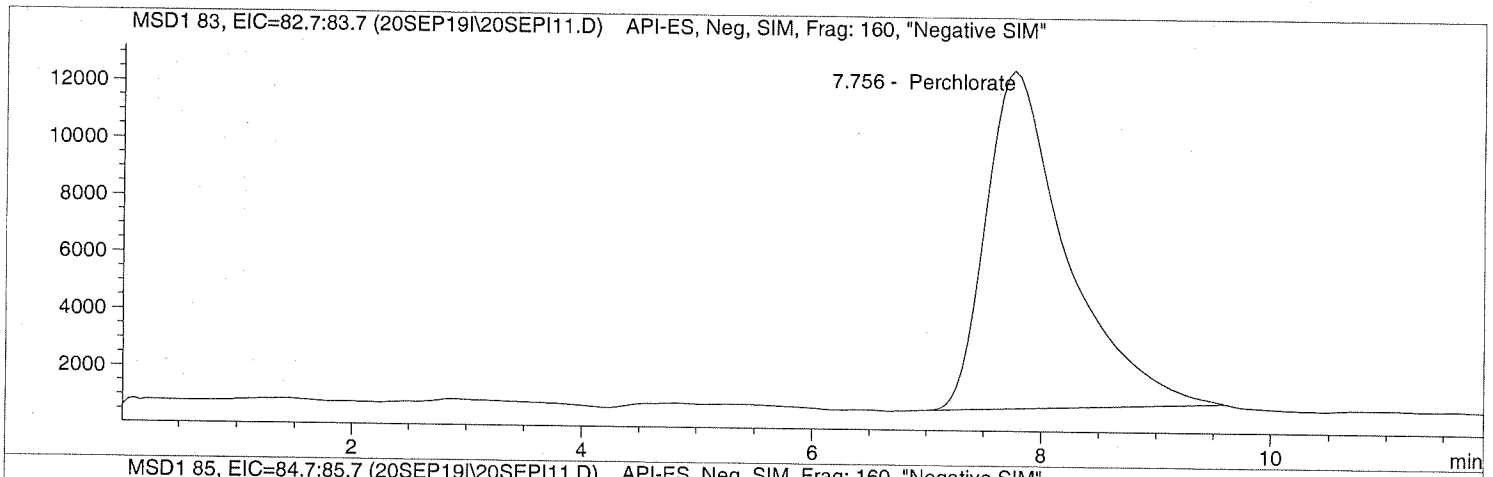
*** End of Report ***

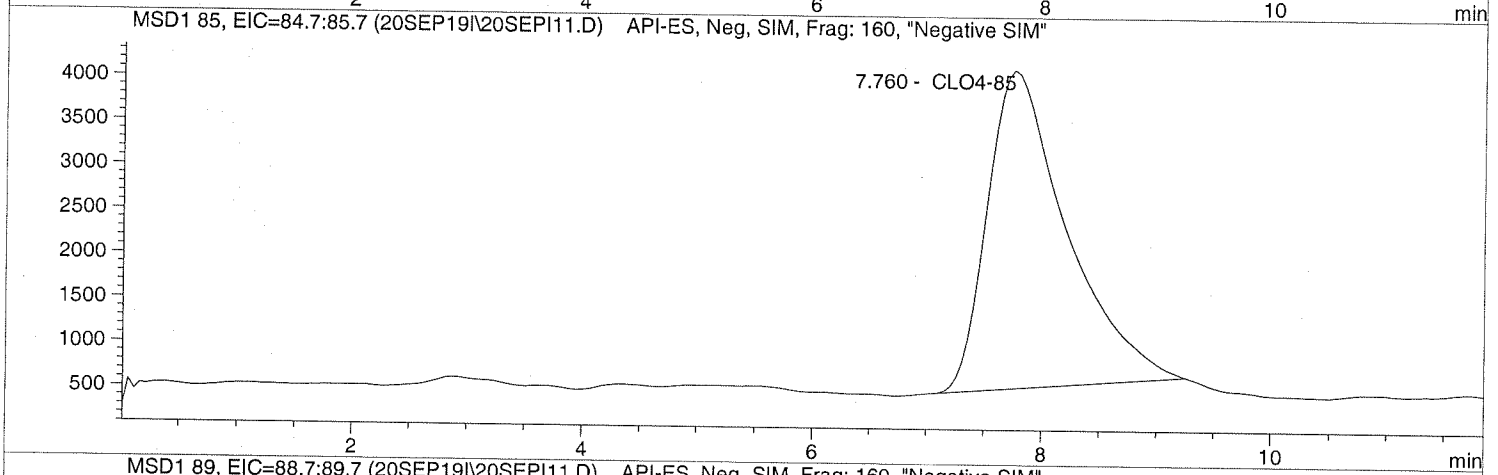
Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI11.D Sample Name: ICAL Verf@10ug/L

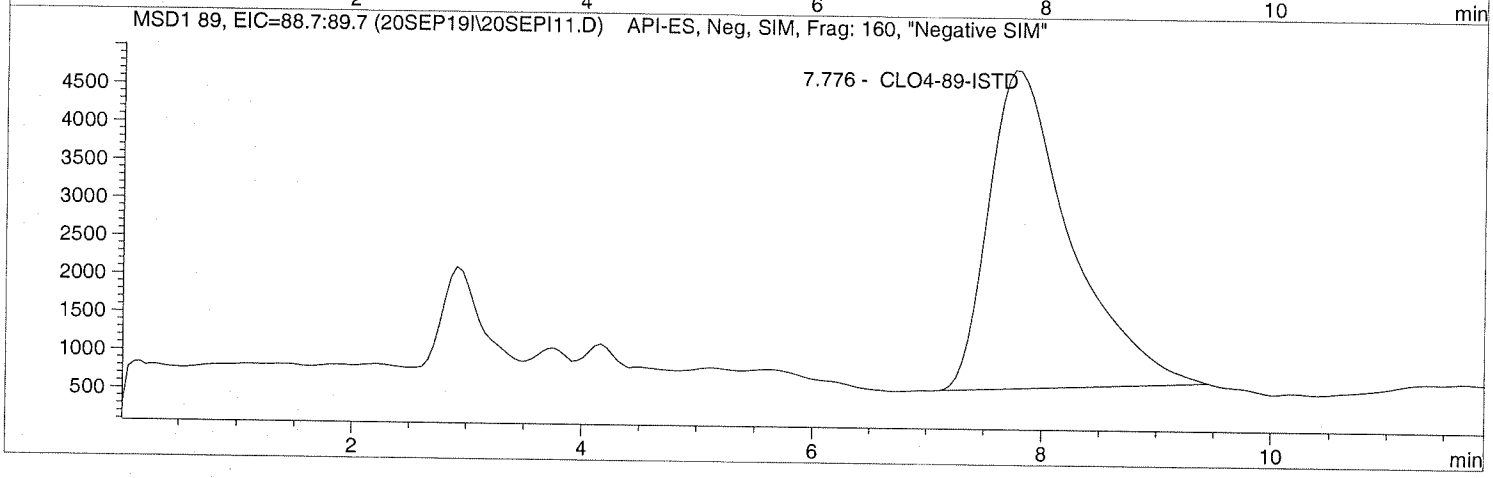
Injection Date:	9/20/2019 11:14:45	Seq Line:	11
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI11.D Sample Name: ICAL Verf@10ug/L

Injection Date:	9/20/2019 11:14:45	Seq Line:	11
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.756	PBA	574879.4	10.1185	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.760	PBA	171000.4	9.7904	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.776	PBA	206243.3	5.0000	CLO4-89-ISTD

*** End of Report ***

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

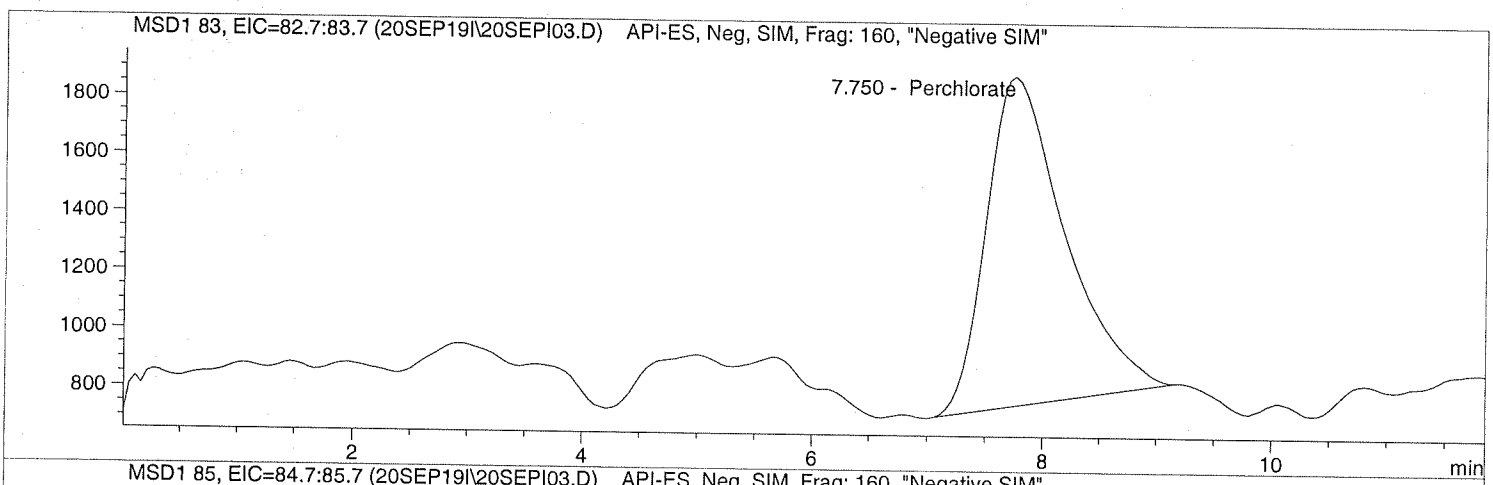
Unmodified

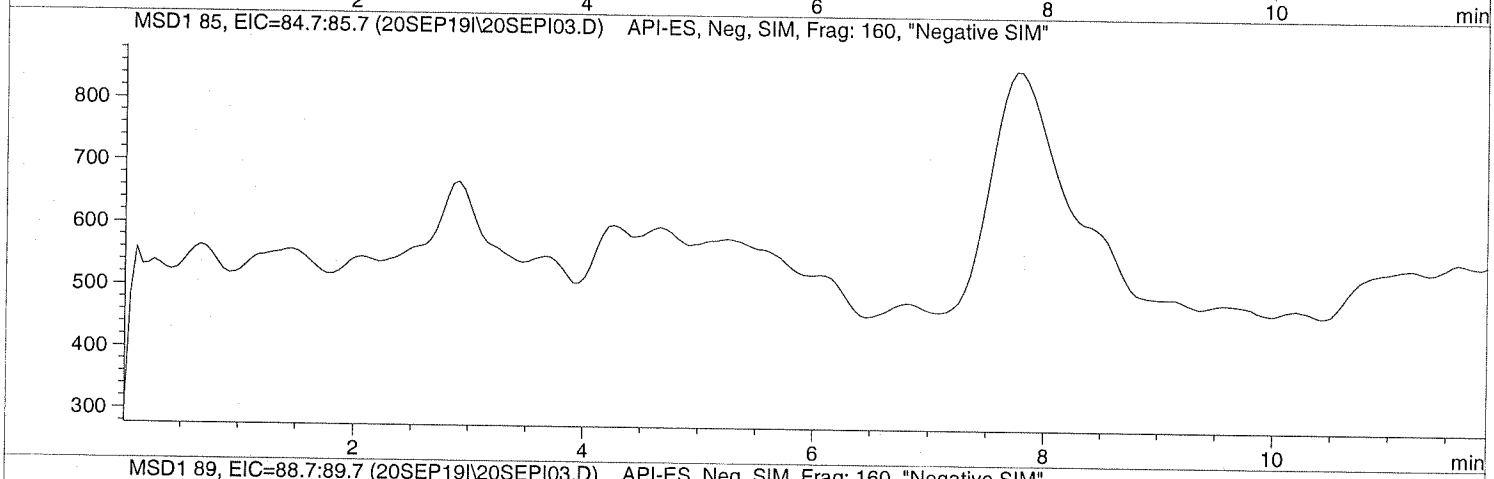
Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

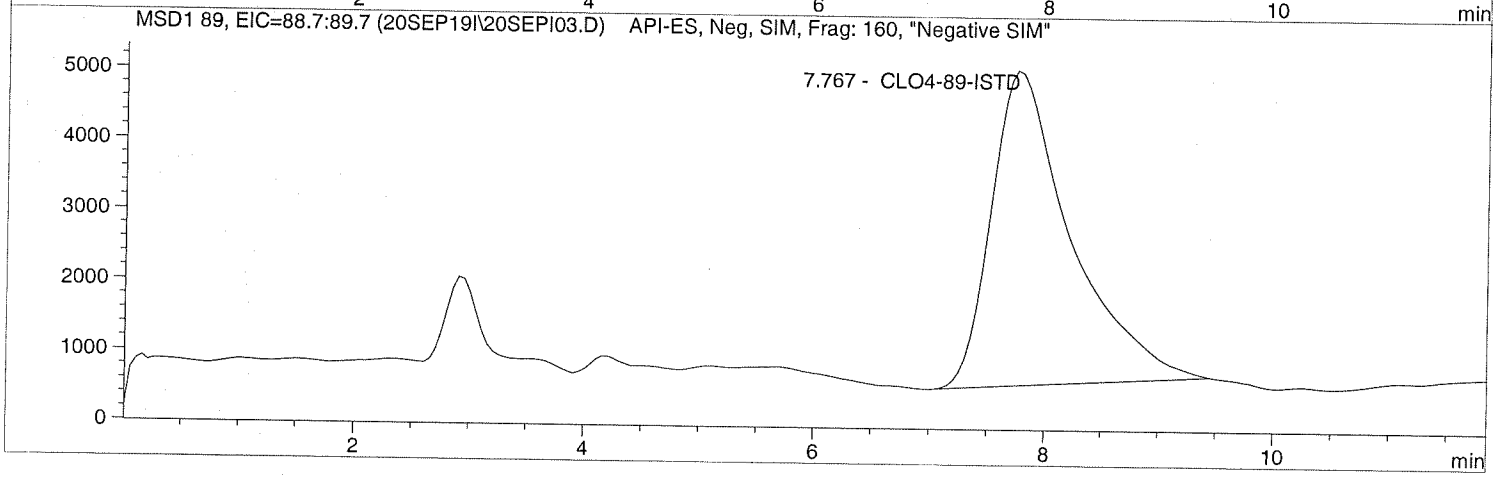
Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:27:11

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	9/23/2019 12:27:11

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.750	PBA	53921.8	0.8760	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.767	PBA	214568.1	5.0000	CLO4-89-ISTD

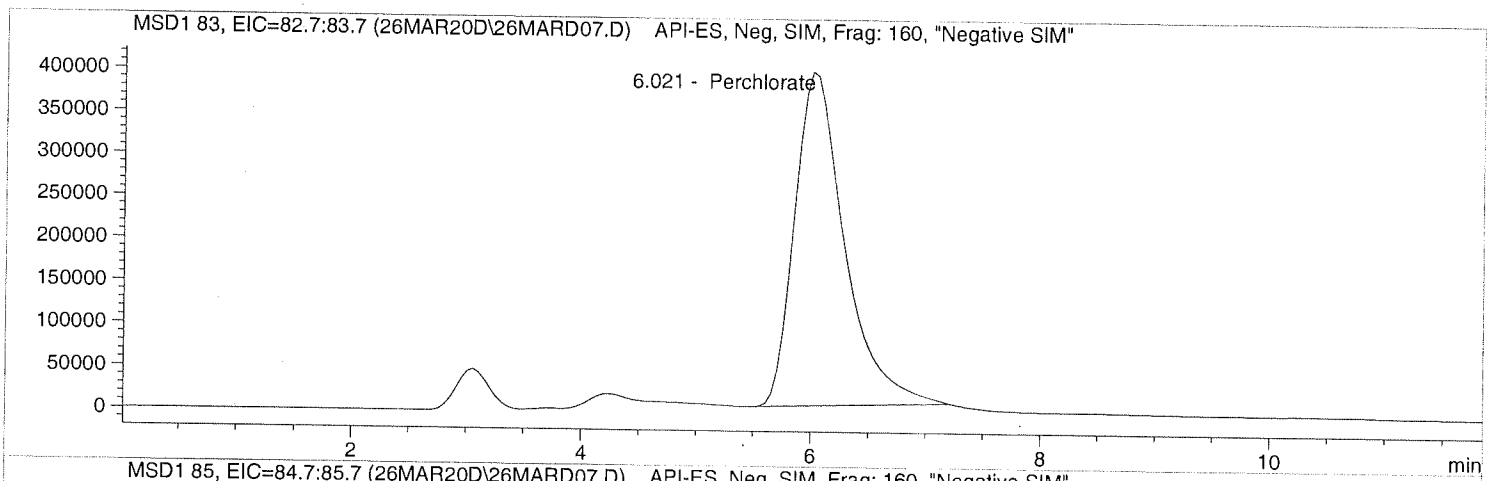
*** End of Report ***

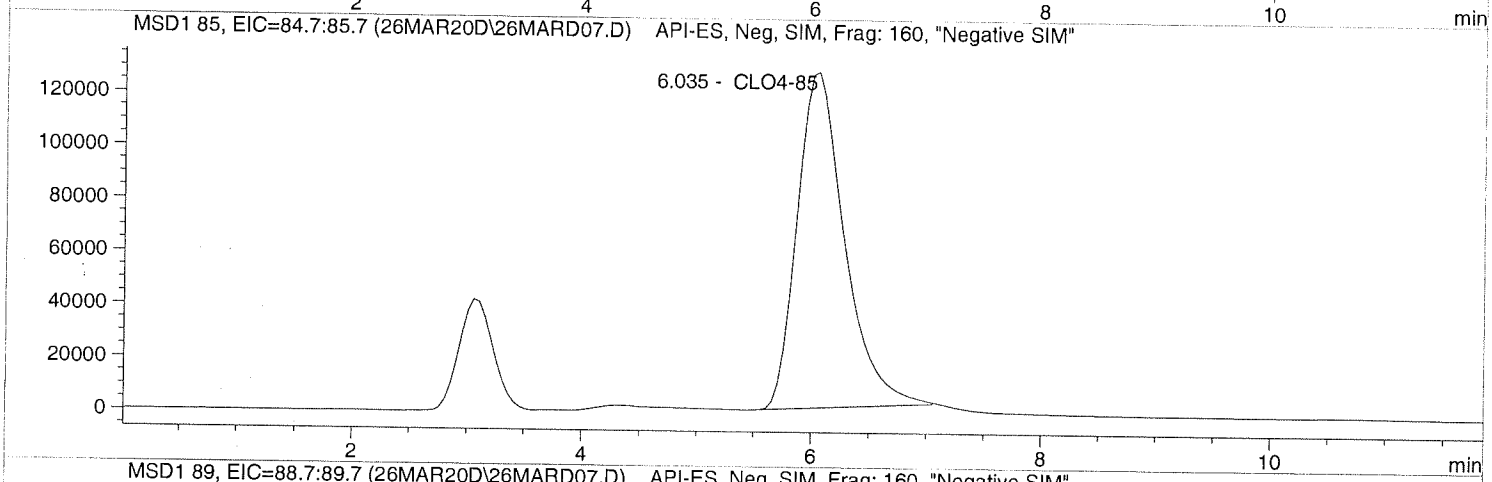
Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD07.D Sample Name: 2008062003

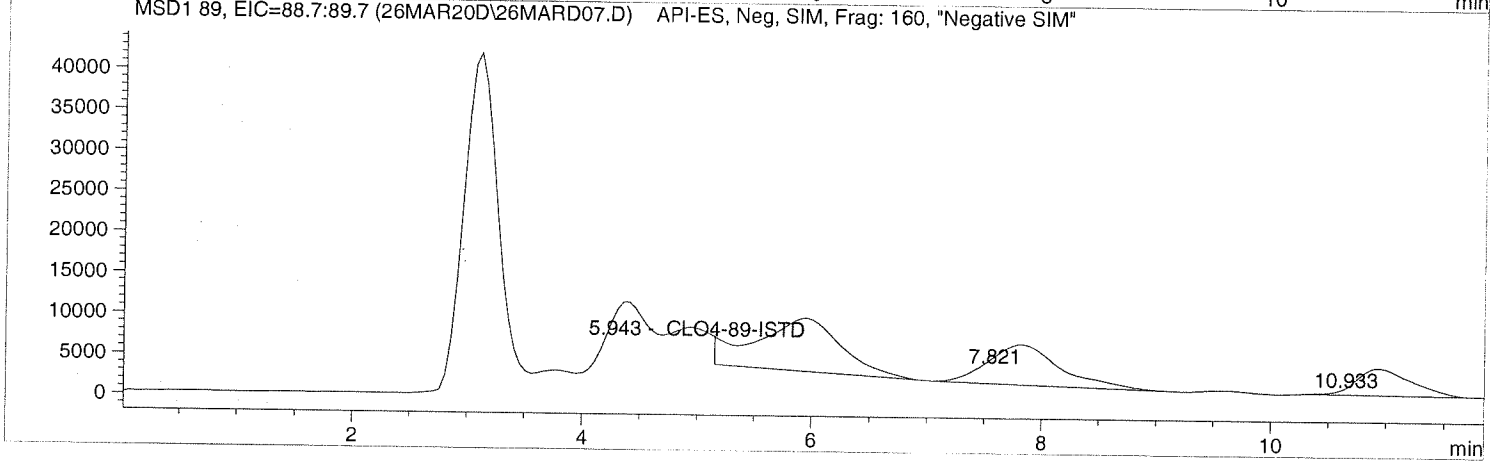
Injection Date:	3/26/2020 09:44:40	Seq Line:	7
Sample Name:	2008062003	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD07.D Sample Name: 2008062003

Injection Date:	3/26/2020 09:44:40	Seq Line:	7
Sample Name:	2008062003	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.021	PBA	11797552.0	94.0331	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.035	PBA	3623208.0	95.7707	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
5.943	BB	332132.3	5.0000	CLO4-89-ISTD
7.821	VBA	216345.0	0.0000	
10.933	PPA	109265.2	0.0000	

*** End of Report ***

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WorkOrder: HS20030733

Longhorn Army Ammunition Plant - 16

Aptim Environmental & Infrastucture, Inc.

Susan Huang
2500 City West Blvd., Suite 1700
Houston TX 77042

24-Apr-2020

ALS Environmental
ALS Group USA, Corp
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16 Final

ALS WO# HS20030733

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April 01, 2020

Susan Huang
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS20030733**

Laboratory Results for: **Longhorn Army Ammunition Plant - 16**

Dear Susan,

ALS Environmental received 9 sample(s) on Mar 17, 2020 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
RJ Modashia
Project Manager

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Work Order: HS20030733

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20030733-01	16WW56-200316	Groundwater		16-Mar-2020 08:15	17-Mar-2020 09:20	☐
HS20030733-02	16WW22-200316	Groundwater		16-Mar-2020 09:10	17-Mar-2020 09:20	☐
HS20030733-03	16WW41-200316	Groundwater		16-Mar-2020 10:05	17-Mar-2020 09:20	☐
HS20030733-04	16WW21-200316	Groundwater		16-Mar-2020 10:55	17-Mar-2020 09:20	☐
HS20030733-05	16WW39-200316	Groundwater		16-Mar-2020 10:50	17-Mar-2020 09:20	☐
HS20030733-06	16WW25-200316	Groundwater		16-Mar-2020 12:55	17-Mar-2020 09:20	☐
HS20030733-07	16WW21-200316-FD	Groundwater		16-Mar-2020 10:55	17-Mar-2020 09:20	☐
HS20030733-08	16WW49-200316	Groundwater		16-Mar-2020 13:55	17-Mar-2020 09:20	☐
HS20030733-09	Trip Blank	Water	CG 021720 -02	16-Mar-2020 00:00	17-Mar-2020 09:20	☐

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Work Order: HS20030733

CASE NARRATIVE

Work Order Comments

• The analysis for Perchlorate was subcontracted to ALS Salt Lake City, UT. Final report attached.

Work Order Comments

• The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.

GC Semivolatiles by Method RSK-175

Batch ID: R358625

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GCMS Volatiles by Method SW8260

Batch ID: R358659,R358682

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R358997

Sample ID: 16WW25-200316 (HS20030733-06)

• The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Bromide)

Batch ID: R358987

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SM2320B

Batch ID: R358569

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW56-200316
Collection Date: 16-Mar-2020 08:15

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	22-Mar-2020 15:32
1,1-Dichloroethene	**2.9**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 15:32
1,2-Dichloroethane	**3.4**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 15:32
cis-1,2-Dichloroethene	**44**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 15:32
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	22-Mar-2020 15:32
Trichloroethene	**520**		**2.0**	**5.0**	**10**	**UG/L**	10	22-Mar-2020 16:44
Vinyl chloride	**6.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 15:32
Surr: 1,2-Dichloroethane-d4	*91.8*			**0**	*81-118*	*%REC*	*1*	*22-Mar-2020 15:32*
Surr: 1,2-Dichloroethane-d4	*90.3*			**0**	*81-118*	*%REC*	*10*	*22-Mar-2020 16:44*
Surr: 4-Bromofluorobenzene	*98.3*			**0**	*85-114*	*%REC*	*1*	*22-Mar-2020 15:32*
Surr: 4-Bromofluorobenzene	*98.5*			**0**	*85-114*	*%REC*	*10*	*22-Mar-2020 16:44*
Surr: Dibromofluoromethane	*94.8*			**0**	*80-119*	*%REC*	*1*	*22-Mar-2020 15:32*
Surr: Dibromofluoromethane	*93.3*			**0**	*80-119*	*%REC*	*10*	*22-Mar-2020 16:44*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*1*	*22-Mar-2020 15:32*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*10*	*22-Mar-2020 16:44*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	**0.000417**	J	**0.000144**	**0.000500**	**0.00100**	**mg/L**	1	20-Mar-2020 10:09
Ethene	**0.00517**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	20-Mar-2020 10:09
Methane	**0.00494**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	20-Mar-2020 10:09
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**389**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	20-Mar-2020 09:55
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**3.19**		**0.150**	**0.500**	**0.500**	**mg/L**	5	17-Mar-2020 20:46
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	17-Mar-2020 20:46
Sulfate	**2,090**		**10.0**	**25.0**	**25.0**	**mg/L**	50	17-Mar-2020 21:58
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW22-200316
Collection Date: 16-Mar-2020 09:10

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 07:19
1,1-Dichloroethene	**0.65**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 07:19
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 07:19
cis-1,2-Dichloroethene	**4.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 07:19
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 07:19
Trichloroethene	**52**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 07:19
Vinyl chloride	**0.69**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 07:19
Surr: 1,2-Dichloroethane-d4	*90.2*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 07:19*
Surr: 4-Bromofluorobenzene	*98.2*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 07:19*
Surr: Dibromofluoromethane	*95.0*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 07:19*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 07:19*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	**0.000288**	J	**0.000144**	**0.000500**	**0.00100**	**mg/L**	1	20-Mar-2020 10:27
Ethene	**0.00168**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	20-Mar-2020 10:27
Methane	**0.00298**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	20-Mar-2020 10:27
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**168**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	20-Mar-2020 10:23
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**4.00**		**0.150**	**0.500**	**0.500**	**mg/L**	5	17-Mar-2020 21:04
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	17-Mar-2020 21:04
Sulfate	**368**		**1.00**	**2.50**	**2.50**	**mg/L**	5	17-Mar-2020 21:04
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW41-200316
Collection Date: 16-Mar-2020 10:05

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	2.5	U	1.5	2.5	5.0	UG/L	5	22-Mar-2020 17:56
1,1-Dichloroethene	**14**		**1.0**	**2.5**	**5.0**	**UG/L**	5	22-Mar-2020 17:56
1,2-Dichloroethane	**4.0**	J	**1.0**	**2.5**	**5.0**	**UG/L**	5	22-Mar-2020 17:56
cis-1,2-Dichloroethene	**2,000**		**10**	**25**	**50**	**UG/L**	50	22-Mar-2020 18:20
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	22-Mar-2020 17:56
Trichloroethene	**6,400**		**10**	**25**	**50**	**UG/L**	50	22-Mar-2020 18:20
Vinyl chloride	**120**		**1.0**	**2.5**	**5.0**	**UG/L**	5	22-Mar-2020 17:56
Surr: 1,2-Dichloroethane-d4	*91.7*			**0**	*81-118*	*%REC*	*50*	*22-Mar-2020 18:20*
Surr: 1,2-Dichloroethane-d4	*91.6*			**0**	*81-118*	*%REC*	*5*	*22-Mar-2020 17:56*
Surr: 4-Bromofluorobenzene	*99.9*			**0**	*85-114*	*%REC*	*5*	*22-Mar-2020 17:56*
Surr: 4-Bromofluorobenzene	*97.8*			**0**	*85-114*	*%REC*	*50*	*22-Mar-2020 18:20*
Surr: Dibromofluoromethane	*94.7*			**0**	*80-119*	*%REC*	*5*	*22-Mar-2020 17:56*
Surr: Dibromofluoromethane	*95.3*			**0**	*80-119*	*%REC*	*50*	*22-Mar-2020 18:20*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*5*	*22-Mar-2020 17:56*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*50*	*22-Mar-2020 18:20*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	**0.000374**	J	**0.000144**	**0.000500**	**0.00100**	**mg/L**	1	20-Mar-2020 10:36
Ethene	**0.00996**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	20-Mar-2020 10:36
Methane	**0.0163**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	20-Mar-2020 10:36
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**1,010**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	20-Mar-2020 10:31
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	0.500	U	0.150	0.500	0.500	mg/L	5	17-Mar-2020 21:22
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	17-Mar-2020 21:22
Sulfate	**8,060**		**100**	**250**	**250**	**mg/L**	500	25-Mar-2020 16:40
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW21-200316
Collection Date: 16-Mar-2020 10:55

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 07:43
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 07:43
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 07:43
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 07:43
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 07:43
Trichloroethene	**1.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 07:43
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 07:43
Surr: 1,2-Dichloroethane-d4	*89.0*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 07:43*
Surr: 4-Bromofluorobenzene	*98.0*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 07:43*
Surr: Dibromofluoromethane	*94.3*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 07:43*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 07:43*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**0.206**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	25-Mar-2020 15:28
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW39-200316
Collection Date: 16-Mar-2020 10:50

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	22-Mar-2020 17:08
1,1-Dichloroethene	**2.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 17:08
1,2-Dichloroethane	**1.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 17:08
cis-1,2-Dichloroethene	**98**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 17:08
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	22-Mar-2020 17:08
Trichloroethene	**1,100**		**5.0**	**12**	**25**	**UG/L**	25	22-Mar-2020 17:32
Vinyl chloride	**5.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 17:08
Surr: 1,2-Dichloroethane-d4	*91.4*			**0**	*81-118*	*%REC*	*1*	*22-Mar-2020 17:08*
Surr: 1,2-Dichloroethane-d4	*90.6*			**0**	*81-118*	*%REC*	*25*	*22-Mar-2020 17:32*
Surr: 4-Bromofluorobenzene	*98.5*			**0**	*85-114*	*%REC*	*1*	*22-Mar-2020 17:08*
Surr: 4-Bromofluorobenzene	*96.5*			**0**	*85-114*	*%REC*	*25*	*22-Mar-2020 17:32*
Surr: Dibromofluoromethane	*94.1*			**0**	*80-119*	*%REC*	*1*	*22-Mar-2020 17:08*
Surr: Dibromofluoromethane	*95.4*			**0**	*80-119*	*%REC*	*25*	*22-Mar-2020 17:32*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*22-Mar-2020 17:08*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*25*	*22-Mar-2020 17:32*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**4.84**		**0.300**	**1.00**	**1.00**	**mg/L**	10	25-Mar-2020 15:46
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW25-200316
Collection Date: 16-Mar-2020 12:55

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 08:07
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 08:07
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 08:07
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 08:07
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 08:07
Trichloroethene	**0.85**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 08:07
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 08:07
Surr: 1,2-Dichloroethane-d4	*89.6*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 08:07*
Surr: 4-Bromofluorobenzene	*97.7*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 08:07*
Surr: Dibromofluoromethane	*93.5*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 08:07*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 08:07*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	**0.000371**	J	**0.000144**	**0.000500**	**0.00100**	**mg/L**	1	20-Mar-2020 10:46
Ethene	**0.00226**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	20-Mar-2020 10:46
Methane	**0.0221**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	20-Mar-2020 10:46
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**32.4**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	20-Mar-2020 10:36
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**3.71**	J	**1.50**	**5.00**	**5.00**	**mg/L**	50	17-Mar-2020 23:29
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	17-Mar-2020 21:40
Sulfate	**5,000**		**100**	**250**	**250**	**mg/L**	500	25-Mar-2020 16:59
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW21-200316-FD
Collection Date: 16-Mar-2020 10:55

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 08:31
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 08:31
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 08:31
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 08:31
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 08:31
Trichloroethene	**1.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-Mar-2020 08:31
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 08:31
Surr: 1,2-Dichloroethane-d4	*92.0*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 08:31*
Surr: 4-Bromofluorobenzene	*97.0*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 08:31*
Surr: Dibromofluoromethane	*93.9*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 08:31*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 08:31*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**0.209**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	25-Mar-2020 16:04
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW49-200316
Collection Date: 16-Mar-2020 13:55

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	22-Mar-2020 15:08
1,1-Dichloroethene	**0.77**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 15:08
1,2-Dichloroethane	**0.85**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 15:08
cis-1,2-Dichloroethene	**270**		**1.0**	**2.5**	**5.0**	**UG/L**	5	22-Mar-2020 21:32
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	22-Mar-2020 15:08
Trichloroethene	**8.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 15:08
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 15:08
Surr: 1,2-Dichloroethane-d4	*92.2*			**0**	*81-118*	*%REC*	*1*	*22-Mar-2020 15:08*
Surr: 1,2-Dichloroethane-d4	*91.2*			**0**	*81-118*	*%REC*	*5*	*22-Mar-2020 21:32*
Surr: 4-Bromofluorobenzene	*99.0*			**0**	*85-114*	*%REC*	*1*	*22-Mar-2020 15:08*
Surr: 4-Bromofluorobenzene	*96.1*			**0**	*85-114*	*%REC*	*5*	*22-Mar-2020 21:32*
Surr: Dibromofluoromethane	*95.8*			**0**	*80-119*	*%REC*	*1*	*22-Mar-2020 15:08*
Surr: Dibromofluoromethane	*95.6*			**0**	*80-119*	*%REC*	*5*	*22-Mar-2020 21:32*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*1*	*22-Mar-2020 15:08*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*5*	*22-Mar-2020 21:32*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**2.16**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	25-Mar-2020 16:22
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	25-Mar-2020 14:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: Trip Blank
Collection Date: 16-Mar-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20030733
Lab ID:HS20030733-09
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	21-Mar-2020 01:18
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:18
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:18
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:18
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-Mar-2020 01:18
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:18
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-Mar-2020 01:18
Surr: 1,2-Dichloroethane-d4	*90.5*			**0**	*81-118*	*%REC*	*1*	*21-Mar-2020 01:18*
Surr: 4-Bromofluorobenzene	*95.4*			**0**	*85-114*	*%REC*	*1*	*21-Mar-2020 01:18*
Surr: Dibromofluoromethane	*94.0*			**0**	*80-119*	*%REC*	*1*	*21-Mar-2020 01:18*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*21-Mar-2020 01:18*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R358569 (0)	**Test Name :** ALKALINITY BY SM2320B				**Matrix:** Groundwater	
HS20030733-01	16WW56-200316	16 Mar 2020 08:15			20 Mar 2020 09:55	1
HS20030733-02	16WW22-200316	16 Mar 2020 09:10			20 Mar 2020 10:23	1
HS20030733-03	16WW41-200316	16 Mar 2020 10:05			20 Mar 2020 10:31	1
HS20030733-06	16WW25-200316	16 Mar 2020 12:55			20 Mar 2020 10:36	1
Batch ID: R358625 (0)	**Test Name :** DISSOLVED GASES BY RSK-175				**Matrix:** Groundwater	
HS20030733-01	16WW56-200316	16 Mar 2020 08:15			20 Mar 2020 10:09	1
HS20030733-02	16WW22-200316	16 Mar 2020 09:10			20 Mar 2020 10:27	1
HS20030733-03	16WW41-200316	16 Mar 2020 10:05			20 Mar 2020 10:36	1
HS20030733-06	16WW25-200316	16 Mar 2020 12:55			20 Mar 2020 10:46	1
Batch ID: R358659 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20030733-09	Trip Blank	16 Mar 2020 00:00			21 Mar 2020 01:18	1
Batch ID: R358659 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20030733-02	16WW22-200316	16 Mar 2020 09:10			21 Mar 2020 07:19	1
HS20030733-04	16WW21-200316	16 Mar 2020 10:55			21 Mar 2020 07:43	1
HS20030733-06	16WW25-200316	16 Mar 2020 12:55			21 Mar 2020 08:07	1
HS20030733-07	16WW21-200316-FD	16 Mar 2020 10:55			21 Mar 2020 08:31	1
Batch ID: R358682 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20030733-01	16WW56-200316	16 Mar 2020 08:15			22 Mar 2020 16:44	10
HS20030733-01	16WW56-200316	16 Mar 2020 08:15			22 Mar 2020 15:32	1
HS20030733-03	16WW41-200316	16 Mar 2020 10:05			22 Mar 2020 18:20	50
HS20030733-03	16WW41-200316	16 Mar 2020 10:05			22 Mar 2020 17:56	5
HS20030733-05	16WW39-200316	16 Mar 2020 10:50			22 Mar 2020 17:32	25
HS20030733-05	16WW39-200316	16 Mar 2020 10:50			22 Mar 2020 17:08	1
HS20030733-08	16WW49-200316	16 Mar 2020 13:55			22 Mar 2020 21:32	5
HS20030733-08	16WW49-200316	16 Mar 2020 13:55			22 Mar 2020 15:08	1
Batch ID: R358878 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Groundwater	
HS20030733-01	16WW56-200316	16 Mar 2020 08:15			25 Mar 2020 14:54	1
HS20030733-02	16WW22-200316	16 Mar 2020 09:10			25 Mar 2020 14:54	1
HS20030733-03	16WW41-200316	16 Mar 2020 10:05			25 Mar 2020 14:54	1
HS20030733-04	16WW21-200316	16 Mar 2020 10:55			25 Mar 2020 14:54	1
HS20030733-05	16WW39-200316	16 Mar 2020 10:50			25 Mar 2020 14:54	1
HS20030733-06	16WW25-200316	16 Mar 2020 12:55			25 Mar 2020 14:54	1
HS20030733-07	16WW21-200316-FD	16 Mar 2020 10:55			25 Mar 2020 14:54	1
HS20030733-08	16WW49-200316	16 Mar 2020 13:55			25 Mar 2020 14:54	1

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R358987 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20030733-03	16WW41-200316	16 Mar 2020 10:05			25 Mar 2020 16:40	500
HS20030733-04	16WW21-200316	16 Mar 2020 10:55			25 Mar 2020 15:28	1
HS20030733-05	16WW39-200316	16 Mar 2020 10:50			25 Mar 2020 15:46	10
HS20030733-06	16WW25-200316	16 Mar 2020 12:55			25 Mar 2020 16:59	500
HS20030733-07	16WW21-200316-FD	16 Mar 2020 10:55			25 Mar 2020 16:04	1
HS20030733-08	16WW49-200316	16 Mar 2020 13:55			25 Mar 2020 16:22	1
Batch ID: R358997 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20030733-01	16WW56-200316	16 Mar 2020 08:15			17 Mar 2020 21:58	50
HS20030733-01	16WW56-200316	16 Mar 2020 08:15			17 Mar 2020 20:46	5
HS20030733-02	16WW22-200316	16 Mar 2020 09:10			17 Mar 2020 21:04	5
HS20030733-03	16WW41-200316	16 Mar 2020 10:05			17 Mar 2020 21:22	5
HS20030733-06	16WW25-200316	16 Mar 2020 12:55			17 Mar 2020 23:29	50
HS20030733-06	16WW25-200316	16 Mar 2020 12:55			17 Mar 2020 21:40	5
Batch ID: R359317 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20030733-01	16WW56-200316	16 Mar 2020 08:15			01 Apr 2020 14:16	1
HS20030733-02	16WW22-200316	16 Mar 2020 09:10			01 Apr 2020 14:16	1
HS20030733-03	16WW41-200316	16 Mar 2020 10:05			01 Apr 2020 14:16	1
HS20030733-04	16WW21-200316	16 Mar 2020 10:55			01 Apr 2020 14:16	1
HS20030733-05	16WW39-200316	16 Mar 2020 10:50			01 Apr 2020 14:16	1
HS20030733-06	16WW25-200316	16 Mar 2020 12:55			01 Apr 2020 14:16	1
HS20030733-07	16WW21-200316-FD	16 Mar 2020 10:55			01 Apr 2020 14:16	1
HS20030733-08	16WW49-200316	16 Mar 2020 13:55			01 Apr 2020 14:16	1

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358625 (0) **Instrument:** FID-4 **Method:** DISSOLVED GASES BY RSK-175

MBLK Sample ID: **MBLK-200320** Units: **mg/L** Analysis Date: **20-Mar-2020 09:55**
Client ID: Run ID: **FID-4_358625** SeqNo: **5523535** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.000500	0.00100								U
Ethene	0.000500	0.00100								U
Methane	0.000500	0.000500								U

LCS Sample ID: **LCS-200320** Units: **mg/L** Analysis Date: **20-Mar-2020 09:31**
Client ID: Run ID: **FID-4_358625** SeqNo: **5523533** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0157	0.00100	0.01804	0	87.0	75 - 125				
Ethene	0.0148	0.00100	0.0168	0	88.0	75 - 125				
Methane	0.00845	0.000500	0.009647	0	87.6	75 - 125				

LCSD Sample ID: **LCSD-200320** Units: **mg/L** Analysis Date: **20-Mar-2020 09:42**
Client ID: Run ID: **FID-4_358625** SeqNo: **5523534** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0158	0.00100	0.01804	0	87.7	75 - 125	0.01571	0.741	30	
Ethene	0.0154	0.00100	0.0168	0	91.4	75 - 125	0.01479	3.75	30	
Methane	0.00893	0.000500	0.009647	0	92.6	75 - 125	0.008450	5.55	30	

DUP Sample ID: **HS20030733-01DUP** Units: **mg/L** Analysis Date: **20-Mar-2020 10:18**
Client ID: **16WW56-200316** Run ID: **FID-4_358625** SeqNo: **5523537** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.000391	0.00100					0.0004170	0	30	J
Ethene	0.00475	0.00100					0.005168	8.36	30	
Methane	0.00472	0.000500					0.004943	4.61	30	

The following samples were analyzed in this batch: HS20030733-01 HS20030733-02 HS20030733-03 HS20030733-06

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358659 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW1-200320** Units: **UG/L** Analysis Date: **21-Mar-2020 00:29**
Client ID: Run ID: **VOA6_358659** SeqNo: **5524279** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*44.95*	*1.0*	*50*	*0*	*89.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.05*	*1.0*	*50*	*0*	*98.1*	*85 - 114*				
Surr: Dibromofluoromethane	*47.12*	*1.0*	*50*	*0*	*94.2*	*80 - 119*				
Surr: Toluene-d8	*53.14*	*1.0*	*50*	*0*	*106*	*89 - 112*				

LCS Sample ID: **VLCSW-200320** Units: **UG/L** Analysis Date: **20-Mar-2020 23:41**
Client ID: Run ID: **VOA6_358659** SeqNo: **5524278** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.89	1.0	20	0	99.5	80 - 119				
1,1-Dichloroethene	18.72	1.0	20	0	93.6	71 - 131				
1,2-Dichloroethane	19.83	1.0	20	0	99.1	73 - 128				
cis-1,2-Dichloroethene	20.22	1.0	20	0	101	78 - 123				
Methylene chloride	20.64	2.0	20	0	103	74 - 124				
Trichloroethene	19.59	1.0	20	0	97.9	79 - 123				
Vinyl chloride	18.09	1.0	20	0	90.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*54.98*	*1.0*	*50*	*0*	*110*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.24*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*56.22*	*1.0*	*50*	*0*	*112*	*80 - 119*				
Surr: Toluene-d8	*51.8*	*1.0*	*50*	*0*	*104*	*89 - 112*				

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358659 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20030621-01MS** Units: **UG/L** Analysis Date: **21-Mar-2020 02:30**
Client ID: Run ID: **VOA6_358659** SeqNo: **5524284** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	20.02	1.0	20	0	100	80 - 119				
1,1-Dichloroethene	18.87	1.0	20	0	94.3	71 - 131				
1,2-Dichloroethane	19.26	1.0	20	0	96.3	73 - 128				
cis-1,2-Dichloroethene	19.78	1.0	20	0	98.9	78 - 123				
Methylene chloride	18.69	2.0	20	0	93.5	74 - 124				
Trichloroethene	21.01	1.0	20	1.118	99.4	79 - 123				
Vinyl chloride	19.44	1.0	20	0	97.2	58 - 137				
Surr: 1,2-Dichloroethane-d4	*46.45*	*1.0*	*50*	*0*	*92.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.71*	*1.0*	*50*	*0*	*97.4*	*85 - 114*				
Surr: Dibromofluoromethane	*47.23*	*1.0*	*50*	*0*	*94.5*	*80 - 119*				
Surr: Toluene-d8	*52.29*	*1.0*	*50*	*0*	*105*	*89 - 112*				

MSD Sample ID: **HS20030621-01MSD** Units: **UG/L** Analysis Date: **21-Mar-2020 02:54**
Client ID: Run ID: **VOA6_358659** SeqNo: **5524285** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.73	1.0	20	0	98.6	80 - 119	20.02	1.5	20	
1,1-Dichloroethene	17.66	1.0	20	0	88.3	71 - 131	18.87	6.61	20	
1,2-Dichloroethane	19.51	1.0	20	0	97.6	73 - 128	19.26	1.32	20	
cis-1,2-Dichloroethene	18.67	1.0	20	0	93.3	78 - 123	19.78	5.8	20	
Methylene chloride	17.56	2.0	20	0	87.8	74 - 124	18.69	6.27	20	
Trichloroethene	19.79	1.0	20	1.118	93.4	79 - 123	21.01	5.96	20	
Vinyl chloride	17.46	1.0	20	0	87.3	58 - 137	19.44	10.7	20	
Surr: 1,2-Dichloroethane-d4	*45.71*	*1.0*	*50*	*0*	*91.4*	*81 - 118*	*46.45*	*1.6*	*20*	
Surr: 4-Bromofluorobenzene	*48.72*	*1.0*	*50*	*0*	*97.4*	*85 - 114*	*48.71*	*0.0289*	*20*	
Surr: Dibromofluoromethane	*47.12*	*1.0*	*50*	*0*	*94.2*	*80 - 119*	*47.23*	*0.23*	*20*	
Surr: Toluene-d8	*52.23*	*1.0*	*50*	*0*	*104*	*89 - 112*	*52.29*	*0.122*	*20*	

The following samples were analyzed in this batch: HS20030733-02 HS20030733-04 HS20030733-06 HS20030733-07 HS20030733-09

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358682 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW1-200322** Units: **UG/L** Analysis Date: **22-Mar-2020 13:55**
Client ID: Run ID: **VOA6_358682** SeqNo: **5524950** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*45.31*	*1.0*	*50*	*0*	*90.6*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.37*	*1.0*	*50*	*0*	*96.7*	*85 - 114*				
Surr: Dibromofluoromethane	*47.15*	*1.0*	*50*	*0*	*94.3*	*80 - 119*				
Surr: Toluene-d8	*52.17*	*1.0*	*50*	*0*	*104*	*89 - 112*				

LCS Sample ID: **VLCSW-200322** Units: **UG/L** Analysis Date: **22-Mar-2020 13:07**
Client ID: Run ID: **VOA6_358682** SeqNo: **5524949** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	18.87	1.0	20	0	94.3	80 - 119				
1,1-Dichloroethene	18.61	1.0	20	0	93.0	71 - 131				
1,2-Dichloroethane	19.63	1.0	20	0	98.1	73 - 128				
cis-1,2-Dichloroethene	20.16	1.0	20	0	101	78 - 123				
Methylene chloride	19.54	2.0	20	0	97.7	74 - 124				
Trichloroethene	19.83	1.0	20	0	99.1	79 - 123				
Vinyl chloride	18.08	1.0	20	0	90.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.29*	*1.0*	*50*	*0*	*105*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.64*	*1.0*	*50*	*0*	*99.3*	*85 - 114*				
Surr: Dibromofluoromethane	*51.88*	*1.0*	*50*	*0*	*104*	*80 - 119*				
Surr: Toluene-d8	*50.26*	*1.0*	*50*	*0*	*101*	*89 - 112*				

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358682 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20030888-01MS** Units: **UG/L** Analysis Date: **22-Mar-2020 15:56**
Client ID: Run ID: **VOA6_358682** SeqNo: **5524955** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.7	1.0	20	0	98.5	80 - 119				
1,1-Dichloroethene	19.41	1.0	20	0	97.0	71 - 131				
1,2-Dichloroethane	19.71	1.0	20	0	98.6	73 - 128				
cis-1,2-Dichloroethene	19.39	1.0	20	0	96.9	78 - 123				
Methylene chloride	18.18	2.0	20	0	90.9	74 - 124				
Trichloroethene	21.91	1.0	20	0	110	79 - 123				
Vinyl chloride	19.26	1.0	20	0	96.3	58 - 137				
Surr: 1,2-Dichloroethane-d4	*45.31*	*1.0*	*50*	*0*	*90.6*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.99*	*1.0*	*50*	*0*	*98.0*	*85 - 114*				
Surr: Dibromofluoromethane	*47.73*	*1.0*	*50*	*0*	*95.5*	*80 - 119*				
Surr: Toluene-d8	*51.65*	*1.0*	*50*	*0*	*103*	*89 - 112*				

MSD Sample ID: **HS20030888-01MSD** Units: **UG/L** Analysis Date: **22-Mar-2020 16:20**
Client ID: Run ID: **VOA6_358682** SeqNo: **5524956** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.83	1.0	20	0	99.1	80 - 119	19.7	0.625	20	
1,1-Dichloroethene	18.26	1.0	20	0	91.3	71 - 131	19.41	6.08	20	
1,2-Dichloroethane	19.55	1.0	20	0	97.7	73 - 128	19.71	0.835	20	
cis-1,2-Dichloroethene	18.67	1.0	20	0	93.4	78 - 123	19.39	3.76	20	
Methylene chloride	17.4	2.0	20	0	87.0	74 - 124	18.18	4.36	20	
Trichloroethene	20.18	1.0	20	0	101	79 - 123	21.91	8.25	20	
Vinyl chloride	18.09	1.0	20	0	90.4	58 - 137	19.26	6.3	20	
Surr: 1,2-Dichloroethane-d4	*45.14*	*1.0*	*50*	*0*	*90.3*	*81 - 118*	*45.31*	*0.37*	*20*	
Surr: 4-Bromofluorobenzene	*48.67*	*1.0*	*50*	*0*	*97.3*	*85 - 114*	*48.99*	*0.656*	*20*	
Surr: Dibromofluoromethane	*47.96*	*1.0*	*50*	*0*	*95.9*	*80 - 119*	*47.73*	*0.482*	*20*	
Surr: Toluene-d8	*52.32*	*1.0*	*50*	*0*	*105*	*89 - 112*	*51.65*	*1.29*	*20*	

The following samples were analyzed in this batch: HS20030733-01 HS20030733-03 HS20030733-05 HS20030733-08

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358569 (0) **Instrument: ManTech01** **Method: ALKALINITY BY SM2320B**

MBLK Sample ID: **WBLKW1-032020** Units: **mg/L** Analysis Date: **20-Mar-2020 08:48**
Client ID: Run ID: **ManTech01_358569** SeqNo: **5522482** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	5.00	5.00								U

LCS Sample ID: **WLCS1-032020** Units: **mg/L** Analysis Date: **20-Mar-2020 08:57**
Client ID: Run ID: **ManTech01_358569** SeqNo: **5522483** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1009	5.00	1000	0	101	85 - 115				

LCSD Sample ID: **WLCSD1-032020** Units: **mg/L** Analysis Date: **20-Mar-2020 09:05**
Client ID: Run ID: **ManTech01_358569** SeqNo: **5522484** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1005	5.00	1000	0	100	85 - 115	1009	0.46	20	

DUP Sample ID: **HS20030586-02DUP** Units: **mg/L** Analysis Date: **20-Mar-2020 09:21**
Client ID: Run ID: **ManTech01_358569** SeqNo: **5522486** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	600.2	5.00					601.9	0.286	20	

The following samples were analyzed in this batch: HS20030733-01 HS20030733-02 HS20030733-03 HS20030733-06

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358987 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK-03.24.20 W** Units: **mg/L** Analysis Date: **25-Mar-2020 15:10**
Client ID: Run ID: **ICS-Integrion_358987** SeqNo: **5532207** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS-03.24.20** Units: **mg/L** Analysis Date: **25-Mar-2020 18:29**
Client ID: Run ID: **ICS-Integrion_358987** SeqNo: **5532216** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.742	0.100	4	0	93.5	80 - 120				
Sulfate	18.26	0.500	20	0	91.3	80 - 120				

LCSD Sample ID: **LCSD-03.24.20** Units: **mg/L** Analysis Date: **25-Mar-2020 18:47**
Client ID: Run ID: **ICS-Integrion_358987** SeqNo: **5532217** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.767	0.100	4	0	94.2	80 - 120	3.742	0.679	20	
Sulfate	19.82	0.500	20	0	99.1	80 - 120	18.26	8.2	20	

MS Sample ID: **HS20030877-01MS** Units: **mg/L** Analysis Date: **26-Mar-2020 15:25**
Client ID: Run ID: **ICS-Integrion_358987** SeqNo: **5532566** PrepDate: DF: **500**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	835.7	50.0	1000	0	83.6	80 - 120				
Sulfate	14340	250	5000	10070	85.3	80 - 120				

MS Sample ID: **HS20030838-01MS** Units: **mg/L** Analysis Date: **26-Mar-2020 00:20**
Client ID: Run ID: **ICS-Integrion_358987** SeqNo: **5532313** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.554	0.100	2	0.7681	89.3	80 - 120				
Sulfate	42.57	0.500	10	32.76	98.1	80 - 120				

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358987 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MSD Sample ID: **HS20030877-01MSD** Units: **mg/L** Analysis Date: **26-Mar-2020 15:43**
Client ID: Run ID: **ICS-Integrion_358987** SeqNo: **5532567** PrepDate: DF: **500**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	837.2	50.0	1000	0	83.7	80 - 120	835.7	0.185	20	
Sulfate	14550	250	5000	10070	89.7	80 - 120	14340	1.5	20	

MSD Sample ID: **HS20030838-01MSD** Units: **mg/L** Analysis Date: **26-Mar-2020 00:38**
Client ID: Run ID: **ICS-Integrion_358987** SeqNo: **5532314** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.609	0.100	2	0.7681	92.1	80 - 120	2.554	2.17	20	
Sulfate	41.66	0.500	10	32.76	89.0	80 - 120	42.57	2.17	20	

The following samples were analyzed in this batch: HS20030733-03 HS20030733-04 HS20030733-05 HS20030733-06 HS20030733-07 HS20030733-08

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030733

QC BATCH REPORT

Batch ID: R358997 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **17-Mar-2020 19:51**
Client ID: Run ID: **ICS-Integrion_358997** SeqNo: **5532381** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U
Nitrogen, Nitrate (As N)	0.100	0.100								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **17-Mar-2020 20:10**
Client ID: Run ID: **ICS-Integrion_358997** SeqNo: **5532382** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.76	0.100	4	0	94.0	80 - 120				
Nitrogen, Nitrate (As N)	4.01	0.100	4	0	100	80 - 120				
Sulfate	19.35	0.500	20	0	96.8	80 - 120				

LCSD Sample ID: **LCSD** Units: **mg/L** Analysis Date: **17-Mar-2020 20:28**
Client ID: Run ID: **ICS-Integrion_358997** SeqNo: **5532383** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.814	0.100	4	0	95.4	80 - 120	3.76	1.44	20	
Nitrogen, Nitrate (As N)	4.094	0.100	4	0	102	80 - 120	4.01	2.07	20	
Sulfate	19.86	0.500	20	0	99.3	80 - 120	19.35	2.57	20	

The following samples were analyzed in this batch: HS20030733-01 HS20030733-02 HS20030733-03 HS20030733-06

ALS Houston, US Date: 01-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: **HS20030733**

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

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-19-25	30-Apr-2020

ALS Houston, US Date: 01-Apr-20

Sample Receipt Checklist

Client Name: CBI-Houston
Work Order: HS20030733
Date/Time Received: **17-Mar-2020 09:20**
Received by: **JRM**

Checklist completed by: *Jared R. Makan* eSignature 17-Mar-2020 Date
Reviewed by: *RJ Modashia* eSignature 18-Mar-2020 Date

Matrices: **Water**
Carrier name: **FedEx Priority Overnight**

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):	2.1°C/2.1°C UC/C	IR11
Cooler(s)/Kit(s):	45563	
Date/Time sample(s) sent to storage:	03/17/2020 17:30	

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:

APTIM

Page 1 of ____

COC ID: LHAAP16 March 2020__-ALS | TURNAROUND TIME: Normal | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	Longhorn AAP			Lab Name	ALS Laboratories			Email Invoice To	FedInvoices@aptim.com		
Project Number	501032			Lab Contact	RJ Modashia						
	LHAAP-16			Email	RJ.Modashia@alsglobal.com			Email Report To	Susan.Huang@aptim.com		
Address	1203-B East Grand Avenue			Address	10450 Stanciff Rd., Suite 210			Mail Reports To	Susan Huang		
	PMB 202							Address	4005 Port Chicago Highway, Suite 200		
City	Marshall	State	TX	City	Houston	State	TX	City	Concord	State	CA
Postal Code	75670	Country	USA	Postal Code	77099	Country	USA	Postal Code	94520	Country	USA
Phone Number	713.243.7264			Phone Number	281.575.2279 or 281.530.5656						
Project Manager	Praveen Srivastav							Shipping Company			

SAMPLE DETAILS / ANALYSIS REQUESTED

Sample ID	Location	Start Depth	End Depth	Depth Unit	Field Matrix	Date	Time (24hr)	# Of Cont.	ANALYSIS: Sample Container and Preservatives	3-40 ml VOA/HCL: VOCs by SW8260B	3-40 ml VOA/HCL: MEE by RSK175	2-40ml Amber/H2SO4: TOC by SM5310C	1-250 ml PE/HNO3: Metals (arsenic, chromium, manganese, nickel, and thallium) by SW6020	1-250ml PE/Ice: Anions (sulfate/nitrate/bromide) by SW9056	1-250ml PE /Ice: Anions (bromide only) by SW9056	1-250ml PE/Ice: Alkalinity by SM2320	1-125ml PE/Ice: Perchlorate by SW6850		
16WW56-200316	LHAAP16				W6	3/16/20	0815	11		X	X	X		X		X	X		
16WW22-200316	LHAAP16				W6	3/16/20	0910	11		X	X	X		X		X	X		
16WW41-200316	LHAAP16				W6	3/16/20	1005	11		X	X	X		X		X	X		
16WW21-200316	LHAAP16				W6	3/16/20	1055	7		X		X			X		X		
16WW39-200316	LHAAP16				W6	3/16/20	1050	7		X		X			X		X		
16WW25-200316	LHAAP16				W6	3/16/20	1255	11		X	X	X		X	SB	X	X		
16WW21-200316-FD	LHAAP16				W6	3/16/20	1055	7		X		X			X		X		
16WW49-200316	LHAAP16				W6	3/16/20	1355	7		X		X			X		X		
TRIP BLANK	LHAAP16				W6	3/16/20		2		X									

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	[illegible] / BHAAP	3/16/20 1430	JJC / ALS	3-17-20 09:20

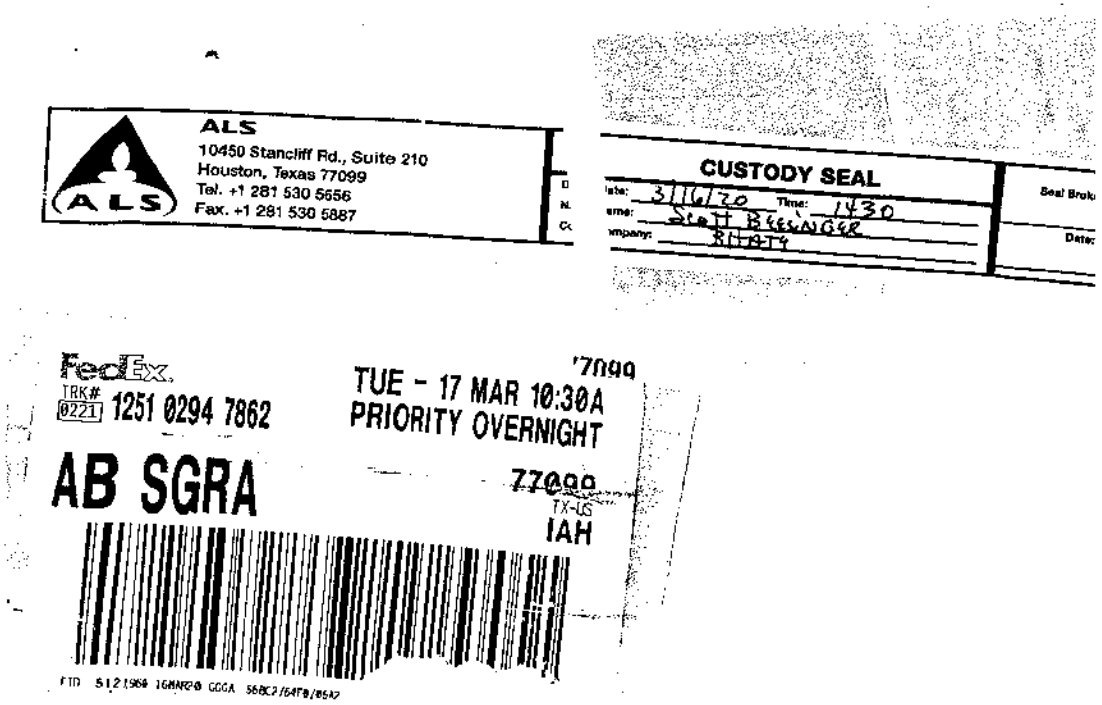
Temp: 2.1 IR # 11 CF 0

45563

HS20030733

Aptim Environmental & Infrastructure, Inc.

Longhorn Army Ammunition Plant - 16



ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL
Date: 3/16/20 Time: 1430
Name: Scott Beesinger
Company: ALS

FedEx
TRK# 0221 1251 0294 7862
TUE - 17 MAR 10:30A
PRIORITY OVERNIGHT
77099
AB SGRA
TX-US
IAH

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
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www.alsglobal.com

March 25, 2020

Analytical Report for Service Request No: K2002412

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: HS20030733

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory March 19, 2020
For your reference, these analyses have been assigned our service request number **K2002412.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

RIGHT SOLUTIONS | RIGHT PARTNER

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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
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.
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.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

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ALS Environmental

Client: ALS Environmental - US
Project: HS20030733
Sample Matrix: Ground Water

Service Request: K2002412
Date Received: 03/19/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Eight ground water samples were received for analysis at ALS Environmental on 03/19/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 03/25/2020

Chain of Custody

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K-2003412

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13537**

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@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:	HS20030733
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20030733-01**	**16WW56-200316**	**Groundwater**	**16 Mar 2020 08:15**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			25 Mar 2020
2.	**HS20030733-02**	**16WW22-200316**	**Groundwater**	**16 Mar 2020 09:10**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			25 Mar 2020
3.	**HS20030733-03**	**16WW41-200316**	**Groundwater**	**16 Mar 2020 10:05**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			25 Mar 2020
4.	**HS20030733-04**	**16WW21-200316**	**Groundwater**	**16 Mar 2020 10:55**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			25 Mar 2020
5.	**HS20030733-05**	**16WW39-200316**	**Groundwater**	**16 Mar 2020 10:50**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			25 Mar 2020
6.	**HS20030733-06**	**16WW25-200316**	**Groundwater**	**16 Mar 2020 12:55**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			25 Mar 2020
7.	**HS20030733-07**	**16WW21-200316-FD**	**Groundwater**	**16 Mar 2020 10:55**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			25 Mar 2020
8.	**HS20030733-08**	**16WW49-200316**	**Groundwater**	**16 Mar 2020 13:55**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			25 Mar 2020

Received: 3/19/2020 0920

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13537**

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By:	J. [illegible]	Date/Time:	3/18/20 18:00
Received By:	[signature]	Date/Time:	3/19/2020 0920
Cooler ID(s):		Temperature(s):	

PC KL

Cooler Receipt and Preservation Form

Client ALS Houston Service Request K20 02412

Received: 3/19/2020 Opened: 3/19/2020 By: CG Unloaded: 3/19/2020 By: CG

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 2, front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Temp Blank	Sample 1	Sample 2	Sample 3	Sample 4	IR GUN	Cooler / COC ID NA	Tracking Number NA	Filed
0.7					3980140804	13537	1251 0295 5459	

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA (Y) N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

General Chemistry

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2002412
Project:	HS20030733	**Date Collected:**	03/16/20
Sample Matrix:	Ground Water	**Date Received:**	03/19/20
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
16WW56-200316	K2002412-001	**10.7**	0.50	0.20	0.07	1	03/22/20 02:59	
16WW22-200316	K2002412-002	**2.35**	0.50	0.20	0.07	1	03/22/20 03:27	
16WW41-200316	K2002412-003	**44.8**	0.50	0.20	0.07	1	03/22/20 03:55	
16WW21-200316	K2002412-004	**1.20**	0.50	0.20	0.07	1	03/22/20 04:23	
16WW39-200316	K2002412-005	**4.57**	0.50	0.20	0.07	1	03/22/20 05:50	
16WW25-200316	K2002412-006	**31.2**	0.50	0.20	0.07	1	03/22/20 06:18	
16WW21-200316-FD	K2002412-007	**0.78**	0.50	0.20	0.07	1	03/22/20 06:46	
16WW49-200316	K2002412-008	**5.22**	0.50	0.20	0.07	1	03/22/20 07:14	
Method Blank	K2002412-MB	**0.29 J**	0.50	0.20	0.07	1	03/21/20 20:07	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2002412
Project	HS20030733	**Date Collected:**	03/16/20
Sample Matrix:	Ground Water	**Date Received:**	03/19/20
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Carbon, Total Organic

Sample Name:	Lab Code:	LOQ	LOD	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
16WW56-200316	K2002412-001DUP	0.50	0.20	0.07	10.7	10.3	10.5	4	10	03/22/20
16WW22-200316	K2002412-002DUP	0.50	0.20	0.07	2.35	2.15	2.25	9	10	03/22/20
16WW41-200316	K2002412-003DUP	0.50	0.20	0.07	44.8	44.5	44.7	<1	10	03/22/20
16WW21-200316	K2002412-004DUP	0.50	0.20	0.07	1.20	0.91	1.05	27 #	10	03/22/20
16WW39-200316	K2002412-005DUP	0.50	0.20	0.07	4.57	4.41	4.49	4	10	03/22/20
16WW25-200316	K2002412-006DUP	0.50	0.20	0.07	31.2	30.7	31.0	2	10	03/22/20
16WW21-200316-FD	K2002412-007DUP	0.50	0.20	0.07	0.78	0.58	0.682	30 #	10	03/22/20
16WW49-200316	K2002412-008DUP	0.50	0.20	0.07	5.22	5.27	5.24	<1	10	03/22/20

Results flagged with an asterisk (*) indicate values outside control criteria.

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

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2002412
Project:	HS20030733	**Date Analyzed:**	03/21/20
Sample Matrix:	Ground Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	674205

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2002412-LCS	24.9	25.0	100	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2002412
Project: HS20030733

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C **Units:** mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	674205	KQ2003999-01	03/21/20 19:52	25.0	26.3	105	90-110
CCV2	674205	KQ2003999-02	03/21/20 23:40	25.0	26.3	105	90-110
CCV3	674205	KQ2003999-03	03/22/20 04:51	25.0	26.5	106	90-110
CCV4	674205	KQ2003999-30	03/22/20 09:35	25.0	25.8	103	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2002412
Project: HS20030733

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C **Units:**mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	674205	KQ2003999-04	03/21/20 19:37	0.50	0.20	0.07	ND	U
CCB2	674205	KQ2003999-05	03/21/20 23:55	0.50	0.20	0.07	0.12	J
CCB3	674205	KQ2003999-06	03/22/20 05:06	0.50	0.20	0.07	ND	U
CCB4	674205	KQ2003999-31	03/22/20 09:49	0.50	0.20	0.07	ND	U

Raw Data

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General Chemistry

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Work Request # Original ( ) R2062276, 2337, 2353, 2365, 2412, 2434, 2416, 2424, 2434, 2462, 2470, 2471, 2489, 2492, 2496, 2432, 2437, 2456, 2422
IV II IV II IV I IV IV I II IV IV II I II IV I IV

Tier:

Date Analyzed: 3/21/20

Analyst: RP

Analysis: TOC/DOC

Run # TOC: 674205, 674225, 674226 TOC: 674227

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1.	Is the method name and number correct and appropriate?	yes/no/NA
2.	Holding times met for all analyses and for all samples?	yes/no/NA
3.	Are calculations correct?	yes/no/NA
4.	Is the reporting basis correct? (Dry Weight)	yes/no/NA
5.	All quality control criteria met?	yes/no
6.	Is the calibration curve correlation coefficient ≥ 0.995?	yes/no/NA
7.	MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency?	yes/no/NA
8.	Are ICVs, CCVs, and CCBs all within acceptance limits?	yes/no/NA
9.	Are results for methods blanks all ND?	yes/no/NA
10.	Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.)	yes/no/NA
11.	Are all exceptions explained?	yes/no/NA
12.	Have all applicable service requests been reviewed?	yes/no/NA
13.	Are all samples labeled correctly?	yes/no/NA
14.	Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V)	yes/no/NA
15.	Are detection limits and units reported correctly?	yes/no/NA
16.	Is the unused space on the benchsheet crossed out?	yes/no/NA
17.	Was analysis turned in by the due date? (n-2) (If not record SR#)	yes/no/NA

COMMENTS: R2002416-3/24, 2412-4/14, 2412 7/7d report a high %RSD. However, these samples are less than 5x the MRL

Final Approved by: _____ Date: 3/24/20

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674205 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002276-001	Carbon, Total Organic	N/A		Ground Water	5.85 mg/L	10 mL	58.5 mg/L	10	0.7	5.0			3/22/20 01:06:00	N	IV
K2002337-001	Carbon, Total Organic	N/A		Water	0.92 mg/L	10 mL	0.92 mg/L	1	0.07	0.50			3/21/20 20:51:00	N	II
K2002337-002	Carbon, Total Organic	N/A		Water	0.85 mg/L	10 mL	0.85 mg/L	1	0.07	0.50			3/21/20 21:48:00	N	II
K2002337-003	Carbon, Total Organic	N/A		Water	0.77 mg/L	10 mL	0.77 mg/L	1	0.07	0.50			3/21/20 22:16:00	N	II
K2002337-004	Carbon, Total Organic	N/A		Water	0.68 mg/L	10 mL	0.68 mg/L	1	0.07	0.50			3/21/20 22:44:00	N	II
K2002337-005	Carbon, Total Organic	N/A		Water	0.45 mg/L	10 mL	0.45 mg/L J	1	0.07	0.50			3/21/20 23:12:00	N	II
K2002337-006	Carbon, Total Organic	N/A		Water	1.87 mg/L	10 mL	1.87 mg/L	1	0.07	0.50			3/22/20 00:10:00	N	II
K2002337-007	Carbon, Total Organic	N/A		Water	0.63 mg/L	10 mL	0.63 mg/L	1	0.07	0.50			3/22/20 00:38:00	N	II
K2002353-001	Carbon, Total Organic	N/A		Ground Water	1.25 mg/L	10 mL	500 mg/L	400	30	200			3/22/20 02:03:00	N	IV
K2002365-001	Carbon, Total Organic	N/A		Water	6.75 mg/L	10 mL	6.75 mg/L	1	0.07	0.50			3/22/20 01:34:00	N	II
K2002412-001	Carbon, Total Organic	N/A		Ground Water	10.68 mg/L	10 mL	10.7 mg/L	1	0.07	0.50			3/22/20 02:59:00	N	IV
K2002412-002	Carbon, Total Organic	N/A		Ground Water	2.35 mg/L	10 mL	2.35 mg/L	1	0.07	0.50			3/22/20 03:27:00	N	IV
K2002412-003	Carbon, Total Organic	N/A		Ground Water	44.83 mg/L	10 mL	44.8 mg/L	1	0.07	0.50			3/22/20 03:55:00	N	IV
K2002412-004	Carbon, Total Organic	N/A		Ground Water	1.20 mg/L	10 mL	1.20 mg/L	1	0.07	0.50			3/22/20 04:23:00	N	IV
K2002412-005	Carbon, Total Organic	N/A		Ground Water	4.57 mg/L	10 mL	4.57 mg/L	1	0.07	0.50			3/22/20 05:50:00	N	IV
K2002412-006	Carbon, Total Organic	N/A		Ground Water	31.25 mg/L	10 mL	31.2 mg/L	1	0.07	0.50			3/22/20 06:18:00	N	IV
K2002412-007	Carbon, Total Organic	N/A		Ground Water	0.78 mg/L	10 mL	0.78 mg/L	1	0.07	0.50			3/22/20 06:46:00	N	IV
K2002412-008	Carbon, Total Organic	N/A		Ground Water	5.22 mg/L	10 mL	5.22 mg/L	1	0.07	0.50			3/22/20 07:14:00	N	IV
K2002434-001	Carbon, Total Organic	N/A		Water	0.24 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 07:42:00	N	I
K2002434-002	Carbon, Total Organic	N/A		Water	0.61 mg/L	10 mL	0.61 mg/L	1	0.07	0.50			3/22/20 08:10:00	N	I
KQ2003999-01	Carbon, Total Organic	CCV		Water	26.33 mg/L	10 mL	26.3 mg/L	1					3/21/20 19:52:00	N	II
KQ2003999-02	Carbon, Total Organic	CCV		Water	26.30 mg/L	10 mL	26.3 mg/L	1					3/21/20 23:40:00	N	II
KQ2003999-03	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	II
KQ2003999-04	Carbon, Total Organic	CCB		Water	-0.03 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/21/20 19:37:00	N	II
KQ2003999-05	Carbon, Total Organic	CCB		Water	0.12 mg/L	10 mL	0.12 mg/L J	1	0.07	0.50			3/21/20 23:55:00	N	II
KQ2003999-06	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	II
KQ2003999-07	Carbon, Total Organic	MB		Water	0.29 mg/L	10 mL	0.29 mg/L J	1	0.07	0.50			3/21/20 20:07:00	N	II
KQ2003999-08	Carbon, Total Organic	LCS		Water	24.88 mg/L	10 mL	24.9 mg/L	1	0.07	0.50	100		3/21/20 20:21:00	N	II
KQ2003999-09	Carbon, Total Organic	MS	K2002337-001	Water	29.48 mg/L	10 mL	29.5 mg/L	1	0.07	0.50	114		3/21/20 21:19:00	N	II
KQ2003999-10	Carbon, Total Organic	DUP	K2002276-001	Ground Water	5.92 mg/L	10 mL	59.2 mg/L	10	0.7	5.0		1	3/22/20 01:06:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674205 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2003999-11	Carbon, Total Organic	DUP	K2002337-001	Water	0.91 mg/L	10 mL	0.91 mg/L	1	0.07	0.50		1	3/21/20 20:51:00	N	II
KQ2003999-12	Carbon, Total Organic	DUP	K2002337-002	Water	0.79 mg/L	10 mL	0.79 mg/L	1	0.07	0.50		7	3/21/20 21:48:00	N	II
KQ2003999-13	Carbon, Total Organic	DUP	K2002337-003	Water	0.70 mg/L	10 mL	0.70 mg/L	1	0.07	0.50		10	3/21/20 22:16:00	N	II
KQ2003999-14	Carbon, Total Organic	DUP	K2002337-004	Water	0.67 mg/L	10 mL	0.67 mg/L	1	0.07	0.50		2	3/21/20 22:44:00	N	II
KQ2003999-15	Carbon, Total Organic	DUP	K2002337-005	Water	0.46 mg/L	10 mL	0.46 mg/L J	1	0.07	0.50		3	3/21/20 23:12:00	N	II
KQ2003999-16	Carbon, Total Organic	DUP	K2002337-006	Water	1.85 mg/L	10 mL	1.85 mg/L	1	0.07	0.50		1	3/22/20 00:10:00	N	II
KQ2003999-17	Carbon, Total Organic	DUP	K2002337-007	Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50		9	3/22/20 00:38:00	N	II
KQ2003999-18	Carbon, Total Organic	DUP	K2002353-001	Ground Water	1.19 mg/L	10 mL	480 mg/L	400	30	200		4	3/22/20 02:03:00	N	IV
KQ2003999-19	Carbon, Total Organic	DUP	K2002365-001	Water	6.74 mg/L	10 mL	6.74 mg/L	1	0.07	0.50		<1	3/22/20 01:34:00	N	II
KQ2003999-20	Carbon, Total Organic	DUP	K2002434-001	Water	0.19 mg/L	10 mL	0.19 mg/L J	1	0.07	0.50		NC	3/22/20 07:42:00	N	I
KQ2003999-21	Carbon, Total Organic	DUP	K2002434-002	Water	0.60 mg/L	10 mL	0.60 mg/L	1	0.07	0.50		2	3/22/20 08:10:00	N	I
KQ2003999-22	Carbon, Total Organic	DUP	K2002412-002	Ground Water	2.15 mg/L	10 mL	2.15 mg/L	1	0.07	0.50		9	3/22/20 03:27:00	N	IV
KQ2003999-23	Carbon, Total Organic	DUP	K2002412-001	Ground Water	10.27 mg/L	10 mL	10.3 mg/L	1	0.07	0.50		4	3/22/20 02:59:00	N	IV
KQ2003999-24	Carbon, Total Organic	DUP	K2002412-003	Ground Water	44.51 mg/L	10 mL	44.5 mg/L	1	0.07	0.50		<1	3/22/20 03:55:00	N	IV
KQ2003999-25	Carbon, Total Organic	DUP	K2002412-004	Ground Water	0.91 mg/L	10 mL	0.91 mg/L	1	0.07	0.50		27*	3/22/20 04:23:00	N	IV
KQ2003999-26	Carbon, Total Organic	DUP	K2002412-005	Ground Water	4.41 mg/L	10 mL	4.41 mg/L	1	0.07	0.50		4	3/22/20 05:50:00	N	IV
KQ2003999-27	Carbon, Total Organic	DUP	K2002412-006	Ground Water	30.72 mg/L	10 mL	30.7 mg/L	1	0.07	0.50		2	3/22/20 06:18:00	N	IV
KQ2003999-28	Carbon, Total Organic	DUP	K2002412-007	Ground Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50		30*	3/22/20 06:46:00	N	IV
KQ2003999-29	Carbon, Total Organic	DUP	K2002412-008	Ground Water	5.27 mg/L	10 mL	5.27 mg/L	1	0.07	0.50		<1	3/22/20 07:14:00	N	IV
KQ2003999-30	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	II
KQ2003999-31	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674225 **Method/Testcode:** 415.1/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002416-001	Carbon, Total Organic	N/A		Ground Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:07:00	Y	IV
K2002416-002	Carbon, Total Organic	N/A		Ground Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 10:33:00	N	IV
K2002416-003	Carbon, Total Organic	N/A		Ground Water	0.19 mg/L	10 mL	0.19 mg/L J	1	0.07	0.50			3/22/20 11:01:00	N	IV
K2002416-004	Carbon, Total Organic	N/A		Ground Water	0.54 mg/L	10 mL	0.54 mg/L	1	0.07	0.50			3/22/20 11:29:00	N	IV
K2002421-001	Carbon, Total Organic	N/A		Water	1.53 mg/L	10 mL	1.53 mg/L	1	0.07	0.50			3/22/20 15:45:00	N	IV
K2002421-002	Carbon, Total Organic	N/A		Water	0.79 mg/L	10 mL	0.79 mg/L	1	0.07	0.50			3/22/20 16:14:00	N	IV
K2002421-003	Carbon, Total Organic	N/A		Water	1.69 mg/L	10 mL	1.69 mg/L	1	0.07	0.50			3/22/20 16:42:00	N	IV
K2002421-004	Carbon, Total Organic	N/A		Water	0.82 mg/L	10 mL	0.82 mg/L	1	0.07	0.50			3/22/20 17:10:00	N	IV
K2002434-003	Carbon, Total Organic	N/A		Water	0.11 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 08:39:00	N	I
K2002462-001	Carbon, Total Organic	N/A		Water	2.96 mg/L	10 mL	2.96 mg/L	1	0.07	0.50			3/22/20 11:58:00	N	II
K2002470-001	Carbon, Total Organic	N/A		Water	2.07 mg/L	10 mL	2.07 mg/L	1	0.07	0.50			3/22/20 12:26:00	N	IV
K2002471-001	Carbon, Total Organic	N/A		Ground Water	4.43 mg/L	10 mL	4.43 mg/L	1	0.07	0.50			3/22/20 12:54:00	N	IV
K2002489-001	Carbon, Total Organic	N/A		Water	4.72 mg/L	10 mL	4.72 mg/L	1	0.07	0.50			3/22/20 13:22:00	N	II
K2002492-002	Carbon, Total Organic	N/A		Drinking Water	0.37 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 13:50:00	N	I
K2002496-001	Carbon, Total Organic	N/A		Water	14.38 mg/L	10 mL	14.4 mg/L	1	0.07	0.50			3/22/20 15:17:00	N	II
KQ2004008-01	Carbon, Total Organic	MS	K2002416-001	Ground Water	27.78 mg/L	10 mL	27.8 mg/L	1	0.07	0.50	111		3/22/20 10:04:00	N	IV
KQ2004008-02	Carbon, Total Organic	DUP	K2002416-001	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 09:07:00	N	IV
KQ2004008-03	Carbon, Total Organic	DUP	K2002416-002	Ground Water	0.01 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 10:33:00	N	IV
KQ2004008-04	Carbon, Total Organic	DUP	K2002416-003	Ground Water	0.16 mg/L	10 mL	0.16 mg/L J	1	0.07	0.50		21*	3/22/20 11:01:00	N	IV
KQ2004008-05	Carbon, Total Organic	DUP	K2002416-004	Ground Water	0.53 mg/L	10 mL	0.53 mg/L	1	0.07	0.50		2	3/22/20 11:29:00	N	IV
KQ2004008-06	Carbon, Total Organic	DUP	K2002421-001	Water	1.47 mg/L	10 mL	1.47 mg/L	1	0.07	0.50		4	3/22/20 15:45:00	N	IV
KQ2004008-07	Carbon, Total Organic	DUP	K2002421-002	Water	0.76 mg/L	10 mL	0.76 mg/L	1	0.07	0.50		3	3/22/20 16:14:00	N	IV
KQ2004008-08	Carbon, Total Organic	DUP	K2002421-003	Water	1.71 mg/L	10 mL	1.71 mg/L	1	0.07	0.50		1	3/22/20 16:42:00	N	IV
KQ2004008-09	Carbon, Total Organic	DUP	K2002421-004	Water	0.78 mg/L	10 mL	0.78 mg/L	1	0.07	0.50		5	3/22/20 17:10:00	N	IV
KQ2004008-10	Carbon, Total Organic	DUP	K2002434-003	Water	0.18 mg/L	10 mL	0.18 mg/L J	1	0.07	0.50		NC	3/22/20 08:39:00	N	I
KQ2004008-11	Carbon, Total Organic	DUP	K2002462-001	Water	2.96 mg/L	10 mL	2.96 mg/L	1	0.07	0.50		<1	3/22/20 11:58:00	N	II
KQ2004008-12	Carbon, Total Organic	DUP	K2002470-001	Water	1.98 mg/L	10 mL	1.98 mg/L	1	0.07	0.50		4	3/22/20 12:26:00	N	IV
KQ2004008-13	Carbon, Total Organic	DUP	K2002471-001	Ground Water	4.30 mg/L	10 mL	4.30 mg/L	1	0.07	0.50		3	3/22/20 12:54:00	N	IV
KQ2004008-14	Carbon, Total Organic	DUP	K2002489-001	Water	4.65 mg/L	10 mL	4.65 mg/L	1	0.07	0.50		2	3/22/20 13:22:00	N	II
KQ2004008-15	Carbon, Total Organic	DUP	K2002492-002	Drinking Water	0.40 mg/L	10 mL	0.40 mg/L J	1	0.07	0.50		NC	3/22/20 13:50:00	N	I

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674225 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2004008-16	Carbon, Total Organic	DUP	K2002496-001	Water	13.50 mg/L	10 mL	13.5 mg/L	1	0.07	0.50		6	3/22/20 15:17:00	N	II
KQ2004008-17	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	I
KQ2004008-17	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	I
KQ2004008-18	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	I
KQ2004008-18	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	I
KQ2004008-19	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	I
KQ2004008-19	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	I
KQ2004008-20	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	I
KQ2004008-20	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	I
KQ2004008-21	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	I
KQ2004008-21	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	I
KQ2004008-22	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	I
KQ2004008-22	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	I
KQ2004008-23	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	I
KQ2004008-23	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	I
KQ2004008-24	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	I
KQ2004008-24	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	I
KQ2004008-25	Carbon, Total Organic	MB		Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:21:00	N	I
KQ2004008-25	Carbon, Total Organic	MB		Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:21:00	N	I
KQ2004008-26	Carbon, Total Organic	LCS		Water	24.62 mg/L	10 mL	24.6 mg/L	1	0.07	0.50	98		3/22/20 05:35:00	N	I
KQ2004008-26	Carbon, Total Organic	LCS		Water	24.62 mg/L	10 mL	24.6 mg/L	1	0.07	0.50	98		3/22/20 05:35:00	N	I
KQ2004008-27	Carbon, Total Organic	N/A		Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:07:00	N	IV
KQ2004008-28	Carbon, Total Organic	MS	KQ2004008-27	Water	27.78 mg/L	10 mL	27.8 mg/L	1	0.07	0.50	111		3/22/20 10:04:00	N	IV
KQ2004008-29	Carbon, Total Organic	DUP	KQ2004008-27	Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 09:07:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674226 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002432-001	Carbon, Total Organic	N/A		Water	0.03 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 17:38:00	N	IV
K2002437-001	Carbon, Total Organic	N/A		Water	1.83 mg/L	10 mL	1.83 mg/L	1	0.07	0.50			3/22/20 19:04:00	N	I
K2002437-002	Carbon, Total Organic	N/A		Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			3/22/20 19:33:00	N	I
K2002437-003	Carbon, Total Organic	N/A		Water	3.10 mg/L	10 mL	3.10 mg/L	1	0.07	0.50			3/22/20 20:00:00	N	I
K2002437-004	Carbon, Total Organic	N/A		Water	0.71 mg/L	10 mL	0.71 mg/L	1	0.07	0.50			3/22/20 20:29:00	N	I
K2002437-005	Carbon, Total Organic	N/A		Water	0.59 mg/L	10 mL	0.59 mg/L	1	0.07	0.50			3/22/20 20:57:00	N	I
K2002456-001	Carbon, Total Organic	N/A		Water	1.07 mg/L	10 mL	1.07 mg/L	1	0.07	0.50			3/22/20 21:25:00	N	IV
K2002456-002	Carbon, Total Organic	N/A		Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			3/22/20 21:53:00	N	IV
K2002456-003	Carbon, Total Organic	N/A		Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50			3/22/20 22:21:00	N	IV
K2002456-004	Carbon, Total Organic	N/A		Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50			3/22/20 22:49:00	N	IV
KQ2004009-01	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	IV
KQ2004009-02	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	IV
KQ2004009-03	Carbon, Total Organic	CCV		Water	25.05 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	IV
KQ2004009-04	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	IV
KQ2004009-05	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	IV
KQ2004009-06	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	IV
KQ2004009-07	Carbon, Total Organic	MB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:48:00	N	IV
KQ2004009-08	Carbon, Total Organic	LCS		Water	24.66 mg/L	10 mL	24.7 mg/L	1	0.07	0.50	99		3/22/20 15:03:00	N	IV
KQ2004009-09	Carbon, Total Organic	MS	K2002432-001	Water	26.30 mg/L	10 mL	26.3 mg/L	1	0.07	0.50	105		3/22/20 18:06:00	N	IV
KQ2004009-10	Carbon, Total Organic	DUP	K2002432-001	Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 17:38:00	N	IV
KQ2004009-11	Carbon, Total Organic	DUP	K2002437-001	Water	1.78 mg/L	10 mL	1.78 mg/L	1	0.07	0.50		3	3/22/20 19:04:00	N	I
KQ2004009-12	Carbon, Total Organic	DUP	K2002437-002	Water	0.71 mg/L	10 mL	0.71 mg/L	1	0.07	0.50		2	3/22/20 19:33:00	N	I
KQ2004009-13	Carbon, Total Organic	DUP	K2002437-003	Water	3.13 mg/L	10 mL	3.13 mg/L	1	0.07	0.50		<1	3/22/20 20:00:00	N	I
KQ2004009-14	Carbon, Total Organic	DUP	K2002437-004	Water	0.64 mg/L	10 mL	0.64 mg/L	1	0.07	0.50		10	3/22/20 20:29:00	N	I
KQ2004009-15	Carbon, Total Organic	DUP	K2002437-005	Water	0.56 mg/L	10 mL	0.56 mg/L	1	0.07	0.50		4	3/22/20 20:57:00	N	I
KQ2004009-16	Carbon, Total Organic	DUP	K2002456-001	Water	1.04 mg/L	10 mL	1.04 mg/L	1	0.07	0.50		2	3/22/20 21:25:00	N	IV
KQ2004009-17	Carbon, Total Organic	DUP	K2002456-002	Water	0.66 mg/L	10 mL	0.66 mg/L	1	0.07	0.50		9	3/22/20 21:53:00	N	IV
KQ2004009-18	Carbon, Total Organic	DUP	K2002456-003	Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50		<1	3/22/20 22:21:00	N	IV
KQ2004009-19	Carbon, Total Organic	DUP	K2002456-004	Water	1.30 mg/L	10 mL	1.30 mg/L	1	0.07	0.50		4	3/22/20 22:49:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674227 **Method/Testcode:** SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002422-001	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	9.45 mg/L	10 mL	9.45 mg/L	1	0.07	0.50			3/23/20 02:23:00	N	III
K2002462-002	Carbon, Dissolved Organic	N/A		Water	4.12 mg/L	10 mL	4.12 mg/L	1	0.07	0.50			3/23/20 01:11:00	N	II
KQ2004010-01	Carbon, Dissolved Organic	CCV		Water	25.13 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	II
KQ2004010-01	Carbon, Dissolved Organic (DOC)	CCV		Water	25.13 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	II
KQ2004010-02	Carbon, Dissolved Organic	CCV		Water	25.06 mg/L	10 mL	25.1 mg/L	1					3/23/20 03:20:00	N	II
KQ2004010-02	Carbon, Dissolved Organic (DOC)	CCV		Water	25.06 mg/L	10 mL	25.1 mg/L	1					3/23/20 03:20:00	N	II
KQ2004010-03	Carbon, Dissolved Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	II
KQ2004010-03	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	II
KQ2004010-04	Carbon, Dissolved Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 03:35:00	N	II
KQ2004010-04	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 03:35:00	N	II
KQ2004010-05	Carbon, Dissolved Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:42:00	N	II
KQ2004010-05	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:42:00	N	II
KQ2004010-06	Carbon, Dissolved Organic	LCS		Water	24.20 mg/L	10 mL	24.2 mg/L	1	0.07	0.50	97		3/23/20 00:57:00	N	II
KQ2004010-06	Carbon, Dissolved Organic (DOC)	LCS		Water	24.20 mg/L	10 mL	24.2 mg/L	1	0.07	0.50	97		3/23/20 00:57:00	N	II
KQ2004010-07	Carbon, Dissolved Organic	MS	K2002462-002	Water	32.05 mg/L	10 mL	32.0 mg/L	1	0.07	0.50	112		3/23/20 01:40:00	N	II
KQ2004010-08	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	4.12 mg/L	10 mL	4.12 mg/L	1	0.07	0.50			3/23/20 01:11:00	N	III
KQ2004010-09	Carbon, Dissolved Organic (DOC)	MS	KQ2004010-08	Surface Water	32.05 mg/L	10 mL	32.0 mg/L	1	0.07	0.50	112		3/23/20 01:40:00	N	III
KQ2004010-10	Carbon, Dissolved Organic (DOC)	DUP	K2002422-001	Surface Water	9.61 mg/L	10 mL	9.61 mg/L	1	0.07	0.50		2	3/23/20 02:23:00	N	III
KQ2004010-11	Carbon, Dissolved Organic	DUP	K2002462-002	Water	4.07 mg/L	10 mL	4.07 mg/L	1	0.07	0.50		1	3/23/20 01:11:00	N	II
KQ2004010-12	Carbon, Dissolved Organic (DOC)	DUP	KQ2004010-08	Surface Water	4.07 mg/L	10 mL	4.07 mg/L	1	0.07	0.50		1	3/23/20 01:11:00	N	III

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

0.043	0.043			OBSERVATIONS	12	0.0432
0.366				STD Deviation	0.11429	ABOVE
0.200				AVERAGE	0.06658	ABOVE
0.055	0.055	0.055	######	UCL	0.18087	0.0545
0.136	0.136			LCL	-0.04772	0.1357
0.000						0
0.000						0
0.000				OBSERVATIONS	3	0
0.000				STD Deviation	0.02578	0
0.000				AVERAGE	0.07780	0
0.000				UCL	0.10358	0
0.000				LCL	0.05202	0
						0
						0
				OBSERVATIONS	1	0
				STD Deviation	#DIV/0!	0
				AVERAGE	0.05450	0
				UCL	#DIV/0!	0
				LCL	#DIV/0!	0
						0
						0
				OBSERVATIONS	0	0
				STD Deviation	#DIV/0!	0
				AVERAGE	#DIV/0!	0
						0
						0
						0
						0
						0

BLP 3/24/20

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccb	1	0.043	0.0778	-0.0346	-0.0346	<0.5	3/21/2020
3	ccv	1	26.406	0.0778	26.3280	26.328	26.3	3/21/2020
4	mb	1	0.366	0.0778	0.2878	0.2878	<0.5	3/21/2020
5	lcs	1	24.954	0.0778	24.8758	24.8758	24.9	3/21/2020
6	K2002337-001	1	0.994	0.0778	0.9162	0.9162	0.92	3/21/2020
7	K2002337-001	1	0.983	0.0778	0.9055	0.9055	0.9	3/21/2020
8	KQ2003999-09	1	29.561	0.0778	29.4834	29.4834	29	3/21/2020
9	K2002337-002	1	0.927	0.0778	0.8490	0.849	0.85	3/21/2020
10	K2002337-002	1	0.868	0.0778	0.7902	0.7902	0.79	3/21/2020
11	K2002337-003	1	0.851	0.0778	0.7733	0.7733	0.8	3/21/2020
12	K2002337-003	1	0.778	0.0778	0.6997	0.6997	0.70	3/21/2020
13	K2002337-004	1	0.759	0.0778	0.6814	0.6814	0.68	3/21/2020
14	K2002337-004	1	0.748	0.0778	0.6704	0.6704	0.67	3/21/2020
15	K2002337-005	1	0.530	0.0778	0.4518	0.4518	<0.5	3/21/2020
16	K2002337-005	1	0.543	0.0778	0.4649	0.4649	<0.5	3/21/2020
17	ccv	1	26.379	0.0778	26.3014	26.3014	26.30	3/21/2020
18	ccb	1	0.200	0.0778	0.1221	0.1221	<0.5	3/21/2020
19	K2002337-006	1	1.952	0.0778	1.8738	1.8738	1.9	3/22/2020
20	K2002337-006	1	1.929	0.0778	1.8513	1.8513	1.85	3/22/2020
21	K2002337-007	1	0.710	0.0778	0.6317	0.6317	0.63	3/22/2020
22	K2002337-007	1	0.658	0.0778	0.5798	0.5798	0.6	3/22/2020
23	K2002276-001	10	5.931	0.0778	5.8531	58.531	58.5	3/22/2020
24	K2002276-001	10	5.997	0.0778	5.9193	59.193	59.19	3/22/2020
25	K2002365-001	1	6.825	0.0778	6.7471	6.7471	6.75	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

	date time
Analyzed By: KD	Date Analyzed 3/21/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002365-001	1	6.814	0.0778	6.7366	6.7366	6.74	3/22/2020
27	K2002353-001	400	1.325	0.0778	1.2473	498.92	498.92	3/22/2020
28	K2002353-001	400	1.272	0.0778	1.1941	477.64	477.6	3/22/2020
29	K2002412-001	1	10.758	0.0778	10.6798	10.6798	10.7	3/22/2020
30	K2002412-001	1	10.352	0.0778	10.2738	10.2738	10.3	3/22/2020
31	K2002412-002	1	2.431	0.0778	2.3535	2.3535	2.4	3/22/2020
32	K2002412-002	1	2.226	0.0778	2.1484	2.1484	2.1	3/22/2020
33	K2002412-003	1	44.908	0.0778	44.8304	44.8304	44.8	3/22/2020
34	K2002412-003	1	44.589	0.0778	44.5114	44.5114	44.5	3/22/2020
35	K2002412-004	1	1.276	0.0778	1.1981	1.1981	1.2	3/22/2020
36	K2002412-004	1	0.987	0.0778	0.9096	0.9096	0.9	3/22/2020
37	ccv	1	26.538	0.0778	26.4599	26.4599	26.5	3/22/2020
38	ccb	1	0.055	0.0778	-0.0233	-0.0233	<0.5	3/22/2020
39	K2002412-005	1	4.650	0.0778	4.5720	4.572	4.6	3/22/2020
40	K2002412-005	1	4.487	0.0778	4.4096	4.4096	4.4	3/22/2020
41	K2002412-006	1	31.326	0.0778	31.2482	31.2482	31.2	3/22/2020
42	K2002412-006	1	30.802	0.0778	30.7243	30.7243	30.7	3/22/2020
43	K2002412-007	1	0.861	0.0778	0.7828	0.7828	0.8	3/22/2020
44	K2002412-007	1	0.659	0.0778	0.5810	0.581	0.6	3/22/2020
45	K2002412-008	1	5.297	0.0778	5.2192	5.2192	5.2	3/22/2020
46	K2002412-008	1	5.349	0.0778	5.2707	5.2707	5.3	3/22/2020
47	K2002434-001	1	0.318	0.0778	0.2402	0.2402	<0.5	3/22/2020
48	K2002434-001	1	0.271	0.0778	0.1933	0.1933	<0.5	3/22/2020
49	K2002434-002	1	0.689	0.0778	0.6116	0.6116	0.6	3/22/2020
50	K2002434-002	1	0.674	0.0778	0.5965	0.5965	0.6	3/22/2020

Analyzed By: BCD	Date Analyzed 3/24/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
51	ccv	1	25.843	0.0778	25.7647	25.7647	25.76	3/22/2020
52	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
53		1		0.0000	0.0000	0	<0.5	
54		1		0.0000	0.0000	0	<0.5	
55		1		0.0000	0.0000	0	<0.5	
56		1		0.0000	0.0000	0	<0.5	
57		1		0.0000	0.0000	0	<0.5	
58		1		0.0000	0.0000	0	<0.5	
59		1		0.0000	0.0000	0	<0.5	
60		1		0.0000	0.0000	0	<0.5	
61		1		0.0000	0.0000	0	<0.5	
62		1		0.0000	0.0000	0	<0.5	
63		1		0.0000	0.0000	0	<0.5	
64		1		0.0000	0.0000	0	<0.5	
65		1		0.0000	0.0000	0	<0.5	
66		1		0.0000	0.0000	0	<0.5	
67		1		0.0000	0.0000	0	<0.5	
68		1		0.0000	0.0000	0	<0.5	
69		1		0.0000	0.0000	0	<0.5	
70		1		0.0000	0.0000	0	<0.5	
71		1		0.0000	0.0000	0	<0.5	
72		1		0.0000	0.0000	0	<0.5	
73		1		0.0000	0.0000	0	<0.5	
74		1		0.0000	0.0000	0	<0.5	
75		1		0.0000	0.0000	0	<0.5	

Analyzed By: BKP	Date Analyzed 3/24/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	26.538	0.0778	26.4599	26.4599	26.5	3/22/2020
3	ccb	1	0.055	0.0778	-0.0233	-0.0233	<0.5	3/22/2020
4	mb	1	0.136	0.0778	0.0579	0.0579	<0.5	3/22/2020
5	lcs	1	24.698	0.0778	24.6205	24.6205	24.6	3/22/2020
6	K2002434-003	1	0.192	0.0778	0.1139	0.1139	<0.5	3/22/2020
7	K2002434-003	1	0.258	0.0778	0.1797	0.1797	<0.5	3/22/2020
8	K2002416-001	1	0.099	0.0778	0.0207	0.0207	<0.5	3/22/2020
9	K2002416-001	1	0.083	0.0778	0.0048	0.0048	<0.5	3/22/2020
10	ccv	1	25.843	0.0778	25.7647	25.7647	25.76	3/22/2020
11	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
12	KQ2004008-01	1	27.862	0.0778	27.7842	27.7842	27.78	3/22/2020
13	K2002416-002	1	0.099	0.0778	0.0210	0.021	<0.5	3/22/2020
14	K2002416-002	1	0.085	0.0778	0.0067	0.0067	<0.5	3/22/2020
15	K2002416-003	1	0.271	0.0778	0.1932	0.1932	<0.5	3/22/2020
16	K2002416-003	1	0.235	0.0778	0.1572	0.1572	<0.5	3/22/2020
17	K2002416-004	1	1.615	0.0778	1.5370	1.537	1.54	3/22/2020
18	K2002416-004	1	1.605	0.0778	1.5267	1.5267	1.5	3/22/2020
19	K2002462-001	1	3.041	0.0778	2.9627	2.9627	3.0	3/22/2020
20	K2002462-001	1	3.038	0.0778	2.9600	2.96	2.96	3/22/2020
21	K2002470-001	1	2.148	0.0778	2.0704	2.0704	2.07	3/22/2020
22	K2002470-001	1	2.061	0.0778	1.9828	1.9828	2.0	3/22/2020
23	K2002471-001	1	4.509	0.0778	4.4308	4.4308	4.4	3/22/2020
24	K2002471-001	1	4.381	0.0778	4.3030	4.303	4.30	3/22/2020
25	K2002489-001	1	4.801	0.0778	4.7227	4.7227	4.72	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

date time

Analyzed By: [signature]	Date Analyzed 3/21/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002489-001	1	4.724	0.0778	4.6460	4.646	4.65	3/22/2020
27	K2002492-002	1	0.452	0.0778	0.3746	0.3746	<0.5	3/22/2020
28	K2002492-002	1	0.479	0.0778	0.4014	0.4014	<0.5	3/22/2020
29	ccv	1	25.695	0.0778	25.6168	25.6168	25.6	3/22/2020
30	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
31	K2002496-001	1	14.459	0.0778	14.3812	14.3812	14.4	3/22/2020
32	K2002496-001	1	13.578	0.0778	13.5000	13.5	13.5	3/22/2020
33	K2002421-001	1	1.605	0.0778	1.5272	1.5272	1.5	3/22/2020
34	K2002421-001	1	1.548	0.0778	1.4705	1.4705	1.5	3/22/2020
35	K2002421-002	1	0.866	0.0778	0.7878	0.7878	0.8	3/22/2020
36	K2002421-002	1	0.842	0.0778	0.7645	0.7645	0.8	3/22/2020
37	K2002421-003	1	1.766	0.0778	1.6881	1.6881	1.7	3/22/2020
38	K2002421-003	1	1.790	0.0778	1.7125	1.7125	1.7	3/22/2020
39	K2002421-004	1	0.896	0.0778	0.8180	0.818	0.8	3/22/2020
40	K2002421-004	1	0.859	0.0778	0.7812	0.7812	0.8	3/22/2020
41	ccv	1	25.418	0.0778	25.3398	25.3398	25.3	3/22/2020
42	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: KP	Date Analyzed 3/22/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.695	0.0778	25.6168	25.6168	25.6	3/22/2020
3	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
4	mb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
5	lcs	1	24.742	0.0778	24.6645	24.6645	24.7	3/22/2020
6	K2002432-001	1	0.108	0.0778	0.0305	0.0305	<0.5	3/22/2020
7	K2002432-001	1	0.143	0.0778	0.0649	0.0649	<0.5	3/22/2020
8	KQ2004009-09	1	26.380	0.0778	26.3020	26.302	26	3/22/2020
9	ccv	1	25.418	0.0778	25.3398	25.3398	25.34	3/22/2020
10	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
11	K2002437-001	1	1.911	0.0778	1.8331	1.8331	1.8	3/22/2020
12	K2002437-001	1	1.853	0.0778	1.7754	1.7754	1.78	3/22/2020
13	K2002437-002	1	0.802	0.0778	0.7246	0.7246	0.72	3/22/2020
14	K2002437-002	1	0.788	0.0778	0.7099	0.7099	0.71	3/22/2020
15	K2002437-003	1	3.181	0.0778	3.1028	3.1028	3.1	3/22/2020
16	K2002437-003	1	3.208	0.0778	3.1306	3.1306	3.1	3/22/2020
17	K2002437-004	1	0.783	0.0778	0.7056	0.7056	0.71	3/22/2020
18	K2002437-004	1	0.715	0.0778	0.6372	0.6372	0.6	3/22/2020
19	K2002437-005	1	0.665	0.0778	0.5874	0.5874	0.6	3/22/2020
20	K2002437-005	1	0.641	0.0778	0.5633	0.5633	0.56	3/22/2020
21	K2002456-001	1	1.145	0.0778	1.0675	1.0675	1.07	3/22/2020
22	K2002456-001	1	1.122	0.0778	1.0438	1.0438	1.0	3/22/2020
23	K2002456-002	1	0.794	0.0778	0.7165	0.7165	0.7	3/22/2020
24	K2002456-002	1	0.735	0.0778	0.6568	0.6568	0.66	3/22/2020
25	K2002456-003	1	1.431	0.0778	1.3528	1.3528	1.35	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

date time

Analyzed By: BDP	Date Analyzed 3/12/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002456-003	1	1.431	0.0778	1.3528	1.3528	1.35	3/22/2020
27	K2002456-004	1	1.433	0.0778	1.3548	1.3548	1.35	3/22/2020
28	K2002456-004	1	1.375	0.0778	1.2971	1.2971	1.3	3/22/2020
29	ccv	1	25.130	0.0778	25.0525	25.0525	25.1	3/23/2020
30	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
31		1		0.0000	0.0000	0	<0.5	
32		1		0.0000	0.0000	0	<0.5	
33		1		0.0000	0.0000	0	<0.5	
34		1		0.0000	0.0000	0	<0.5	
35		1		0.0000	0.0000	0	<0.5	
36		1		0.0000	0.0000	0	<0.5	
37		1		0.0000	0.0000	0	<0.5	
38		1		0.0000	0.0000	0	<0.5	
39		1		0.0000	0.0000	0	<0.5	
40		1		0.0000	0.0000	0	<0.5	
41		1		0.0000	0.0000	0	<0.5	
42		1		0.0000	0.0000	0	<0.5	
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: BCP	Date Analyzed 3/21/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.130	0.0778	25.0525	25.0525	25.1	3/23/2020
3	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
4	mb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
5	lcs	1	24.199	0.0778	24.1209	24.1209	24.1	3/23/2020
6	K2002462-002	1	4.117	0.0778	4.0393	4.0393	4.04	3/23/2020
7	K2002462-002	1	4.067	0.0778	3.9892	3.9892	4.0	3/23/2020
8	KQ2004010-07	1	32.047	0.0778	31.9695	31.9695	32	3/23/2020
9	K2002422-001	1	9.445	0.0778	9.3675	9.3675	9.37	3/23/2020
10	K2002422-001	1	9.612	0.0778	9.5338	9.5338	9.53	3/23/2020
11	ccv	1	25.060	0.0778	24.9820	24.982	25.0	3/23/2020
12	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
13		1		0.0000	0.0000	0	<0.5	
14		1		0.0000	0.0000	0	<0.5	
15		1		0.0000	0.0000	0	<0.5	
16		1		0.0000	0.0000	0	<0.5	
17		1		0.0000	0.0000	0	<0.5	
18		1		0.0000	0.0000	0	<0.5	
19		1		0.0000	0.0000	0	<0.5	
20		1		0.0000	0.0000	0	<0.5	
21		1		0.0000	0.0000	0	<0.5	
22		1		0.0000	0.0000	0	<0.5	
23		1		0.0000	0.0000	0	<0.5	
24		1		0.0000	0.0000	0	<0.5	
25		1		0.0000	0.0000	0	<0.5	

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

date time

Analyzed By: BCP	Date Analyzed 3/21/20
Reviewed By:	Date Reviewed

Revision 1, 2010 R:\WET\ANALYSES\TOC\TEMPLATE\TOCwaterLIMS

TOC: 674205, 674225, 674226
DOC: 674227

Schedule: 03212020

Version: 4
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2020/03/21 21:07 - Saturday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
74	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K2002337-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
4	Sample	K2002337-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
5	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
6	Sample	K2002337-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
7	Sample	K2002337-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
8	Sample	K2002337-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
9	Sample	K2002337-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
10	Sample	K2002337-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	K2002337-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	K2002276-001.01 10x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	K2002365-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
14	Sample	K2002353-001.01 400x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
15	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
16	Sample	K2002412-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
17	Sample	K2002412-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
18	Sample	K2002412-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
19	Sample	K2002412-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
21	Sample	K2002412-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K2002412-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
23	Sample	K2002412-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
24	Sample	K2002412-008.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
25	Sample	K2002434-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K2002434-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K2002434-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K2002416-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
29	Sample	K2002416-001.02 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
30	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
31	Sample	K2002416-002.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
32	Sample	K2002416-003.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
33	Sample	K2002416-004.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
34	Sample	K2002462-001.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
35	Sample	K2002470-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
36	Sample	K2002471-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
37	Sample	K2002489-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
38	Sample	K2002492-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready

Schedule: 03212020

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
39	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
40	Sample	K2002496-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
41	Sample	K2002421-001.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
42	Sample	K2002421-002.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
43	Sample	K2002421-003.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
44	Sample	K2002421-004.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
45	Sample	K2002432-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
46	Sample	K2002432-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
47	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
48	Sample	K2002437-001.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
49	Sample	K2002437-002.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
50	Sample	K2002437-003.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
51	Sample	K2002437-004.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
52	Sample	K2002437-005.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
53	Sample	K2002456-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
54	Sample	K2002456-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
55	Sample	K2002456-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
56	Sample	K2002456-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
57	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
58	Sample	MB4	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
59	Sample	K2002462-002.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
60	Sample	K2002462-002.04 ms doc	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
61	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
62	Sample	FB 3/19/20 1619	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
63	Sample	K2002422-001.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
64	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
					False	

Fusion Report - 03212020
Saturday, March 21, 2020 04:44 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/03/24 09:26 - Tuesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	03212020	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v2) Fusion1 (Fusion1) (v3) Fusion1 (Fusion1) (v4)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/03/21 16:44

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	12.01	16.15	4.14	49.81	08:01
2	TC Clean	18.09	21.86	3.77	49.56	07:17
3	TC Clean	6.93	10.79	3.86	49.61	07:02
4	TC Clean	5.02	8.90	3.88	49.63	07:01

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	74	TOC	RB	0.4528 ppm	0.0533 ppm	11.7700%	2020/03/21 17:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4804	4.8037	10.62	14.37	3.75	49.71	10:29
2	TOC	0.4973	4.9732	10.74	14.56	3.82	49.67	10:29
3	TOC	0.4567	4.5672	10.46	14.14	3.68	49.67	10:27
4	TOC	0.3769	3.7687	9.93	13.76	3.83	49.65	10:29

Dilution **Blank Contribution** **Method** **Calibration**

1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/03/21 18:14

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	9.17	13.91	4.74	49.79	07:59
2	TC Clean	6.79	10.62	3.83	49.55	07:20
3	TC Clean	4.32	8.23	3.91	49.61	07:00
4	TC Clean	3.54	7.40	3.86	49.60	07:01

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/03/21 18:48

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.92	4.73	3.81	49.82	07:59
2	TC Clean	8.57	12.40	3.83	49.62	07:17
3	TC Clean	4.30	8.10	3.80	49.63	07:00
4	TC Clean	3.55	7.36	3.81	49.65	07:03

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	D	TOC	RB	0.2621 ppm	0.0000 ppm	0.0000%	2020/03/21 19:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2621	2.6207	9.15	12.95	3.80	49.69	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCB — From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time

◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0432 ppm (PASS)	0.0000 ppm	0%	2020/03/21 19:37

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0432	0.4318	8.11	11.92	3.82	49.72	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.4058 ppm (PASS)	0.0000 ppm	0%	2020/03/21 19:52

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.4058	264.0582	185.40	189.22	3.82	49.75	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Sample From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	1	TOC	MB1	0.3656 ppm	0.0000 ppm	0.0000%	2020/03/21 20:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3656	3.6557	9.85	13.62	3.77	49.76	10:35

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	24.9536 ppm (PASS)	0.0000 ppm	0%	2020/03/21 20:21

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.9536	249.5362	175.63	179.68	4.05	49.79	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	2	TOC	ICS	2.0813 ppm	0.0000 ppm	0.0000%	2020/03/21 20:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.0813	20.8126	21.39	25.32	3.93	49.83	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	3	TOC	K2002337-001.01	0.9886 ppm	0.0076 ppm	0.7700%	2020/03/21 20:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9940	9.9397	14.08	17.85	3.78	49.85	10:28
2	TOC	0.9833	9.8327	14.00	17.80	3.80	49.88	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	4	TOC	K2002337-001.01 ms	29.5612 ppm	0.0000 ppm	0.0000%	2020/03/21 21:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	29.5612	295.6123	206.19	209.98	3.79	49.90	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	5	TOC	RB	0.2728 ppm	0.0000 ppm	0.0000%	2020/03/21 21:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2728	2.7278	9.23	12.95	3.72	49.94	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	6	TOC	K2002337-002.01	0.8974 ppm	0.0415 ppm	4.6300%	2020/03/21 21:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9268	9.2676	13.62	17.26	3.63	49.95	10:26
2	TOC	0.8680	8.6802	13.23	17.12	3.89	49.98	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	7	TOC	K2002337-003.01	0.8143 ppm	0.0520 ppm	6.3900%	2020/03/21 22:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8511	8.5107	13.12	16.70	3.59	49.97	10:27
2	TOC	0.7775	7.7747	12.62	16.55	3.93	50.00	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	8	TOC	K2002337-004.01	0.7537 ppm	0.0078 ppm	1.0300%	2020/03/21 22:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7592	7.5918	12.50	16.55	4.05	50.01	10:30
2	TOC	0.7482	7.4817	12.42	16.32	3.90	50.00	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	9	TOC	K2002337-005.01	0.5361 ppm	0.0093 ppm	1.7300%	2020/03/21 23:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5296	5.2958	10.95	14.68	3.72	49.98	10:30
2	TOC	0.5427	5.4267	11.04	14.79	3.75	49.99	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.3792 ppm	0.0000 ppm	0%	2020/03/21 23:40

							(PASS)			

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.3792	263.7921	185.22	188.92	3.71	50.01	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.1999 ppm (PASS)	0.0000 ppm	0%	2020/03/21 23:55

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.1999	1.9991	9.16	12.96	3.80	50.00	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	10	TOC	K2002337-006.01	1.9404 ppm	0.0159 ppm	0.8200%	2020/03/22 00:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9516	19.5160	20.52	24.28	3.76	50.01	10:33
2	TOC	1.9291	19.2914	20.37	24.25	3.89	49.98	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	11	TOC	K2002337-007.01	0.6836 ppm	0.0367 ppm	5.3700%	2020/03/22 00:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7095	7.0951	12.16	15.91	3.75	49.97	10:25
2	TOC	0.6576	6.5762	11.81	15.68	3.87	49.95	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis	Sample ID	Result (ppmC)	Std. Dev.	RSD	Start Time

		Type			(ppmC)		
◈	12	TOC	K2002276-001.01 10x	5.9640 ppm	0.0468 ppm	0.7800%	2020/03/22 01:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.9309	59.3095	47.28	51.18	3.91	49.95	10:27
2	TOC	5.9971	59.9712	47.72	51.51	3.79	49.96	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	13	TOC	K2002365-001.01	6.8196 ppm	0.0075 ppm	0.1100%	2020/03/22 01:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.8249	68.2493	53.29	57.25	3.96	49.94	10:26
2	TOC	6.8144	68.1437	53.22	57.13	3.91	49.94	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	14	TOC	K2002353-001.01 400x	1.2985 ppm	0.0376 ppm	2.9000%	2020/03/22 02:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3251	13.2513	16.30	20.20	3.90	49.93	10:28
2	TOC	1.2719	12.7189	15.94	19.92	3.97	49.90	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	15	TOC	RB	0.0981 ppm	0.0036 ppm	3.6500%	2020/03/22 02:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1006	1.0059	8.07	11.84	3.77	49.88	10:26
2	TOC	0.0955	0.9553	8.03	12.08	4.05	49.88	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	16	TOC	K2002412-001.01	10.5546 ppm	0.2870 ppm	2.7200%	2020/03/22 02:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	10.7576	107.5758	79.74	83.68	3.95	49.85	10:29
2	TOC	10.3516	103.5163	77.01	80.95	3.94	49.85	10:26

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	17	TOC	K2002412-002.01	2.3288 ppm	0.1450 ppm	6.2300%	2020/03/22 03:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4313	24.3130	23.74	27.73	3.98	49.85	10:28
2	TOC	2.2262	22.2625	22.36	26.60	4.24	49.85	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	18	TOC	K2002412-003.01	44.7487 ppm	0.2255 ppm	0.5000%	2020/03/22 03:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	44.9082	449.0821	309.40	313.24	3.84	49.85	10:30
2	TOC	44.5892	445.8925	307.25	311.28	4.03	49.85	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	19	TOC	K2002412-004.01	1.1317 ppm	0.2040 ppm	18.0300%	2020/03/22 04:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2759	12.7591	15.97	20.08	4.10	49.87	10:27
2	TOC	0.9874	9.8743	14.03	18.07	4.04	49.92	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.5377 ppm (PASS)	0.0000 ppm	0%	2020/03/22 04:51

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.5377	265.3772	186.28	190.22	3.94	49.88	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	50 ppmC

met.	(v4)	(v32)

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0545 ppm (PASS)	0.0000 ppm	0%	2020/03/22 05:06

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0545	0.5449	8.18	12.24	4.06	49.92	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	20	TOC	MB2	0.1357 ppm	0.0000 ppm	0.0000%	2020/03/22 05:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1357	1.3568	8.30	12.27	3.97	49.92	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	24.6983 ppm (PASS)	0.0000 ppm	0%	2020/03/22 05:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.6983	246.9831	173.91	177.85	3.94	49.91	10:35

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	21	TOC	K2002412-005.01	4.5686 ppm	0.1148 ppm	2.5100%	2020/03/22 05:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.6498	46.4975	38.66	42.58	3.92	49.92	10:28
2	TOC	4.4874	44.8737	37.57	41.59	4.02	49.93	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	22	TOC	K2002412-006.01	31.0641 ppm	0.3704 ppm	1.1900%	2020/03/22 06:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	31.3260	313.2600	218.06	222.06	4.00	49.92	10:27
2	TOC	30.8021	308.0213	214.54	218.63	4.09	49.93	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	23	TOC	K2002412-007.01	0.7597 ppm	0.1427 ppm	18.7800%	2020/03/22 06:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8606	8.6059	13.18	17.31	4.14	49.93	10:28
2	TOC	0.6588	6.5880	11.82	15.93	4.11	49.94	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	24	TOC	K2002412-008.01	5.3228 ppm	0.0364 ppm	0.6800%	2020/03/22 07:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.2970	52.9704	43.01	47.07	4.06	49.93	10:27
2	TOC	5.3485	53.4849	43.36	47.40	4.04	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	25	TOC	K2002434-001.01	0.2946 ppm	0.0331 ppm	11.2400%	2020/03/22 07:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3180	3.1799	9.53	13.49	3.96	49.96	10:27
2	TOC	0.2711	2.7115	9.22	13.14	3.93	49.95	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	26	TOC	K2002434-002.01	0.6819 ppm	0.0107 ppm	1.5700%	2020/03/22 08:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6894	6.8944	12.03	15.93	3.91	49.95	10:31
2	TOC	0.6743	6.7427	11.93	15.87	3.94	49.94	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	27	TOC	K2002434-003.01	0.2246 ppm	0.0465 ppm	20.6900%	2020/03/22 08:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1917	1.9174	8.68	12.65	3.97	49.94	10:25
2	TOC	0.2575	2.5746	9.12	13.14	4.02	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	28	TOC	K2002416-001.02	0.0905 ppm	0.0113 ppm	12.4200%	2020/03/22 09:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0985	0.9850	8.05	11.97	3.92	49.94	10:26
2	TOC	0.0826	0.8259	7.95	11.91	3.97	49.95	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8425 ppm (PASS)	0.0000 ppm	0%	2020/03/22 09:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8425	258.4255	181.61	185.65	4.04	49.95	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	50 ppmC

met.	(v4)	(v32)

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 09:49

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.06	10.95	3.89	49.94	10:28

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	29	TOC	K2002416-001.02 ms	27.8620 ppm	0.0000 ppm	0.0000%	2020/03/22 10:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.8620	278.6204	194.76	198.67	3.91	49.95	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	30	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 10:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.09	11.09	4.00	49.95	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	31	TOC	K2002416-002.02	0.0917 ppm	0.0101 ppm	11.0100%	2020/03/22 10:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0988	0.9880	8.06	12.13	4.08	49.96	10:26
2	TOC	0.0845	0.8453	7.96	12.11	4.15	49.97	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	32	TOC	K2002416-003.02	0.2530 ppm	0.0254 ppm	10.0600%	2020/03/22 11:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2710	2.7100	9.21	13.27	4.06	49.93	10:29
2	TOC	0.2350	2.3501	8.97	12.92	3.95	49.92	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	33	TOC	K2002416-004.02	1.6097 ppm	0.0073 ppm	0.4500%	2020/03/22 11:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6148	16.1479	18.25	22.09	3.84	49.94	10:26
2	TOC	1.6045	16.0453	18.18	22.08	3.90	49.92	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	34	TOC	K2002462-001.06	3.0392 ppm	0.0019 ppm	0.0600%	2020/03/22 11:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.0405	30.4052	27.84	31.73	3.89	49.91	10:31
2	TOC	3.0378	30.3785	27.82	31.60	3.78	49.91	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	35	TOC	K2002470-001.01	2.1044 ppm	0.0619 ppm	2.9400%	2020/03/22 12:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1482	21.4818	21.84	25.60	3.76	49.92	10:27
2	TOC	2.0606	20.6059	21.25	25.19	3.94	49.92	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	36	TOC	K2002471-001.01	4.4447 ppm	0.0904 ppm	2.0300%	2020/03/22 12:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.5086	45.0863	37.71	41.74	4.03	49.90	10:29

2	TOC	4.3808	43.8075	36.85	40.81	3.96	49.89	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	37	TOC	K2002489-001.01	4.7622 ppm	0.0543 ppm	1.1400%	2020/03/22 13:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.8005	48.0053	39.67	43.66	3.99	49.91	10:29
2	TOC	4.7238	47.2380	39.16	43.00	3.84	49.91	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	38	TOC	K2002492-002.01	0.4658 ppm	0.0189 ppm	4.0600%	2020/03/22 13:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4524	4.5241	10.43	14.40	3.97	49.90	10:27
2	TOC	0.4792	4.7918	10.61	14.28	3.66	49.89	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.6946 ppm (PASS)	0.0000 ppm	0%	2020/03/22 14:19

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.6946	256.9459	180.61	184.49	3.88	49.89	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 14:33

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.32	10.16	3.85	49.87	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	39	TOC	MB3	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 14:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.92	9.75	3.83	49.87	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.7423 ppm (PASS)	0.0000 ppm	0%	2020/03/22 15:03

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.7423	247.4232	174.21	178.06	3.85	49.87	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	40	TOC	K2002496-001.01	14.0184 ppm	0.6231 ppm	4.4400%	2020/03/22 15:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.4590	144.5901	104.63	108.44	3.81	49.85	10:28
2	TOC	13.5778	135.7782	98.70	102.54	3.83	49.84	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	41	TOC	K2002421-001.12	1.5767 ppm	0.0401 ppm	2.5400%	2020/03/22 15:45

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6050	16.0498	18.18	22.01	3.83	49.82	10:28
2	TOC	1.5483	15.4833	17.80	21.76	3.95	49.80	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	42	TOC	K2002421-002.12	0.8540 ppm	0.0165 ppm	1.9300%	2020/03/22 16:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8656	8.6565	13.21	17.17	3.96	49.80	10:29
2	TOC	0.8423	8.4230	13.06	16.87	3.81	49.81	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	43	TOC	K2002421-003.12	1.7781 ppm	0.0172 ppm	0.9700%	2020/03/22 16:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.7659	17.6587	19.27	23.22	3.95	49.79	10:29
2	TOC	1.7903	17.9026	19.43	23.24	3.81	49.77	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	44	TOC	K2002421-004.12	0.8774 ppm	0.0261 ppm	2.9700%	2020/03/22 17:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8958	8.9583	13.42	17.18	3.76	49.77	10:27
2	TOC	0.8590	8.5895	13.17	16.92	3.75	49.78	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	45	TOC	K2002432-001.01	0.1255 ppm	0.0243 ppm	19.3500%	2020/03/22 17:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1083	1.0832	8.12	11.94	3.82	49.80	10:28

2	TOC	0.1427	1.4267	8.35	12.16	3.81	49.84	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	46	TOC	K2002432-001.01 ms	26.3798 ppm	0.0000 ppm	0.0000%	2020/03/22 18:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	26.3798	263.7980	184.80	188.75	3.96	49.85	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	47	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 18:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.97	9.86	3.88	49.86	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.4176 ppm (PASS)	0.0000 ppm	0%	2020/03/22 18:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.4176	254.1757	178.75	182.64	3.89	49.88	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB — From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 18:50

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time

D	TOC	0 ppm	1	0.0000	0.0000	6.08	9.82	3.74	49.92	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	48	TOC	K2002437-001.03	1.8820 ppm	0.0408 ppm	2.1700%	2020/03/22 19:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9109	19.1085	20.24	24.02	3.78	49.93	10:29
2	TOC	1.8532	18.5316	19.85	23.57	3.71	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	49	TOC	K2002437-002.03	0.7951 ppm	0.0104 ppm	1.3100%	2020/03/22 19:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8024	8.0245	12.79	16.50	3.71	50.00	10:24
2	TOC	0.7877	7.8773	12.69	16.46	3.77	49.99	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	50	TOC	K2002437-003.03	3.1945 ppm	0.0197 ppm	0.6200%	2020/03/22 20:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.1806	31.8060	28.78	32.47	3.69	50.00	10:30
2	TOC	3.2084	32.0841	28.97	32.65	3.68	50.00	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	51	TOC	K2002437-004.03	0.7492 ppm	0.0484 ppm	6.4600%	2020/03/22 20:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7834	7.8341	12.66	16.42	3.76	50.00	10:32
2	TOC	0.7150	7.1501	12.20	15.91	3.71	50.03	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC)	CAS_salt_010711	CAS_salt_010711

(v1364) (v4) (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	52	TOC	K2002437-005.03	0.6532 ppm	0.0170 ppm	2.6100%	2020/03/22 20:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6652	6.6520	11.86	15.62	3.76	50.00	10:25
2	TOC	0.6411	6.4111	11.70	15.67	3.96	50.03	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	53	TOC	K2002456-001.01	1.1335 ppm	0.0168 ppm	1.4800%	2020/03/22 21:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1453	11.4535	15.09	18.93	3.84	50.00	10:25
2	TOC	1.1216	11.2156	14.93	18.88	3.94	50.02	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	54	TOC	K2002456-002.01	0.7645 ppm	0.0422 ppm	5.5200%	2020/03/22 21:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7943	7.9427	12.73	16.72	3.99	50.05	10:29
2	TOC	0.7346	7.3464	12.33	16.17	3.83	50.01	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	55	TOC	K2002456-003.01	1.4306 ppm	0.0000 ppm	0.0000%	2020/03/22 22:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4306	14.3056	17.01	21.07	4.05	50.03	10:28
2	TOC	1.4306	14.3056	17.01	20.90	3.89	50.04	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	56	TOC	K2002456-004.01	1.4038 ppm	0.0408 ppm	2.9100%	2020/03/22 22:49

Rep	Base	ppm	µg	Adjusted	NDIR (Abs)	Baseline	Pressure	Run

#	Analysis Type			(Abs)		(Abs)	(psig)	Time
1	TOC	1.4326	14.3264	17.03	21.09	4.07	50.03	10:26
2	TOC	1.3749	13.7494	16.64	20.59	3.96	50.03	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	57	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 23:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.12	9.08	3.96	50.08	10:29
2	TOC	0.0000	0.0000	5.08	8.91	3.83	50.03	10:26
3	TOC	0.0000	0.0000	4.92	8.74	3.82	50.02	10:27
4	TOC	0.0000	0.0000	4.82	8.59	3.76	50.04	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.1303 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:13

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.1303	251.3028	176.82	180.56	3.74	50.04	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:27

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.42	9.22	3.80	50.03	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	58	TOC	MB4	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 00:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.04	8.76	3.72	50.03	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.1987 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:57

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.1987	241.9868	170.55	174.42	3.87	50.01	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	59	TOC	K2002462-002.04 doc	4.0921 ppm	0.0354 ppm	0.8700%	2020/03/23 01:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.1171	41.1711	35.08	38.88	3.80	50.00	10:29
2	TOC	4.0670	40.6700	34.74	38.61	3.87	50.04	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	60	TOC	K2002462-002.04 ms doc	32.0473 ppm	0.0000 ppm	0.0000%	2020/03/23 01:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	32.0473	320.4734	222.91	226.80	3.89	50.01	10:31

Dilution	Blank Contribution	Method	Calibration

1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	61	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 01:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.10	10.11	4.00	50.00	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	62	TOC	FB 3/19/20 1619	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 02:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.24	9.23	4.00	49.99	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	63	TOC	K2002422-001.04 doc	9.5284 ppm	0.1176 ppm	1.2300%	2020/03/23 02:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.4453	94.4531	70.91	74.94	4.03	50.01	10:29
2	TOC	9.6116	96.1156	72.03	75.73	3.70	49.98	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	64	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 02:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.59	9.48	3.89	49.99	10:29
2	TOC	0.0000	0.0000	5.25	9.15	3.90	49.99	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25	0 / infinity	25.0598	0.0000	0%	2020/03/23 03:20

					ppm [25 ppm]	(NA / NA)	ppm (PASS)	ppm		

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.0598	250.5980	176.34	180.27	3.92	49.97	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/23 03:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.46	9.42	3.96	50.00	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1364	1.7787	1.3950	0.0000	0.0000	0.0000	2020/03/19 15:10	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v32	Calibration curve formula:	TOC: y = 6.725x + 7.818
Ver Creation:	2020/03/11 15:55	r^2 value:	TOC: r^2 = 0.99921
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	5.8640	0.0000		2020/03/11 14:28
0.500 ppm	9.5210	0.5000		2020/03/11 14:42
1.0 ppm	12.5930	1.0000		2020/03/11 14:56
5.0 ppm	40.5270	5.0000		2020/03/11 15:10
10 ppm	79.5310	10.0000		2020/03/11 15:25
25 ppm	181.4610	25.0000		2020/03/11 15:39
50 ppm	340.5610	50.0000		2020/03/11 15:53

Methods

Name: CAS_salt_010711 (TOC)

Version: v4 Operator: Fusion1 (Fusion1)

Ver Creation: 2019/02/21 17:57

Comment:

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/03/23 03:50

ALS Environmental

StarLIMS Run:	674205, 674225, 674226, 674227
Analysis:	DOC/TOC
Method:	SM 5310 C, 9060A, 415.1, 9060

CCV: 11-GEN-05-82C 50 ppm LCS: 11-GEN-05-79J 25.0 ppm

ICAL Date: 3/11/2020

ICAL ID: 19-GEN-8-7-E->J

ICS ID: 11-GEN-05-78M

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 11-GEN-05-82C 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 19-GEN-08-9-H

21 % H3PO4: 19-GEN-08-8-K

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

21 BCP 3/24/20

Analyzed By: BCP	Date Analyzed: 3/24/20
Reviewed By:	Date Reviewed: 3/24/20

Case Narrative

Method: 6850
Analysis: Perchlorate
Analysis SOP: LC-MS-CLO4
ALS WO ID(s): 2008062; 2008310

Client: ALS Laboratories (Houston, TX)
Matrix: Water
ELMS Batch (HBN): 2362 (259687)

General Set Information: There were twenty field samples in these Work Orders. The samples were analyzed for perchlorate.

Method Summary: Each sample was prepared as noted below and analyzed using an Agilent 1100 LC/MSD system in select ion monitoring (SIM) mode at m/z 83 and 85, which corresponds to the loss of one oxygen atom from the perchlorate molecule. ChemStation software was used for instrument control and data analysis. The ion ratio of m/z 83 to 85 was used to positively identify the response peak as perchlorate. Quantitation was performed using the m/z 83 peak area. An internal standard (ISTD) of ^{18}O labeled perchlorate was added to each sample to establish the perchlorate peak retention time and used in quantitation.

Sample Preparation: A 10.0mL aliquot of each sample was transferred into a 15-mL centrifuge tube. 50µL of an ^{18}O labeled perchlorate solution was added to each sample as an internal standard. The samples were then capped, vortexed, and filtered into autosampler vial using Phenex PES membrane 0.45µm Syringe filters.

Holding Times: Holding times were met for all analyses.

Dilutions: NA

Method QC data: The method blank (LMB 701041) was less than 1/2 the CRDL. The recovery for the LCS (701038) was within acceptable parameters.

MS/MSD Analysis: MS/MSD was performed on samples 2008310002/03 (Client ID: 16WW44-200317). 3.0µL of Working Standard Solution Horizon ID 49947 was added to 10.0mL of sample preparation. The spike target was 3.µg/L. The MS/MSD percent recoveries and relative percent difference (RPD) were within the performance limits.

Instrument QC: Instrument initial and continuing calibrations were performed in accordance with published procedures.

NC/CAR(s): NA

Sample Calculation: Samples were reported in µg/L. Results were calculated in µg/L by the equation (A)x(B),

where: A = Analyte concentration from the standard curve (µg/L)
B = Dilution performed at time of analysis

Miscellaneous Comments: These samples were analyzed in accordance with the requirements found in the DOD QSM Version 5.1.1. Field sample 2008062001 had a positive result for perchlorate. However, because the 83/85 ion ratio failed, the result was not reported. The Reporting Limit Verification Standard (RLVS – 701039) is reported from the analysis of the Laboratory Control Sample (LCS – 701038) at a level of 3.0µg/L. Due to limitations of the Chemstation Software, some of the chromatographic peaks may require manual integrations. A manual integration was performed for one of the Initial Calibration analyses (datafile: 20SEPI03) along with datafiles 26MARD07.

Thomas Bosch — Analyst
March 29, 2020 — Date

ANALYTICAL REPORT

Report Date: March 31, 2020

RJ Modashia
ALS Environmental (Houston)
10450 Stancliff Road
Suite 210
Houston, TX 77099

Phone: 281 530-5656

E-mail: RJ.Modashia@ALSGlobal.com

Workorder: **34-2008062**
Project ID: HS20030733
Purchase Order: HS20030733
Project Manager Kevin W. Griffiths

Client Sample ID	Lab ID	Collect Date	Receive Date	Sampling Site
16WW56-200316	2008062001	03/16/20	03/19/20	
16WW22-200316	2008062002	03/16/20	03/19/20	
16WW41-200316	2008062003	03/16/20	03/19/20	
16WW21-200316	2008062004	03/16/20	03/19/20	
16WW39-200316	2008062005	03/16/20	03/19/20	
16WW25-200316	2008062006	03/16/20	03/19/20	
16WW21-200316-FD	2008062007	03/16/20	03/19/20	
16WW49-200316	2008062008	03/16/20	03/19/20	

ANALYTICAL REPORT

Workorder: 34-2008062
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **16WW56-200316** | Sampling Site: NA | Collected: 03/16/2020
Lab ID: 2008062001 | Media: 125 mL Nalgene | Received: 03/19/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 09:16 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW22-200316** | Sampling Site: NA | Collected: 03/16/2020
Lab ID: 2008062002 | Media: 125 mL Nalgene | Received: 03/19/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 09:30 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW41-200316** | Sampling Site: NA | Collected: 03/16/2020
Lab ID: 2008062003 | Media: 125 mL Nalgene | Received: 03/19/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 14:24 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	**310**	10	20	40	10	

Sample ID: **16WW21-200316** | Sampling Site: NA | Collected: 03/16/2020
Lab ID: 2008062004 | Media: 125 mL Nalgene | Received: 03/19/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 09:58 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

ANALYTICAL REPORT

Workorder: 34-2008062
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **16WW39-200316** | Sampling Site: NA | Collected: 03/16/2020
Lab ID: 2008062005 | Media: 125 mL Nalgene | Received: 03/19/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 10:12 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	**62**	1.0	2.0	4.0	1	

Sample ID: **16WW25-200316** | Sampling Site: NA | Collected: 03/16/2020
Lab ID: 2008062006 | Media: 125 mL Nalgene | Received: 03/19/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 10:26 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW21-200316-FD** | Sampling Site: NA | Collected: 03/16/2020
Lab ID: 2008062007 | Media: 125 mL Nalgene | Received: 03/19/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 10:40 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW49-200316** | Sampling Site: NA | Collected: 03/16/2020
Lab ID: 2008062008 | Media: 125 mL Nalgene | Received: 03/19/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 10:54 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

ANALYTICAL REPORT

Workorder: 34-2008062
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method	Analyst	Peer Review
EPA 6850, DoD QSM	/S/ Thomas Bosch 03/27/2020 11:27	/S/ Stephen Brose 03/31/2020 15:31

Laboratory Contact Information

ALS Environmental
960 W Levoy Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: alslt.lab@ALSGlobal.com
Web: www.alsslc.com

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
The following was provided by the client: Sample ID, Collection Date, Sampling Location, Media Type, Sampling Parameter.
Collection Date, Media Type, and Sampling Parameter can potentially affect the validity of the results.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	PJLA (DoD ELAP)	L17-506	http://www.pjlabs.com
	PJLA (ISO 17025)	L17-507-R1	http://www.pjlabs.com
	Utah (TNI)	UT00953	http://lams.nelac-institute.org/search
	Iowa (TNI)	IA# 376	http://www.shl.uiowa.edu/labcert/idnr/
	Kansas	E-10416	http://www.kdheks.gov/envlab/disclaimer.html
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP)	101574	http://www.aihaaccreditedlabs.org
	DOECAP-AP	L18-606	http://www.pjlabs.com
	Washington	C596	https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Laboratory-Accreditation
Dietary Supplements	PJLA (ISO 17025)	L17-507-R1	http://www.pjlabs.com

ANALYTICAL REPORT

Workorder: 34-2008062
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Result Symbol Definitions

MDL = Method Detection Limit, a statistical estimate of method/media/instrument sensitivity.
RL = Reporting Limit, a verified value of method/media/instrument sensitivity.
CRDL = Contract Required Detection Limit
Reg. Limit = Regulatory Limit.
ND = Not Detected, testing result not detected above the MDL or RL.
< Means this testing result is less than the numerical value.
** No result could be reported, see sample comments for details.

Qualifier Symbol Definitions

U = Qualifier indicates that the analyte was not detected above the MDL.
J = Qualifier Indicates that the analyte value is between the MDL and the RL. It is also used to indicate an estimated value for tentatively identified compounds in mass spectrometry where a 1:1 response is assumed.
B = Qualifier indicates that the analyte was detected in the blank.
E = Qualifier indicates that the analyte result exceeds calibration range.
P = Qualifier indicates that the RPD between the two columns is greater than 40%.

Quality Control Sample Batch Report

Analysis Information

Workorder: 2008062

Limits:	Client SOW/Contract Specified	**Preparation:**	NA	**Analysis:**	EPA 6850, DoD QSM
Basis:	DoD QSM	**Batch:**	NA	**Batch:**	ELMS/2362 (HBN: 259687)
		Prepared By:	NA	**Analyzed By:**	Thomas Bosch

Blank

LMB: 701041
Analyzed: 03/26/2020 09:02
Units: ug/L

Analyte	Result	MDL	RL
Perchlorate	ND	1	2.00

Laboratory Control Sample

LCS: 701038
Analyzed: 03/26/2020 08:34
Dilution: 1
Units: ug/L

Analyte	Result	Target	% Rec	QC Limits	
Perchlorate	3.07	3.00	102	78.8	123.8

Matrix Spike - Matrix Spike Duplicate

Sample:	2008310001	**MS:**	2008310002	**MSD:**	2008310003
Analyzed:	03/26/2020 11:08	**Analyzed:**	03/26/2020 11:22	**Analyzed:**	03/26/2020 11:50
Dilution:	1	**Dilution:**	1	**Dilution:**	1
Units:	ug/L	**Units:**	ug/L	**Units:**	ug/L

Analyte	Result	Result	Target	% Rec	QC Limits		Result	% Rec	RPD	QC Limits	
Perchlorate	ND	3.03	3	101	78.8	123.8	3	100	0.991	0.0	20.0

QC Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Analyst	Peer Review
/S/ Thomas Bosch	/S/ Stephen Brose
03/29/2020 11:11	03/31/2020 15:31

Symbols and Definitions

- * - Analyte above reporting limit or outside of control limits
- ▲ - Sample result is greater than 4 times the spike added
- ◆ - Sample and Matrix Duplicate less than 5 times the reporting limit
- ● - Result is above the calibration range
- # - The Matrix Spike, Matrix Spike duplicate or Matrix Duplicate is reported for your information only. The sample matrix may be inappropriate for the method selected.

RPD - Relative % Difference (Spike / Spike Duplicate)
ND - Not Detected (U - Qualifier also flags analyte as not detected)
NA - Not Applicable
QC results are not adjusted for moisture correction, where applicable

2008062

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

18698 #2

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13536**

SUBCONTRACT TO:

ALS Laboratory Group
960 LeVoy Dr
Salt Lake City, UT 84123

Phone: +1 801 266 7700

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@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:	HS20030733
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20030733-01**	**16WW56-200316**	**Groundwater**	**16 Mar 2020 08:15**
	SUB_Perch-6850			25 Mar 2020
2.	**HS20030733-02**	**16WW22-200316**	**Groundwater**	**16 Mar 2020 09:10**
	SUB_Perch-6850			25 Mar 2020
3.	**HS20030733-03**	**16WW41-200316**	**Groundwater**	**16 Mar 2020 10:05**
	SUB_Perch-6850			25 Mar 2020
4.	**HS20030733-04**	**16WW21-200316**	**Groundwater**	**16 Mar 2020 10:55**
	SUB_Perch-6850			25 Mar 2020
5.	**HS20030733-05**	**16WW39-200316**	**Groundwater**	**16 Mar 2020 10:50**
	SUB_Perch-6850			25 Mar 2020
6.	**HS20030733-06**	**16WW25-200316**	**Groundwater**	**16 Mar 2020 12:55**
	SUB_Perch-6850			25 Mar 2020
7.	**HS20030733-07**	**16WW21-200316-FD**	**Groundwater**	**16 Mar 2020 10:55**
	SUB_Perch-6850			25 Mar 2020
8.	**HS20030733-08**	**16WW49-200316**	**Groundwater**	**16 Mar 2020 13:55**
	SUB_Perch-6850			25 Mar 2020

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13536**

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: [signature]

Received By: [signature]

Cooler ID(s):

Date/Time: 3/18/2020 1800

Date/Time: 3-19-20 9:54

Temperature(s):

ALS Environmental

CHAIN-OF-CUSTODY

Project / Job / Task: HS20030733	***Split:***	**Workorder ID:** 2008062		**Level:** ENV_LVL4	**Requested Analysis**
Client: ALS Environmental (Houston)		**Account:** 8101		**Type:** 125Poly	
Comments:				**Preservatives**	

Item	Collect Date/Time	Sample ID	Lab ID	QC	Matrix	Containers ID(s)	Containers Count	EPA 6850, DoD QSM											
						COOL													
1	03/16/2020 08:15	16WW56-200316	2008062001		Water	A	1	A											
2	03/16/2020 09:10	16WW22-200316	2008062002		Water	A	1	A											
3	03/16/2020 10:05	16WW41-200316	2008062003		Water	A	1	A											
4	03/16/2020 10:55	16WW21-200316	2008062004		Water	A	1	A											
5	03/16/2020 10:50	16WW39-200316	2008062005		Water	A	1	A											
6	03/16/2020 12:55	16WW25-200316	2008062006		Water	A	1	A											
7	03/16/2020 10:55	16WW21-200316-FD	2008062007	FLDDUP	Water	A	1	A											
8	03/16/2020 13:55	16WW49-200316	2008062008		Water	A	1	A											

ORIGINAL FIELD SAMPLE CHAIN-OF-CUSTODY

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location
Wrath, Julie	03/19/2020 09:54	ALS Sample Receiving	Sample Login
Julie Wrath 3/19/20 1130	14C		Storage
R.33.1	03.24.20/12:35	T. Booth	CLO4 analysis

SAMPLE PREPARATION / ANALYSIS CHAIN-OF-CUSTODY

Sample Prep / Analysis for: _____ Lab Notebook No.: _____

Prepared / Analyzed by: _____ Date / Time: _____

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location

ALS-SALT LAKE CITY-RELATED INFORMATION REPORT (CRIR)

COOLER OR CONTAINER INFORMATION CHECKLIST (Fill In or Circle)

Client Name: ALS Houston

Project/Task/Site: 2088862

Date/Time of Receipt: 03-19-20 9:54

Number of Coolers Received: 1

Condition of Coolers:	Acceptable/Unacceptable	Temperature Control:	Present/Not Included
Cooler Custody Seals:	Present/Absent/NA Intact/Broken/NA	Location Temp Taken:	Control/Between Samples
Container Custody Seals:	Present/Absent/NA Intact/Broken/NA	Are all temperatures within project specific guidelines?	Yes/No/NA
Ice Present:	Yes/No/NA Frozen/Melted/NA	VOA Headspace Present?	Yes/No/NA

pH Check Performed:							
	Metals	Yes/No/NA	Total Phenolics	Yes/No/NA	NO3/NO2	Yes/No/NA
	Cyanide	Yes/No/NA	TPH – 418.1	Yes/No/NA	Oil & Grease	Yes/No/NA
	Sulfide	Yes/No/NA	COD	Yes/No/NA	Total Phosphorous	Yes/No/NA
	Ammonia	Yes/No/NA	TKN	Yes/No/NA	Gross A.B, Gamma Spec	Yes/No/NA

Cooler Received	Cooler Condition	Temp.	Cooler Received	Cooler Condition	Temp.	Cooler Received	Cooler Condition	Temp.
1	Good	2 °C	4		°C	7		°C
2		°C	5		°C	8		°C
3		°C	6		°C	9		°C

Taken By: Jan VanRussell (Signature) T. VanRussell (Printed Name) 03-19-20 (Date)

CLIENT-RELATED INFORMATION

☐ Missing Cooler	☐ Missing Samples/Bottles	☐ Incorrect Preservation	☐ Insufficient Sample Volume
☐ Cooler Conditions	☐ Broken/Leaking Samples	☐ pH Criteria Not Met	☐ Chain of Custody Problems
☐ Missing Paperwork	☐ Incorrect Bottle Type	☐ Residual Chlorine Present	☐ Other:
☐ Missing/Incorrect Bottle Labels	☐ Cooler Temperatures Out of Range	☐ Head Space in Bottles	

BRIEFLY DESCRIBE THE PROBLEM AND THE ACTION TAKEN:

Client Notified? YES ☐ NO ☐

Response Required Within 24 Hours

PROJECT MANAGEMENT

PROJECT MANAGER COMMENTS:

ALS Project Manager: _____ (Printed Name) Returned to Sample Receipt by: _____ (Signature) Date: _____

Must Deliver Next Business Day
Time and Tempature Sensitive!

Part # 159469-434 RIT2 EXP 12/20 *

ORIGIN ID:SGRA (281) 530-5656
SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD
SUITE 210
HOUSTON, TX 77099
UNITED STATES US

SHIP DATE: 18MAR20
ACTWGT: 15.25 LB
CAD: 300130/CAFE3211
DIMS: 14x11x10 IN

BILL THIRD PARTY

TO SAMPLE RECEIVING
ALS ENVIRONMENTAL
960 W. LEVOY DRIVE

SALT LAKE CITY UT 84123
(801) 266-7700
REF: HS20030733 - RJ

551C2/64E0/104C

FedEx Express

THU - 19 MAR 3:00P
STANDARD OVERNIGHT

TRK# 0201 1251 0295 5448

AX BTFA

84123
UT-US SLC

Batch Worklist

Batch: ELMS/ 2362 Created: 3/26/2020 08:10 Instrument: HBN: 259687

Rule: EPA 6850, DoD QSM Water Analyst: T. Bosch Status: WP

Workorder: 2008062 [ENV_LVL4]

Workorder: 2008310 [ENV_LVL4]

Pos	Lab ID	Sample ID	Prep Initial	Prep Final	Dust Weight	Type	Mx	Container	Procedure	Mgr	Expire Date	Due Date	Run Date
1	701037	CCV for HBN 259687 [ELMS/2362]				CCV	3		E685041C3Q	5311		4/1/2020	
2	701038	LCS for HBN 259687 [ELMS/2362]				LCS	3		E6850Q413Q	5311		4/1/2020	
3	701039	RLVS for HBN 259687 [ELMS/2362				RLVS	3		E685041C3Q	5311		4/1/2020	
4	701040	ICS for HBN 259687 [ELMS/2362]				ICS	3		E6850..D3Q	5311		4/1/2020	
5	701041	LMB for HBN 259687 [ELMS/2362]				LMB	3		E6850Q413Q	5311		4/1/2020	
6	2008062001	16WW56-200316				SAMPLE	3	2008062001-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
7	2008062002	16WW22-200316				SAMPLE	3	2008062002-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
8	2008062003	16WW41-200316				SAMPLE	3	2008062003-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
9	2008062004	16WW21-200316				SAMPLE	3	2008062004-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
10	2008062005	16WW39-200316				SAMPLE	3	2008062005-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
11	2008062006	16WW25-200316				SAMPLE	3	2008062006-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
12	2008062007	16WW21-200316-FD				FLDDUP	3	2008062007-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
13	2008062008	16WW49-200316				SAMPLE	3	2008062008-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
14	2008310001	16WW44-200317				SAMPLE	3	2008310001-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
15	2008310002	16WW44-200317MS				MS	3	2008310002-A	E6850Q413Q	5480		4/1/2020	
16	701042	CCV for HBN 259687 [ELMS/2362]				CCV	3		E685041C3Q	5311		4/1/2020	
17	2008310003	16WW44-200317MSD				MSD	3	2008310003-A	E6850Q413Q	5480		4/1/2020	
18	2008310004	16WW37-200317				SAMPLE	3	2008310004-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
19	2008310005	16WW38-200317				SAMPLE	3	2008310005-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
20	2008310006	16WW14-200317				SAMPLE	3	2008310006-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
21	2008310007	16RW06-200317				SAMPLE	3	2008310007-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
22	2008310008	16PM03-200317				SAMPLE	3	2008310008-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
23	2008310009	16PM02-200317				SAMPLE	3	2008310009-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
24	2008310010	16RW07-200317				SAMPLE	3	2008310010-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
25	2008310011	16RW11-200317				SAMPLE	3	2008310011-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
26	2008310012	16WW51-200317				SAMPLE	3	2008310012-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
27	701043	CCV for HBN 259687 [ELMS/2362]				CCV	3		E685041C3Q	5311		4/1/2020	
28	701102	CCV for HBN 259687 [ELMS/2362]				CCV	3		E685041C3Q	5311		4/1/2020	

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Analytical Documentation

Analyst Write-up

ALS Work Order #'s & Sample #( )'s: 2008062 (001-08); 2008310 (001-12)
ELMS Batch/HBN ID: 2362 (259687)
Prep Date: 03/24,25/2020 Analysis Date: 03/26/2020 Analyst: Tom Bosch
Analyte: **Perchlorate** Matrix: **Water** Method: **6850**
Sequence: \\HPCHEM\1\SEQUENCE\CLO4\2020\MAR\26MAR0D.s
Reported DL: **1.0µg/L** Reported LOD: **2.0µg/L** Reported LOQ: **4.0µg/L**

SAMPLE PREPARATION/ANALYSIS:

Water: Samples were prepared by Tom Bosch. 10.0mL of each sample was pipetted into a 15-mL centrifuge tube, and 50µL of an oxygen-18 labeled perchlorate solution was added as an internal standard. The samples were capped, vortexed, and filtered with Phenex PES membrane 0.45µm Syringe filters prior to analysis.

REAGENTS: Eluent A1: 95% ASTM Type II water (ALS)/5%ACN (B&J Lot DU461-US)/0.1% glacial acetic acid (JT-Baker Lot 122550).
Eluent B1: 95% ACN (B&J Lot DU461-US)/5% ASTM Type II water (ALS)/0.1% glacial acetic acid (JT-Baker Lot 122550).

STANDARDS: Internal Standard Spiking Solution Horizon# 47863. Dilutions of Working Standards (Horizon: 49947/48) used for ICAL, CCV's, RLVS and ICS.

CALIBRATION CURVE: Used curve from 09/20/2019, sequence 20SEP19D.s Offline Quantitation Method: CLO4-DP3.M

INSTRUMENT CONDITIONS: Samples were analyzed with an Agilent 1100 LC/MSD system, in negative SIM mode, monitoring m/z 83, 85, and 89.
Instrument ID: **LCMS04** Online Acquisition Method: CLO4-AQN.M Fragmentor: 160 Output Gain: 10 Injection Volume: 40µL
Column: KP-RPPX C8 separator, 250mm Mobile Phase: 70% Eluent A1; 30% Eluent B1 Run time: 12.0min.

FLOW GRADIENT:

Time (min.)	Flow (mL/min)
0	0.65
5.8	0.65
5.9	0.25
10.3	0.25
10.5	0.65
12.0	0.65

QC DATA: 3.0µL of QC Solution Horizon ID 47516 was used for LCS 701038; Target = 3.0µg/L. ASTM type II water was used for LMB 701041.

MS/MSD: The Matrix Spike and duplicate (MS/MSD) was performed on samples 2008310002/03 (Client ID: 16WW44-200317). 3.0µl of Working Standard Solution Horizon ID 49947 was added to 10.0mL of sample preparation. Spike target = 3.0µg/L.

COMMENTS:

1) Results reported in µg/L.
2) All QC, Blank, CCV, and MS/MSD results were within method parameters. Field sample 2008062001 had a positive result for perchlorate. However, because the 83/85 ion ratio failed, the result was not reported.
3) Sample data can be viewed at two directories within the ALS system: \\ALSLTWS013\LCMS\LCMS04\2020\MAR\HBN# or through NuGenesis\Tree\PrintData\LCMS\DefaultView.
4) Notebook: \\alsltws013\ORGANIC\BOSCH\LCMS\Perchlorates\Waters\2020\DOD\259687-DoD-ALS-Hstn LCMS4 or through \\ALSLTWS013\DATAREVIEW\HBN#
5) The Reporting Limit Verification Standard (RLVS – 701039) is reported from the analysis of the Laboratory Control Sample (LCS – 701038) at a level of 3.0µg/L.
6) Due to limitations of the Chemstation Software, some of the chromatographic peaks require manual integration. Manual Integrations were performed for one of the Initial Calibration analyses (datafile: 20SEPI03) along with datafile 26MARD07.

5.5 Chromatography (GC, HPLC and LC/MS) Technical Review

Note: It is the peer reviewer's responsibility to ensure that appropriate criteria are used as defined in the HORIZON PROFILE. The evaluation criteria are prioritized as per Section 2.2 of this SOP. These items must be checked for all projects. The following checklist will be completed by both the analyst and the peer reviewer and scanned into the HBN folder with the raw data.

Chromatography (GC, HPLC, LC/MS) Technical Review Criteria **Batch(es)/SDG:** ELMS: 2362 HBN: 259687 **Sample Set IDs if Applicable:** 2008062 / 2008310	**Analyst Initials**	**Reviewer Initials**
Sample positions on autosampler verified against instrument sequence	TB	NA
Calibration standards analyzed and meets criteria	TB	SB
Standards traceability checked and meets criteria	TB	SB
Standard curve coefficients evaluated and meet criteria	TB	SB
ICVs analyzed and meet acceptance criteria	TB	SB
CCVs analyzed and meet acceptance criteria	TB	SB
Retention Time Windows checked	TB	SB
For method 8081A, Endrin/DDT Breakdown is checked for compliance	—	—
Surrogate recoveries checked and appropriately addressed	—	—
Method Preparation Blanks analyzed and meet acceptance criteria	TB	SB
MSs, MSDs, and/or MDs analyzed and calculations checked; applicable	TB	SB
RLVS analyzed	TB	SB
Preparation and analysis hold times met	TB	SB
Preparation deviations and re-preparations noted when performed	TB	SB
Analysis deviations and re-analyses noted when performed	TB	SB
Sample dilution factors noted on reports	TB	SB
Electronic records in HBN transcription accuracy and completeness	TB	SB
Preparation and analysis calculations checked	TB	SB
NCRs are completed as necessary NC/CAR#_____	TB	SB
Report forms are complete and accurate	TB	SB
Manual integrations checked	TB	SB

STANDARD REPORT

Working Standard - CLO4ISTDWRK

CLO4ISTDWRK		Description - Perchlorate ISTD Wrk 1,000ug/L
Standard: 49946	**Created By:** Thomas Bosch	**Amount:** 25 mL
MFG: ALS/SLC	**Create Date:** 09/23/2019 03:09PM	**Expires:** 09/19/2020
MFG Lot: TNB: 09/20/2019	**Verified By:** Thomas Bosch	**Usable:** Yes
Pipette ID: Not Provided	**Verify Date:**	**Lab Lot:** CLO4ISTDWRK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	1000 ug/L
2	14797-73-0-89	Perchlorate 89	1000 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
47863	CLO4ISTDSTK	Perchlorate ISTD Stock	CLO4ISTDSTK	0.25 mL	12/05/2028

STANDARD REPORT

Constituent

Stock Standard - CLO4ISTDSTK

CLO4ISTDSTK		Description - Perchlorate ISTD Stock
Standard: 47863	**Created By:** Thomas Bosch	**Amount:** 1 mL
MFG: Cambridge Isotope	**Create Date:** 05/23/2019 10:05AM	**Expires:** 12/05/2028
MFG Lot: SDIH-016	**Verified By:** Thomas Bosch	**Usable:** Yes
Part ID: OLM-7310-S	**Verify Date:**	**Lab Lot:** CLO4ISTDSTK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	100 ug/mL
2	14797-73-0-89	Perchlorate 89	100 ug/mL

STANDARD REPORT

Working Standard - CLO4 WRK

CLO4 WRK — **Description - 6850 WKG Std 100.ug/L**

Standard: 49948
MFG: ALS/SLC
MFG Lot: TNB: 09/20/2019
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 09/20/2019 03:09PM

Amount: 10 mL
Expires: 07/25/2020
Usable: Yes
Lab Lot: CLO4 WRK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	0.1 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	0.1 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
49947	CLO4 INT	6850 Intermdt AccStd 10.ug/mL	CLO4 INT	0.1 mL	07/25/2020

STANDARD REPORT

Constituent

Stock Standard - CLO4 STOCK

CLO4 STOCK		Description - 6850 Stock AccStd 1,000ug/mL
Standard: 43659	**Created By:** Thomas Bosch	**Amount:** 100 mL
MFG: AccuStandard	**Create Date:** 09/17/2018 09:09AM	**Expires:** 07/25/2020
MFG Lot: 218065075		**Usable:** Yes
Part ID: IC-PER-10X-1		**Lab Lot:** CLO4 STOCK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	1000 ug/mL

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O		Description - ASTM Type II Water
Standard: 109	**Created By:** ALS Support (Lims)	**Amount:** 1000 L
MFG: DCL In House	**Create Date:** 10/06/2005 09:10AM	**Expires:** 11/07/2025
MFG Lot: Not Provided		**Usable:** Yes
Part ID: Not Provided		**Lab Lot:** LAB 109

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Working Standard - CLO4 INT

CLO4 INT	Description - 6850 Intermdt AccStd 10.ug/mL

Standard: 49947
MFG: ALS/SLC
MFG Lot: TNB: 09/20/2019
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 09/23/2019 03:09PM

Amount: 10 mL
Expires: 07/25/2020
Usable: Yes
Lab Lot: CLO4 INT

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
43659	CLO4 STOCK	6850 Stock AccStd 1,000ug/mL	CLO4 STOCK	0.1 mL	07/25/2020

STANDARD REPORT

Working Standard - CLO4 QC WRK

CLO4 QC WRK		Description - 6850 QC WKG STD 100ug/L
Standard: 47516	**Created By:** Thomas Bosch	**Amount:** 10 mL
MFG: ALS/SLC	**Create Date:** 05/06/2019 03:05PM	**Expires:** 03/31/2020
MFG Lot: TNB: 05/06/2019		**Usable:** Yes
Pipette ID: Not Provided		**Lab Lot:** CLO4 QC WRK 100.ug/L

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	100 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
47515	CLO4 QC INT	6850 QC Intrmdt Std-QC 10ug/mL	CLO4 QC INT 10.ug/mL	0.1 mL	03/31/2020

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O			**Description - ASTM Type II Water**
Standard: 109	**Created By:** ALS Support (Lims)	**Amount:** 1000 L	
MFG: DCL In House	**Create Date:** 10/06/2005 09:10AM	**Expires:** 11/07/2025	
MFG Lot: Not Provided		**Usable:** Yes	
Part ID: Not Provided		**Lab Lot:** LAB 109	

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Stock Standard - CLO4 QCSTOCK

CLO4 QCSTOCK		**Description - 6850 QC Stock STD 1,000ug/mL**
Standard: 36748	**Created By:** Thomas Bosch	**Amount:** 100 mL
MFG: Ultra Scientific	**Create Date:** 05/11/2017 01:05PM	**Expires:** 03/31/2020
MFG Lot: CP-0860		**Usable:** Yes
Part ID: ICC-013		**Lab Lot:** CLO4 QC STOCK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL

STANDARD REPORT

Constituent

Working Standard - CLO4 QC INT

CLO4 QC INT	Description - 6850 QC Intrmdt Std-QC 10ug/mL

Standard:	**47515**	**Created By:**	Thomas Bosch	**Amount:**	10 mL
MFG:	ALS/SLC	**Create Date:**	05/06/2019 03:05PM	**Expires:**	03/31/2020
MFG Lot:	TNB: 05/06/2019			**Usable:**	Yes
Pipette ID:	Not Provided			**Lab Lot:**	CLO4 QC INT 10.ug/mL

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
36748	CLO4 QCSTOCK	6850 QC Stock STD 1,000ug/mL	CLO4 QC STOCK	0.1 mL	03/31/2020

125 Market Street
New Haven, CT 06513
USA

AccuStandard®

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

S 43659

AccuTrace™ Reference Standard

Catalog No: IC-PER-10X-1
Description: Perchlorate Standard
Element: Perchlorate (ClO_4)
SRM: Ind. Std.
Lot: 218065075
Matrix: Water
Hazards: *Refer to SDS for complete safety information*

Signal Word: None

Date Certified: Jun 25, 2018
Expiration: Jul 25, 2020
Sample Size: 100 mL
Components: 1
Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO 17034 Scope of Accreditation: Yes

Component		SRM #	Prepared Concentration (µg/mL)
ClO_4	Perchlorate	Ind. Std.	1000

The gravimetric uncertainty for this product is ±0.24%.

The final solution was checked against an independent standard to verify its concentration.

We use the highest purity raw materials available to minimize impurity levels in the final solution. Typically 99.999%+ pure starting materials are used as well as ASTM Type I 18 megohm deionized water.

All solutions are filtered through a 0.2 µm filter prior to being bottled.

All glassware used in preparation is Class A and calibrated regularly.

All weights are traceable through NIST, Test No. 822-275872-11

All bottles are triple rinsed with deionized water prior to use.

Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware.

We certify the accuracy of this standard to be ±0.5% of the stated value until its expiration date provided it is kept tightly capped and stored under the conditions stated above.

Certified By: Meigan O'Leary

Meigan O'Leary, Inorganic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO 17034, ISO/IEC 17025 and certified to ISO 9001:2015

AccuStandard

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: ICC-013
Lot Number: CP-0860

S 36748

Lot Issue Date: 29-Feb 2016
Expiration Date: 31-Mar 2020

Product Name: Perchlorate IC Standard

Description:
This Reference Material (RM) was gravimetrically prepared in accordance with ISO Guide 34 and under ULTRA Scientific's ISO 9001 registered quality system. The neat materials used for this product have been verified by ULTRA's ISO 17025 laboratory and under ULTRA's ISO Guide 34 accreditation. The analyte concentrations were verified by ULTRA's ISO 17025 accredited laboratory. For each analyte, the true value, with its uncertainty value calculated at the 95% confidence level, is reported below.

Analyte	Starting Material	Lot Number	Purity (%)	Calculated Value	True Value	Traceability & Method
perchlorate	potassium perchlorate	RM07987	100	1001 ± 5 µg/mL	976 ± 6 µg/mL	NIST SRM 3141A; ICP-OES

Solvent: water (low TOC, < 50 ppb)

Storage: Store at Room Temperature (15° to 30°C).

Traceability:
Traceability has been established through an unbroken chain of comparisons, each having stated uncertainties. Comparisons are based on appropriate physical or chemical measurements, including gravimetric or volumetric dilution, where the mass or volume of a solution before and after dilution is measured. The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1, ISO 9001, ISO 17025, and ISO Guide 34. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 819.

Estimation of Uncertainties:
The true value is reported, with its uncertainty value calculated at the 95% confidence level.

Homogeneity:
This RM was formulated and unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening and should be processed without delay for the true value to be valid within the stated uncertainties. Do not pipet from the bottle. Do not return any material removed for pipetting to the bottle. Tightly cap the bottle after removing any material and store according to the instructions noted above.

Hazards:
Refer to the Safety Data Sheet for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid, within the measurement uncertainty specified, until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER
ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 9001 Registered Quality System – TUV USA

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

TRIPLE ISO CERTIFICATION ULTRA ISO 9001 ISO GUIDE 34 ISO 17025

ISO Guide 34 Reference Material

Product Number: ICC-013
Lot Number: CP-0860

Lot Issue Date: 29-Feb 2016
Expiration Date: 31-Mar 2020

Maintenance of Certification:
The real-time, long term stability of the RM may be monitored over the lifetime of the certification. If substantive changes occur that affect the certification before the expiration of this certificate, ULTRA Scientific will notify the purchaser.

Peter A. King, Ph.D.
VP, Technical Operations

Daniel J. Lamendola
Director of QA/RA

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

Cambridge Isotope Laboratories, Inc.

Certificate of Analysis

S 47863

Product Name: PERCHLORIC ACID, SODIUM SALT
(Isotopic Label & Enrichment Specification) (18O4, 90%+) 100 UG/ML IN WATER

Lot Number: SDIH-016

Catalog Number: OLM-7310-S

Product Information

Chemical Purity Specification:	≥ 98%
MW*: ** For isotopically labeled compounds, MW listed is for the fully enriched product.*	130.44
Labeled CAS Number:	NA
Unlabeled CAS Number:	7601-89-0
Chemical Formula:	NaCl*O4
Storage:	Store at room temperature away from light and moisture.
Stability:	See storage and expiration date.

$NaCl^{18}O_4$

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number . Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Sashi Sivendran-Basak

Sashi Sivendran-Basak, Ph.D., Quality Review

Quality Control Tests and Results

QC Release Date	12/05/2018
Expiration Date	12/05/2028
Concentration Based on Gravimetry	100.0 ± 1.0 µg/mL (k=2)
Chemical Purity of Neat Material(s)	98%
LC/MS for Concentration	105.4 ± 1.1 µg/mL (k=2)

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

Batch Report: C:\HPCHEM\1\DATA\26MAR20D\26MAR20S.B

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DP3.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#*	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorat RT	Perchlorate Amount
*	701037 CCV@25	Vial 71	1	Control	1	1.31519e6	7.596	24.50269
*	701038 LCS@3.	Vial 72	1	Control	2	1.66008e5	7.469	3.07012
*	701040 ICS@3.0	Vial 73	1	Control	3	9.99850e4	7.425	2.96673
*	701041 LMB	Vial 74	1	Control	4	0.00000	0.000	0.00000
*	2008062001	Vial 75	1	Sample	5	1.09960e5	6.921	2.23127
*	2008062002	Vial 76	1	Sample	6	0.00000	0.000	0.00000
*	2008062003	Vial 77	1	Sample	7	1.17976e7	6.021	147.31769 D1/5
*	2008062004	Vial 78	1	Sample	8	0.00000	0.000	0.00000
*	2008062005	Vial 79	1	Sample	9	3.68639e6	7.063	61.54884
*	2008062006	Vial 80	1	Sample	10	0.00000	0.000	0.00000
*	2008062007	Vial 81	1	Sample	11	0.00000	0.000	0.00000
*	2008062008	Vial 82	1	Sample	12	0.00000	0.000	0.00000
*	2008310001	Vial 83	1	Sample	13	0.00000	0.000	0.00000
*	2008310002 MS	Vial 84	1	Sample	14	1.61579e5	7.624	3.03065
*	701042 CCV@25	Vial 71	1	Control	15	1.25770e6	7.542	25.04210
*	2008310003 MSD	Vial 85	1	Sample	16	1.56764e5	7.529	3.00067
*	2008310004	Vial 86	1	Sample	17	0.00000	0.000	0.00000
*	2008310005	Vial 87	1	Sample	18	0.00000	0.000	0.00000
*	2008310006	Vial 88	1	Sample	19	0.00000	0.000	0.00000
*	2008310007	Vial 89	1	Sample	20	0.00000	0.000	0.00000
*	2008310008 10X	Vial 90	1	Sample	21	2.26474e6	7.461	396.52335
*	2008310009	Vial 91	1	Sample	22	0.00000	0.000	0.00000
*	2008310010	Vial 92	1	Sample	23	2.13687e5	7.243	4.87047
*	2008310011	Vial 93	1	Sample	24	0.00000	0.000	0.00000
*	2008310012	Vial 94	1	Sample	25	0.00000	0.000	0.00000
*	701043 CCV@25	Vial 71	1	Control	26	1.23305e6	7.642	25.29232
*	2008062003 10X	Vial 95	1	Sample	27	1.66187e6	7.172	308.79978
*	701102 CCV@25	Vial 71	1	Control	28	1.21579e6	7.568	25.02152

#*	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-IS RT	CLO4-89-ISTD Amount
*	701037 CCV@25	Vial 71	1	Control	1	1.83781e5	7.637	5.00000
*	701038 LCS@3.	Vial 72	1	Control	2	1.99015e5	7.478	5.00000
*	701040 ICS@3.0	Vial 73	1	Control	3	1.23987e5	7.431	5.00000
*	701041 LMB	Vial 74	1	Control	4	1.77630e5	7.646	5.00000
*	2008062001	Vial 75	1	Sample	5	1.80290e5	6.911	5.00000
*	2008062002	Vial 76	1	Sample	6	2.21066e5	7.204	5.00000
*	2008062003	Vial 77	1	Sample	7	1.80433e5	5.955	5.00000
*	2008062004	Vial 78	1	Sample	8	2.38862e5	7.519	5.00000
*	2008062005	Vial 79	1	Sample	9	1.77448e5	7.086	5.00000
*	2008062006	Vial 80	1	Sample	10	1.94128e5	8.130	5.00000
*	2008062007	Vial 81	1	Sample	11	1.72495e5	7.483	5.00000
*	2008062008	Vial 82	1	Sample	12	2.20984e5	7.241	5.00000
*	2008310001	Vial 83	1	Sample	13	2.23497e5	7.586	5.00000
*	2008310002 MS	Vial 84	1	Sample	14	1.96195e5	7.631	5.00000
*	701042 CCV@25	Vial 71	1	Control	15	1.71580e5	7.576	5.00000
*	2008310003 MSD	Vial 85	1	Sample	16	1.92226e5	7.553	5.00000
*	2008310004	Vial 86	1	Sample	17	1.66041e5	7.125	5.00000
*	2008310005	Vial 87	1	Sample	18	1.63139e5	7.338	5.00000
*	2008310006	Vial 88	1	Sample	19	1.67930e5	7.299	5.00000
*	2008310007	Vial 89	1	Sample	20	1.37320e5	7.249	5.00000
*	2008310008 10X	Vial 90	1	Sample	21	1.83925e5	7.486	50.00000
*	2008310009	Vial 91	1	Sample	22	2.26093e5	7.401	5.00000
*	2008310010	Vial 92	1	Sample	23	1.61722e5	7.250	5.00000
*	2008310011	Vial 93	1	Sample	24	1.41774e5	7.091	5.00000
*	2008310012	Vial 94	1	Sample	25	1.86602e5	7.252	5.00000

Batch Report: C:\HPCHEM\1\DATA\26MAR20D\26MAR20S.B

#	*	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-IS RT	CLO4-89-ISTD Amount
	*	701043 CCV@25	Vial 71	1	Control	26	1.66381e5	7.665	5.00000
	*	2008062003 10X	Vial 95	1	Sample	27	1.79512e5	7.187	50.00000
	*	701102 CCV@25	Vial 71	1	Control	28	1.66012e5	7.575	5.00000

#	*	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
	*	701037 CCV@25	Vial 71	1	Control	1	4.23244e5	7.613	25.73518
	*	701038 LCS@3.	Vial 72	1	Control	2	5.75315e4	7.501	3.40153
	*	701040 ICS@3.0	Vial 73	1	Control	3	3.96560e4	7.435	3.77484
	*	701041 LMB	Vial 74	1	Control	4	0.00000	0.000	0.00000
	*	2008062001	Vial 75	1	Sample	5	1.31311e4	6.920	7.42428e-1
	*	2008062002	Vial 76	1	Sample	6	0.00000	0.000	0.00000
	*	2008062003	Vial 77	1	Sample	7	3.62321e6	6.035	150.65418
	*	2008062004	Vial 78	1	Sample	8	0.00000	0.000	0.00000
	*	2008062005	Vial 79	1	Sample	9	1.09785e6	7.077	60.87616
	*	2008062006	Vial 80	1	Sample	10	0.00000	0.000	0.00000
	*	2008062007	Vial 81	1	Sample	11	0.00000	0.000	0.00000
	*	2008062008	Vial 82	1	Sample	12	0.00000	0.000	0.00000
	*	2008310001	Vial 83	1	Sample	13	0.00000	0.000	0.00000
	*	2008310002 MS	Vial 84	1	Sample	14	5.55387e4	7.622	3.32853
	*	701042 CCV@25	Vial 71	1	Control	15	4.03497e5	7.547	26.23064
	*	2008310003 MSD	Vial 85	1	Sample	16	5.07657e4	7.527	3.09739
	*	2008310004	Vial 86	1	Sample	17	0.00000	0.000	0.00000
	*	2008310005	Vial 87	1	Sample	18	0.00000	0.000	0.00000
	*	2008310006	Vial 88	1	Sample	19	0.00000	0.000	0.00000
	*	2008310007	Vial 89	1	Sample	20	0.00000	0.000	0.00000
	*	2008310008 10X	Vial 90	1	Sample	21	7.08209e5	7.477	407.04413
	*	2008310009	Vial 91	1	Sample	22	0.00000	0.000	0.00000
	*	2008310010	Vial 92	1	Sample	23	6.45639e4	7.251	4.73281
	*	2008310011	Vial 93	1	Sample	24	0.00000	0.000	0.00000
	*	2008310012	Vial 94	1	Sample	25	0.00000	0.000	0.00000
	*	701043 CCV@25	Vial 71	1	Control	26	3.91623e5	7.660	26.25206
	*	2008062003 10X	Vial 95	1	Sample	27	4.89002e5	7.190	299.63811
	*	701102 CCV@25	Vial 71	1	Control	28	3.97063e5	7.579	26.63751

*** End of Report ***

Sequence: C:\HPCHEM\1\SEQUENCE\CLO4\2020\MAR\26MAR20D.S

Sequence Table:

Method and Injection Info Part:

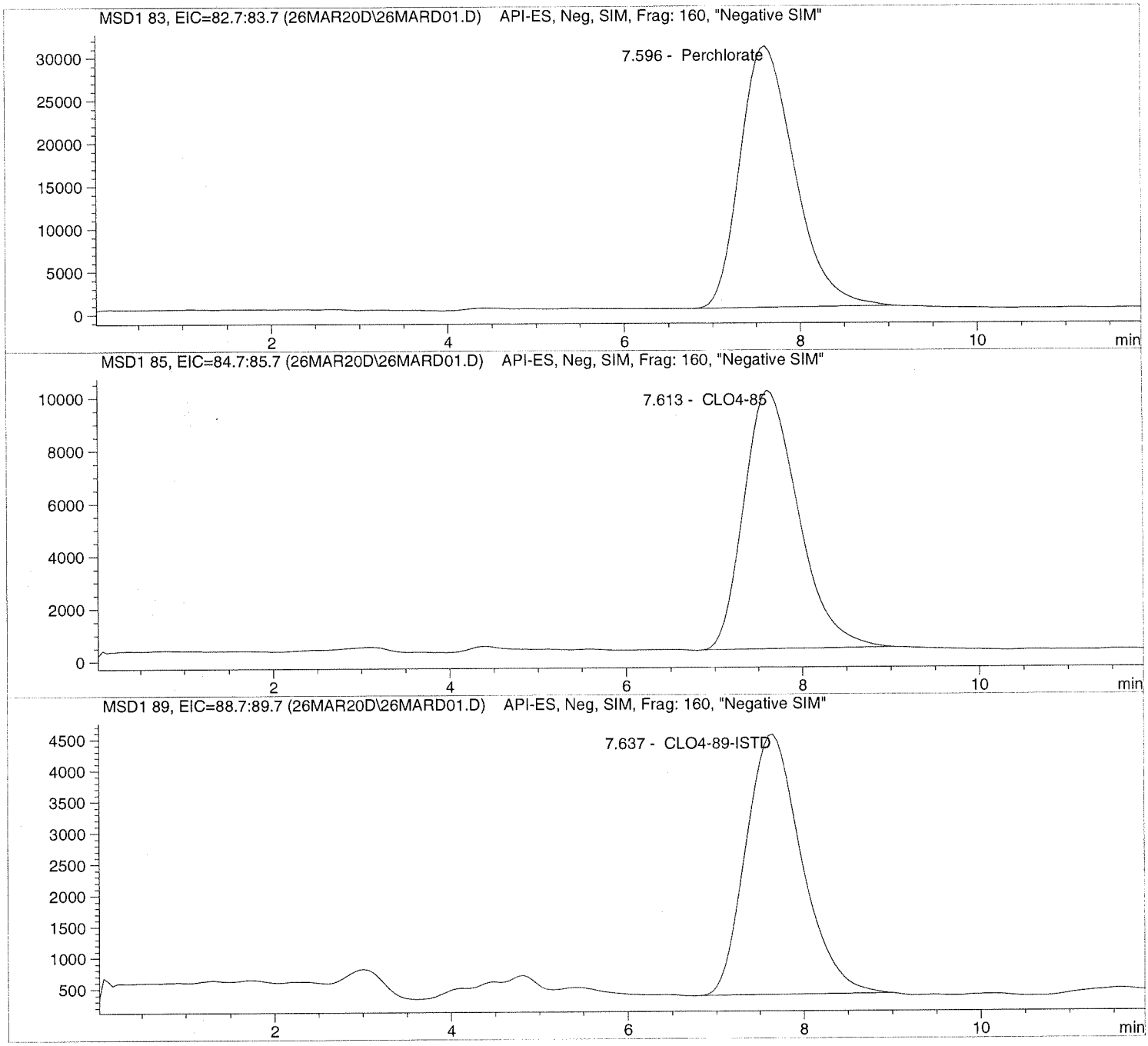
Line	Location	SampleName		Method	Inj	SampleType	InjVolume	DataFile
1	Vial 71	701037	CCV@25	CLO4-AQN	1	Ctrl Samp		
2	Vial 72	701038	LCS@3.	CLO4-AQN	1	Ctrl Samp		
3	Vial 73	701040	ICS@3.0	CLO4-AQN	1	Ctrl Samp		
4	Vial 74	701041	LMB	CLO4-AQN	1	Ctrl Samp		
5	Vial 75	2008062001		CLO4-AQN	1	Sample		
6	Vial 76	2008062002		CLO4-AQN	1	Sample		
7	Vial 77	2008062003		CLO4-AQN	1	Sample		
8	Vial 78	2008062004		CLO4-AQN	1	Sample		
9	Vial 79	2008062005		CLO4-AQN	1	Sample		
10	Vial 80	2008062006		CLO4-AQN	1	Sample		
11	Vial 81	2008062007		CLO4-AQN	1	Sample		
12	Vial 82	2008062008		CLO4-AQN	1	Sample		
13	Vial 83	2008310001		CLO4-AQN	1	Sample		
14	Vial 84	2008310002	MS	CLO4-AQN	1	Sample		
15	Vial 71	701042	CCV@25	CLO4-AQN	1	Ctrl Samp		
16	Vial 85	2008310003	MSD	CLO4-AQN	1	Sample		
17	Vial 86	2008310004		CLO4-AQN	1	Sample		
18	Vial 87	2008310005		CLO4-AQN	1	Sample		
19	Vial 88	2008310006		CLO4-AQN	1	Sample		
20	Vial 89	2008310007		CLO4-AQN	1	Sample		
21	Vial 90	2008310008	10X	CLO4-AQN	1	Sample		
22	Vial 91	2008310009		CLO4-AQN	1	Sample		
23	Vial 92	2008310010		CLO4-AQN	1	Sample		
24	Vial 93	2008310011		CLO4-AQN	1	Sample		
25	Vial 94	2008310012		CLO4-AQN	1	Sample		
26	Vial 71	701043	CCV@25	CLO4-AQN	1	Ctrl Samp		
27	Vial 95	2008062003	10X	CLO4-AQN	1	Sample		
28	Vial 71	701102	CCV@25	CLO4-AQN	1	Ctrl Samp		

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD01.D Sample Name: 701037 CCV@25

Injection Date:	3/26/2020 08:19:01	Seq Line:	1
Sample Name:	701037 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD01.D Sample Name: 701037 CCV@25

Injection Date:	3/26/2020 08:19:01	Seq Line:	1
Sample Name:	701037 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.596	PBA	1315193.4	24.5027	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.613	PBA	423244.0	25.7352	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.637	PBA	183780.9	5.0000	CLO4-89-ISTD

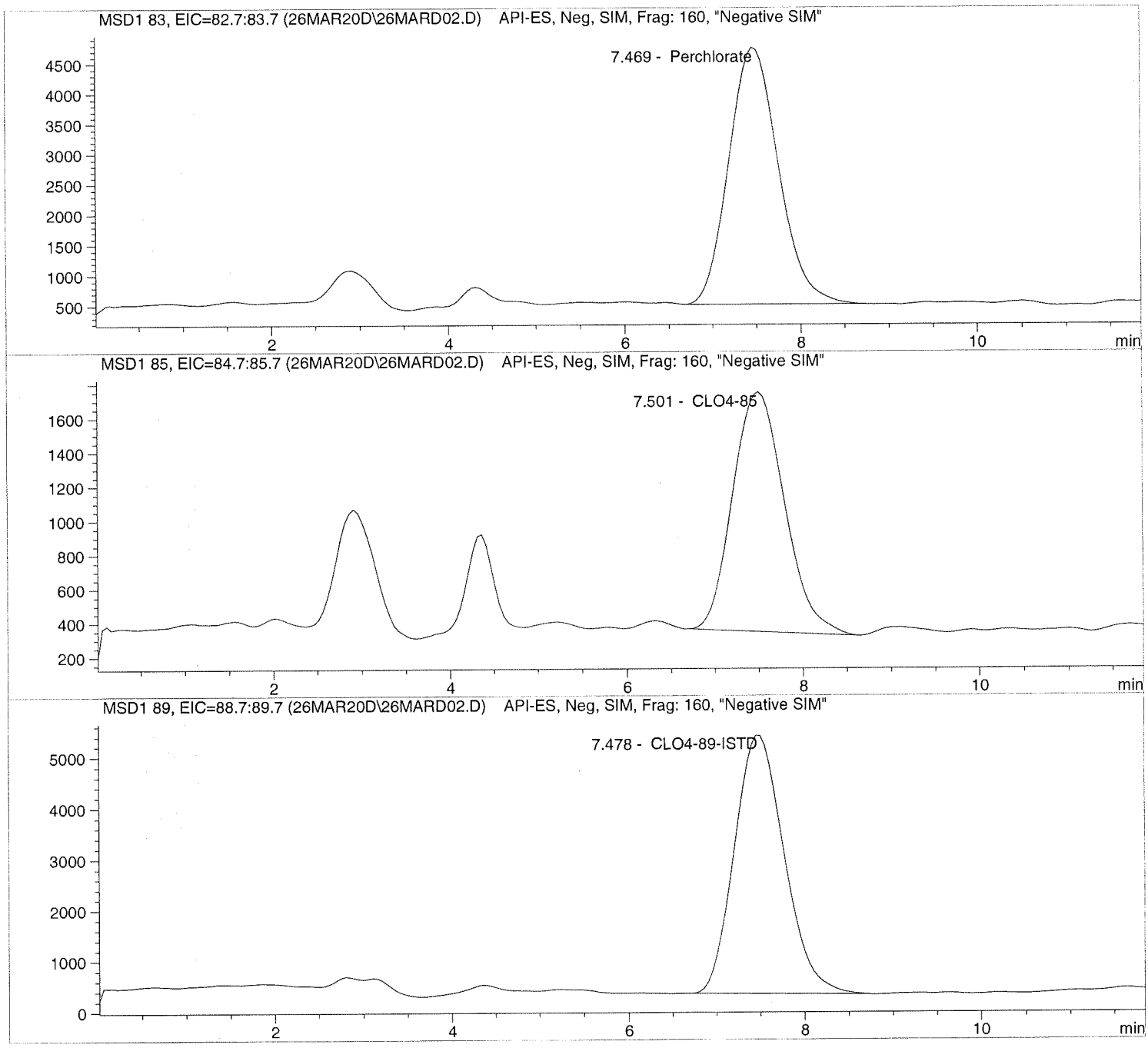
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD02.D Sample Name: 701038 LCS@3.

Injection Date:	3/26/2020 08:34:46	Seq Line:	2
Sample Name:	701038 LCS@3.	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD02.D Sample Name: 701038 LCS@3.

Injection Date:	3/26/2020 08:34:46	Seq Line:	2
Sample Name:	701038 LCS@3.	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	3.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.469	PBA	166008.5	3.0701	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.501	PBA	57531.5	3.4015	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.478	PBA	199014.8	5.0000	CLO4-89-ISTD

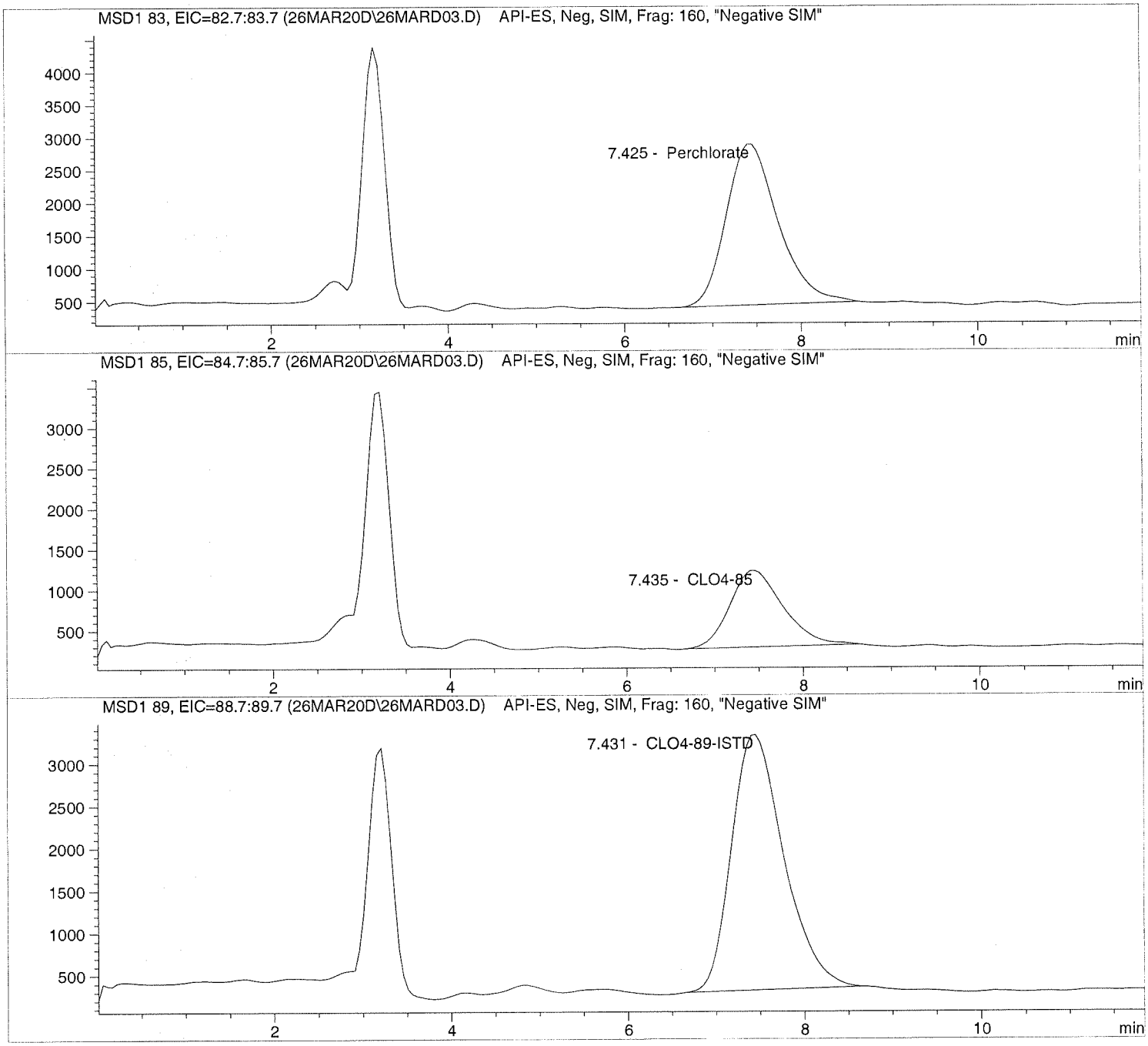
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD03.D Sample Name: 701040 ICS@3.0

Injection Date:	3/26/2020 08:48:42	Seq Line:	3
Sample Name:	701040 ICS@3.0	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD03.D Sample Name: 701040 ICS@3.0

Injection Date:	3/26/2020 08:48:42	Seq Line:	3
Sample Name:	701040 ICS@3.0	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	3.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.425	PBA	99985.0	2.9667	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.435	PBA	39656.0	3.7748	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.431	PBA	123986.5	5.0000	CLO4-89-ISTD

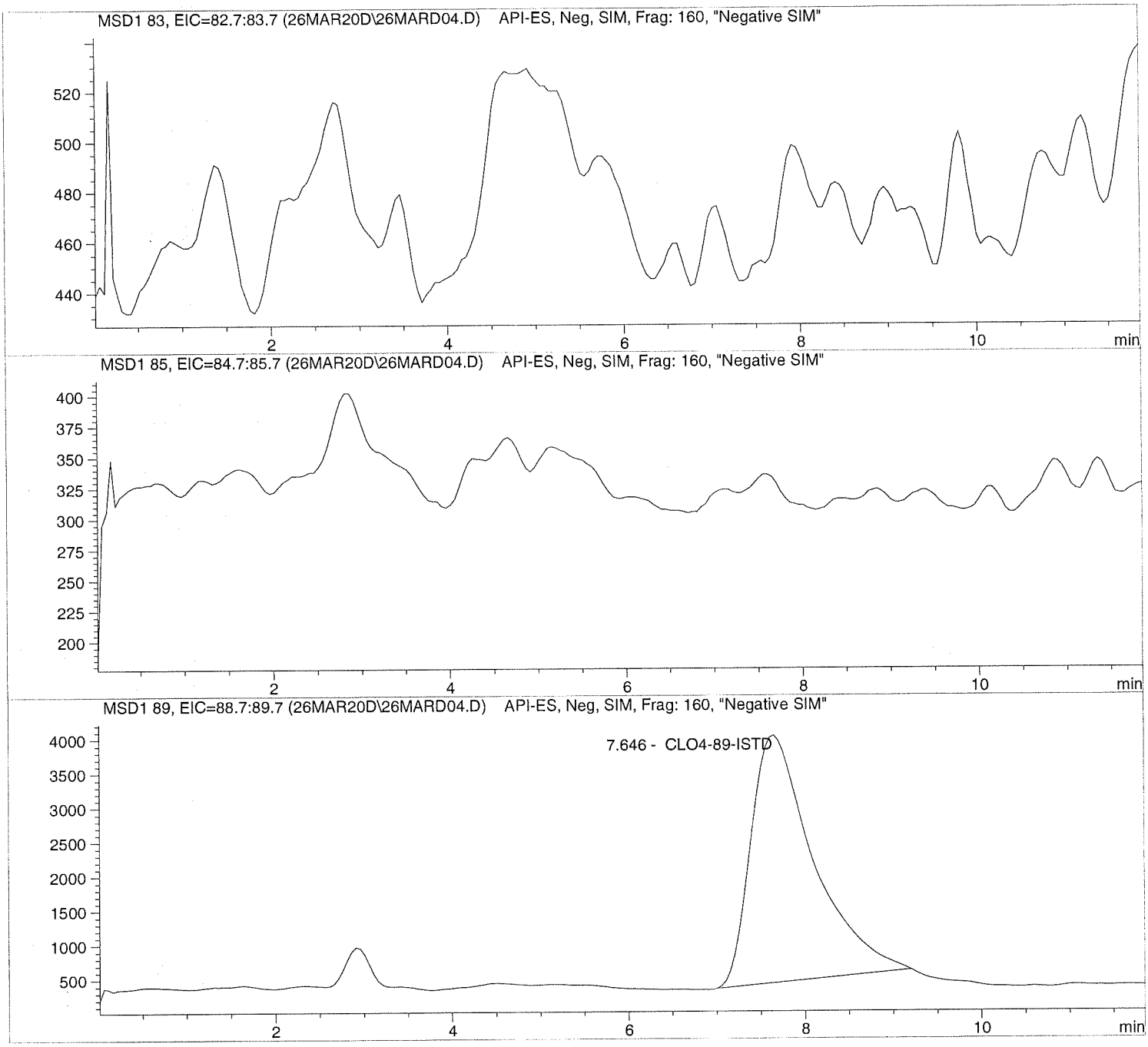
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD04.D Sample Name: 701041 LMB

Injection Date:	3/26/2020 09:02:43	Seq Line:	4
Sample Name:	701041 LMB	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD04.D Sample Name: 701041 LMB

Injection Date:	3/26/2020 09:02:43	Seq Line:	4
Sample Name:	701041 LMB	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.646	PBA	177629.6	5.0000	CLO4-89-ISTD

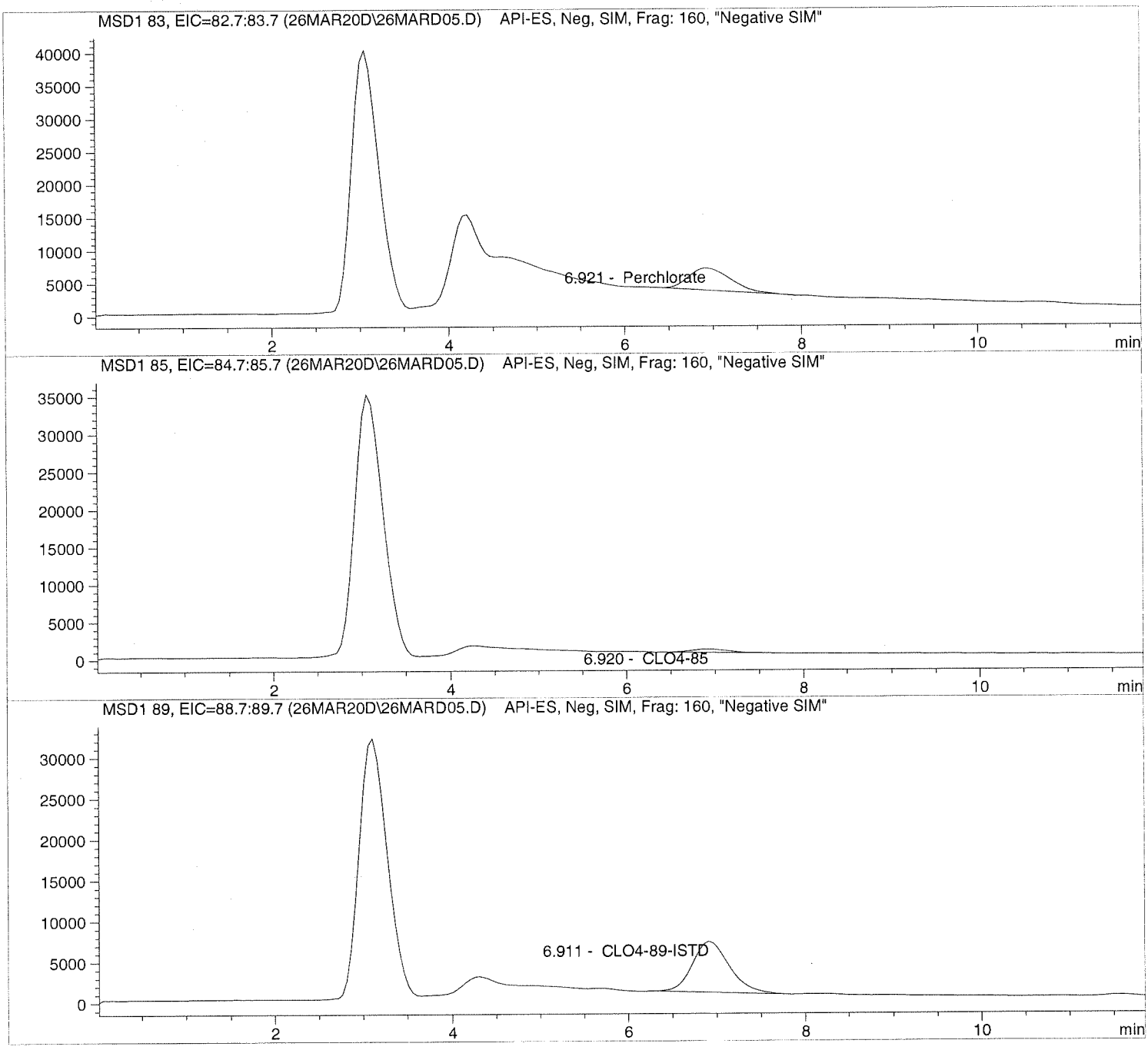
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD05.D Sample Name: 2008062001

Injection Date:	3/26/2020 09:16:42	Seq Line:	5
Sample Name:	2008062001	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD05.D Sample Name: 2008062001

Injection Date:	3/26/2020 09:16:42	Seq Line:	5
Sample Name:	2008062001	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.921	PBA	109960.3	2.2313	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.920	PBA	13131.1	0.7424	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.911	PBA	180290.0	5.0000	CLO4-89-ISTD

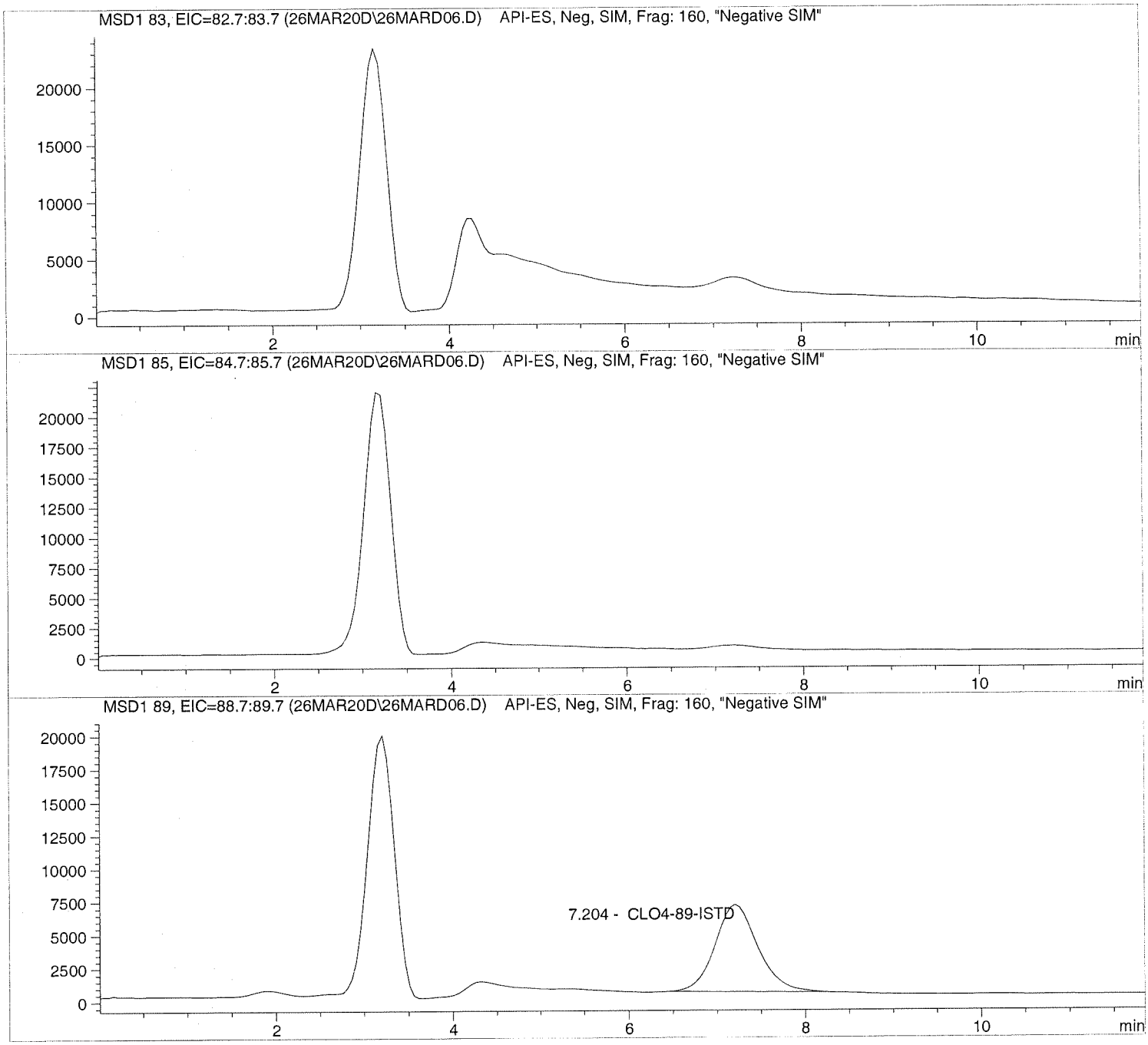
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD06.D Sample Name: 2008062002

Injection Date:	3/26/2020 09:30:41	Seq Line:	6
Sample Name:	2008062002	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD06.D Sample Name: 2008062002

Injection Date:	3/26/2020 09:30:41	Seq Line:	6
Sample Name:	2008062002	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.204	PBA	221065.7	5.0000	CLO4-89-ISTD

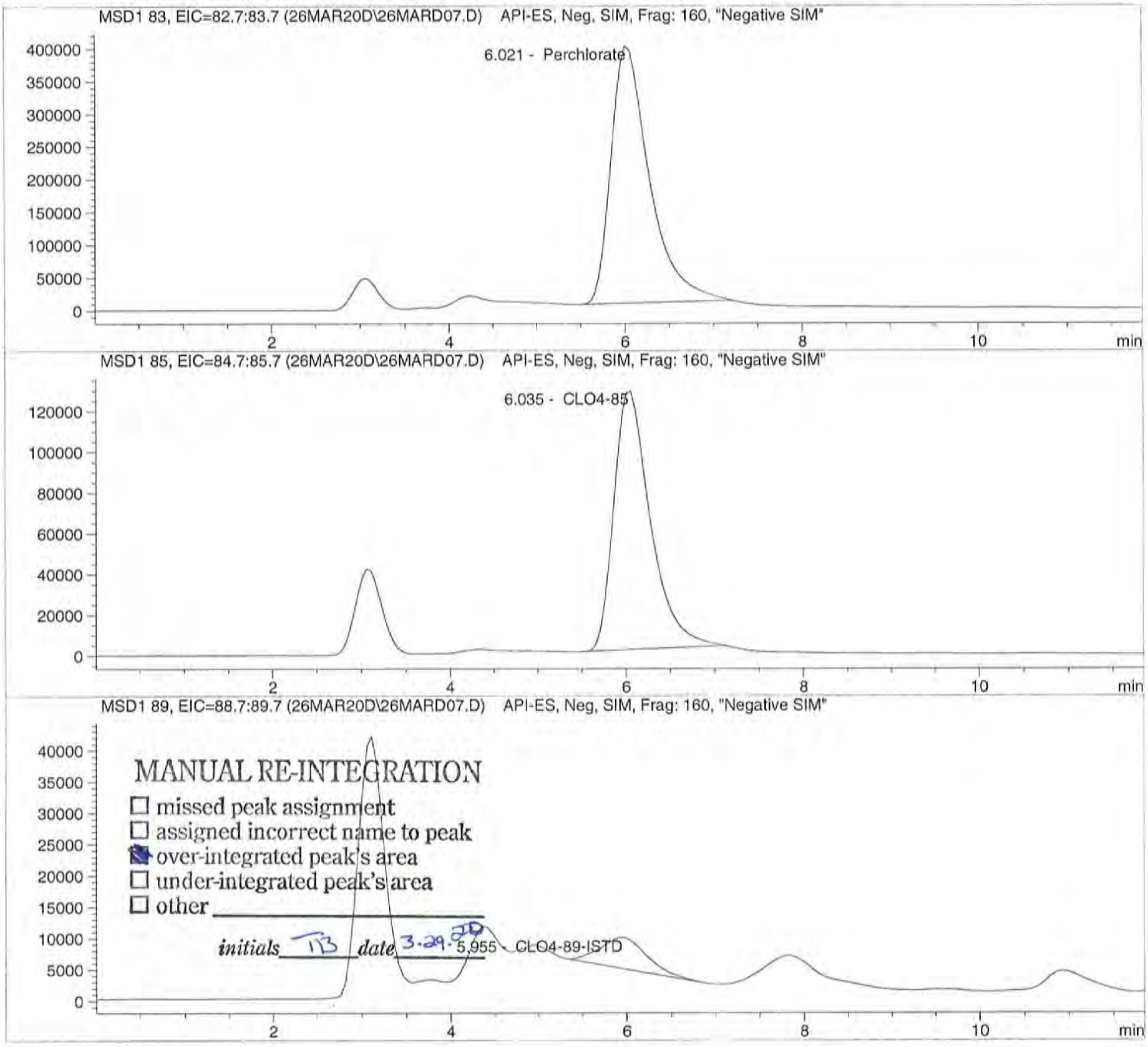
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD07.D Sample Name: 2008062003

Injection Date:	3/26/2020 09:44:40	Seq Line:	7
Sample Name:	2008062003	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD07.D Sample Name: 2008062003

Injection Date:	3/26/2020 09:44:40	Seq Line:	7
Sample Name:	2008062003	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.021	PBA	11797552.0	147.3177	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.035	PBA	3623208.0	150.6542	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
5.955	MM	180433.5	5.0000	CLO4-89-ISTD

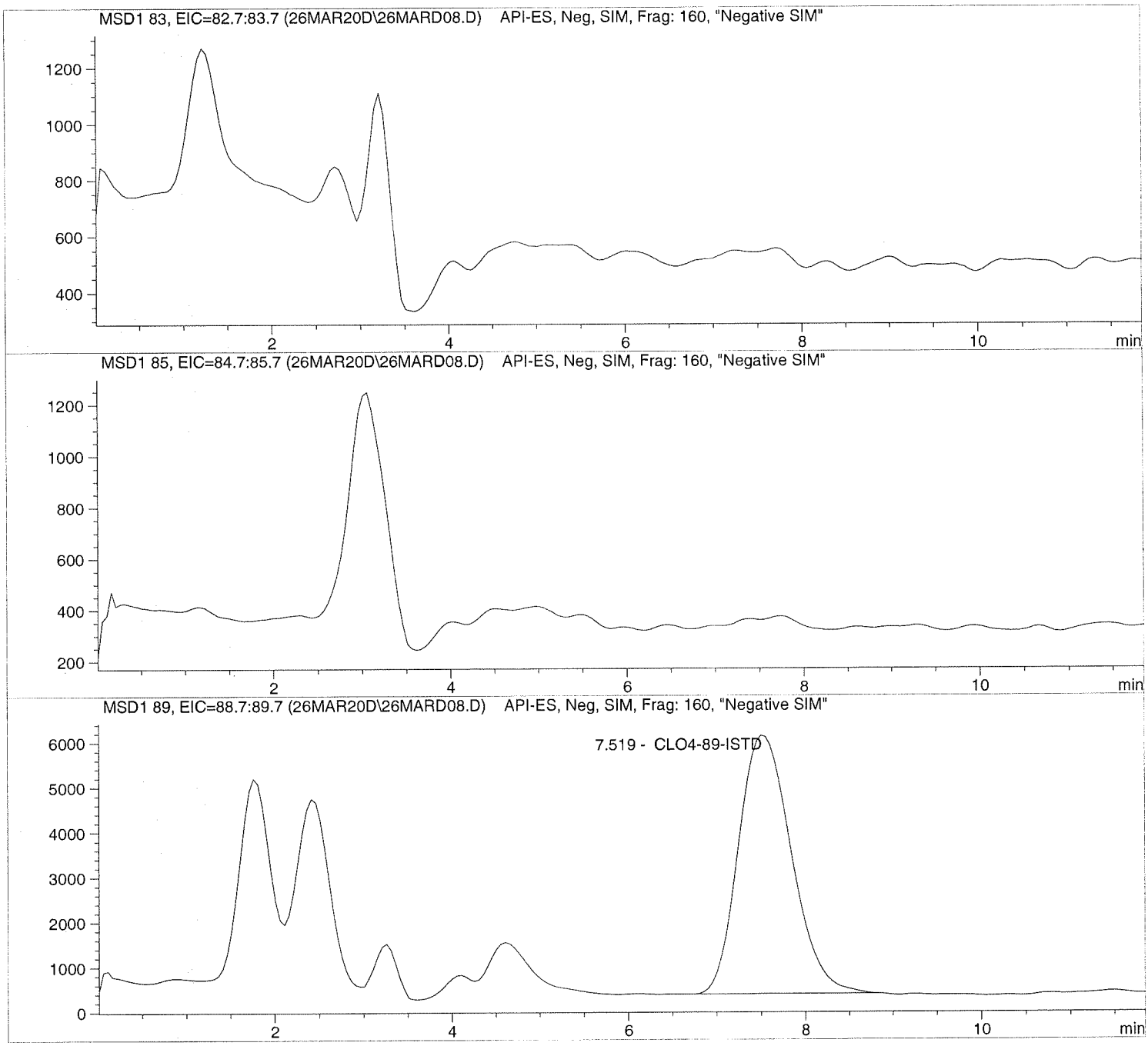
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD08.D Sample Name: 2008062004

Injection Date:	3/26/2020 09:58:39	Seq Line:	8
Sample Name:	2008062004	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD08.D Sample Name: 2008062004

Injection Date:	3/26/2020 09:58:39	Seq Line:	8
Sample Name:	2008062004	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.519	PBA	238862.2	5.0000	CLO4-89-ISTD

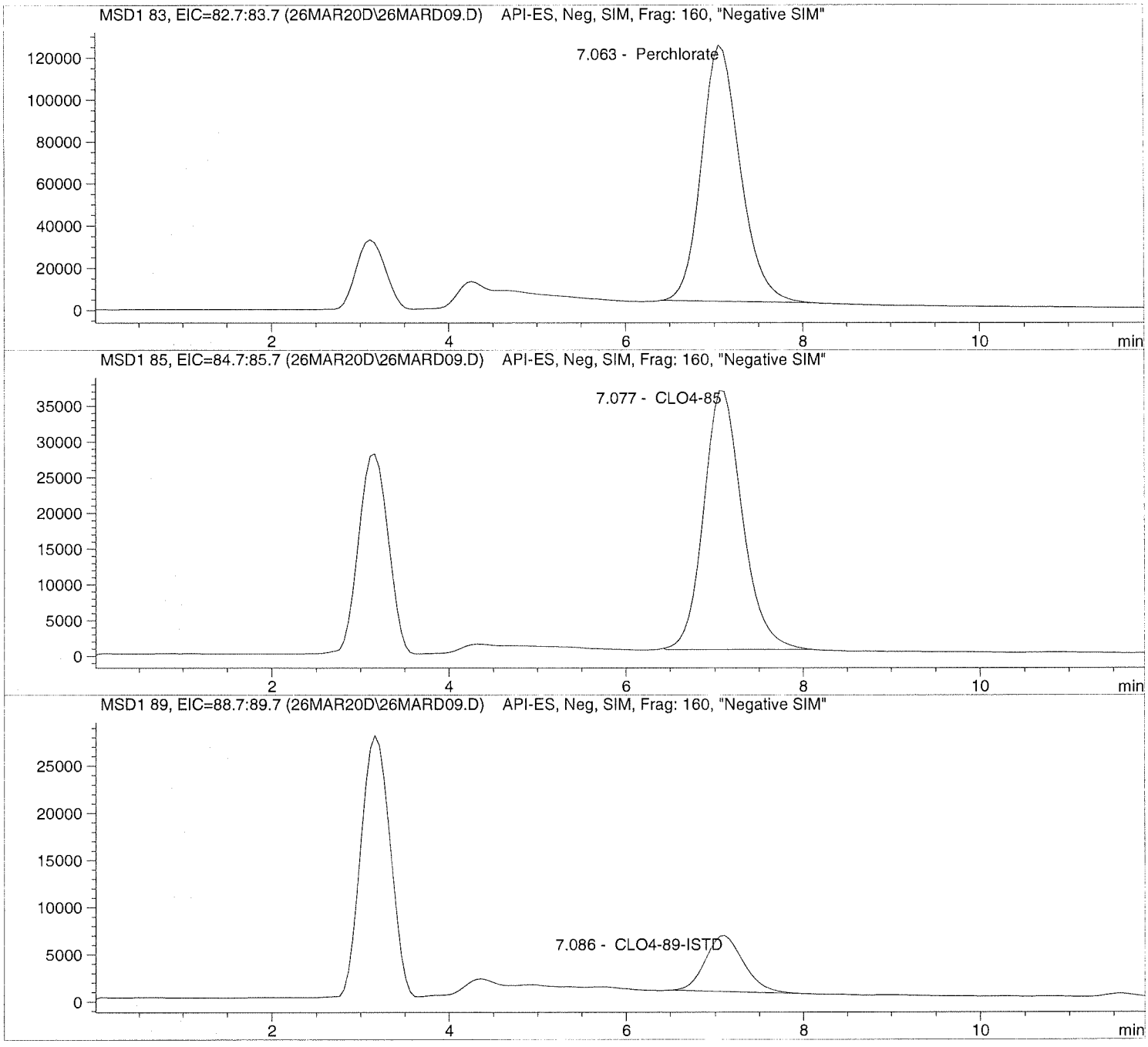
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD09.D Sample Name: 2008062005

Injection Date:	3/26/2020 10:12:38	Seq Line:	9
Sample Name:	2008062005	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD09.D Sample Name: 2008062005

Injection Date:	3/26/2020 10:12:38	Seq Line:	9
Sample Name:	2008062005	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.063	BBA	3686393.8	61.5488	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.077	BBA	1097853.7	60.8762	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.086	PBA	177447.9	5.0000	CLO4-89-ISTD

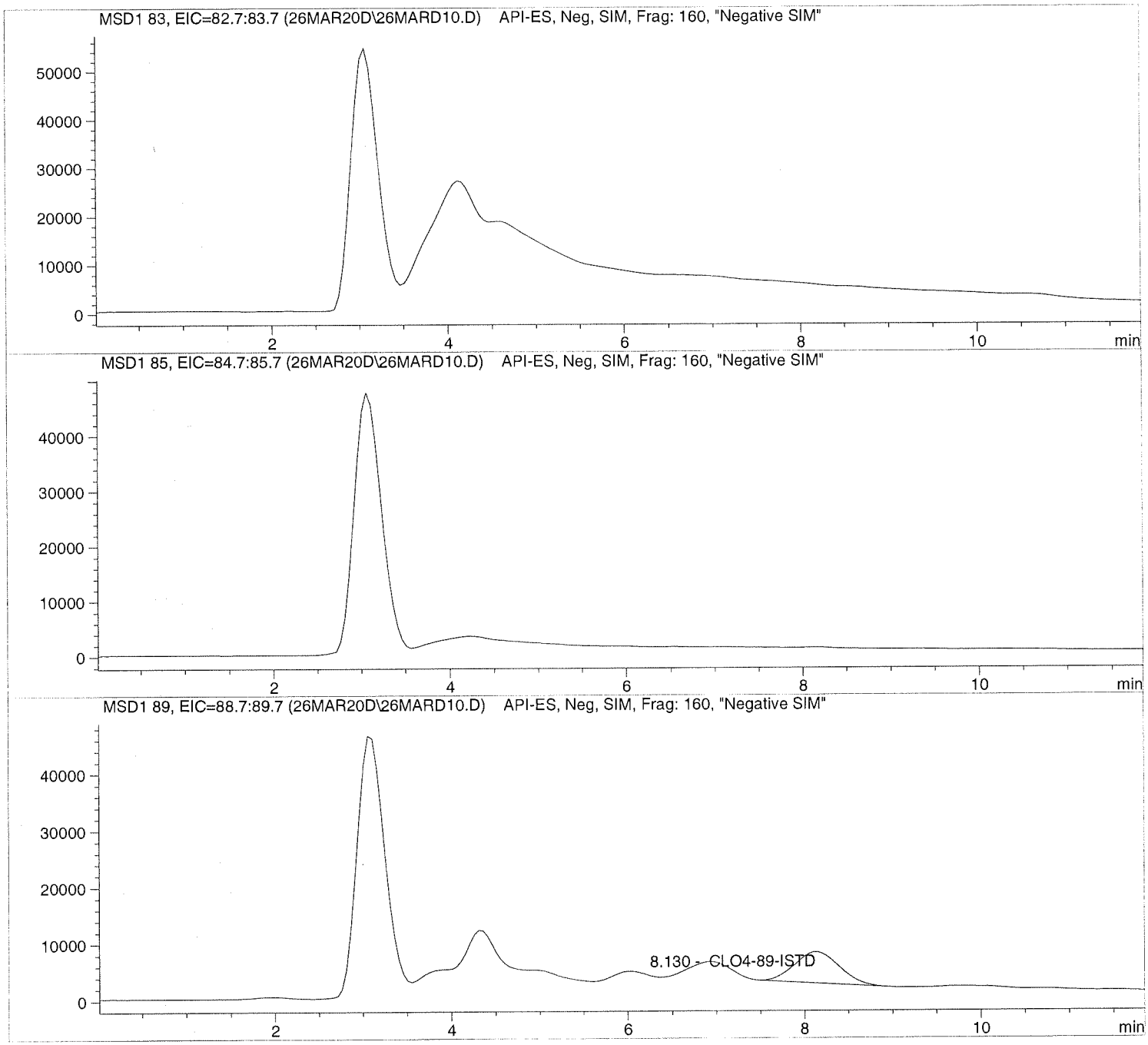
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD10.D Sample Name: 2008062006

Injection Date:	3/26/2020 10:26:37	Seq Line:	10
Sample Name:	2008062006	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD10.D Sample Name: 2008062006

Injection Date:	3/26/2020 10:26:37	Seq Line:	10
Sample Name:	2008062006	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.130	VBA	194127.8	5.0000	CLO4-89-ISTD

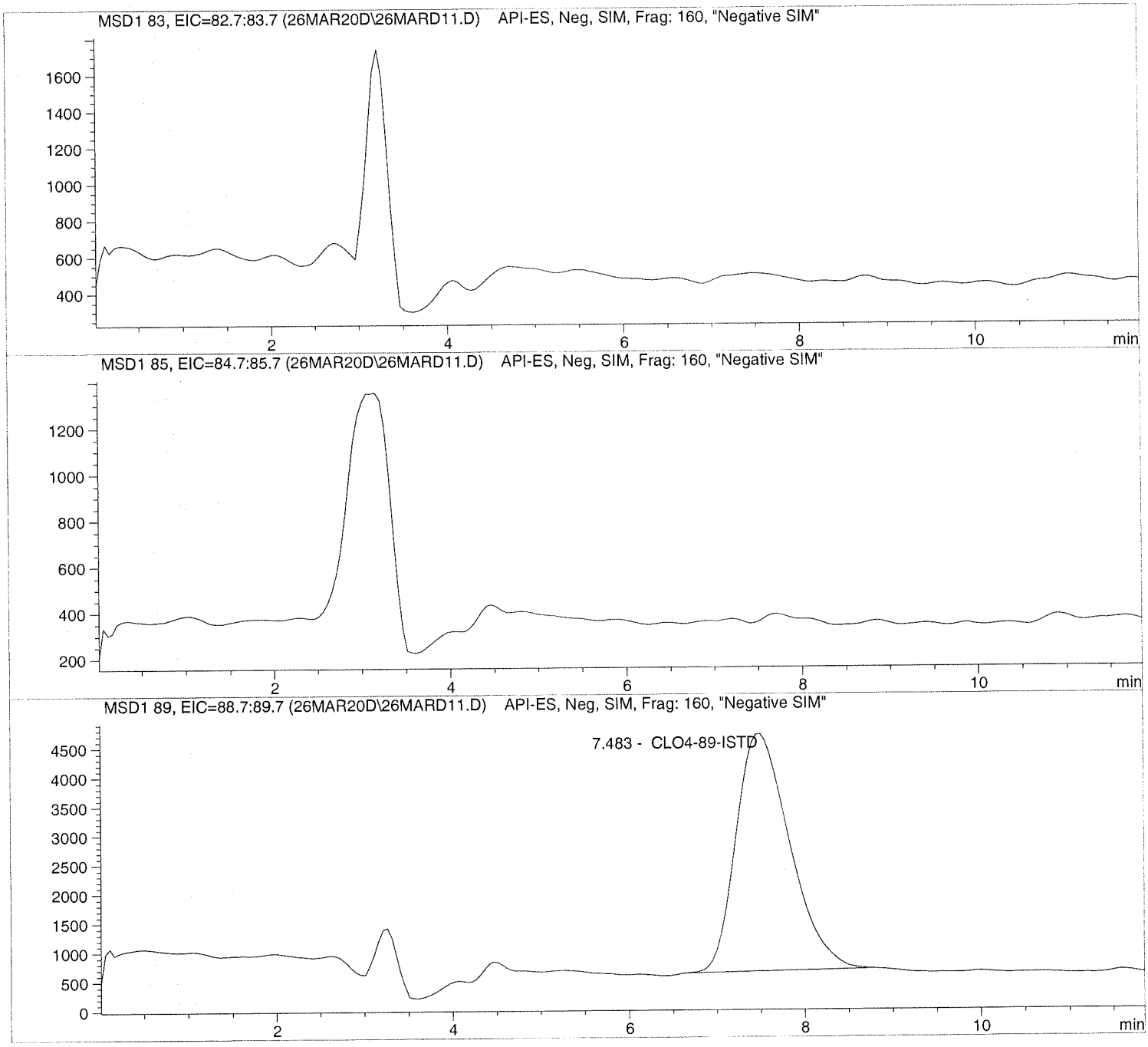
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD11.D Sample Name: 2008062007

Injection Date:	3/26/2020 10:40:42	Seq Line:	11
Sample Name:	2008062007	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD11.D Sample Name: 2008062007

Injection Date:	3/26/2020 10:40:42	Seq Line:	11
Sample Name:	2008062007	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.483	BBA	172495.2	5.0000	CLO4-89-ISTD

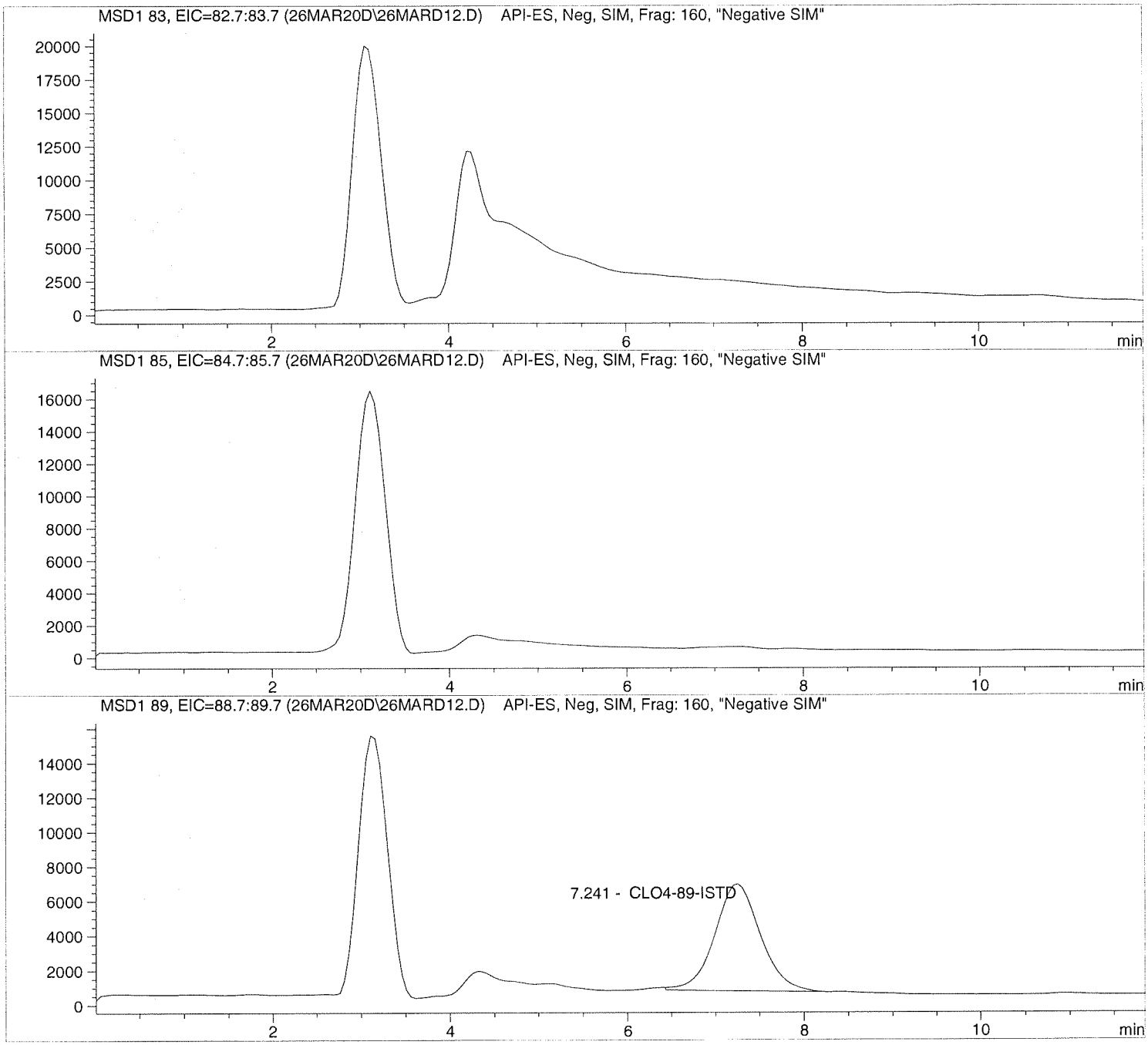
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD12.D Sample Name: 2008062008

Injection Date:	3/26/2020 10:54:39	Seq Line:	12
Sample Name:	2008062008	Location:	Vial 82
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD12.D Sample Name: 2008062008

Injection Date:	3/26/2020 10:54:39	Seq Line:	12
Sample Name:	2008062008	Location:	Vial 82
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.241	BBA	220984.2	5.0000	CLO4-89-ISTD

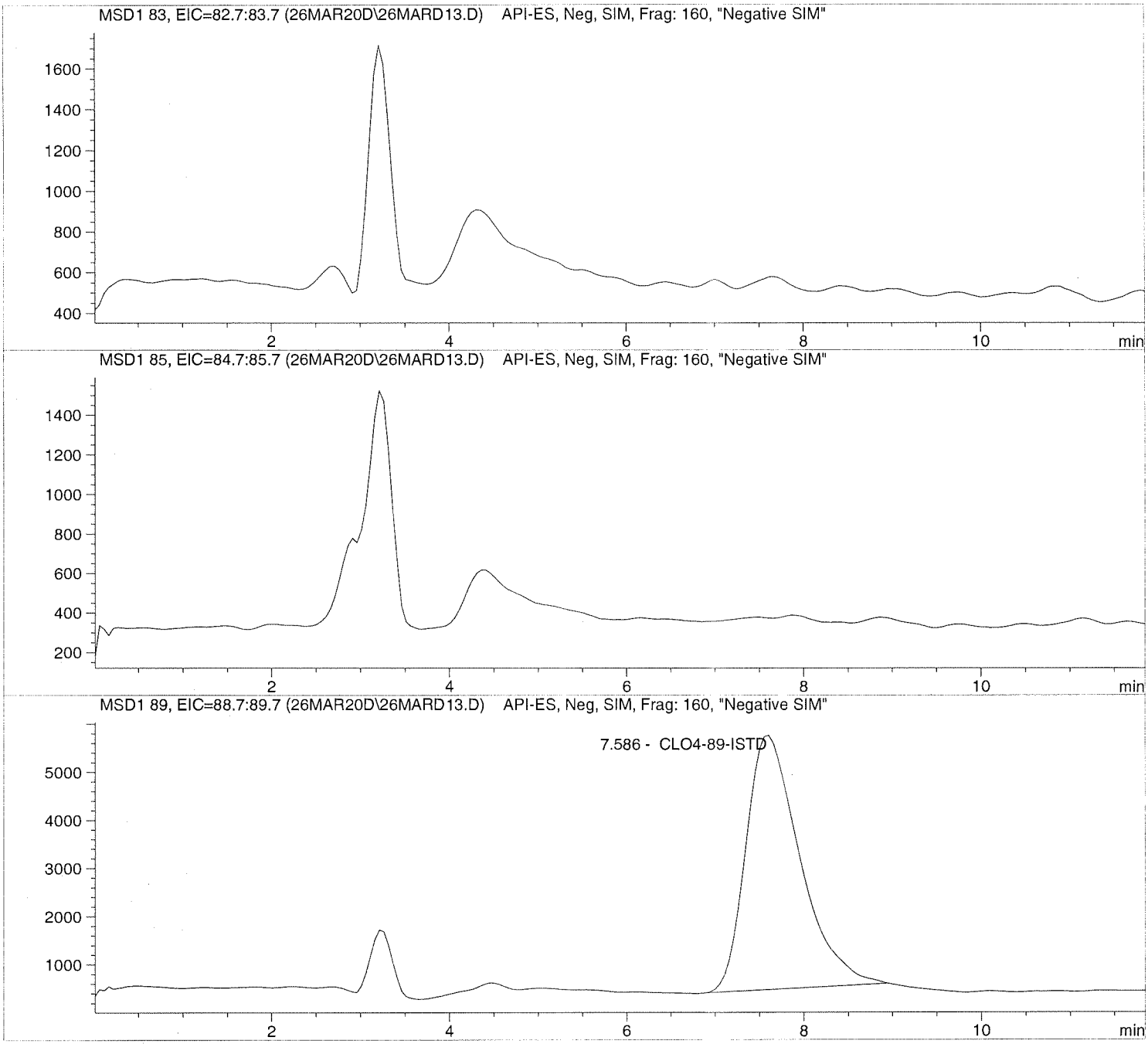
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD13.D Sample Name: 2008310001

Injection Date:	3/26/2020 11:08:35	Seq Line:	13
Sample Name:	2008310001	Location:	Vial 83
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD13.D Sample Name: 2008310001

Injection Date:	3/26/2020 11:08:35	Seq Line:	13
Sample Name:	2008310001	Location:	Vial 83
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.586	PBA	223497.3	5.0000	CLO4-89-ISTD

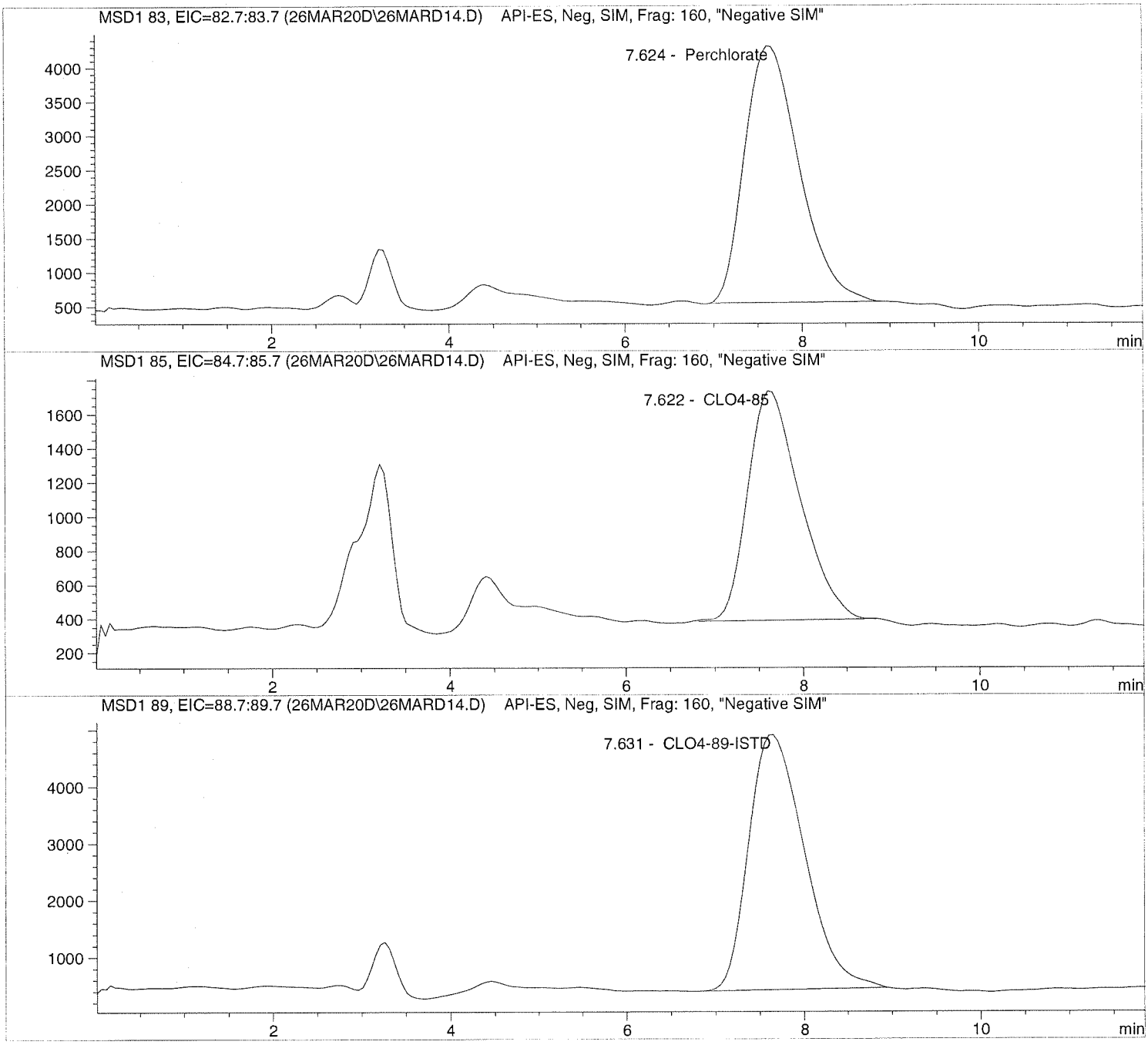
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD14.D Sample Name: 2008310002 MS

Injection Date:	3/26/2020 11:22:32	Seq Line:	14
Sample Name:	2008310002 MS	Location:	Vial 84
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD14.D Sample Name: 2008310002 MS

Injection Date:	3/26/2020 11:22:32	Seq Line:	14
Sample Name:	2008310002 MS	Location:	Vial 84
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.624	PBA	161578.6	3.0306	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.622	BBA	55538.7	3.3285	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.631	PBA	196195.3	5.0000	CLO4-89-ISTD

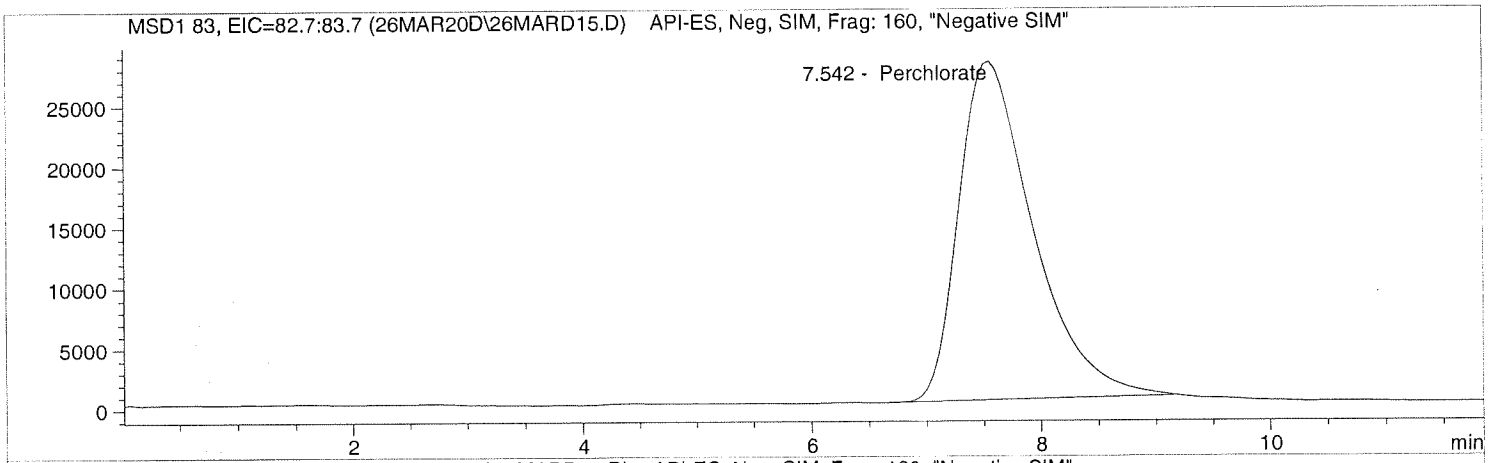
*** End of Report ***

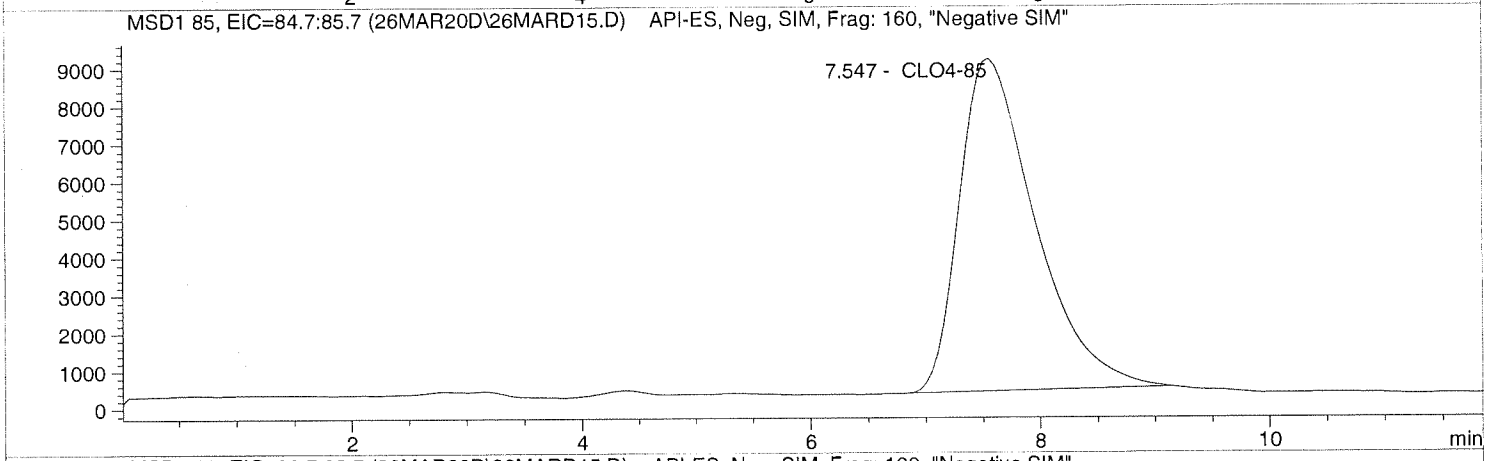
Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD15.D Sample Name: 701042 CCV@25

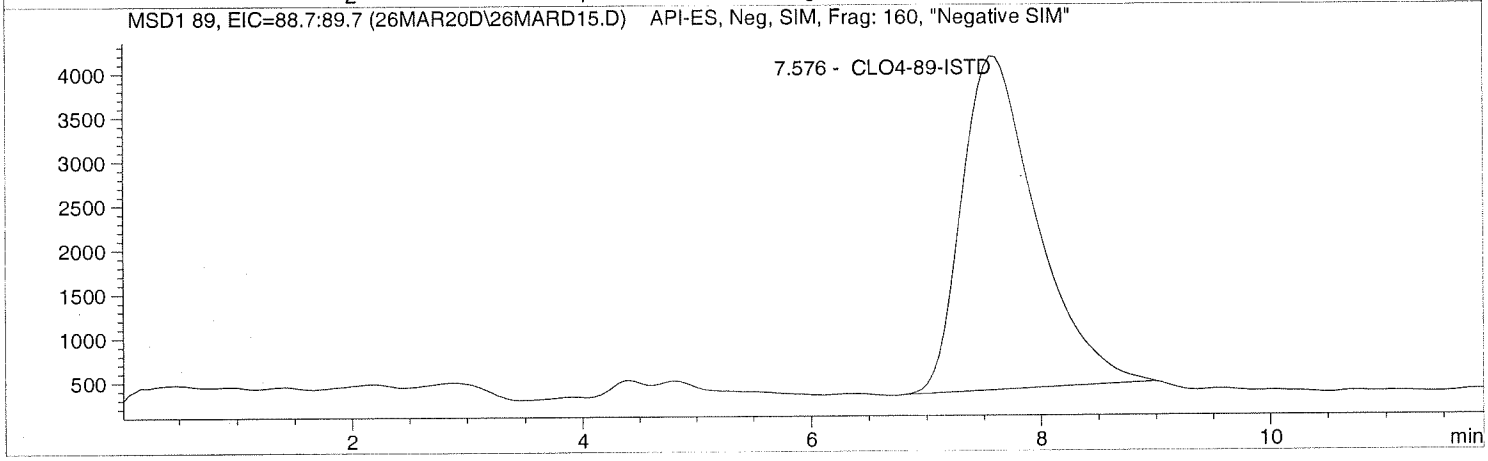
Injection Date:	3/26/2020 11:36:32	Seq Line:	15
Sample Name:	701042 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD15.D Sample Name: 701042 CCV@25

Injection Date:	3/26/2020 11:36:32	Seq Line:	15
Sample Name:	701042 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.542	PBA	1257703.0	25.0421	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.547	PBA	403497.3	26.2306	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.576	PBA	171579.5	5.0000	CLO4-89-ISTD

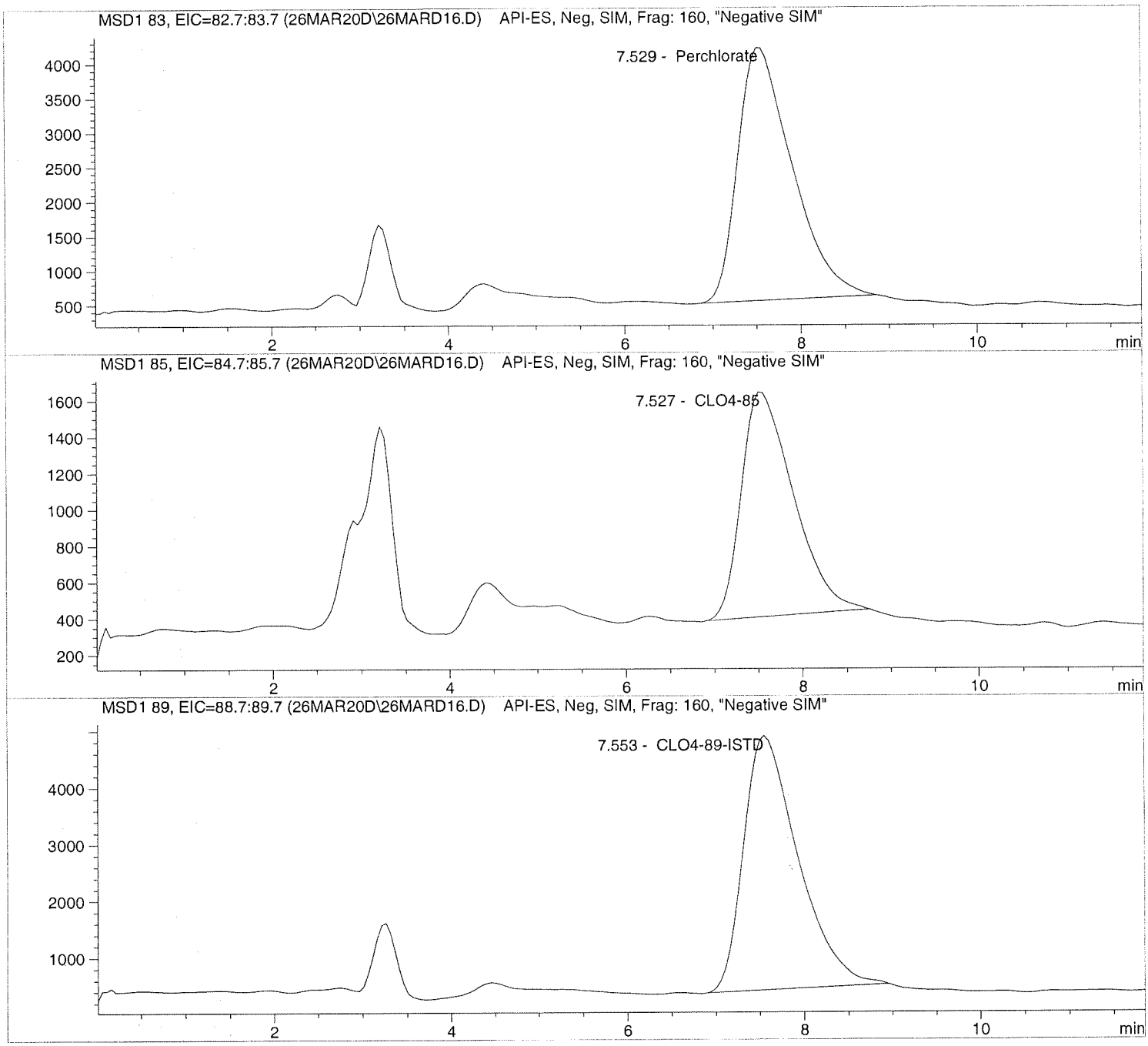
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD16.D Sample Name: 2008310003 MSD

Injection Date:	3/26/2020 11:50:32	Seq Line:	16
Sample Name:	2008310003 MSD	Location:	Vial 85
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD16.D Sample Name: 2008310003 MSD

Injection Date:	3/26/2020 11:50:32	Seq Line:	16
Sample Name:	2008310003 MSD	Location:	Vial 85
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.529	PBA	156764.3	3.0007	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.527	PBA	50765.7	3.0974	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.553	PBA	192226.0	5.0000	CLO4-89-ISTD

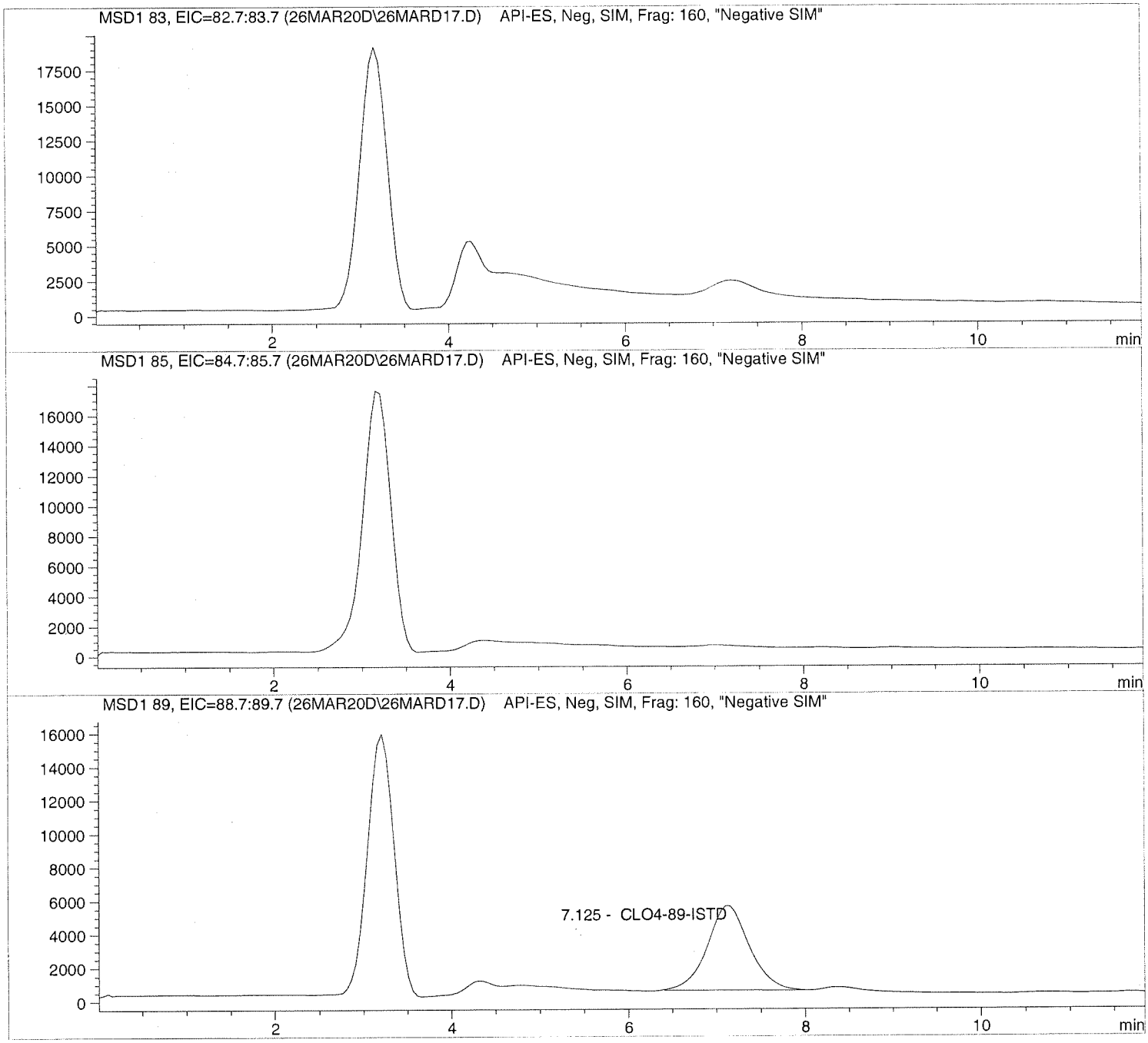
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD17.D Sample Name: 2008310004

Injection Date:	3/26/2020 12:04:29	Seq Line:	17
Sample Name:	2008310004	Location:	Vial 86
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD17.D Sample Name: 2008310004

Injection Date:	3/26/2020 12:04:29	Seq Line:	17
Sample Name:	2008310004	Location:	Vial 86
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.125	PBA	166041.3	5.0000	CLO4-89-ISTD

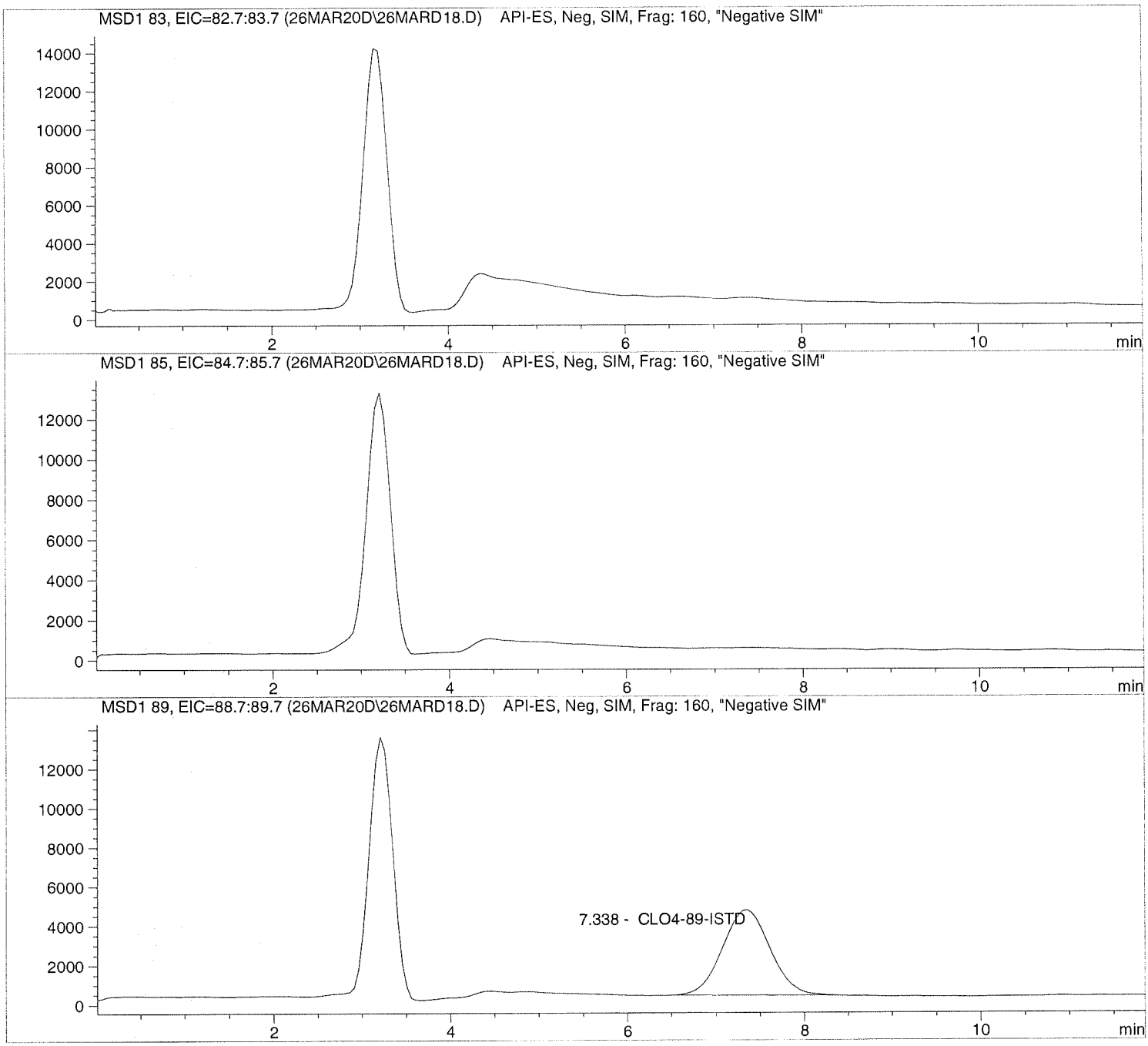
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD18.D Sample Name: 2008310005

Injection Date:	3/26/2020 12:18:26	Seq Line:	18
Sample Name:	2008310005	Location:	Vial 87
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD18.D Sample Name: 2008310005

Injection Date:	3/26/2020 12:18:26	Seq Line:	18
Sample Name:	2008310005	Location:	Vial 87
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.338	PBA	163139.4	5.0000	CLO4-89-ISTD

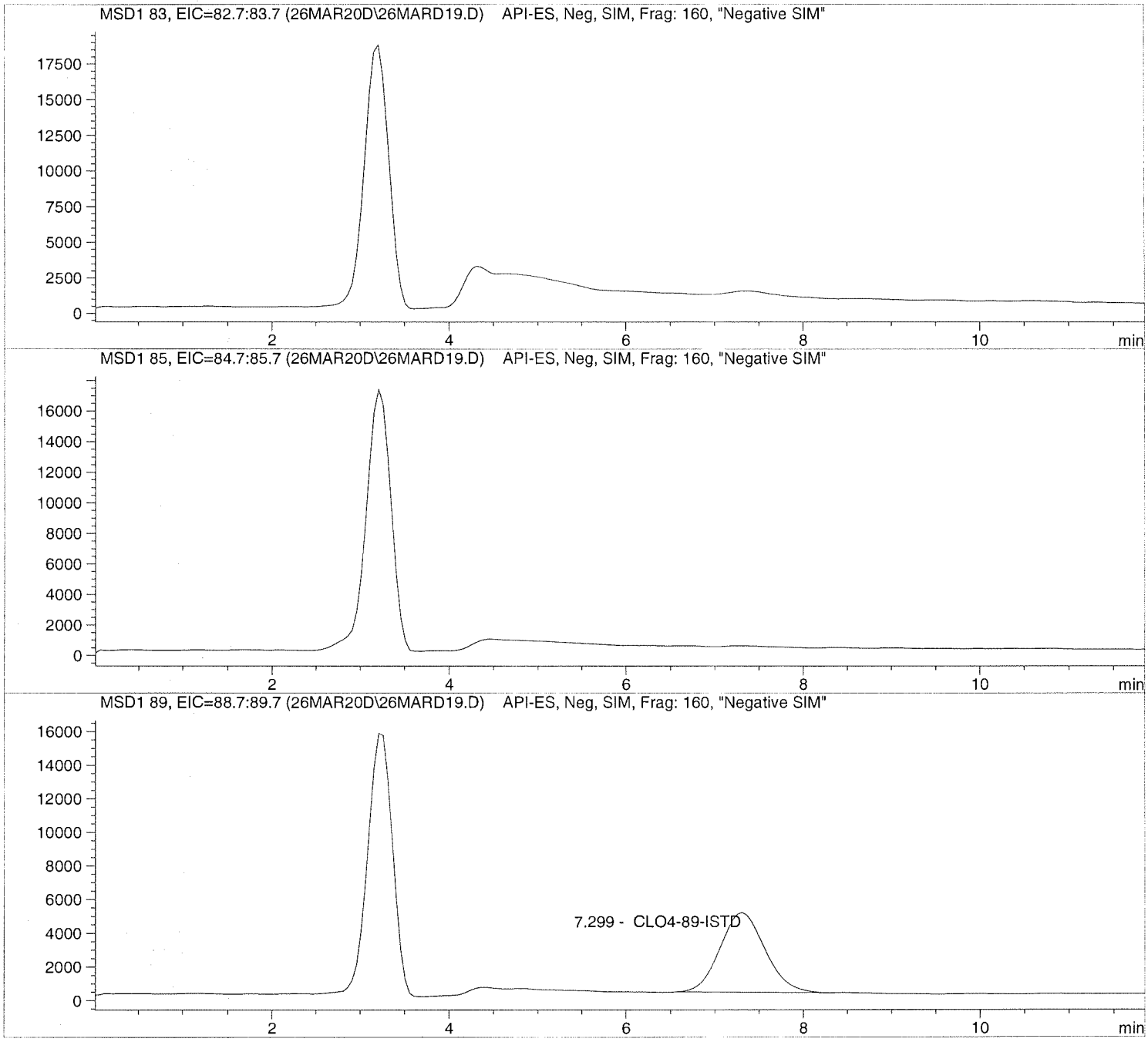
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD19.D Sample Name: 2008310006

Injection Date:	3/26/2020 12:32:24	Seq Line:	19
Sample Name:	2008310006	Location:	Vial 88
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD19.D Sample Name: 2008310006

Injection Date:	3/26/2020 12:32:24	Seq Line:	19
Sample Name:	2008310006	Location:	Vial 88
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.299	PBA	167930.1	5.0000	CLO4-89-ISTD

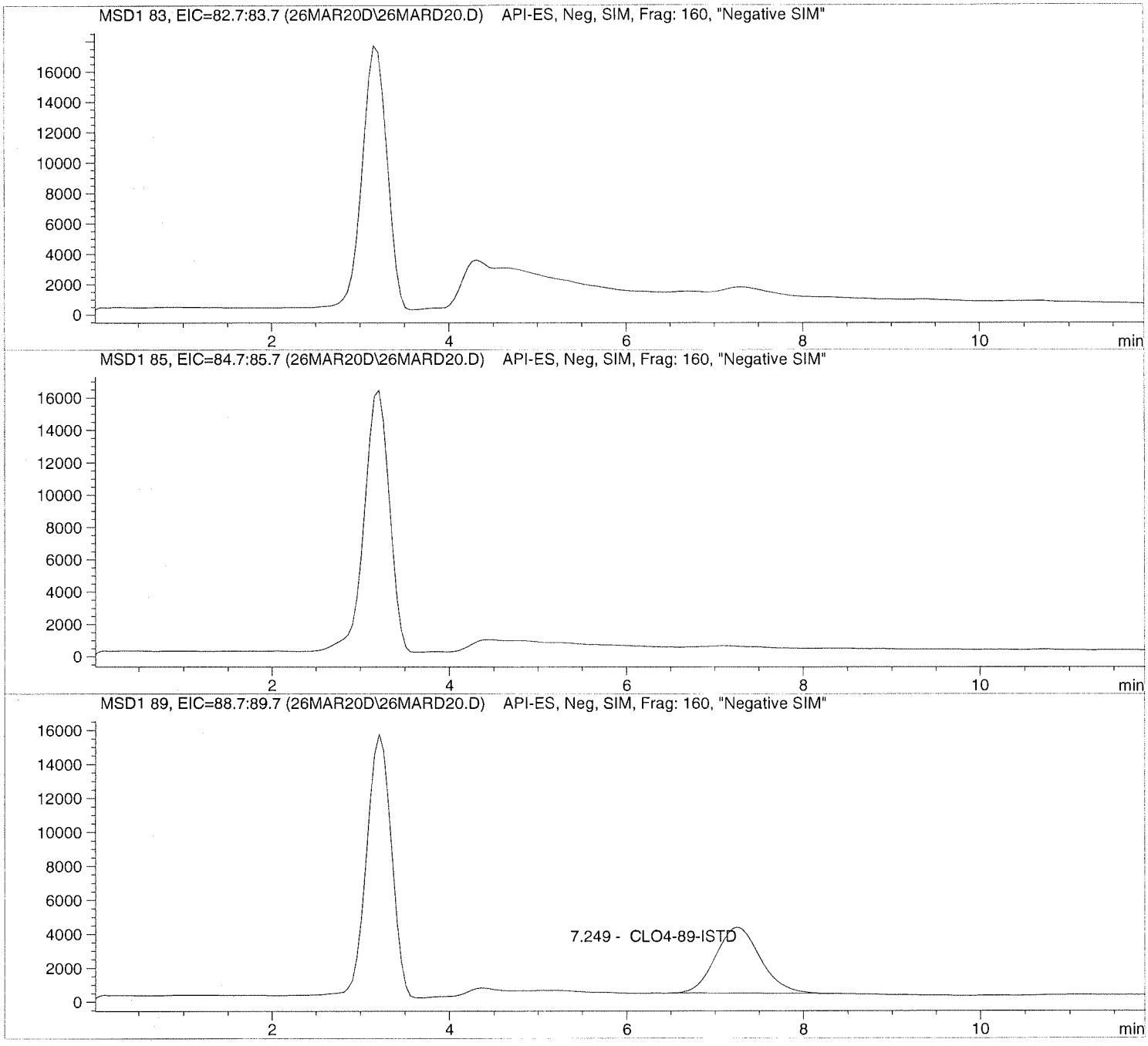
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD20.D Sample Name: 2008310007

Injection Date:	3/26/2020 12:46:26	Seq Line:	20
Sample Name:	2008310007	Location:	Vial 89
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD20.D Sample Name: 2008310007

Injection Date:	3/26/2020 12:46:26	Seq Line:	20
Sample Name:	2008310007	Location:	Vial 89
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.249	PBA	137319.5	5.0000	CLO4-89-ISTD

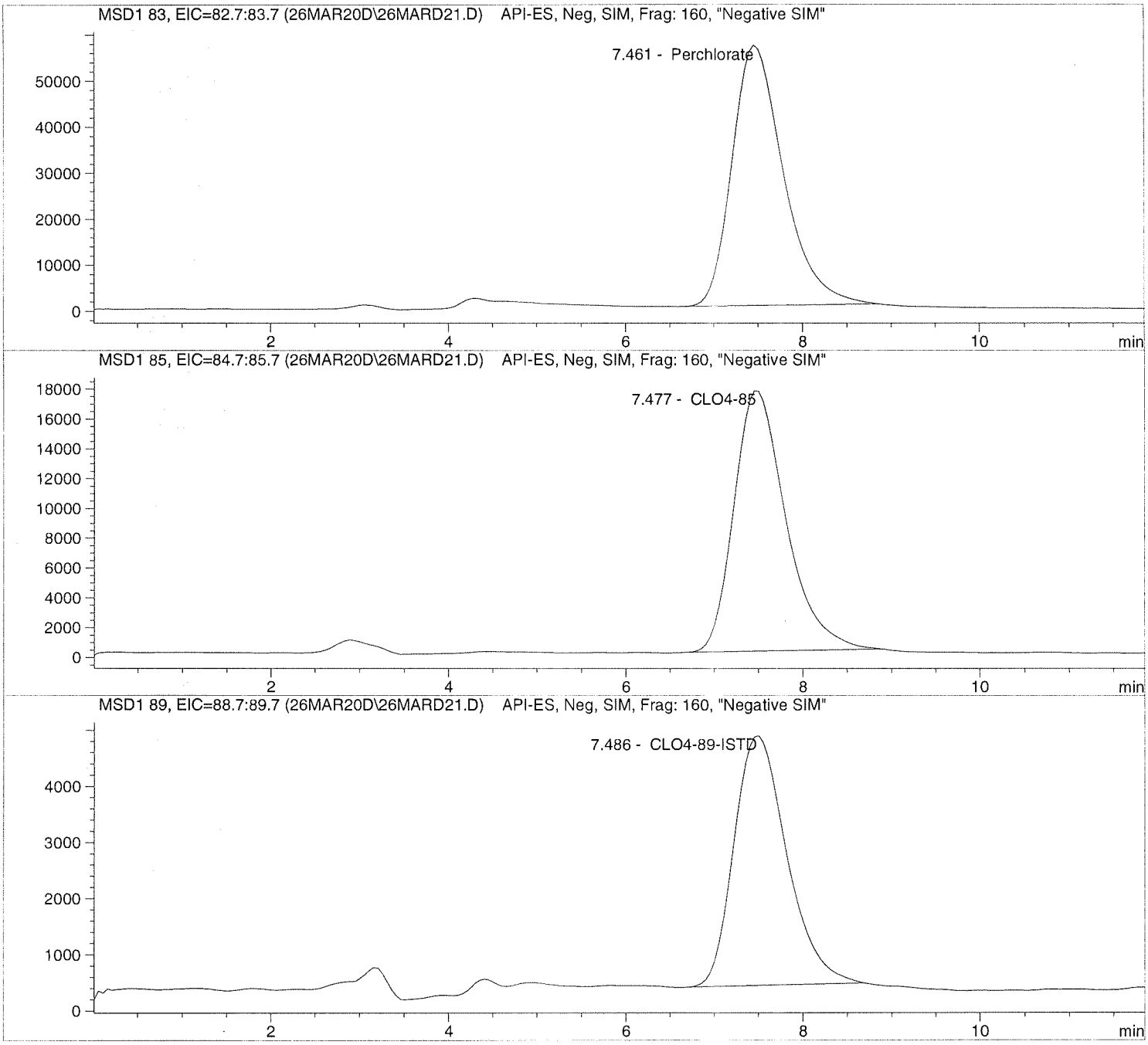
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD21.D Sample Name: 2008310008 10X

Injection Date:	3/26/2020 13:00:24	Seq Line:	21
Sample Name:	2008310008 10X	Location:	Vial 90
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD21.D Sample Name: 2008310008 10X

Injection Date:	3/26/2020 13:00:24	Seq Line:	21
Sample Name:	2008310008 10X	Location:	Vial 90
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	10.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.461	PBA	2264742.3	396.5233	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.477	PBA	708208.9	407.0441	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.486	PBA	183925.3	50.0000	CLO4-89-ISTD

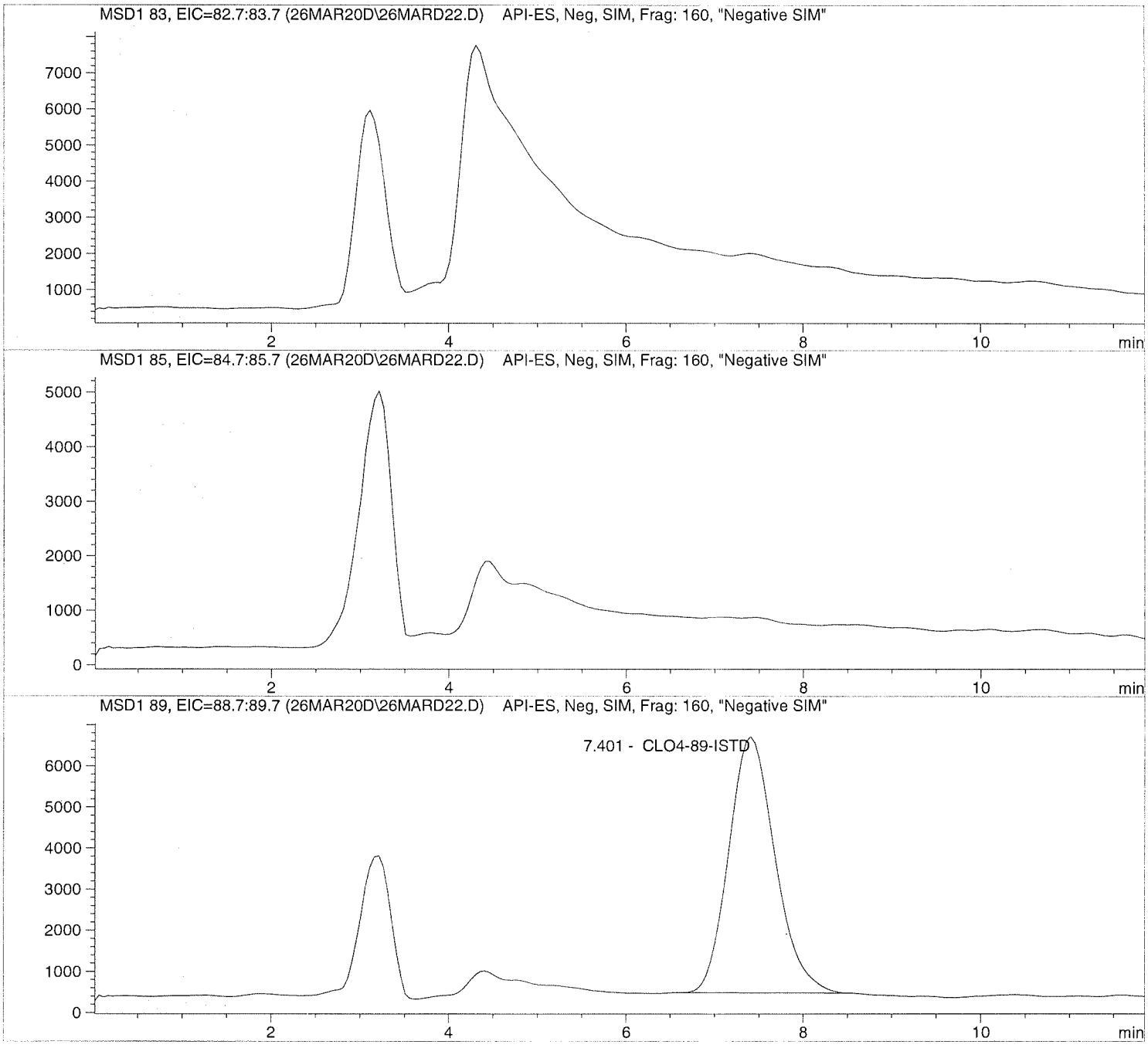
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD22.D Sample Name: 2008310009

Injection Date:	3/26/2020 13:14:36	Seq Line:	22
Sample Name:	2008310009	Location:	Vial 91
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD22.D Sample Name: 2008310009

Injection Date:	3/26/2020 13:14:36	Seq Line:	22
Sample Name:	2008310009	Location:	Vial 91
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.401	PBA	226092.7	5.0000	CLO4-89-ISTD

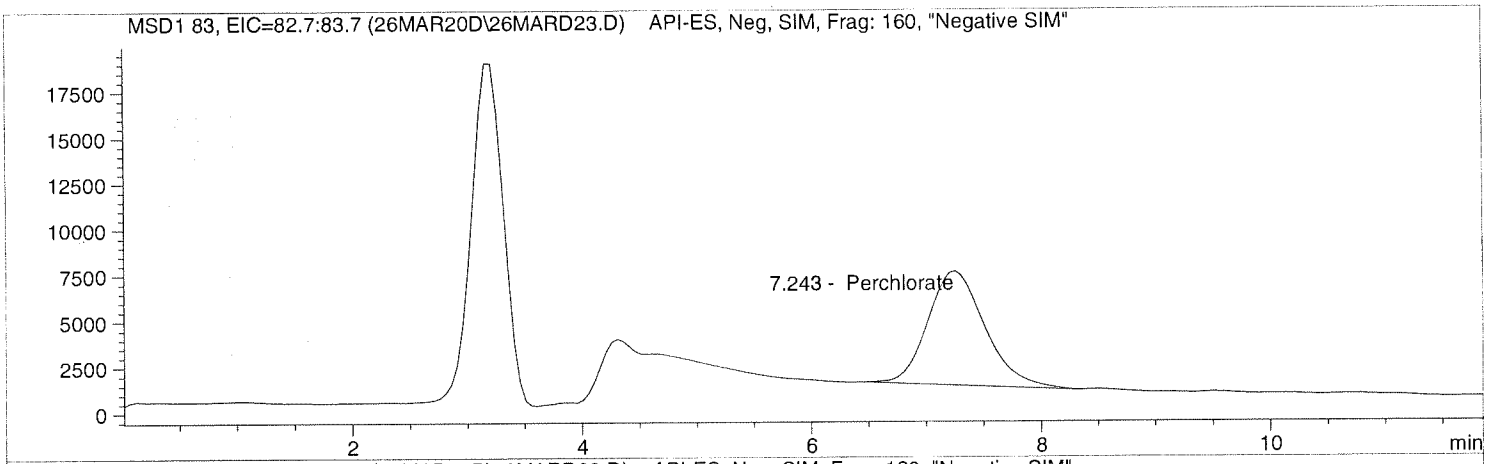
*** End of Report ***

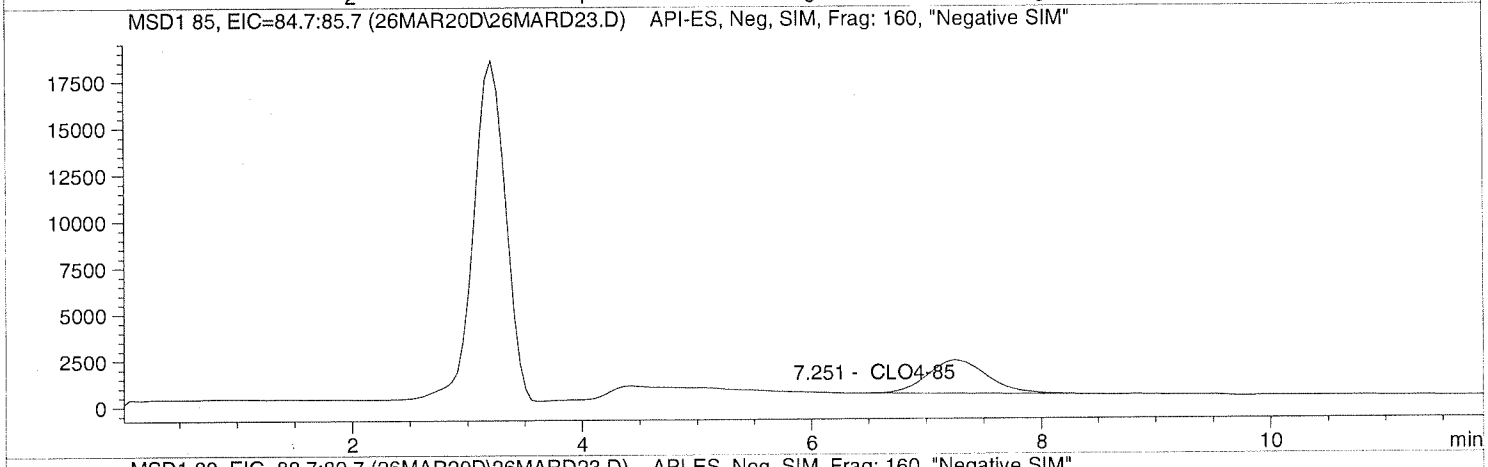
Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD23.D Sample Name: 2008310010

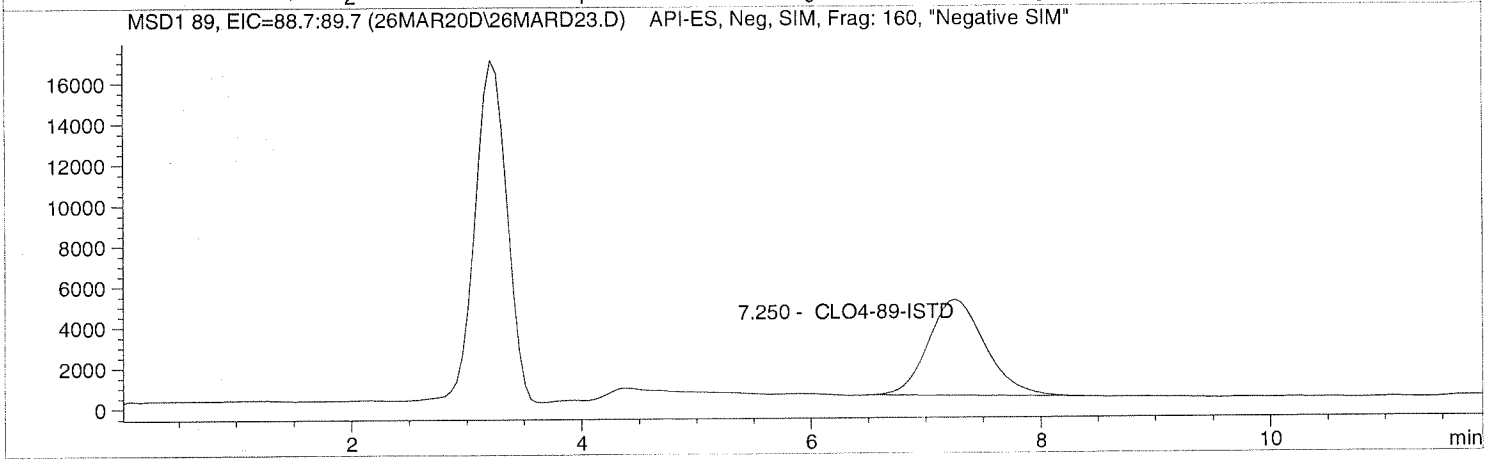
Injection Date:	3/26/2020 13:28:31	Seq Line:	23
Sample Name:	2008310010	Location:	Vial 92
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD23.D Sample Name: 2008310010

Injection Date:	3/26/2020 13:28:31	Seq Line:	23
Sample Name:	2008310010	Location:	Vial 92
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.243	BBA	213687.0	4.8705	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.251	PBA	64563.9	4.7328	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.250	PBA	161722.0	5.0000	CLO4-89-ISTD

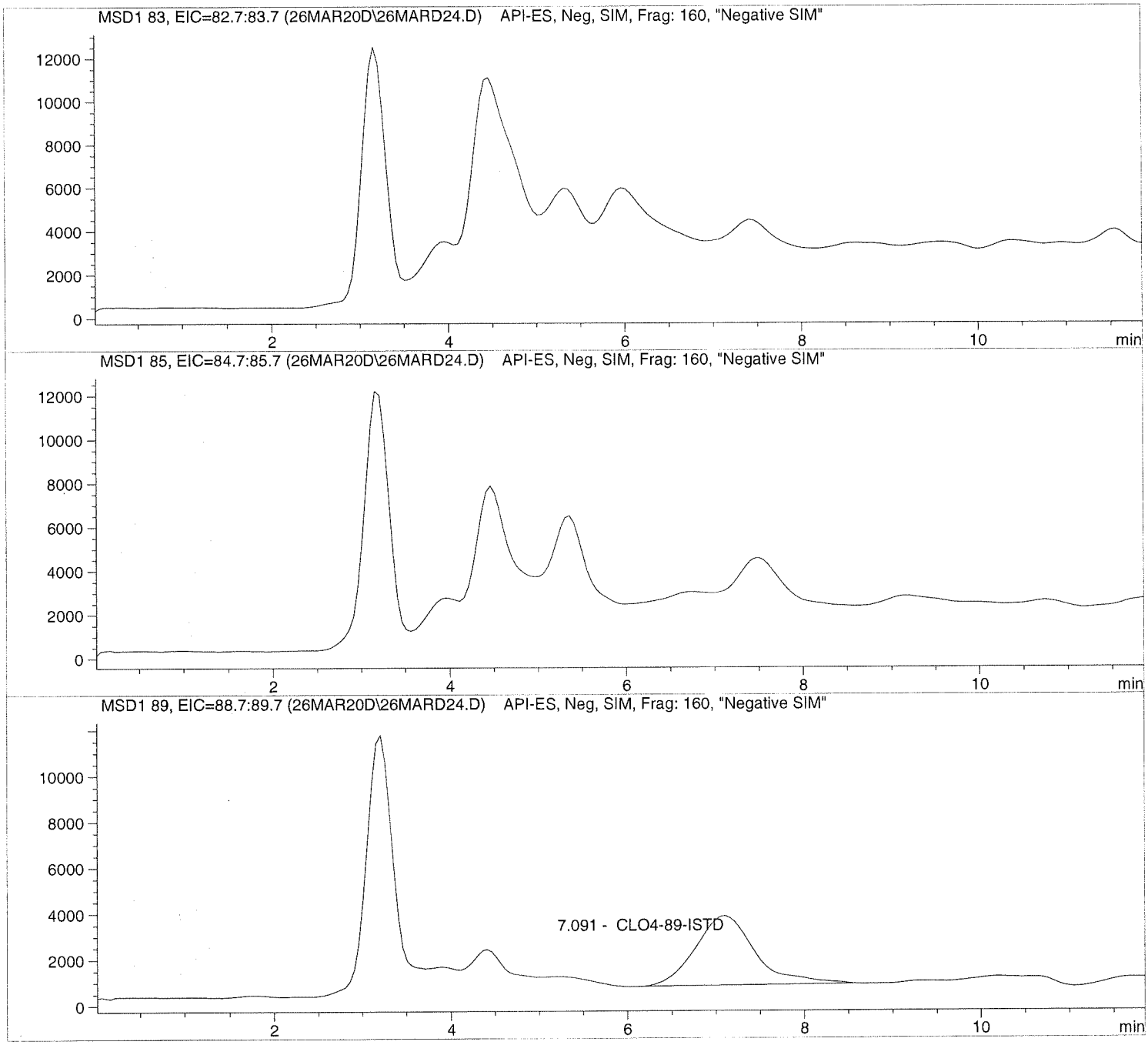
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD24.D Sample Name: 2008310011

Injection Date:	3/26/2020 13:42:47	Seq Line:	24
Sample Name:	2008310011	Location:	Vial 93
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD24.D Sample Name: 2008310011

Injection Date:	3/26/2020 13:42:47	Seq Line:	24
Sample Name:	2008310011	Location:	Vial 93
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.091	PBA	141774.2	5.0000	CLO4-89-ISTD

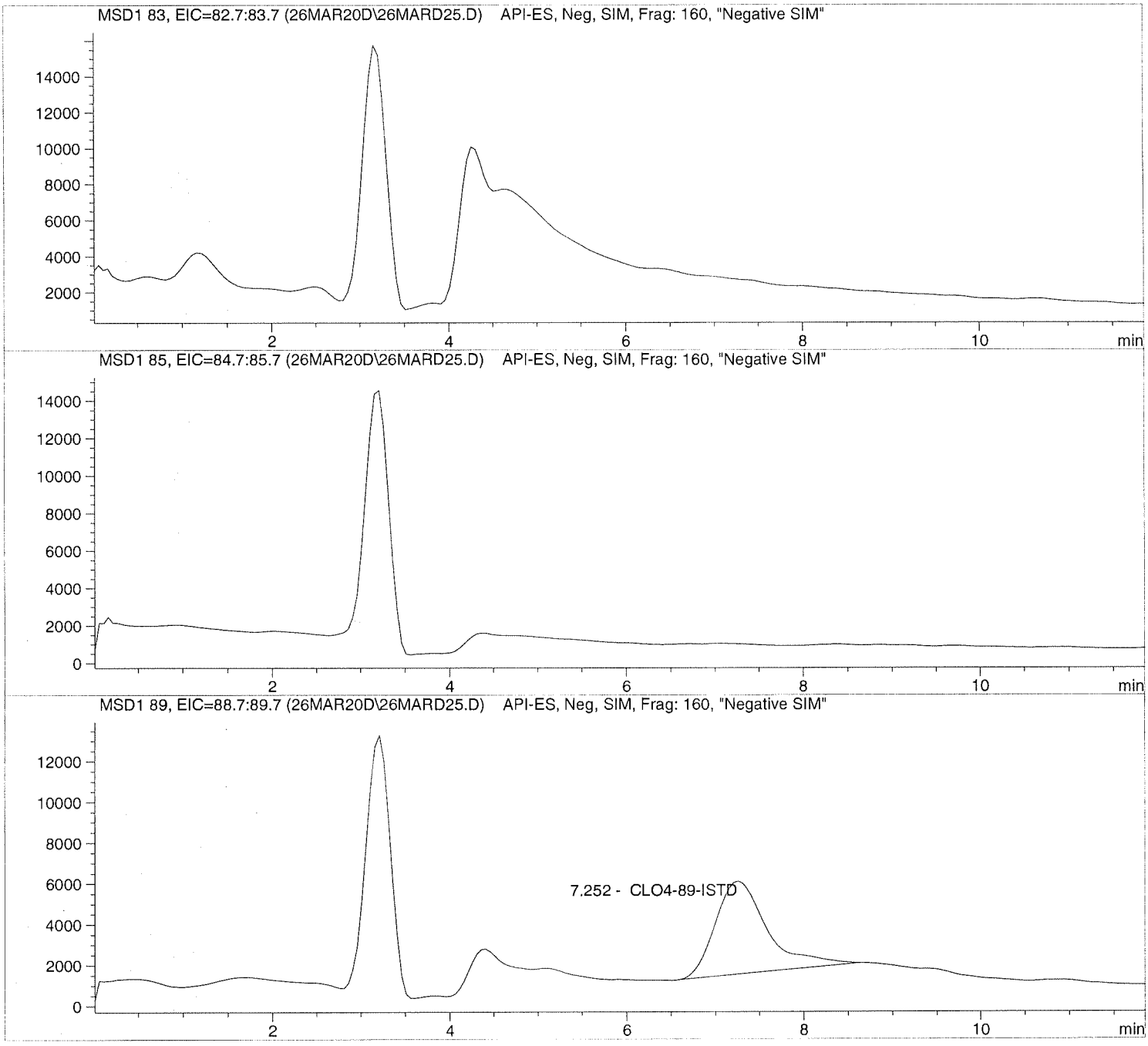
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD25.D Sample Name: 2008310012

Injection Date:	3/26/2020 13:56:46	Seq Line:	25
Sample Name:	2008310012	Location:	Vial 94
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD25.D Sample Name: 2008310012

Injection Date:	3/26/2020 13:56:46	Seq Line:	25
Sample Name:	2008310012	Location:	Vial 94
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.252	PBA	186601.9	5.0000	CLO4-89-ISTD

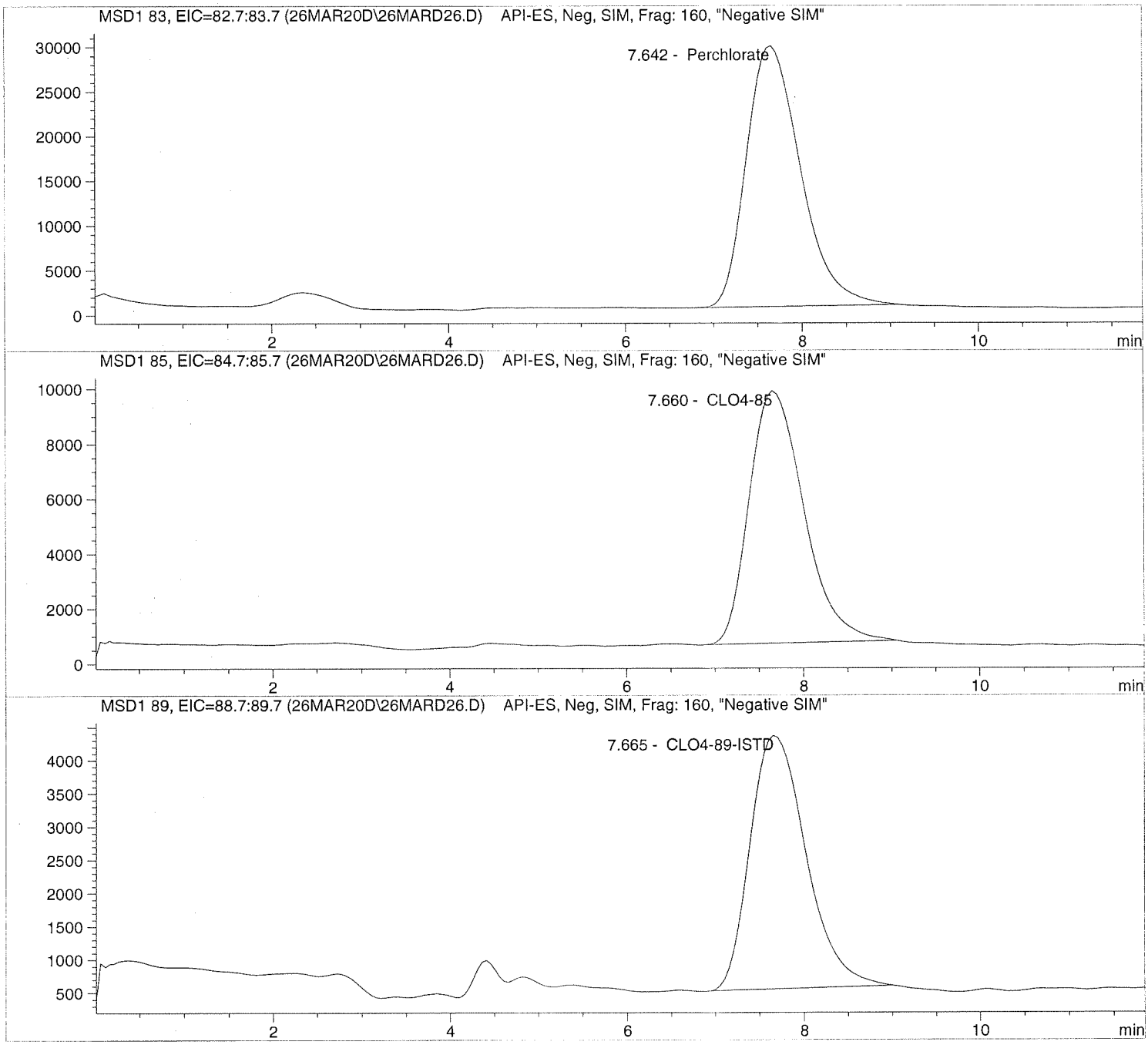
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD26.D Sample Name: 701043 CCV@25

Injection Date:	3/26/2020 14:10:42	Seq Line:	26
Sample Name:	701043 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD26.D Sample Name: 701043 CCV@25

Injection Date:	3/26/2020 14:10:42	Seq Line:	26
Sample Name:	701043 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.642	PBA	1233054.6	25.2923	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.660	PBA	391623.1	26.2521	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.665	PBA	166381.0	5.0000	CLO4-89-ISTD

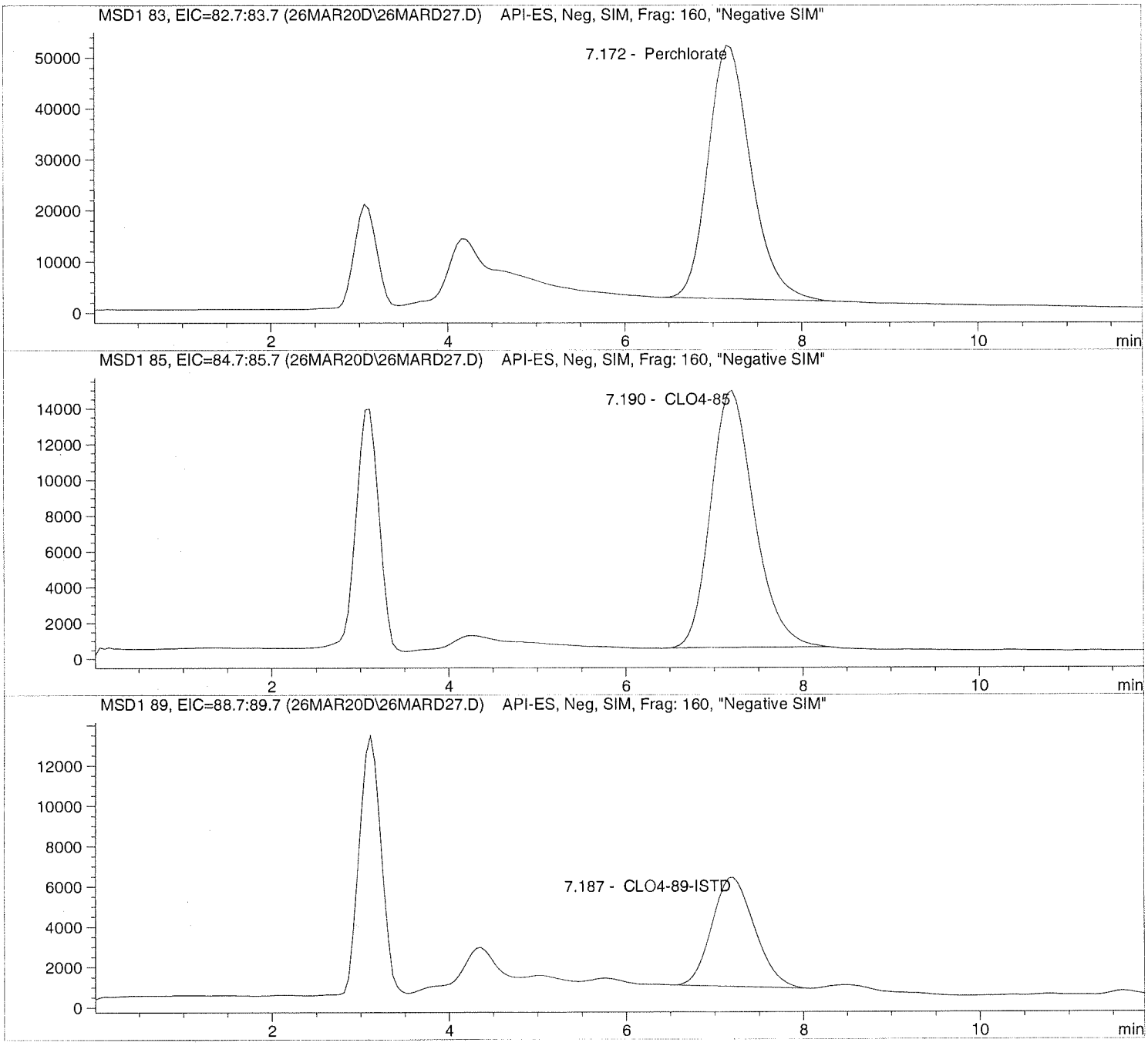
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD27.D Sample Name: 2008062003 10X

Injection Date:	3/26/2020 14:24:42	Seq Line:	27
Sample Name:	2008062003 10X	Location:	Vial 95
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD27.D Sample Name: 2008062003 10X

Injection Date:	3/26/2020 14:24:42	Seq Line:	27
Sample Name:	2008062003 10X	Location:	Vial 95
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	10.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.172	BBA	1661872.5	308.7998	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.190	PBA	489002.0	299.6381	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.187	PBA	179512.0	50.0000	CLO4-89-ISTD

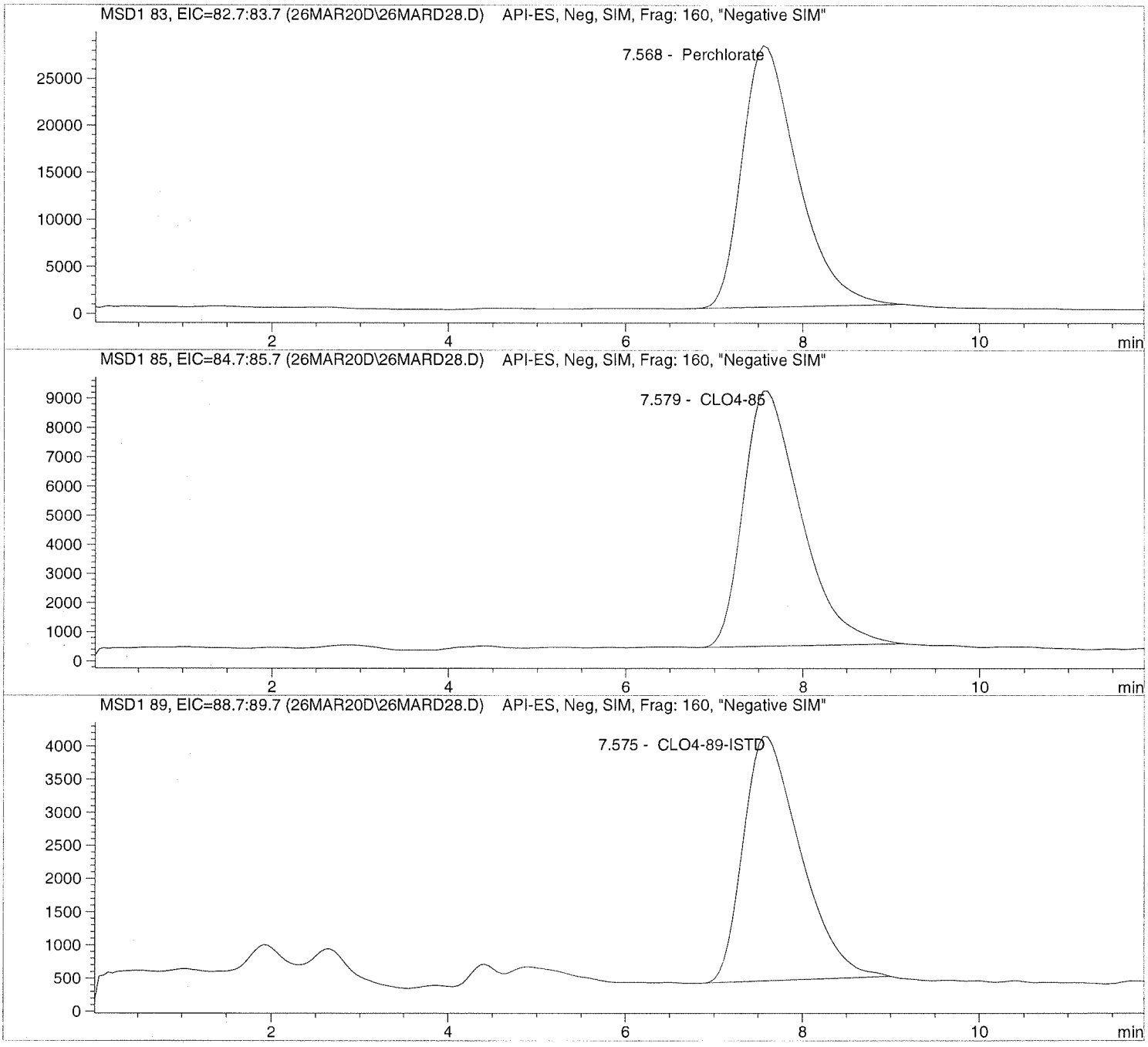
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD28.D Sample Name: 701102 CCV@25

Injection Date:	3/26/2020 14:38:44	Seq Line:	28
Sample Name:	701102 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD28.D Sample Name: 701102 CCV@25

Injection Date:	3/26/2020 14:38:44	Seq Line:	28
Sample Name:	701102 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.568	PBA	1215789.9	25.0215	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.579	PBA	397063.1	26.6375	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.575	PBA	166012.1	5.0000	CLO4-89-ISTD

*** End of Report ***

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

Initial Calibration

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

Calibration Table

Perchlorate

Calib. Data Modified : 9/23/2019 12:20:59 PM

Calculate : Internal Standard
Based on : Peak Area

Rel. Reference Window : 20.000 %
Abs. Reference Window : 0.000 min
Rel. Non-ref. Window : 20.000 %
Abs. Non-ref. Window : 0.000 min
Use Multiplier & Dilution Factor with ISTDs
Uncalibrated Peaks : not reported
Partial Calibration : No recalibration if peaks missing

Curve Type : Quadratic (some peaks differ, see below)
Origin : Ignored (some peaks differ, see below)
Weight : Linear (Amnt) (some peaks differ, see below)

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Default Sample ISTD Information (if not set in sample table):

ISTD #	ISTD Amount	Name
1	5.00000	CLO4-89-ISTD

Signal 1: MSD1 83, EIC=82.7:83.7
Signal 2: MSD1 85, EIC=84.7:85.7
Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Sig	Lvl	Amount	Area	Amt/Area	Ref	Grp	Name
7.750	1	3	1.00000	5.39218e4	1.85454e-5	1		Perchlorate
		4	2.00000	1.32825e5	1.50574e-5			
		5	5.00000	2.76271e5	1.80982e-5			
		6	10.00000	5.61298e5	1.78159e-5			
		7	25.00000	1.51820e6	1.64669e-5			
		8	50.00000	3.31156e6	1.50986e-5			
		9	75.00000	5.23914e6	1.43153e-5			
7.767	3	3	5.00000	2.14568e5	2.33026e-5	+I1		CLO4-89-ISTD
		4	5.00000	2.04758e5	2.44190e-5			
		5	5.00000	2.13407e5	2.34294e-5			
		6	5.00000	2.09246e5	2.38953e-5			
		7	5.00000	2.07403e5	2.41077e-5			
		8	5.00000	2.02929e5	2.46391e-5			
		9	5.00000	1.97933e5	2.52611e-5			
7.778	2	3	1.00000	1.70436e4	5.86732e-5	1		CLO4-85
		4	2.00000	4.20754e4	4.75337e-5			
		5	5.00000	9.24707e4	5.40712e-5			
		6	10.00000	1.68622e5	5.93041e-5			
		7	25.00000	4.63724e5	5.39114e-5			
		8	50.00000	9.95933e5	5.02042e-5			

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

RetTime [min]	Sig	Lvl	Amount	Area	Amt/Area	Ref	Grp	Name
		9	75.00000	1.58066e6	4.74484e-5			

More compound-specific settings:

Compound: Perchlorate
- Time Window : From 3.581 min To 11.899 min
- Curve Type : Quadratic
- Origin : Ignored
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 0.5
  - Level 5 : 0.2
  - Level 6 : 0.1
  - Level 7 : 0.04
  - Level 8 : 0.02
  - Level 9 : 0.013333

Compound: CLO4-89-ISTD
- Time Window : From 3.581 min To 11.896 min
- Curve Type : Linear
- Origin : Included
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 1
  - Level 5 : 1
  - Level 6 : 1
  - Level 7 : 1
  - Level 8 : 1
  - Level 9 : 1

Compound: CLO4-85
- Time Window : From 3.601 min To 11.913 min
- Curve Type : Quadratic
- Origin : Ignored
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 0.5
  - Level 5 : 0.2
  - Level 6 : 0.1
  - Level 7 : 0.04
  - Level 8 : 0.02
  - Level 9 : 0.013333

Peak Sum Table

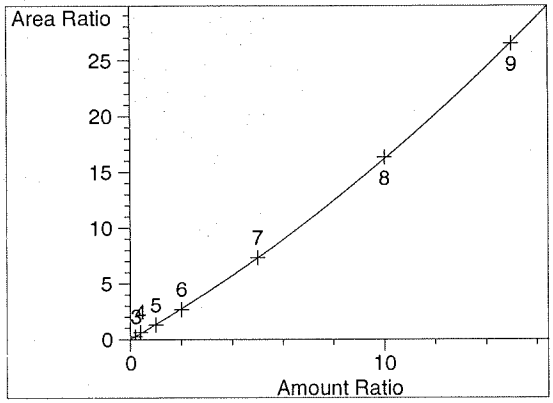
No Entries in table

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

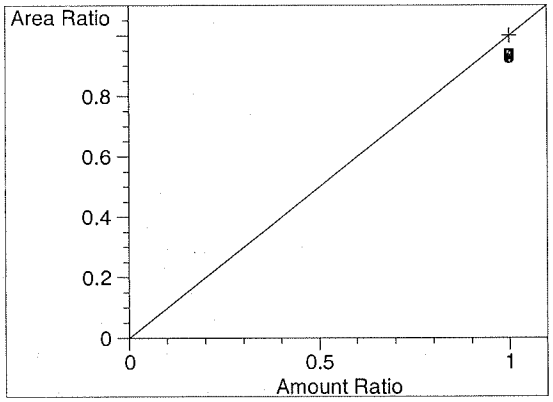
==========

Calibration Curves

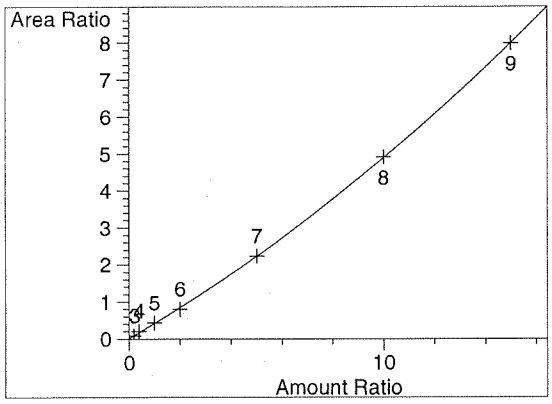
==========



Perchlorate at exp. RT: 7.750
MSD1 83, EIC=82.7:83.7
Correlation: 0.99975
Residual Std. Dev.: 0.10284
Formula: $y = ax^2 + bx + c$
a: 3.10463e-2
b: 1.30369
c: 2.19496e-2
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 0.5
Level 5 : 0.2
Level 6 : 0.1
Level 7 : 0.04
Level 8 : 0.02
Level 9 : 0.013333



CLO4-89-ISTD at exp. RT: 7.767
MSD1 89, EIC=88.7:89.7
Correlation: 1.00000
Residual Std. Dev.: 0.00000
Formula: $y = mx + b$
m: 1.00000
b: 0.00000
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 1
Level 5 : 1
Level 6 : 1
Level 7 : 1
Level 8 : 1
Level 9 : 1



CLO4-85 at exp. RT: 7.778
MSD1 85, EIC=84.7:85.7
Correlation: 0.99969
Residual Std. Dev.: 0.02601
Formula: $y = ax^2 + bx + c$
a: 8.85207e-3
b: 3.99283e-1
c: 1.33505e-2
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 0.5
Level 5 : 0.2
Level 6 : 0.1
Level 7 : 0.04
Level 8 : 0.02
Level 9 : 0.013333

==========

Batch Report: C:\HPCHEM\1\DATA\20SEP19I\20SEP19D.B

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DP3.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorat RT	Perchlorate Amount
#*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	5.39218e4	7.750	8.75982e-1
#*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	1.32825e5	7.797	2.37682
#*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	2.76271e5	7.770	4.77237
#*	CLO4@ 10.ug/L	Vial 76	1	Control	6	5.61298e5	7.785	9.75097
#*	CLO4@ 25.ug/L	Vial 77	1	Control	7	1.51820e6	7.741	25.01082
#*	CLO4@ 50.ug/L	Vial 78	1	Control	8	3.31156e6	7.775	50.40300
#*	CLO4@ 75.ug/L	Vial 79	1	Control	9	5.23914e6	7.736	74.79107
#*	ICAL Verf@10ug/L	Vial 80	1	Control	11	5.74879e5	7.756	10.11855

#	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-IS RT	CLO4-89-ISTD Amount
#*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	2.14568e5	7.767	5.00000
#*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	2.04758e5	7.816	5.00000
#*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	2.13407e5	7.793	5.00000
#*	CLO4@ 10.ug/L	Vial 76	1	Control	6	2.09246e5	7.798	5.00000
#*	CLO4@ 25.ug/L	Vial 77	1	Control	7	2.07403e5	7.763	5.00000
#*	CLO4@ 50.ug/L	Vial 78	1	Control	8	2.02929e5	7.800	5.00000
#*	CLO4@ 75.ug/L	Vial 79	1	Control	9	1.97933e5	7.765	5.00000
#*	ICAL Verf@10ug/L	Vial 80	1	Control	11	2.06243e5	7.776	5.00000

#	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
#*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	1.70436e4	7.778	8.24488e-1
#*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	4.20754e4	7.805	2.38090
#*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	9.24707e4	7.787	5.14166
#*	CLO4@ 10.ug/L	Vial 76	1	Control	6	1.68622e5	7.781	9.52209
#*	CLO4@ 25.ug/L	Vial 77	1	Control	7	4.63724e5	7.760	25.04916
#*	CLO4@ 50.ug/L	Vial 78	1	Control	8	9.95933e5	7.793	50.14223
#*	CLO4@ 75.ug/L	Vial 79	1	Control	9	1.58066e6	7.758	74.93659
#*	ICAL Verf@10ug/L	Vial 80	1	Control	11	1.71000e5	7.760	9.79043

*** End of Report ***

Sequence: C:\HPCHEM\1\SEQUENCE\CLO4\2019\SEP\20SEP19I.S

Sequence Table:

Method and Injection Info Part:

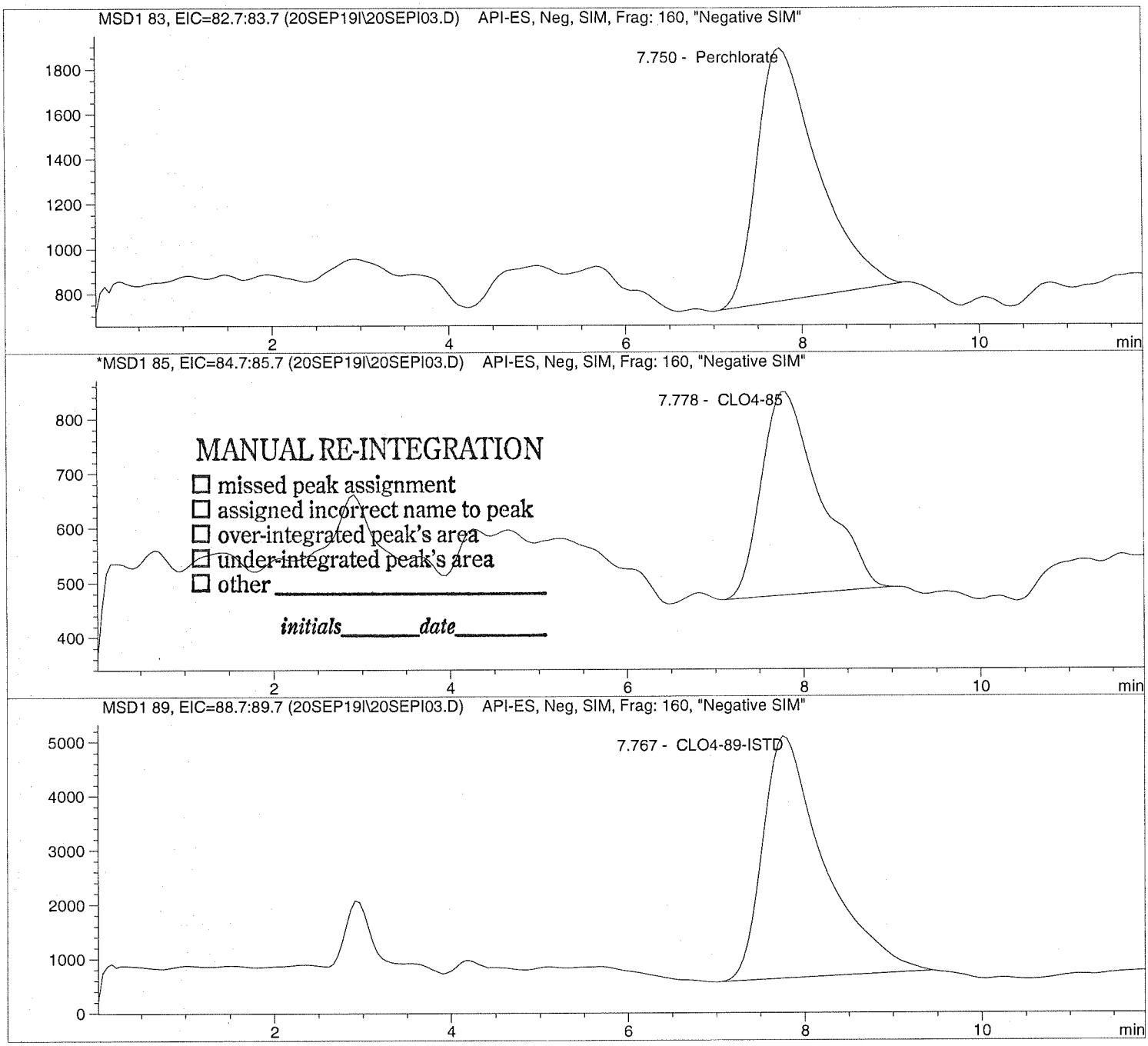
Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 71	CLO4@ 0.2ug/L	CLO4-AQN	1	Ctrl Samp		
2	Vial 72	CLO4@ 0.5ug/L	CLO4-AQN	1	Ctrl Samp		
3	Vial 73	CLO4@ 1.0ug/L	CLO4-AQN	1	Ctrl Samp		
4	Vial 74	CLO4@ 2.0ug/L	CLO4-AQN	1	Ctrl Samp		
5	Vial 75	CLO4@ 5.0ug/L	CLO4-AQN	1	Ctrl Samp		
6	Vial 76	CLO4@ 10.ug/L	CLO4-AQN	1	Ctrl Samp		
7	Vial 77	CLO4@ 25.ug/L	CLO4-AQN	1	Ctrl Samp		
8	Vial 78	CLO4@ 50.ug/L	CLO4-AQN	1	Ctrl Samp		
9	Vial 79	CLO4@ 75.ug/L	CLO4-AQN	1	Ctrl Samp		
10	Vial 71	CLO4@ 0.2ug/L	CLO4-AQN	1	Ctrl Samp		
11	Vial 80	ICAL Verf@10ug/L	CLO4-AQN	1	Ctrl Samp		

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.750	PBA	53921.8	0.8760	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.778	MM	17043.6	0.8245	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.767	PBA	214568.1	5.0000	CLO4-89-ISTD

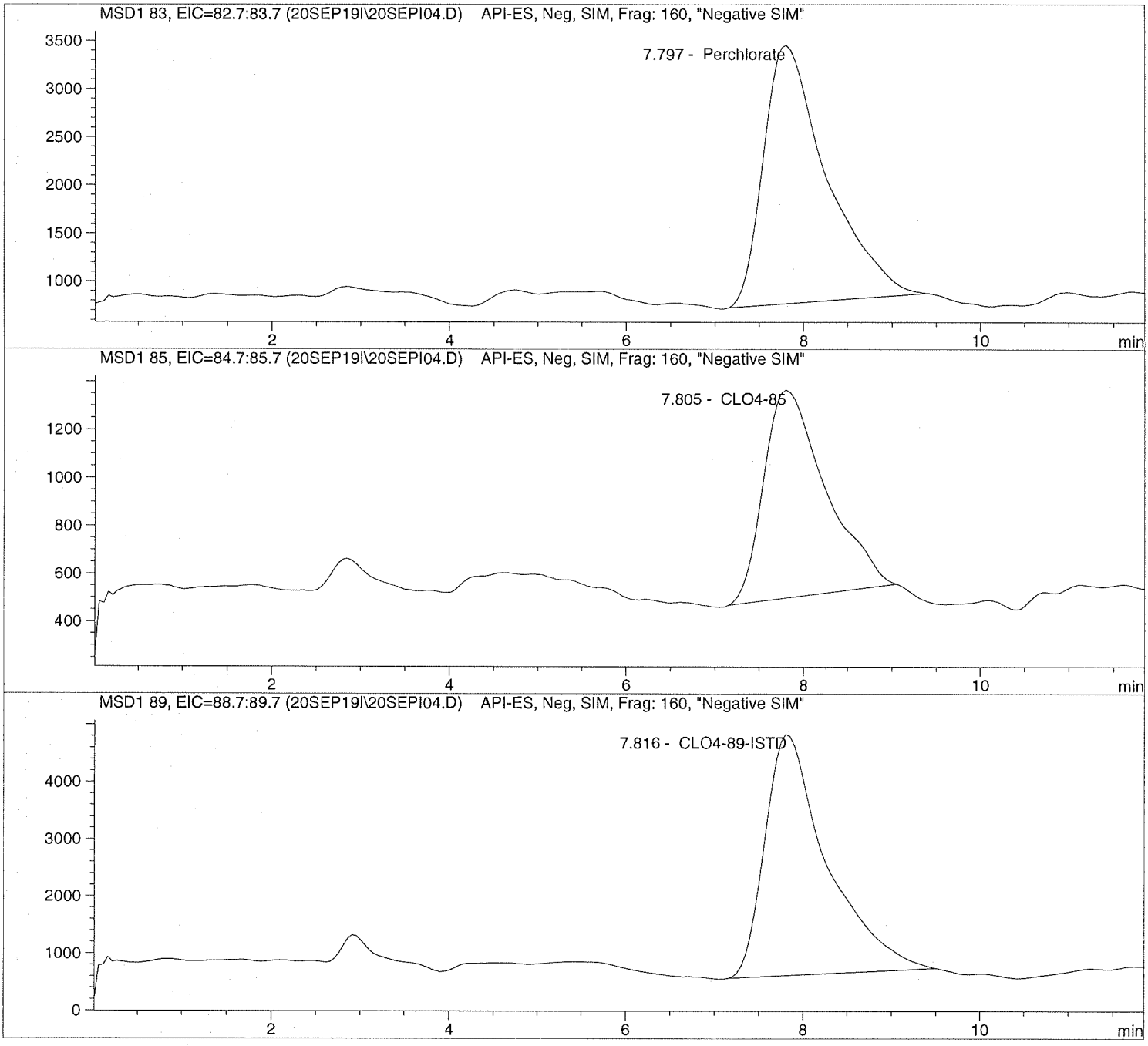
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI04.D Sample Name: CLO4@ 2.0ug/L

Injection Date:	9/20/2019 09:37:58	Seq Line:	4
Sample Name:	CLO4@ 2.0ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI04.D Sample Name: CLO4@ 2.0ug/L

Injection Date:	9/20/2019 09:37:58	Seq Line:	4
Sample Name:	CLO4@ 2.0ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	2.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.797	PBA	132825.2	2.3768	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.805	PBA	42075.4	2.3809	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.816	PBA	204758.3	5.0000	CLO4-89-ISTD

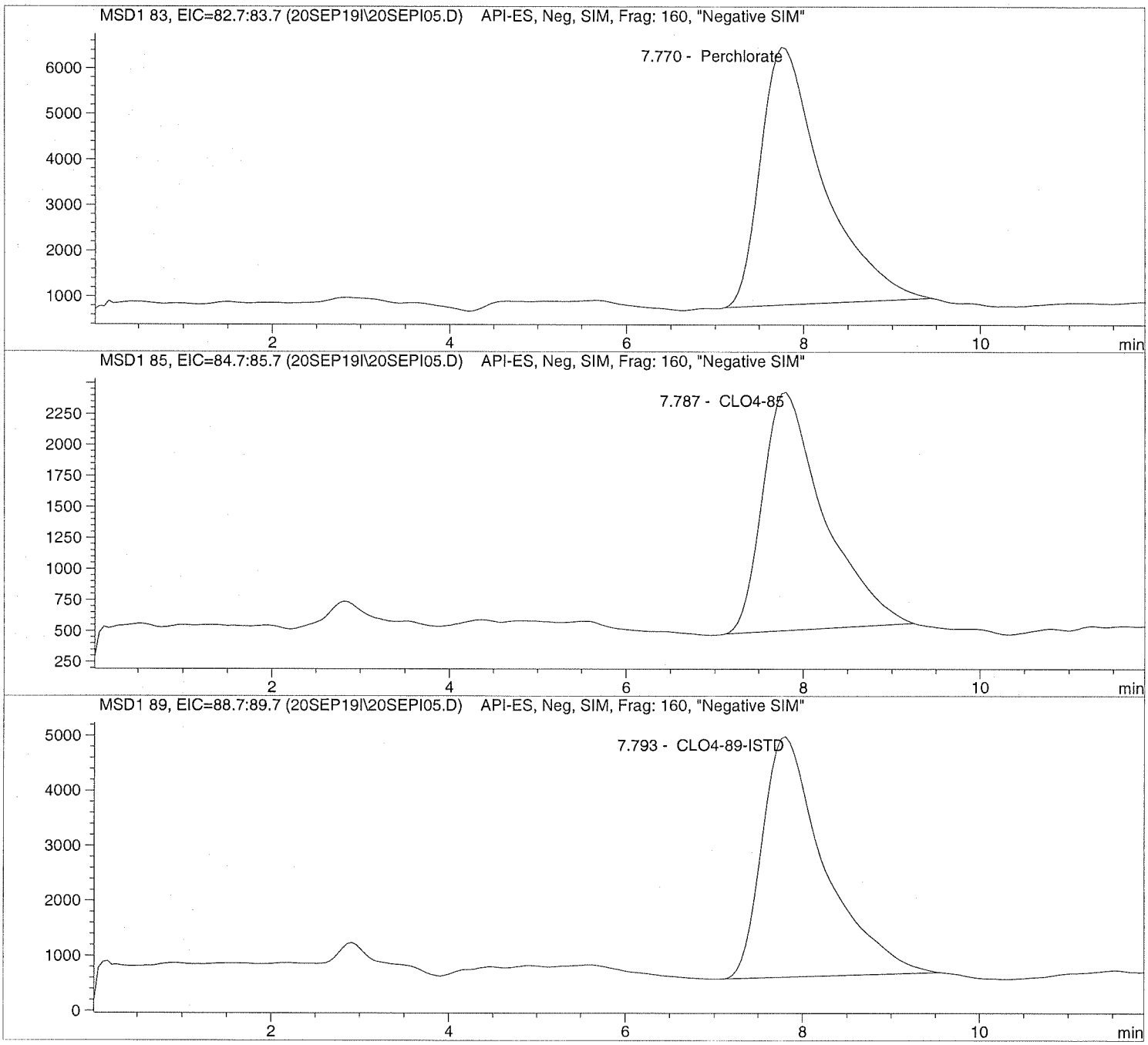
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI05.D Sample Name: CLO4@ 5.0ug/L

Injection Date:	9/20/2019 09:51:49	Seq Line:	5
Sample Name:	CLO4@ 5.0ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI05.D Sample Name: CLO4@ 5.0ug/L

Injection Date:	9/20/2019 09:51:49	Seq Line:	5
Sample Name:	CLO4@ 5.0ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	5.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.770	PBA	276270.7	4.7724	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.787	PBA	92470.7	5.1417	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.793	PBA	213407.0	5.0000	CLO4-89-ISTD

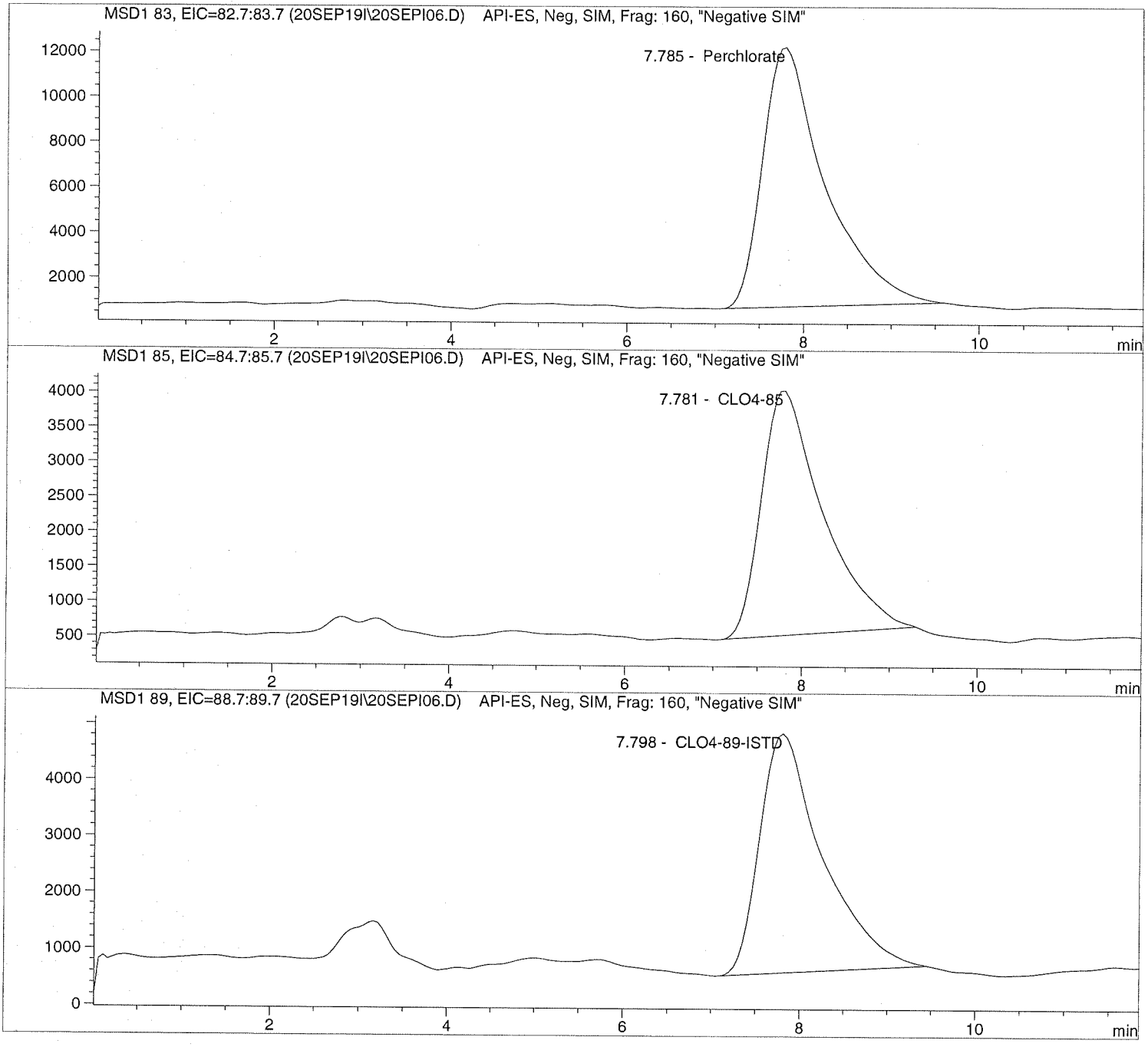
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI06.D Sample Name: CLO4@ 10.ug/L

Injection Date:	9/20/2019 10:05:36	Seq Line:	6
Sample Name:	CLO4@ 10.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI06.D Sample Name: CLO4@ 10.ug/L

Injection Date:	9/20/2019 10:05:36	Seq Line:	6
Sample Name:	CLO4@ 10.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.785	PBA	561297.7	9.7510	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.781	PBA	168622.4	9.5221	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.798	PBA	209246.3	5.0000	CLO4-89-ISTD

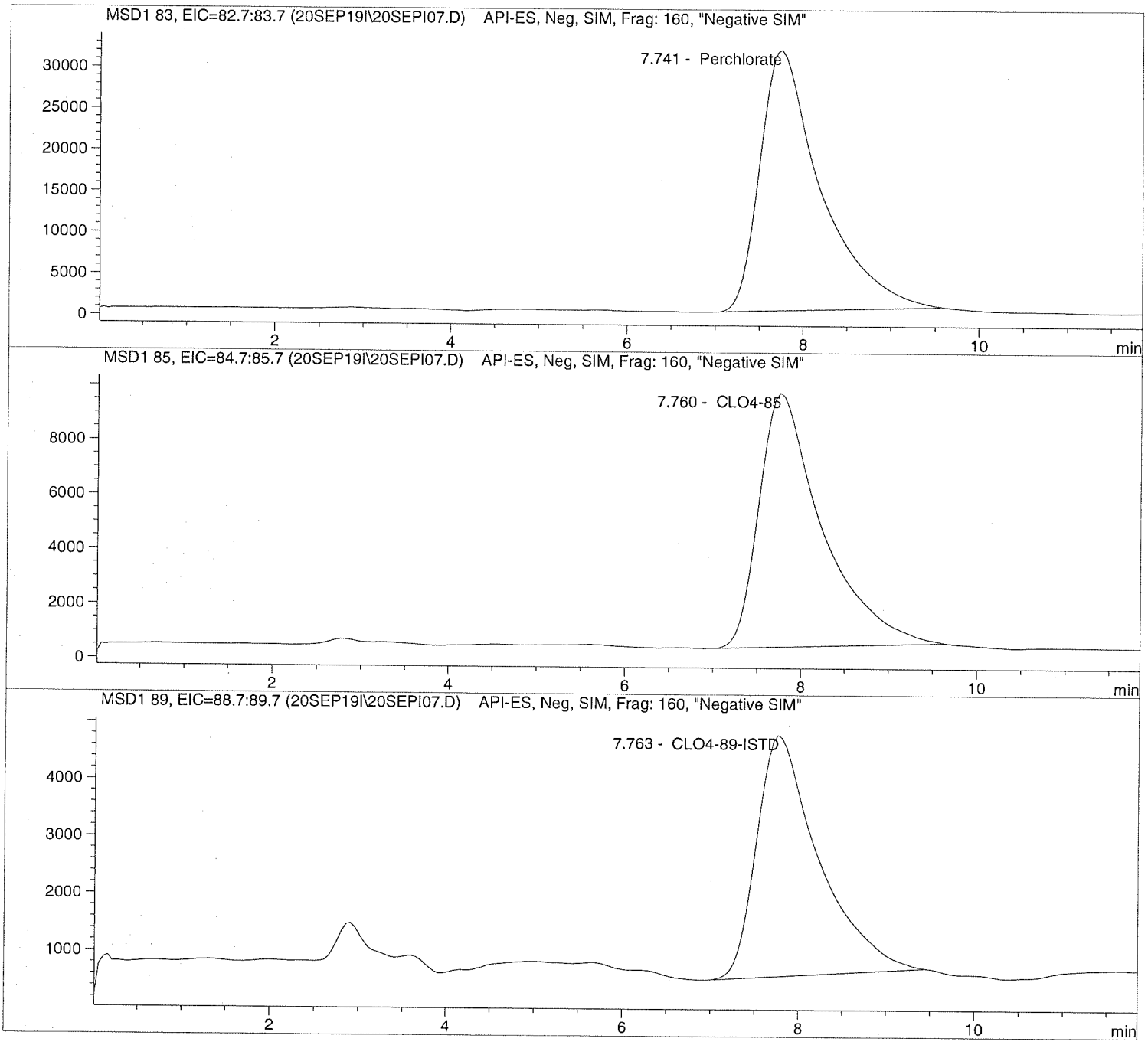
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI07.D Sample Name: CLO4@ 25.ug/L

Injection Date:	9/20/2019 10:19:23	Seq Line:	7
Sample Name:	CLO4@ 25.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI07.D Sample Name: CLO4@ 25.ug/L

Injection Date:	9/20/2019 10:19:23	Seq Line:	7
Sample Name:	CLO4@ 25.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.741	PBA	1518197.9	25.0108	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.760	PBA	463724.0	25.0492	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.763	PBA	207402.8	5.0000	CLO4-89-ISTD

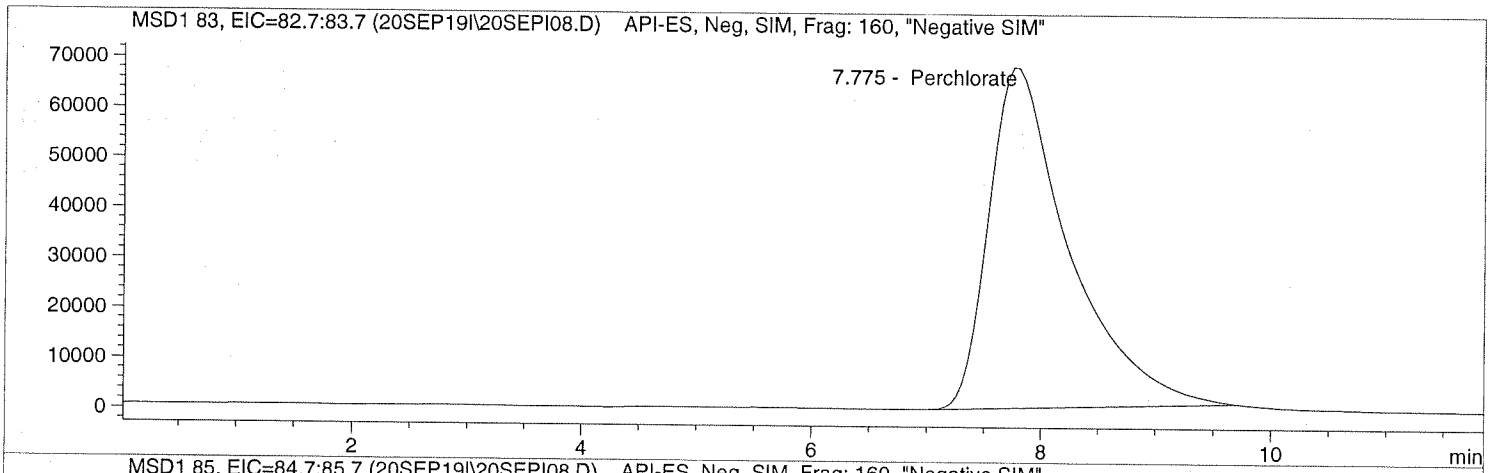
*** End of Report ***

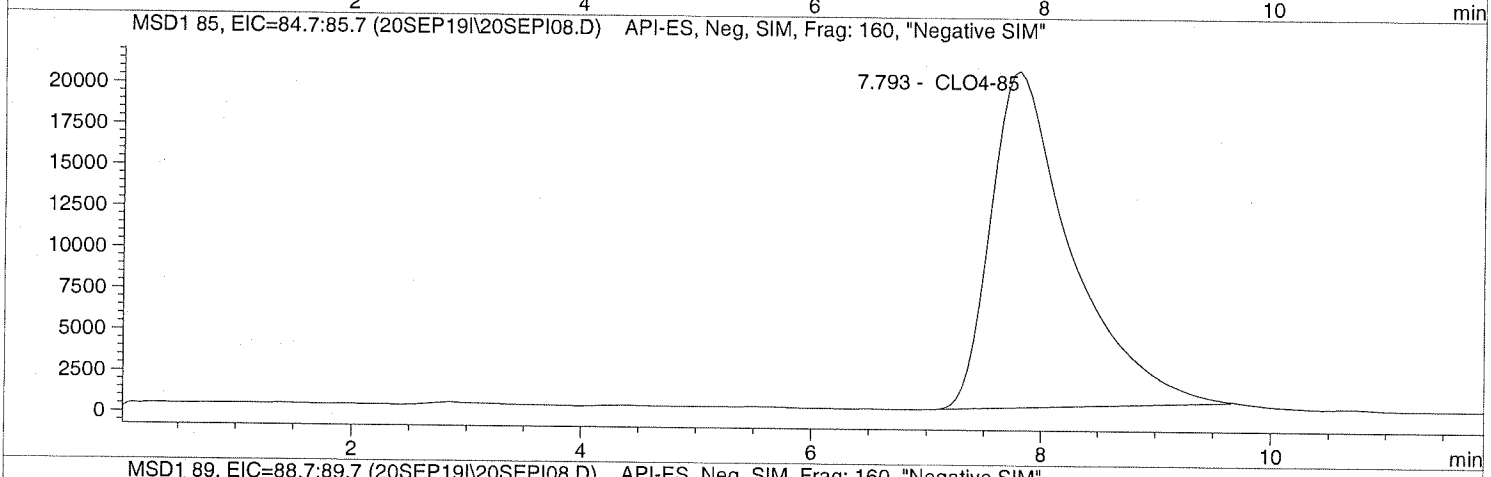
Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI08.D Sample Name: CLO4@ 50.ug/L

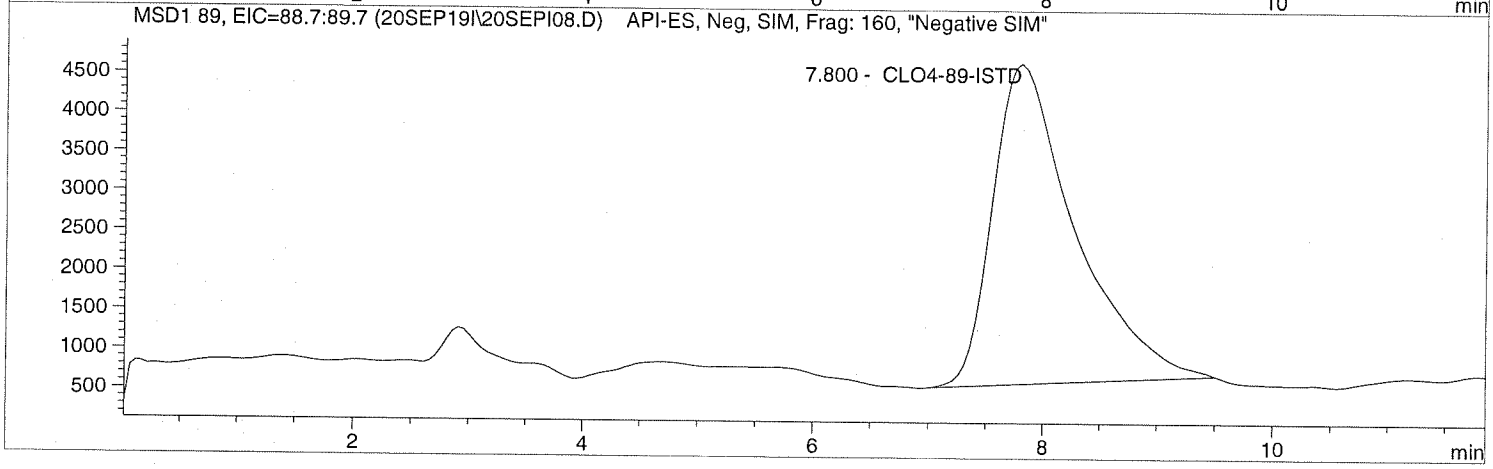
Injection Date:	9/20/2019 10:33:18	Seq Line:	8
Sample Name:	CLO4@ 50.ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI08.D Sample Name: CLO4@ 50.ug/L

Injection Date:	9/20/2019 10:33:18	Seq Line:	8
Sample Name:	CLO4@ 50.ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	50.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.775	PBA	3311559.2	50.4030	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.793	PBA	995933.0	50.1422	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.800	PBA	202929.2	5.0000	CLO4-89-ISTD

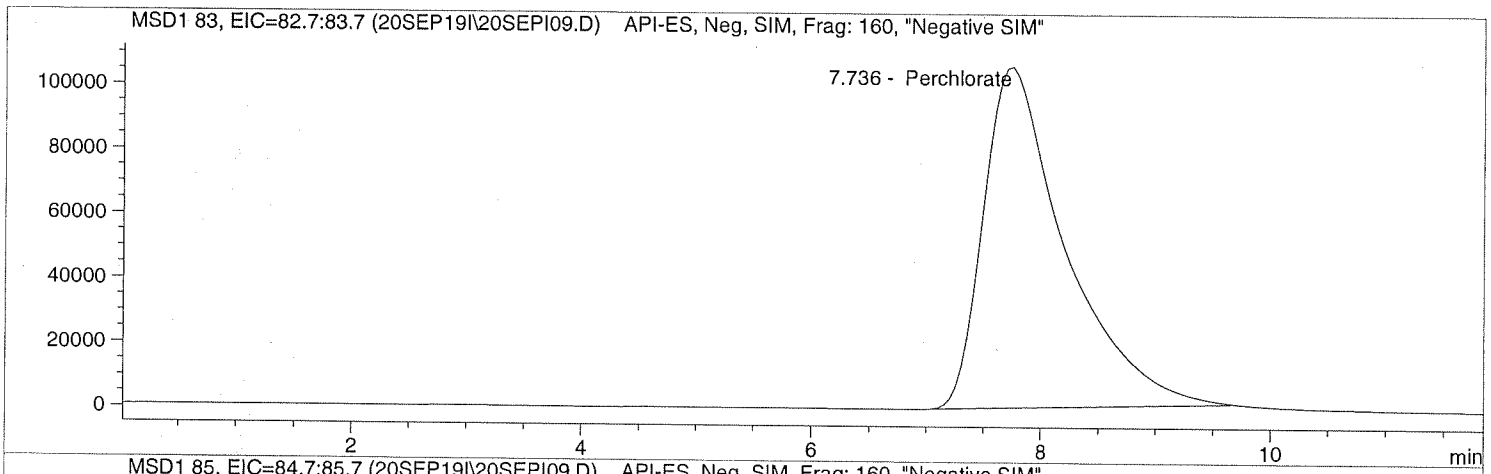
*** End of Report ***

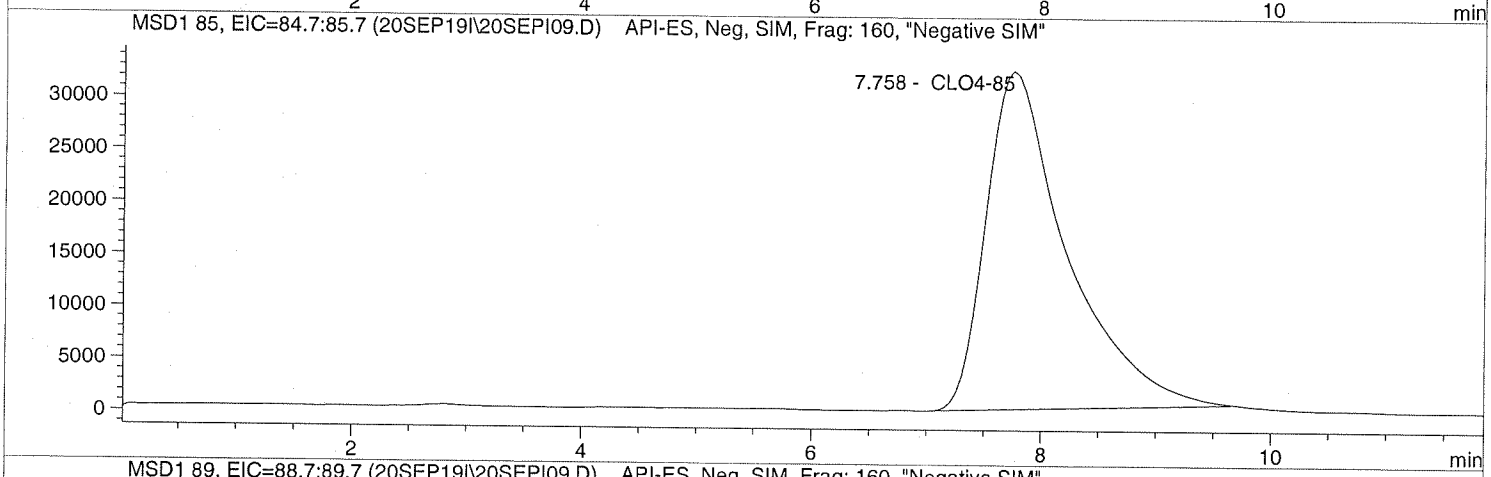
Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI09.D Sample Name: CLO4@ 75.ug/L

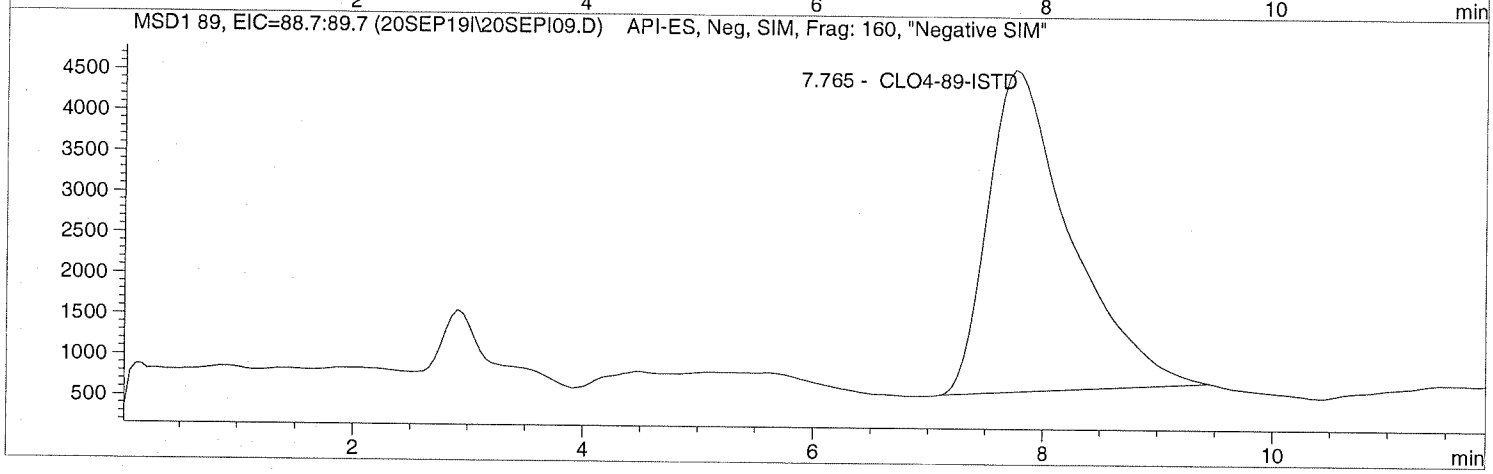
Injection Date:	9/20/2019 10:47:05	Seq Line:	9
Sample Name:	CLO4@ 75.ug/L	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI09.D Sample Name: CLO4@ 75.ug/L

Injection Date:	9/20/2019 10:47:05	Seq Line:	9
Sample Name:	CLO4@ 75.ug/L	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	75.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.736	PBA	5239145.0	74.7911	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.758	PBA	1580664.2	74.9366	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.765	PBA	197932.5	5.0000	CLO4-89-ISTD

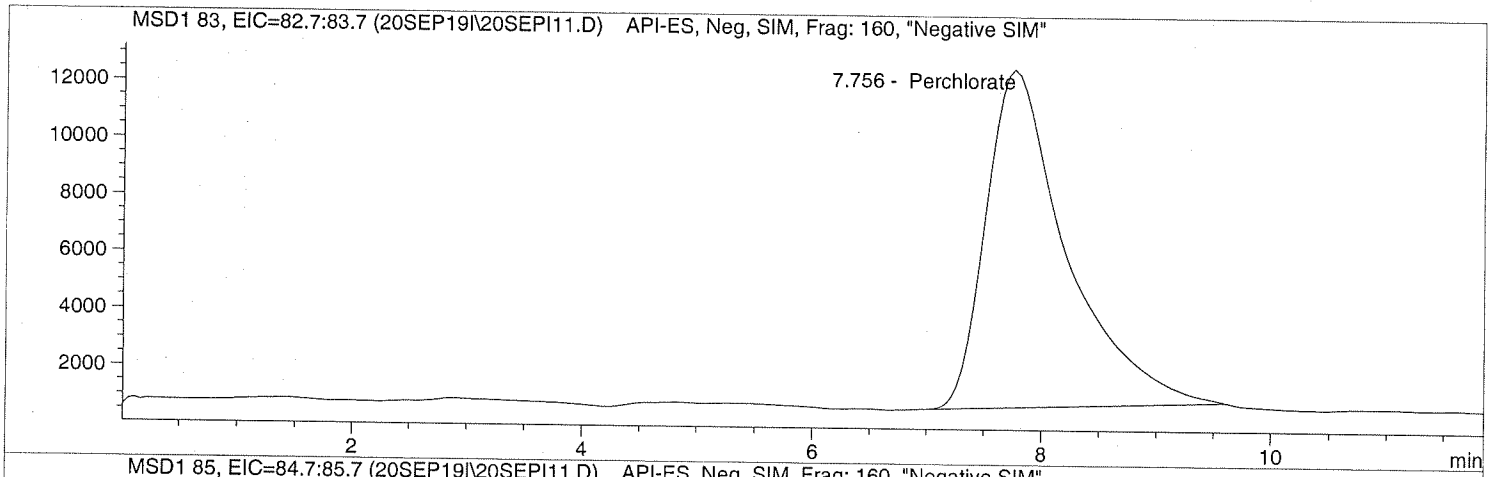
*** End of Report ***

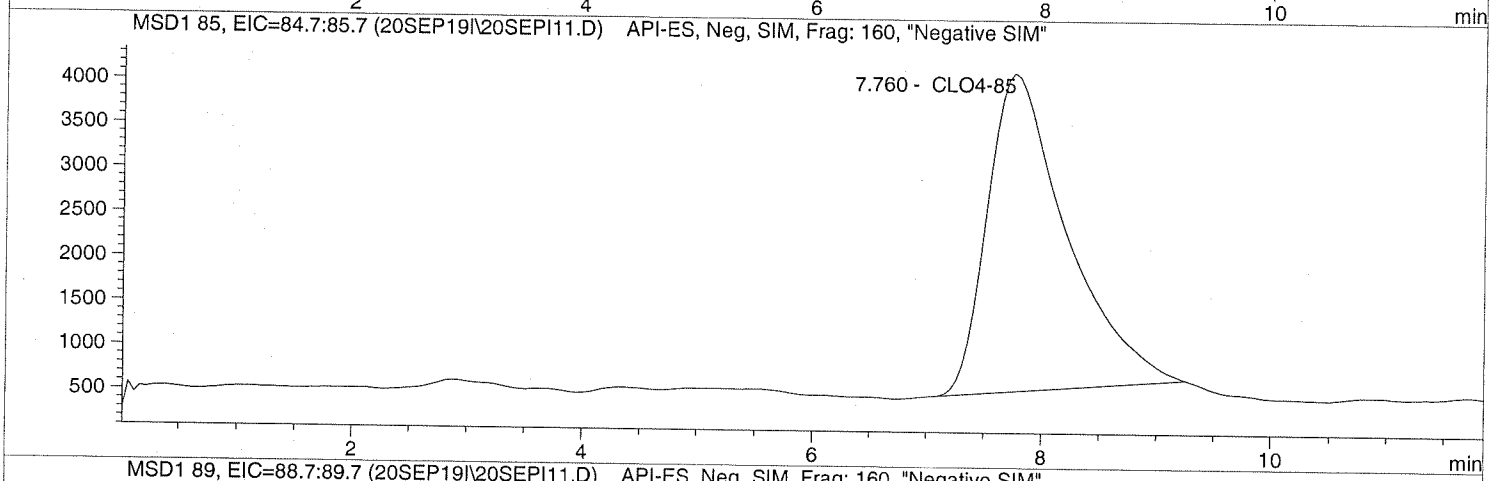
Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI11.D Sample Name: ICAL Verf@10ug/L

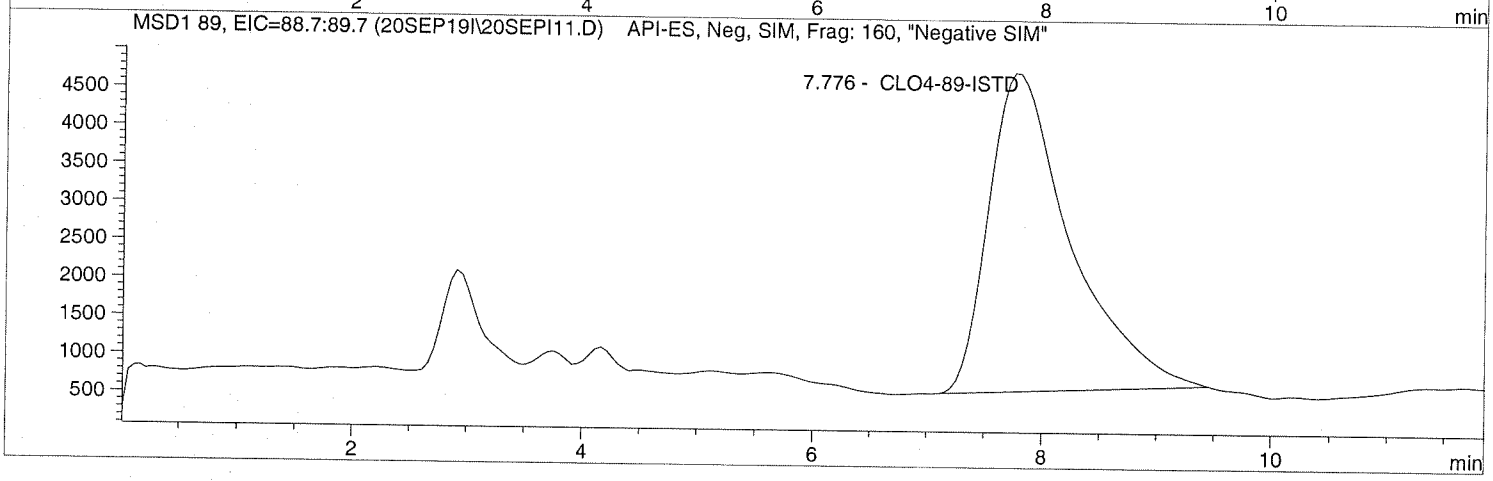
Injection Date:	9/20/2019 11:14:45	Seq Line:	11
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI11.D Sample Name: ICAL Verf@10ug/L

Injection Date:	9/20/2019 11:14:45	Seq Line:	11
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.756	PBA	574879.4	10.1185	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.760	PBA	171000.4	9.7904	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.776	PBA	206243.3	5.0000	CLO4-89-ISTD

*** End of Report ***

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

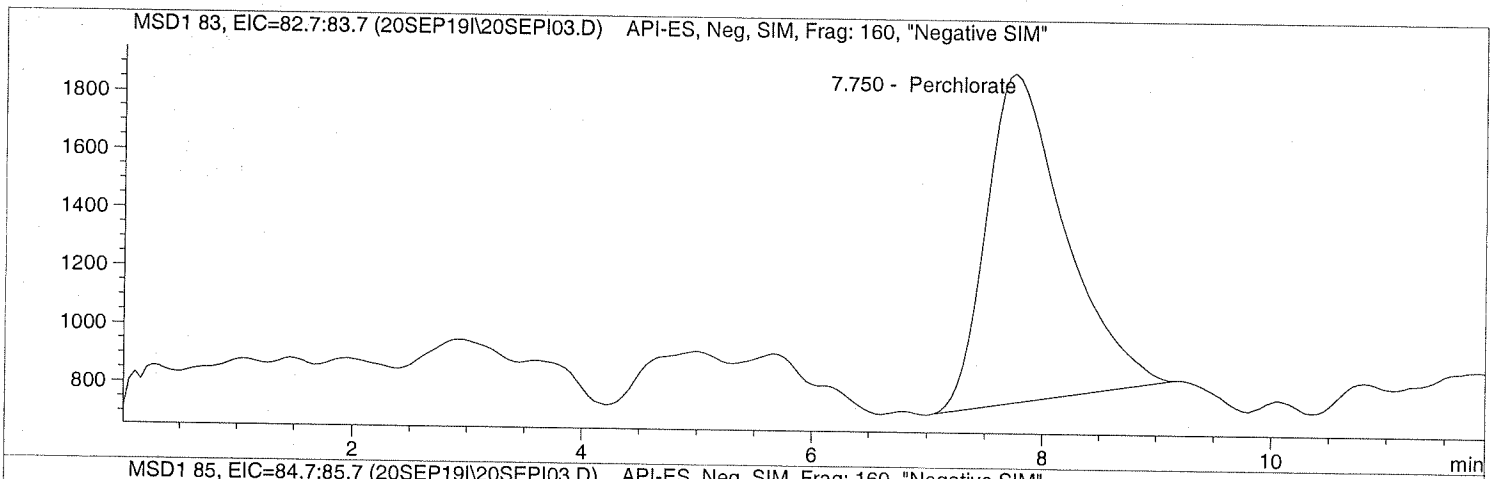
Unmodified

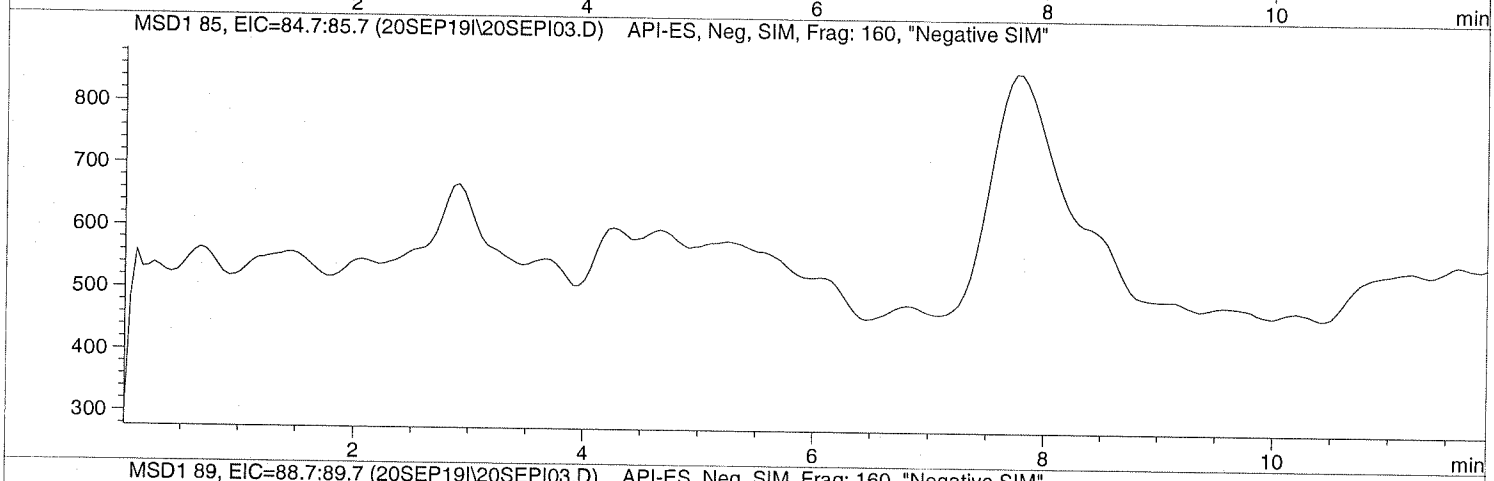
Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

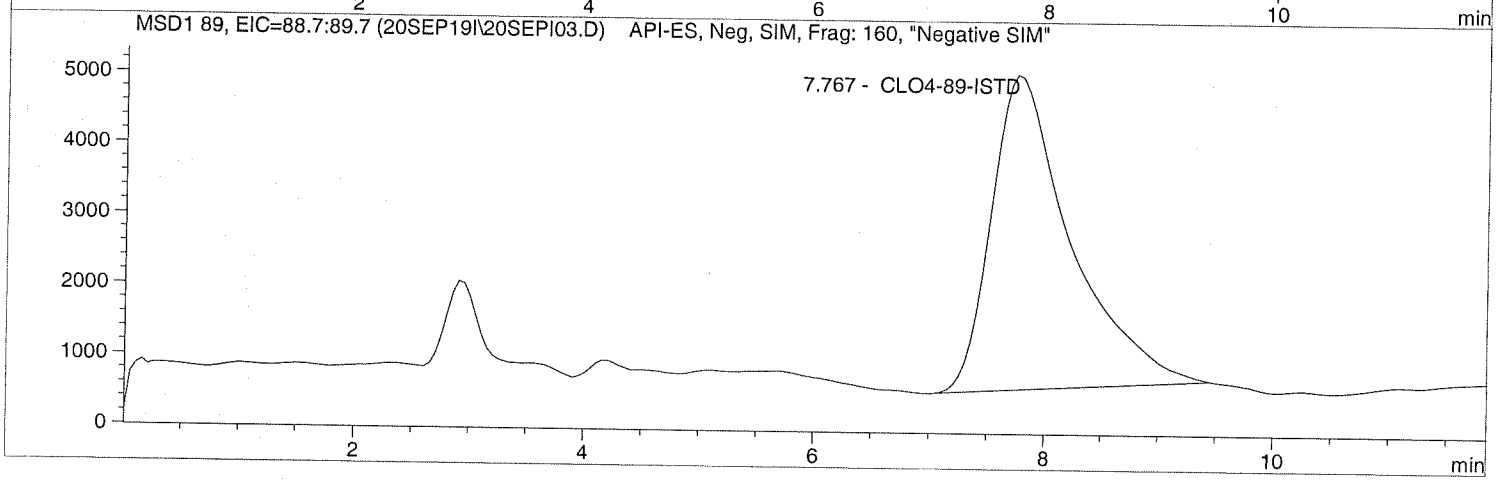
Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:27:11

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	9/23/2019 12:27:11

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.750	PBA	53921.8	0.8760	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.767	PBA	214568.1	5.0000	CLO4-89-ISTD

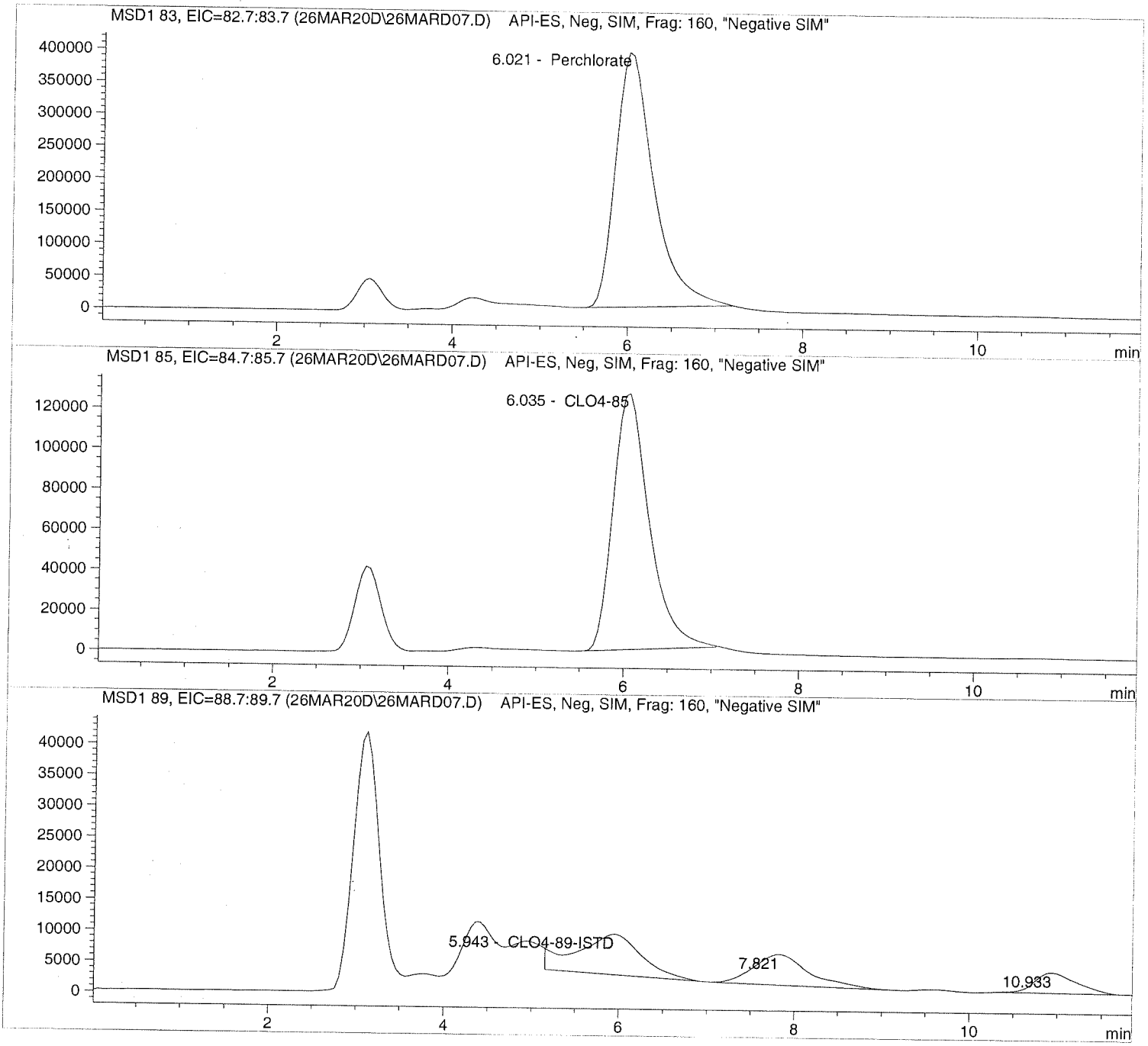
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD07.D Sample Name: 2008062003

Injection Date:	3/26/2020 09:44:40	Seq Line:	7
Sample Name:	2008062003	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD07.D Sample Name: 2008062003

Injection Date:	3/26/2020 09:44:40	Seq Line:	7
Sample Name:	2008062003	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.021	PBA	11797552.0	94.0331	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.035	PBA	3623208.0	95.7707	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
5.943	BB	332132.3	5.0000	CLO4-89-ISTD
7.821	VBA	216345.0	0.0000	
10.933	PPA	109265.2	0.0000	

*** End of Report ***

HS20030733 8260 Raw Data

ALS WO# HS20030733

MSVOA06 -Logbook

Batch: 40066
Date: 03-19-2020
Method: 8260_W
Comments:

Analyst: Devak Giga
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	03-19-2020 11:10 am	1.00	0.00 mL	0.00 mL	X031901.D	Liquid	Y	NA
	Auto find/ purged									
2	VSTD000.25	ICAL1	03-19-2020 11:34 am	1.00	5.00 mL	0.00 mL	X031902.D	Liquid	Y	NA
3	VSTD000.5	ICAL2	03-19-2020 11:58 am	1.00	5.00 mL	0.00 mL	X031903.D	Liquid	Y	NA
4	VSTD001	ICAL3	03-19-2020 12:46 pm	1.00	5.00 mL	0.00 mL	X031904.D	Liquid	Y	NA
5	VSTD002	ICAL4	03-19-2020 01:10 pm	1.00	5.00 mL	0.00 mL	X031905.D	Liquid	Y	NA
6	VSTD005	ICAL5	03-19-2020 01:34 pm	1.00	5.00 mL	0.00 mL	X031906.D	Liquid	Y	NA
7	VSTD020	ICAL6	03-19-2020 01:58 pm	1.00	5.00 mL	0.00 mL	X031907.D	Liquid	Y	NA
8	VSTD050	ICAL7	03-19-2020 02:22 pm	1.00	5.00 mL	0.00 mL	X031908.D	Liquid	Y	NA
9	VSTD100	ICAL8	03-19-2020 02:46 pm	1.00	5.00 mL	0.00 mL	X031909.D	Liquid	Y	NA
10	VSTD150	ICAL9	03-19-2020 03:10 pm	1.00	5.00 mL	0.00 mL	X031910.D	Liquid	Y	NA
11	VSTD200	ICAL	03-19-2020 03:33 pm	1.00	5.00 mL	0.00 mL	X031911.D	Liquid	Y	NA
12	BLANK	SAMP	03-19-2020 03:58 pm	1.00	5.00 mL	0.00 mL	X031912.D	Liquid	Y	NA
13	BLANK	SAMP	03-19-2020 04:22 pm	1.00	5.00 mL	0.00 mL	X031913.D	Liquid	Y	NA
14	BLANK	SAMP	03-19-2020 04:46 pm	1.00	5.00 mL	0.00 mL	X031914.D	Liquid	Y	NA
15	ICV	ICV	03-19-2020 05:09 pm	1.00	5.00 mL	0.00 mL	X031915.D	Liquid	Y	NA
16	BLANK	SAMP	03-19-2020 05:33 pm	1.00	5.00 mL	0.00 mL	X031916.D	Liquid	Y	NA
17	VLCSW-200319	LCS	03-19-2020 05:57 pm	1.00	5.00 mL	0.00 mL	X031917.D	Liquid	Y	NA
18	VLCSDW-200319	LCSD	03-19-2020 06:21 pm	1.00	5.00 mL	0.00 mL	X031918.D	Liquid	Y	NA
19	BLANK	SAMP	03-19-2020 06:45 pm	1.00	5.00 mL	0.00 mL	X031919.D	Liquid	Y	NA
20	BLANK	SAMP	03-19-2020 07:10 pm	1.00	5.00 mL	0.00 mL	X031920.D	Liquid	Y	NA
21	VBLKW1-200319	MBLK	03-19-2020 07:34 pm	1.00	5.00 mL	0.00 mL	X031921.D	Liquid	Y	NA
22	VBLKW2-200319	MBLK	03-19-2020 07:58 pm	1.00	5.00 mL	0.00 mL	X031922.D	Liquid	Y	NA
23	VBLKW3-200319	MBLK	03-19-2020 08:22 pm	1.00	5.00 mL	0.00 mL	X031923.D	Liquid	Y	NA
24	HS20021070-01	SAMP	03-19-2020 08:46 pm	1.00	5.00 mL	0.00 mL	X031924.D	Liquid	Y	NA
25	HS20021070-02	SAMP	03-19-2020 09:10 pm	1.00	5.00 mL	0.00 mL	X031925.D	Liquid	Y	NA
26	HS20021070-03	SAMP	03-19-2020 09:33 pm	1.00	5.00 mL	0.00 mL	X031926.D	Liquid	Y	NA
27	BFB	TUNE	03-19-2020 09:57 pm	1.00	0.00 mL	0.00 mL	Y031901.D	Liquid	Y	NA
	Auto find/ purged									
28	CCV	CCV	03-19-2020 10:21 pm	1.00	5.00 mL	0.00 mL	Y031902a.D	Liquid	Y	NA
29	CCV	CCV	03-19-2020 10:45 pm	1.00	5.00 mL	0.00 mL	Y031903.D	Liquid	Y	NA
30	CCB	SAMP	03-19-2020 11:09 pm	1.00	5.00 mL	0.00 mL	Y031904.D	Liquid	Y	NA
31	VLCSW-200319	LCS	03-19-2020 11:33 pm	1.00	5.00 mL	0.00 mL	Y031905.D	Liquid	Y	NA
32	BLANK	SAMP	03-19-2020 11:57 pm	1.00	5.00 mL	0.00 mL	Y031906.D	Liquid	Y	NA
33	VBLKW1-200319	MBLK	03-20-2020 12:21 am	1.00	5.00 mL	0.00 mL	Y031907.D	Liquid	Y	NA
34	HS20030474-07	SAMP	03-20-2020 12:45 am	1.00	5.00 mL	0.00 mL	Y031908.D	Liquid	Y	NA
35	HS20030498-08	SAMP	03-20-2020 01:09 am	1.00	5.00 mL	0.00 mL	Y031909.D	Liquid	Y	NA
36	HS20030838-02	SAMP	03-20-2020 01:34 am	1.00	5.00 mL	0.00 mL	Y031910.D	Liquid	Y	NA
37	HS20030838-01	SAMP	03-20-2020 01:58 am	1.00	5.00 mL	0.00 mL	Y031911.D	Liquid	Y	NA
38	HS20030474-04	SAMP	03-20-2020 02:22 am	1.00	5.00 mL	0.00 mL	Y031912.D	Liquid	Y	NA
39	HS20030474-05	SAMP	03-20-2020 02:46 am	1.00	5.00 mL	0.00 mL	Y031913.D	Liquid	Y	NA
40	HS20030498-03	SAMP	03-20-2020 03:10 am	1.00	5.00 mL	0.00 mL	Y031914.D	Liquid	Y	NA

MSVOA06 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
41	HS20030498-03MS	MS	03-20-2020 03:34 am	1.00	5.00 mL	0.00 mL	Y031915.D	Liquid	Y	NA
42	HS20030498-03MSD	MSD	03-20-2020 03:58 am	1.00	5.00 mL	0.00 mL	Y031916.D	Liquid	Y	NA
43	HS20030498-03	SAMP	03-20-2020 04:22 am	25.00	5.00 mL	0.00 mL	Y031917.D	Liquid	Y	NA
44	HS20030474-03	SAMP	03-20-2020 04:46 am	1.00	5.00 mL	0.00 mL	Y031918.D	Liquid	Y	NA
45	HS20030474-03	SAMP	03-20-2020 05:10 am	10.00	5.00 mL	0.00 mL	Y031919.D	Liquid	Y	NA
46	HS20030474-06	SAMP	03-20-2020 05:34 am	1.00	5.00 mL	0.00 mL	Y031920.D	Liquid	Y	NA
47	HS20030474-06	SAMP	03-20-2020 05:58 am	25.00	5.00 mL	0.00 mL	Y031921.D	Liquid	Y	NA
48	HS20030498-01	SAMP	03-20-2020 06:22 am	5.00	5.00 mL	0.00 mL	Y031922.D	Liquid	Y	NA
49	HS20030498-01	SAMP	03-20-2020 06:46 am	25.00	5.00 mL	0.00 mL	Y031923.D	Liquid	Y	NA
50	HS20030498-02	SAMP	03-20-2020 07:10 am	5.00	5.00 mL	0.00 mL	Y031924.D	Liquid	Y	NA
51	HS20030498-02	SAMP	03-20-2020 07:34 am	50.00	5.00 mL	0.00 mL	Y031925.D	Liquid	Y	NA
52	HS20030474-01	SAMP	03-20-2020 07:58 am	10.00	5.00 mL	0.00 mL	Y031926.D	Liquid	Y	NA
53	HS20030474-01	SAMP	03-20-2020 08:23 am	100.0(	5.00 mL	0.00 mL	Y031927.D	Liquid	Y	NA
54	HS20030474-02	SAMP	03-20-2020 08:47 am	25.00	5.00 mL	0.00 mL	Y031928.D	Liquid	Y	NA
55	HS20030474-02	SAMP	03-20-2020 09:11 am	250.0(	5.00 mL	0.00 mL	Y031929.D	Liquid	Y	NA
56	CCV-END	CCV	03-20-2020 09:35 am	1.00	5.00 mL	0.00 mL	Y031930.D	Liquid	Y	NA

Chemical	Value
SURR SPK ID	31106-16-03
IS ID	31106-16-04
LCS/MS ID	31105-08-01
CAL STD ID	31106-20-01/02
BFB ID	31106-16-03
pH Paper	634-64-11

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030733

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT (ug/l)	% REC #	QC. LIMITS REC.
cis-1,2-Dichloroethene	50.00	49.94	100	80-120
Vinyl Chloride	50.00	46.97	94	80-120
Methylene Chloride	50.00	51.57	103	80-120
1,1-Dichloroethene	50.00	50.03	100	80-120
1,2-Dichloroethane	50.00	51.86	104	80-120
Trichloroethene	50.00	50.47	101	80-120
1,1,2-Trichloroethane	50.00	49.65	99	80-120
Dibromofluoromethane	50.00	52.34	105	80-120
1,2-Dichloroethane-d4	50.00	52.41	105	80-120
Toluene-d8	50.00	49.94	100	80-120
4-Bromofluorobenzene	50.00	50.93	102	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030733

Lab File ID: X031901 DFTPP Injection Date: 03/19/20

Instrument ID: VOA6 DFTPP Injection Time: 1110

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.4
75	30.0 - 60.0% of mass 95	46.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	79.4
175	5.0 - 9.0% of mass 174	6.2 (7.8)1
176	95.0 - 101.0% of mass 174	77.1 (97.2)1
177	5.0 - 9.0% of mass 176	4.8 (6.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD000.25	VSTD000.25	X031902	03/19/20	1134
02	VSTD000.5	VSTD000.5	X031903	03/19/20	1158
03	VSTD001	VSTD001	X031904	03/19/20	1246
04	VSTD002	VSTD002	X031905	03/19/20	1310
05	VSTD005	VSTD005	X031906	03/19/20	1334
06	VSTD020	VSTD020	X031907	03/19/20	1358
07	VSTD050	VSTD050	X031908	03/19/20	1422
08	VSTD100	VSTD100	X031909	03/19/20	1446
09	VSTD150	VSTD150	X031910	03/19/20	1510
10	VSTD200	VSTD200	X031911	03/19/20	1533
11	ICV	ICV	X031915	03/19/20	1709
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030733

Instrument ID: VOA6 Calibration Date(s): 03/19/20 03/19/20

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1134 1533

LAB FILE ID: RF0.25: X031902 RF0.5: X031903 RF1: X031904
RF2: X031905 RF5: X031906 RF20: X031907

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF5	RF20
Vinyl Chloride		1.013	0.813	0.712	0.728	0.737
Methylene Chloride		5758	6397	10725	22525	70573
1,1-Dichloroethene			0.400	0.446	0.430	0.416
1,2-Dichloroethane		0.487	0.510	0.514	0.548	0.517
Trichloroethene		0.291	0.342	0.344	0.368	0.337
cis-1,2-Dichloroethene		0.482	0.578	0.608	0.642	0.582
1,1,2-Trichloroethane		0.296	0.310	0.293	0.307	0.281
Dibromofluoromethane		1595	2958	5989	17420	61899
1,2-Dichloroethane-d4		3270	4734	9969	20720	80050
Toluene-d8		6812	11874	23746	62955	225397
4-Bromofluorobenzene		3499	8202	12385	22920	85378

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS2003073

Instrument ID: VOA6 Calibration Date(s): 03/19/20 03/19/20

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1134 1533

LAB FILE ID: RF50: X031908 RF100: X031909 RF150: X031910
RF200: X031911

COMPOUND	RF50	RF100	RF150	RF200
Vinyl Chloride	0.708	0.760	0.743	0.769
Methylene Chloride	162281	310528	437081	572059
1,1-Dichloroethene	0.399	0.419	0.406	0.413
1,2-Dichloroethane	0.538	0.538	0.536	0.556
Trichloroethene	0.345	0.364	0.357	0.370
cis-1,2-Dichloroethene	0.544	0.578	0.547	0.567
1,1,2-Trichloroethane	0.277	0.280	0.273	0.277
Dibromofluoromethane	149393	290125	416931	545685
1,2-Dichloroethane-d4	185105	366265	529642	688377
Toluene-d8	537269	1055270	1518049	1981187
4-Bromofluorobenzene	199192	397823	566125	739220

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS2003073

Instrument ID: VOA6 Calibration Date(s): 03/19/20 03/19/20

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1134 1533

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
Vinyl Chloride	AVRG		0.77582348	12.182	15.000
Methylene Chloride	LINR	-3.26e-002	1.93554595	0.9993879	0.9900000
1,1-Dichloroethene	AVRG		0.41618290	3.786	15.000
1,2-Dichloroethane	AVRG		0.52719771	4.107	15.000
Trichloroethene	AVRG		0.34655152	6.956	15.000
cis-1,2-Dichloroethene	AVRG		0.56987978	7.832	15.000
1,1,2-Trichloroethane	AVRG		0.28844951	4.742	15.000
Dibromofluoromethane	LINR	-2.07e-003	2.01718202	0.9996204	0.9900000
1,2-Dichloroethane-d4	LINR	-4.7e-003	1.59780273	0.9996454	0.9900000
Toluene-d8	LINR	-1.42e-003	0.78183893	0.9999537	0.9900000
4-Bromofluorobenzene	LINR	-9.56e-003	2.09896810	0.9999078	0.9900000

FORM VI VOA

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031901.D

Date : 19-MAR-2020 11:10

Client ID: BFB

Instrument: voa6.i

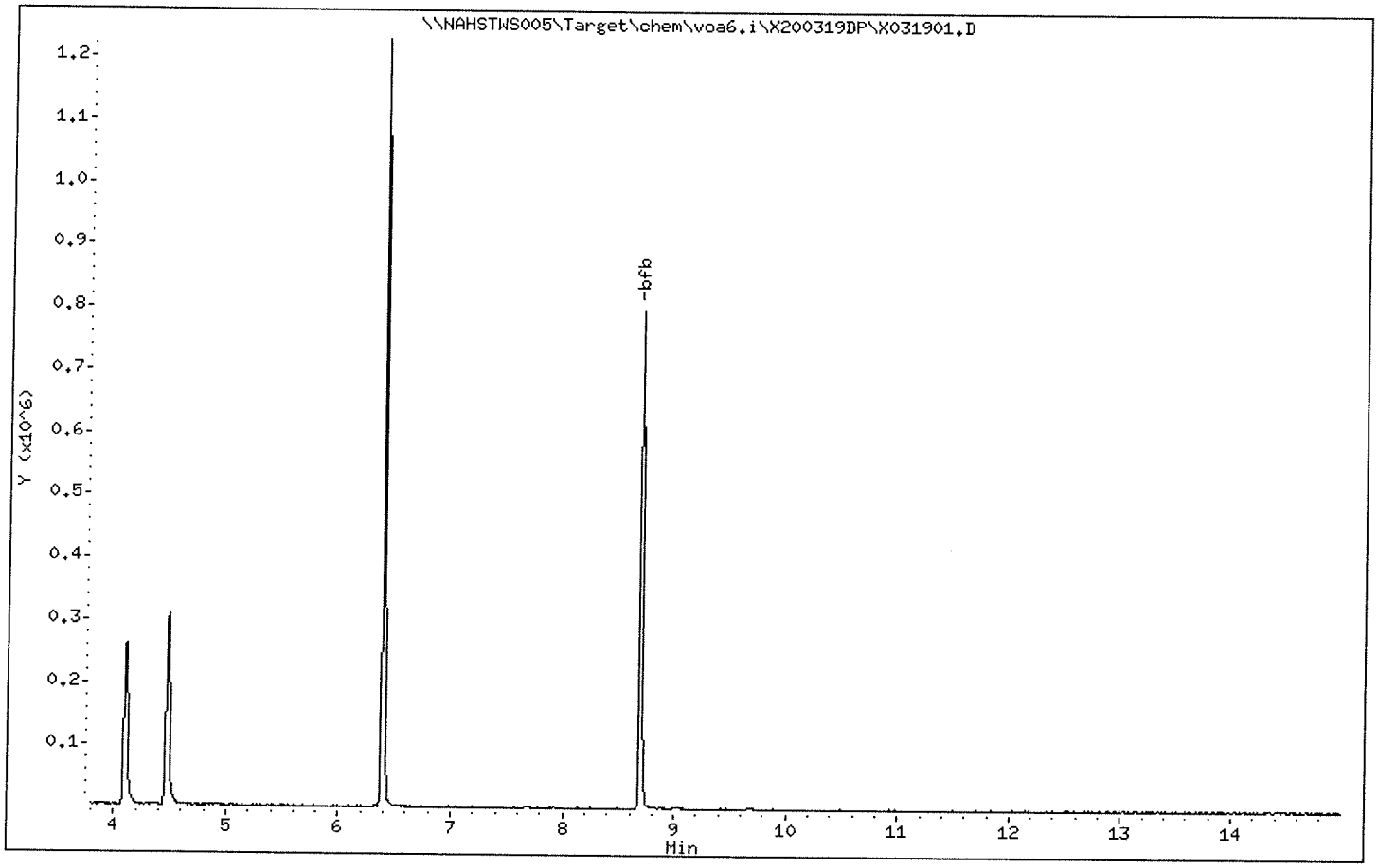
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031901.D

Date : 19-MAR-2020 11:10

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

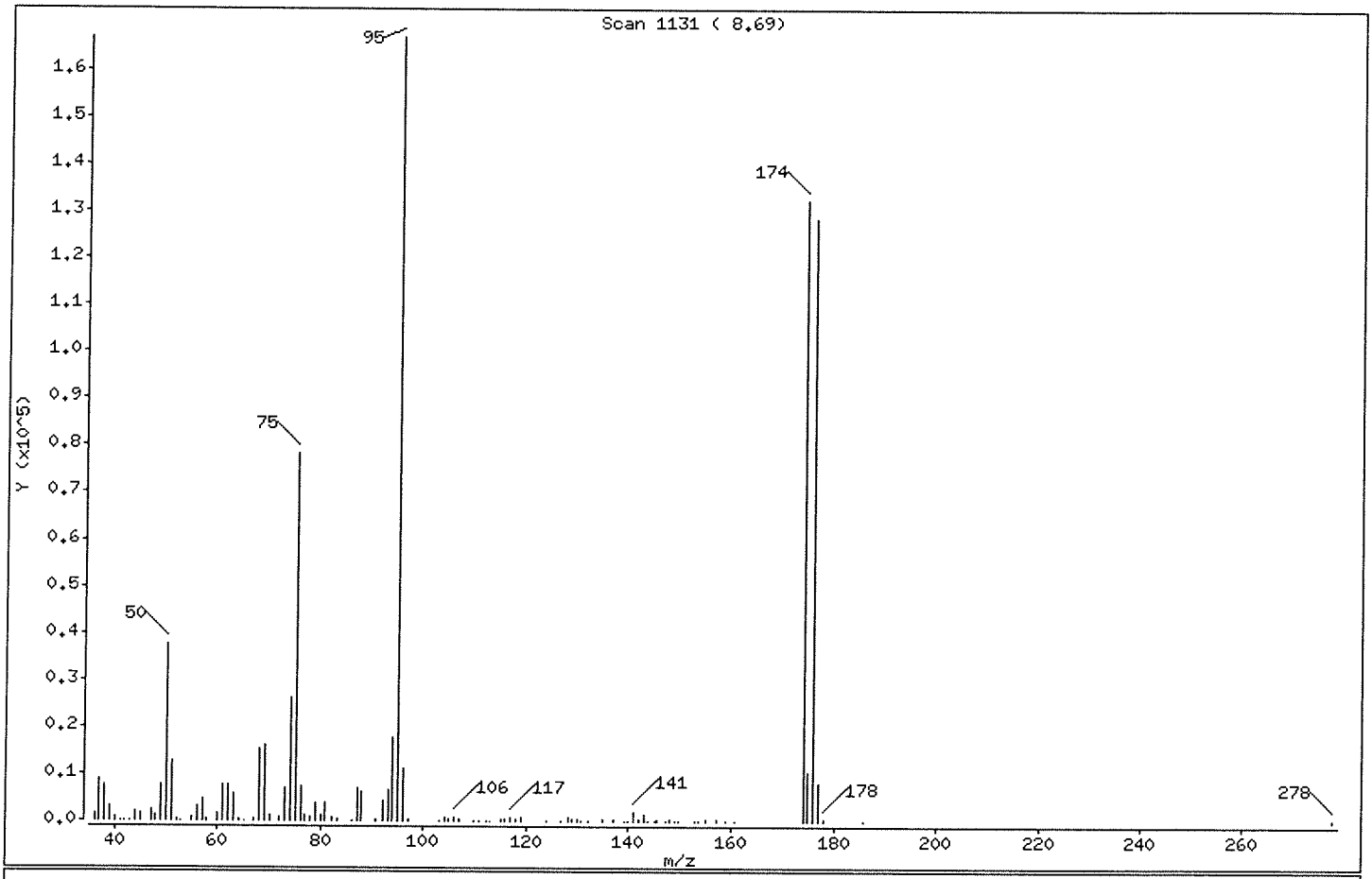
Volume Injected (uL): 2.0

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	22.44
75	30.00 - 60.00% of mass 95	46.84
96	5.00 - 9.00% of mass 95	6.71
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	79.36
175	5.00 - 9.00% of mass 174	6.21 (7.83)
176	95.00 - 101.00% of mass 174	77.12 (97.18)
177	5.00 - 9.00% of mass 176	4.84 (6.28)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031901.D

Date : 19-MAR-2020 11:10

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: X031901.D
Spectrum: Scan 1131 (8.69)
Location of Maximum: 95.00
Number of points: 101

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.10	1360	65.00	163	97.10	263	140.90	1836
37.00	8769	67.10	353	103.20	89	142.00	192
38.00	7670	68.00	15485	104.00	727	142.90	1435
39.10	2999	69.00	16031	104.80	202	143.90	95
40.00	952	70.00	1269	105.80	737	145.10	117
41.20	93	72.00	762	106.90	217	145.60	258
41.90	78	73.00	6729	109.90	88	147.10	75
43.00	168	74.00	26176	110.90	73	148.00	387
44.00	1824	75.00	78128	112.20	62	149.10	83
45.00	1552	76.10	7370	112.80	75	149.80	76
47.00	2478	77.00	1071	115.00	259	153.00	135
47.90	1254	78.00	826	115.90	438	153.80	67
49.00	7676	79.00	3833	117.00	918	155.10	401
50.00	37424	80.00	1180	117.90	502	157.10	297
51.00	12563	80.90	3942	118.90	858	158.90	162
52.00	570	82.00	745	123.90	50	160.80	187
52.90	73	83.10	195	126.90	85	174.00	132352
55.00	621	85.90	140	128.00	809	175.00	10363
56.10	2880	87.00	6928	129.00	384	176.00	128616
57.00	4661	87.90	6204	130.00	465	177.00	8074
57.90	288	90.70	380	130.70	179	178.00	201
60.00	1638	92.00	4234	132.10	55	186.00	57
61.00	7723	93.00	6369	134.80	234	277.90	192
62.00	7841	94.00	17568	136.90	228		
63.00	5744	95.00	166784	139.00	69		
64.00	482	96.10	11193	139.90	141		

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031902.D Page 1
Report Date: 15-Apr-2020 11:52

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031902.D
Lab Smp Id: VSTD000.25 Client Smp ID: VSTD000.25
Inj Date : 19-MAR-2020 11:34
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.25;VSTD000.25;1;1;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:52 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 15:33 Cal File: X031911.D
Als bottle: 2 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

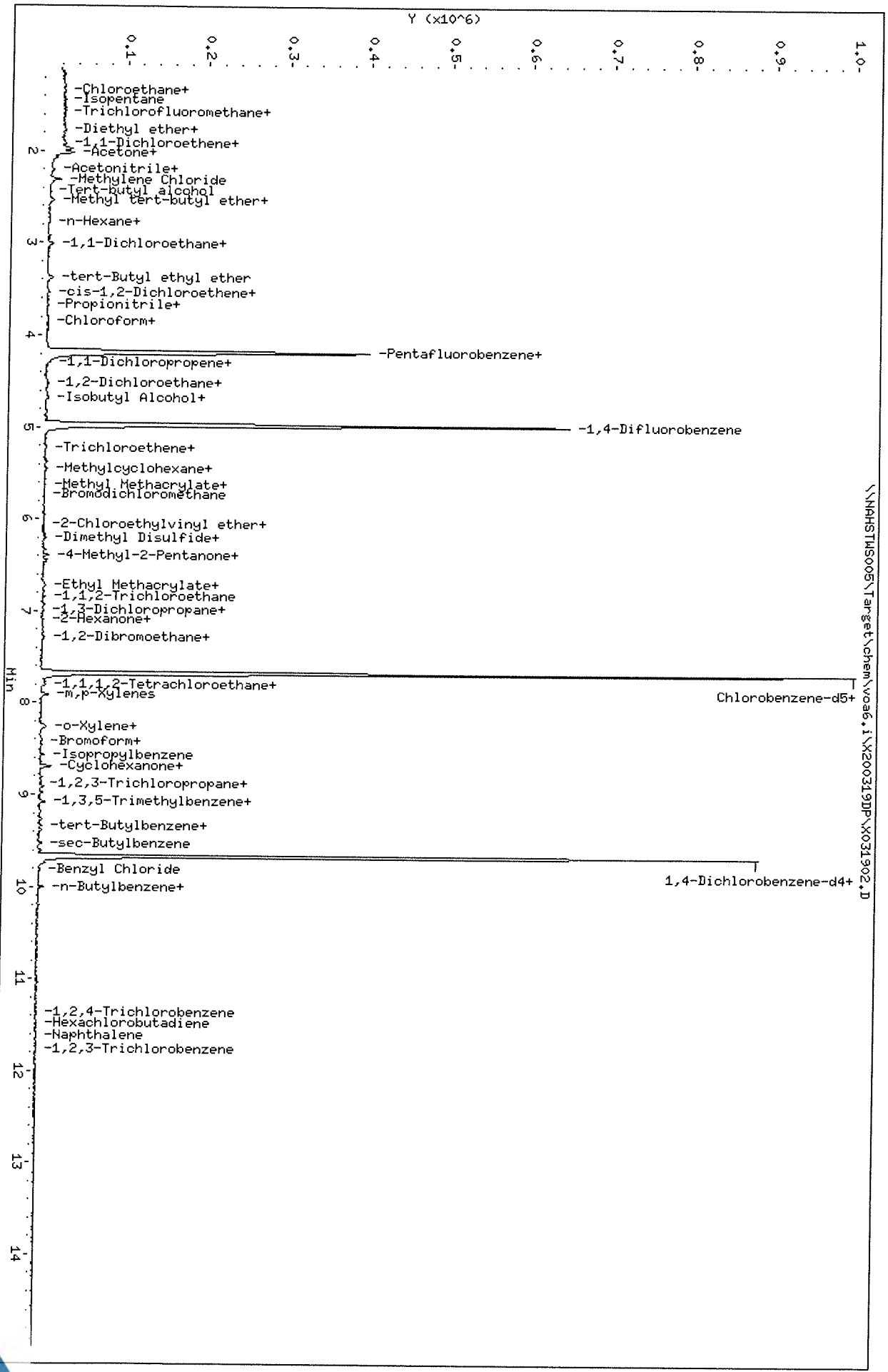
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	334865	50.0000	
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.983)	908	0.25000	0.16(a)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	1143	0.25000	0.11(Ta)
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	508670	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	452074	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	4217	0.25000	0.28(Ta)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	4979	0.25000	0.66(aM)
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	214709	50.0000	

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.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031902.D
Date : 19-MAR-2020 11:34
Client ID: VSTD000.25
Sample Info: VSTD000.25;VSTD000.25;1;1;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031903.D
Lab Smp Id: VSTD000.5 Client Smp ID: VSTD000.5
Inj Date : 19-MAR-2020 11:58
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.5;VSTD000.5;1;2;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:52 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 11:34 Cal File: X031902.D
Als bottle: 3 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

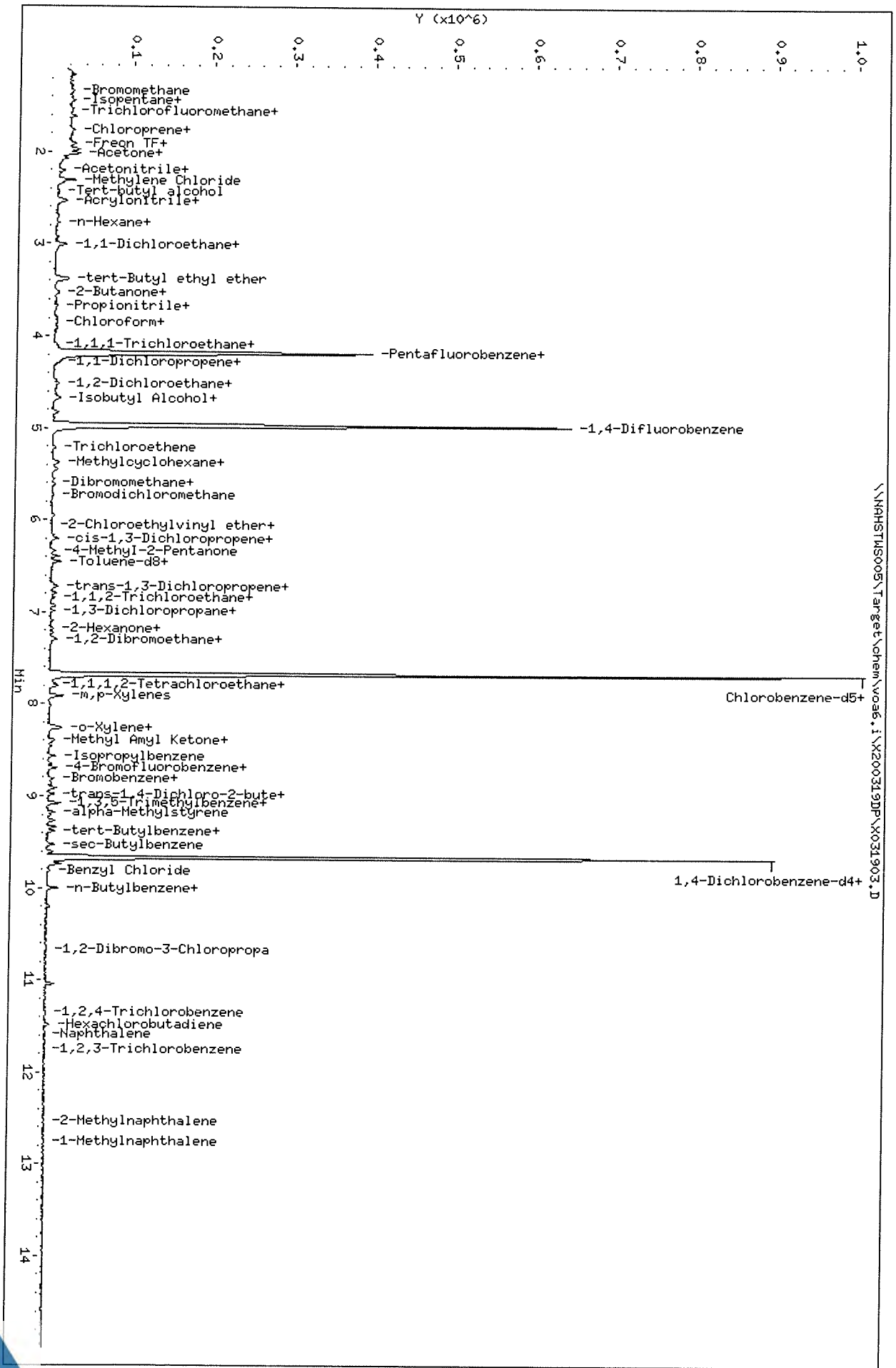
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	332459	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	1595	0.50000	0.37(a)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	2909	0.50000	0.54(TaM)
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	503603	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	451366	50.0000	
$ 48 Toluene-d8	98	6.396	6.396	(0.834)	6812	0.50000	0.51(a)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	3499	0.50000	0.32(a)
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	220941	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	2946	0.50000	0.58(aM)
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	1608	0.50000	0.57(aM)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	1337	0.50000	0.51(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.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031903.D
Date : 19-MAR-2020 11:58
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

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031904.D
Lab Smp Id: VSTD001 Client Smp ID: VSTD001
Inj Date : 19-MAR-2020 12:46
Operator : PC Inst ID: voa6.i
Smp Info : VSTD001;VSTD001;1;3;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:52 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 11:58 Cal File: X031903.D
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

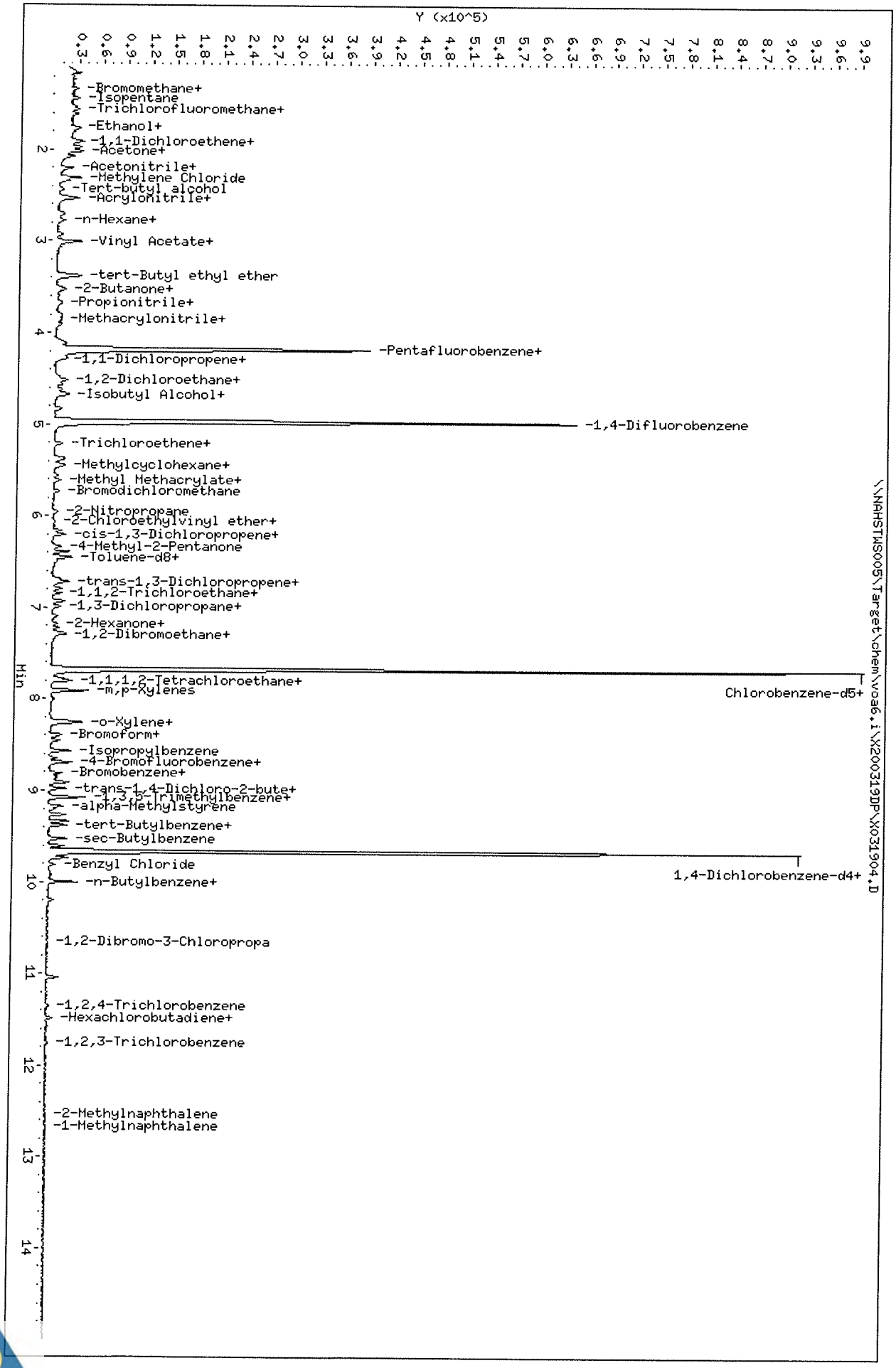
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	323740	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	3028	1.00000	0.83(a)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	4838	1.00000	1.03(a)
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	494081	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	442403	50.0000	
$ 48 Toluene-d8	98	6.396	6.396	(0.834)	12359	1.00000	1.01(a)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	8202	1.00000	1.45(a)
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	218790	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	5267	1.00000	1.06(a)
11 1,1-Dichloroethene	96	1.919	1.919	(0.459)	2593	1.00000	0.94(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	3714	1.00000	1.00(a)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	5041	1.00000	0.96(a)
38 Trichloroethene	130	5.206	5.206	(1.048)	3378	1.00000	0.98(a)
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	2724	1.00000	1.06(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031904.D
Date : 19-MAR-2020 12:46
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

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031905.D
Lab Smp Id: VSTD002 Client Smp ID: VSTD002
Inj Date : 19-MAR-2020 13:10
Operator : PC Inst ID: voa6.i
Smp Info : VSTD002;VSTD002;1;4;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:52 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 12:46 Cal File: X031904.D
Als bottle: 6 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

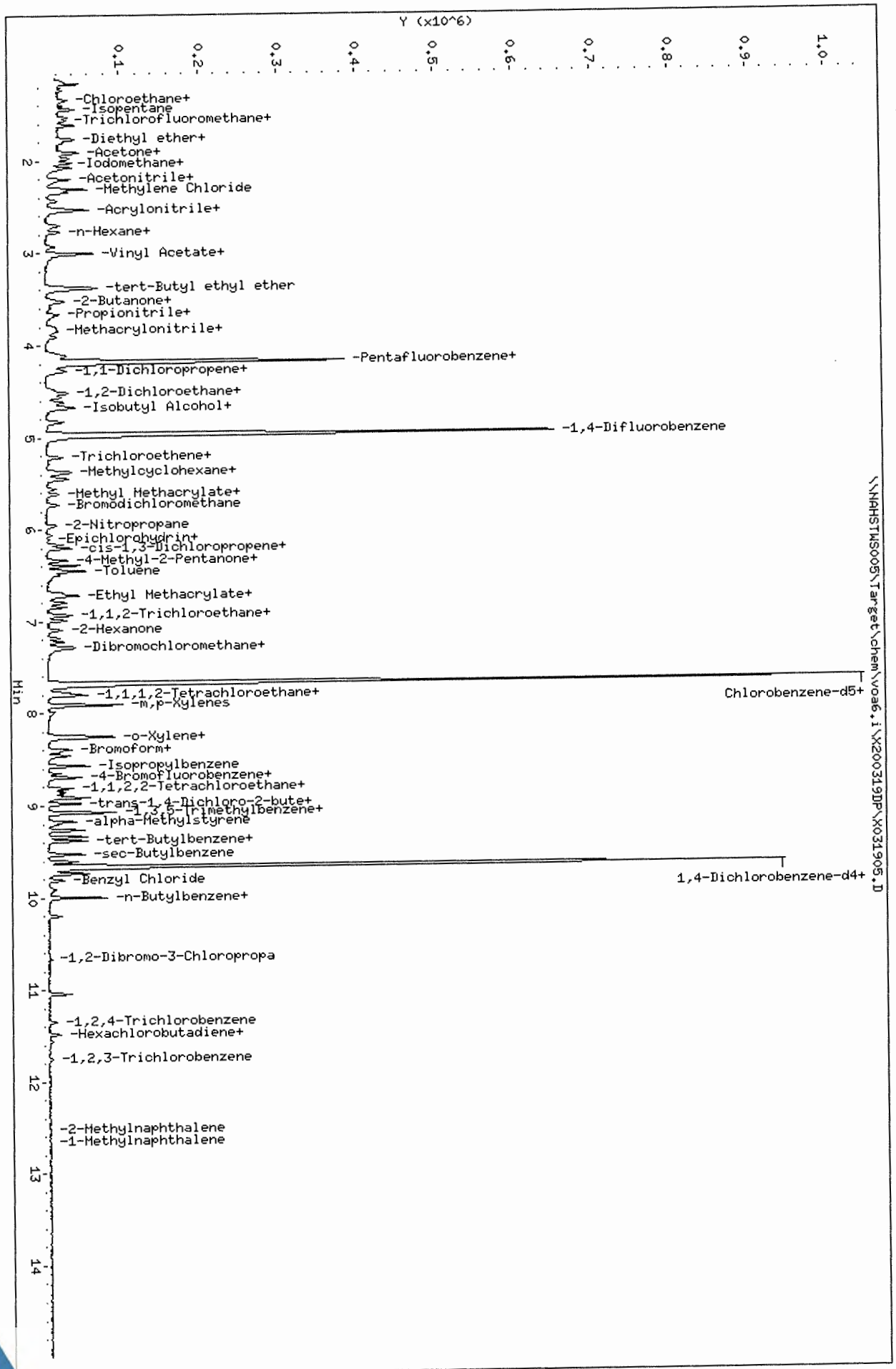
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	317561	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	5989	2.00000	1.79(a)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	8567	2.00000	1.99(aM)
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	498211	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	449226	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	23746	2.00000	1.99(a)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	12385	2.00000	2.40(a)
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	221564	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	9040	2.00000	1.86(a)
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	5662	2.00000	2.10(a)
17 Methylene Chloride	84	2.305	2.305	(0.551)	9972	2.00000	1.61(aM)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	7730	2.00000	2.13(a)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	10240	2.00000	1.94(a)
38 Trichloroethene	130	5.214	5.214	(1.049)	6853	2.00000	1.98(a)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	5273	2.00000	2.03(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031905.D
Date : 19-MAR-2020 13:10
Client ID: VSTD002
Sample Info: VSTD002;VSTD002;1;4;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031906.D
Lab Smp Id: VSTD005 Client Smp ID: VSTD005
Inj Date : 19-MAR-2020 13:34
Operator : PC Inst ID: voa6.i
Smp Info : VSTD005;VSTD005;1;5;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:52 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 13:10 Cal File: X031905.D
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

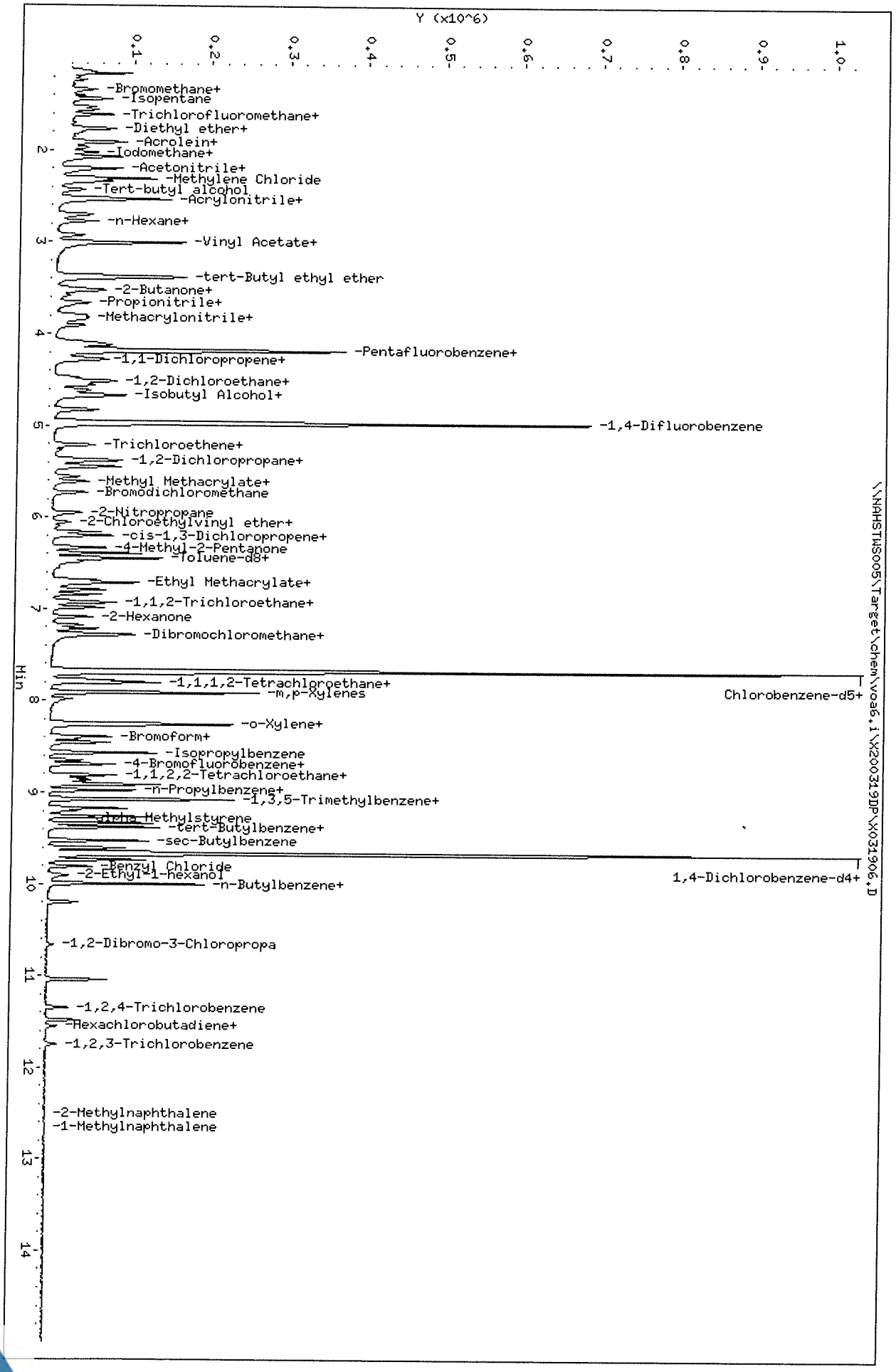
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	309553	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	17420	5.00000	5.56
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	20720	5.00000	5.18
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	486956	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	441541	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	62955	5.00000	5.49
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	22920	5.00000	4.95(a)
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	225770	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	22527	5.00000	4.77(a)
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	13314	5.00000	5.07
17 Methylene Chloride	84	2.306	2.306	(0.551)	22460	5.00000	5.59(M)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	19888	5.00000	5.64
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	26678	5.00000	5.18
38 Trichloroethene	130	5.214	5.214	(1.049)	17942	5.00000	5.31
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	13550	5.00000	5.32

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6,i\X200319DP\X031906,D
Date : 19-MAR-2020 13:34
Client ID: VSTD005
Sample Info: VSTD005;VSTD005;1;5;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

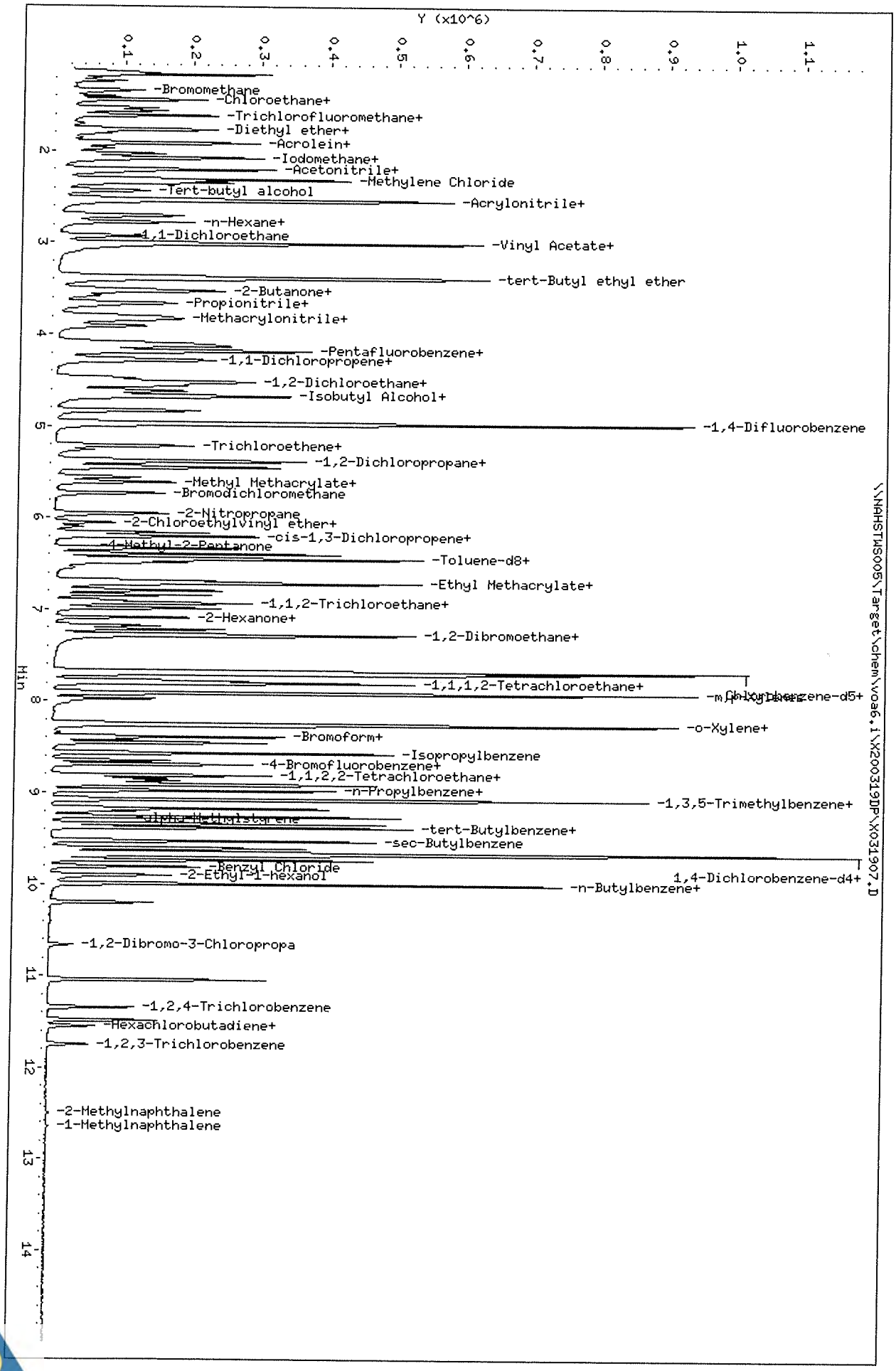
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031907.D
Lab Smp Id: VSTD020 Client Smp ID: VSTD020
Inj Date : 19-MAR-2020 13:58
Operator : PC Inst ID: voa6.i
Smp Info : VSTD020;VSTD020;1;6;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:52 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 13:34 Cal File: X031906.D
Als bottle: 8 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	299061	50.0000	
$ 30 Dibromofluoromethane	113	4.104	4.104	(0.981)	61899	20.0000	20.76
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	80050	20.0000	21.21
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	480908	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	433129	50.0000	
$ 48 Toluene-d8	98	6.389	6.389	(0.833)	225397	20.0000	20.27
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	85378	20.0000	20.19
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	213879	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	88179	20.0000	19.35
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	49791	20.0000	19.64
17 Methylene Chloride	84	2.306	2.306	(0.551)	70573	20.0000	21.38
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	69663	20.0000	20.45
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	99484	20.0000	19.58
38 Trichloroethene	130	5.207	5.207	(1.048)	64841	20.0000	19.45
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	48758	20.0000	19.53



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031907.D
Date : 19-MAR-2020 13:58
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;1;6;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

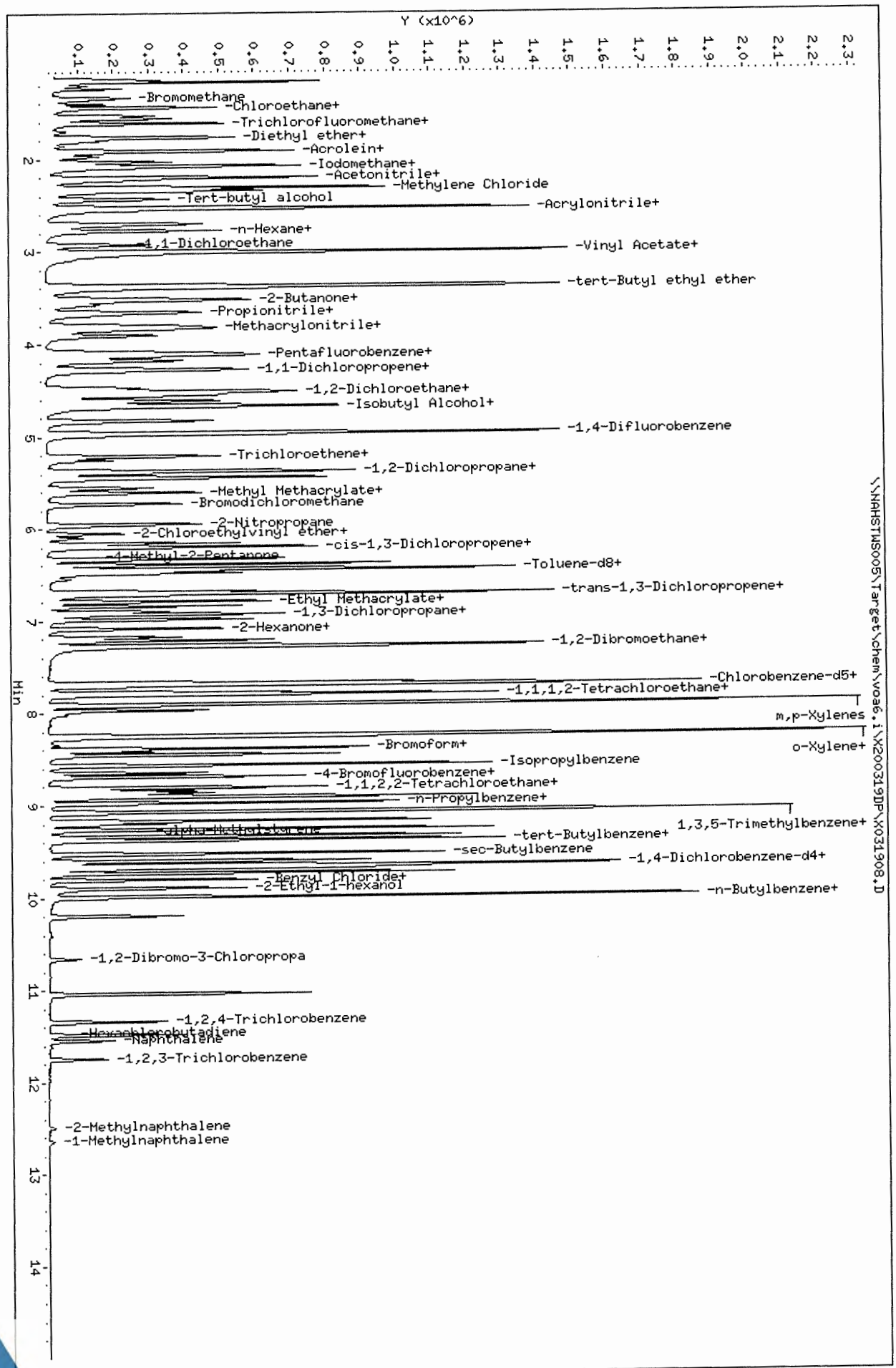
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031908.D
Lab Smp Id: VSTD050 Client Smp ID: VSTD050
Inj Date : 19-MAR-2020 14:22
Operator : PC Inst ID: voa6.i
Smp Info : VSTD050;VSTD050;1;7;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:52 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 13:58 Cal File: X031907.D
Als bottle: 9 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	308394	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	149393	50.0000	48.75
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	185105	50.0000	47.76
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	463946	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	424365	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	537213	50.0000	49.41
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	199673	50.0000	48.88
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	211624	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	218403	50.0000	46.48
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	123020	50.0000	47.07
17 Methylene Chloride	84	2.305	2.305	(0.551)	162281	50.0000	49.43
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	167789	50.0000	47.77
33 1,2-Dichloroethane	62	4.555	4.555	(0.916)	249570	50.0000	50.91
38 Trichloroethene	130	5.206	5.206	(1.048)	160161	50.0000	49.80
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	117355	50.0000	47.99



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031908.D
Date : 19-MAR-2020 14:22
Client ID: VSTD050
Sample Info: VSTD050;VSTD050;1;7;;
Purge Volume: 5.0
Column phase: DB624

\\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031908.D

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031909.D Page 1
Report Date: 15-Apr-2020 11:52

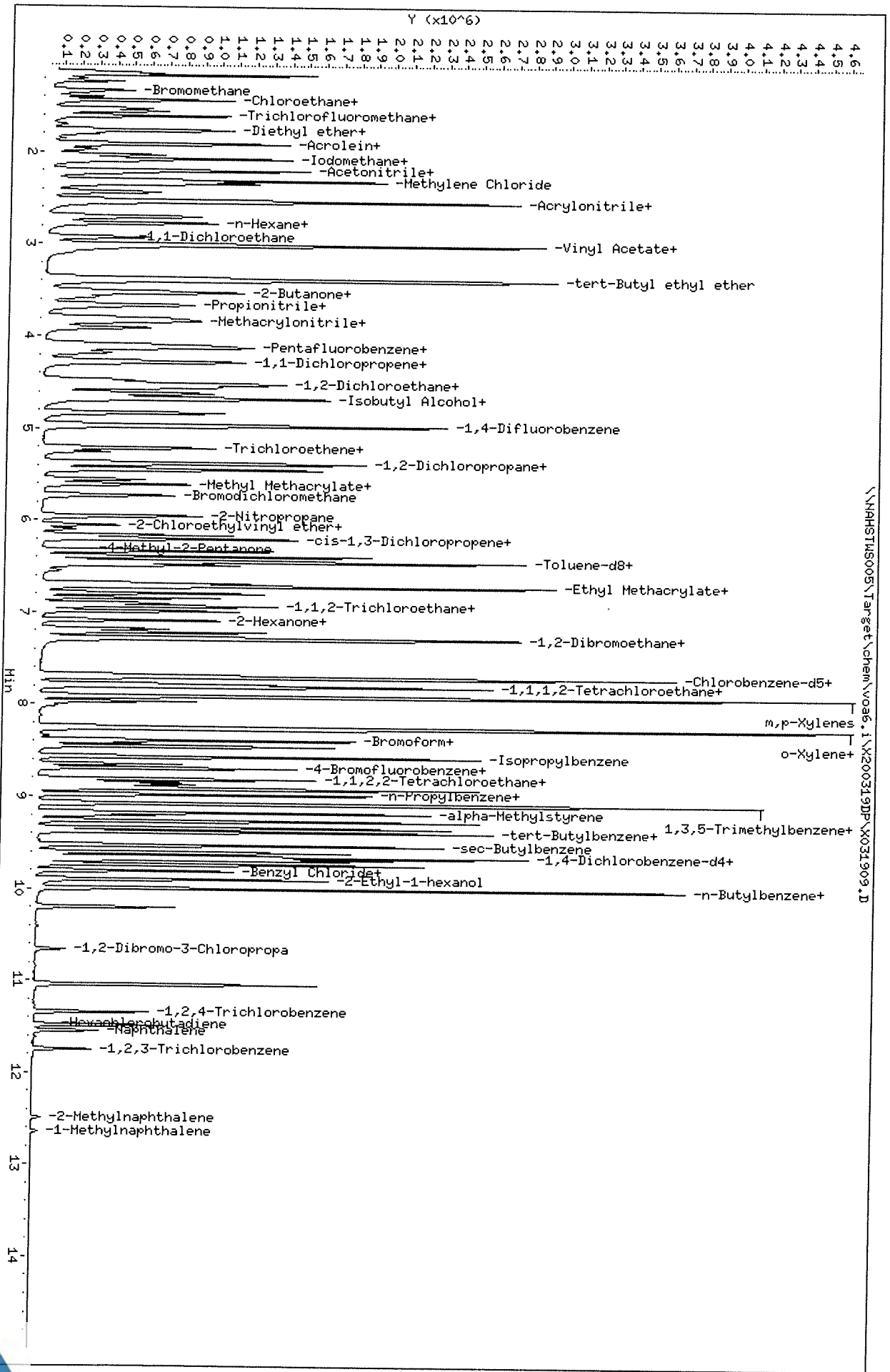
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031909.D
Lab Smp Id: VSTD100 Client Smp ID: VSTD100
Inj Date : 19-MAR-2020 14:46
Operator : PC Inst ID: voa6.i
Smp Info : VSTD100;VSTD100;1;8;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:52 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 10 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	286614	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	290125	100.000	101.98
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	366265	100.000	101.87
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	439703	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	412807	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1054666	100.000	99.81
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	397823	100.000	100.64
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	202255	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	435381	100.000	99.70
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	240131	100.000	98.87
17 Methylene Chloride	84	2.305	2.305	(0.551)	310528	100.000	103.27
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	331114	100.000	101.44
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	481696	100.000	103.69
38 Trichloroethene	130	5.206	5.206	(1.048)	320532	100.000	105.17
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	230846	100.000	97.06



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031909.D
Date : 19-MAR-2020 14:46
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;1;8;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

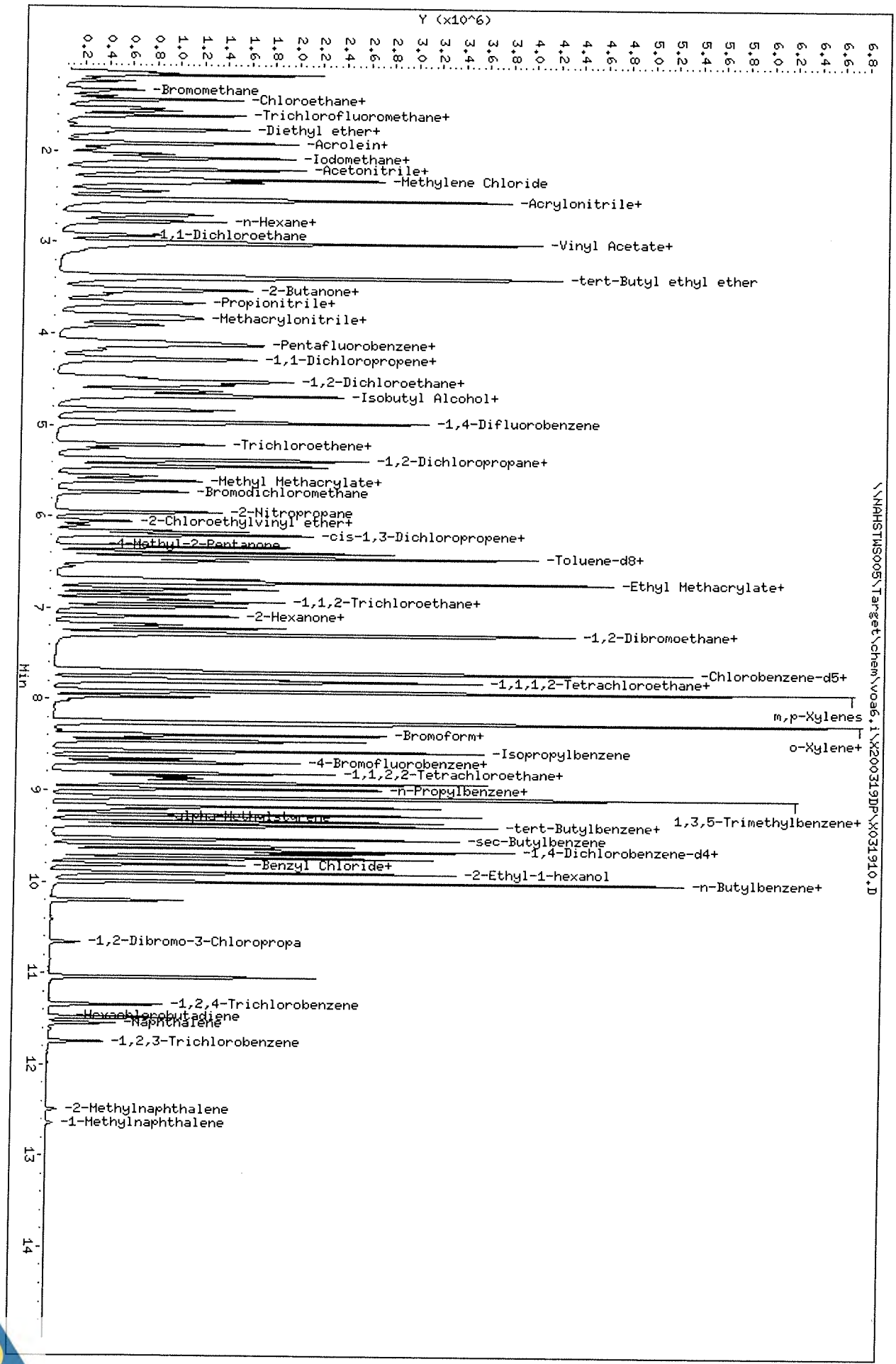
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031910.D
Lab Smp Id: VSTD150 Client Smp ID: VSTD150
Inj Date : 19-MAR-2020 15:10
Operator : PC Inst ID: voa6.i
Smp Info : VSTD150;VSTD150;1;9;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:52 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:46 Cal File: X031909.D
Als bottle: 11 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	285712	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	416931	150.000	147.07
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	529642	150.000	147.86
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	430514	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	397694	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1518049	150.000	149.15
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	566125	150.000	148.90
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	198118	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	636695	150.000	146.27
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	347727	150.000	143.62
17 Methylene Chloride	84	2.306	2.306	(0.551)	437081	150.000	146.41
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	468820	150.000	144.08
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	692218	150.000	152.19
38 Trichloroethene	130	5.207	5.207	(1.048)	461294	150.000	154.59
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	326278	150.000	142.40



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031910.D
Date : 19-MAR-2020 15:10
Client ID: VSTD150
Sample Info: VSTD150;VSTD150;1;9;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031911.D Page 1
Report Date: 15-Apr-2020 11:52

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031911.D
Lab Smp Id: VSTD200 Client Smp ID: VSTD200
Inj Date : 19-MAR-2020 15:33
Operator : PC Inst ID: voa6.i
Smp Info : VSTD200;VSTD200;1;10;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:52 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 15:10 Cal File: X031910.D
Als bottle: 12 Calibration Sample, Level: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

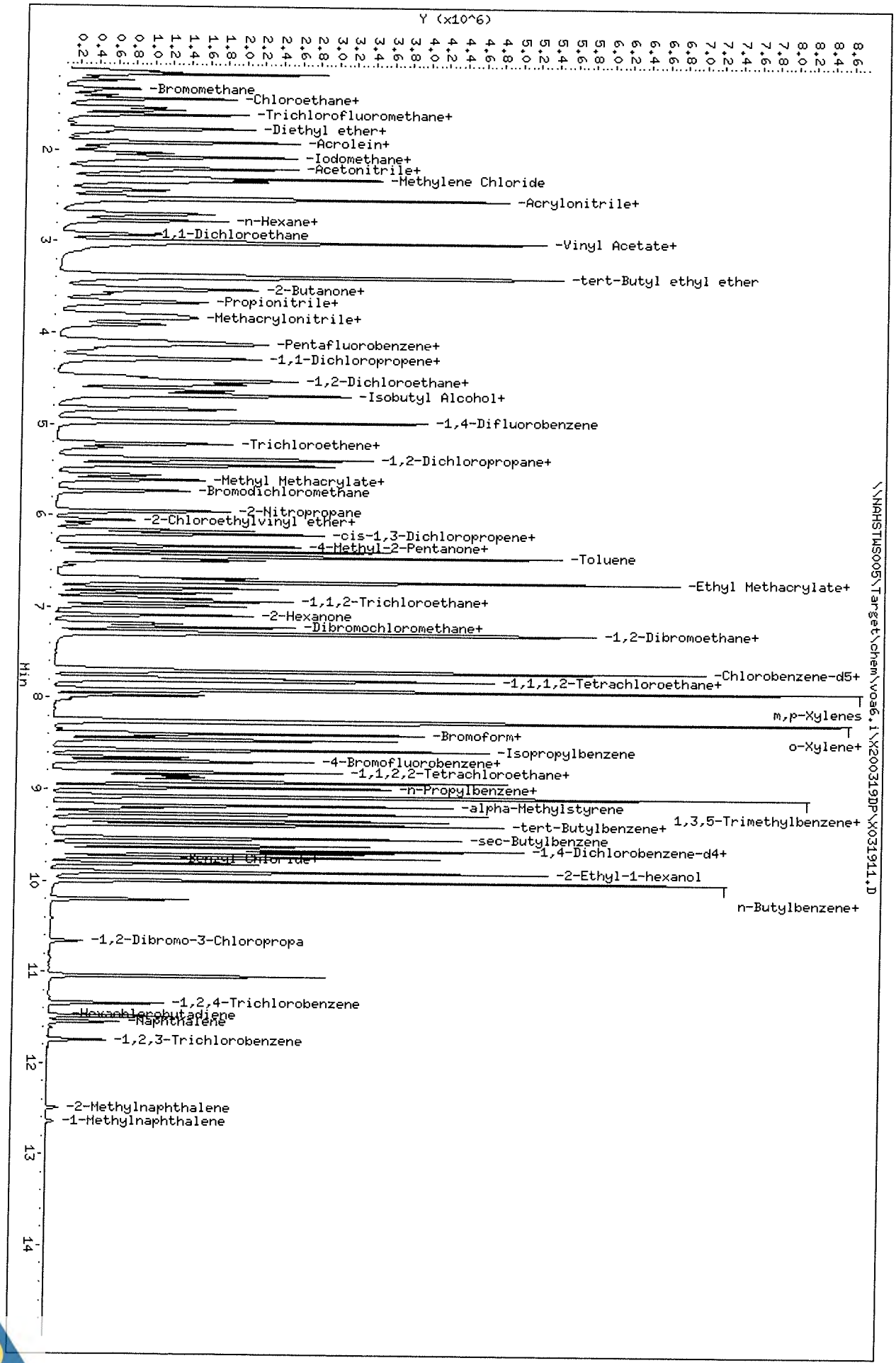
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	273221	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	545685	200.000	201.33(A)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	688377	200.000	201.01(A)
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	408332	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	385556	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1981187	200.000	200.82(A)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	739220	200.000	200.72(A)
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	190770	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	840563	200.000	201.93(A)
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	451814	200.000	195.15
17 Methylene Chloride	84	2.305	2.305	(0.551)	572059	200.000	200.90(A)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	619486	200.000	199.09
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	908572	200.000	210.61(A)
38 Trichloroethene	130	5.207	5.207	(1.048)	603965	200.000	213.40(A)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	427427	200.000	192.42

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031911.D
Date : 19-MAR-2020 15:33
Client ID: VSTD200
Sample Info: VSTD200;VSTD200;1;10;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

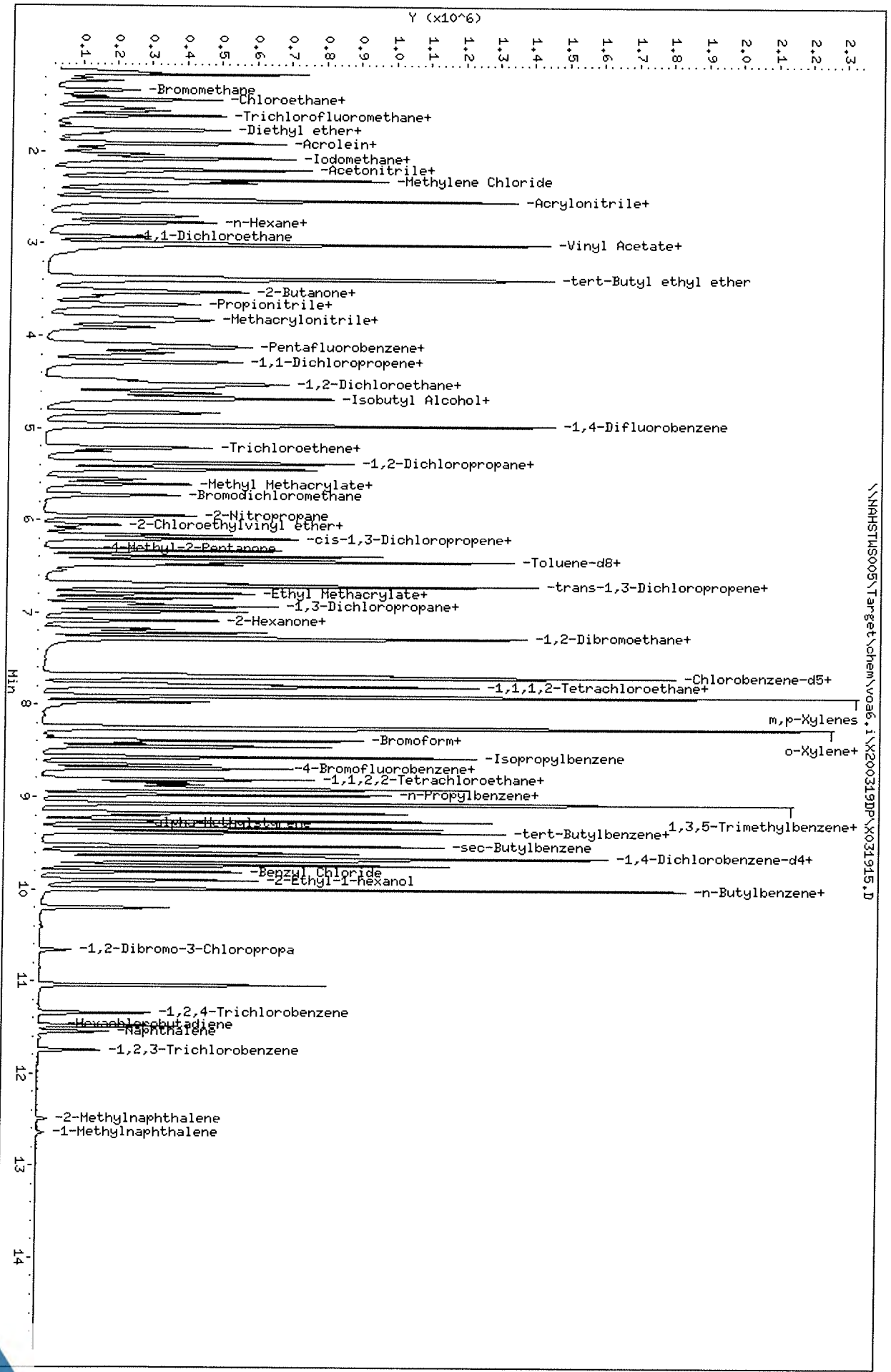
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031915.D
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 19-MAR-2020 17:09
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;;ICV
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 15-Apr-2020 11:52 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 15:33 Cal File: X031911.D
Als bottle: 16 QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	286433	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	148947	52.3413	52.34
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	188752	52.4596	52.45
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	444859	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	412876	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	528266	49.9474	49.94
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	201904	50.8305	50.83
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	209059	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	208794	47.8466	47.84
11 1,1-Dichloroethene	96	1.911	1.912	(0.457)	119289	49.1482	49.14
17 Methylene Chloride	84	2.305	2.305	(0.551)	157492	51.7167	51.71
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	163069	49.9916	49.99
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	243287	51.7645	51.76
38 Trichloroethene	130	5.206	5.207	(1.048)	155631	50.4744	50.47
53 1,1,2-Trichloroethane	83	6.840	6.847	(0.892)	118115	49.6548	49.65



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031915.D
Date : 19-MAR-2020 17:09
Client ID: ICV
Sample Info: CCV;CCV;2;;;ICV
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

MSVOA06 -Logbook

Batch: 40073
Date: 03-20-2020
Method: 8260
Comments:

Analyst: Presenta Cabascango
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	03-20-2020 10:05 am	1.00	50 mL	50 mL	X032001.D	Liquid	Y	NA
2	*Auto find/ purged* CCV	CCV	03-20-2020 10:29 am	1.00	50 mL	50 mL	X032002a.D	Liquid	Y	NA
3	*10 uL cal std/50 mL DI* CCV	CCV	03-20-2020 10:53 am	1.00	50 mL	50 mL	X032003.D	Liquid	Y	NA
4	*10 uL cal std/50 mL DI* CCB	SAMP	03-20-2020 11:17 am	1.00	50 mL	50 mL	X032004.D	Liquid	Y	NA
5	VLCSW-200320	LCS	03-20-2020 11:41 am	1.00	50 mL	50 mL	X032005.D	Liquid	Y	NA
6	*4.0 uL cal std/50 mL DI* BLANK	SAMP	03-20-2020 12:05 pm	1.00	50 mL	50 mL	X032006.D	Liquid	Y	NA
7	VBLKW1-200320	MBLK	03-20-2020 12:29 pm	1.00	50 mL	50 mL	X032007.D	Liquid	Y	NA
8	VBLKW2-200320	MBLK	03-20-2020 12:53 pm	1.00	50 mL	50 mL	X032008.D	Liquid	Y	NA
9	HS20021070-04	SAMP	03-20-2020 01:17 pm	1.00	50 mL	50 mL	X032009.D	Liquid	Y	NA
10	HS20021070-05	SAMP	03-20-2020 01:41 pm	1.00	50 mL	50 mL	X032010.D	Liquid	Y	NA
11	HS20030848-01	SAMP	03-20-2020 02:05 pm	1.00	50 mL	50 mL	X032011.D	Liquid	Y	<2
12	HS20030521-03	SAMP	03-20-2020 02:29 pm	1.00	50 mL	50 mL	X032012.D	Liquid	Y	<2
13	HS20030498-04	SAMP	03-20-2020 02:53 pm	10.00	5 mL	50 mL	X032013.D	Liquid	Y	<2
14	HS20030848-01MS	MS	03-20-2020 03:17 pm	1.00	50 mL	50 mL	X032014.D	Liquid	Y	<2
15	*3.5 uL cal std/40 mL samp* HS20030848-01MSD	MSD	03-20-2020 03:41 pm	1.00	50 mL	50 mL	X032015.D	Liquid	Y	<2
16	*3.5 uL cal std/40 mL samp* HS20030498-04	SAMP	03-20-2020 04:05 pm	100.0(	500 µL	50 mL	X032016.D	Liquid	Y	<2
17	HS20030498-05	SAMP	03-20-2020 04:29 pm	25.00	2 mL	50 mL	X032017.D	Liquid	Y	<2
18	HS20030498-05	SAMP	03-20-2020 04:53 pm	250.0(	200 µL	50 mL	X032018.D	Liquid	Y	<2
19	HS20030498-06	SAMP	03-20-2020 05:17 pm	25.00	2 mL	50 mL	X032019.D	Liquid	Y	<2
20	HS20030498-06	SAMP	03-20-2020 05:41 pm	250.0(	200 µL	50 mL	X032020.D	Liquid	Y	<2
21	HS20030498-07	SAMP	03-20-2020 06:05 pm	25.00	2 mL	50 mL	X032021.D	Liquid	Y	<2
22	HS20030498-07	SAMP	03-20-2020 06:29 pm	250.0(	200 µL	50 mL	X032022.D	Liquid	Y	<2
23	HS20030701-01	SAMP	03-20-2020 06:53 pm	1.00	50 mL	50 mL	X032023.D	Liquid	Y	<2
24	HS20030701-02	SAMP	03-20-2020 07:17 pm	1.00	50 mL	50 mL	X032024.D	Liquid	Y	<2
25	HS20030701-03	SAMP	03-20-2020 07:41 pm	1.00	50 mL	50 mL	X032025.D	Liquid	Y	<2
26	HS20030701-04	SAMP	03-20-2020 08:05 pm	1.00	50 mL	50 mL	X032026.D	Liquid	Y	<2
27	HS20030701-05	SAMP	03-20-2020 08:30 pm	1.00	50 mL	50 mL	X032027.D	Liquid	Y	<2
28	HS20030701-06	SAMP	03-20-2020 08:54 pm	1.00	50 mL	50 mL	X032028.D	Liquid	Y	<2
29	HS20030701-07	SAMP	03-20-2020 09:18 pm	1.00	50 mL	50 mL	X032029.D	Liquid	Y	<2
30	CCV-END	CCV	03-20-2020 09:42 pm	1.00	50 mL	50 mL	X032030.D	Liquid	Y	na
31	BFB	TUNE	03-20-2020 10:06 pm	1.00	50 mL	50 mL	Y032001.D	Liquid	Y	na
32	*Auto find/ purged* CCV	CCV	03-20-2020 10:29 pm	1.00	50 mL	50 mL	Y032002a.D	Liquid	Y	na
33	*10 uL cal std/50 mL DI* CCV	CCV	03-20-2020 10:53 pm	1.00	50 mL	50 mL	Y032003.D	Liquid	Y	na
34	*10 uL cal std/50 mL DI* CCB	SAMP	03-20-2020 11:17 pm	1.00	50 mL	50 mL	Y032004.D	Liquid	Y	na
35	VLCSW-200320	LCS	03-20-2020 11:41 pm	1.00	50 mL	50 mL	Y032005.D	Liquid	Y	na
36	*4.0 uL cal std/50 mL DI* BLANK	SAMP	03-21-2020 12:05 am	1.00	50 mL	50 mL	Y032006.D	Liquid	Y	na

MSVOA06 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
37	VBLKW1-200320	MBLK	03-21-2020 12:29 am	1.00	50 mL	50 mL	Y032007.D	Liquid	Y	na
38	HS20030621-13	SAMP	03-21-2020 12:54 am	1.00	50 mL	50 mL	Y032008.D	Liquid	Y	<2
39	HS20030733-09	SAMP	03-21-2020 01:18 am	1.00	50 mL	50 mL	Y032009.D	Liquid	Y	<2
40	HS20030621-01	SAMP	03-21-2020 01:42 am	1.00	50 mL	50 mL	Y032010.D	Liquid	Y	<2
41	HS20030621-09	SAMP	03-21-2020 02:06 am	1.00	50 mL	50 mL	Y032011.D	Liquid	Y	<2
42	HS20030621-01MS	MS	03-21-2020 02:30 am	1.00	50 mL	50 mL	Y032012.D	Liquid	Y	<2
	3.5 uL cal std/40 mL samp									
43	HS20030621-01MSD	MSD	03-21-2020 02:54 am	1.00	50 mL	50 mL	Y032013.D	Liquid	Y	<2
	3.5 uL cal std/40 mL samp									
44	HS20030621-09n/r	SAMP	03-21-2020 03:18 am	5.00	10 mL	50 mL	Y032014.D	Liquid	Y	<2
45	HS20030621-02	SAMP	03-21-2020 03:42 am	1.00	50 mL	50 mL	Y032015.D	Liquid	Y	<2
46	HS20030621-03	SAMP	03-21-2020 04:06 am	1.00	50 mL	50 mL	Y032016.D	Liquid	Y	<2
47	HS20030621-04	SAMP	03-21-2020 04:30 am	1.00	50 mL	50 mL	Y032017.D	Liquid	Y	<2
48	HS20030621-05	SAMP	03-21-2020 04:54 am	1.00	50 mL	50 mL	Y032018.D	Liquid	Y	<2
49	HS20030621-06	SAMP	03-21-2020 05:18 am	1.00	50 mL	50 mL	Y032019.D	Liquid	Y	<2
50	HS20030621-08	SAMP	03-21-2020 05:42 am	1.00	50 mL	50 mL	Y032020.D	Liquid	Y	<2
51	HS20030621-10	SAMP	03-21-2020 06:06 am	1.00	50 mL	50 mL	Y032021.D	Liquid	Y	<2
52	HS20030621-11	SAMP	03-21-2020 06:30 am	1.00	50 mL	50 mL	Y032022.D	Liquid	Y	<2
53	HS20030621-12	SAMP	03-21-2020 06:54 am	1.00	50 mL	50 mL	Y032023.D	Liquid	Y	<2
54	HS20030733-02	SAMP	03-21-2020 07:19 am	1.00	50 mL	50 mL	Y032024.D	Liquid	Y	<2
55	HS20030733-04	SAMP	03-21-2020 07:43 am	1.00	50 mL	50 mL	Y032025.D	Liquid	Y	<2
56	HS20030733-06	SAMP	03-21-2020 08:07 am	1.00	50 mL	50 mL	Y032026.D	Liquid	Y	<2
57	HS20030733-07	SAMP	03-21-2020 08:31 am	1.00	50 mL	50 mL	Y032027.D	Liquid	Y	<2
58	HS20030621-07	SAMP	03-21-2020 08:55 am	5.00	10 mL	50 mL	Y032028.D	Liquid	Y	<2
59	HS20030621-07	SAMP	03-21-2020 09:19 am	50.00	1 mL	50 mL	Y032029.D	Liquid	Y	<2
60	CCV-END	CCV	03-21-2020 09:43 am	1.00	50 mL	50 mL	Y032030.D	Liquid	Y	na

Chemical	Value
SURR SPK ID	31106-21-06
IS ID	31106-21-06
LCS/MS ID	
CAL STD ID	31106-21-01/02
BFB ID	31106-21-06
pH Paper	634-64-11

FORM 2
WATER VOLATILE SURROGATE RECOVERY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030733

	CLIENT SAMPLE NO.	S1 #	S2 (DCE)#	S3 (TOL)#	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	CCB	94	90	106	95					0
02	VLCSW-200320	112	110	104	102					0
03	VBLKW1-20032	94	90	106	98					0
04	HS20030733-0	94	90	107	95					0
05	HS20030621-0	94	93	104	97					0
06	HS20030621-0	94	91	104	97					0
07	HS20030733-0	95	90	105	98					0
08	HS20030733-0	94	89	105	98					0
09	HS20030733-0	93	90	107	98					0
10	HS20030733-0	94	92	105	97					0
11										
12										
13										
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		QC LIMITS
S1	= Dibromofluoromethane	(70-130)
S2 (DCE)	= 1,2-Dichloroethane-d4	(70-130)
S3 (TOL)	= Toluene-d8	(70-130)
S4	= 4-Bromofluorobenzene	(70-130)

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKW1-200320

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030733

Lab File ID: Y032007 Lab Sample ID: VBLKW1-200320

Instrument ID: VOA6 Date Extracted:

Matrix: (soil/water) WATER Date Analyzed: 03/21/20

Level: (low/med) LOW Time Analyzed: 0029

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	CCB	CCB	Y032004	03/20/20
02	VLCSW-200320	VLCSW-200320	Y032005	03/20/20
03	HS20030733-0	HS20030733-09	Y032009	03/21/20
04	HS20030621-0	HS20030621-01M	Y032012	03/21/20
05	HS20030621-0	HS20030621-01M	Y032013	03/21/20
06	HS20030733-0	HS20030733-02	Y032024	03/21/20
07	HS20030733-0	HS20030733-04	Y032025	03/21/20
08	HS20030733-0	HS20030733-06	Y032026	03/21/20
09	HS20030733-0	HS20030733-07	Y032027	03/21/20
10				
11				
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COMMENTS:

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030733

Lab File ID: Y032001 DFTPP Injection Date: 03/20/20

Instrument ID: VOA6 DFTPP Injection Time: 2206

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	25.8
75	30.0 - 60.0% of mass 95	48.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.6 (1.0)1
174	Greater than 50.0% of mass 95	60.4
175	5.0 - 9.0% of mass 174	5.2 (8.6)1
176	95.0 - 101.0% of mass 174	59.2 (98.1)1
177	5.0 - 9.0% of mass 176	4.5 (7.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	Y032003	03/20/20	2253
02	CCB	CCB	Y032004	03/20/20	2317
03	VLCSW-200320	VLCSW-200320	Y032005	03/20/20	2341
04	VBLKW1-20032	VBLKW1-200320	Y032007	03/21/20	0029
05	HS20030733-0	HS20030733-09	Y032009	03/21/20	0118
06	HS20030621-0	HS20030621-01M	Y032012	03/21/20	0230
07	HS20030621-0	HS20030621-01M	Y032013	03/21/20	0254
08	HS20030733-0	HS20030733-02	Y032024	03/21/20	0719
09	HS20030733-0	HS20030733-04	Y032025	03/21/20	0743
10	HS20030733-0	HS20030733-06	Y032026	03/21/20	0807
11	HS20030733-0	HS20030733-07	Y032027	03/21/20	0831
12	CCV-END	CCV-END	Y032030	03/21/20	0943
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030733

Instrument ID: VOA6 Calibration Date: 03/20/20 Time: 2253

Lab File ID: Y032003 Init. Calib. Date(s): 03/19/20 03/19/20

Init. Calib. Times: 1134 1533

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Vinyl Chloride	0.7620000	0.7895163	0.7895163	0.1	-3.61	50.00	AVRG
1,1-Dichloroethene	0.4240000	0.4397039	0.4397039	0.1	-3.70	50.00	AVRG
Methylene Chloride	50.332921	50.000000	0.6039676	0.1	-0.66	50.00	LINR
cis-1,2-Dichloroethene	0.5690000	0.6221093	0.6221093	0.1	-9.33	50.00	AVRG
1,2-Dichloroethane	0.5280000	0.5584066	0.5584066	0.1	-5.76	50.00	AVRG
Trichloroethene	0.3460000	0.3558225	0.3558225	0.2	-2.84	50.00	AVRG
1,1,2-Trichloroethane	0.2880000	0.2898709	0.2898709	0.1	-0.65	50.00	AVRG
Dibromofluoromethane	51.754674	50.000000	0.5716971	0.1	-3.51	50.00	LINR
1,2-Dichloroethane-d4	50.092057	50.000000	0.6951615	0.1	-0.18	50.00	LINR
Toluene-d8	50.023224	50.000000	1.3479837	0.1	-0.05	50.00	LINR
4-Bromofluorobenzene	49.796194	50.000000	0.4970487	0.1	0.41	50.00	LINR

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030733

Instrument ID: VOA6 Calibration Date: 03/21/20 Time: 0943

Lab File ID: Y032030 Init. Calib. Date(s): 03/19/20 03/19/20

Init. Calib. Times: 1134 1533

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Vinyl Chloride	0.7620000	0.7895163	0.7895163	0.1	-3.61	50.00	AVRG
1,1-Dichloroethene	0.4240000	0.4397039	0.4397039	0.1	-3.70	50.00	AVRG
Methylene Chloride	56.947251	50.000000	0.6039676	0.1	-13.89	50.00	LINR
cis-1,2-Dichloroethene	0.5690000	0.6221093	0.6221093	0.1	-9.33	50.00	AVRG
1,2-Dichloroethane	0.5280000	0.5584066	0.5584066	0.1	-5.76	50.00	AVRG
Trichloroethene	0.3460000	0.3558225	0.3558225	0.2	-2.84	50.00	AVRG
1,1,2-Trichloroethane	0.2880000	0.2898709	0.2898709	0.1	-0.65	50.00	AVRG
Dibromofluoromethane	57.554904	50.000000	0.5716971	0.1	-15.11	50.00	LINR
1,2-Dichloroethane-d4	55.349095	50.000000	0.6951615	0.1	-10.70	50.00	LINR
Toluene-d8	52.625652	50.000000	1.3479837	0.1	-5.25	50.00	LINR
4-Bromofluorobenzene	51.673240	50.000000	0.4970487	0.1	-3.35	50.00	LINR

FORM VII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

outputFile debug: C:\tp\envision\results\HS20030733/08bc.01 Lab Code: AL

Lab File ID (Standard): Y032003 Date Analyzed: 03/20/20

Instrument ID: VOA6 Time Analyzed: 2253

		IS1 AREA #	RT #	IS2 (DFB) AREA #	RT #	IS3 (CBZ) AREA #	RT #
	12 HOUR STD	304535	4.18	474839	4.97	434388	7.67
	UPPER LIMIT	609070	4.68	949678	5.47	868776	8.17
	LOWER LIMIT	152268	3.68	237420	4.47	217194	7.17
	CLIENT SAMPLE NO.						
01	CCB	380065	4.18	562840	4.97	486716	7.67
02	VLCSW-200320	299957	4.18	480944	4.97	440920	7.67
03	VBLKW1-20032	394085	4.18	585058	4.97	507145	7.67
04	HS20030733-0	401483	4.18	590305	4.97	506444	7.67
05	HS20030621-0	381564	4.18	565201	4.97	491322	7.67
06	HS20030621-0	379651	4.18	565579	4.97	494280	7.67
07	HS20030733-0	403500	4.18	596323	4.97	512733	7.67
08	HS20030733-0	405708	4.18	603209	4.97	526825	7.67
09	HS20030733-0	403994	4.18	599819	4.97	507854	7.67
10	HS20030733-0	395991	4.18	589533	4.97	506907	7.67
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

outputFile debug: C:\tp\envision\results\HS20030733/08bc.01 Lab Code: AL

Lab File ID (Standard): Y032003 Date Analyzed: 03/20/20

Instrument ID: VOA6 Time Analyzed: 2253

		IS4 (DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	210243	9.67				
	UPPER LIMIT	420486	10.17				
	LOWER LIMIT	105122	9.17				
	CLIENT SAMPLE NO.						
01	CCB	216160	9.67				
02	VLCSW-200320	216321	9.67				
03	VBLKW1-20032	241728	9.67				
04	HS20030733-0	228511	9.67				
05	HS20030621-0	230380	9.66				
06	HS20030621-0	239783	9.67				
07	HS20030733-0	234168	9.67				
08	HS20030733-0	245731	9.66				
09	HS20030733-0	232354	9.67				
10	HS20030733-0	231027	9.67				
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032001.D

Date : 20-MAR-2020 22:06

Client ID: BFB

Instrument: voa6.i

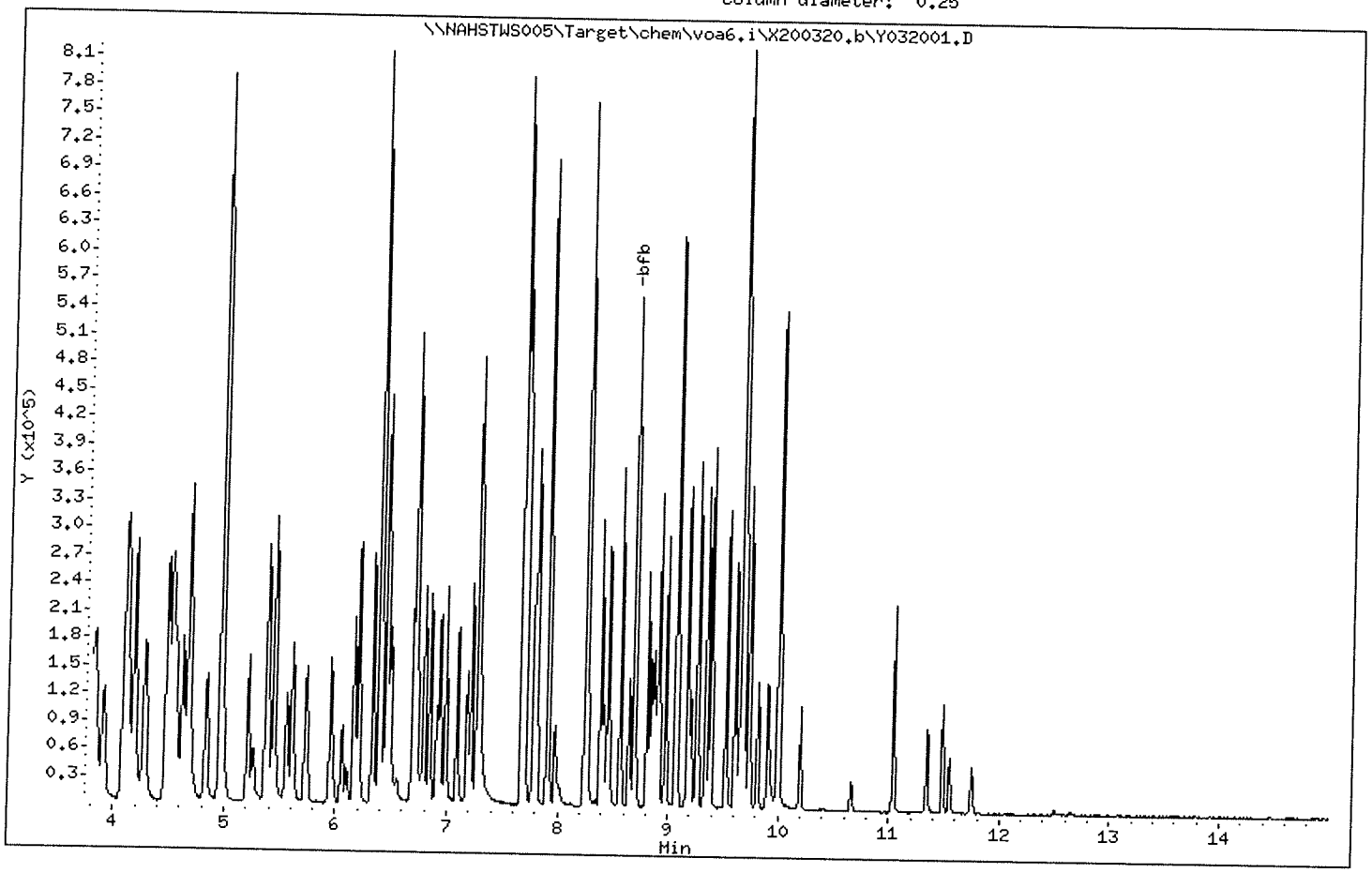
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032001.D

Date : 20-MAR-2020 22:06

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

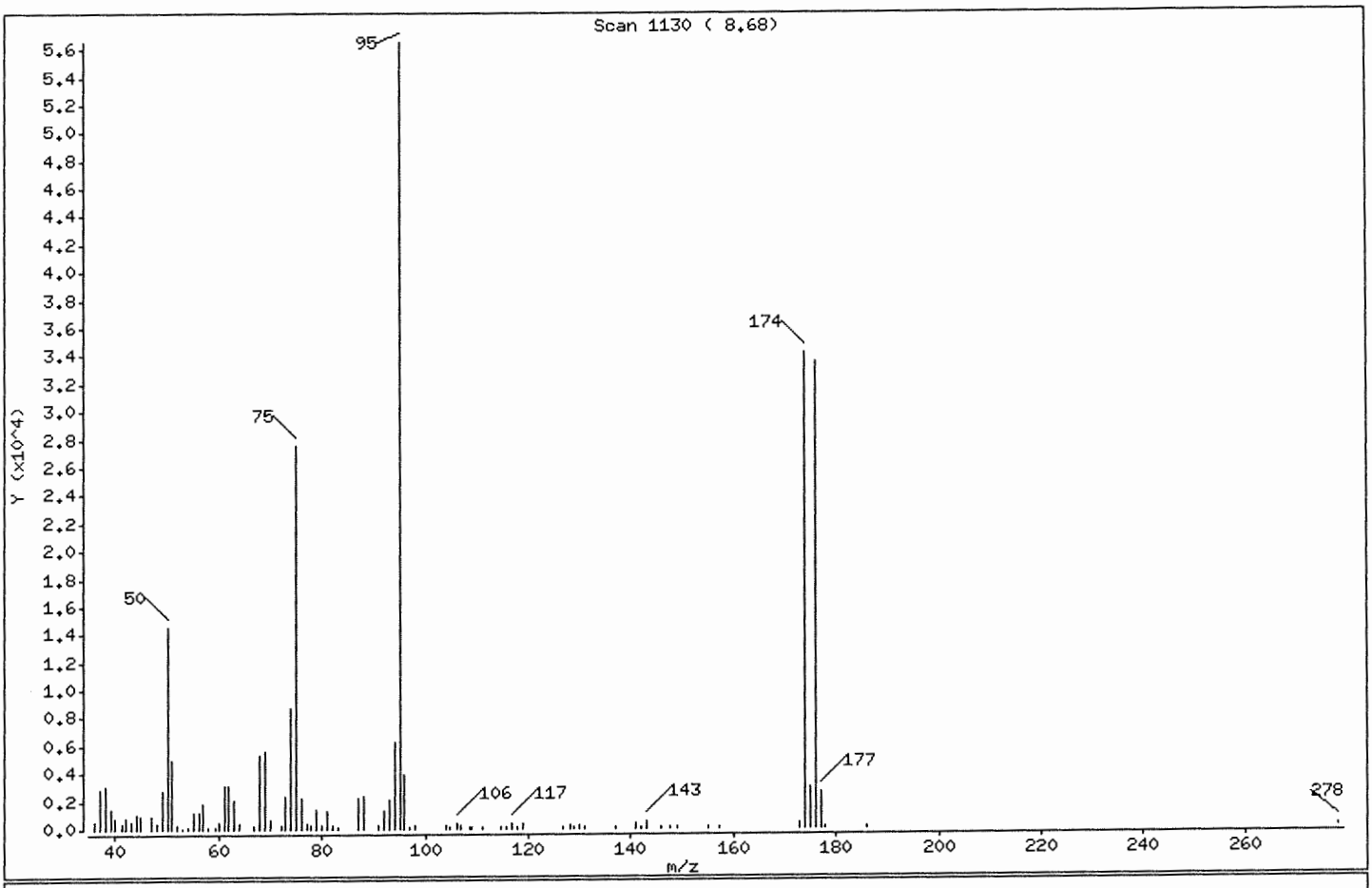
Volume Injected (uL): 2.0

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	25.78
75	30.00 - 60.00% of mass 95	48.79
96	5.00 - 9.00% of mass 95	6.91
173	Less than 2.00% of mass 174	0.59 (0.98)
174	Greater than 50.00% of mass 95	60.42
175	5.00 - 9.00% of mass 174	5.18 (8.57)
176	95.00 - 101.00% of mass 174	59.25 (98.06)
177	5.00 - 9.00% of mass 176	4.55 (7.67)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032001.D

Date : 20-MAR-2020 22:06

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: Y032001.D
Spectrum: Scan 1130 (8.68)
Location of Maximum: 95.00
Number of points: 88

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.90	531	59.90	583	91.00	275	129.80	244
37.10	2880	61.00	3164	92.10	1297	130.90	80
38.00	3129	62.00	3117	92.90	2045	136.90	94
39.10	1412	63.00	2087	94.10	6250	140.90	390
39.90	715	64.00	331	95.00	56536	141.90	185
41.20	390	66.90	197	96.00	3904	142.90	520
42.00	769	68.00	5373	96.90	90	146.00	68
43.10	570	69.00	5628	98.00	195	147.80	148
44.00	1021	70.10	610	103.90	263	148.90	116
45.00	874	72.00	238	104.90	142	155.00	165
47.00	943	73.00	2302	106.00	339	157.10	81
48.00	429	74.00	8763	107.00	218	172.80	336
49.00	2702	75.00	27584	108.70	87	174.00	34160
50.00	14577	76.00	2192	109.10	74	175.00	2929
51.00	4904	77.00	353	111.00	65	176.00	33496
52.00	252	77.90	207	114.80	130	177.00	2570
53.10	51	78.90	1419	115.90	132	177.90	85
53.90	190	79.90	299	116.90	397	186.00	89
55.10	1146	81.00	1287	117.90	177	278.20	76
56.10	1178	82.00	268	118.90	355		
57.00	1763	83.10	77	126.90	120		
58.10	147	87.00	2200	128.00	233		
59.20	157	88.00	2287	129.00	93		

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032003.D Page 1
Report Date: 15-Apr-2020 12:24

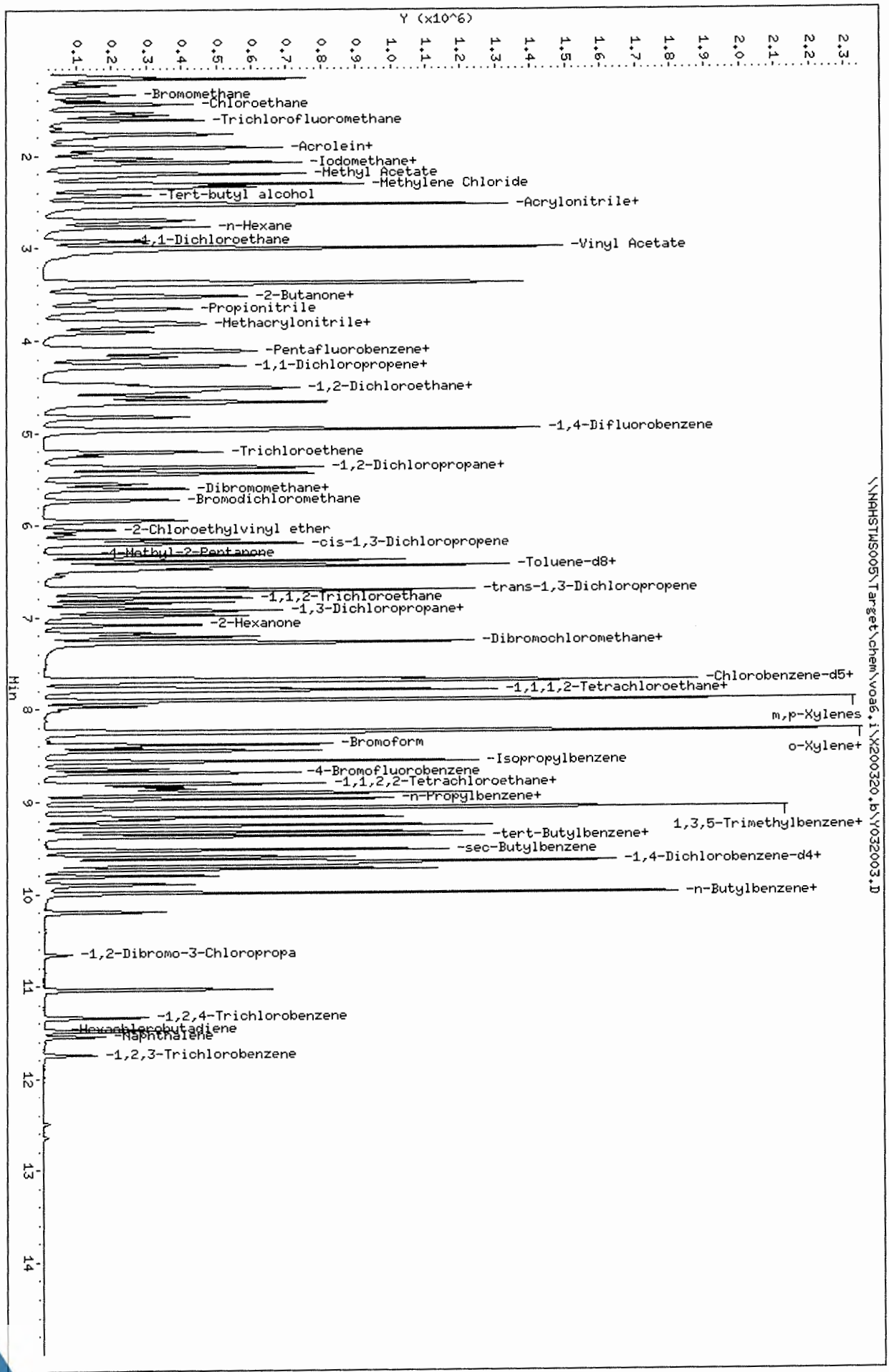
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032003.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 20-MAR-2020 22:53
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:24 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 32 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	304535	50.0000	
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	156589	50.0000	51.75
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	191651	50.0000	50.09
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	474839	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	434388	50.0000	
$	48 Toluene-d8	98	6.388	6.388	(0.833)	556633	50.0000	50.02
$	69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	208143	50.0000	49.79
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	210243	50.0000	
	5 Vinyl Chloride	62	1.138	1.138	(0.272)	221860	50.0000	47.81
	11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	123797	50.0000	47.97
	17 Methylene Chloride	84	2.305	2.305	(0.551)	163084	50.0000	50.33
	27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	171710	50.0000	49.51
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	244558	50.0000	48.74
	38 Trichloroethene	130	5.207	5.207	(1.048)	165636	50.0000	50.32
	53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	119764	50.0000	47.85



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032003.D
Date : 20-MAR-2020 22:53
Client ID: CCV
Sample Info: CCV;CCV;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032004.D Page 1
Report Date: 15-Apr-2020 12:24

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032004.D
Lab Smp Id: CCB Client Smp ID: CCB
Inj Date : 20-MAR-2020 23:17
Operator : PC Inst ID: voa6.i
Smp Info : CCB;CCB;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:24 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 33
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

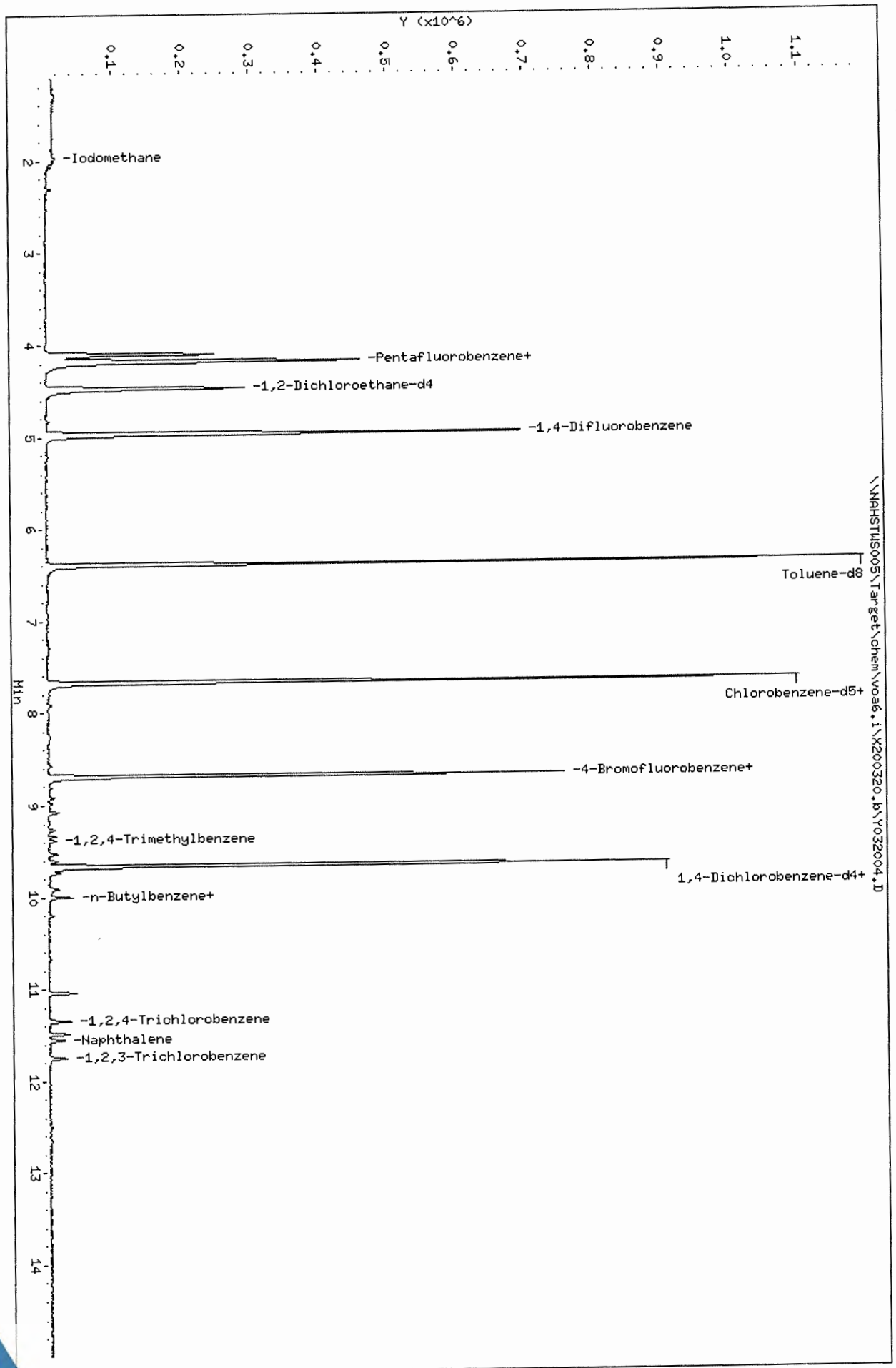
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	380065	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	177568	47.0156	47.01
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	214169	44.8367	44.83
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	562840	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	486716	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	664245	53.2811	53.28
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	222062	47.3909	47.39
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	216160	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032004.D
Date : 20-MAR-2020 23:17
Client ID: CCB
Sample Info: CCB;CCB;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



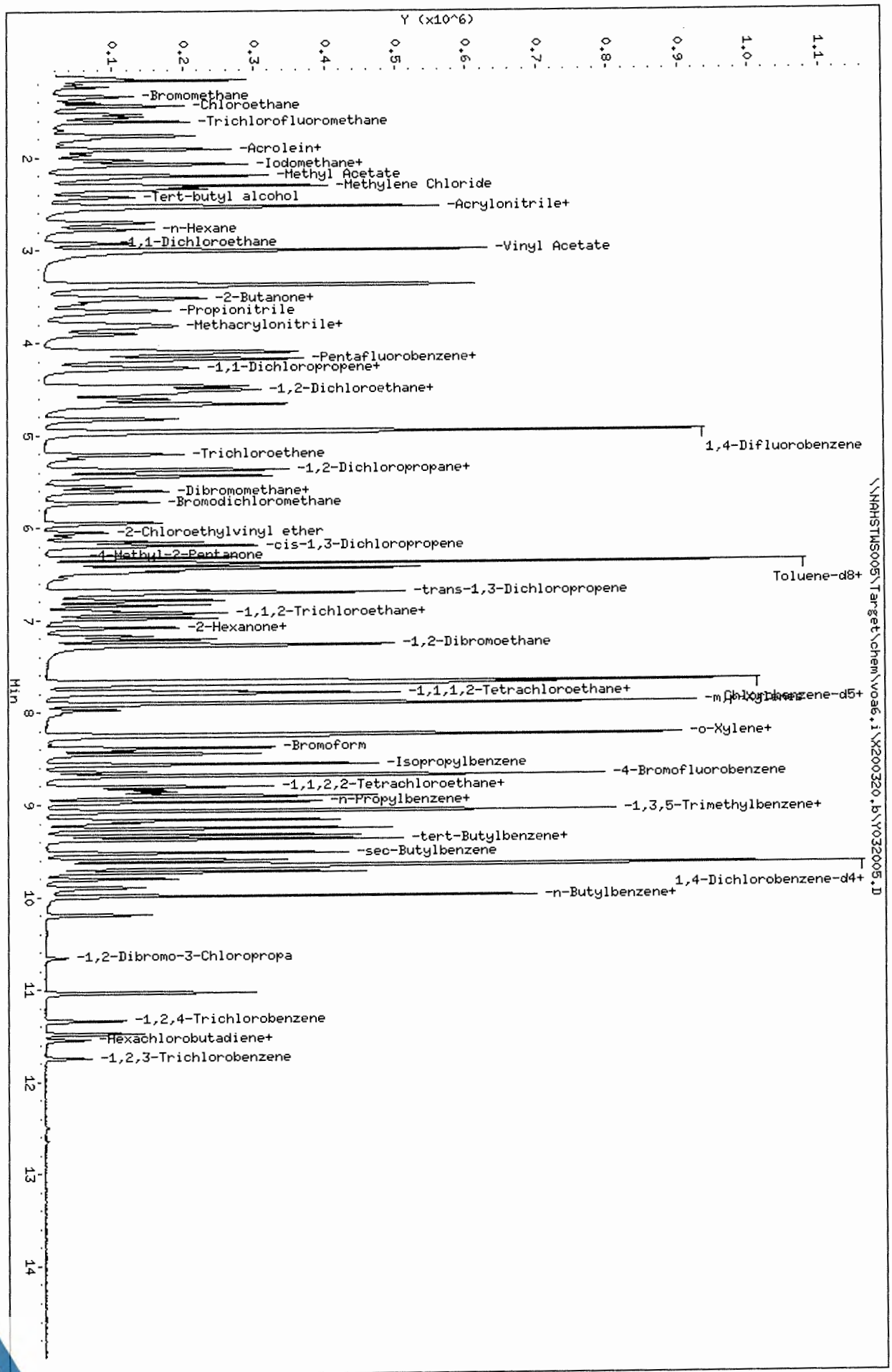
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032005.D
Lab Smp Id: VLCSW-200320 Client Smp ID: VLCSW-200320
Inj Date : 20-MAR-2020 23:41
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-200320;VLCSW-200320;3;;LCS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:24 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 34 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	299957	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	167519	56.2215	56.22
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	207135	54.9808	54.98
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	480944	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	440920	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	585022	51.7983	51.79
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	217321	51.2358	51.23
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	216321	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	82662	18.0885	18.08
11 1,1-Dichloroethene	96	1.911	1.912	(0.457)	47585	18.7215	18.72
17 Methylene Chloride	84	2.305	2.305	(0.551)	68463	20.6407	20.64
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	69069	20.2196	20.21
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	100749	19.8281	19.82
38 Trichloroethene	130	5.206	5.207	(1.048)	65300	19.5892	19.58
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	50537	19.8942	19.89



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032005.D
Date : 20-MAR-2020 23:41
Client ID: VLCSW-200320
Sample Info: VLCSW-200320;VLCSW-200320;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032007.D
Lab Smp Id: VBLKW1-200320 Client Smp ID: VBLKW1-200320
Inj Date : 21-MAR-2020 00:29
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW1-200320;VBLKW1-200320;3;;BLANK
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:24 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 36 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

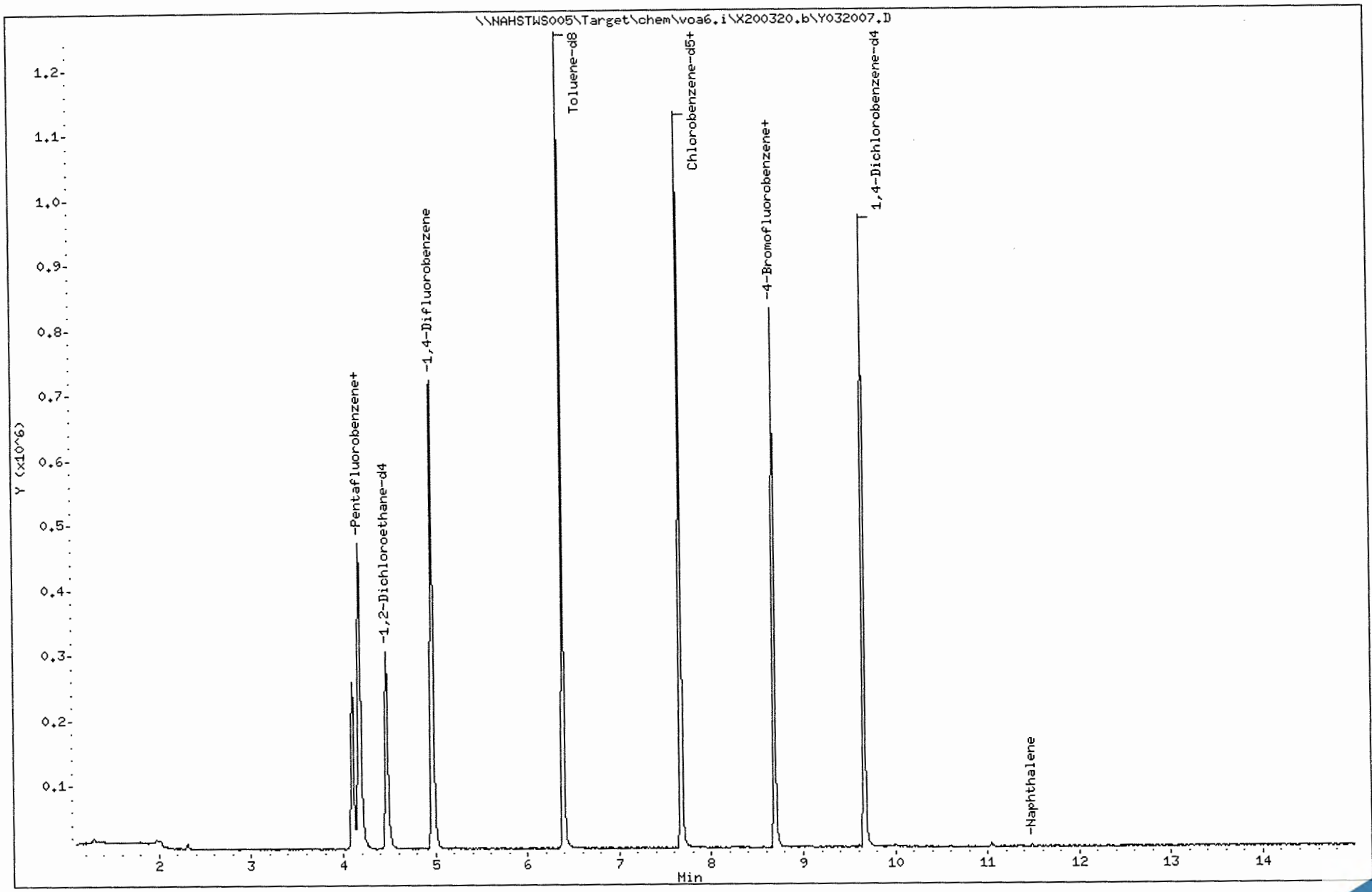
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	394085	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	184522	47.1189	47.11
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	222628	44.9499	44.94
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	585058	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	507145	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	690327	53.1425	53.14
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	239410	49.0521	49.05
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	241728	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032007.D
Date : 21-MAR-2020 00:29
Client ID: VBLKW1-200320
Sample Info: VBLKW1-200320;VBLKW1-200320;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i

Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032009.D Page 1
Report Date: 15-Apr-2020 12:24

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032009.D
Lab Smp Id: HS20030733-09 Client Smp ID: HS20030733-09
Inj Date : 21-MAR-2020 01:18
Operator : PC Inst ID: voa6.i
Smp Info : HS20030733-09;HS20030733-09;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:24 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 38
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

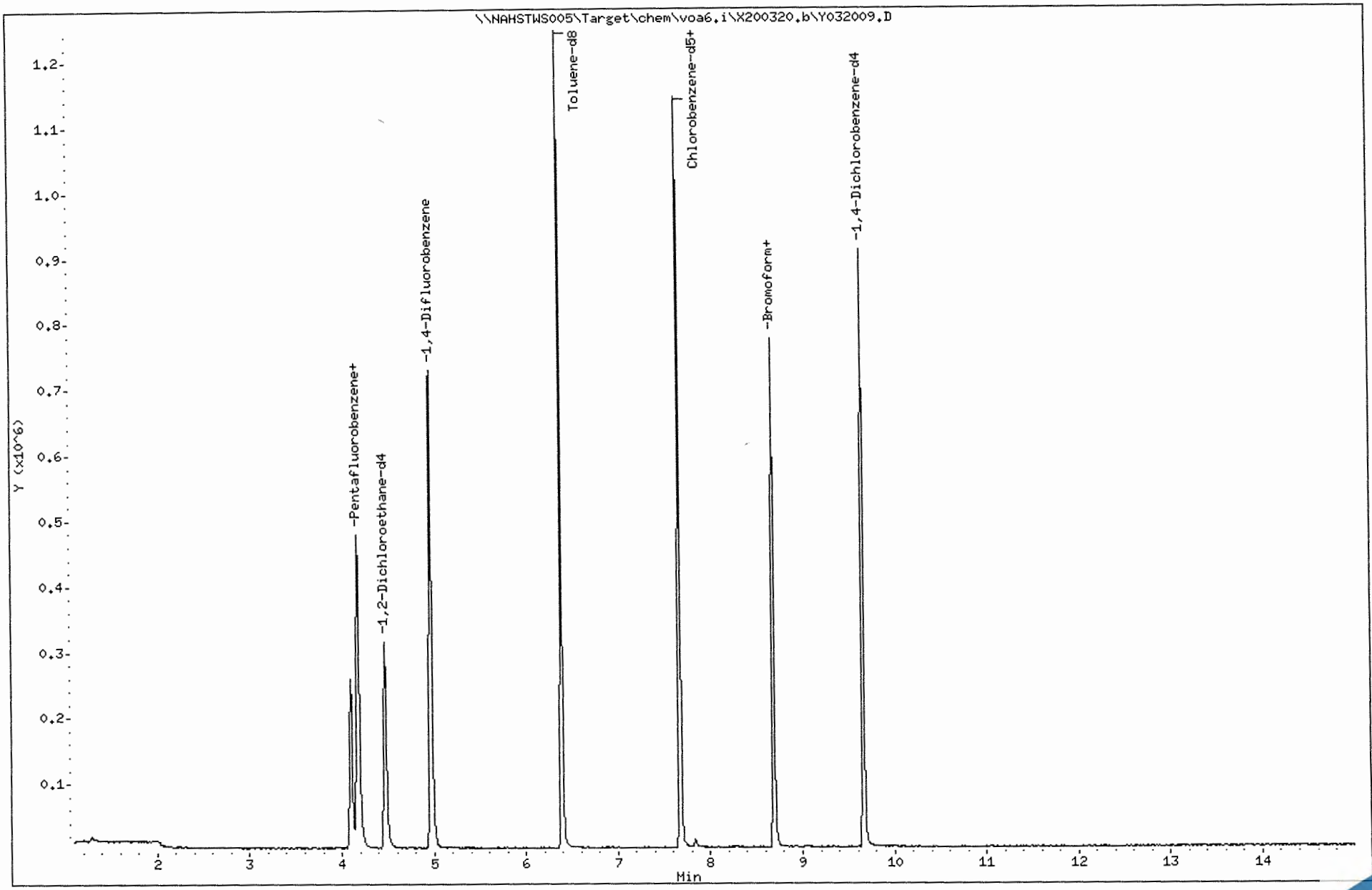
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	401483	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	187434	46.9802	46.98
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	228242	45.2352	45.23
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	590305	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	506444	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	694351	53.5268	53.52
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	232457	47.6798	47.67
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	228511	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032009.D
Date : 21-MAR-2020 01:18
Client ID: HS20030733-09
Sample Info: HS20030733-09;HS20030733-09;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i

Operator: PC
Column diameter: 0.18



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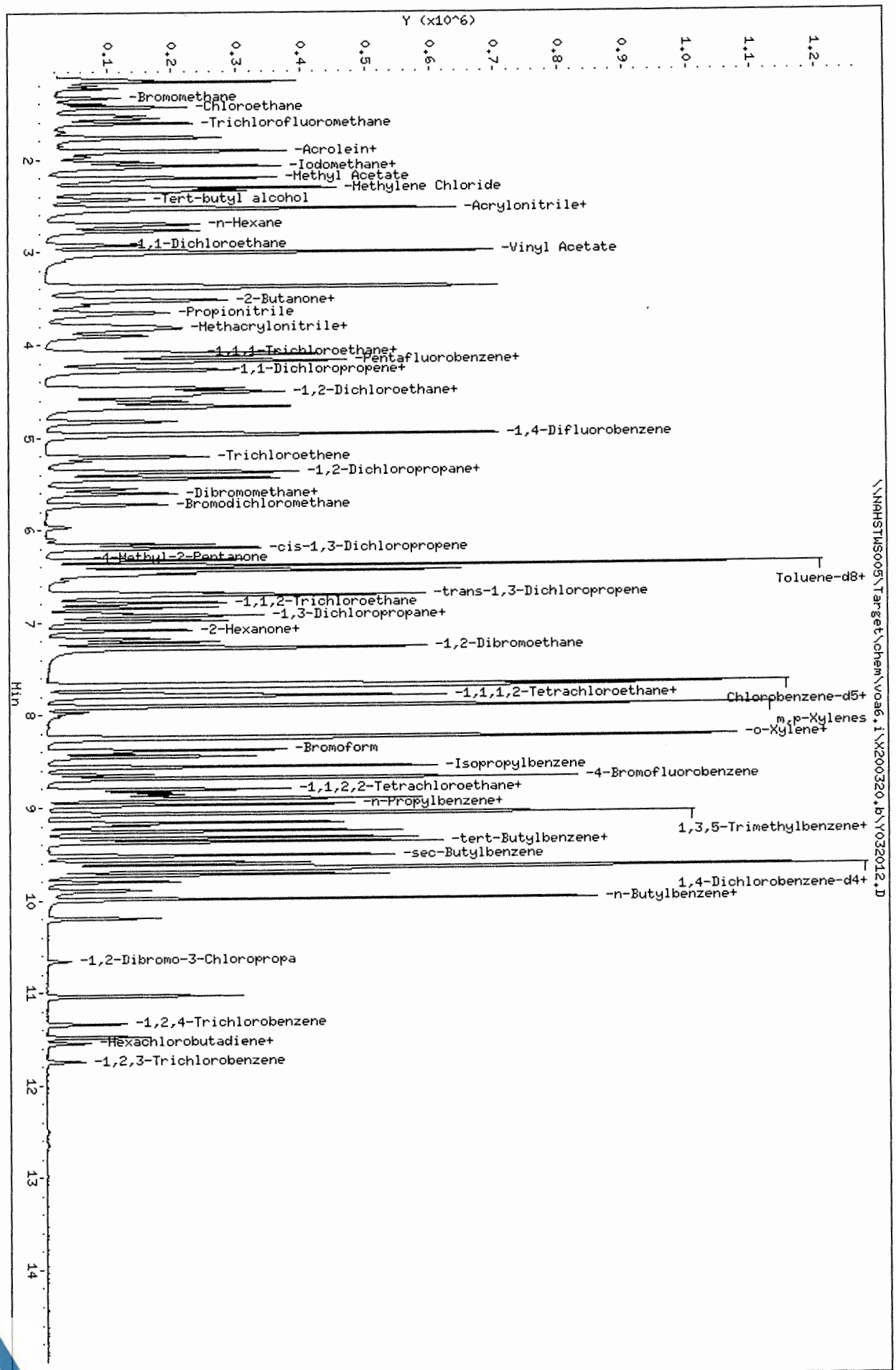
Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032012.D
Lab Smp Id: HS20030621-01MS Client Smp ID: HS20030621-01MS
Inj Date : 21-MAR-2020 02:30
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-01MS;HS20030621-01MS;3;;MS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:24 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 41 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	381564	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	179086	47.2317	47.23
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	222732	46.4519	46.45
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	565201	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	491322	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	658084	52.2906	52.29
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	230333	48.7088	48.70
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	230380	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	112987	19.4364	19.43
11 1,1-Dichloroethene	96	1.911	1.912	(0.457)	60997	18.8656	18.86
17 Methylene Chloride	84	2.305	2.305	(0.551)	79404	18.6944	18.69
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	85955	19.7812	19.78
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	114988	19.2568	19.25
38 Trichloroethene	130	5.206	5.207	(1.048)	82290	21.0059	21.00
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	56680	20.0235	20.02



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032012.D
Date : 21-MAR-2020 02:30
Client ID: HS20030621-01MS
Sample Info: HS20030621-01MS;HS20030621-01MS;3;;MS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032013.D Page 1
Report Date: 15-Apr-2020 12:24

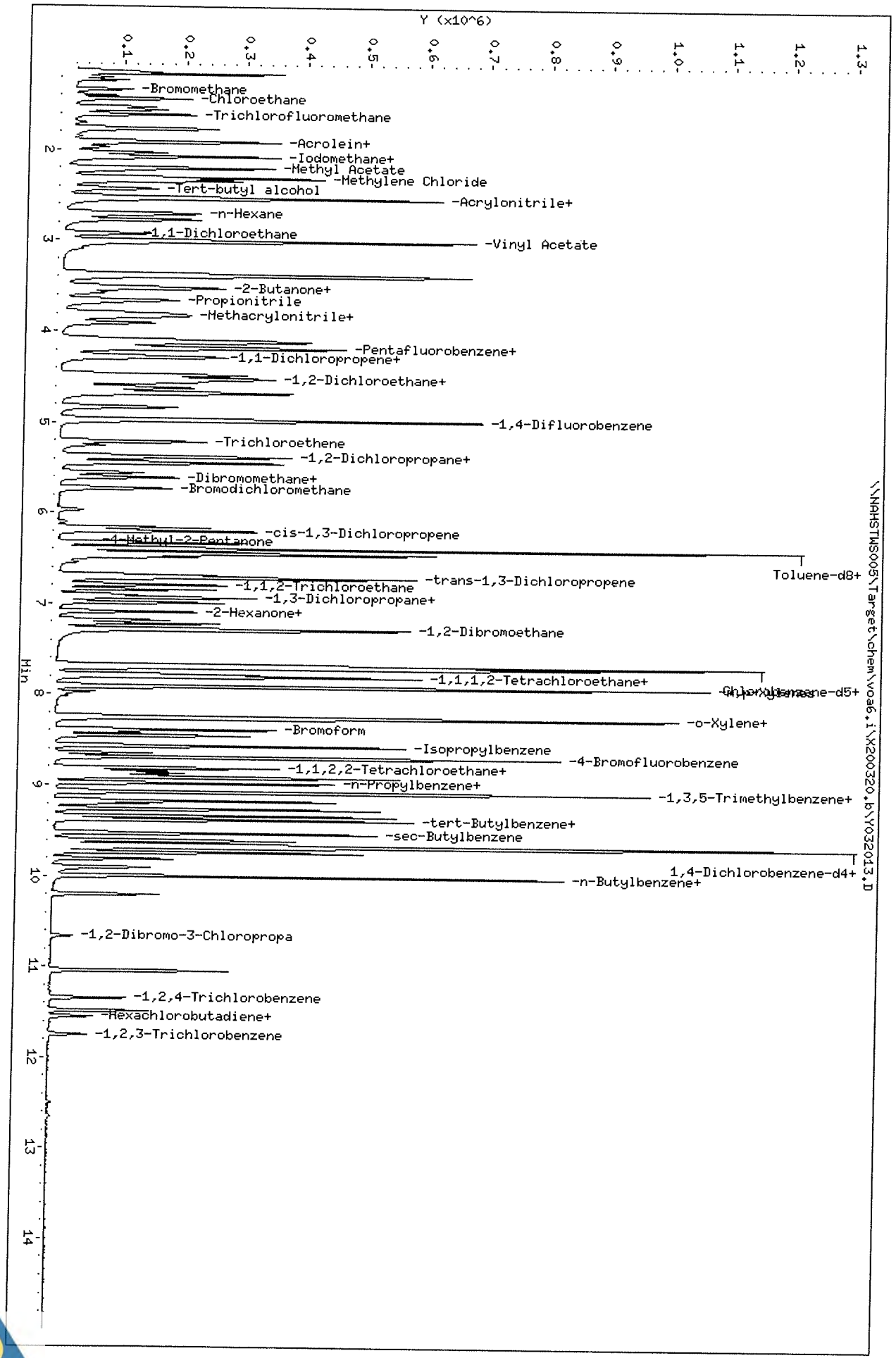
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032013.D
Lab Smp Id: HS20030621-01MSD Client Smp ID: HS20030621-01MSD
Inj Date : 21-MAR-2020 02:54
Operator : PC Inst ID: voa6.i
Smp Info : HS20030621-01MSD;HS20030621-01MSD;3;;MSD
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:24 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 41 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	379651	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	177780	47.1233	47.12
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	218099	45.7123	45.71
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	565579	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	494280	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	661242	52.2270	52.22
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	231786	48.7228	48.72
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	239783	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	100992	17.4606	17.46
11 1,1-Dichloroethene	96	1.911	1.912	(0.457)	56809	17.6589	17.65
17 Methylene Chloride	84	2.305	2.305	(0.551)	74541	17.5580	17.55
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	80706	18.6668	18.66
33 1,2-Dichloroethane	62	4.555	4.562	(0.916)	116598	19.5134	19.51
38 Trichloroethene	130	5.206	5.207	(1.048)	77581	19.7906	19.79
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	56173	19.7256	19.72



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Date : 21-MAR-2020 02:54
Client ID: HS20030621-01MSD
Sample Info: HS20030621-01MSD;HS20030621-01MSD;3;;MSD
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032024.D Page 1
Report Date: 15-Apr-2020 12:28

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Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032024.D
Lab Smp Id: HS20030733-02 Client Smp ID: HS20030733-02
Inj Date : 21-MAR-2020 07:19
Operator : PC Inst ID: voa6.i
Smp Info : HS20030733-02;HS20030733-02;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:28 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 52
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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

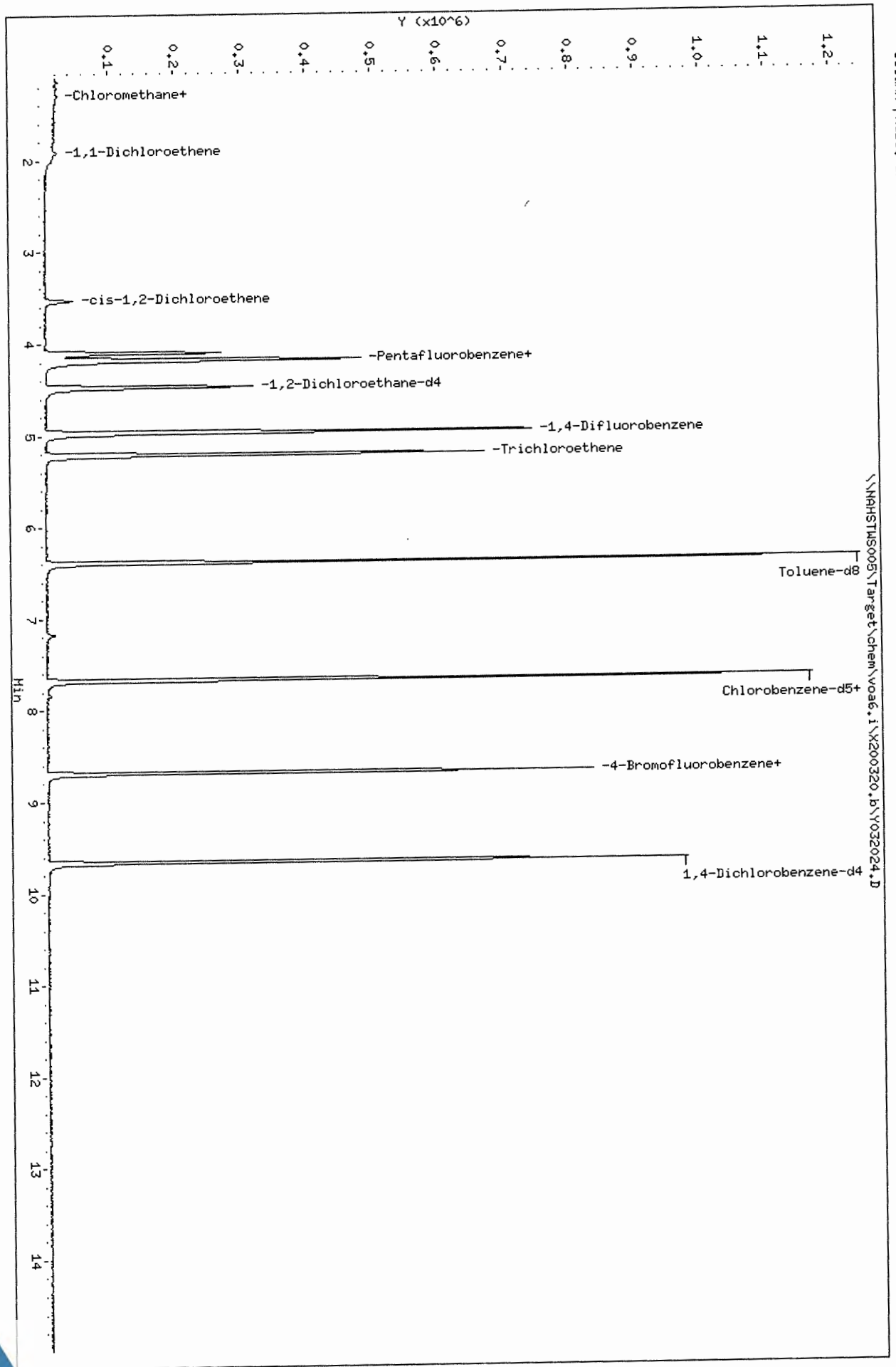
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	403500	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	190405	47.4875	47.48
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	228661	45.0912	45.09
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	596323	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	512733	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	687750	52.3660	52.36
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	242214	49.0861	49.08
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	234168	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	4218	0.68615	0.68(a)
11 1,1-Dichloroethene	96	1.919	1.911	(0.459)	2221	0.64958	0.64(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	19286	4.19708	4.19(a)
38 Trichloroethene	130	5.207	5.206	(1.048)	215515	52.1426	52.14

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032024.D
Date : 21-MAR-2020 07:19
Client ID: HS20030733-02
Sample Info: HS20030733-02;HS20030733-02;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032024.D

Date : 21-MAR-2020 07:19

Client ID: HS20030733-02

Instrument: voa6.i

Sample Info: HS20030733-02;HS20030733-02;;;

Purge Volume: 5.0

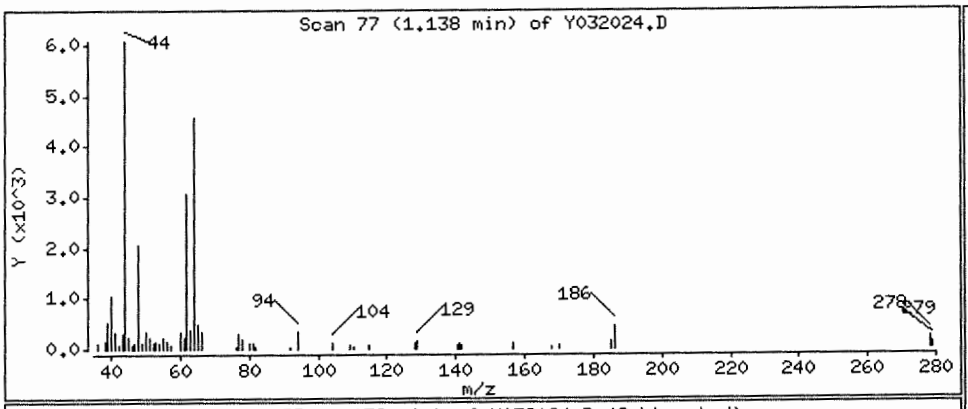
Operator: PC

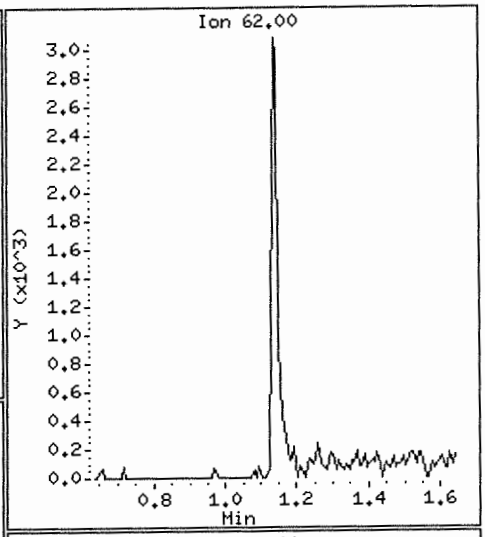
Column phase: DB624

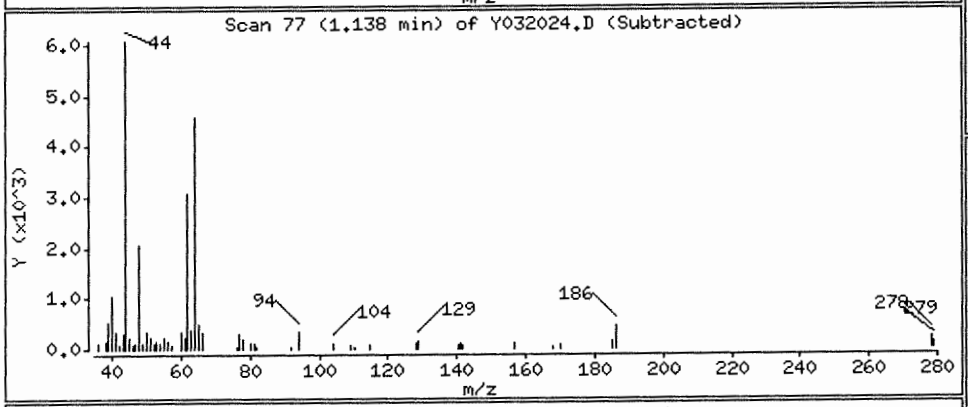
Column diameter: 0.18

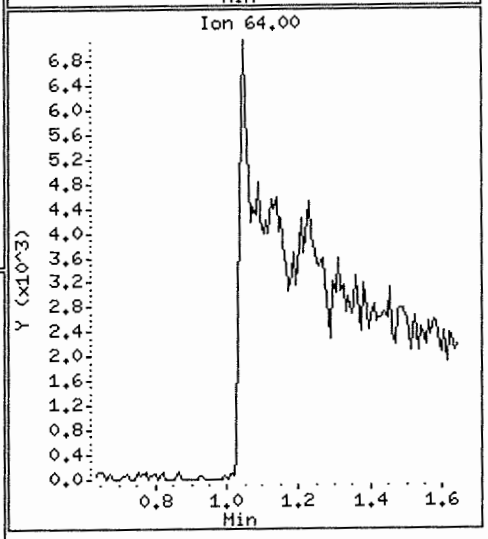
5 Vinyl Chloride

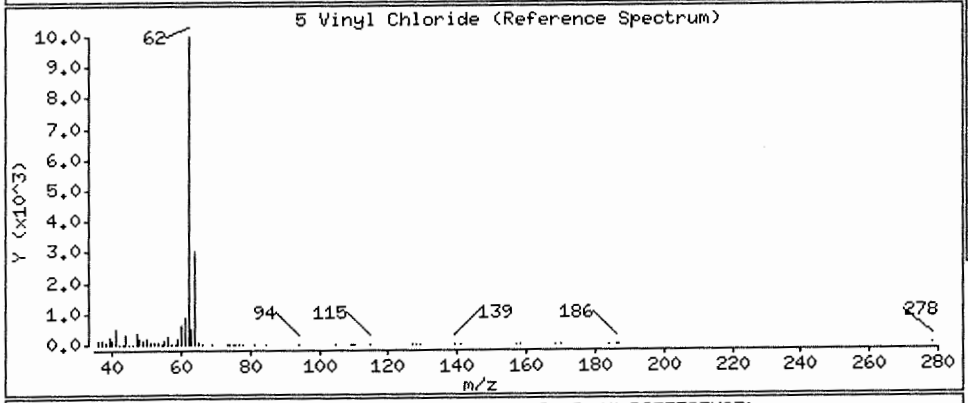
Concentration: 0.68 ug/l

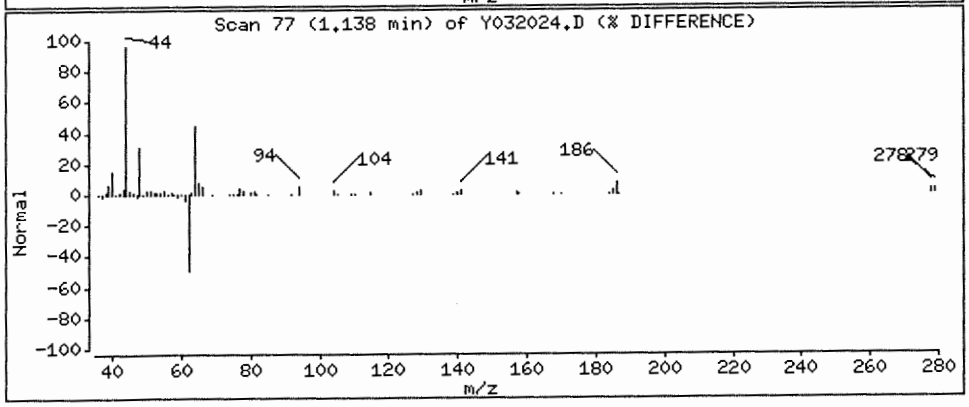












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032024.D

Date : 21-MAR-2020 07:19

Client ID: HS20030733-02

Instrument: voa6.i

Sample Info: HS20030733-02;HS20030733-02;;;

Purge Volume: 5.0

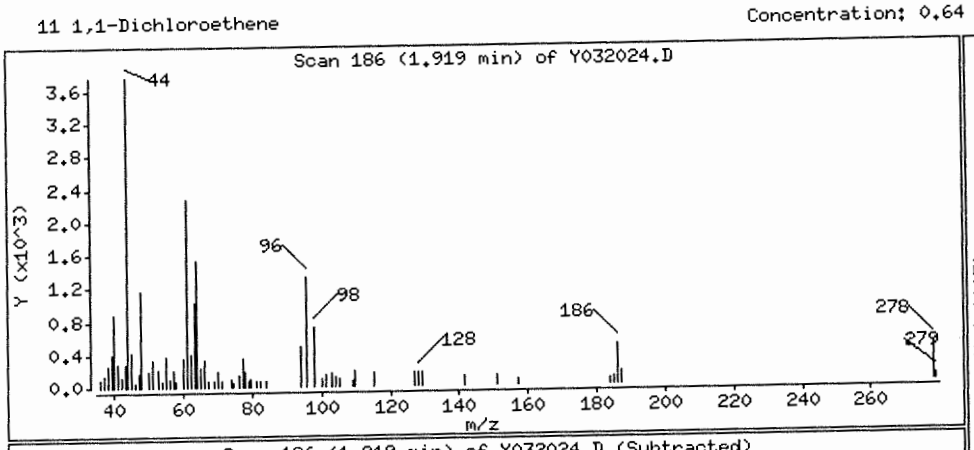
Operator: PC

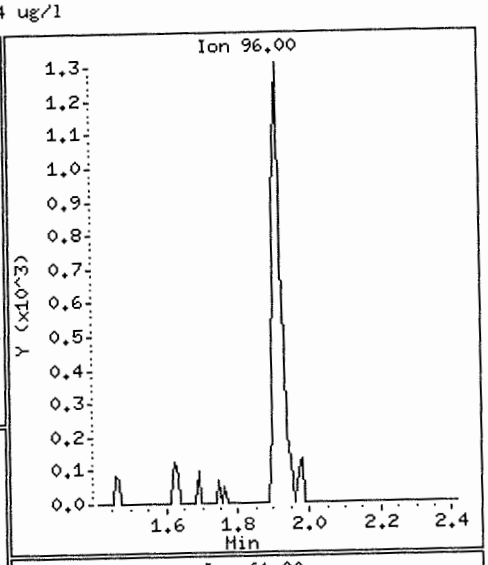
Column phase: DB624

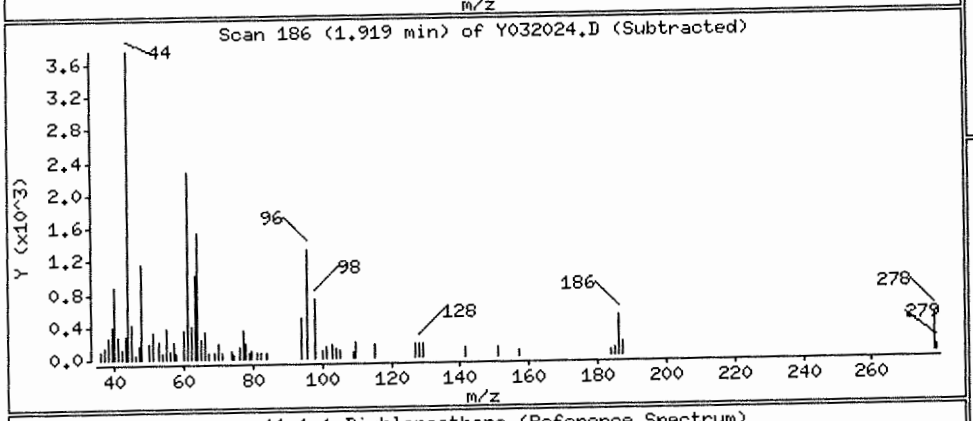
Column diameter: 0.18

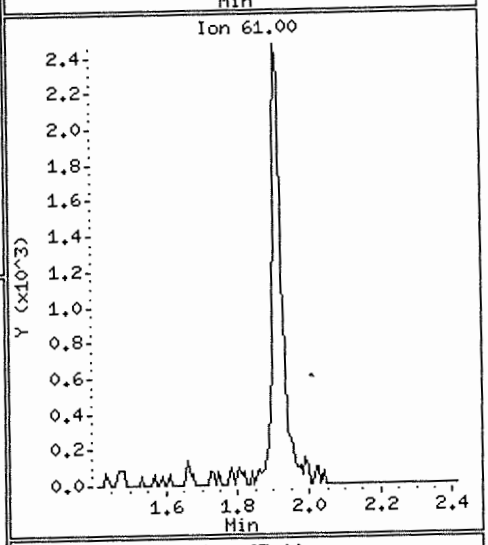
11 1,1-Dichloroethene

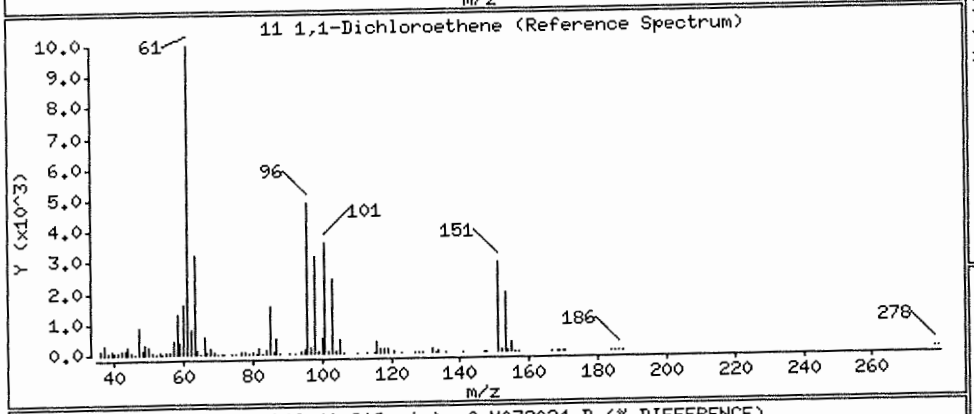
Concentration: 0.64 ug/l

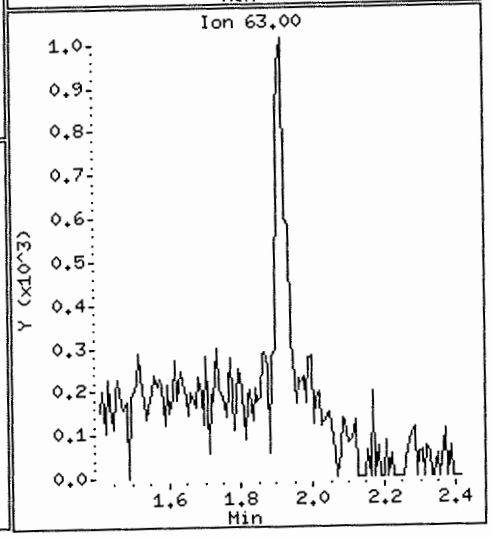


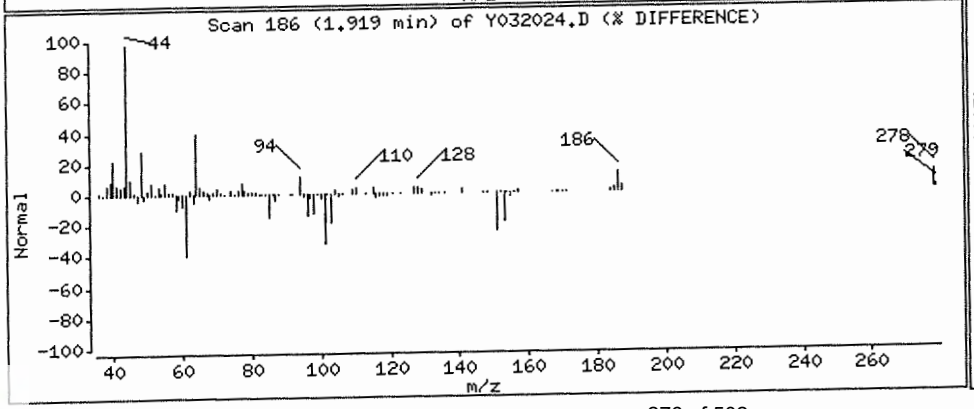












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032024.D

Date : 21-MAR-2020 07:19

Client ID: HS20030733-02

Instrument: voa6.i

Sample Info: HS20030733-02;HS20030733-02;;;

Purge Volume: 5.0

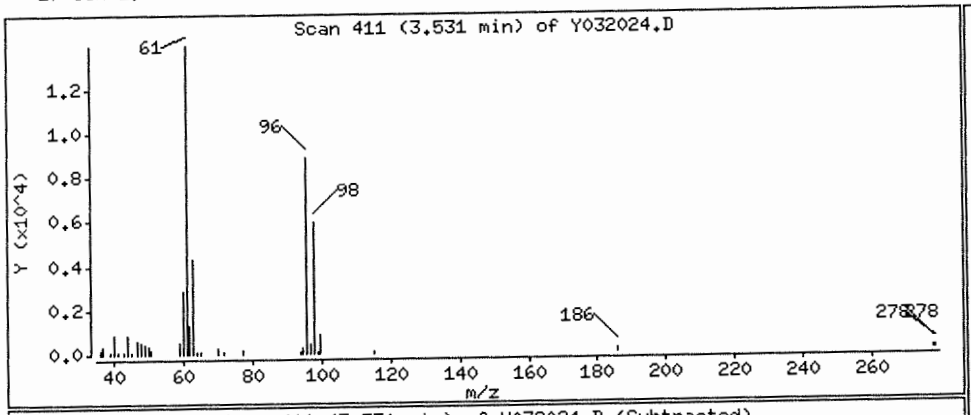
Operator: PC

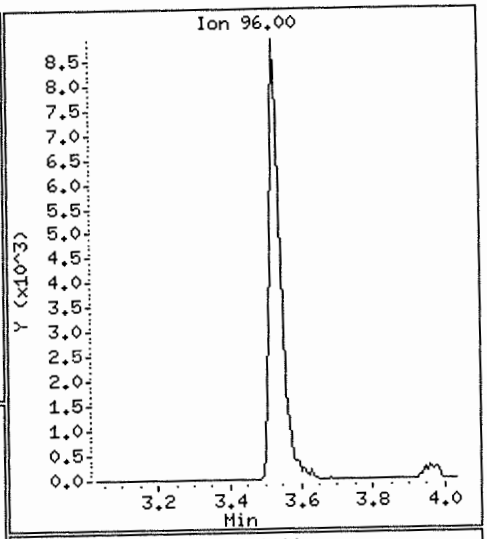
Column phase: DB624

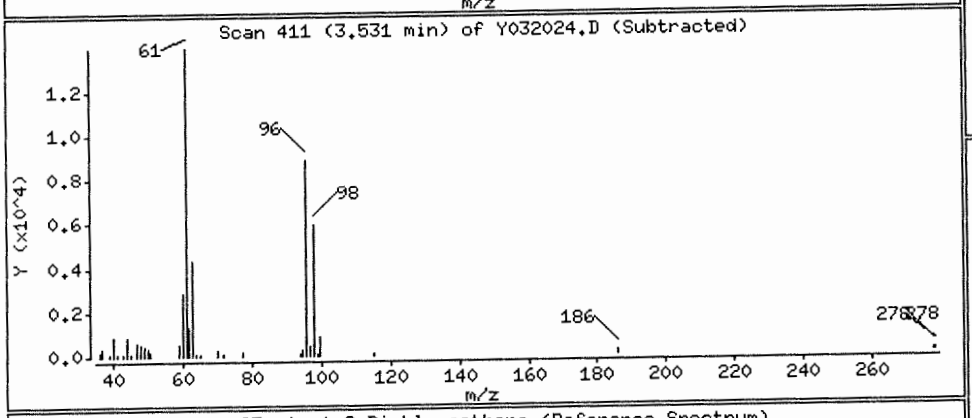
Column diameter: 0.18

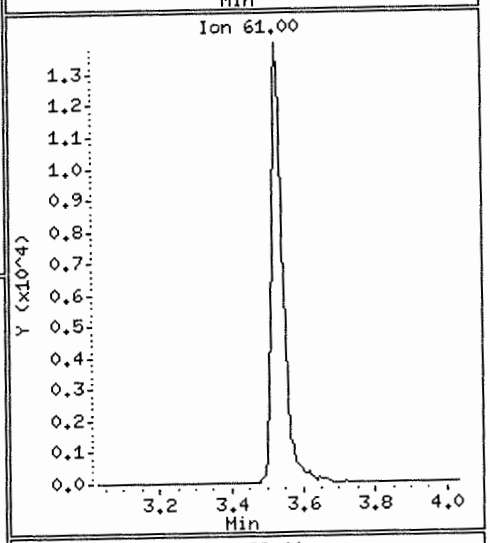
27 cis-1,2-Dichloroethene

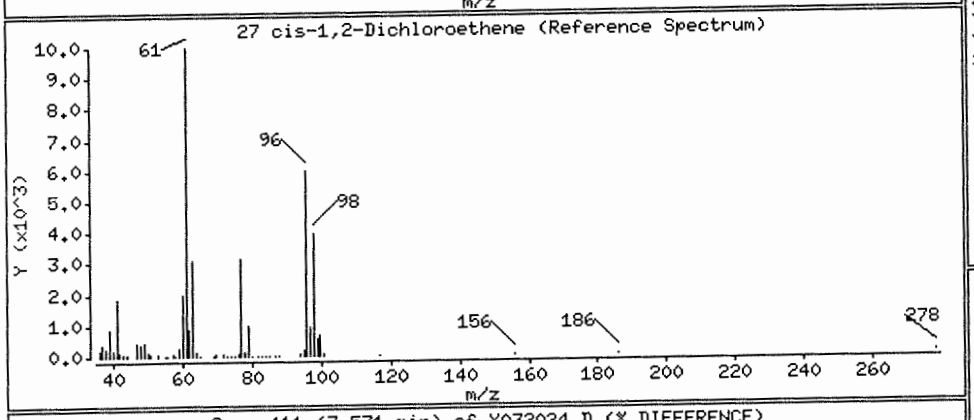
Concentration: 4.19 ug/l

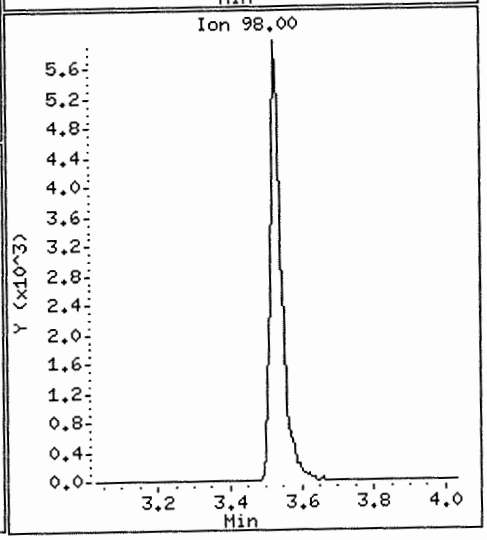


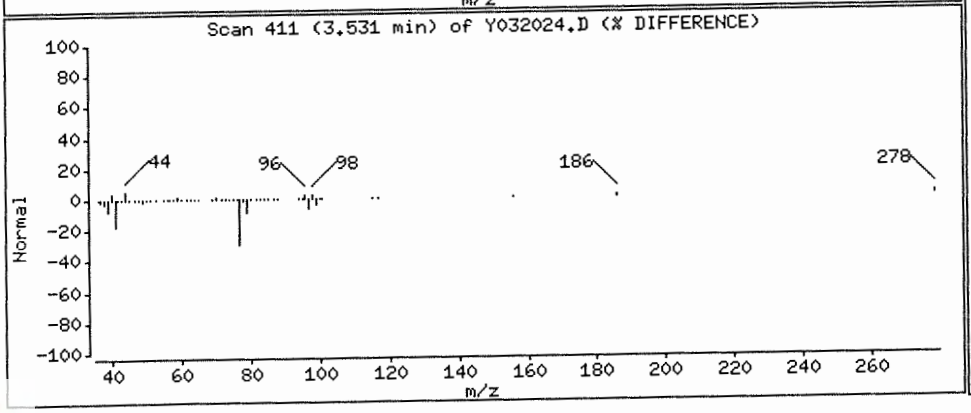












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032024.D

Date : 21-MAR-2020 07:19

Client ID: HS20030733-02

Instrument: voa6.i

Sample Info: HS20030733-02;HS20030733-02;;;

Purge Volume: 5.0

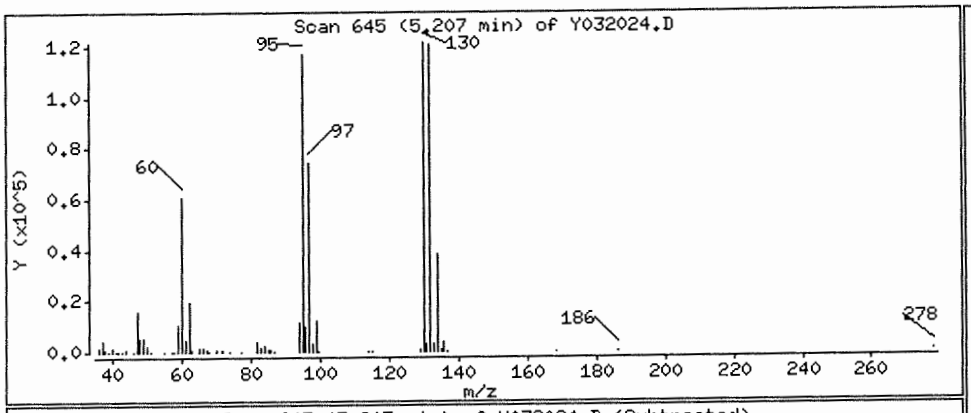
Operator: PC

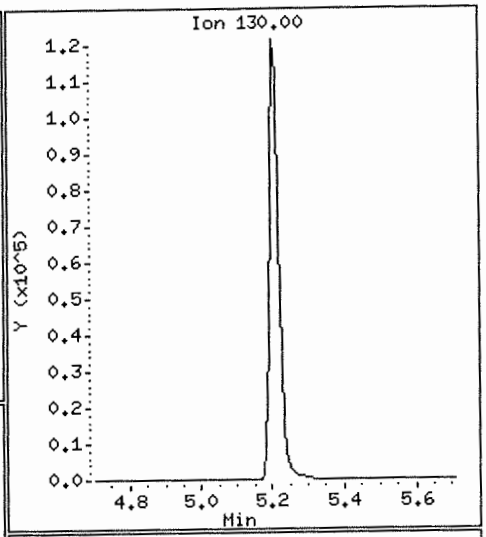
Column phase: DB624

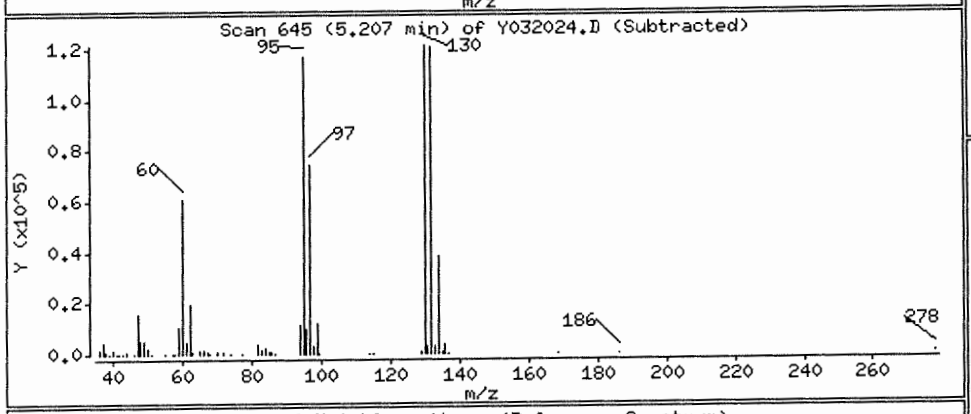
Column diameter: 0.18

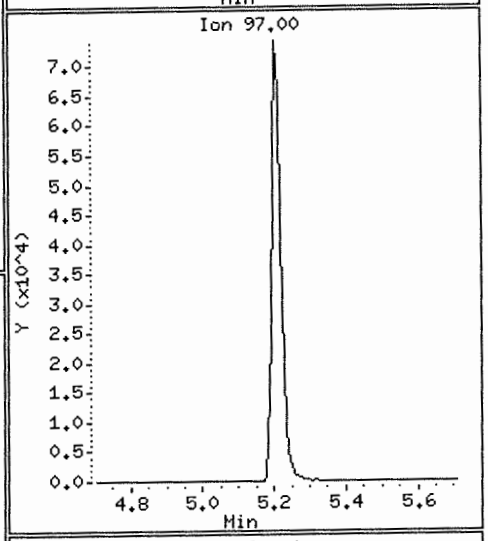
38 Trichloroethene

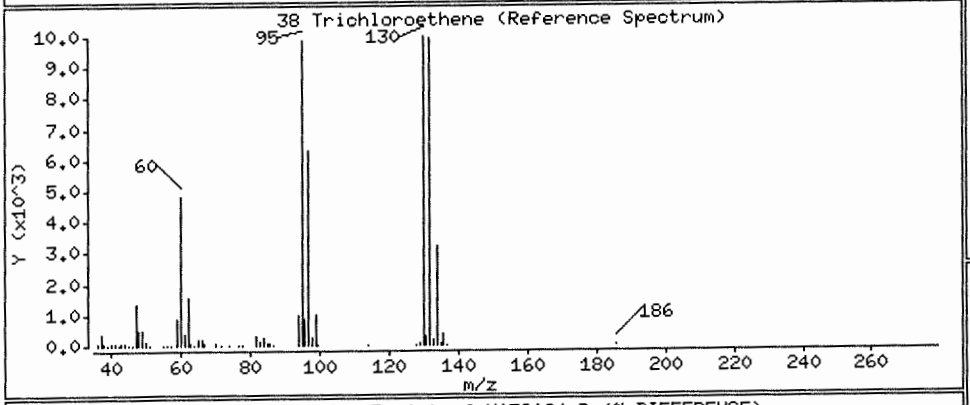
Concentration: 52.14 ug/l

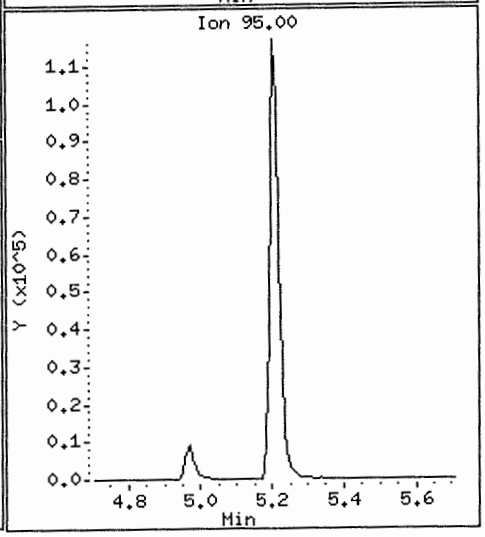


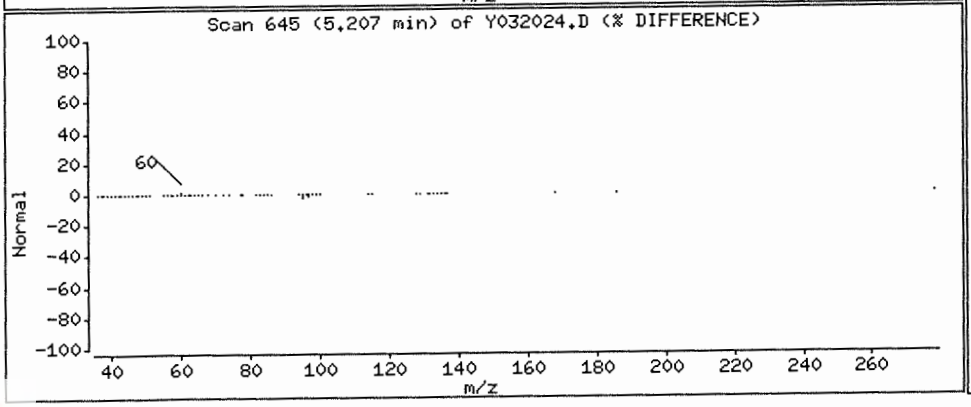












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032025.D Page 1
Report Date: 15-Apr-2020 12:28

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032025.D
Lab Smp Id: HS20030733-04 Client Smp ID: HS20030733-04
Inj Date : 21-MAR-2020 07:43
Operator : PC Inst ID: voa6.i
Smp Info : HS20030733-04;HS20030733-04;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:28 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 53
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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

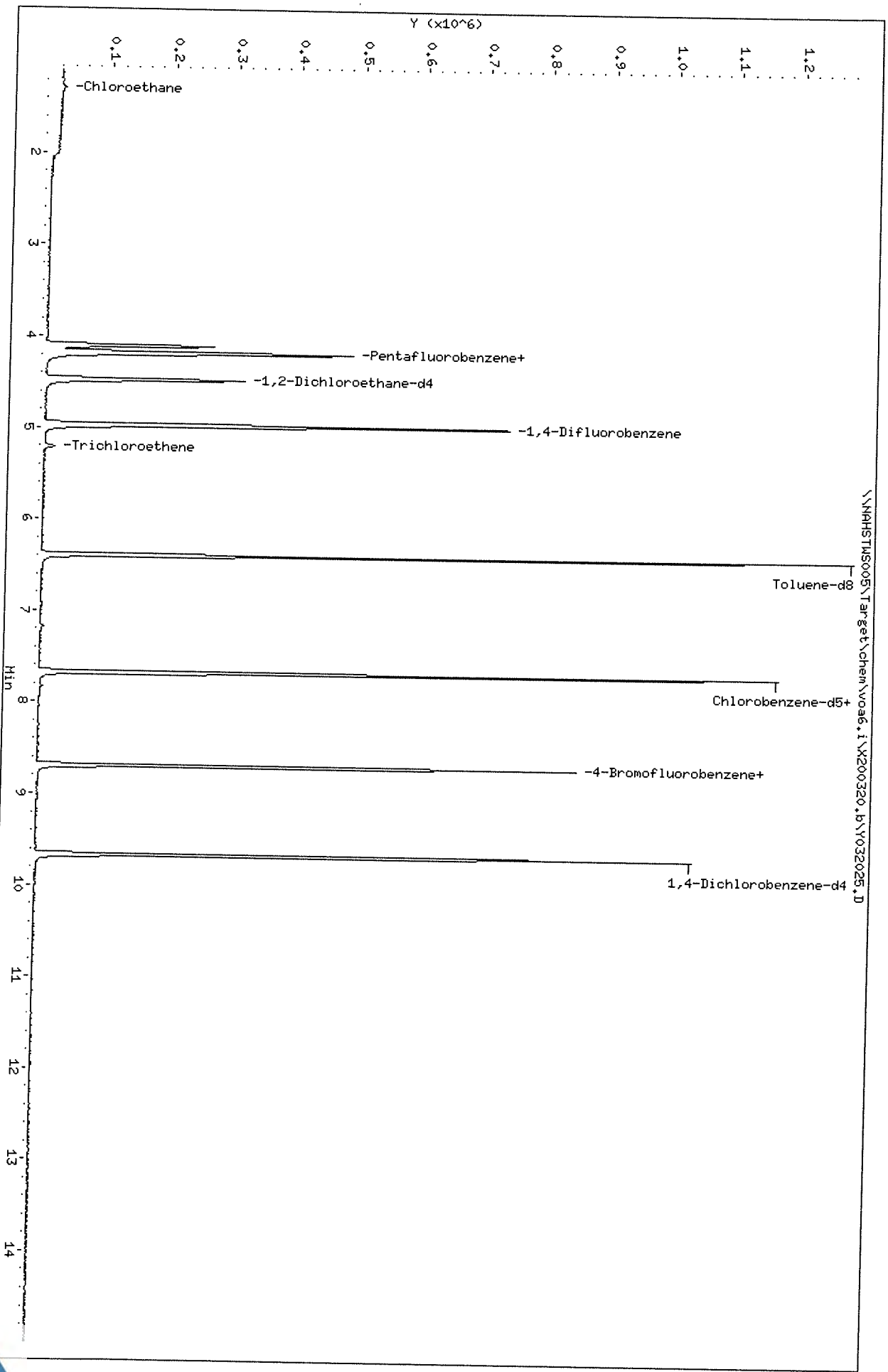
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	405708	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	190014	47.1313	47.13
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	226879	44.4942	44.49
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	603209	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	526825	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	706282	52.3385	52.33
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	248405	48.9933	48.99
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	245731	50.0000	
38 Trichloroethene	130	5.206	5.206	(1.048)	5404	1.29254	1.29(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032025.D
Date : 21-MAR-2020 07:43
Client ID: HS200307333-04
Sample Info: HS200307333-04;HS200307333-04;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032025.D

Date : 21-MAR-2020 07:43

Client ID: HS20030733-04

Instrument: voa6.i

Sample Info: HS20030733-04;HS20030733-04;;;

Purge Volume: 5.0

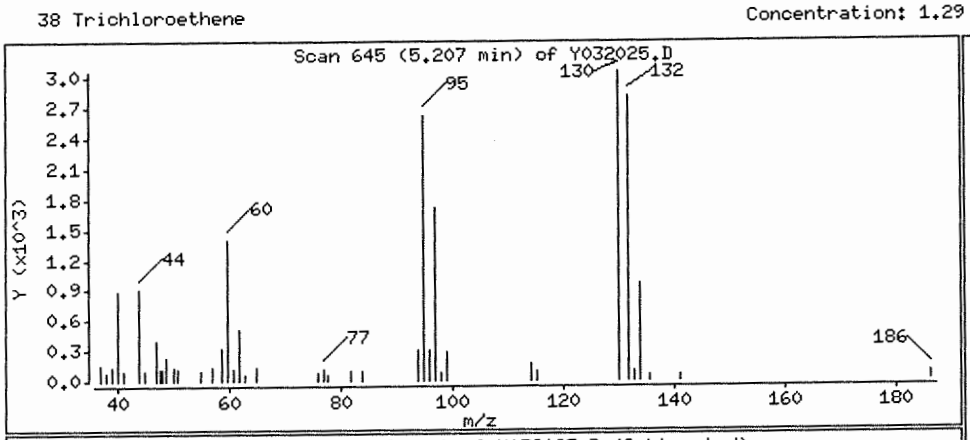
Operator: PC

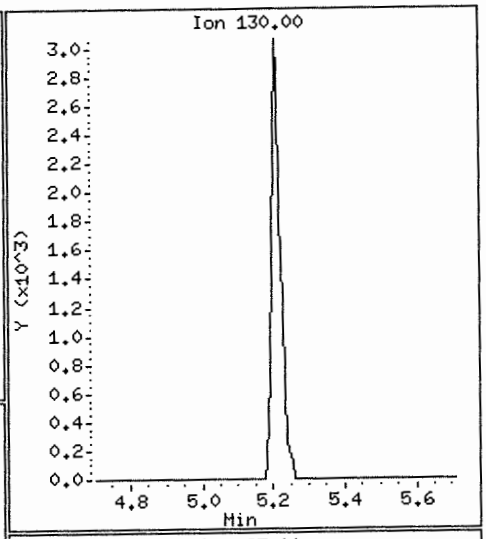
Column phase: DB624

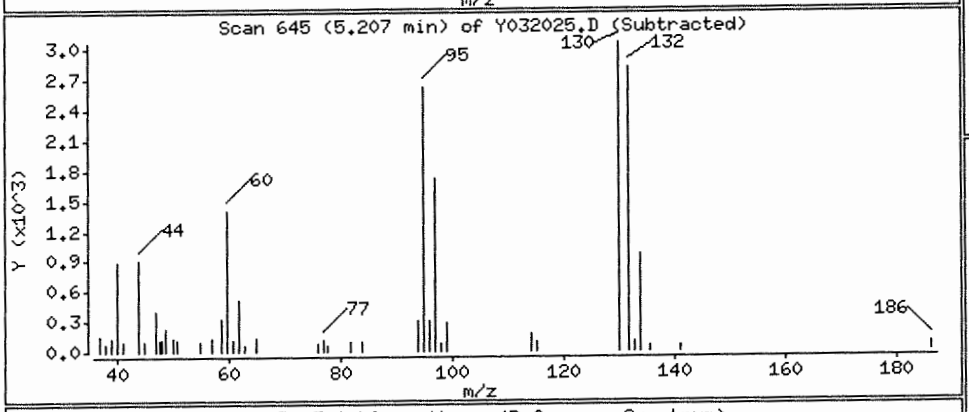
Column diameter: 0.18

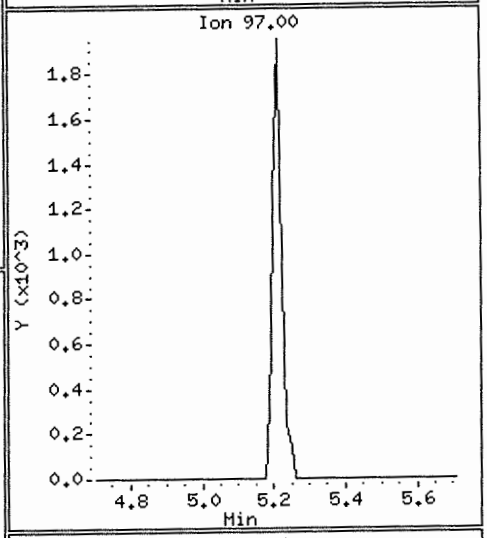
38 Trichloroethene

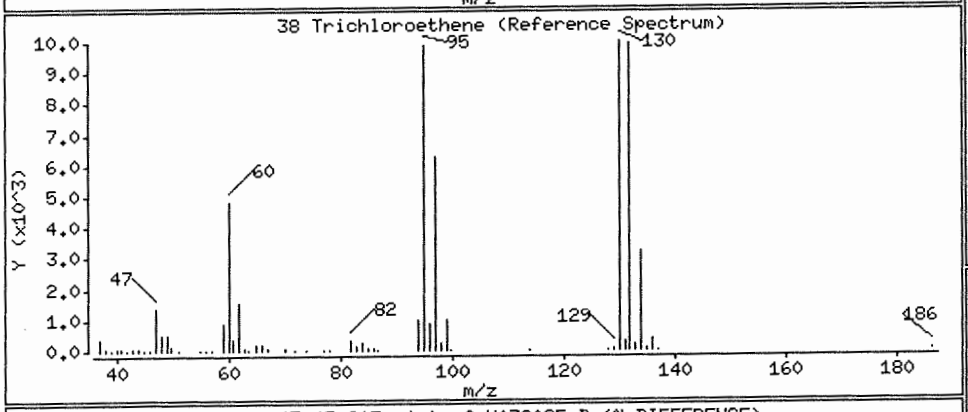
Concentration: 1.29 ug/l

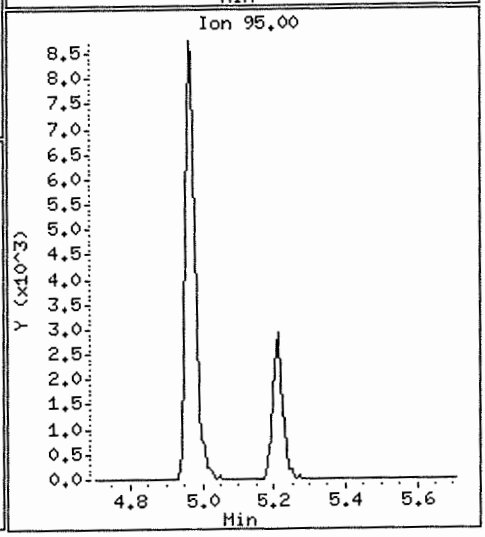


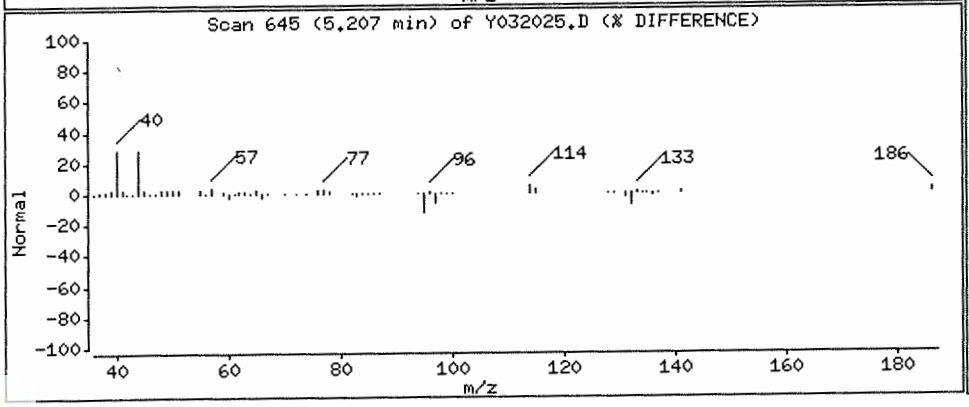












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032026.D Page 1
Report Date: 15-Apr-2020 12:29

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032026.D
Lab Smp Id: HS20030733-06 Client Smp ID: HS20030733-06
Inj Date : 21-MAR-2020 08:07
Operator : PC Inst ID: voa6.i
Smp Info : HS20030733-06;HS20030733-06;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:28 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 54
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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

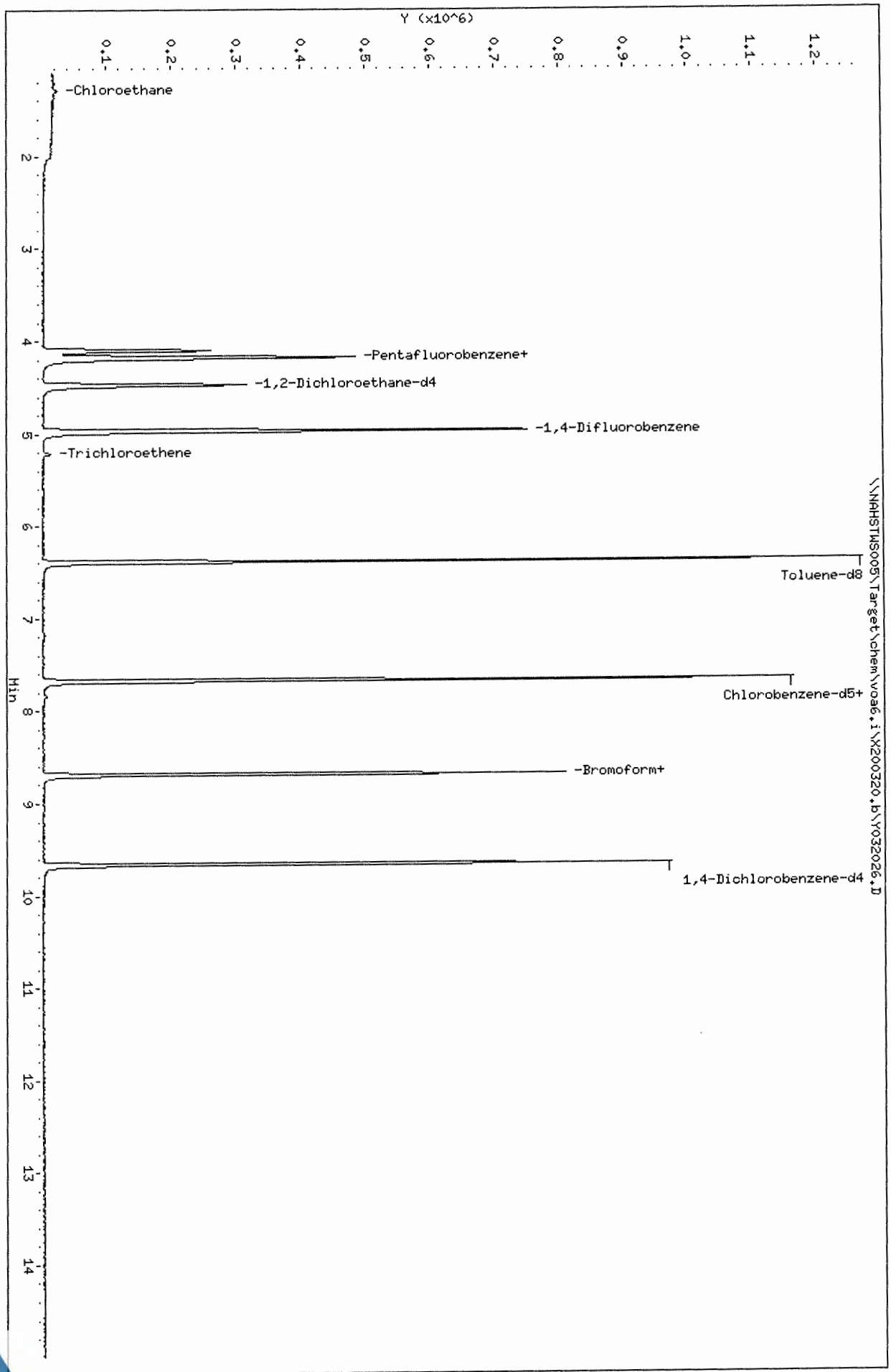
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	403994	50.0000	
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	187638	46.7385	46.73
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	227547	44.8157	44.81
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	599819	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	507854	50.0000	
$	48 Toluene-d8	98	6.388	6.388	(0.833)	697186	53.5962	53.59
$	69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	238774	48.8515	48.85
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	232354	50.0000	
	38 Trichloroethene	130	5.214	5.206	(1.049)	3540	0.85149	0.85(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032026.D
Date : 21-MAR-2020 08:07
Client ID: HS20030733-06
Sample Info: HS20030733-06;HS20030733-06;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032026.D

Date : 21-MAR-2020 08:07

Client ID: HS20030733-06

Instrument: voa6.i

Sample Info: HS20030733-06;HS20030733-06;;;

Purge Volume: 5.0

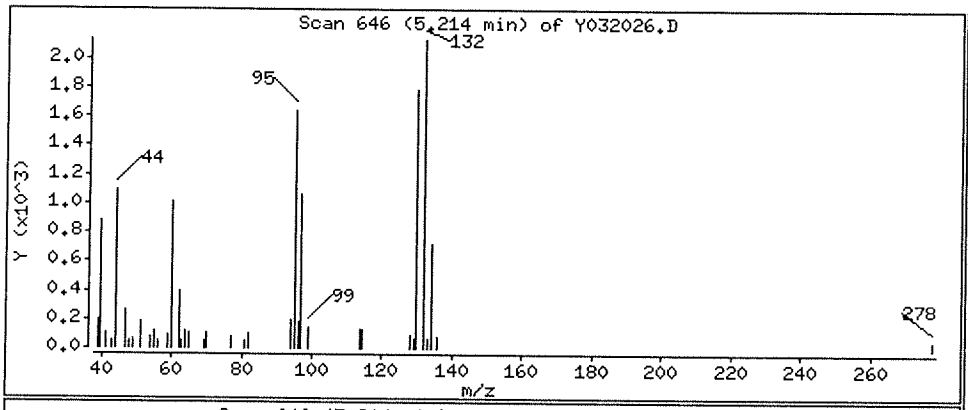
Operator: PC

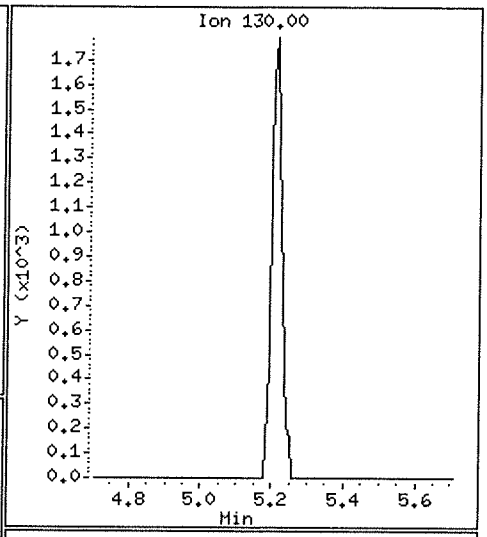
Column phase: DB624

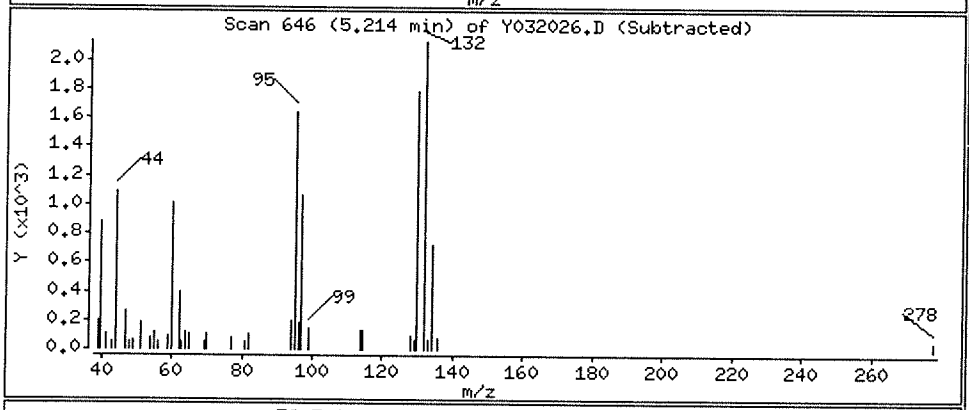
Column diameter: 0.18

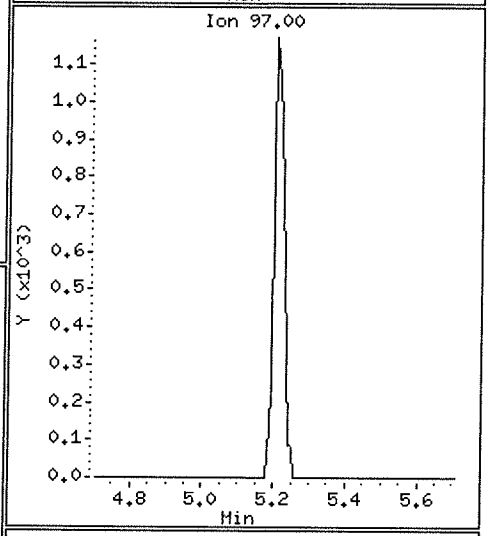
38 Trichloroethene

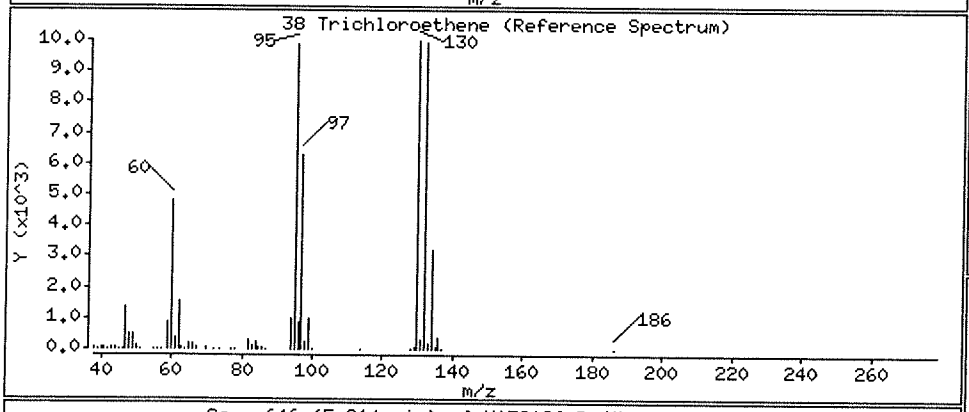
Concentration: 0.85 ug/l

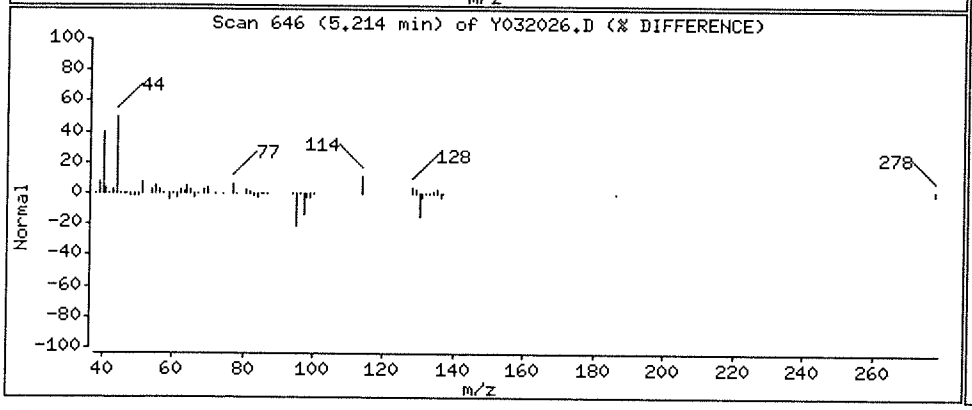


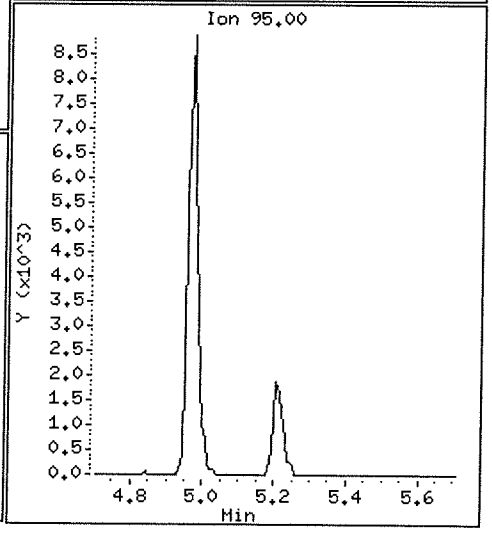












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032027.D Page 1
Report Date: 15-Apr-2020 12:29

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032027.D
Lab Smp Id: HS20030733-07 Client Smp ID: HS20030733-07
Inj Date : 21-MAR-2020 08:31
Operator : PC Inst ID: voa6.i
Smp Info : HS20030733-07;HS20030733-07;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:28 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 55
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	395991	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	184693	46.9351	46.93
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	228827	45.9827	45.98
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	589533	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	506907	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	683389	52.6323	52.63
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	236532	48.4795	48.47
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	231027	50.0000	
38 Trichloroethene	130	5.214	5.206	(1.049)	4507	1.10300	1.10(a)

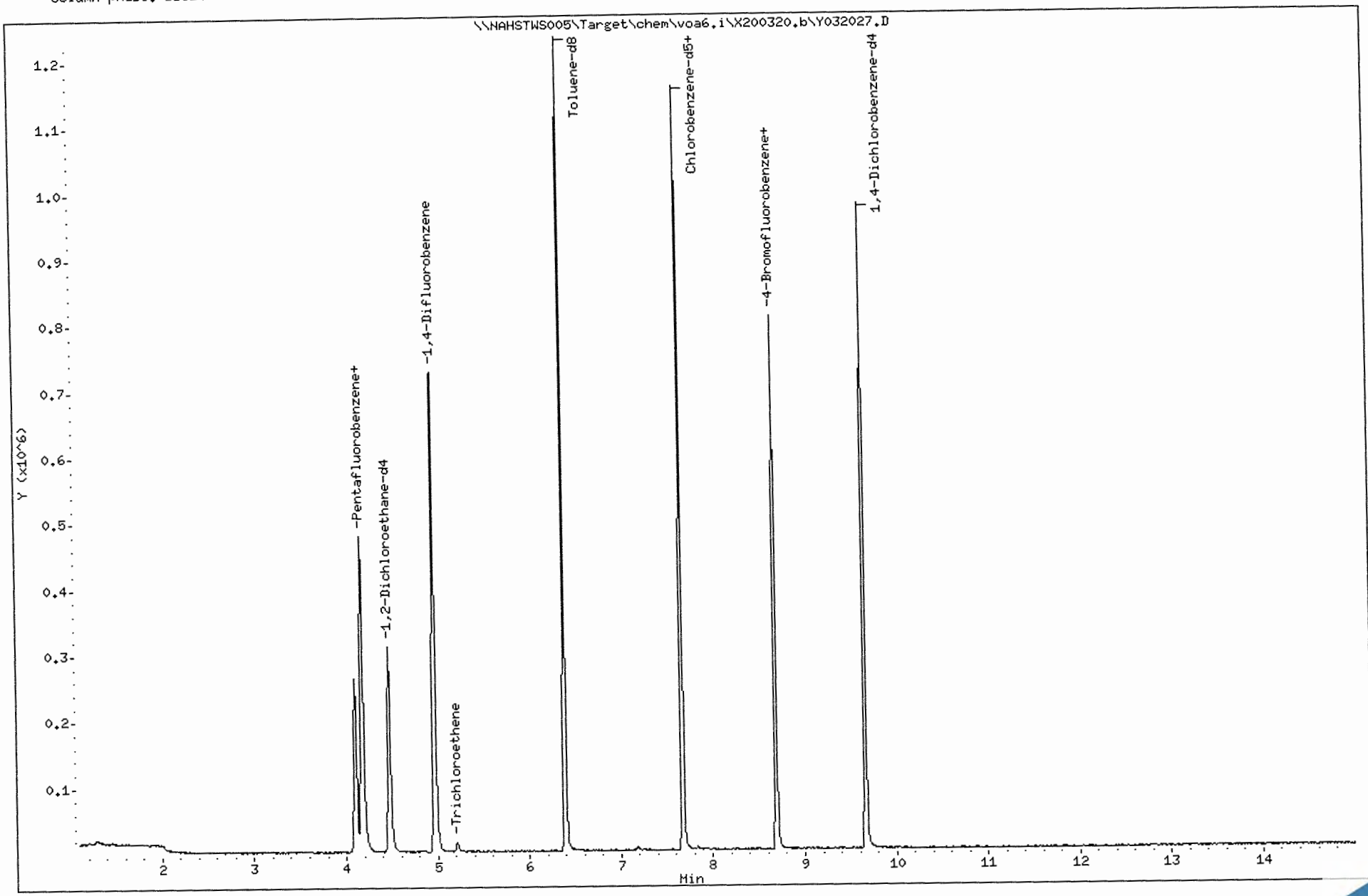
QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032027.D
Date : 21-MAR-2020 08:31
Client ID: HS20030733-07
Sample Info: HS20030733-07;HS20030733-07;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i

Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032027.D

Date : 21-MAR-2020 08:31

Client ID: HS20030733-07

Instrument: voa6.i

Sample Info: HS20030733-07;HS20030733-07;;;

Purge Volume: 5.0

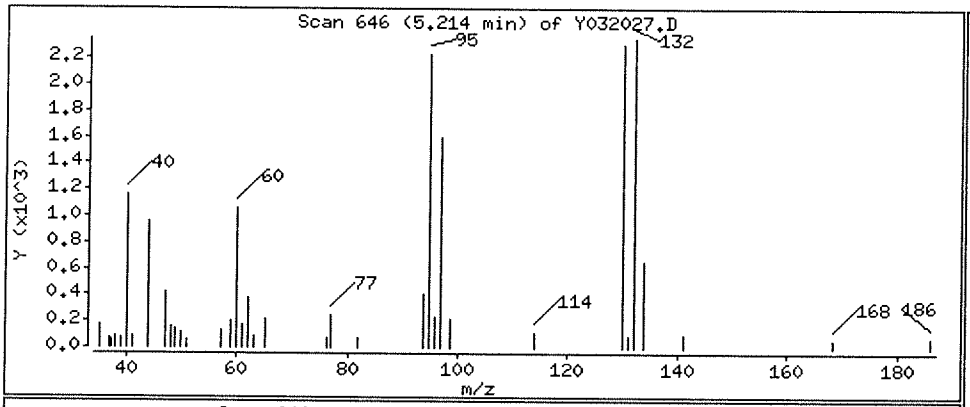
Operator: PC

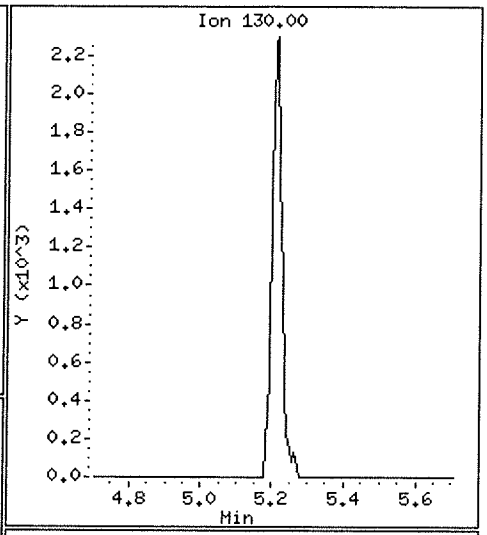
Column phase: DB624

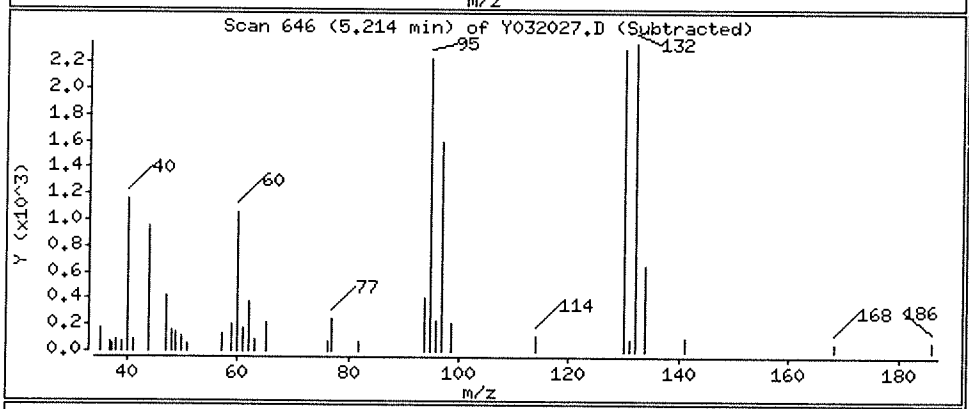
Column diameter: 0.18

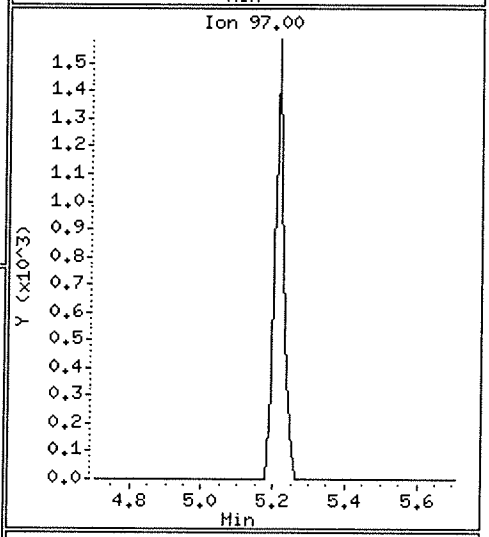
38 Trichloroethene

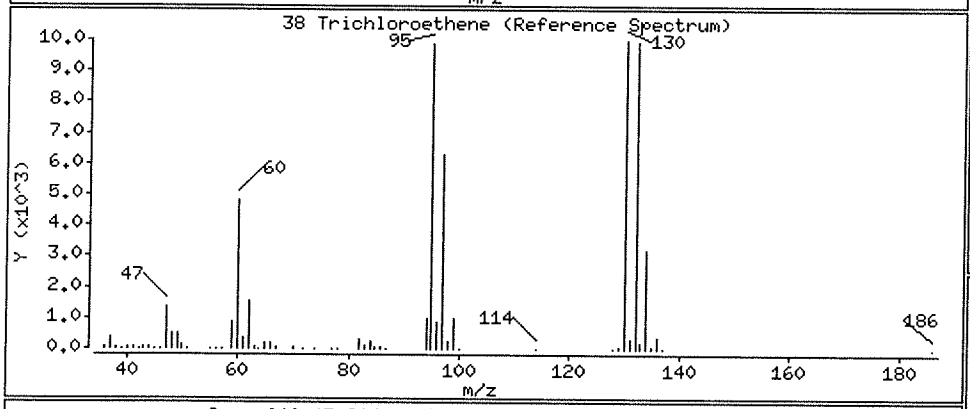
Concentration: 1.10 ug/l

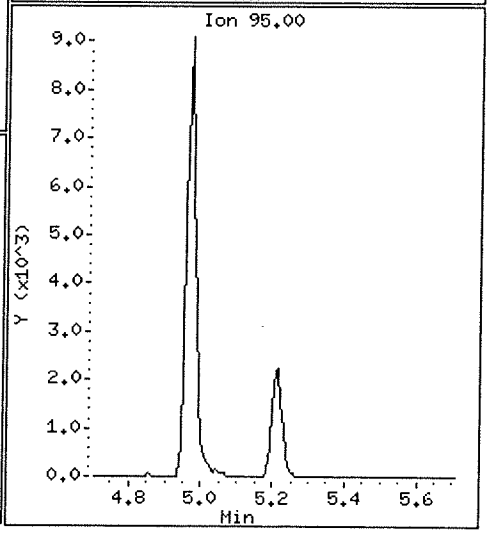


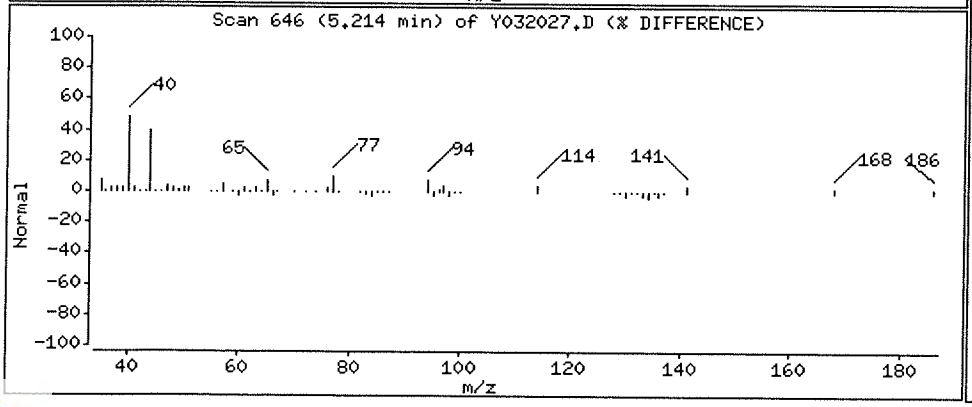












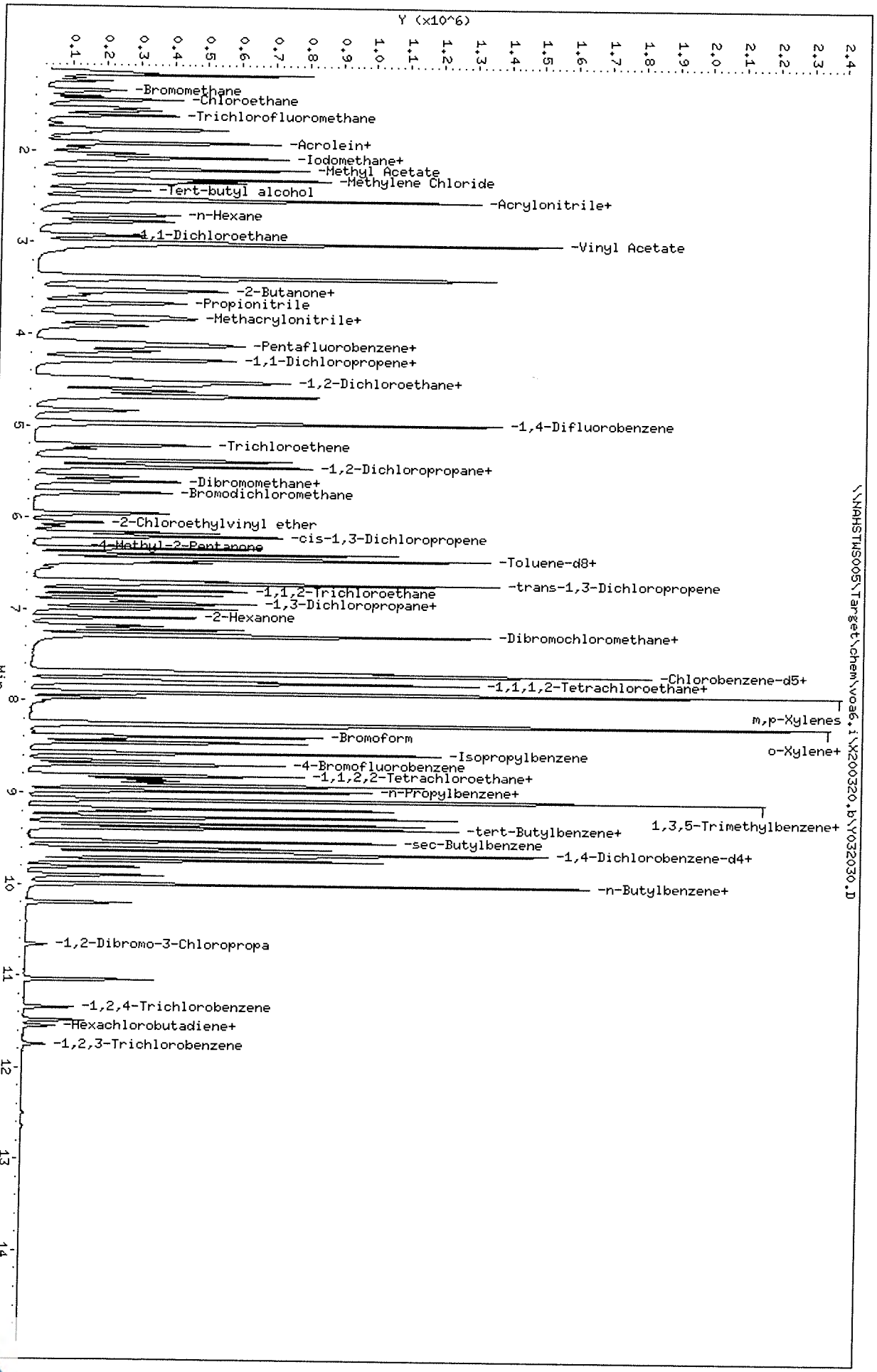
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032030.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 21-MAR-2020 09:43
Operator : PC Inst ID: voa6.i
Smp Info : CCV-END;CCV-END;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200320.b\8260W.m
Meth Date : 15-Apr-2020 12:24 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 58 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	284098	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	162418	50.0000	57.55
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	197494	50.0000	55.34
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	466848	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	426928	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	575492	50.0000	52.62
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	212204	50.0000	51.67
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	201436	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	224300	50.0000	51.82
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	124919	50.0000	51.89
17 Methylene Chloride	84	2.305	2.305	(0.551)	171586	50.0000	56.94
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	176740	50.0000	54.62
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	260691	50.0000	52.85
38 Trichloroethene	130	5.206	5.206	(1.048)	166115	50.0000	51.33
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	123754	50.0000	50.31



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200320.b\Y032030.D
Date : 21-MAR-2020 09:43
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

MSVOA06 -Logbook

Batch: 40074
Date: 03-22-2020
Method: 8260
Comments:

Analyst: Presenta Cabascango
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	03-22-2020 11:32 am	1.00	50 mL	50 mL	X032201.D	Liquid	Y	NA
	Auto find/ purged									
2	CCV	CCV	03-22-2020 11:55 am	1.00	50 mL	50 mL	X032202a.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
3	CCV	CCV	03-22-2020 12:19 pm	1.00	50 mL	50 mL	X032203.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
4	CCB	SAMP	03-22-2020 12:43 pm	1.00	50 mL	50 mL	X032204.D	Liquid	Y	NA
5	VLCSW-200322	LCS	03-22-2020 01:07 pm	1.00	50 mL	50 mL	X032205.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
6	BLANK	SAMP	03-22-2020 01:31 pm	1.00	50 mL	50 mL	X032206.D	Liquid	Y	NA
7	VBLKW1-200322	MBLK	03-22-2020 01:55 pm	1.00	50 mL	50 mL	X032207.D	Liquid	Y	NA
8	HS20030888-11	SAMP	03-22-2020 02:20 pm	1.00	50 mL	50 mL	X032208.D	Liquid	Y	<2
9	HS20030888-01	SAMP	03-22-2020 02:44 pm	1.00	50 mL	50 mL	X032209.D	Liquid	Y	<2
10	HS20030733-08	SAMP	03-22-2020 03:08 pm	1.00	50 mL	50 mL	X032210.D	Liquid	Y	<2
11	HS20030733-01	SAMP	03-22-2020 03:32 pm	1.00	50 mL	50 mL	X032211.D	Liquid	Y	<2
12	HS20030888-01MS	MS	03-22-2020 03:56 pm	1.00	50 mL	50 mL	X032212.D	Liquid	Y	<2
	3.5 uL cal std/40 mL samp									
13	HS20030888-01MSD	MSD	03-22-2020 04:20 pm	1.00	50 mL	50 mL	X032213.D	Liquid	Y	<2
	3.5 uL cal std/40 mL samp									
14	HS20030733-01	SAMP	03-22-2020 04:44 pm	10.00	5 mL	50 mL	X032214.D	Liquid	Y	<2
15	HS20030733-05	SAMP	03-22-2020 05:08 pm	1.00	50 mL	50 mL	X032215.D	Liquid	Y	<2
16	HS20030733-05	SAMP	03-22-2020 05:32 pm	25.00	2 mL	50 mL	X032216.D	Liquid	Y	<2
17	HS20030733-03	SAMP	03-22-2020 05:56 pm	5.00	10 mL	50 mL	X032217.D	Liquid	Y	<2
18	HS20030733-03	SAMP	03-22-2020 06:20 pm	50.00	1 mL	50 mL	X032218.D	Liquid	Y	<2
19	HS20030731-01	SAMP	03-22-2020 06:44 pm	1.00	50 mL	50 mL	X032219.D	Liquid	Y	<2
20	HS20030731-07	SAMP	03-22-2020 07:08 pm	1.00	50 mL	50 mL	X032220.D	Liquid	Y	<2
21	HS20030731-06	SAMP	03-22-2020 07:32 pm	1.00	50 mL	50 mL	X032221.D	Liquid	Y	<2
22	HS20030731-02	SAMP	03-22-2020 07:56 pm	1.00	50 mL	50 mL	X032222.D	Liquid	Y	<2
23	HS20030731-03	SAMP	03-22-2020 08:20 pm	5.00	10 mL	50 mL	X032223.D	Liquid	Y	<2
24	HS20030731-04	SAMP	03-22-2020 08:44 pm	10.00	5 mL	50 mL	X032224.D	Liquid	Y	<2
25	HS20030731-05	SAMP	03-22-2020 09:08 pm	10.00	5 mL	50 mL	X032225.D	Liquid	Y	<2
26	HS20030733-08	SAMP	03-22-2020 09:32 pm	5.00	10 mL	50 mL	X032226.D	Liquid	Y	<2
27	HS20030888-02	SAMP	03-22-2020 09:56 pm	1.00	50 mL	50 mL	X032227.D	Liquid	Y	<2
28	HS20030888-04	SAMP	03-22-2020 10:21 pm	1.00	50 mL	50 mL	X032228.D	Liquid	Y	<2
29	HS20030888-05	SAMP	03-22-2020 10:45 pm	1.00	50 mL	50 mL	X032229.D	Liquid	Y	<2
30	CCV-END	CCV	03-22-2020 11:09 pm	1.00	50 mL	50 mL	X032230.D	Liquid	Y	na
	10 uL cal std/50 mL DI									

MSVOA06 -Logbook

Chemical	Value
SURR SPK ID	31106-21-06
IS ID	31106-21-06
CAL STD ID	311006-21-01/02
BFB ID	31106-21-06
pH Paper	634-64-11

FORM 2
WATER VOLATILE SURROGATE RECOVERY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030733

	CLIENT SAMPLE NO.	S1 #	S2 (DCE)#	S3 (TOL)#	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	CCB	94	89	107	97					0
02	VLCSW-200322	104	104	100	99					0
03	VBLKW1-20032	94	91	104	97					0
04	HS20030733-0	96	92	104	99					0
05	HS20030733-0	95	92	103	98					0
06	HS20030888-0	95	91	103	98					0
07	HS20030888-0	96	90	105	97					0
08	HS20030733-0	93	90	106	98					0
09	HS20030733-0	94	91	105	98					0
10	HS20030733-0	95	90	108	96					0
11	HS20030733-0	95	92	103	100					0
12	HS20030733-0	95	92	104	98					0
13	HS20030733-0	96	91	106	96					0
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										

		QC LIMITS
S1	= Dibromofluoromethane	(70-130)
S2 (DCE)	= 1,2-Dichloroethane-d4	(70-130)
S3 (TOL)	= Toluene-d8	(70-130)
S4	= 4-Bromofluorobenzene	(70-130)

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKW1-200322

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030733

Lab File ID: X032207 Lab Sample ID: VBLKW1-200322

Instrument ID: VOA6 Date Extracted:

Matrix: (soil/water) WATER Date Analyzed: 03/22/20

Level: (low/med) LOW Time Analyzed: 1355

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	CCB	CCB	X032204	03/22/20
02	VLCSW-200322	VLCSW-200322	X032205	03/22/20
03	HS20030733-0	HS20030733-08	X032210	03/22/20
04	HS20030733-0	HS20030733-01	X032211	03/22/20
05	HS20030888-0	HS20030888-01M	X032212	03/22/20
06	HS20030888-0	HS20030888-01M	X032213	03/22/20
07	HS20030733-0	HS20030733-01	X032214	03/22/20
08	HS20030733-0	HS20030733-05	X032215	03/22/20
09	HS20030733-0	HS20030733-05	X032216	03/22/20
10	HS20030733-0	HS20030733-03	X032217	03/22/20
11	HS20030733-0	HS20030733-03	X032218	03/22/20
12	HS20030733-0	HS20030733-08	X032226	03/22/20
13				
14				
15				
16				
17				
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19				
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21				
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23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030733

Lab File ID: X032201 DFTPP Injection Date: 03/22/20

Instrument ID: VOA6 DFTPP Injection Time: 1132

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	23.4
75	30.0 - 60.0% of mass 95	47.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.7 (0.9)1
174	Greater than 50.0% of mass 95	80.4
175	5.0 - 9.0% of mass 174	6.1 (7.6)1
176	95.0 - 101.0% of mass 174	78.5 (97.6)1
177	5.0 - 9.0% of mass 176	5.1 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	X032203	03/22/20	1219
02	CCB	CCB	X032204	03/22/20	1243
03	VLCSW-200322	VLCSW-200322	X032205	03/22/20	1307
04	VBLKW1-20032	VBLKW1-200322	X032207	03/22/20	1355
05	HS20030733-0	HS20030733-08	X032210	03/22/20	1508
06	HS20030733-0	HS20030733-01	X032211	03/22/20	1532
07	HS20030888-0	HS20030888-01M	X032212	03/22/20	1556
08	HS20030888-0	HS20030888-01M	X032213	03/22/20	1620
09	HS20030733-0	HS20030733-01	X032214	03/22/20	1644
10	HS20030733-0	HS20030733-05	X032215	03/22/20	1708
11	HS20030733-0	HS20030733-05	X032216	03/22/20	1732
12	HS20030733-0	HS20030733-03	X032217	03/22/20	1756
13	HS20030733-0	HS20030733-03	X032218	03/22/20	1820
14	HS20030733-0	HS20030733-08	X032226	03/22/20	2132
15	CCV-END	CCV-END	X032230	03/22/20	2309
16					
17					
18					
19					
20					
21					
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030733

Instrument ID: VOA6 Calibration Date: 03/22/20 Time: 1219

Lab File ID: X032203 Init. Calib. Date(s): 03/19/20 03/19/20

Init. Calib. Times: 1134 1533

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Vinyl Chloride	0.7620000	0.7328594	0.7328594	0.1	3.82	20.00	AVRG
Methylene Chloride	51.154929	50.000000	0.5440248	0.1	-2.31	20.00	LINR
1,1-Dichloroethene	0.4240000	0.4155646	0.4155646	0.1	1.99	20.00	AVRG
1,2-Dichloroethane	0.5280000	0.5379620	0.5379620	0.1	-1.89	20.00	AVRG
Trichloroethene	0.3460000	0.3662592	0.3662592	0.2	-5.86	20.00	AVRG
1,1,2-Trichloroethane	0.2880000	0.2847948	0.2847948	0.1	1.11	20.00	AVRG
Dibromofluoromethane	51.536482	50.000000	0.5120272	0.1	-3.07	20.00	LINR
1,2-Dichloroethane-d4	50.370911	50.000000	0.6328157	0.1	-0.74	20.00	LINR
Toluene-d8	50.841357	50.000000	1.3023451	0.1	-1.68	20.00	LINR
4-Bromofluorobenzene	50.739672	50.000000	0.4881534	0.1	-1.48	20.00	LINR

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030733

Instrument ID: VOA6 Calibration Date: 03/22/20 Time: 2309

Lab File ID: X032230 Init. Calib. Date(s): 03/19/20 03/19/20

Init. Calib. Times: 1134 1533

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Vinyl Chloride	0.7620000	0.7727914	0.7727914	0.1	-1.42	20.00	AVRG
Methylene Chloride	53.430392	50.000000	0.5675728	0.1	-6.86	20.00	LINR
1,1-Dichloroethene	0.4240000	0.4300865	0.4300865	0.1	-1.44	20.00	AVRG
1,2-Dichloroethane	0.5280000	0.5354540	0.5354540	0.1	-1.41	20.00	AVRG
Trichloroethene	0.3460000	0.3472861	0.3472861	0.2	-0.37	20.00	AVRG
1,1,2-Trichloroethane	0.2880000	0.2777666	0.2777666	0.1	3.55	20.00	AVRG
Dibromofluoromethane	52.445692	50.000000	0.5210416	0.1	-4.89	20.00	LINR
1,2-Dichloroethane-d4	51.303105	50.000000	0.6444903	0.1	-2.61	20.00	LINR
Toluene-d8	48.648101	50.000000	1.2462461	0.1	2.70	20.00	LINR
4-Bromofluorobenzene	47.915075	50.000000	0.4612401	0.1	4.17	20.00	LINR

FORM VII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

outputFile debug: C:\tp\envision\results\HS20030733/08bc.01 Lab Code: AL

Lab File ID (Standard): X032203 Date Analyzed: 03/22/20

Instrument ID: VOA6 Time Analyzed: 1219

		IS1 AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	302148	4.18	465176	4.97	429281	7.67
	UPPER LIMIT	604296	4.68	930352	5.47	858562	8.17
	LOWER LIMIT	151074	3.68	232588	4.47	214641	7.17
	CLIENT SAMPLE NO.						
01	CCB	379259	4.18	565653	4.97	483508	7.67
02	VLCSW-200322	317077	4.18	496346	4.97	453575	7.67
03	VBLKW1-20032	400963	4.18	593699	4.97	522348	7.67
04	HS20030733-0	389753	4.18	589962	4.97	519517	7.67
05	HS20030733-0	399338	4.18	596007	4.97	511087	7.67
06	HS20030888-0	378224	4.18	559922	4.97	497970	7.67
07	HS20030888-0	374451	4.18	561455	4.97	486849	7.67
08	HS20030733-0	390803	4.18	581014	4.97	502936	7.67
09	HS20030733-0	395491	4.18	590028	4.97	491405	7.67
10	HS20030733-0	390086	4.18	581654	4.97	493352	7.67
11	HS20030733-0	391147	4.18	586634	4.97	498398	7.67
12	HS20030733-0	393140	4.18	588748	4.97	515797	7.67
13	HS20030733-0	402608	4.18	600055	4.97	519949	7.67
14							
15							
16							
17							
18							
19							
20							

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

outputFile debug: C:\tp\envision\results\HS20030733/08bc.01 Lab Code: AL

Lab File ID (Standard): X032203 Date Analyzed: 03/22/20

Instrument ID: VOA6 Time Analyzed: 1219

		IS4 (DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	207792	9.67				
	UPPER LIMIT	415584	10.17				
	LOWER LIMIT	103896	9.17				
	CLIENT SAMPLE NO.						
01	CCB	218394	9.67				
02	VLCSW-200322	217359	9.67				
03	VBLKW1-20032	241942	9.67				
04	HS20030733-0	247834	9.67				
05	HS20030733-0	244912	9.67				
06	HS20030888-0	231705	9.66				
07	HS20030888-0	226002	9.67				
08	HS20030733-0	234218	9.67				
09	HS20030733-0	231147	9.67				
10	HS20030733-0	224714	9.67				
11	HS20030733-0	248365	9.67				
12	HS20030733-0	242338	9.67				
13	HS20030733-0	237560	9.67				
14							
15							
16							
17							
18							
19							
20							

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032201.D

Date : 22-MAR-2020 11:32

Client ID: BFB

Instrument: voa6.i

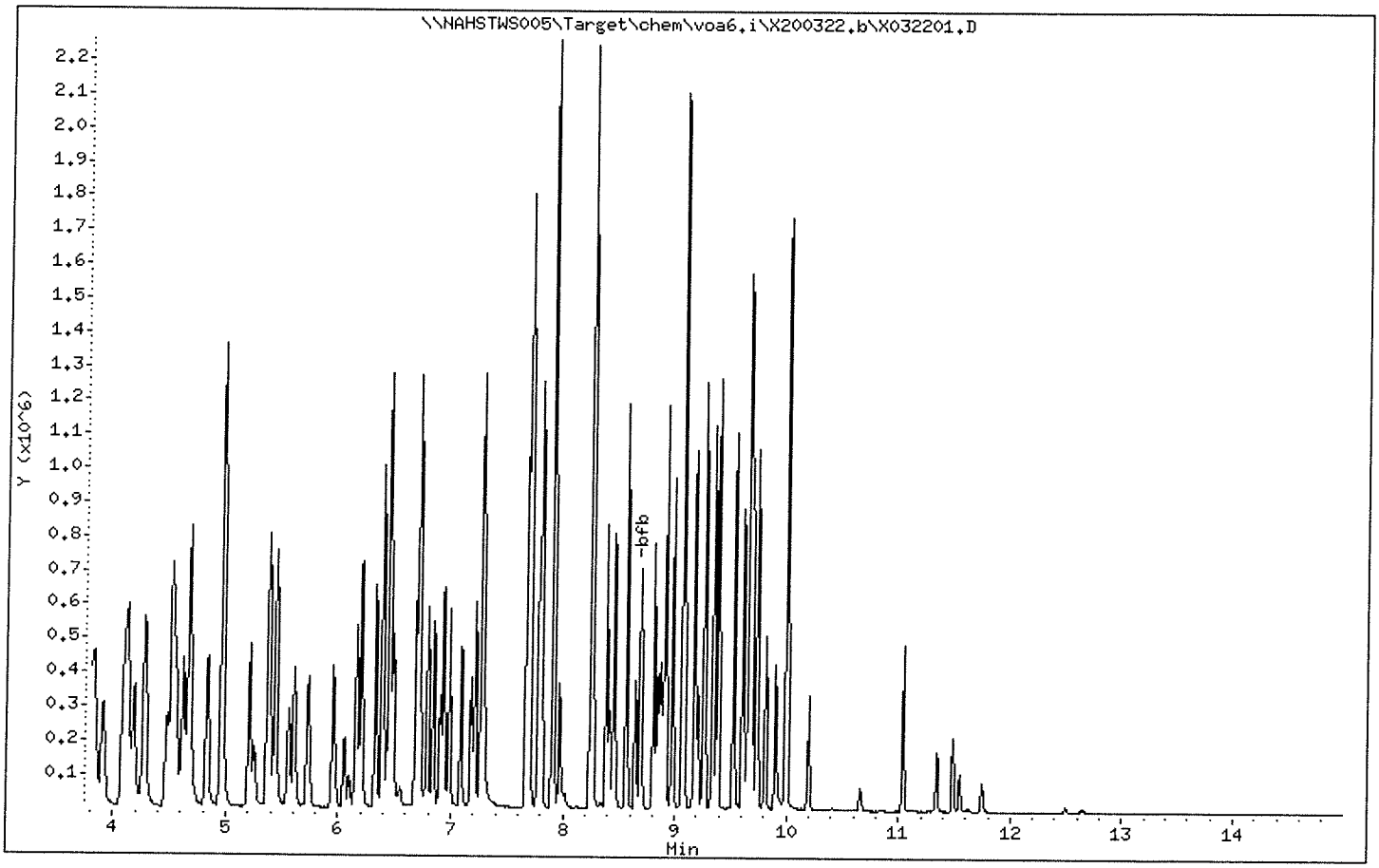
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032201.D

Date : 22-MAR-2020 11:32

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

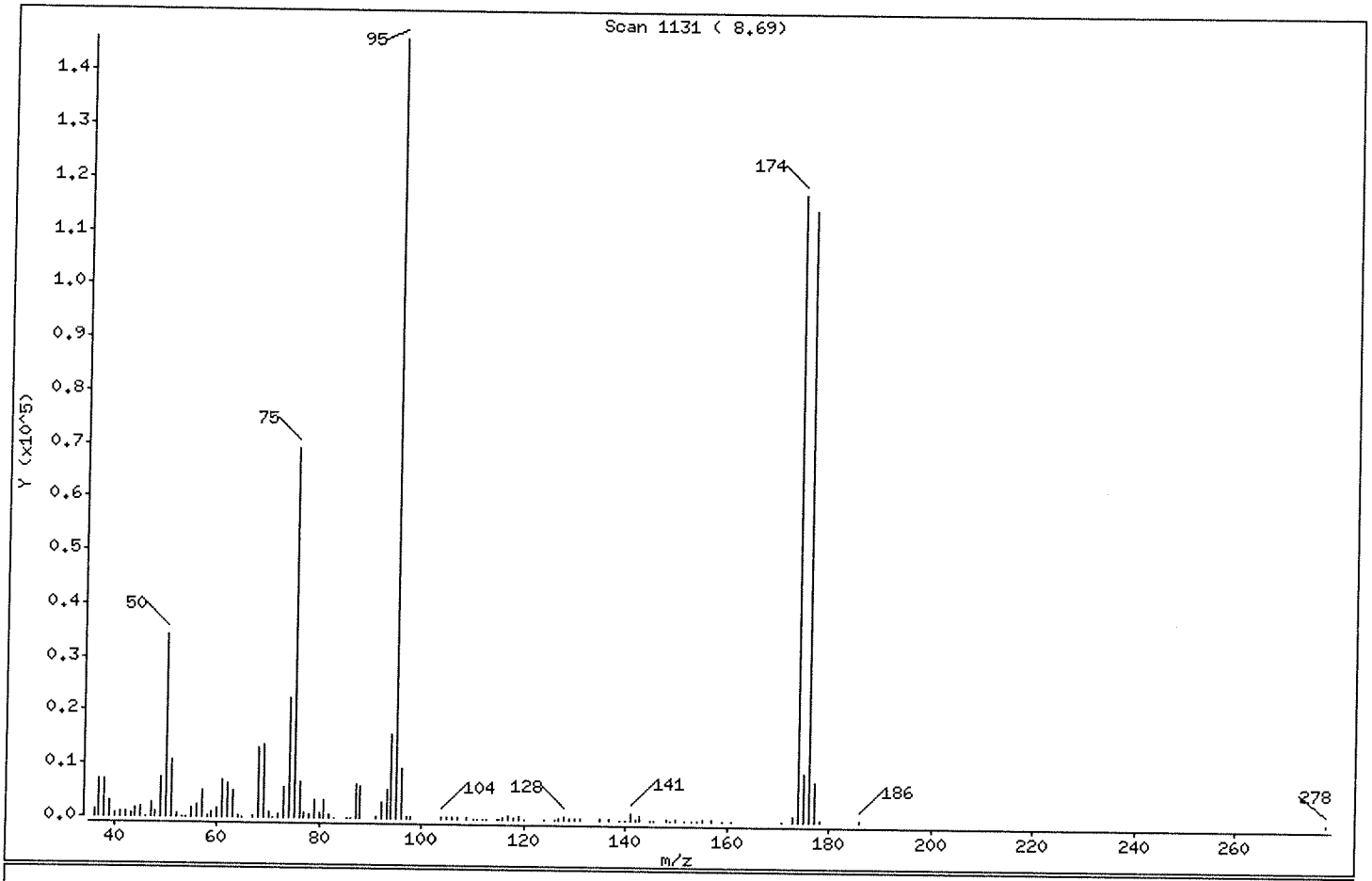
Volume Injected (uL): 2.0

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	23.43
75	30.00 - 60.00% of mass 95	47.32
96	5.00 - 9.00% of mass 95	6.48
173	Less than 2.00% of mass 174	0.74 (0.93)
174	Greater than 50.00% of mass 95	80.40
175	5.00 - 9.00% of mass 174	6.14 (7.64)
176	95.00 - 101.00% of mass 174	78.47 (97.60)
177	5.00 - 9.00% of mass 176	5.07 (6.46)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032201.D Page 3

Date : 22-MAR-2020 11:32

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: X032201.D
Spectrum: Scan 1131 (8.69)
Location of Maximum: 95.00
Number of points: 110

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.10	1250	64.10	403	96.00	9475	138.90	112
37.00	7173	65.00	131	97.00	355	139.90	160
38.10	6998	67.10	328	97.90	311	140.90	1469
39.10	2974	68.00	13240	103.90	490	141.90	242
39.90	829	69.00	13628	105.00	421	142.80	1085
41.00	1031	70.00	956	105.80	474	144.90	82
42.10	994	71.00	113	107.00	433	145.70	97
43.10	752	71.90	686	108.80	280	147.90	319
44.00	1587	73.00	5843	110.00	86	148.80	96
45.00	2022	74.00	22528	110.90	64	149.70	189
46.10	135	75.00	69168	111.90	66	151.60	70
47.00	2589	76.00	6685	112.70	79	153.00	118
48.00	953	77.00	1128	114.70	144	153.90	68
49.00	7259	77.90	696	115.20	155	155.00	445
50.00	34256	78.90	3415	115.80	451	156.90	286
51.00	10626	80.00	909	116.90	643	158.90	168
52.00	570	80.90	3501	118.00	447	160.80	149
53.10	111	82.00	737	118.90	582	170.80	131
54.00	101	83.00	99	120.10	75	172.90	1088
55.10	1569	85.20	115	123.90	85	174.00	117520
56.00	2436	86.10	127	125.90	91	175.00	8976
57.00	5065	87.00	6525	126.90	277	176.00	114704
58.10	268	88.00	6177	127.80	727	177.00	7410
58.90	842	90.90	455	128.90	251	178.00	244
60.00	1613	92.00	3178	129.90	380	185.90	277
61.00	7074	93.00	5350	131.00	221	278.00	272
62.00	6506	94.00	15835	134.90	207		
63.00	5088	95.00	146176	136.70	195		

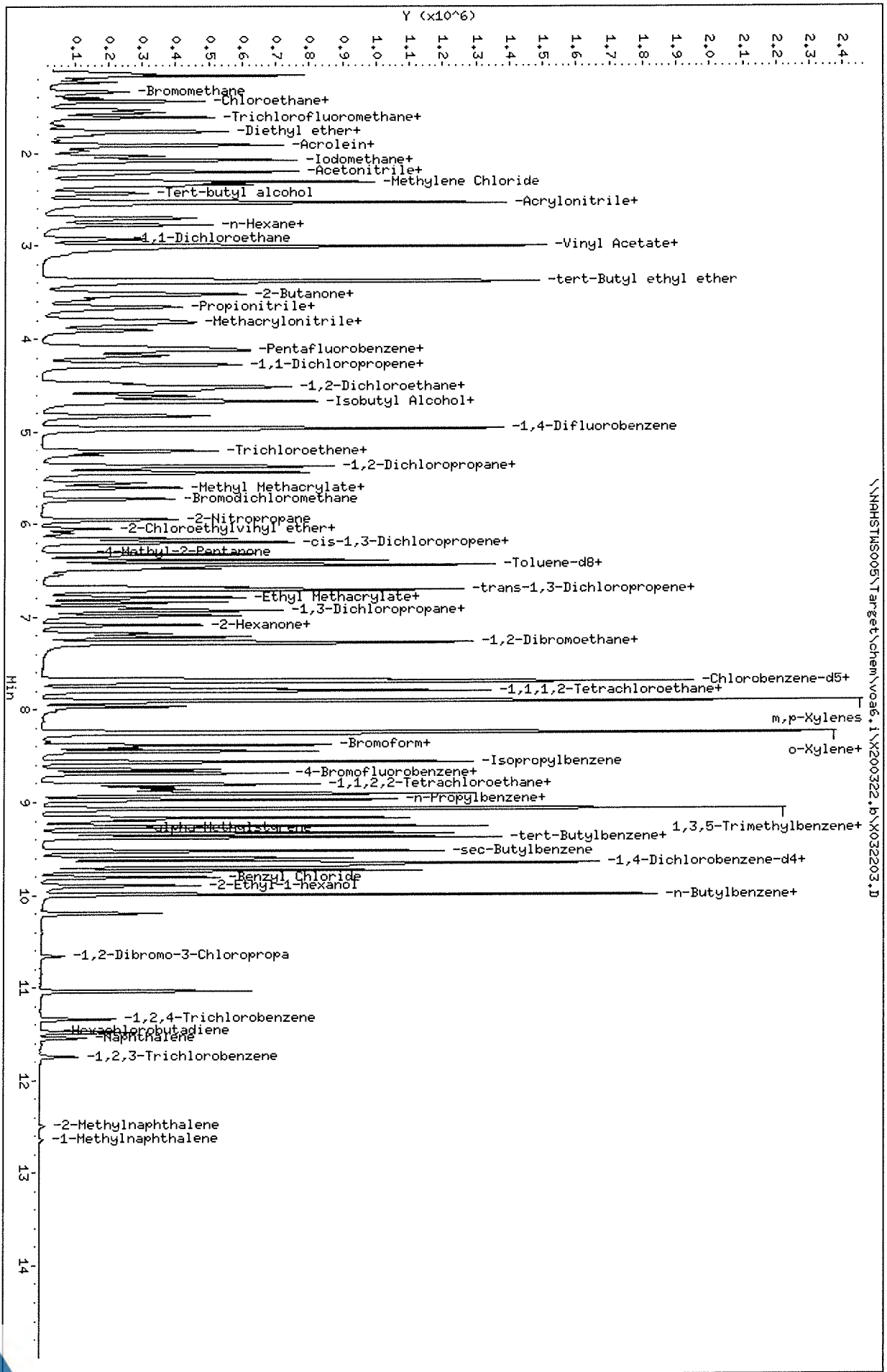
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032203.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 22-MAR-2020 12:19
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 15-Apr-2020 12:35 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	302148	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	154708	50.0000	51.53
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	191204	50.0000	50.37
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	465176	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	429281	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	559072	50.0000	50.84
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	209555	50.0000	50.73
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	207792	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	221432	50.0000	48.10
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	125562	50.0000	49.04
17 Methylene Chloride	84	2.306	2.306	(0.551)	164376	50.0000	51.15
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	176947	50.0000	51.42
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	250247	50.0000	50.91
38 Trichloroethene	130	5.207	5.207	(1.048)	170375	50.0000	52.84
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	122257	50.0000	49.43



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032203.D
Date : 22-MAR-2020 12:19
Client ID: CCV
Sample Info: CCV;CCV;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032204.D
Lab Smp Id: CCB Client Smp ID: CCB
Inj Date : 22-MAR-2020 12:43
Operator : PC Inst ID: voa6.i
Smp Info : CCB;CCB;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 15-Apr-2020 12:35 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

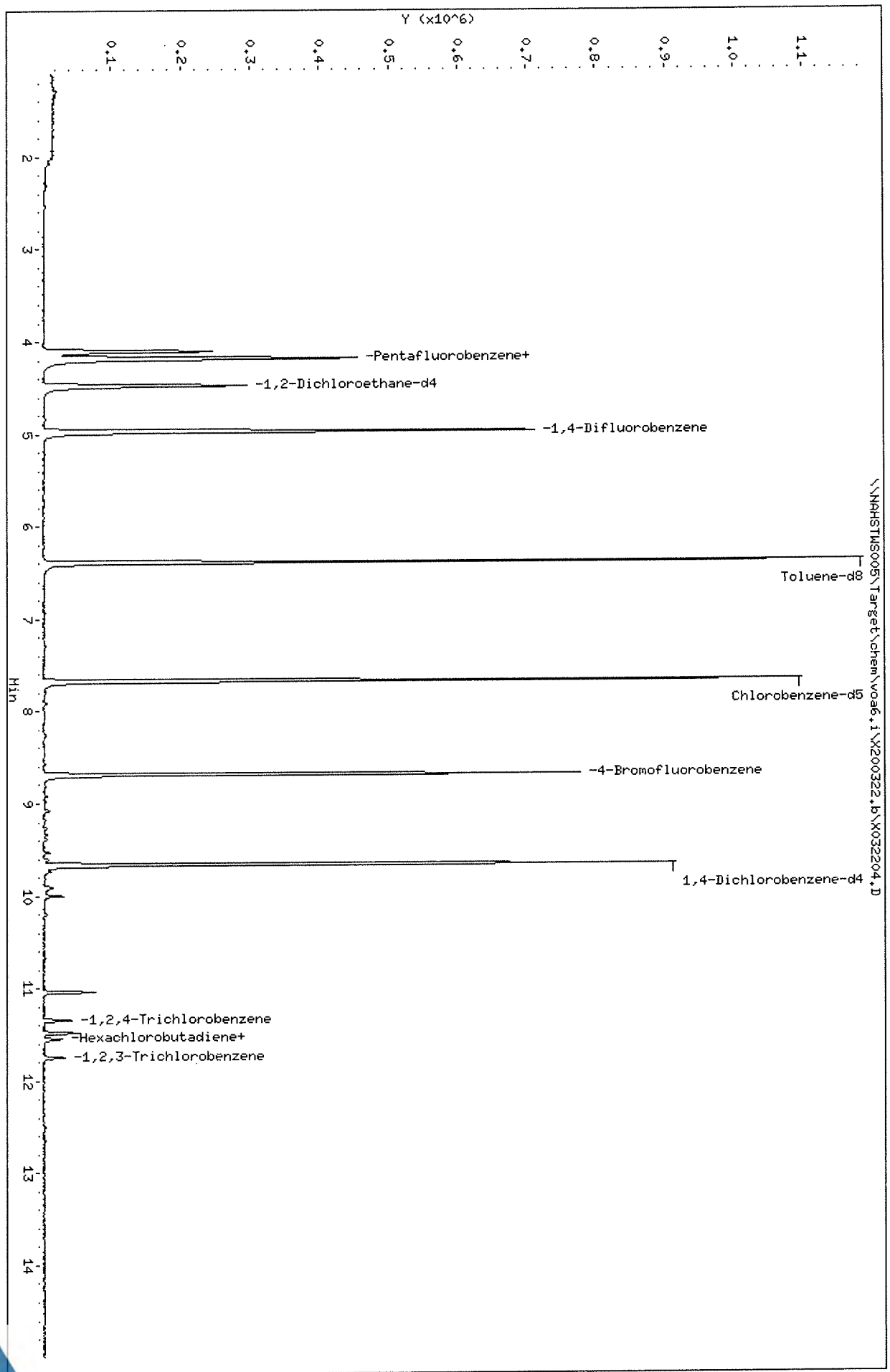
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	379259	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	176818	46.9162	46.91
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	213256	44.7401	44.74
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	565653	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	483508	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	660552	53.3365	53.33
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	225752	48.5095	48.50
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	218394	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032204.D
Date : 22-MAR-2020 12:43
Client ID: CCB
Sample Info: CCB;CCB;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032205.D Page 1
Report Date: 15-Apr-2020 12:35

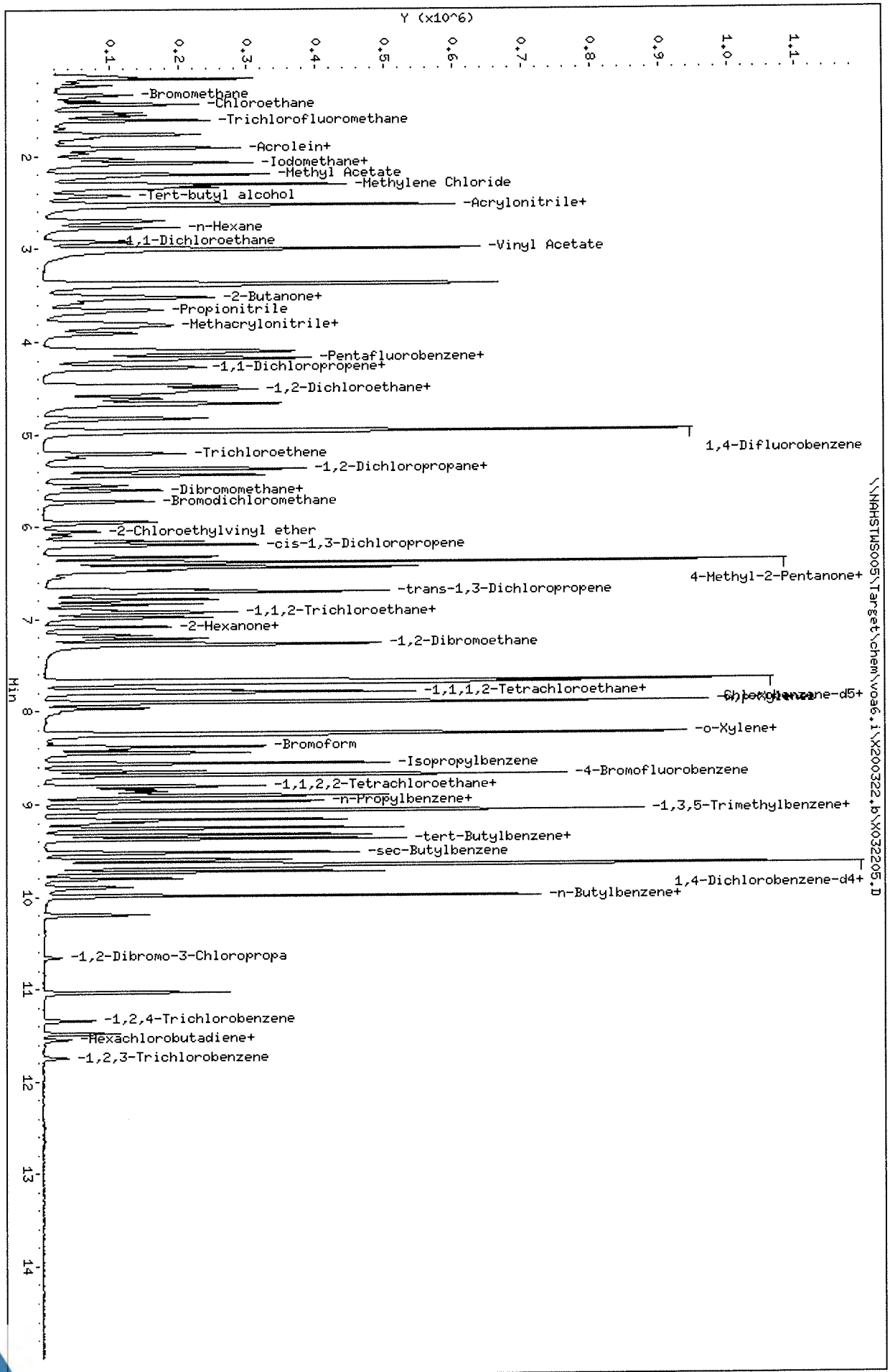
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032205.D
Lab Smp Id: VLCSW-200322 Client Smp ID: VLCSW-200322
Inj Date : 22-MAR-2020 13:07
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-200322;VLCSW-200322;3;;LCS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 15-Apr-2020 12:35 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 5 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	317077	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	163437	51.8816	51.88
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	208259	52.2867	52.28
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	496346	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	453575	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	584005	50.2633	50.26
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	216683	49.6449	49.64
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	217359	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	87326	18.0773	18.07
11 1,1-Dichloroethene	96	1.911	1.912	(0.457)	49998	18.6088	18.60
17 Methylene Chloride	84	2.305	2.306	(0.551)	68763	19.5413	19.54
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	72784	20.1567	20.15
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	102923	19.6274	19.62
38 Trichloroethene	130	5.206	5.207	(1.048)	68209	19.8269	19.82
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	49311	18.8699	18.86



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032205.D
Date : 22-MAR-2020 13:07
Client ID: VLCSW-200322
Sample Info: VLCSW-200322;VLCSW-200322;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032207.D Page 1
Report Date: 15-Apr-2020 12:35

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032207.D
Lab Smp Id: VBLKW1-200322 Client Smp ID: VBLKW1-200322
Inj Date : 22-MAR-2020 13:55
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW1-200322;VBLKW1-200322;3;;BLANK
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 15-Apr-2020 12:35 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 7 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

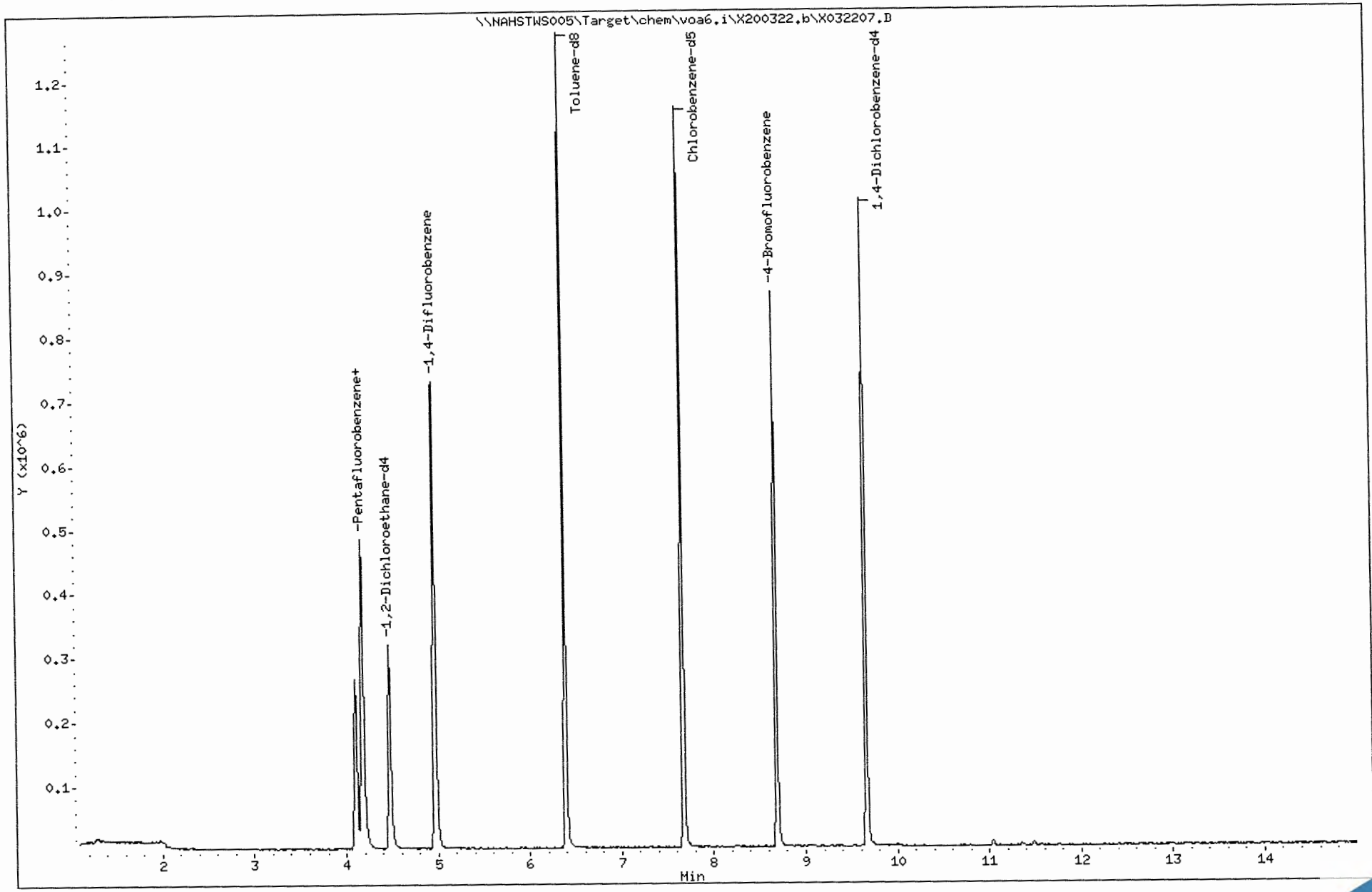
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	400963	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	187860	47.1485	47.14
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	228329	45.3114	45.31
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	593699	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	522348	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	698000	52.1678	52.16
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	243172	48.3660	48.36
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	241942	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032207.D
Date : 22-MAR-2020 13:55
Client ID: VBLKW1-200322
Sample Info: VBLKW1-200322;VBLKW1-200322;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i

Operator: PC
Column diameter: 0.18



ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032210.D
Lab Smp Id: HS20030733-08 Client Smp ID: HS20030733-08
Inj Date : 22-MAR-2020 15:08
Operator : PC Inst ID: voa6.i
Smp Info : HS20030733-08;HS20030733-08;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 15-Apr-2020 12:39 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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

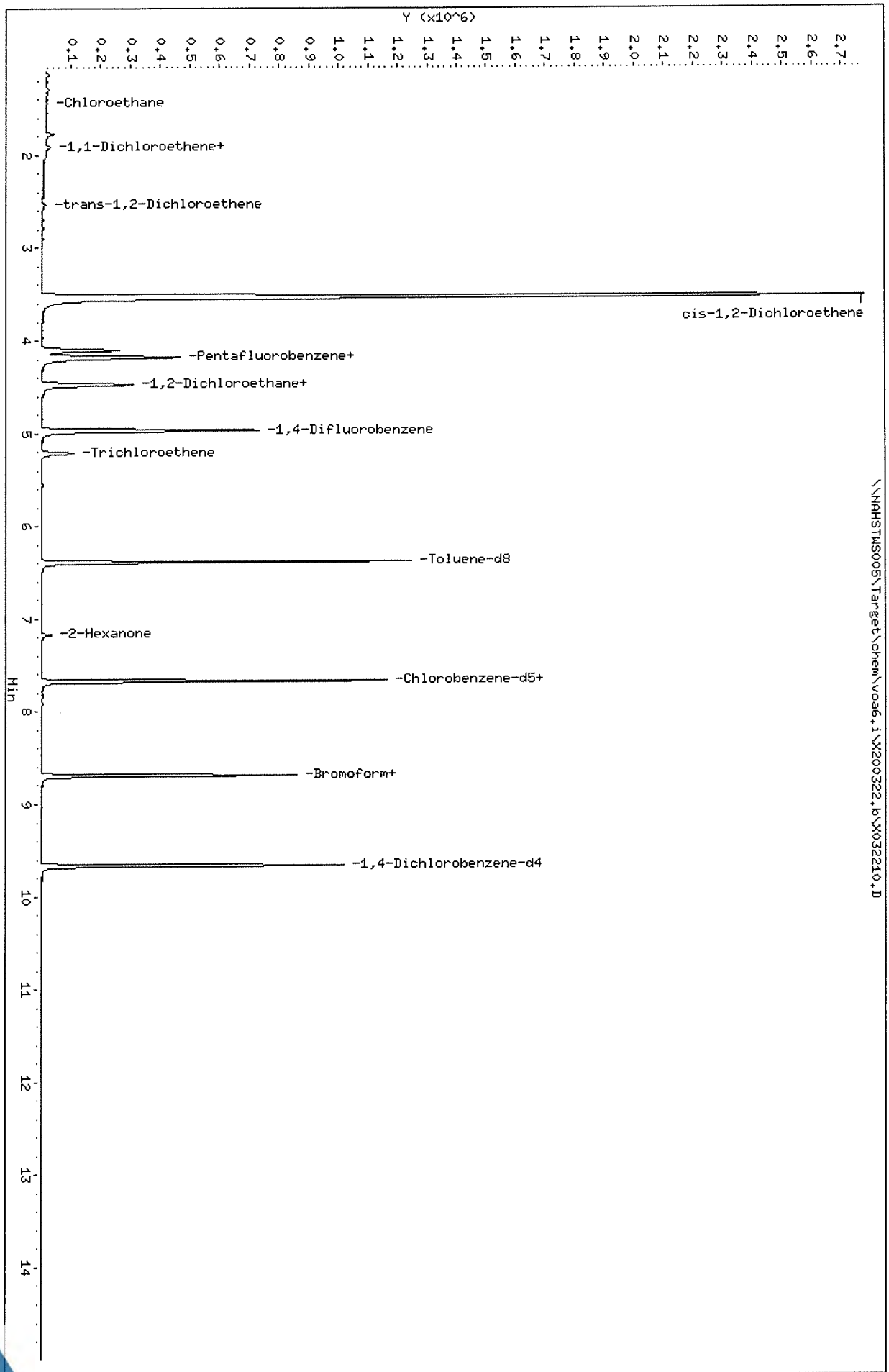
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	389753	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	185577	47.9168	47.91
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	225712	46.0831	46.08
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	589962	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	519517	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	689530	51.8151	51.81
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	247438	49.4940	49.49
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	247834	50.0000	
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	2536	0.76787	0.76(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	1307437	294.564	294.56(A)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	5286	0.84808	0.84(a)
38 Trichloroethene	130	5.207	5.207	(1.048)	34126	8.34562	8.34

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032210.D
Date : 22-MAR-2020 15:08
Client ID: HS20030733-08
Sample Info: HS20030733-08;HS20030733-08;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032210.D

Date : 22-MAR-2020 15:08

Client ID: HS20030733-08

Instrument: voa6.i

Sample Info: HS20030733-08;HS20030733-08;;;

Purge Volume: 5.0

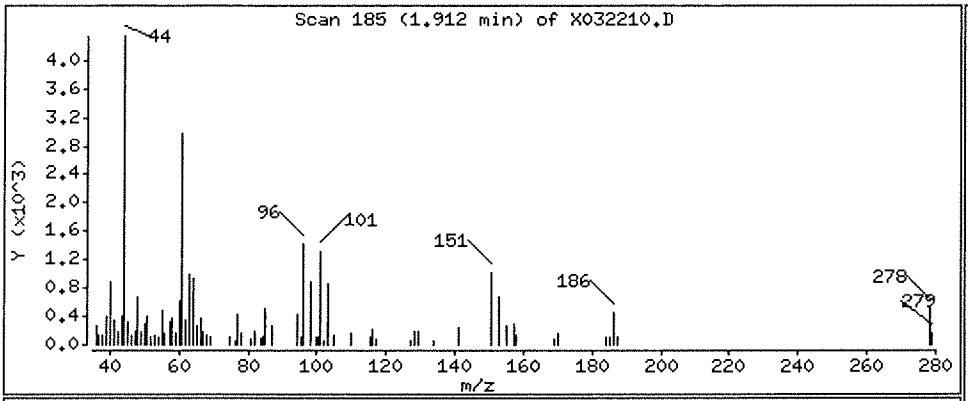
Operator: PC

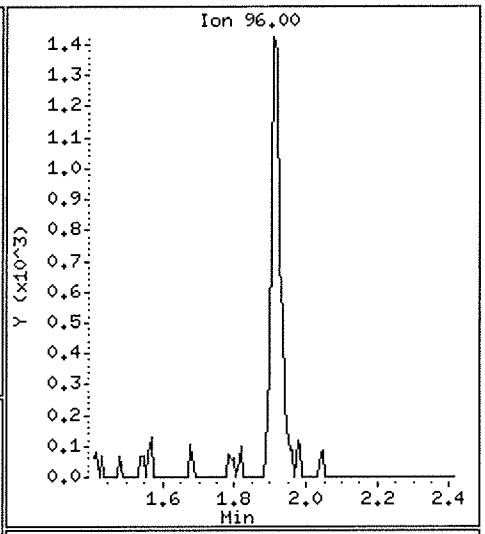
Column phase: DB624

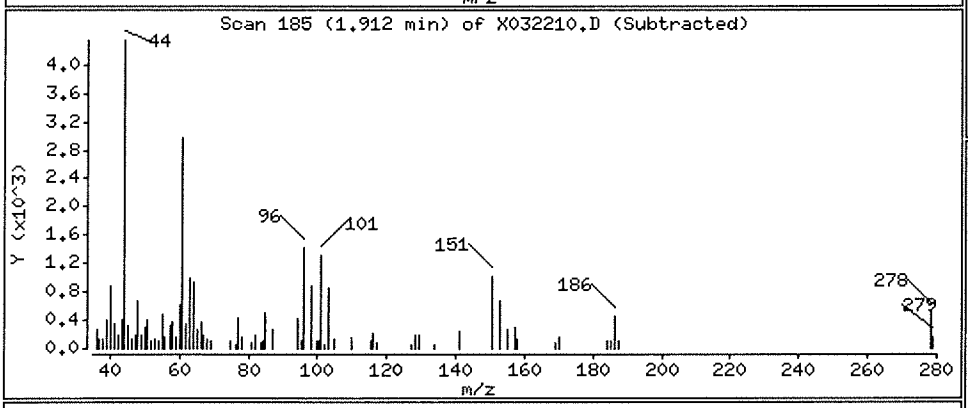
Column diameter: 0.18

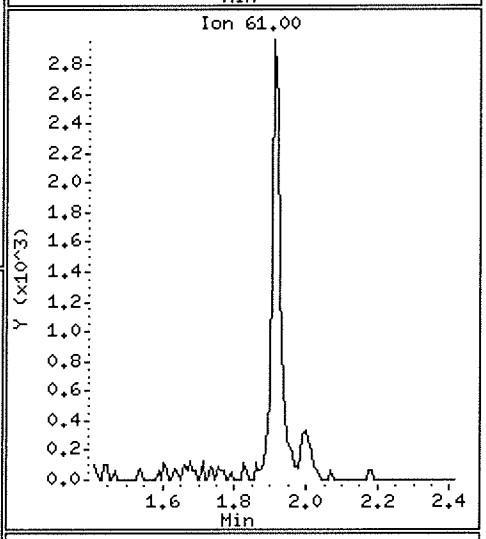
11 1,1-Dichloroethene

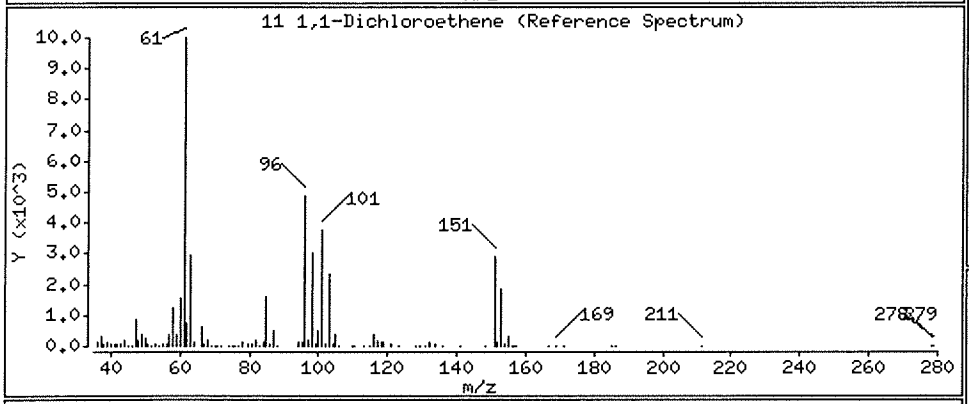
Concentration: 0.76 ug/l

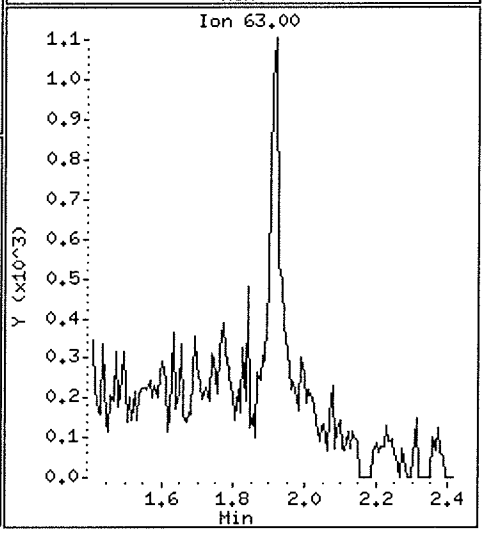


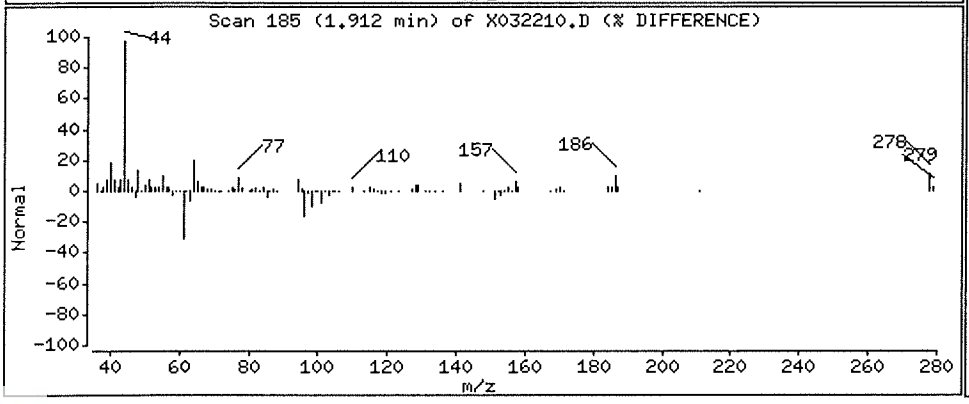












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032210.D

Date : 22-MAR-2020 15:08

Client ID: HS20030733-08

Instrument: voa6.i

Sample Info: HS20030733-08;HS20030733-08;;;

Purge Volume: 5.0

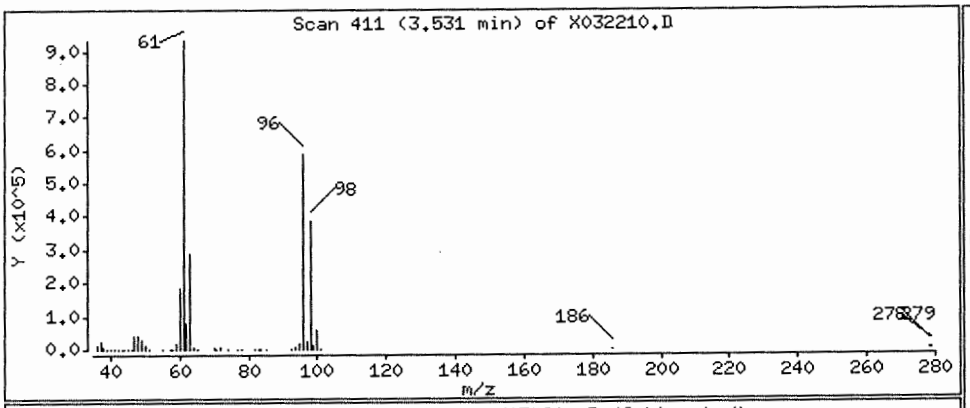
Operator: PC

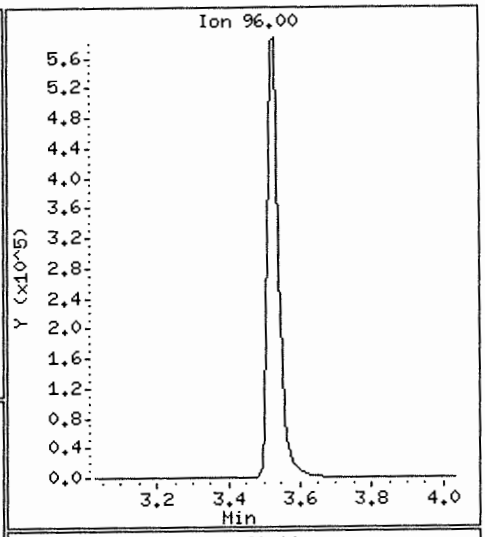
Column phase: DB624

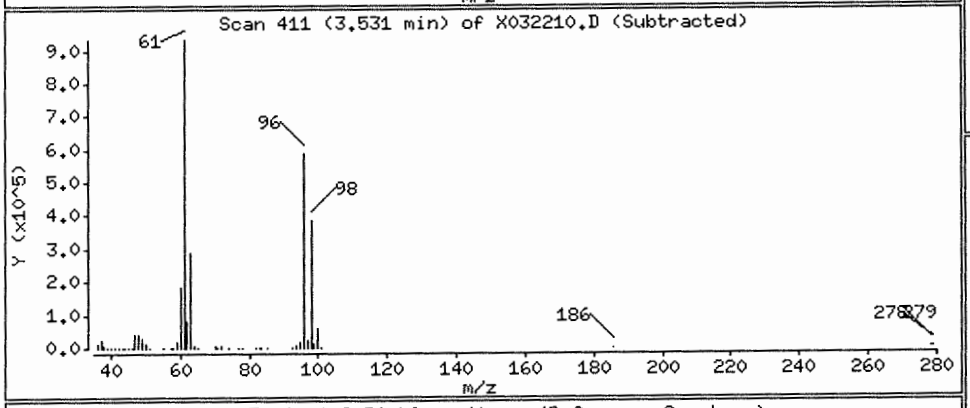
Column diameter: 0.18

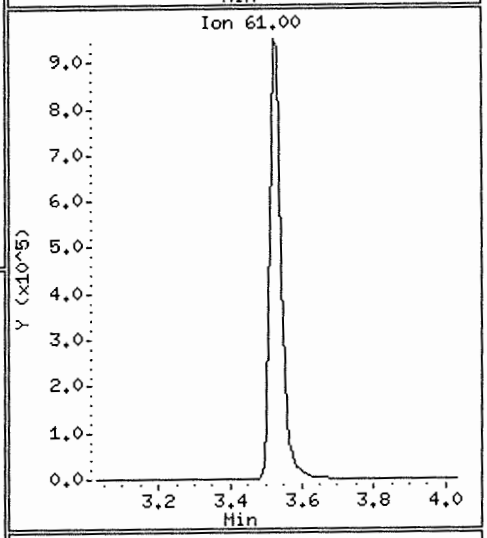
27 cis-1,2-Dichloroethene

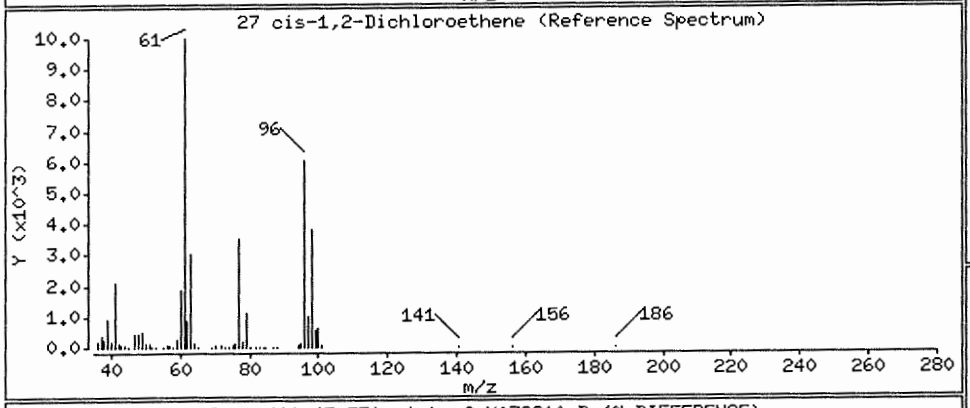
Concentration: 294.56 ug/l

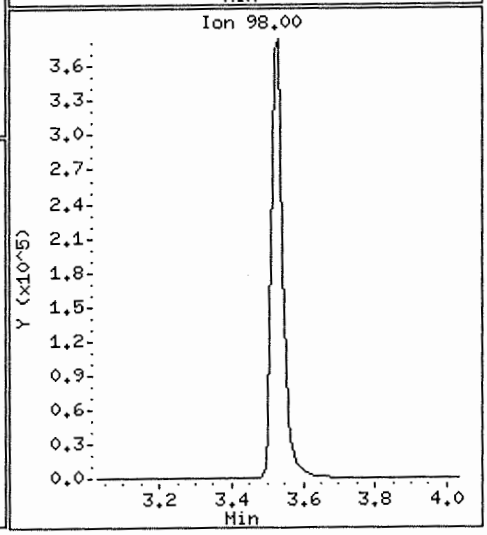


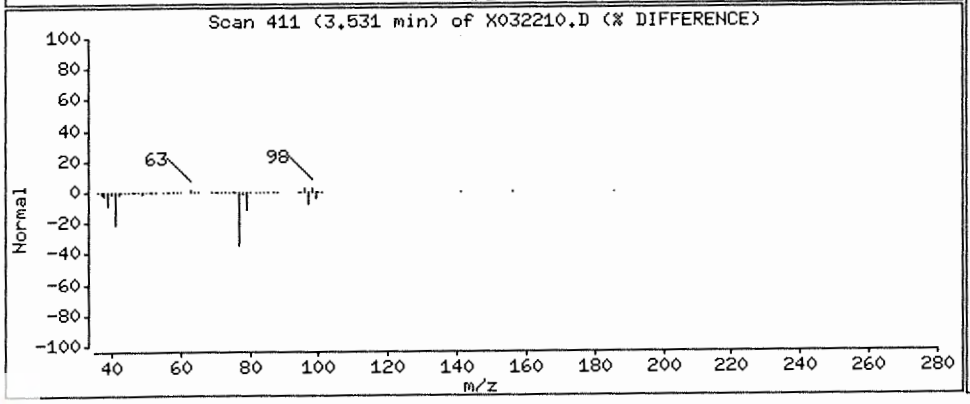












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032210.D

Date : 22-MAR-2020 15:08

Client ID: HS20030733-08

Instrument: voa6.i

Sample Info: HS20030733-08;HS20030733-08;;;

Purge Volume: 5.0

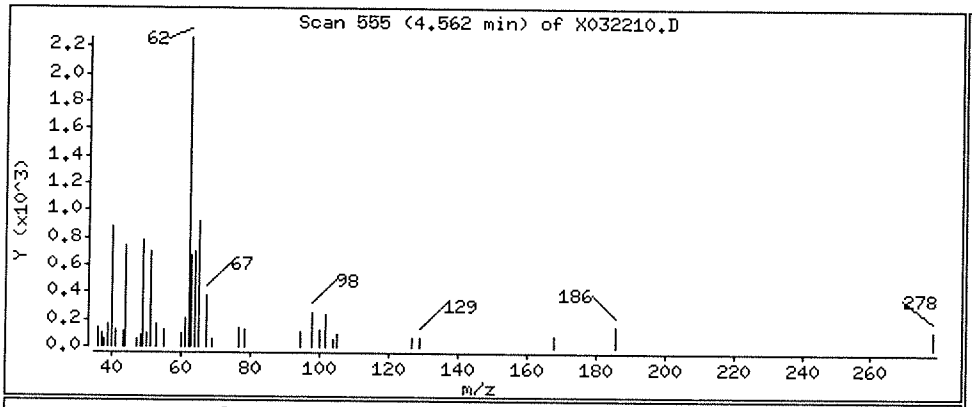
Operator: PC

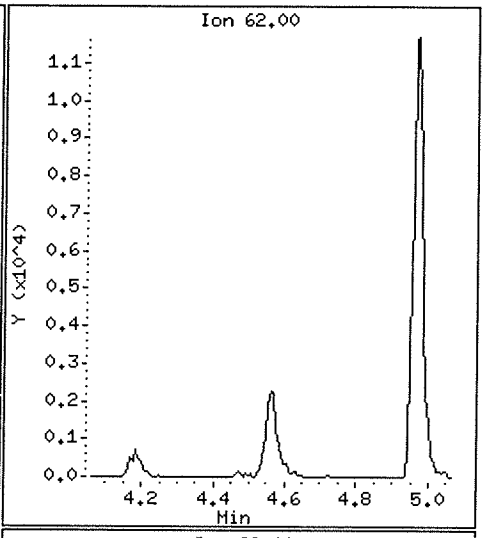
Column phase: DB624

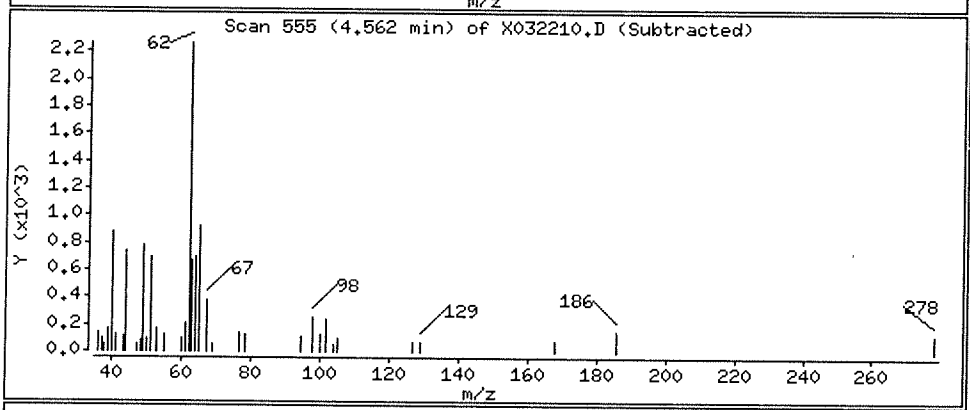
Column diameter: 0.18

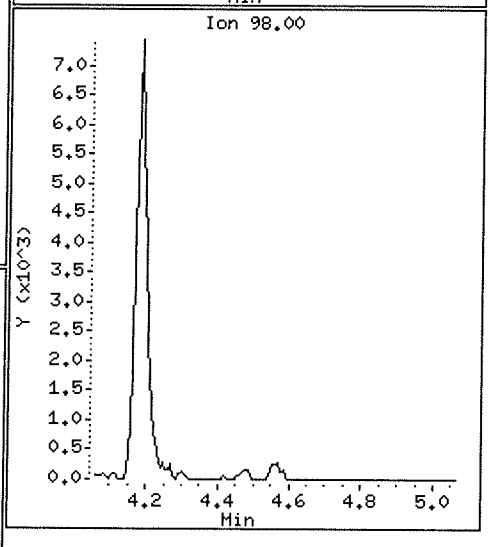
33 1,2-Dichloroethane

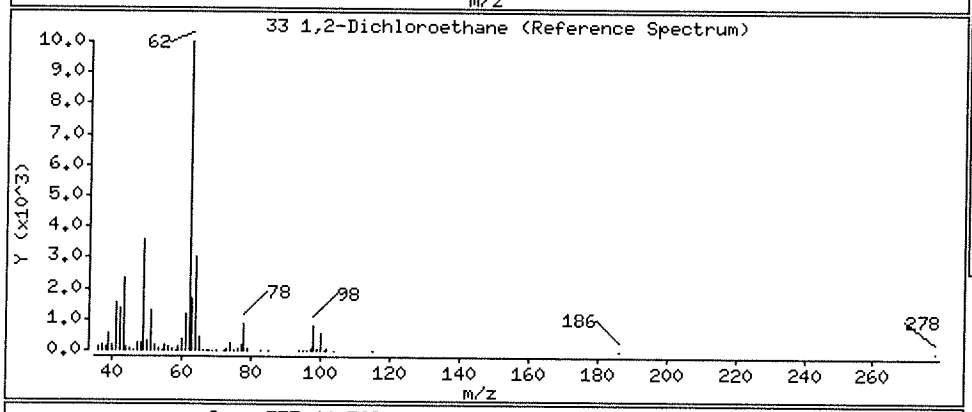
Concentration: 0.84 ug/l

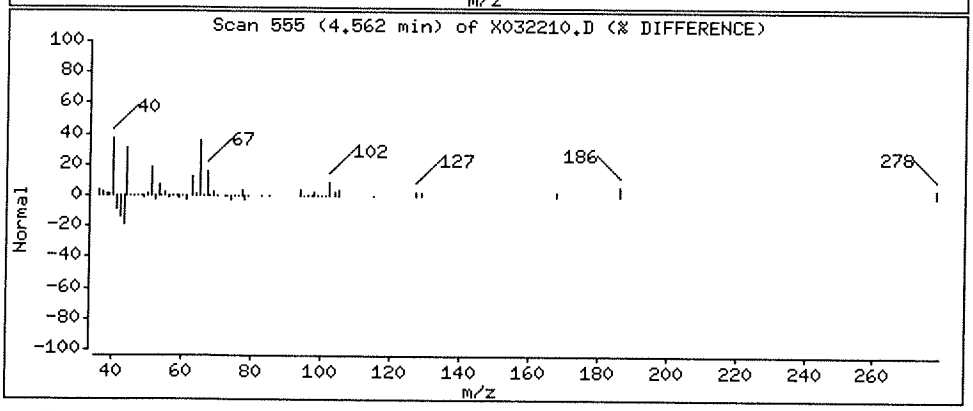












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032210.D

Date : 22-MAR-2020 15:08

Client ID: HS20030733-08

Instrument: voa6.i

Sample Info: HS20030733-08;HS20030733-08;;;

Purge Volume: 5.0

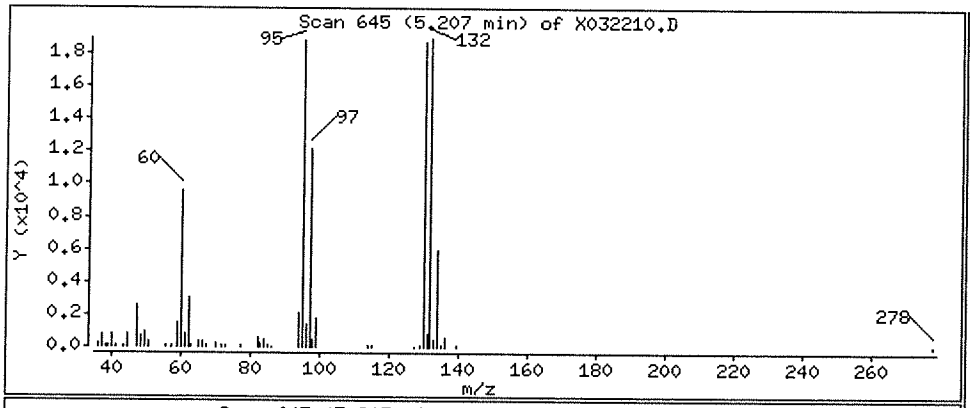
Operator: PC

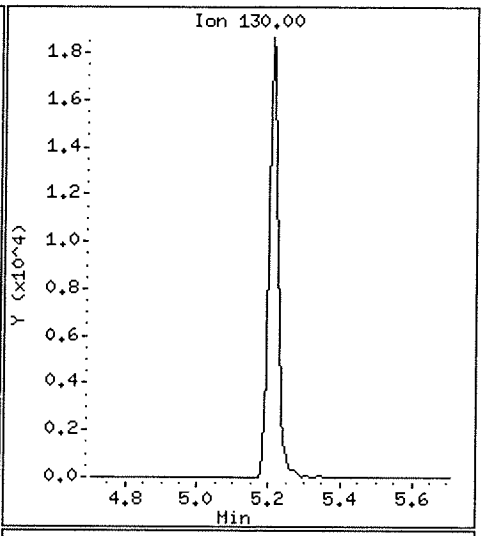
Column phase: DB624

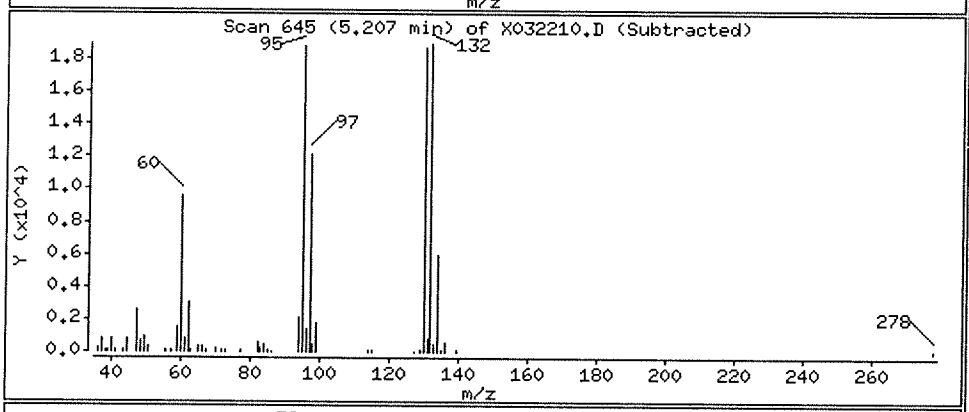
Column diameter: 0.18

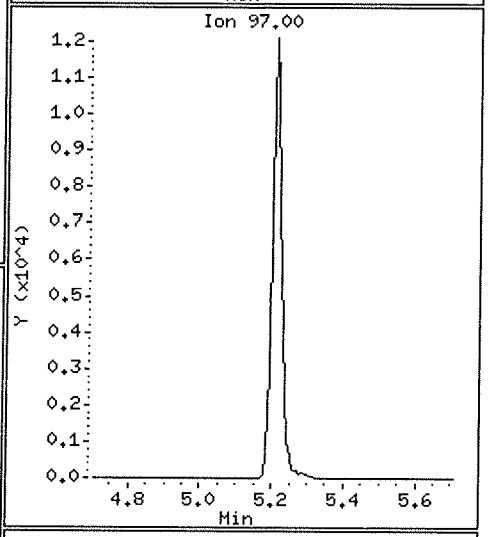
38 Trichloroethene

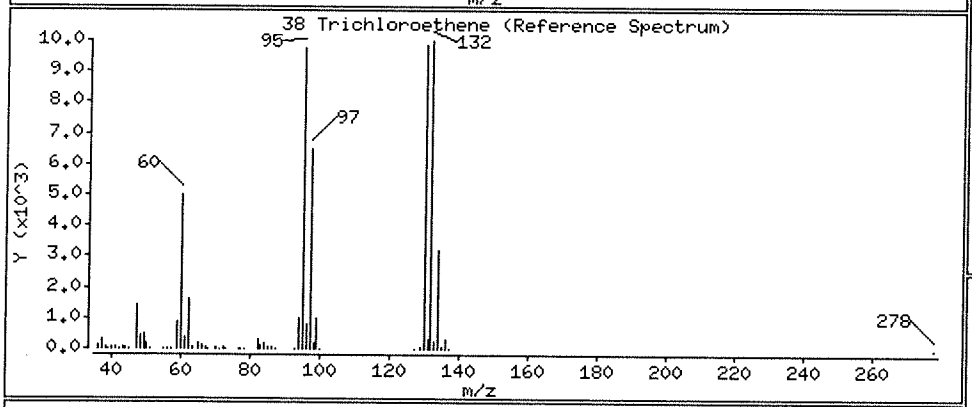
Concentration: 8.34 ug/l

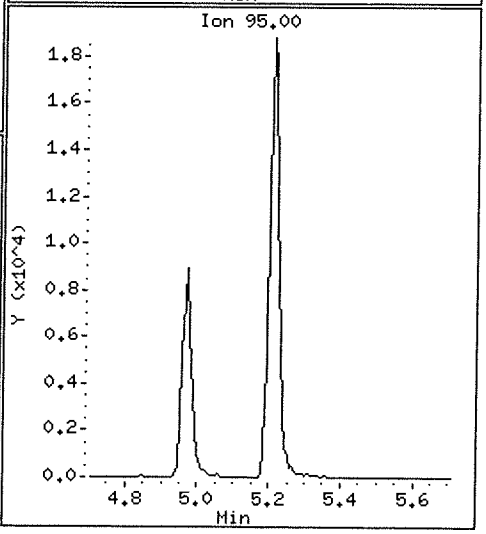


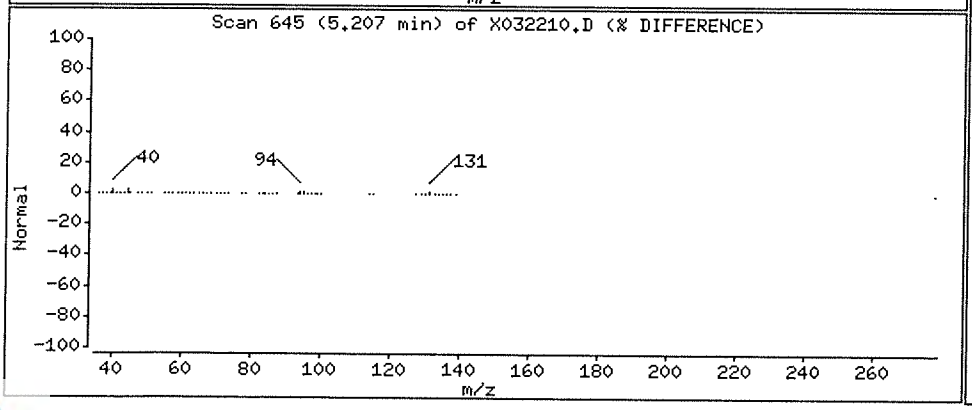












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032211.D Page 1
Report Date: 15-Apr-2020 12:39

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032211.D
Lab Smp Id: HS20030733-01 Client Smp ID: HS20030733-01
Inj Date : 22-MAR-2020 15:32
Operator : PC Inst ID: voa6.i
Smp Info : HS20030733-01;HS20030733-01;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 15-Apr-2020 12:39 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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

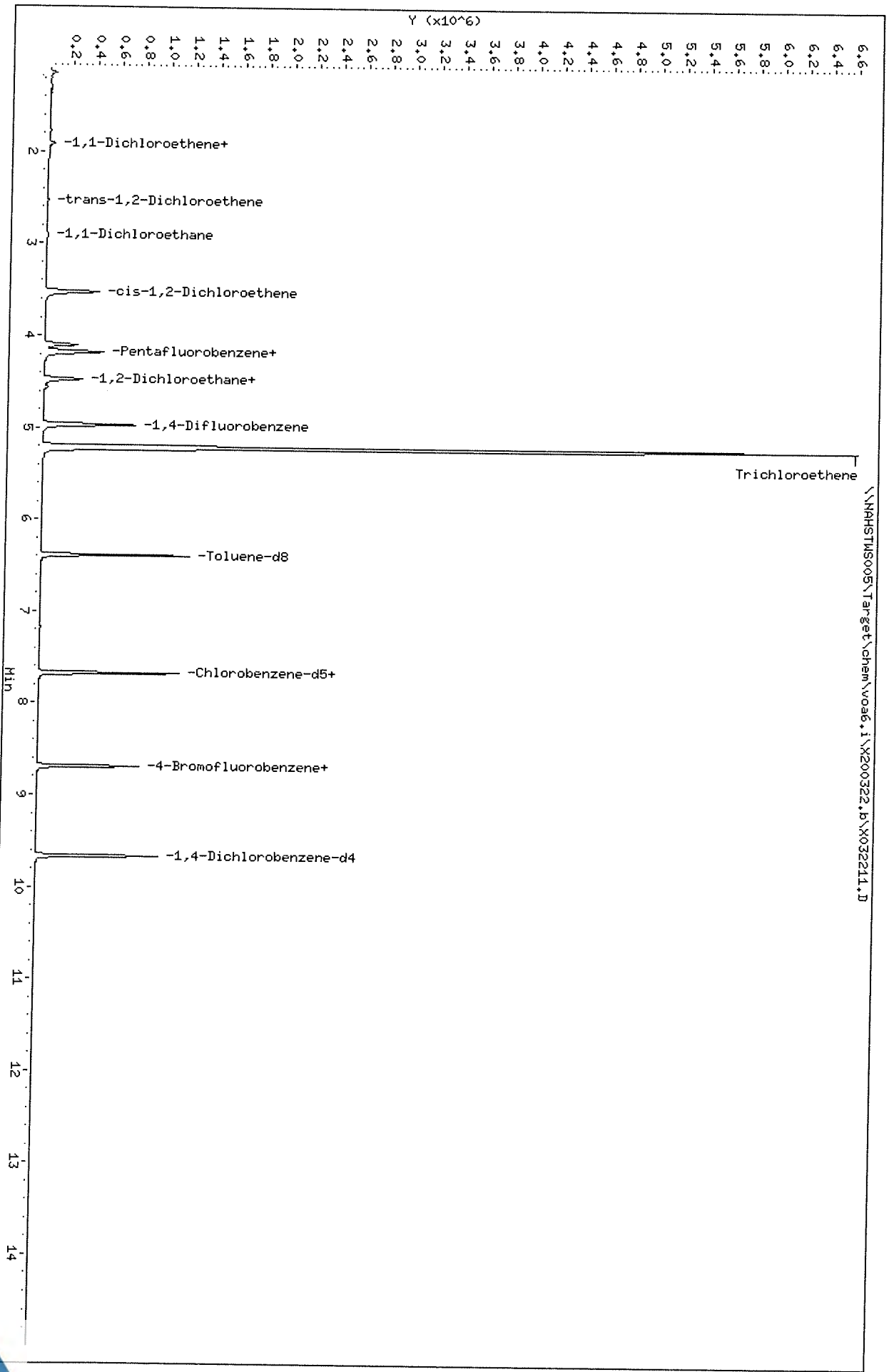
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	399338	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	188142	47.4120	47.41
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	230328	45.8961	45.89
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	596007	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	511087	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	673500	51.4448	51.44
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	241725	49.1454	49.14
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	244912	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	38067	6.25696	6.25
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	9757	2.88341	2.88(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	200720	44.1366	44.13
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	21522	3.41796	3.41(a)
38 Trichloroethene	130	5.207	5.207	(1.048)	2125608	514.552	514.55(A)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032211.D
Date : 22-MAR-2020 15:32
Client ID: HS20030733-01
Sample Info: HS20030733-01;HS20030733-01;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032211.D

Date : 22-MAR-2020 15:32

Client ID: HS20030733-01

Instrument: voa6.i

Sample Info: HS20030733-01;HS20030733-01;;;

Purge Volume: 5.0

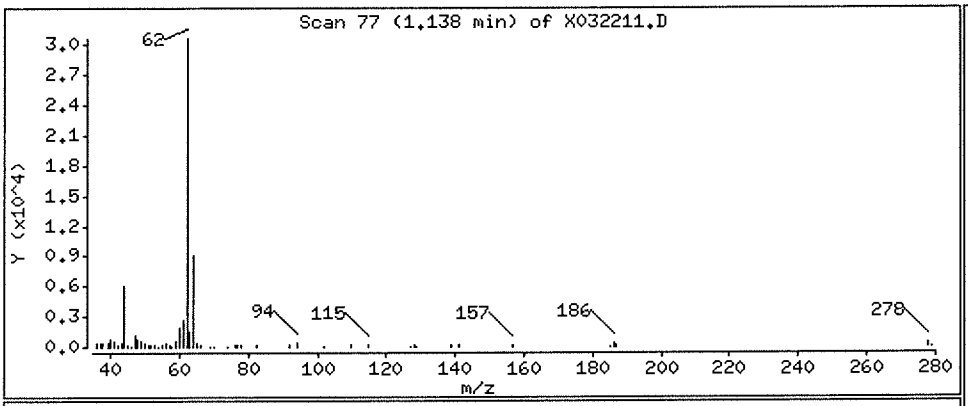
Operator: PC

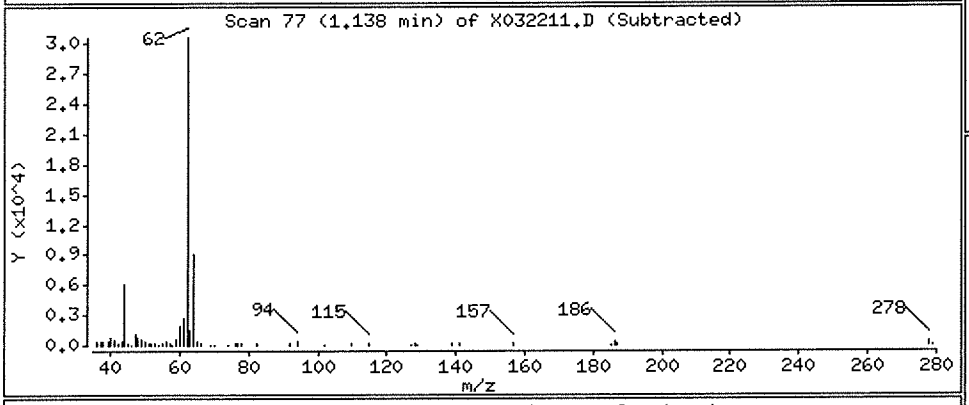
Column phase: DB624

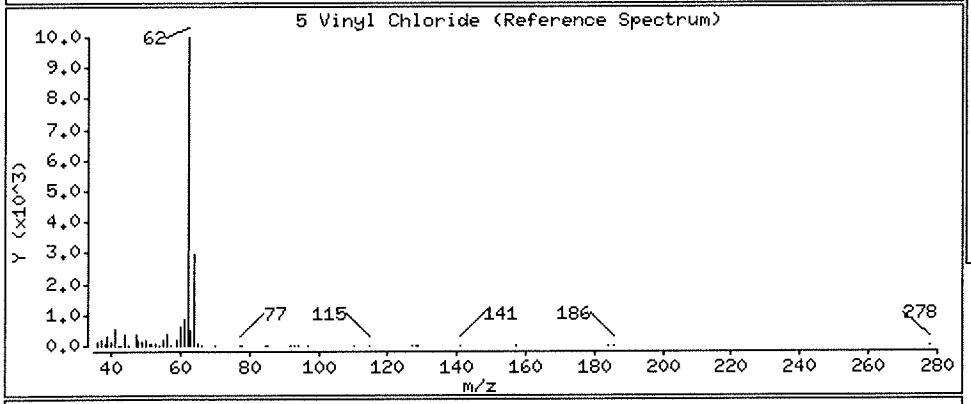
Column diameter: 0.18

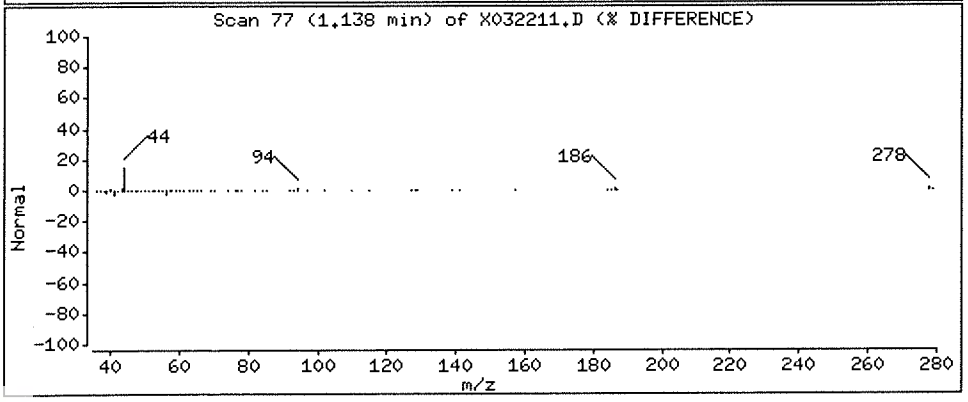
5 Vinyl Chloride

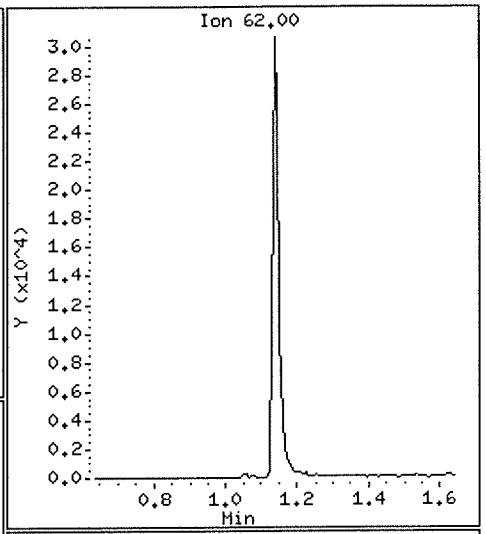
Concentration: 6.25 ug/l

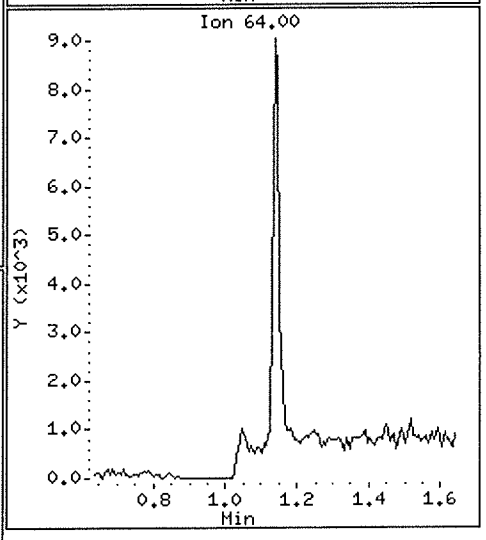












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032211.D

Date : 22-MAR-2020 15:32

Client ID: HS20030733-01

Instrument: voa6.i

Sample Info: HS20030733-01;HS20030733-01;;;

Purge Volume: 5.0

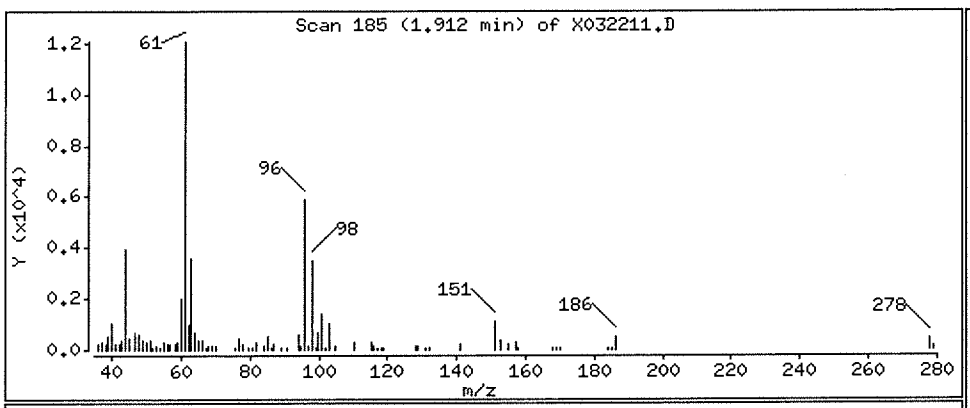
Operator: PC

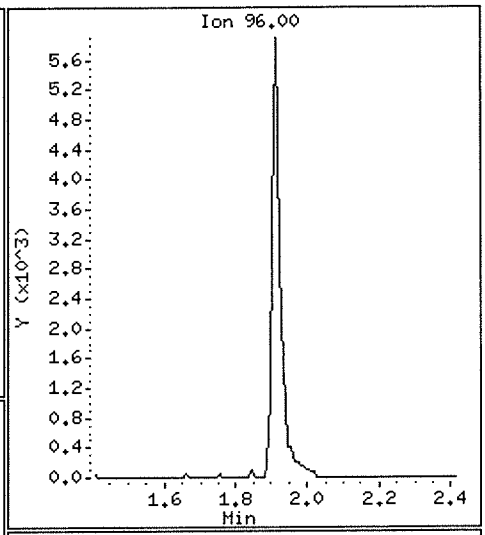
Column phase: DB624

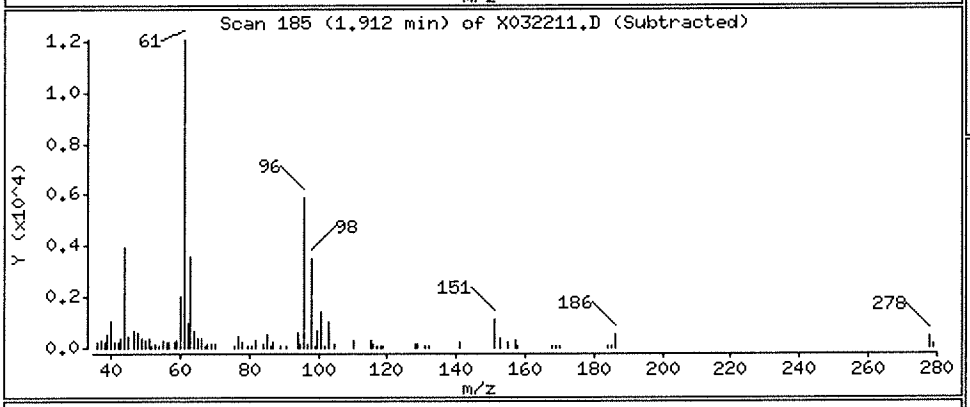
Column diameter: 0.18

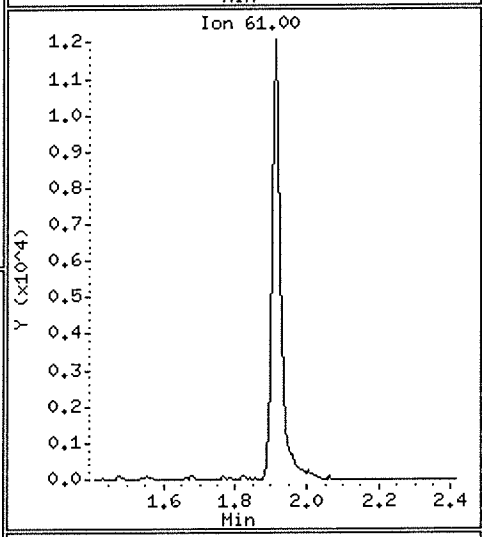
11 1,1-Dichloroethene

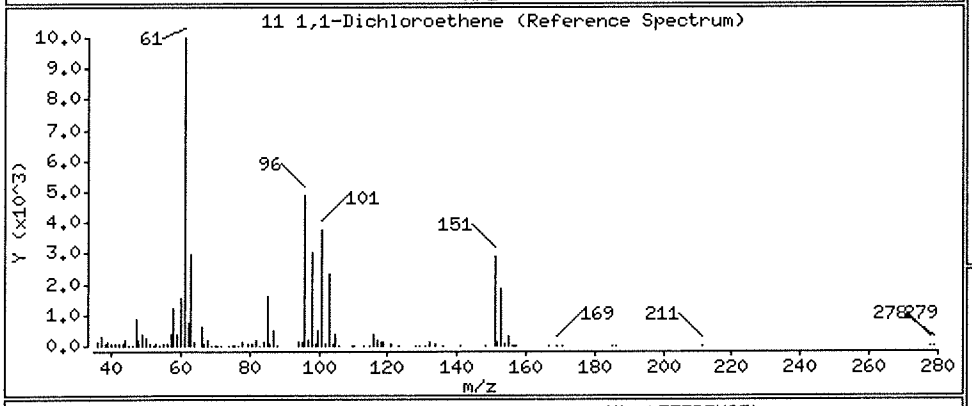
Concentration: 2.88 ug/l

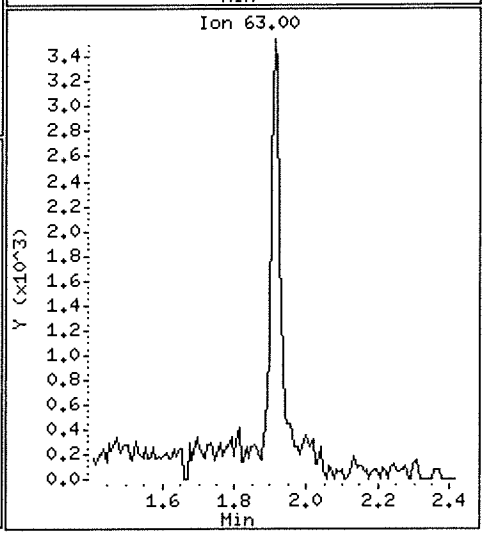


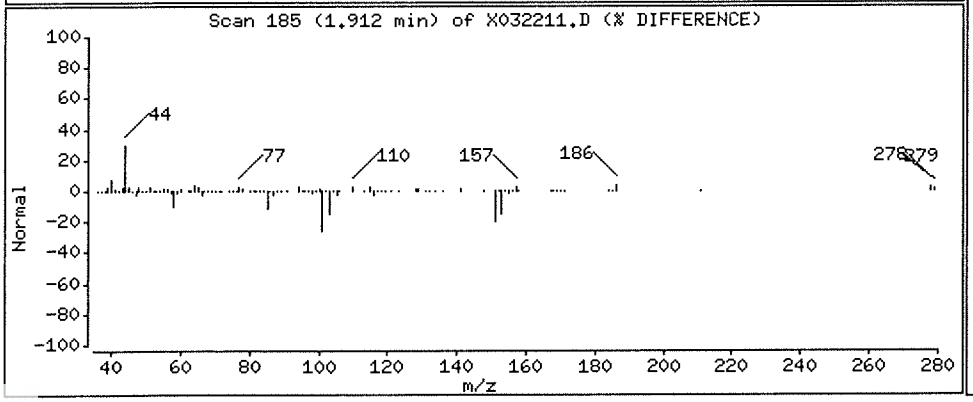












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032211.D

Date : 22-MAR-2020 15:32

Client ID: HS20030733-01

Instrument: voa6.i

Sample Info: HS20030733-01;HS20030733-01;;;

Purge Volume: 5.0

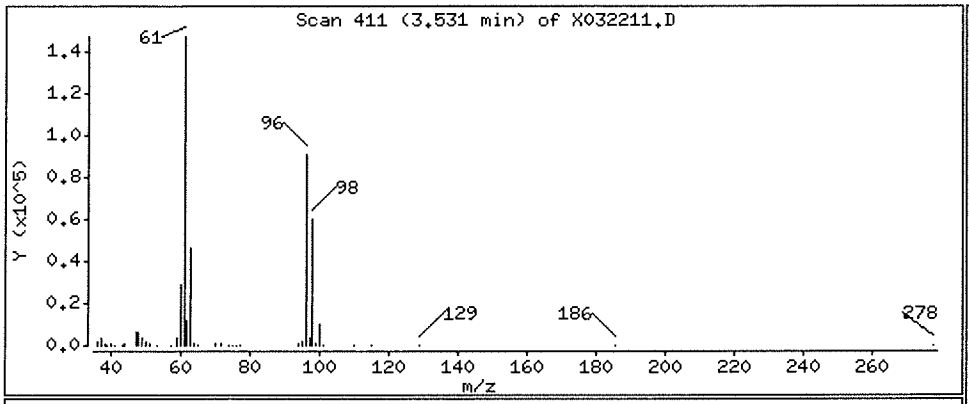
Operator: PC

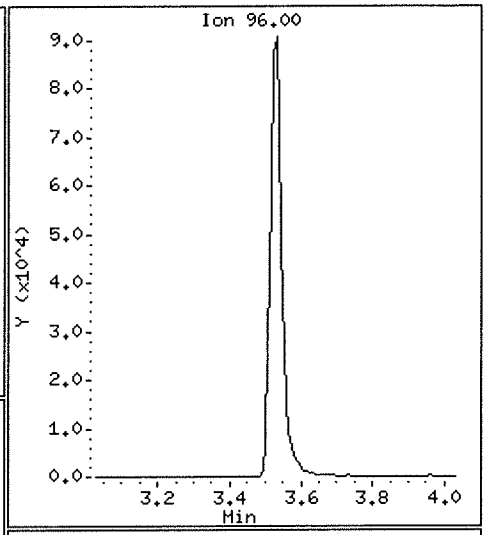
Column phase: DB624

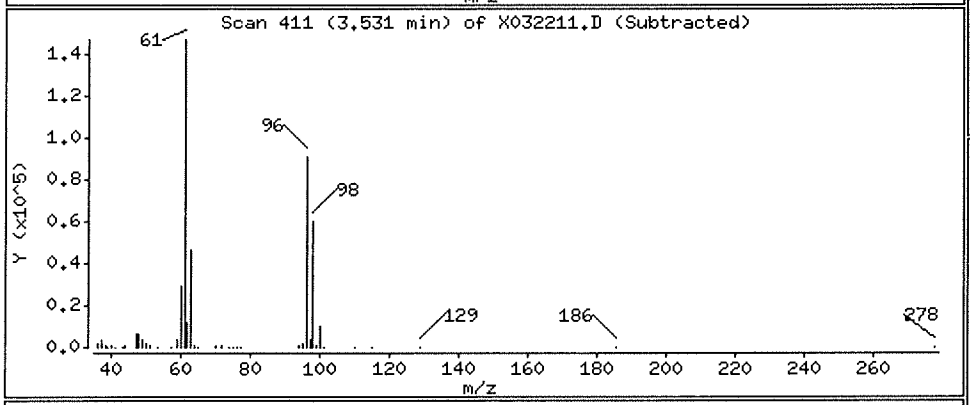
Column diameter: 0.18

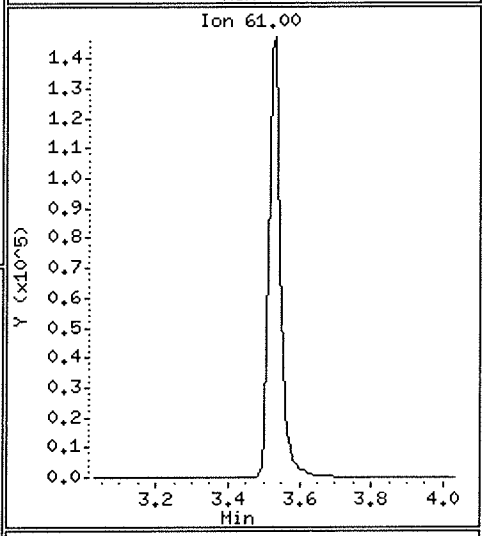
27 cis-1,2-Dichloroethene

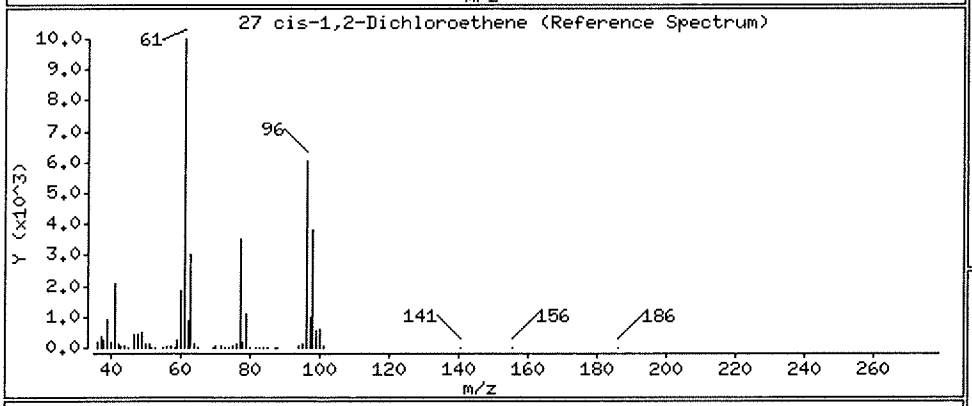
Concentration: 44.13 ug/l

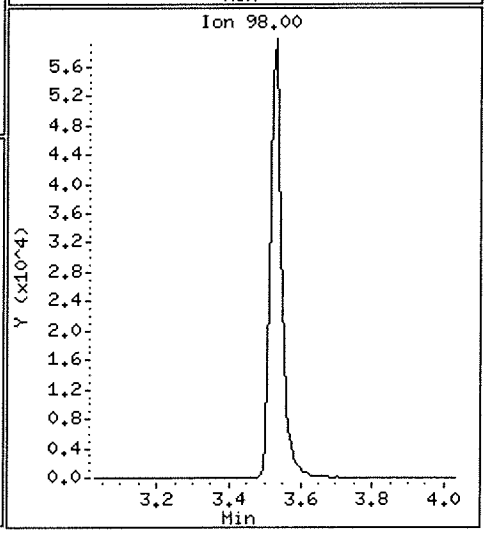


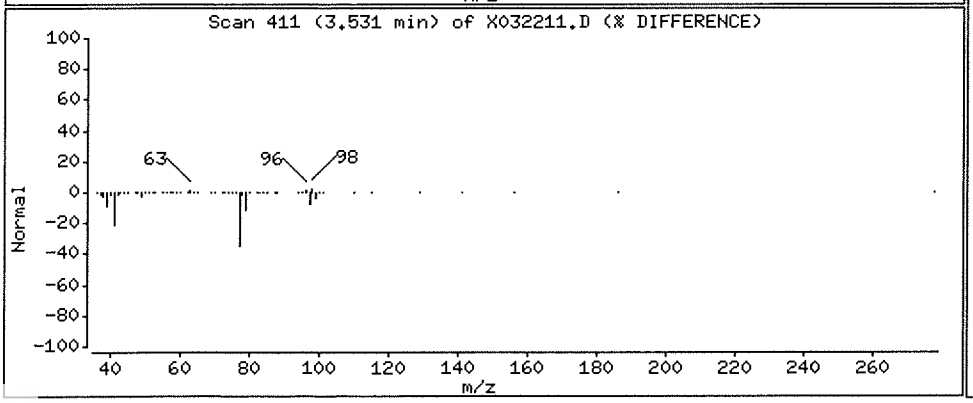












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032211.D

Date : 22-MAR-2020 15:32

Client ID: HS20030733-01

Instrument: voa6.i

Sample Info: HS20030733-01;HS20030733-01;;;

Purge Volume: 5.0

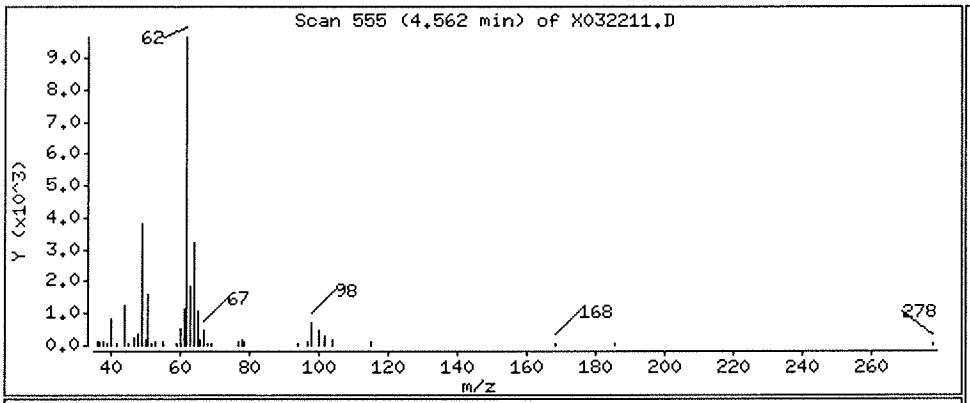
Operator: PC

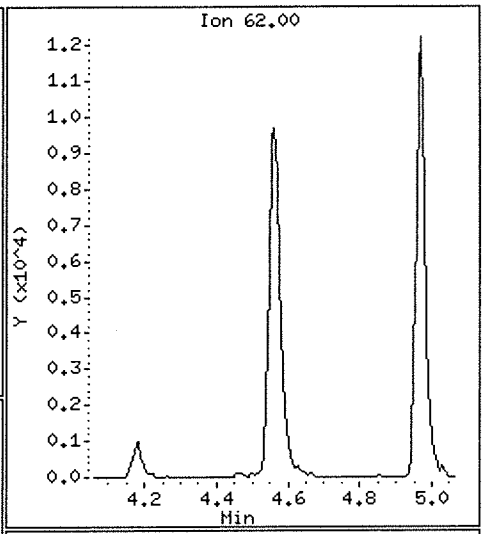
Column phase: DB624

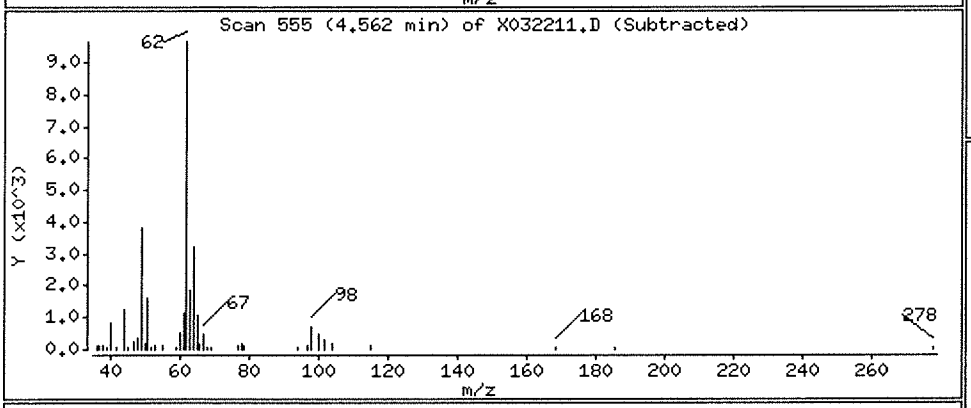
Column diameter: 0.18

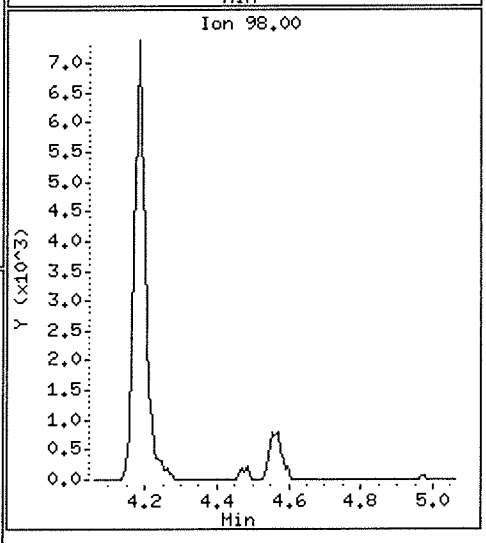
33 1,2-Dichloroethane

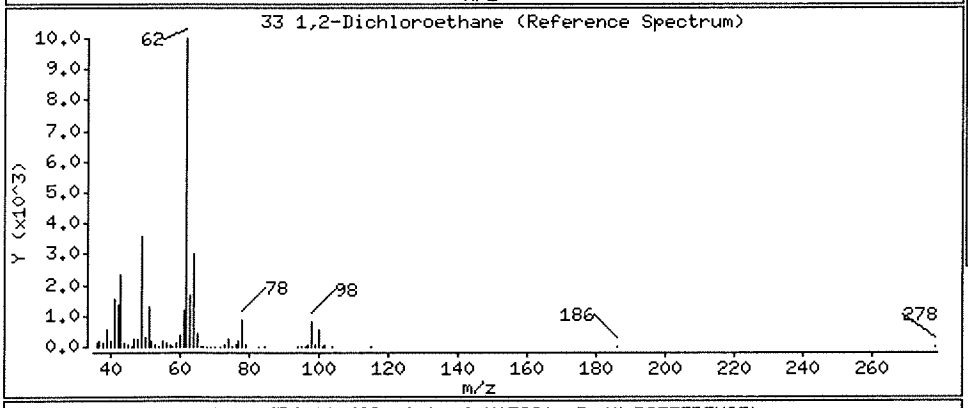
Concentration: 3.41 ug/l

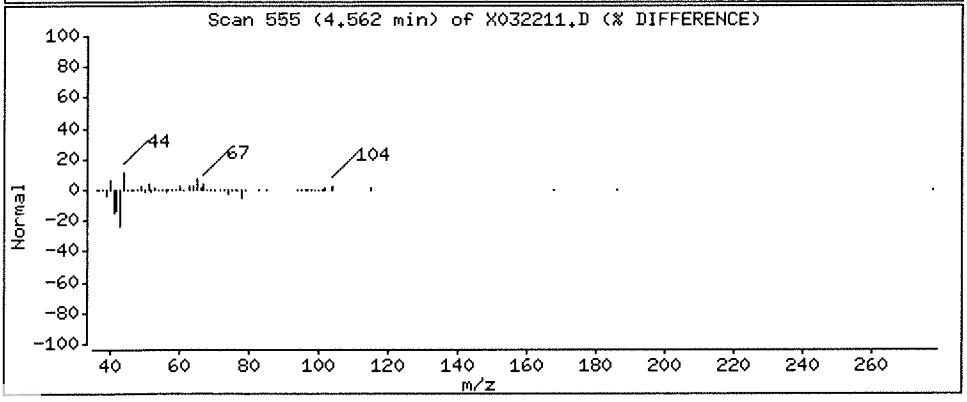












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Date : 22-MAR-2020 15:32

Client ID: HS20030733-01

Instrument: voa6.i

Sample Info: HS20030733-01;HS20030733-01;;;

Purge Volume: 5.0

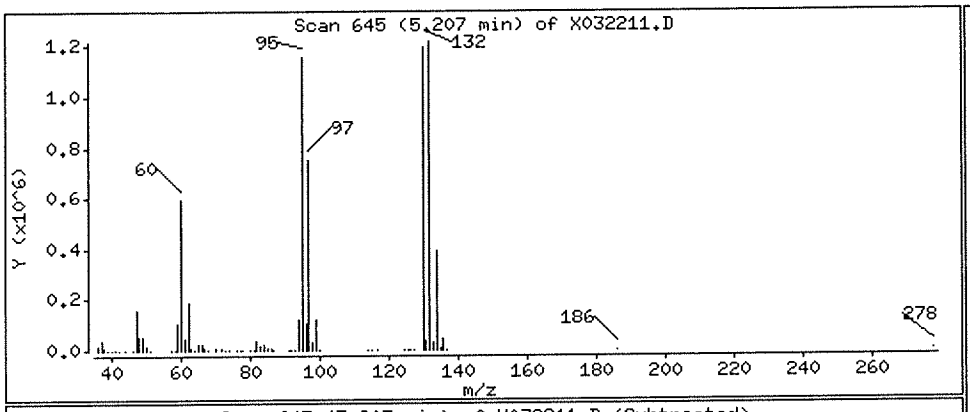
Operator: PC

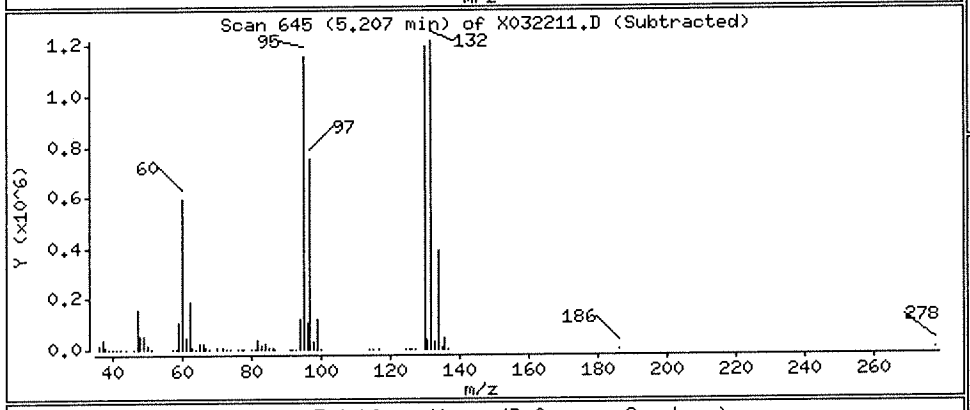
Column phase: DB624

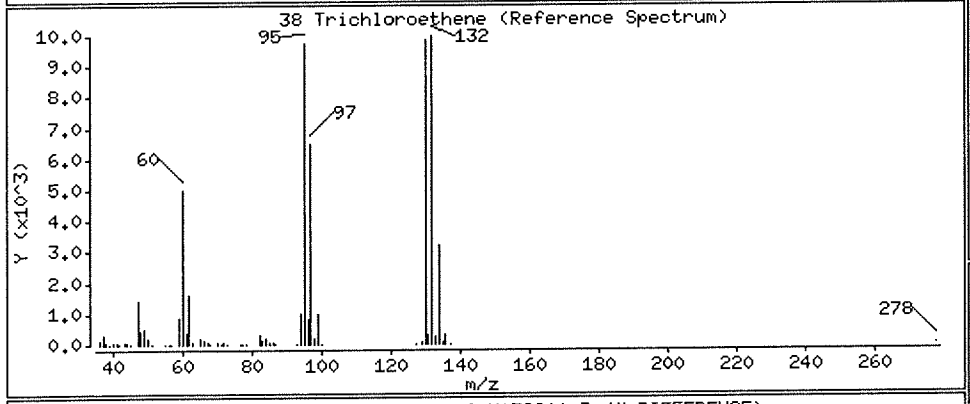
Column diameter: 0.18

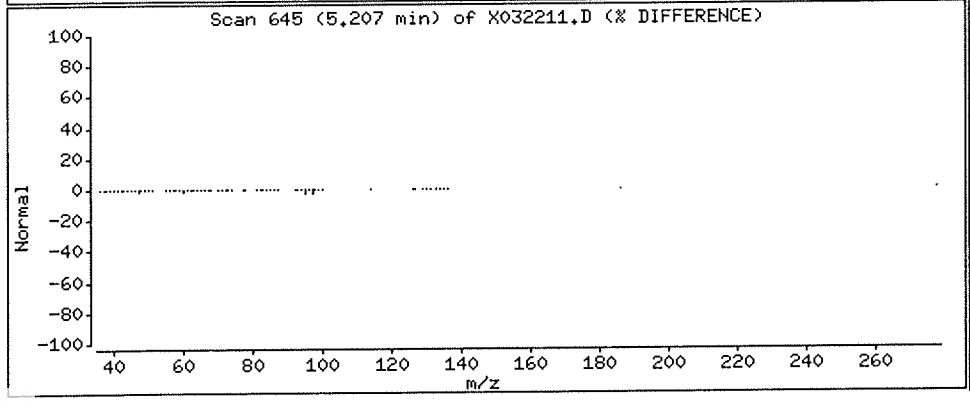
38 Trichloroethene

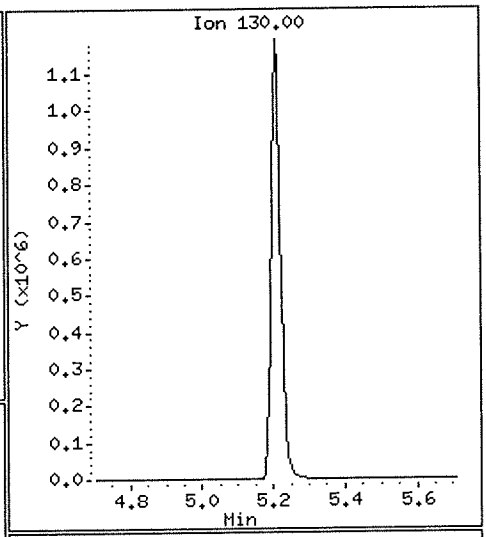
Concentration: 514.55 ug/l

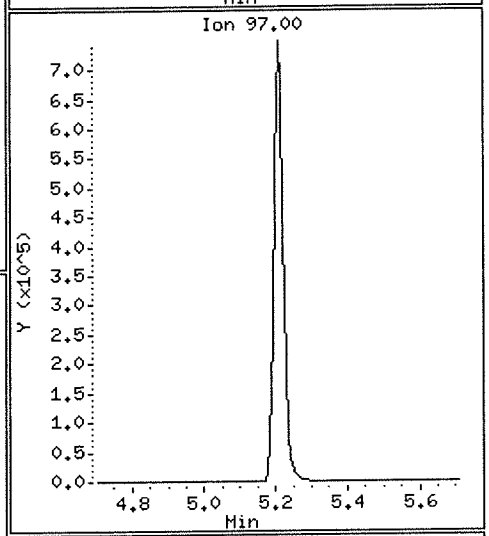


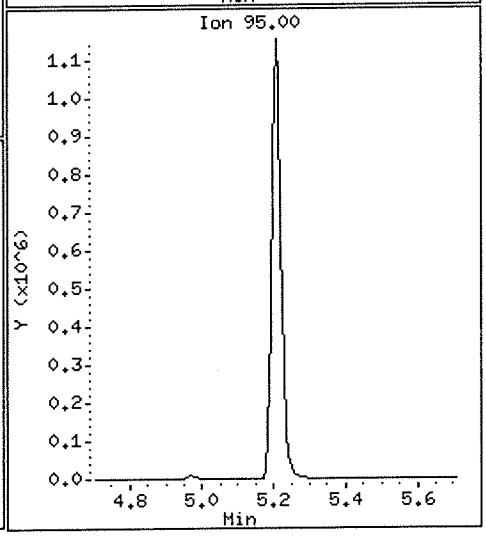












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032212.D Page 1
Report Date: 15-Apr-2020 12:39

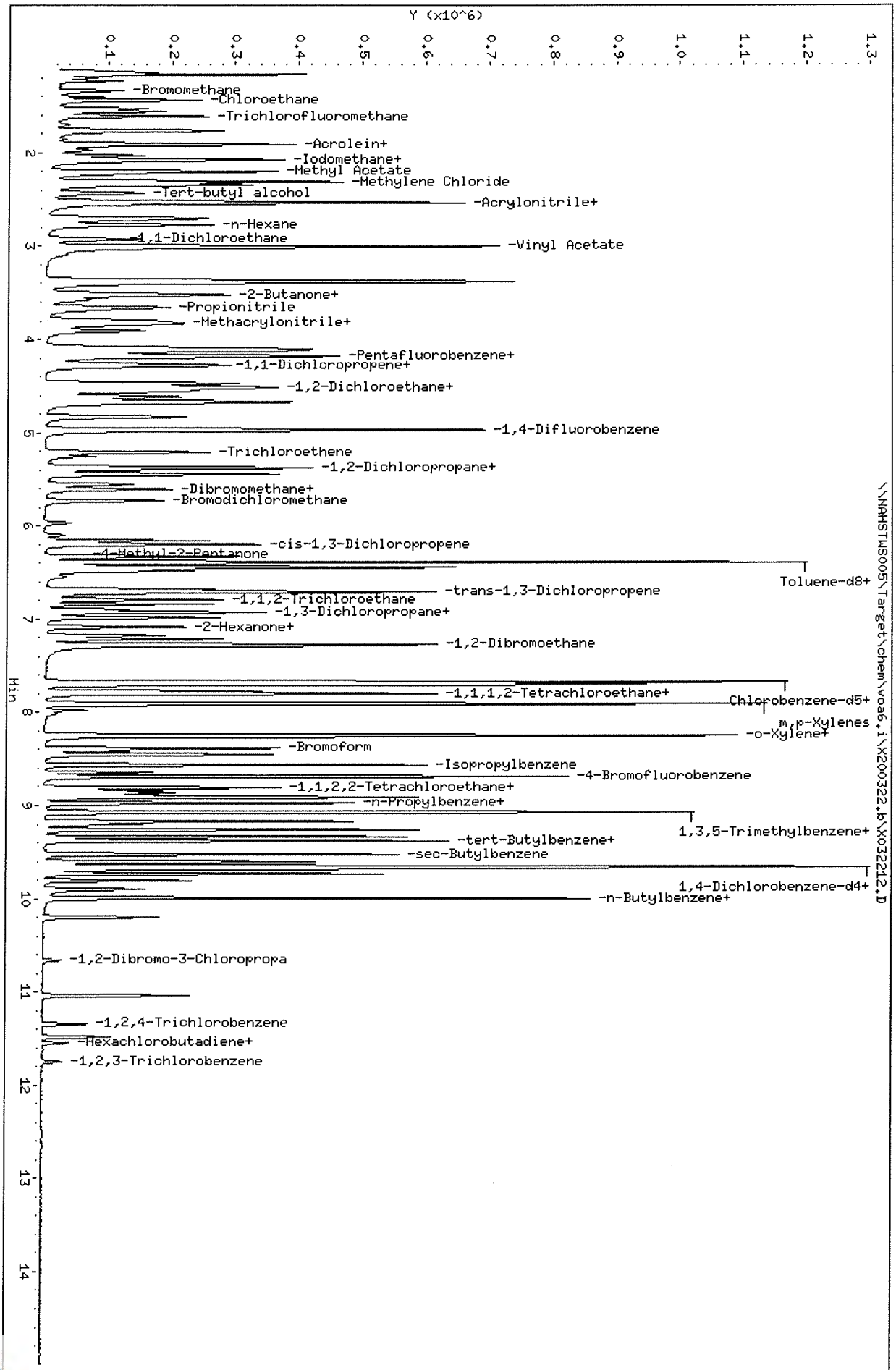
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032212.D
Lab Smp Id: HS20030888-01MS Client Smp ID: HS20030888-01MS
Inj Date : 22-MAR-2020 15:56
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-01MS;HS20030888-01MS;3;;MS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 15-Apr-2020 12:39 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 12 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	378224	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	179379	47.7279	47.72
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	215355	45.3061	45.30
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	559922	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	497970	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	658841	51.6510	51.65
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	234764	48.9858	48.98
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	231705	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	110995	19.2624	19.26
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	62198	19.4070	19.40
17 Methylene Chloride	84	2.306	2.306	(0.551)	76695	18.1799	18.17
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	83498	19.3855	19.38
33 1,2-Dichloroethane	62	4.555	4.562	(0.916)	116614	19.7133	19.71
38 Trichloroethene	130	5.207	5.207	(1.048)	85045	21.9138	21.91
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	56529	19.7035	19.70



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032212.D
Date : 22-MAR-2020 15:56
Client ID: HS20030888-01MS
Sample Info: HS20030888-01MS;HS20030888-01MS;3;;MS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032212.D

Date : 22-MAR-2020 15:56

Client ID: HS20030888-01MS

Instrument: voa6.i

Sample Info: HS20030888-01MS;HS20030888-01MS;3;;MS

Purge Volume: 5.0

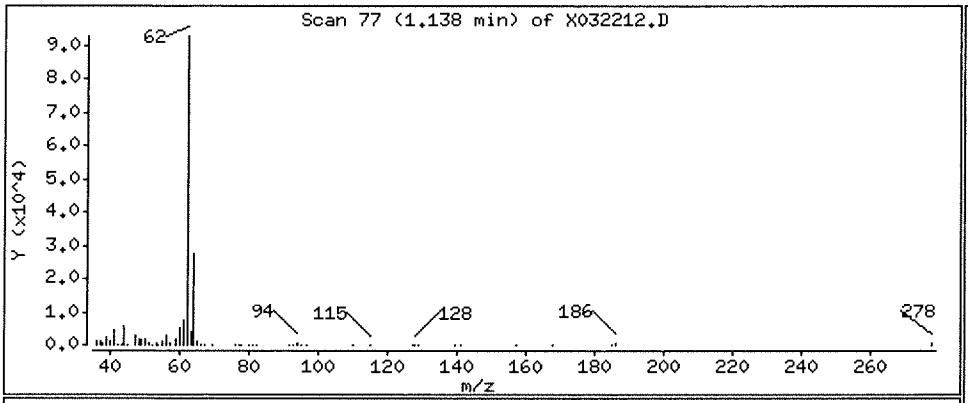
Operator: PC

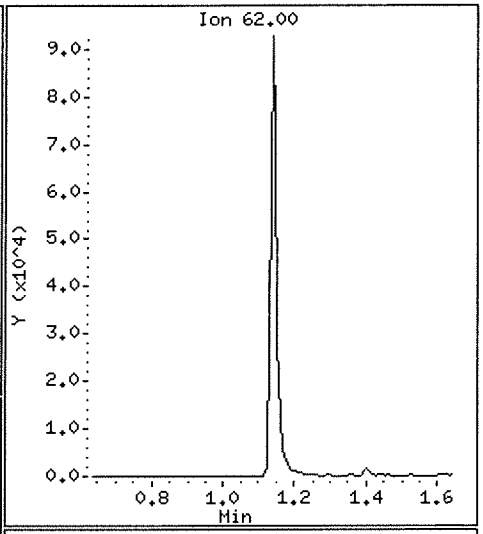
Column phase: DB624

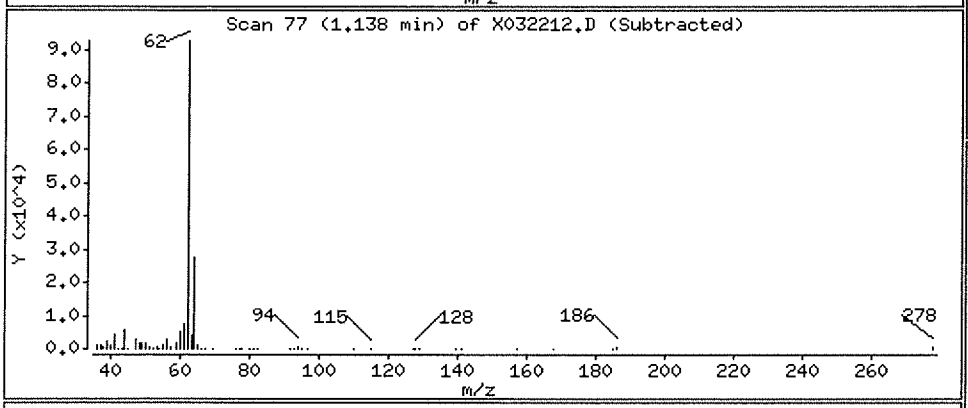
Column diameter: 0.18

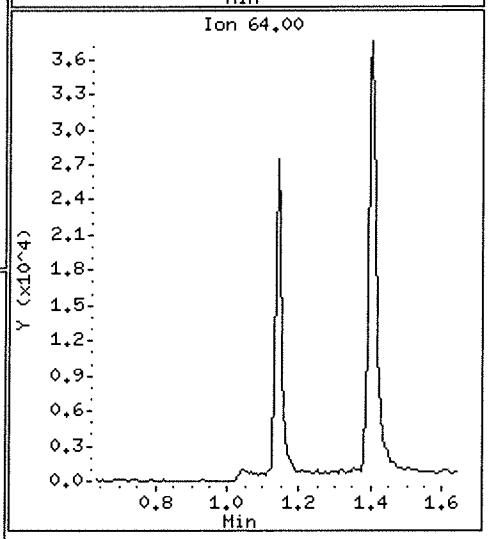
5 Vinyl Chloride

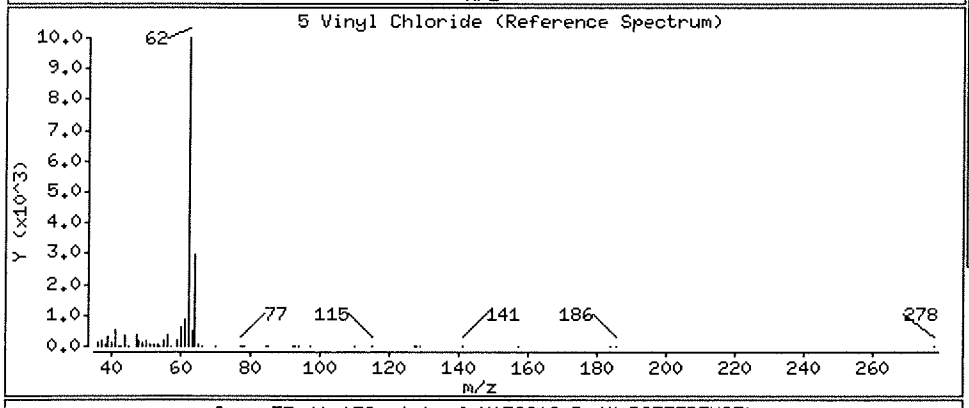
Concentration: 19.26 ug/l

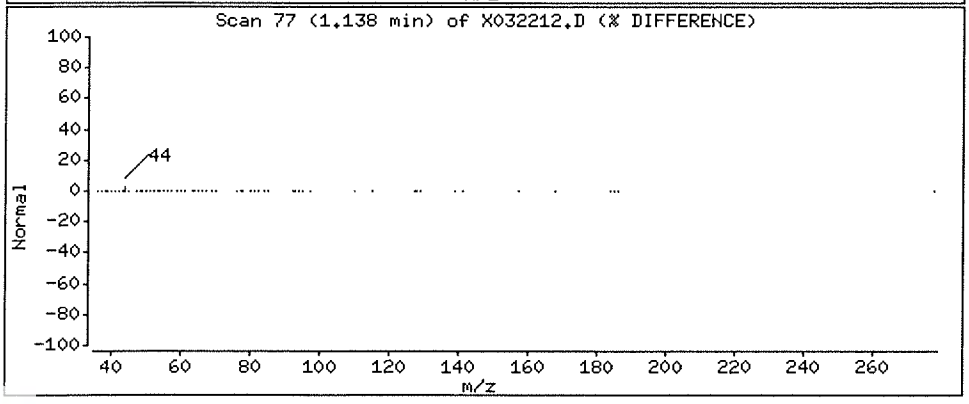












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032212.D

Date : 22-MAR-2020 15:56

Client ID: HS20030888-01MS

Instrument: voa6.i

Sample Info: HS20030888-01MS;HS20030888-01MS;3;;MS

Purge Volume: 5.0

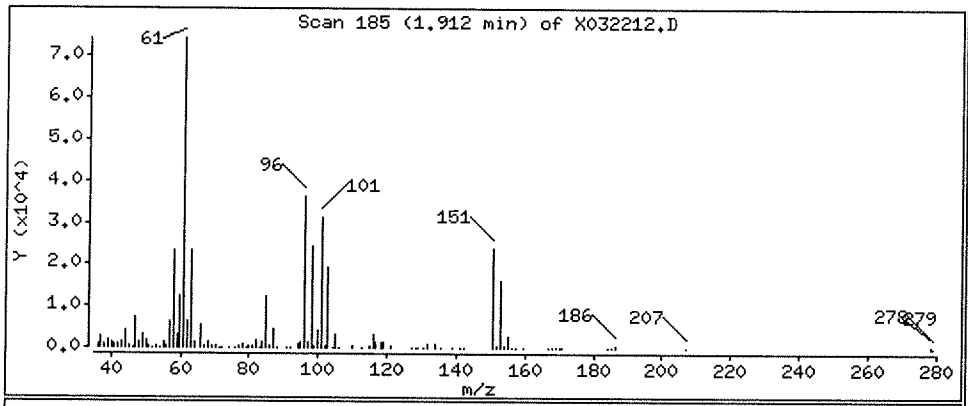
Operator: PC

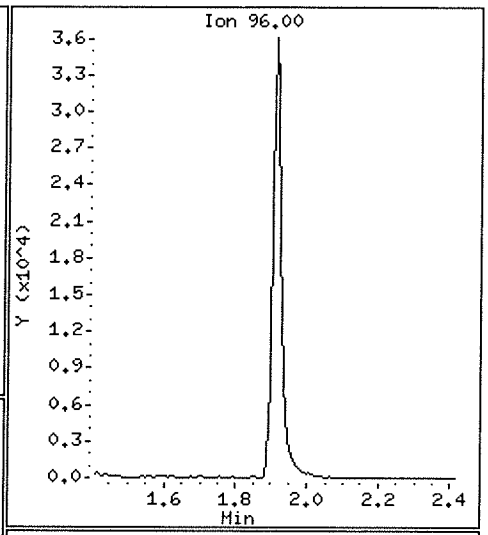
Column phase: DB624

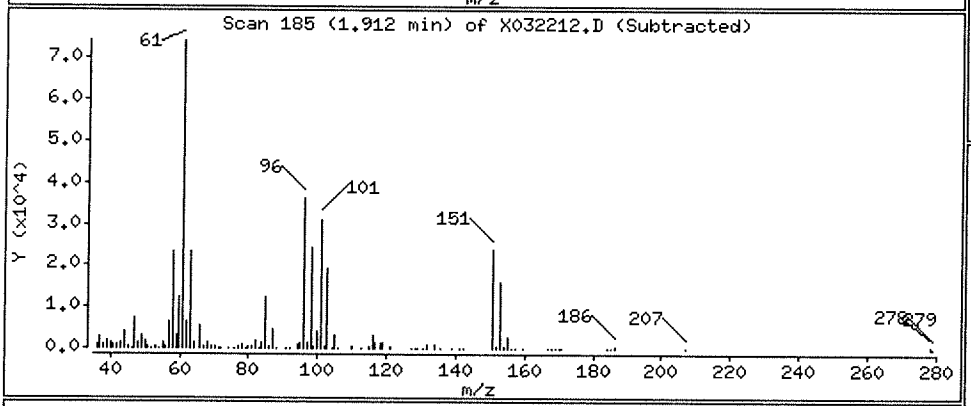
Column diameter: 0.18

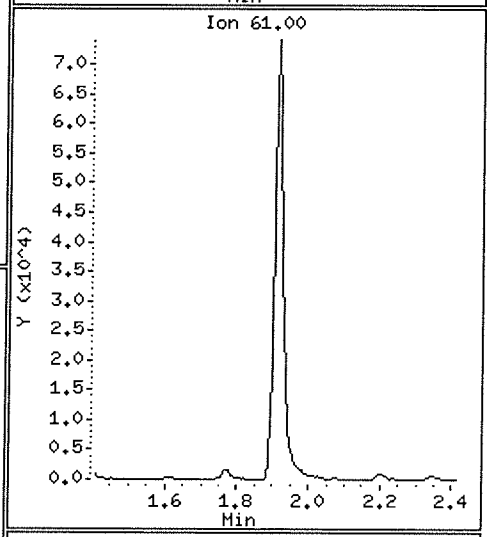
11 1,1-Dichloroethene

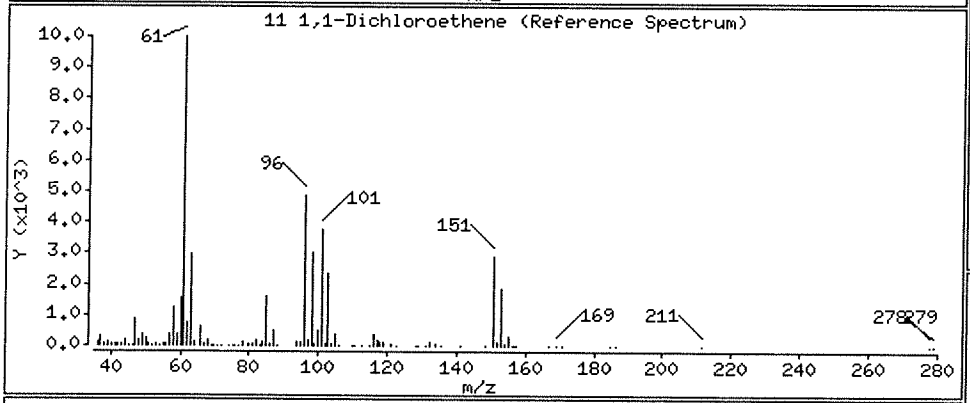
Concentration: 19.40 ug/l

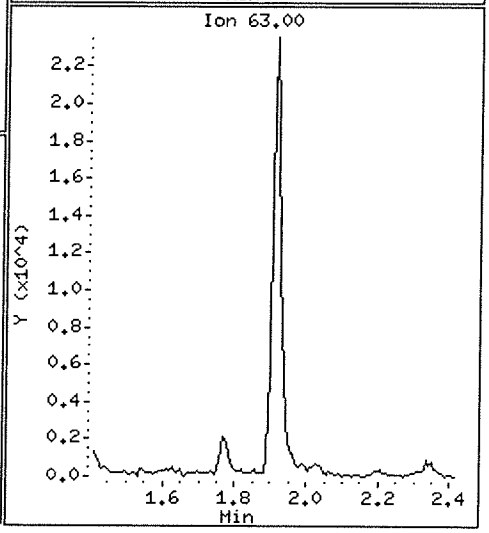


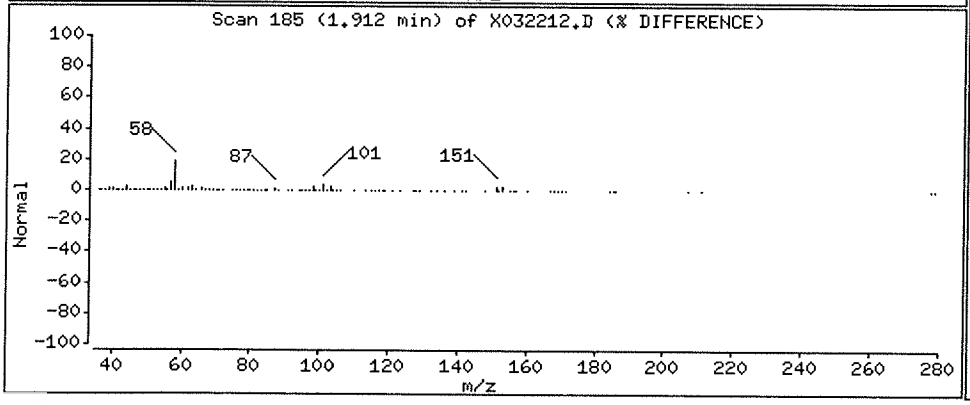












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Date : 22-MAR-2020 15:56

Client ID: HS20030888-01MS

Instrument: voa6.i

Sample Info: HS20030888-01MS;HS20030888-01MS;3;;MS

Purge Volume: 5.0

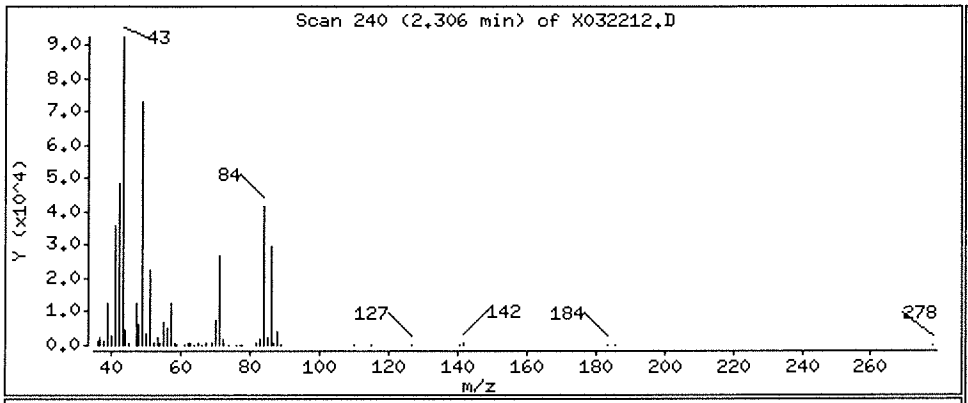
Operator: PC

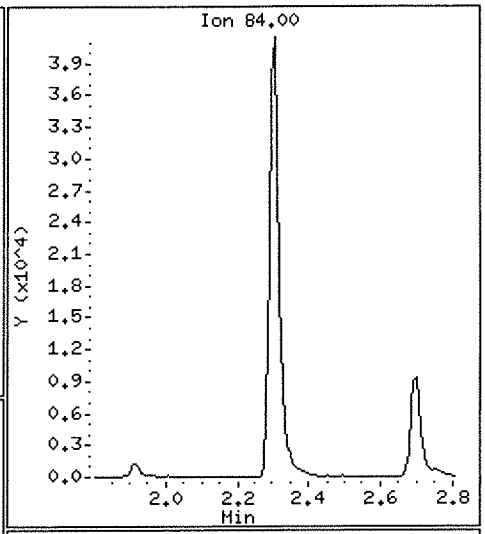
Column phase: DB624

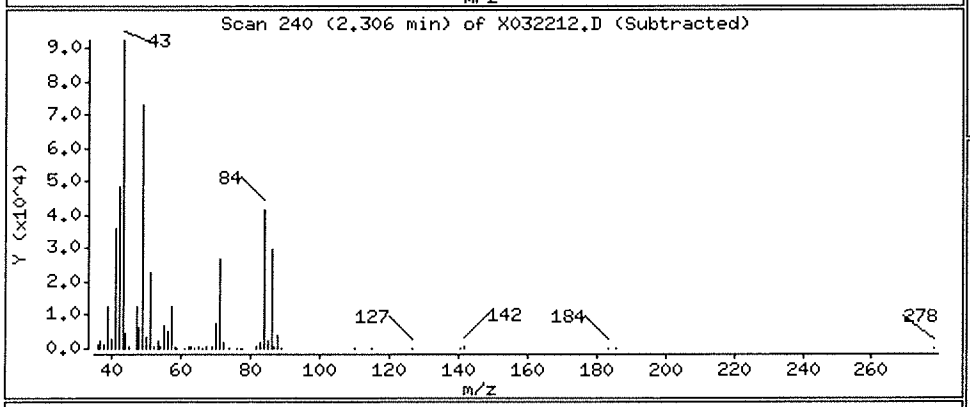
Column diameter: 0.18

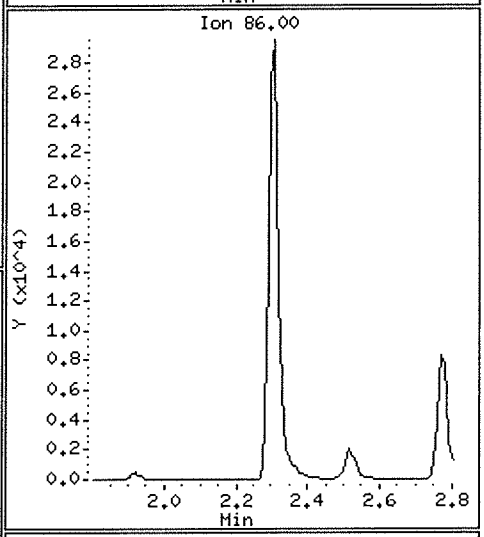
17 Methylene Chloride

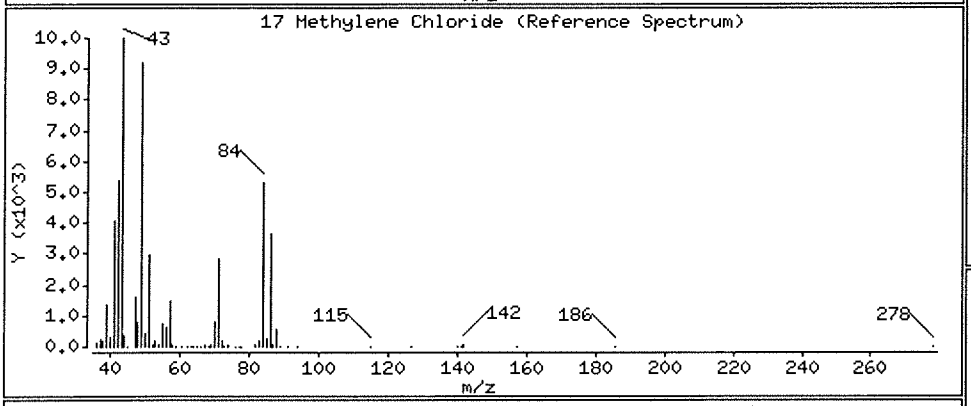
Concentration: 18.17 ug/l

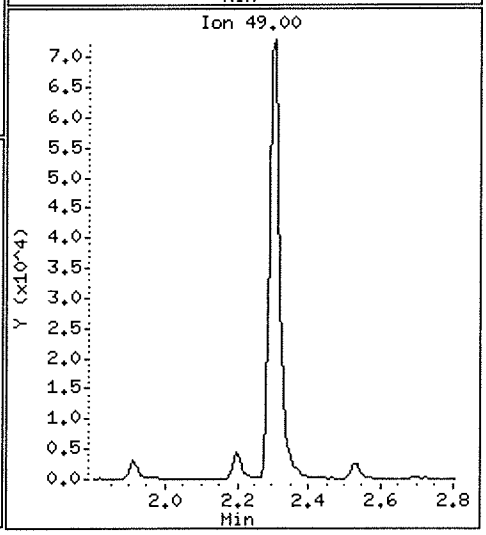


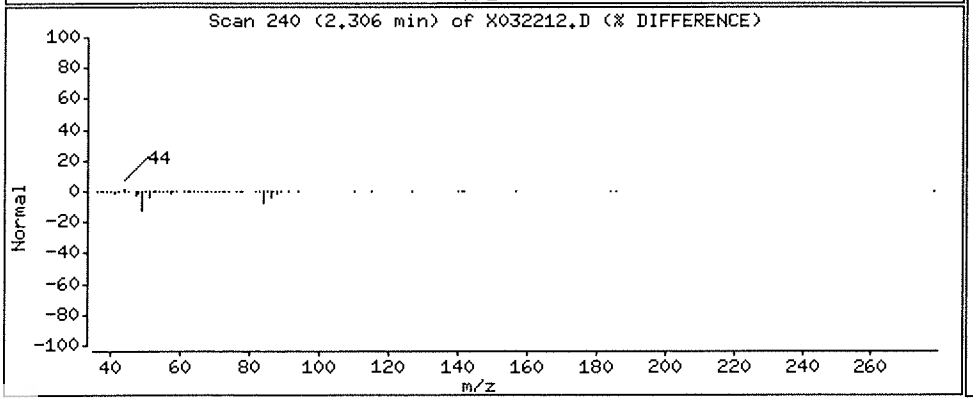












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032212.D

Date : 22-MAR-2020 15:56

Client ID: HS20030888-01MS

Instrument: voa6.i

Sample Info: HS20030888-01MS;HS20030888-01MS;3;;MS

Purge Volume: 5.0

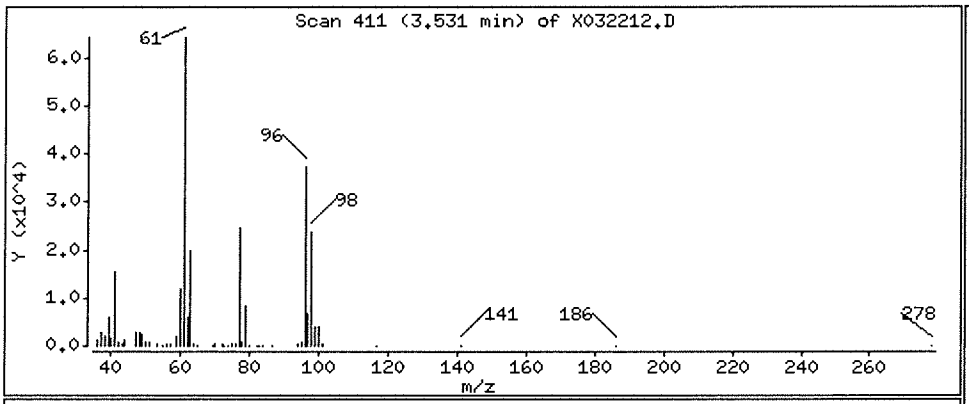
Operator: PC

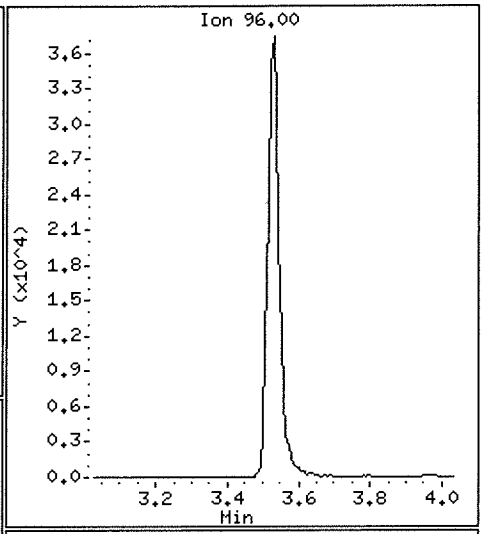
Column phase: DB624

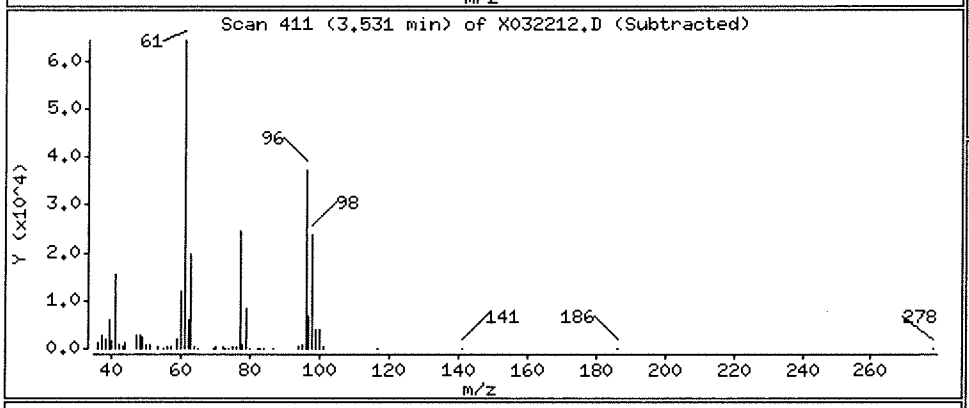
Column diameter: 0.18

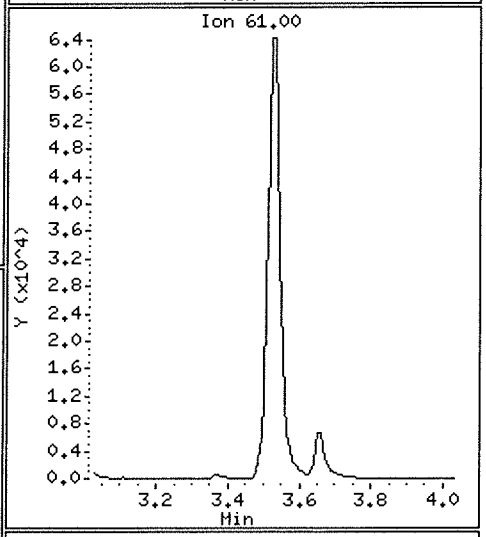
27 cis-1,2-Dichloroethene

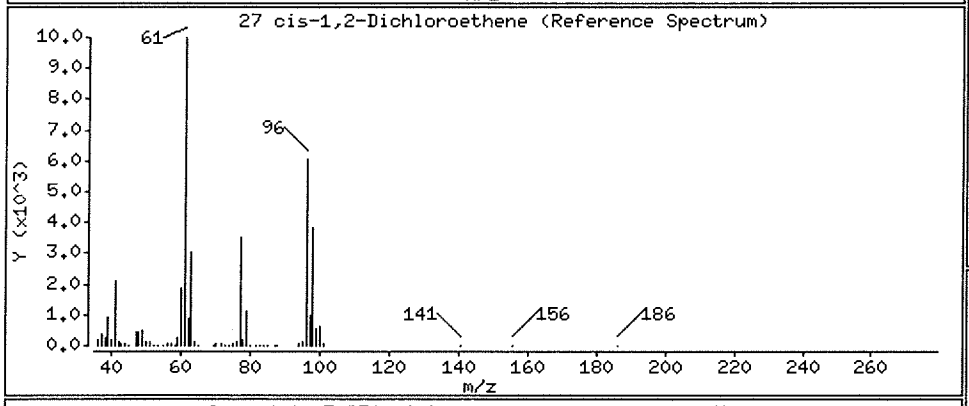
Concentration: 19.38 ug/l

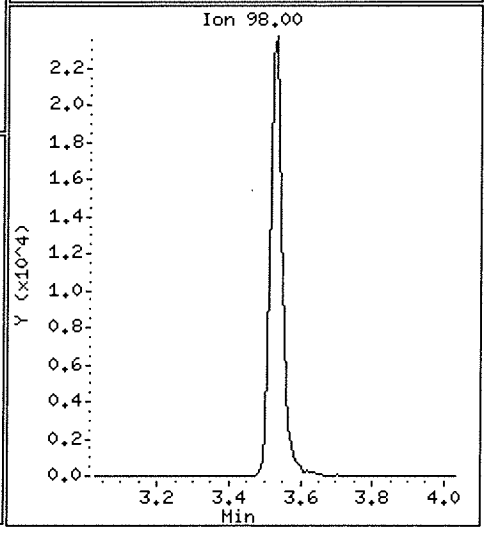


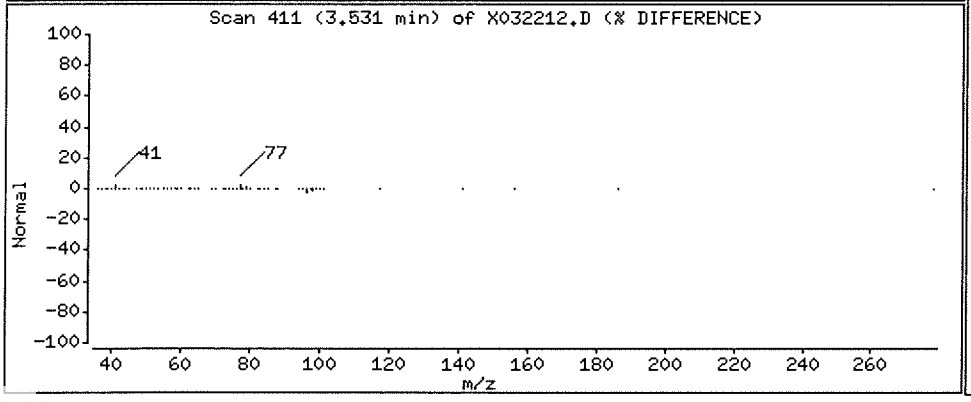












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032212.D

Date : 22-MAR-2020 15:56

Client ID: HS20030888-01MS

Instrument: voa6.i

Sample Info: HS20030888-01MS;HS20030888-01MS;3;;MS

Purge Volume: 5.0

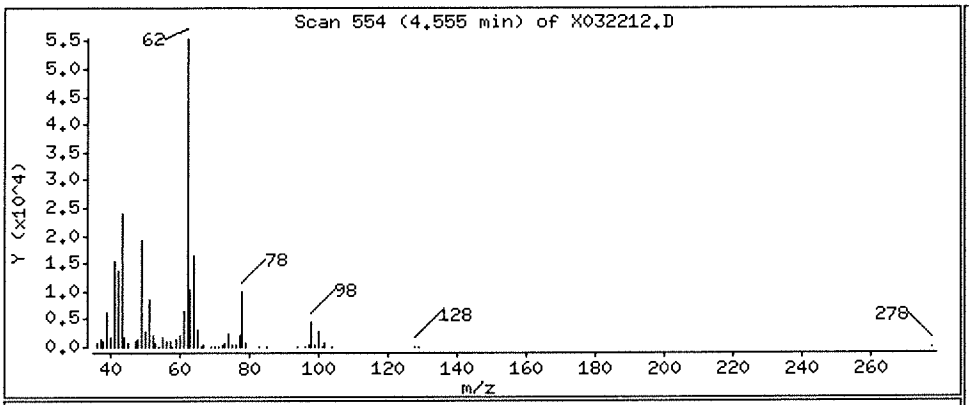
Operator: PC

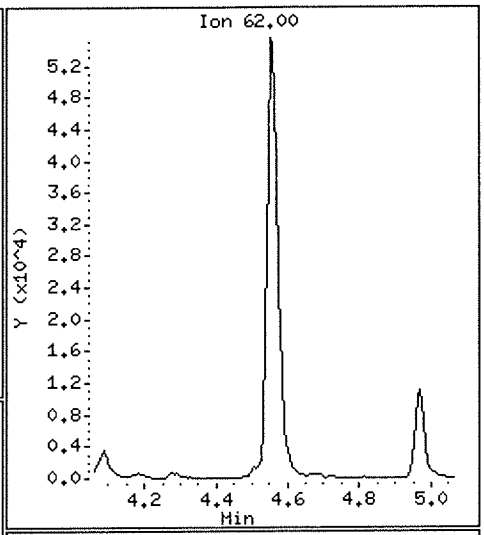
Column phase: DB624

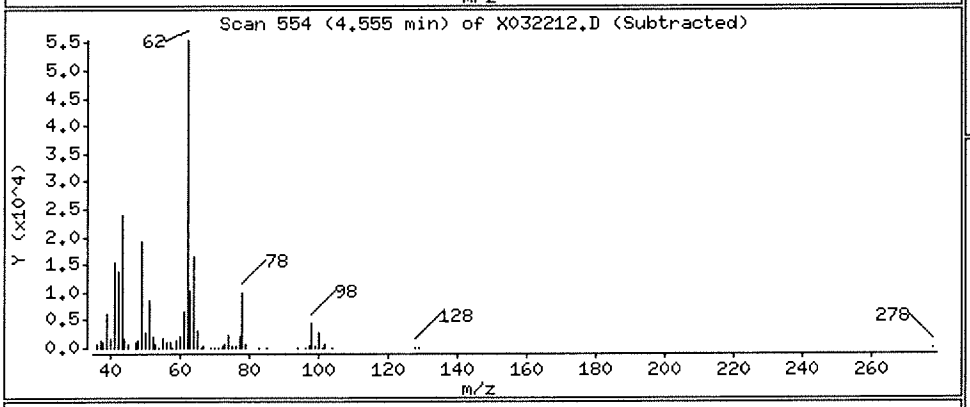
Column diameter: 0.18

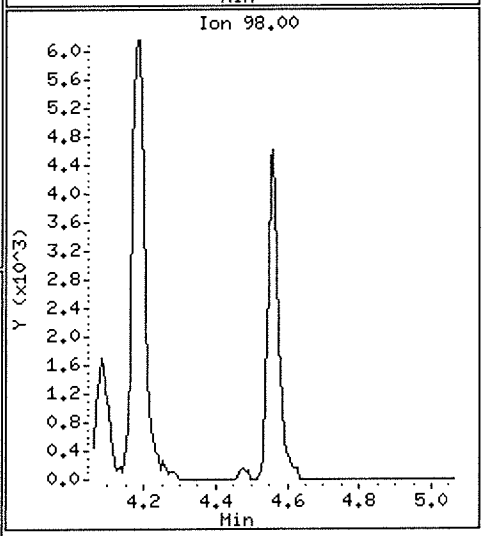
33 1,2-Dichloroethane

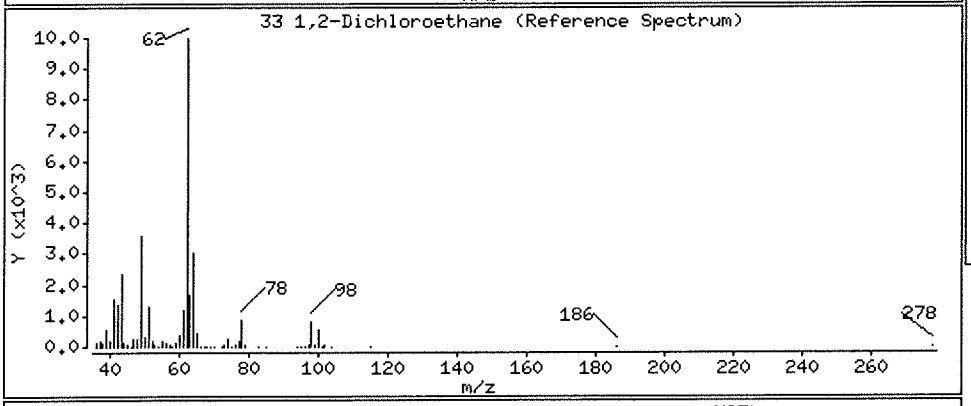
Concentration: 19.71 ug/l

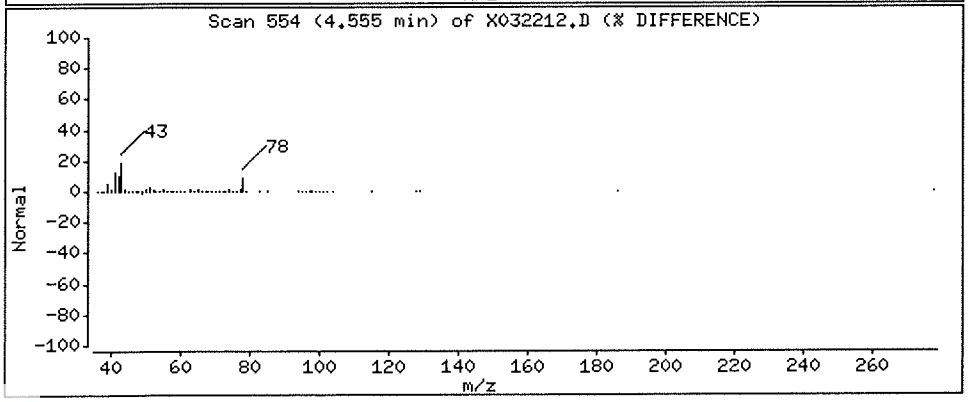












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Date : 22-MAR-2020 15:56

Client ID: HS20030888-01MS

Instrument: voa6.i

Sample Info: HS20030888-01MS;HS20030888-01MS;3;;MS

Purge Volume: 5.0

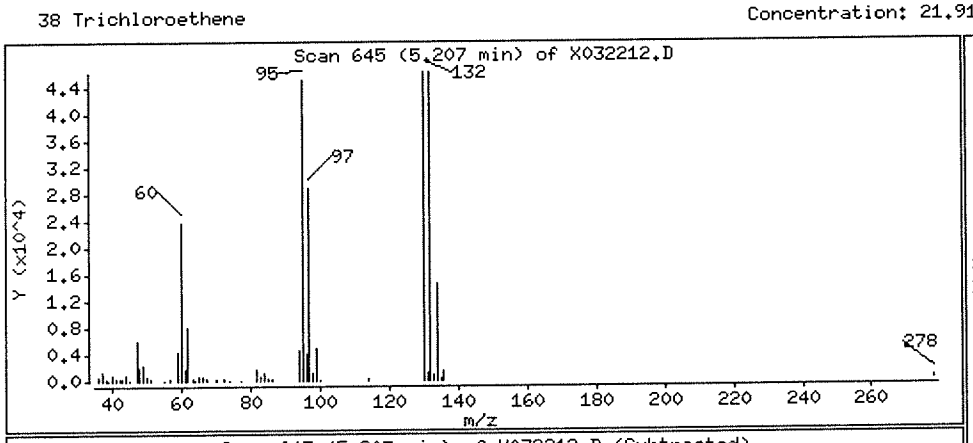
Operator: PC

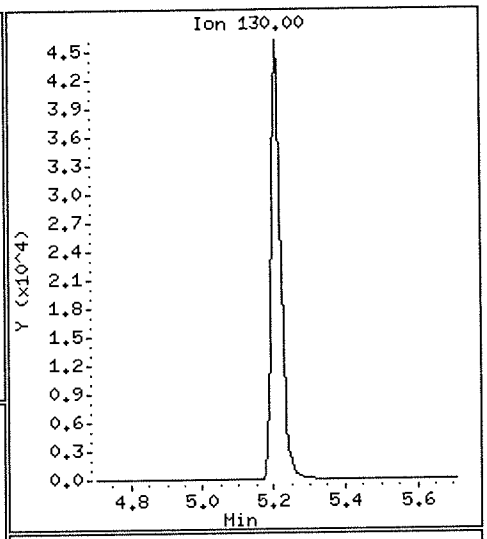
Column phase: DB624

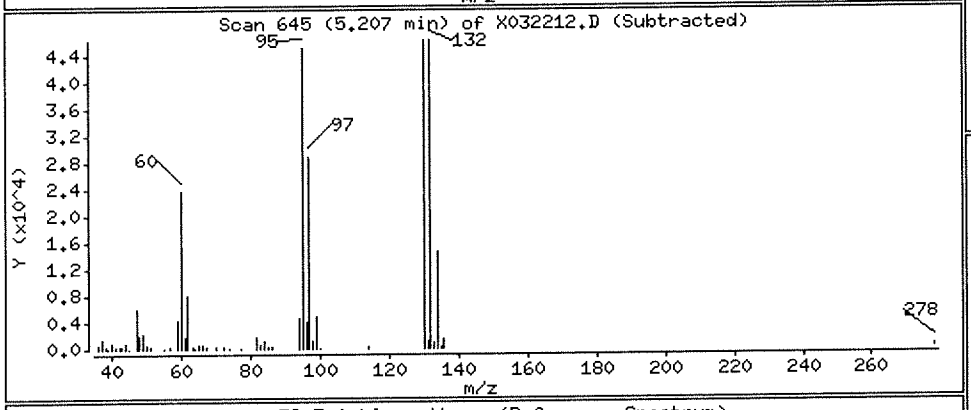
Column diameter: 0.18

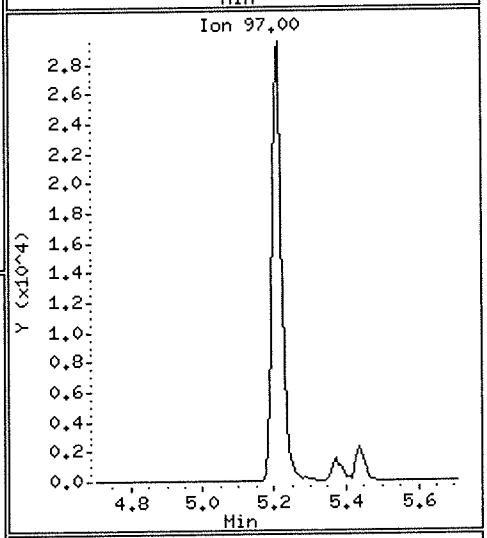
38 Trichloroethene

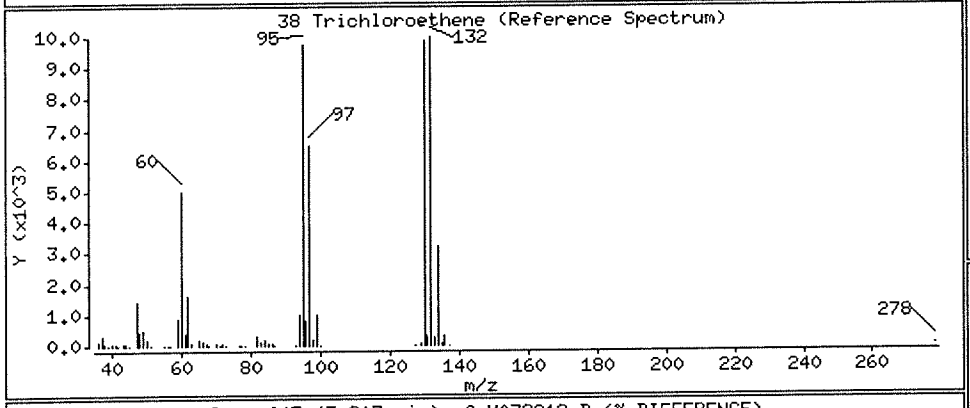
Concentration: 21.91 ug/l

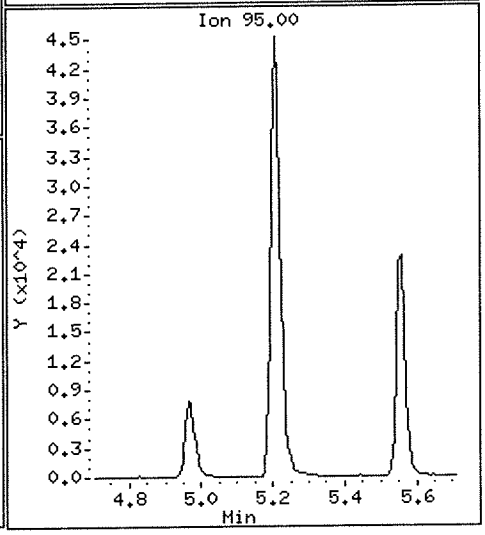


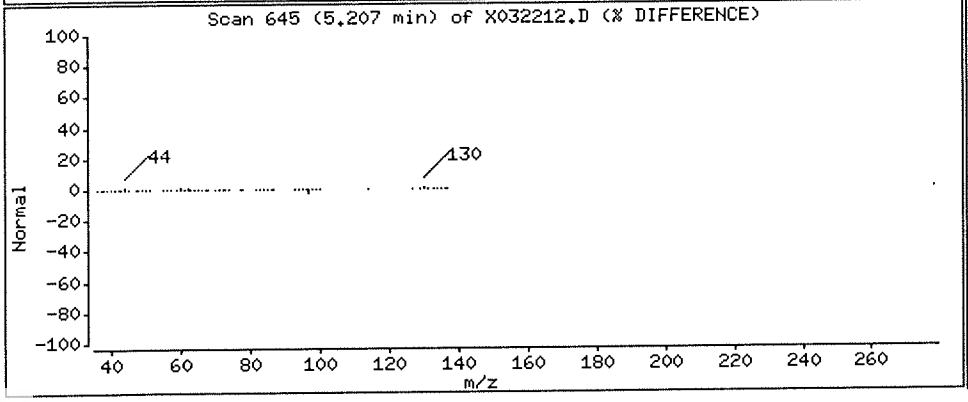












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032212.D

Date : 22-MAR-2020 15:56

Client ID: HS20030888-01MS

Instrument: voa6.i

Sample Info: HS20030888-01MS;HS20030888-01MS;3;;MS

Purge Volume: 5.0

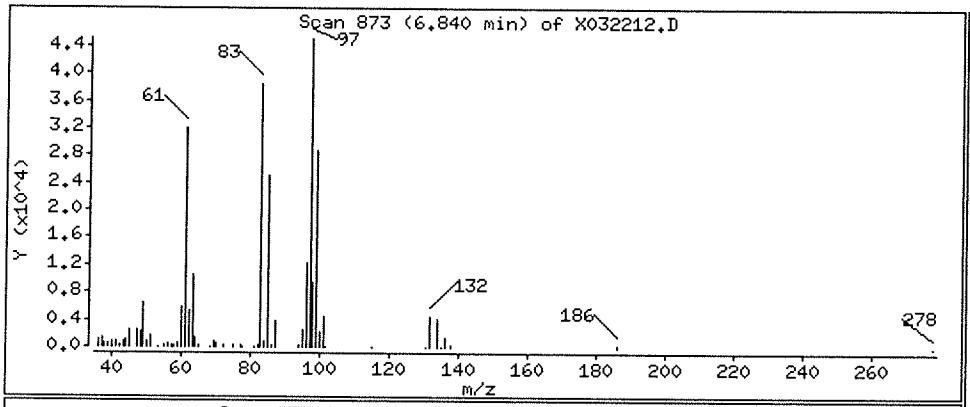
Operator: PC

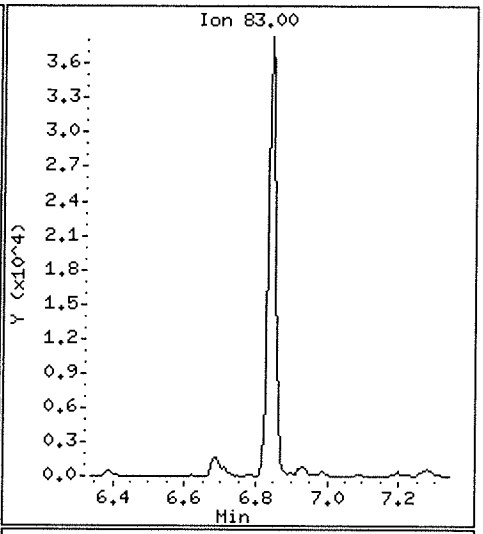
Column phase: DB624

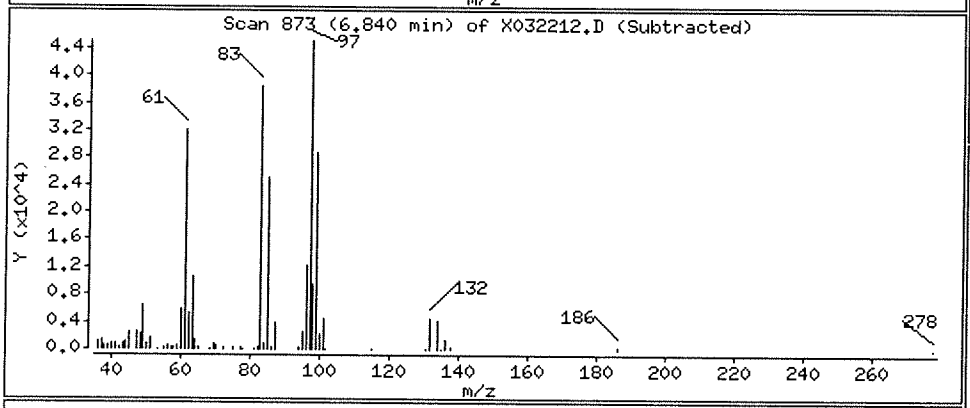
Column diameter: 0.18

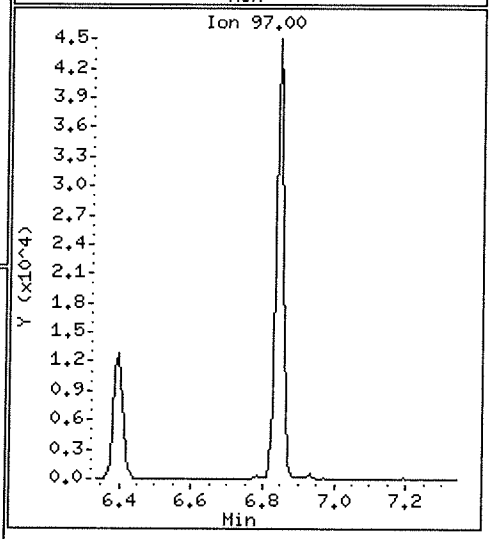
53 1,1,2-Trichloroethane

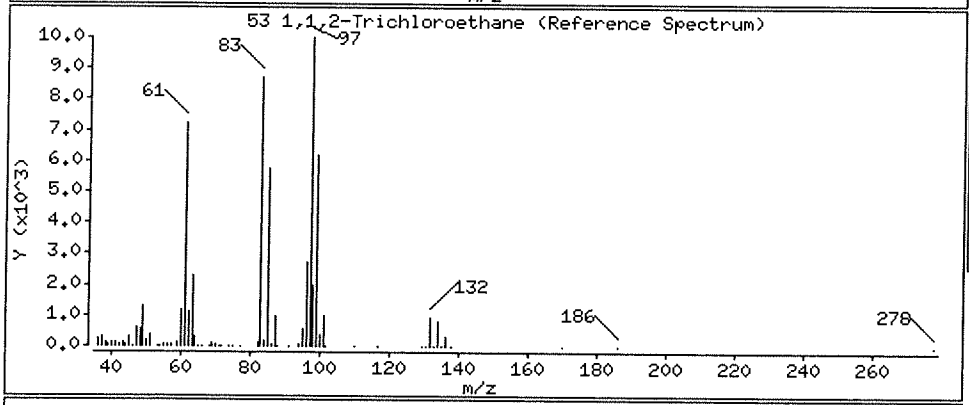
Concentration: 19.70 ug/l

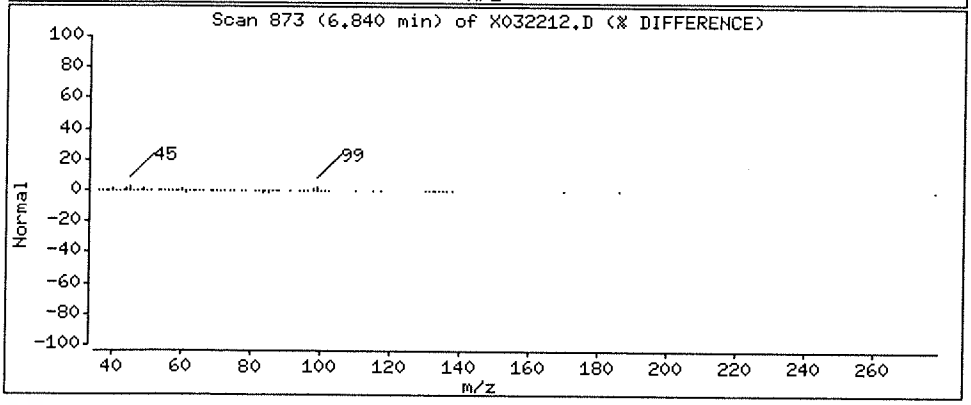












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032213.D Page 1
Report Date: 15-Apr-2020 12:40

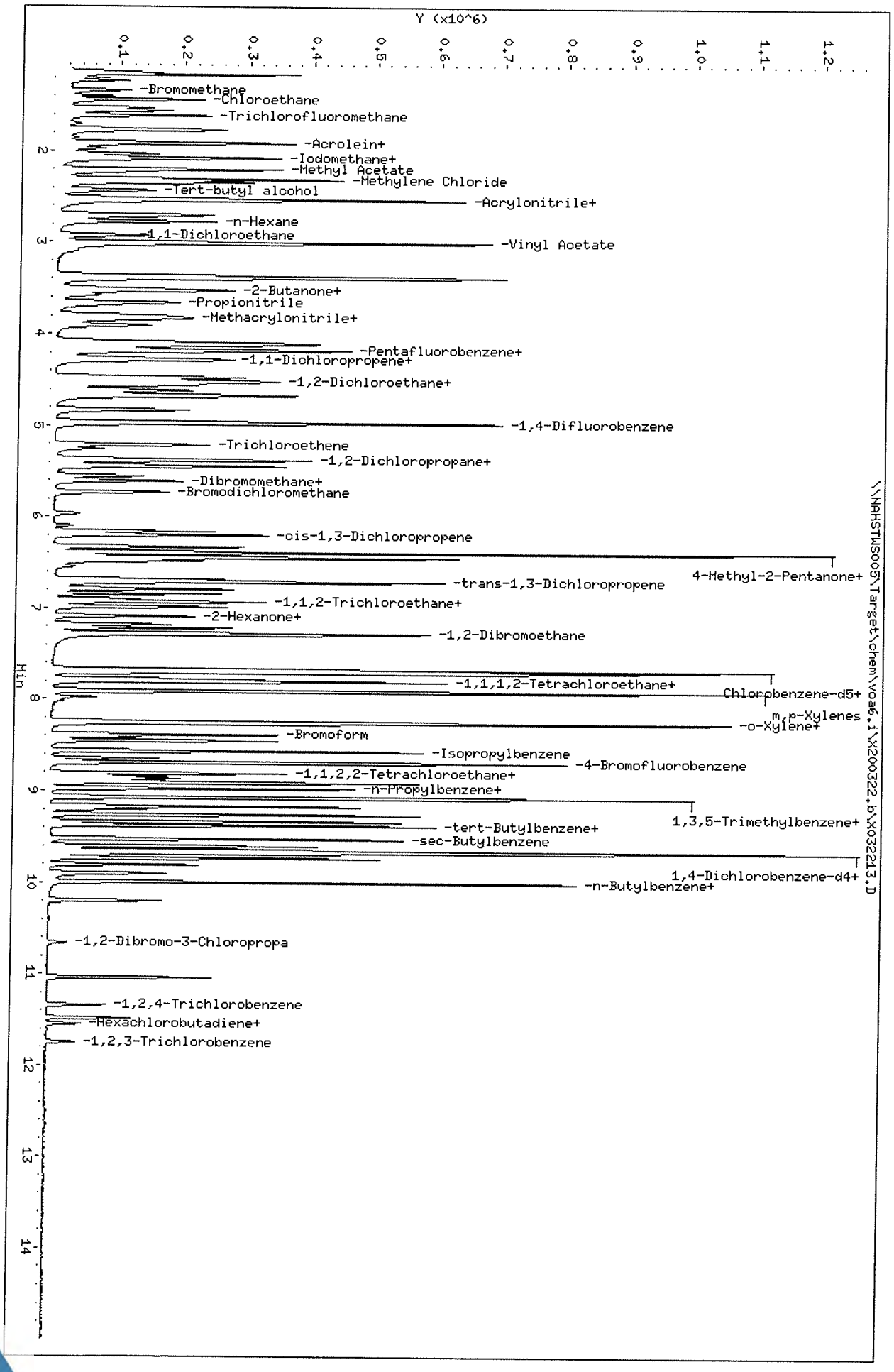
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032213.D
Lab Smp Id: HS20030888-01MSD Client Smp ID: HS20030888-01MSD
Inj Date : 22-MAR-2020 16:20
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-01MSD;HS20030888-01MSD;3;;MSD
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 15-Apr-2020 12:39 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 12 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	374451	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	178445	47.9583	47.95
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	212422	45.1388	45.13
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	561455	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	486849	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	652458	52.3200	52.31
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	228035	48.6654	48.66
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	226002	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	103176	18.0859	18.08
11 1,1-Dichloroethene	96	1.911	1.912	(0.457)	57944	18.2618	18.26
17 Methylene Chloride	84	2.305	2.306	(0.551)	72924	17.4042	17.40
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	79618	18.6709	18.67
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	115961	19.5493	19.54
38 Trichloroethene	130	5.206	5.207	(1.048)	78525	20.1786	20.17
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	55613	19.8270	19.82



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Date : 22-MAR-2020 16:20
Client ID: HS20030888-01MSD
Sample Info: HS20030888-01MSD;HS20030888-01MSD;3;;MSD
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032213.D

Date : 22-MAR-2020 16:20

Client ID: HS20030888-01MSD

Instrument: voa6.i

Sample Info: HS20030888-01MSD;HS20030888-01MSD;3;;MSD

Purge Volume: 5.0

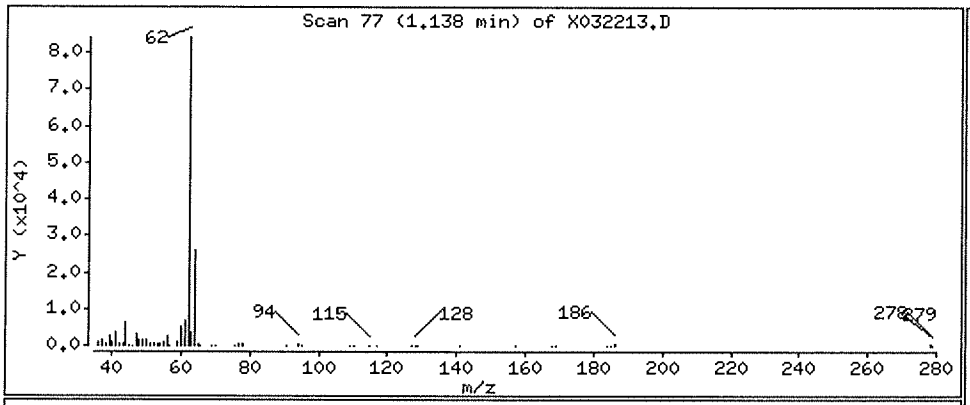
Operator: PC

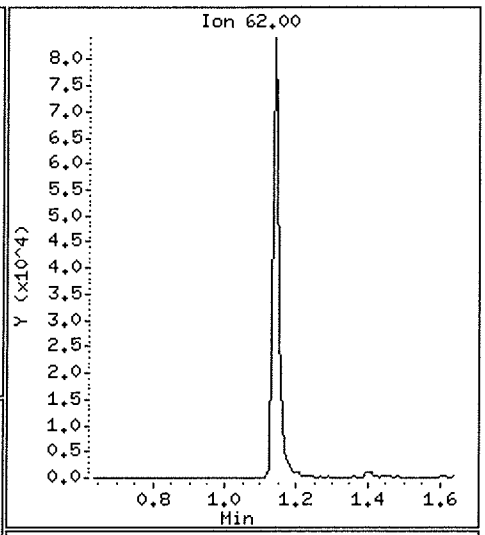
Column phase: DB624

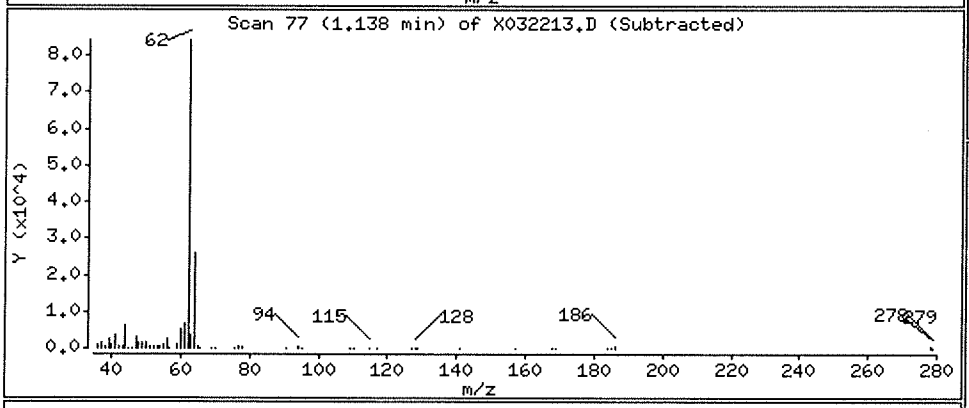
Column diameter: 0.18

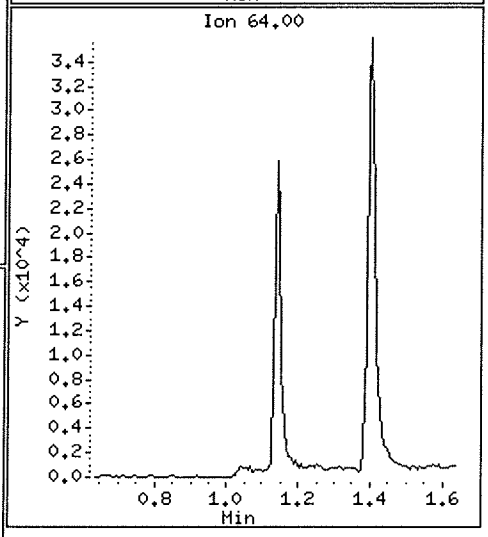
5 Vinyl Chloride

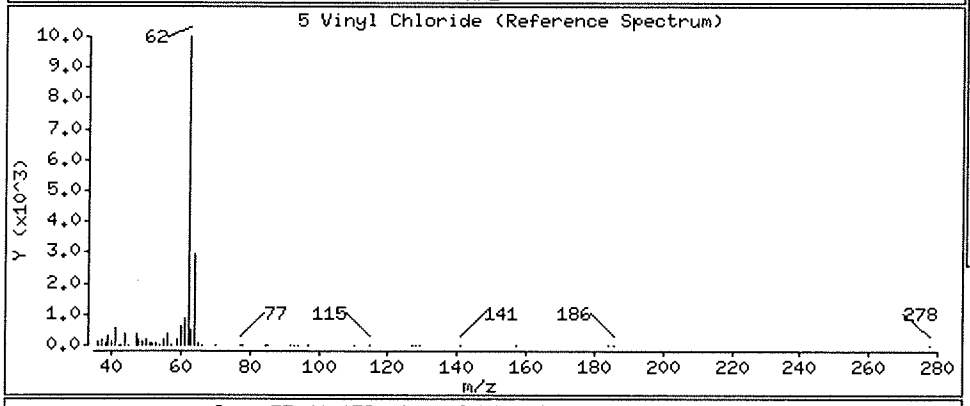
Concentration: 18.08 ug/l

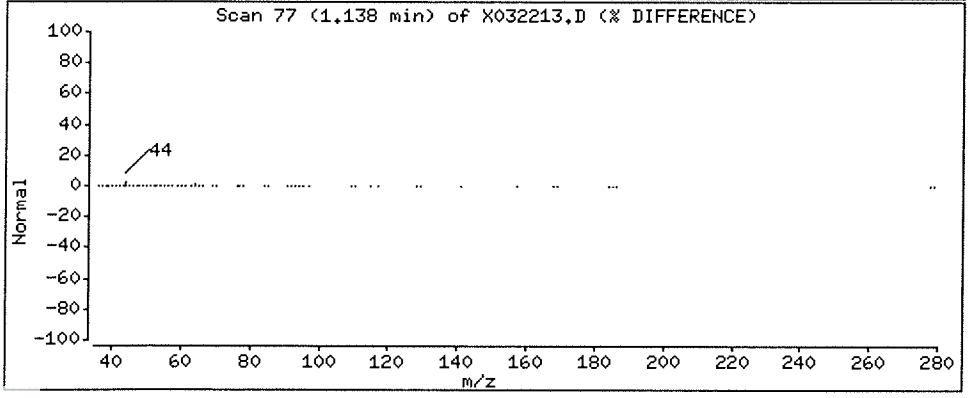












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032213.D

Date : 22-MAR-2020 16:20

Client ID: HS20030888-01MSD

Instrument: voa6.i

Sample Info: HS20030888-01MSD;HS20030888-01MSD;3;;MSD

Purge Volume: 5.0

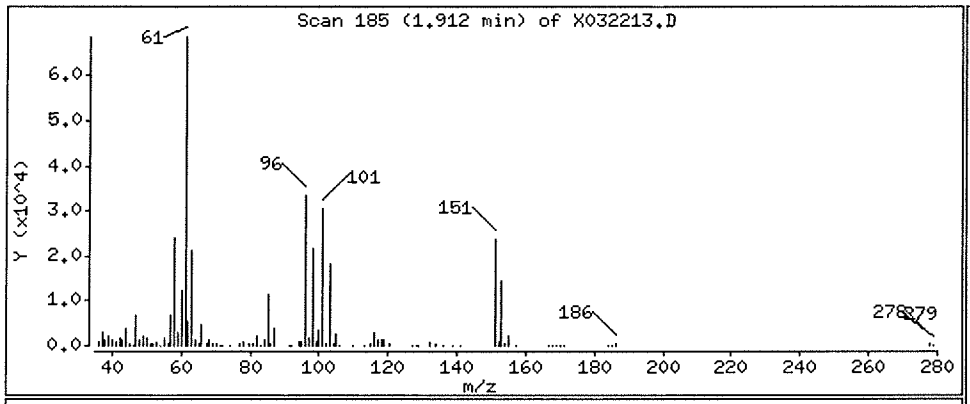
Operator: PC

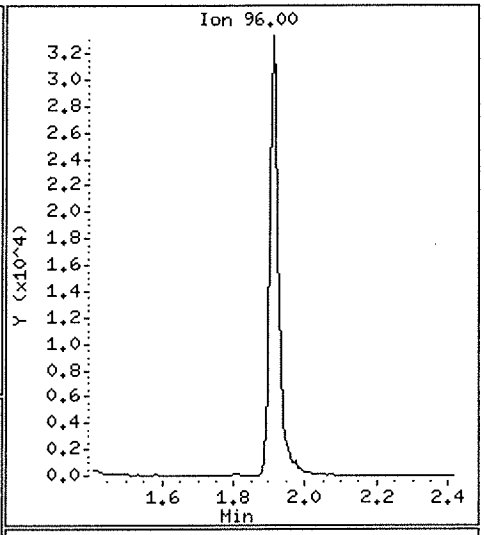
Column phase: DB624

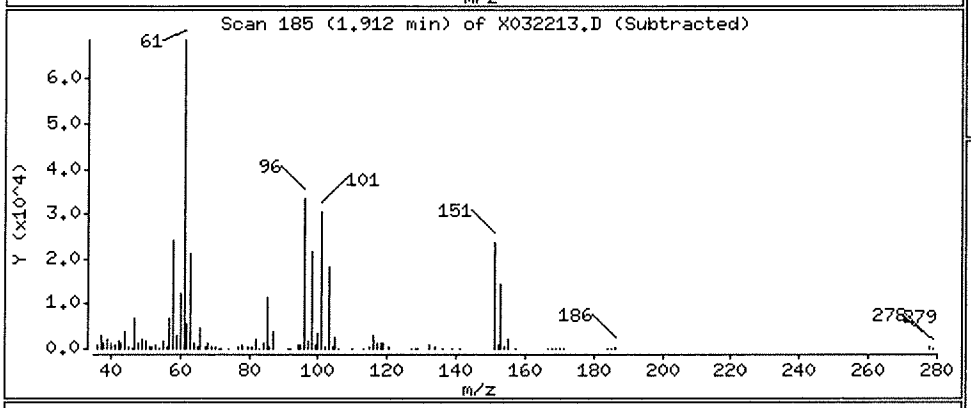
Column diameter: 0.18

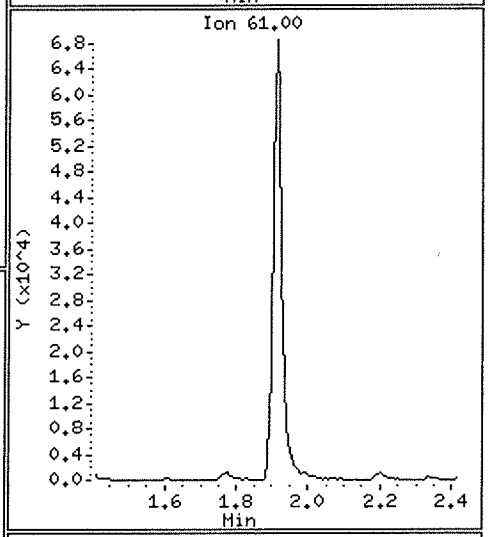
11 1,1-Dichloroethene

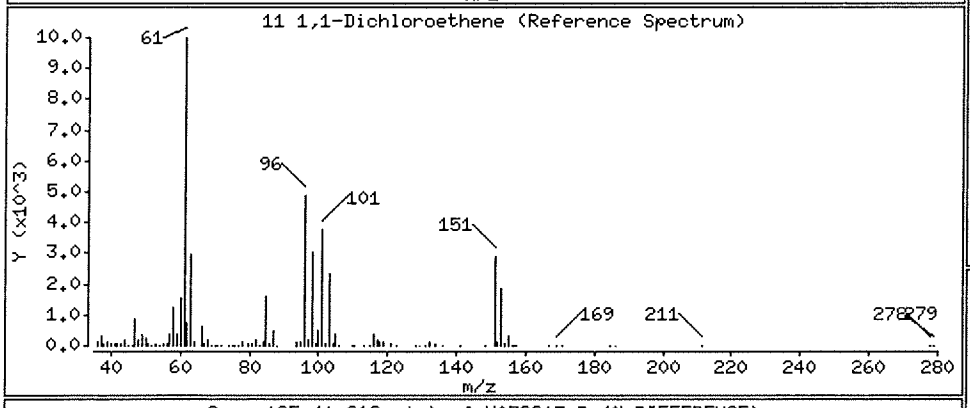
Concentration: 18.26 ug/l

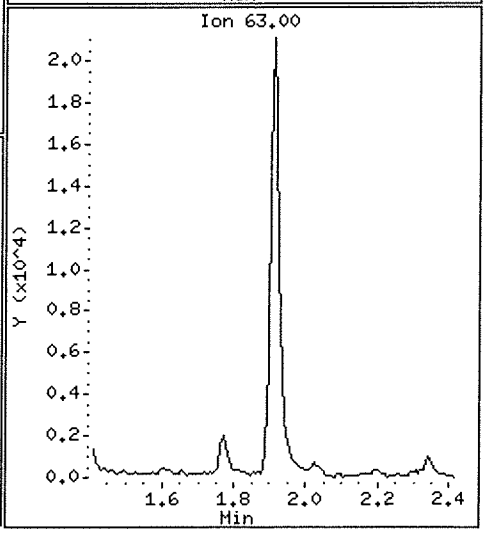


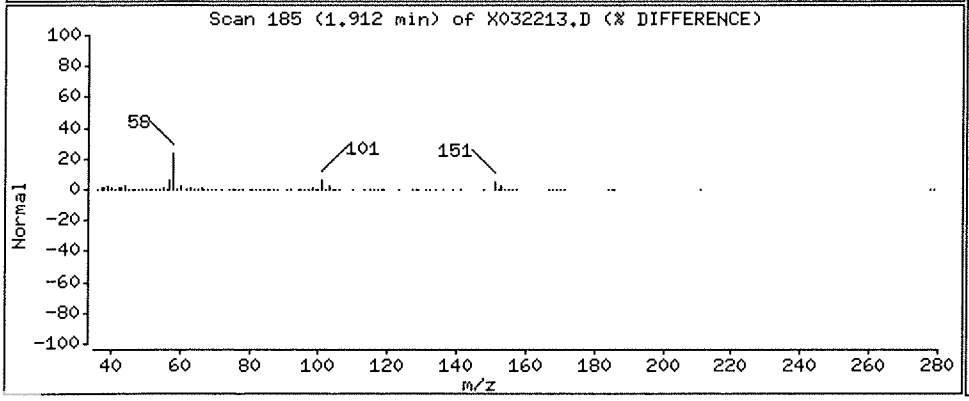












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032213.D

Date : 22-MAR-2020 16:20

Client ID: HS20030888-01MSD

Instrument: voa6.i

Sample Info: HS20030888-01MSD;HS20030888-01MSD;3;;MSD

Purge Volume: 5.0

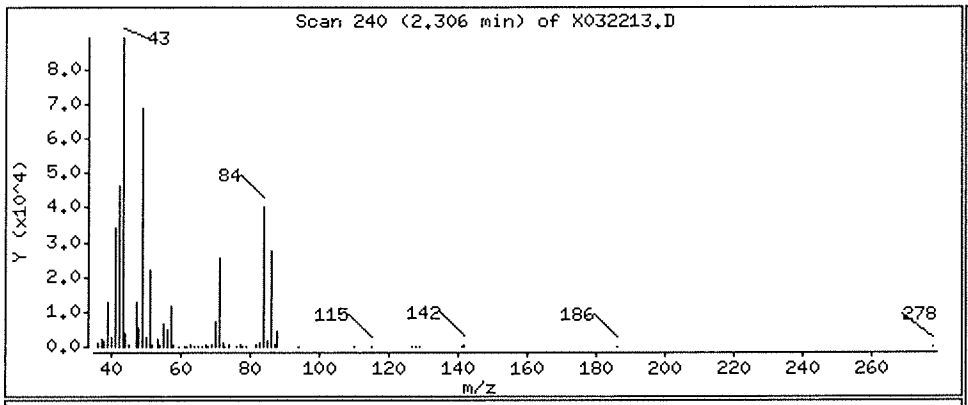
Operator: PC

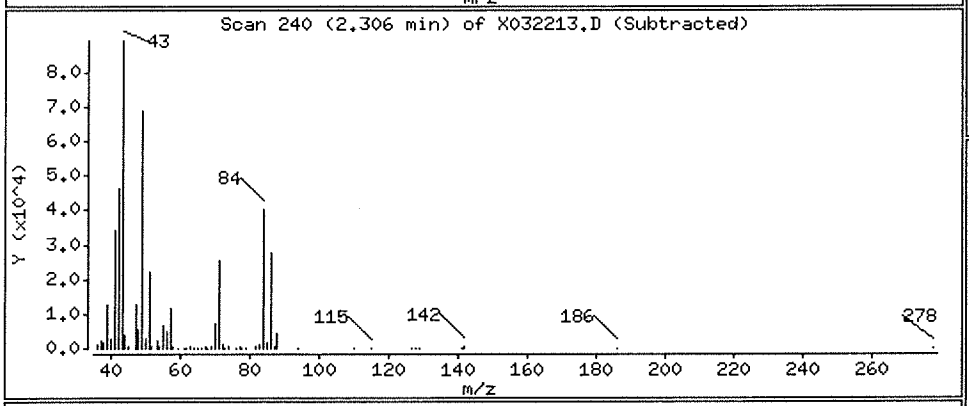
Column phase: DB624

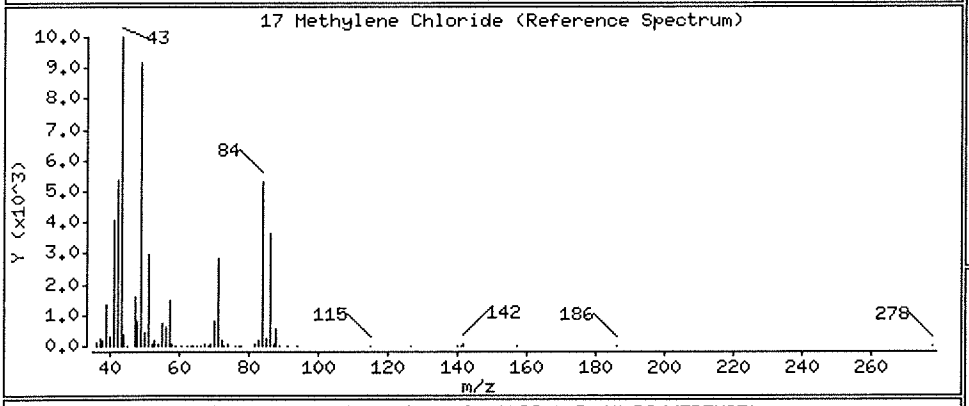
Column diameter: 0.18

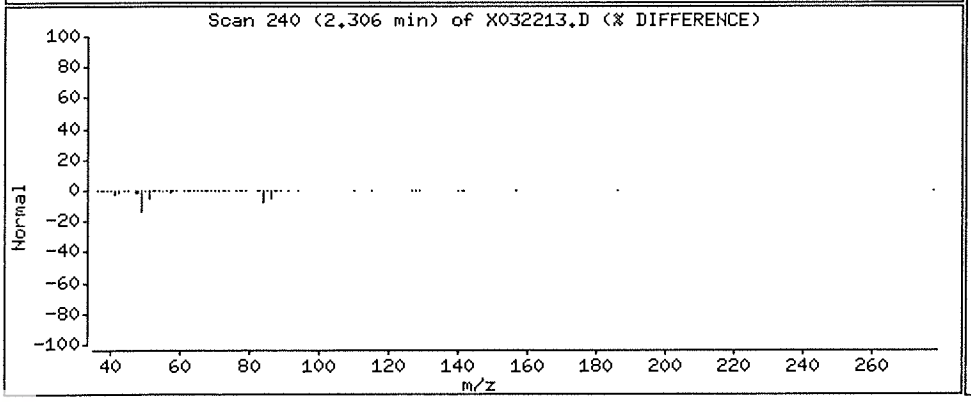
17 Methylene Chloride

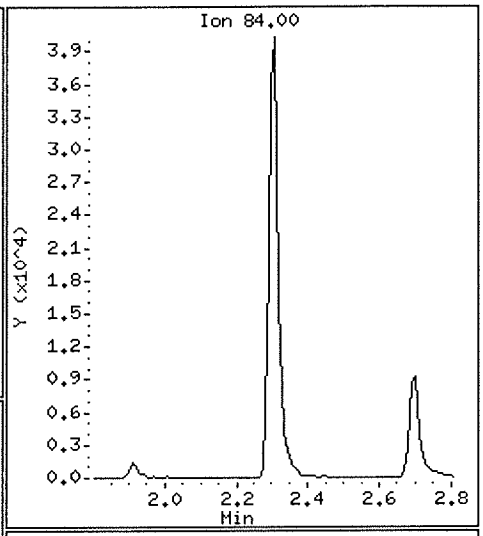
Concentration: 17.40 ug/l

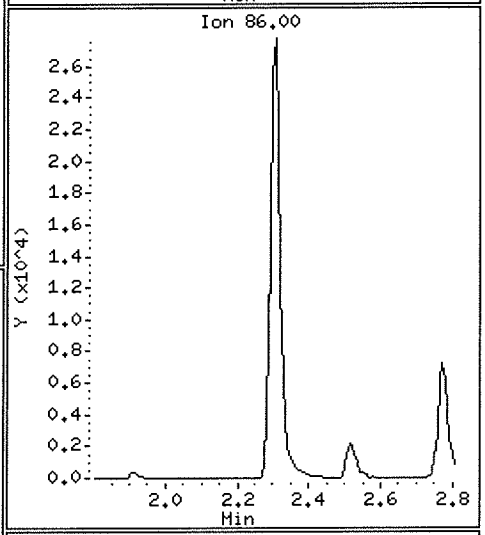


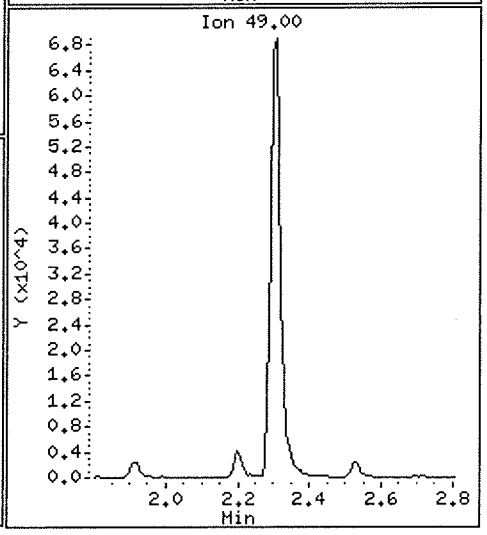












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032213.D

Date : 22-MAR-2020 16:20

Client ID: HS20030888-01MSD

Instrument: voa6.i

Sample Info: HS20030888-01MSD;HS20030888-01MSD;3;;MSD

Purge Volume: 5.0

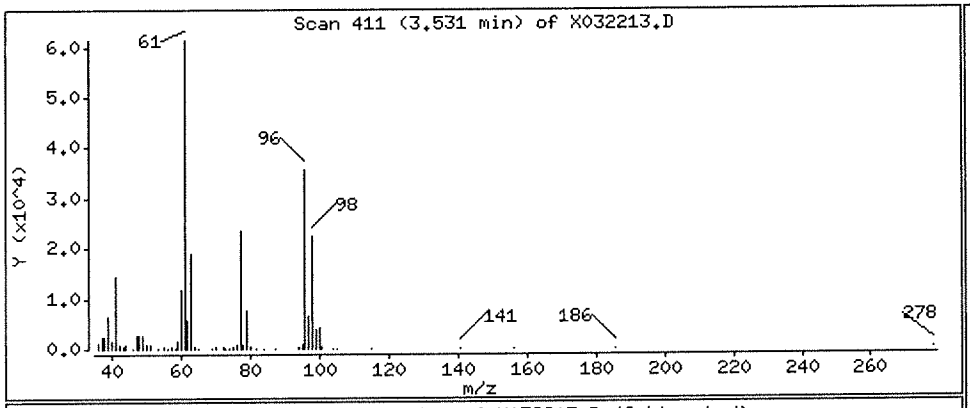
Operator: PC

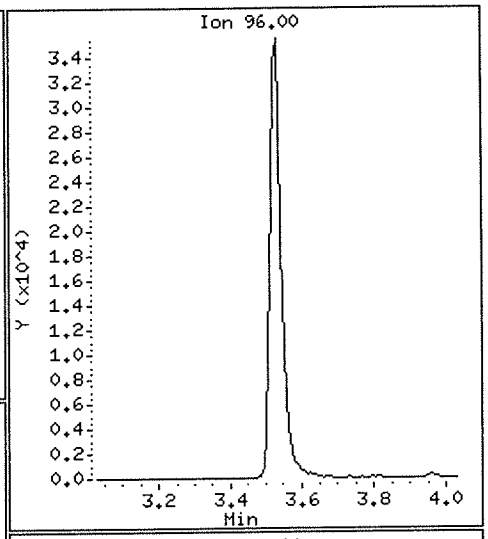
Column phase: DB624

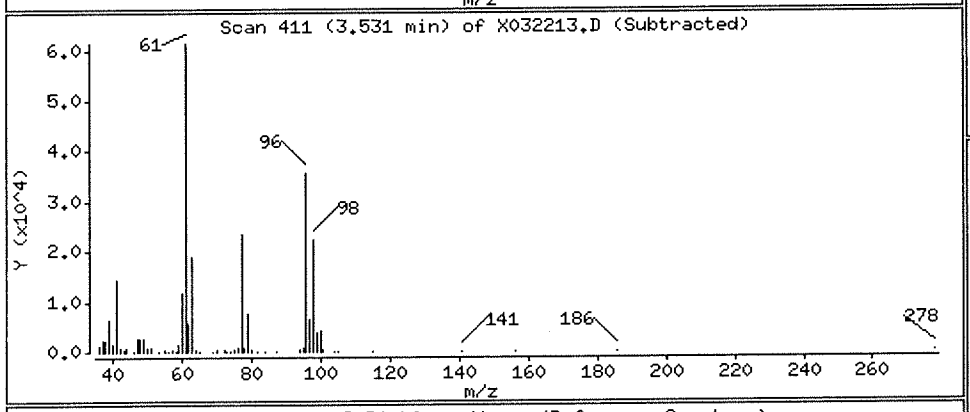
Column diameter: 0.18

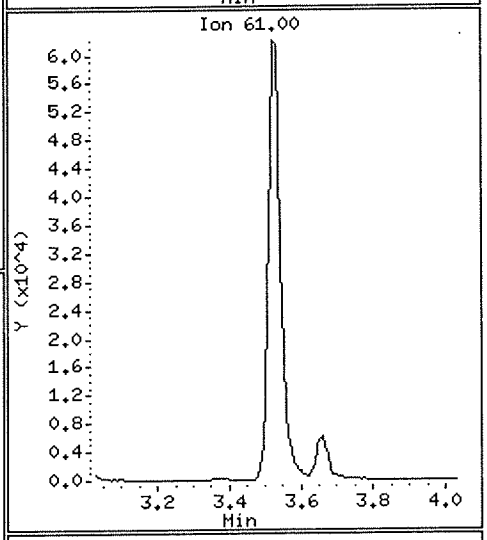
27 cis-1,2-Dichloroethene

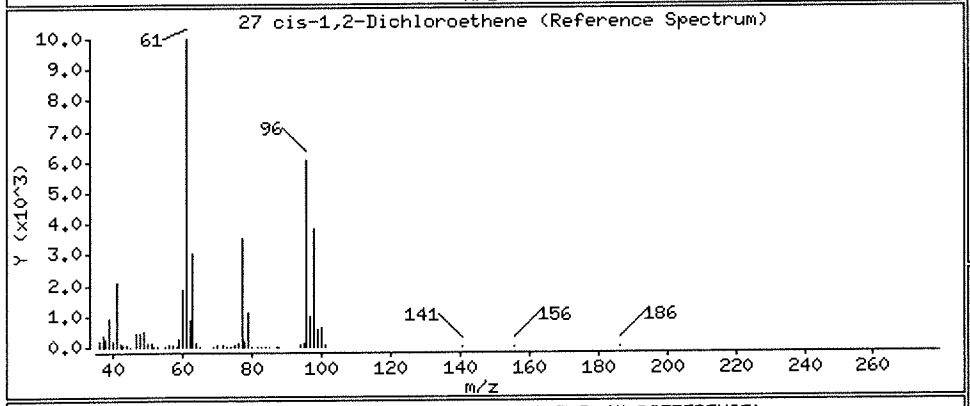
Concentration: 18.67 ug/l

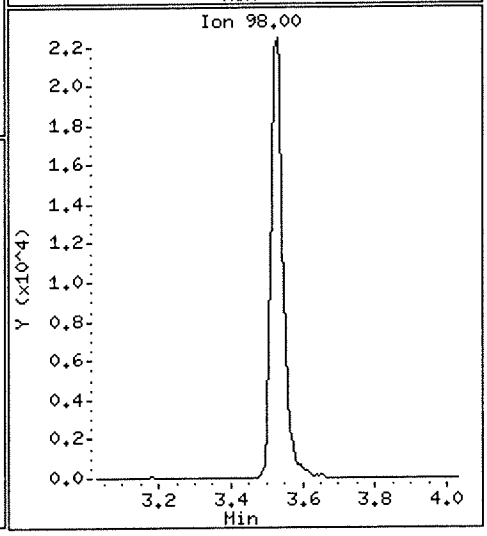


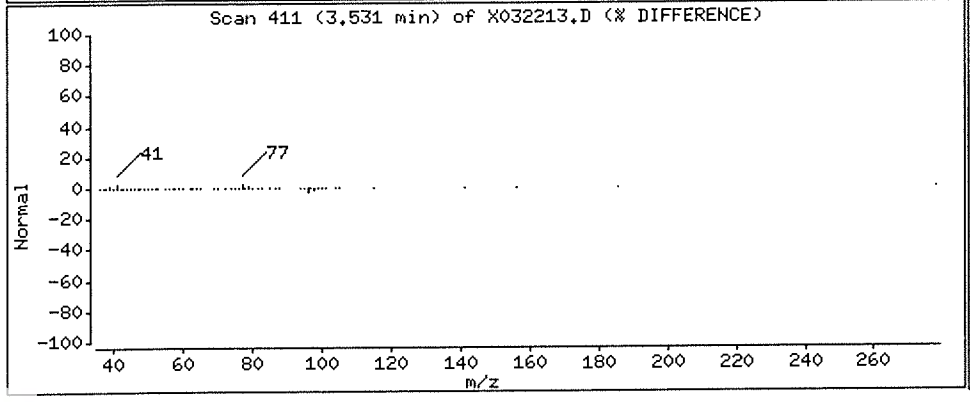












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032213.D

Date : 22-MAR-2020 16:20

Client ID: HS20030888-01MSD

Instrument: voa6.i

Sample Info: HS20030888-01MSD;HS20030888-01MSD;3;;MSD

Purge Volume: 5.0

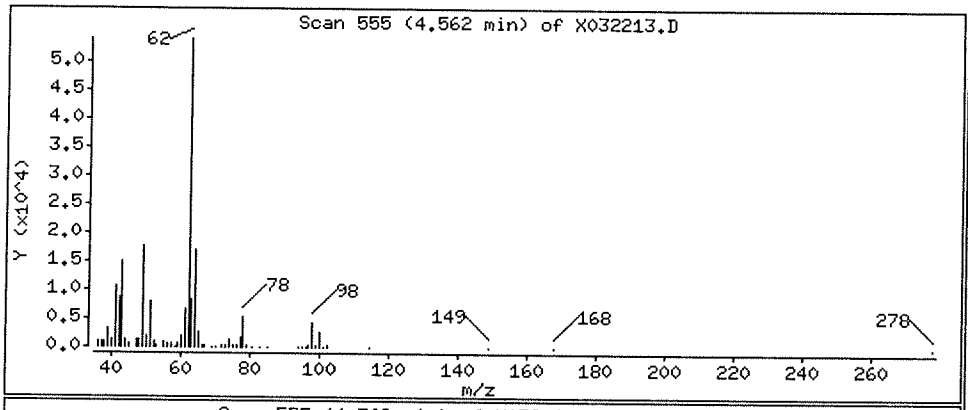
Operator: PC

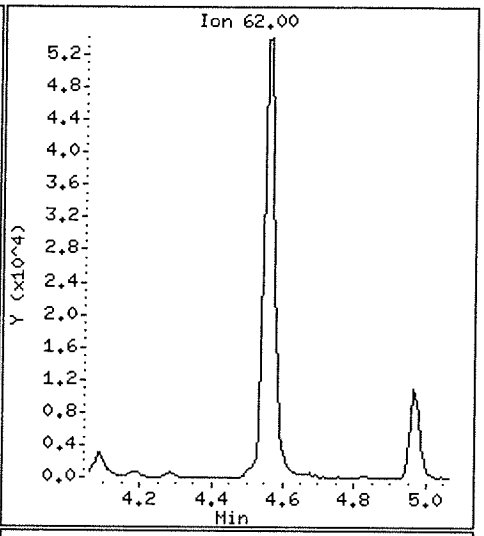
Column phase: DB624

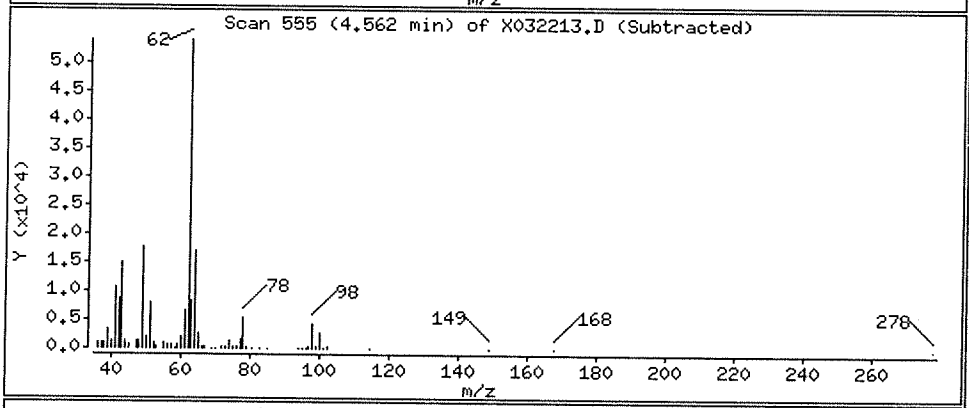
Column diameter: 0.18

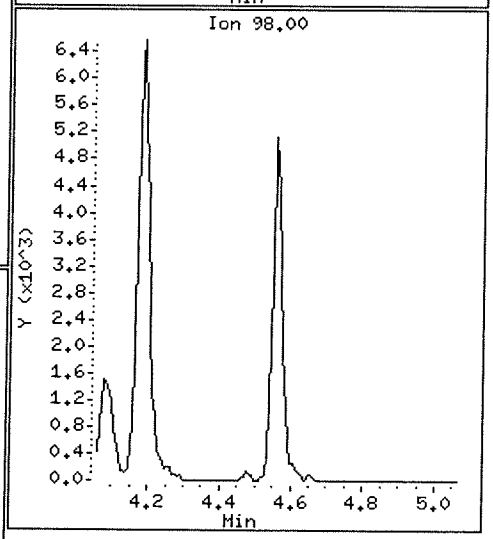
33 1,2-Dichloroethane

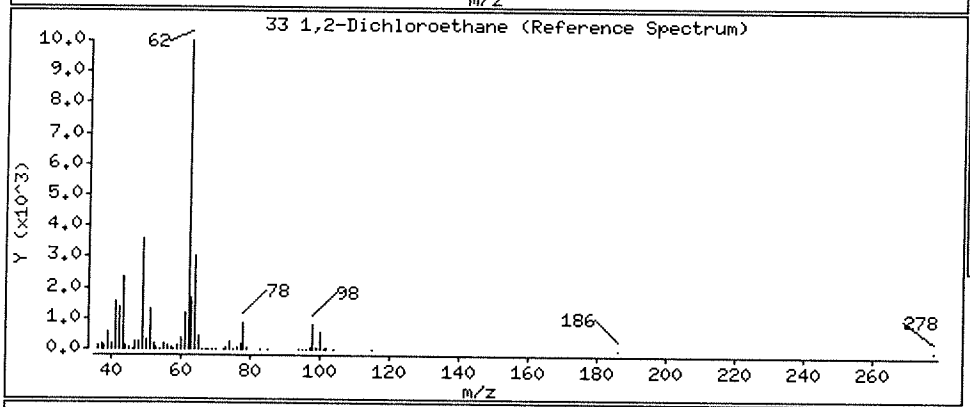
Concentration: 19.54 ug/l

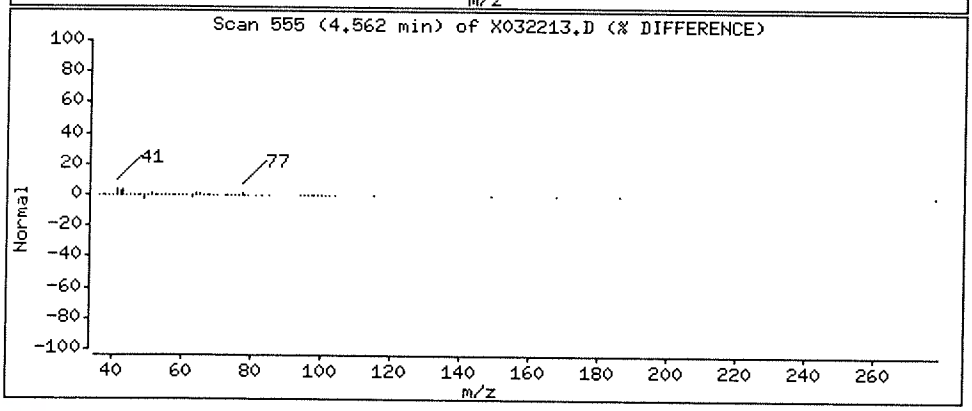












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032213.D

Date : 22-MAR-2020 16:20

Client ID: HS20030888-01MSD

Instrument: voa6.i

Sample Info: HS20030888-01MSD;HS20030888-01MSD;3;;MSD

Purge Volume: 5.0

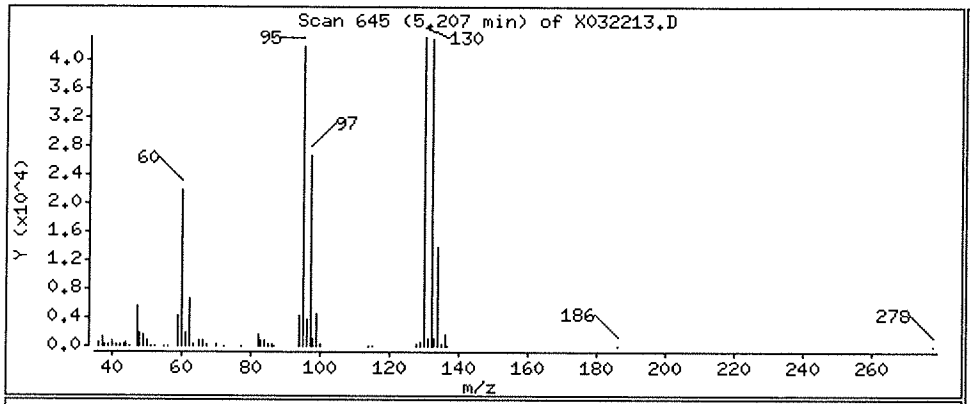
Operator: PC

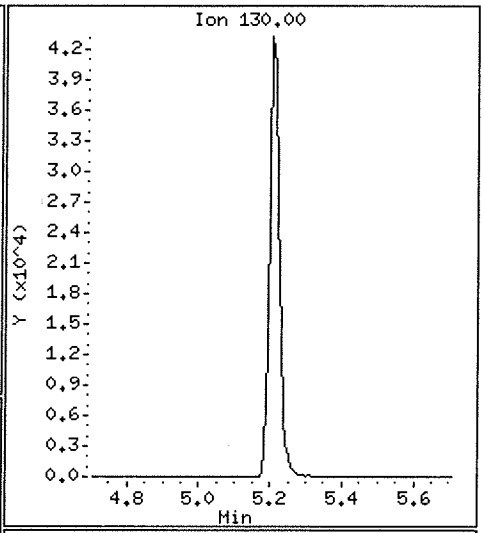
Column phase: DB624

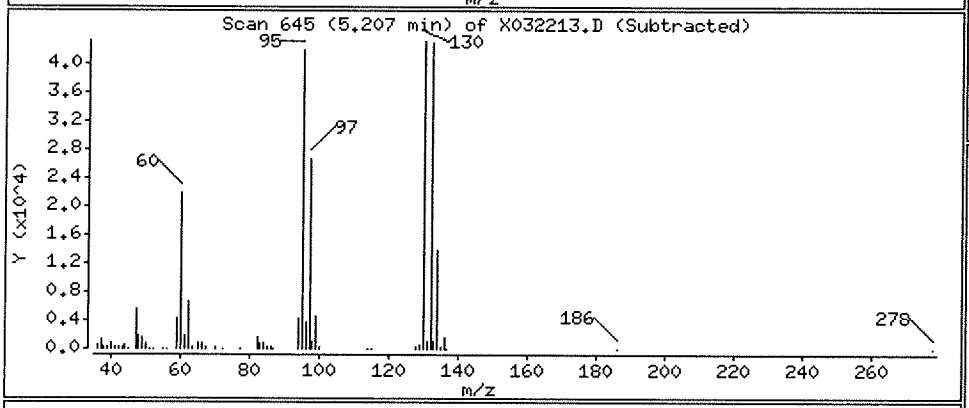
Column diameter: 0.18

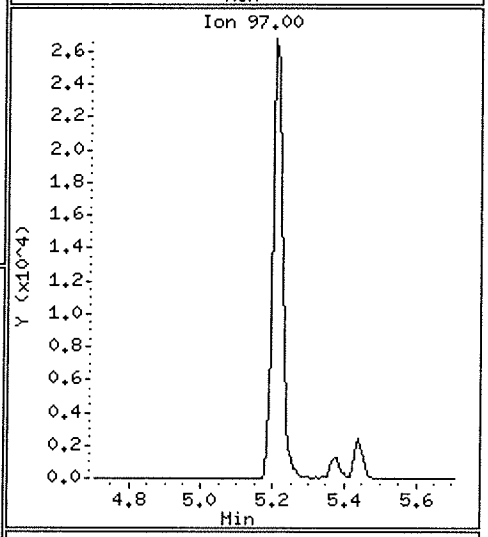
38 Trichloroethene

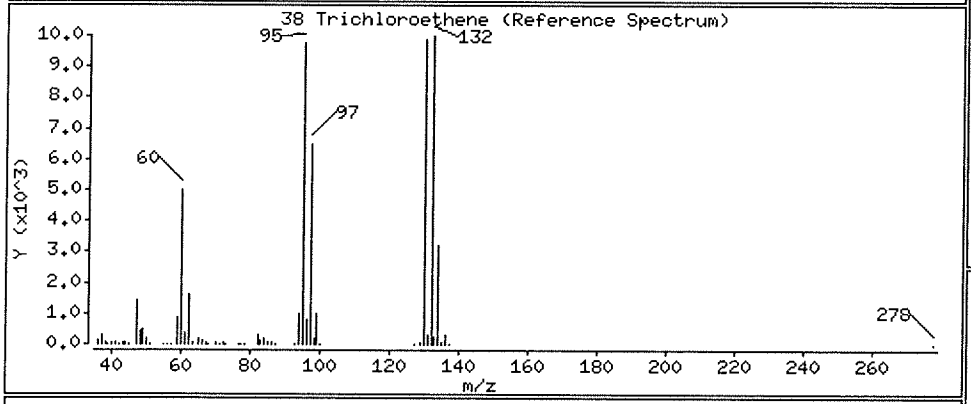
Concentration: 20.17 ug/l

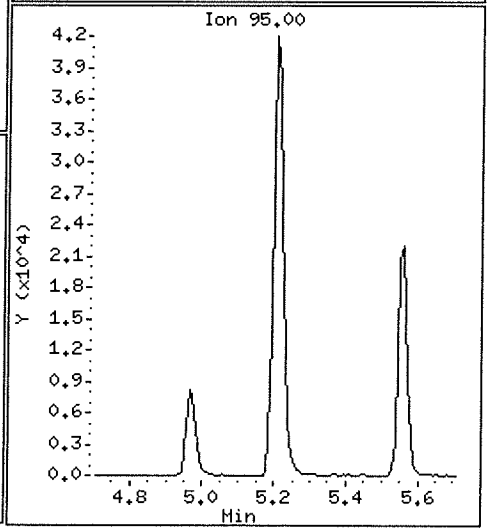


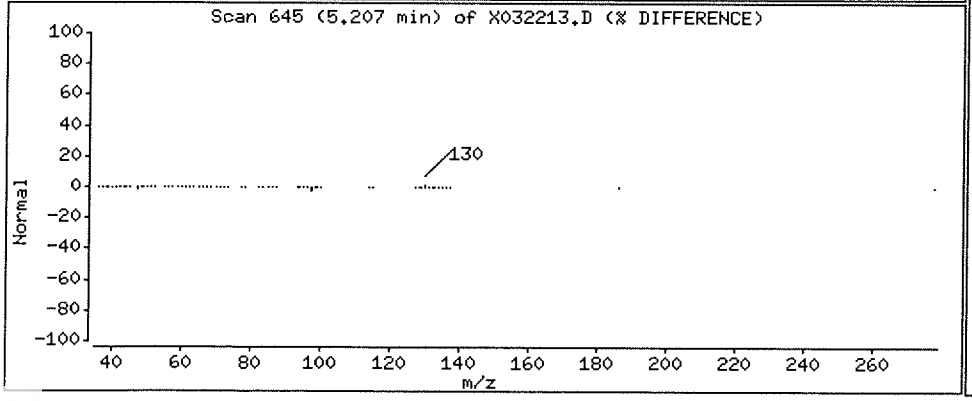












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032213.D

Date : 22-MAR-2020 16:20

Client ID: HS20030888-01MSD

Instrument: voa6.i

Sample Info: HS20030888-01MSD;HS20030888-01MSD;3;;MSD

Purge Volume: 5.0

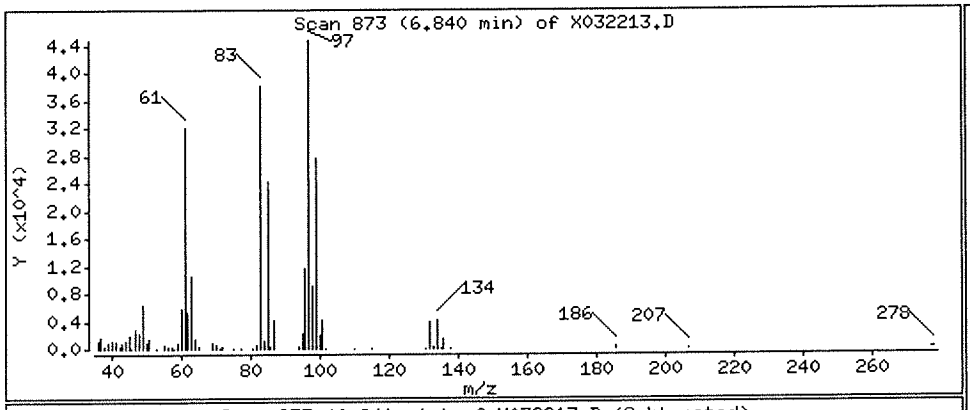
Operator: PC

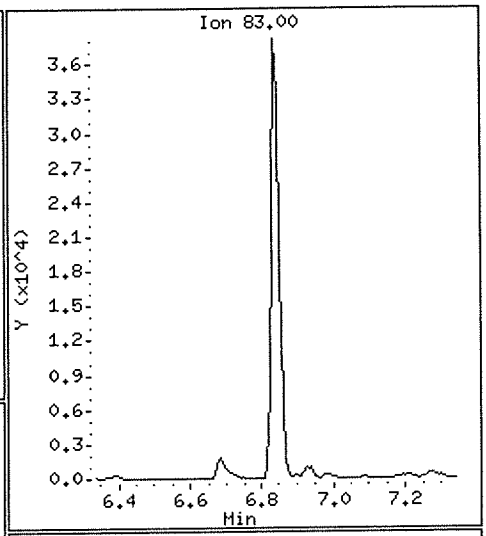
Column phase: DB624

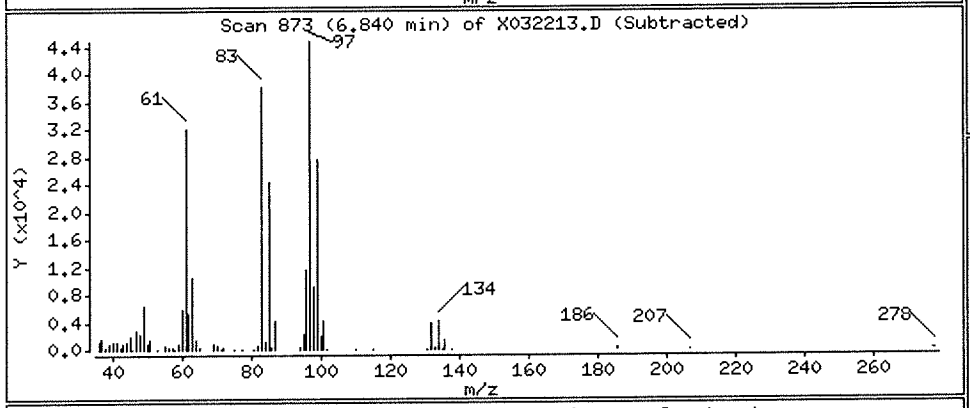
Column diameter: 0.18

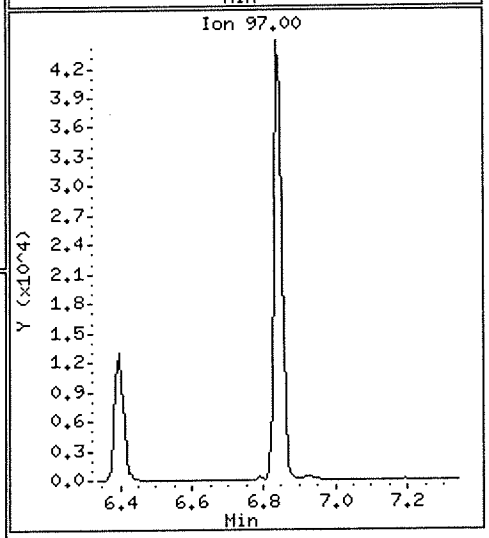
53 1,1,2-Trichloroethane

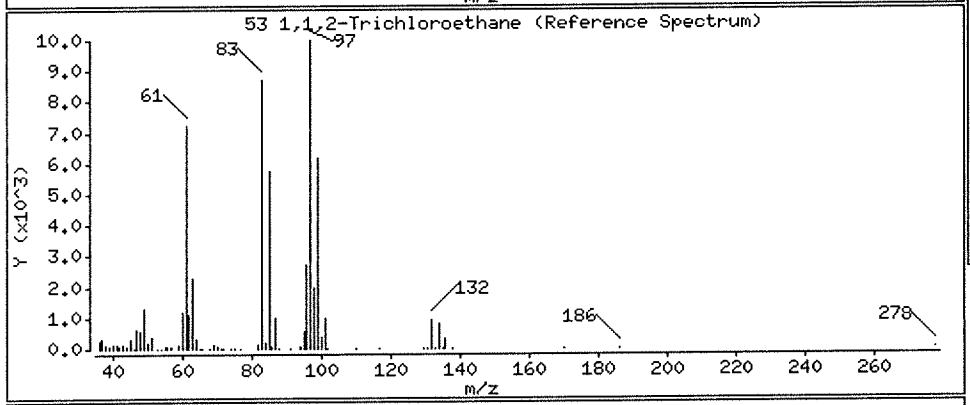
Concentration: 19.82 ug/l

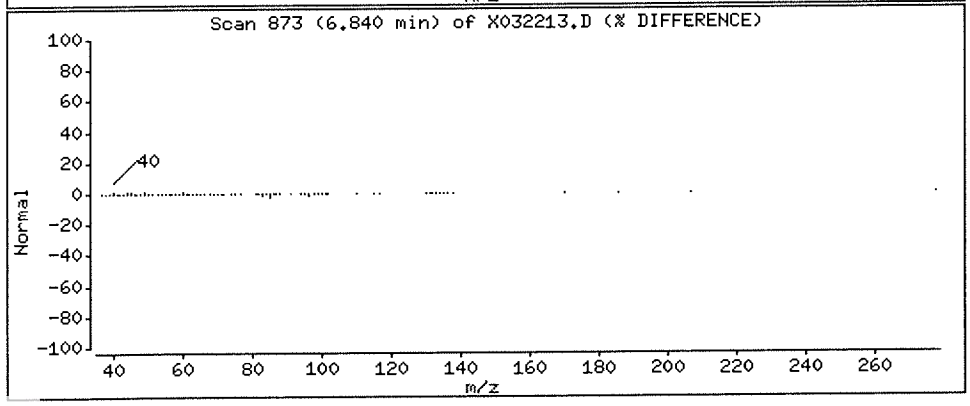












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032214.D Page 1
Report Date: 15-Apr-2020 12:40

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032214.D
Lab Smp Id: HS20030733-01 Client Smp ID: HS20030733-01
Inj Date : 22-MAR-2020 16:44
Operator : PC Inst ID: voa6.i
Smp Info : HS20030733-01;HS20030733-01;;;
Misc Info : HS18090001;WATER;0;10;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 15-Apr-2020 12:39 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 13
Dil Factor: 10.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	10.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

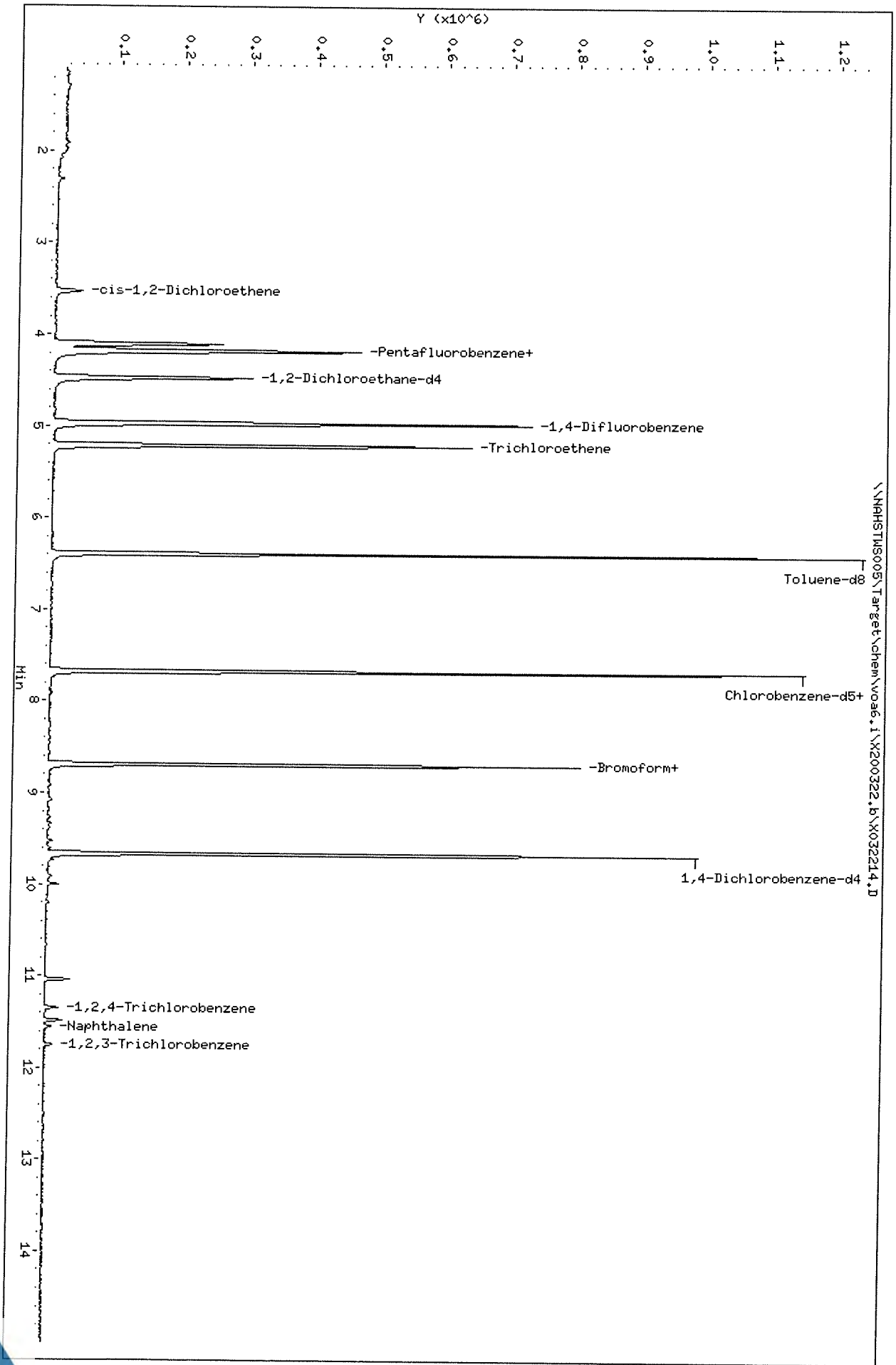
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	390803	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	181171	46.6507	46.65
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	221817	45.1630	45.16
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	581014	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	502936	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	680037	52.7879	52.78
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	238491	49.2750	49.27
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	234218	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	3471	0.58298	5.82(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	20199	4.53859	45.38(a)
38 Trichloroethene	130	5.207	5.207	(1.048)	208605	51.8007	518.00

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032214.D
Date : 22-MAR-2020 16:44
Client ID: HS200307333-01
Sample Info: HS200307333-01;HS200307333-01;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032214.D

Date : 22-MAR-2020 16:44

Client ID: HS20030733-01

Instrument: voa6.i

Sample Info: HS20030733-01;HS20030733-01;;;

Purge Volume: 5.0

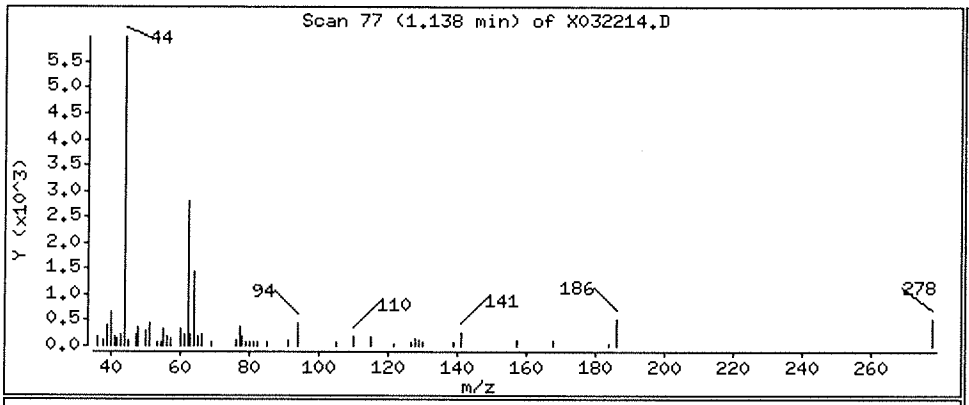
Operator: PC

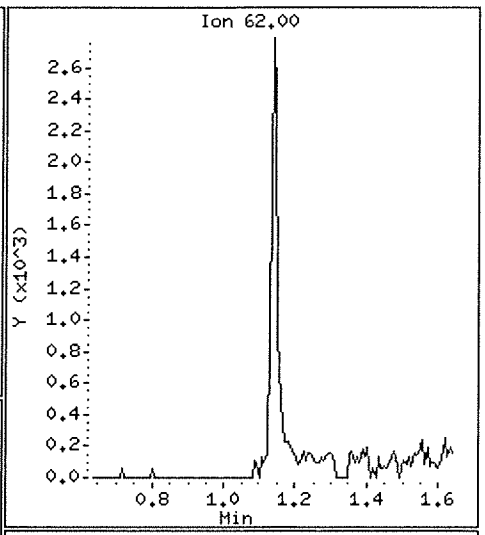
Column phase: DB624

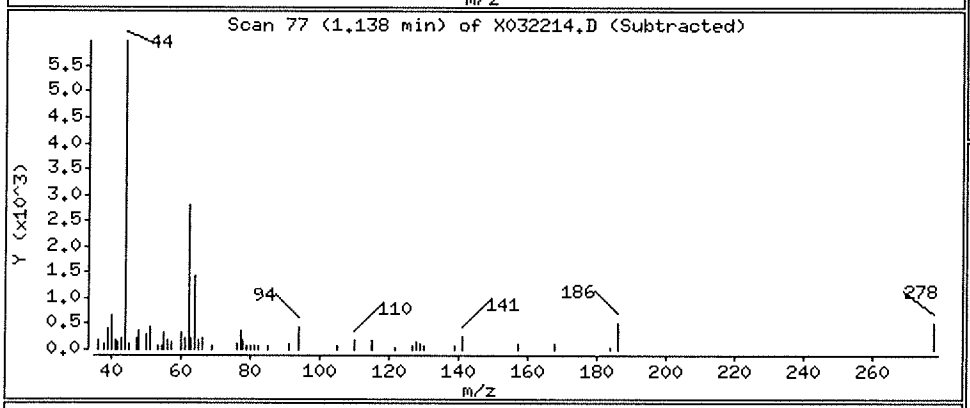
Column diameter: 0.18

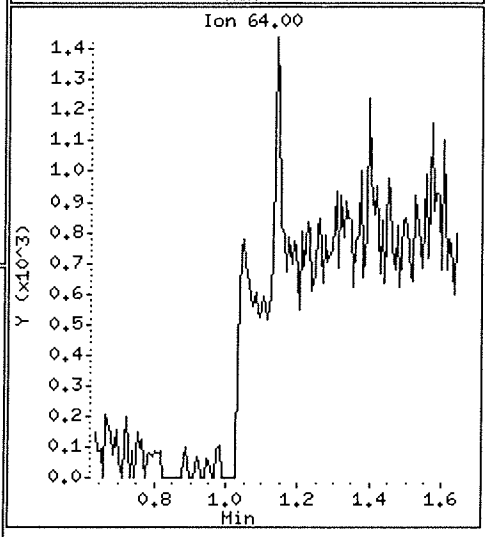
5 Vinyl Chloride

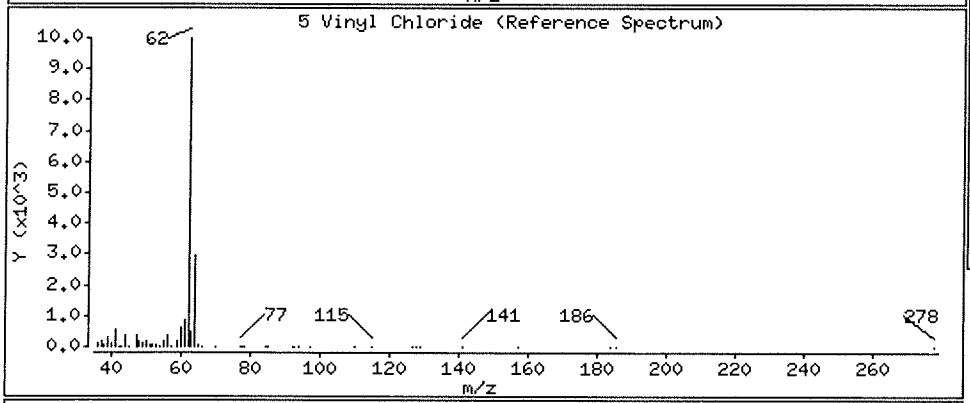
Concentration: 5.82 ug/l

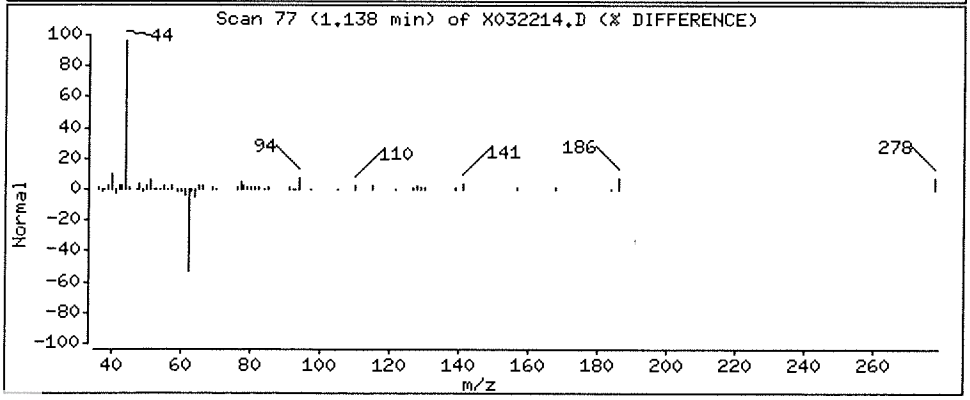












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032214.D

Date : 22-MAR-2020 16:44

Client ID: HS20030733-01

Instrument: voa6.i

Sample Info: HS20030733-01;HS20030733-01;;;

Purge Volume: 5.0

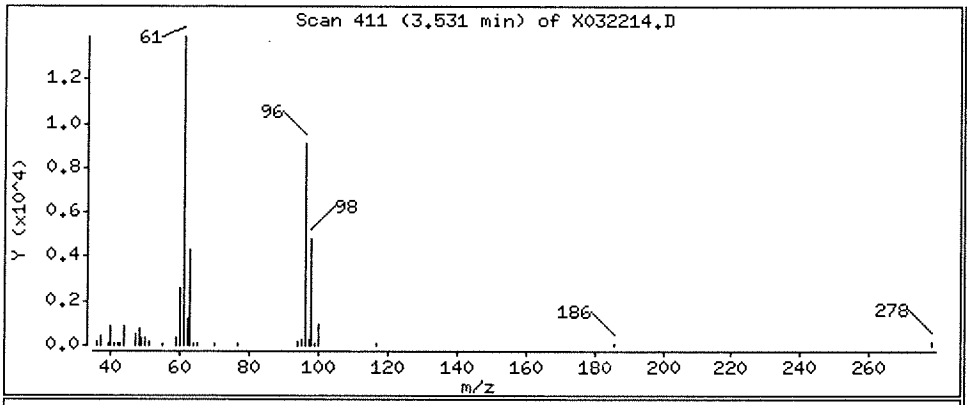
Operator: PC

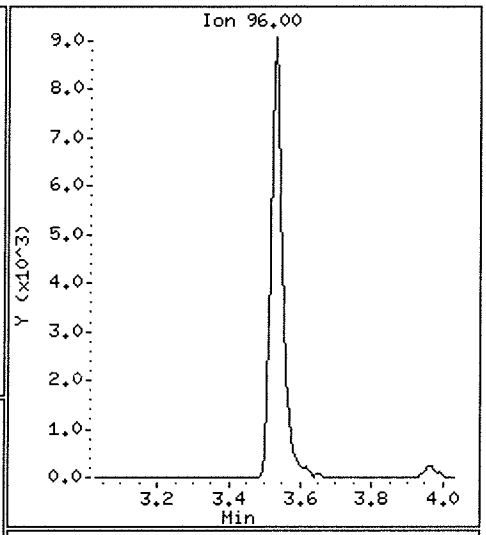
Column phase: DB624

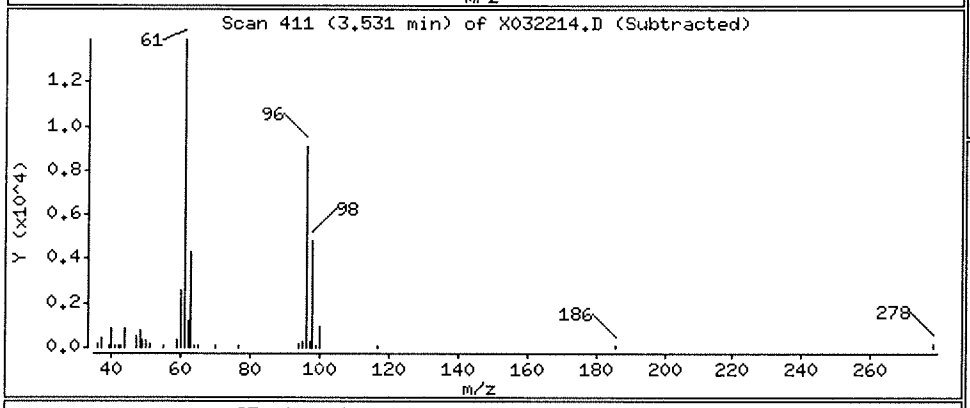
Column diameter: 0.18

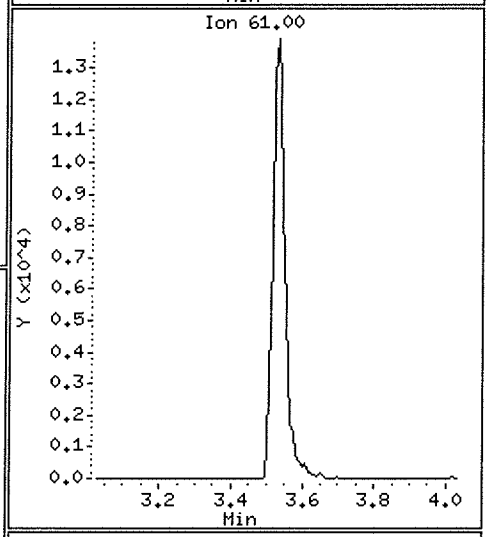
27 cis-1,2-Dichloroethene

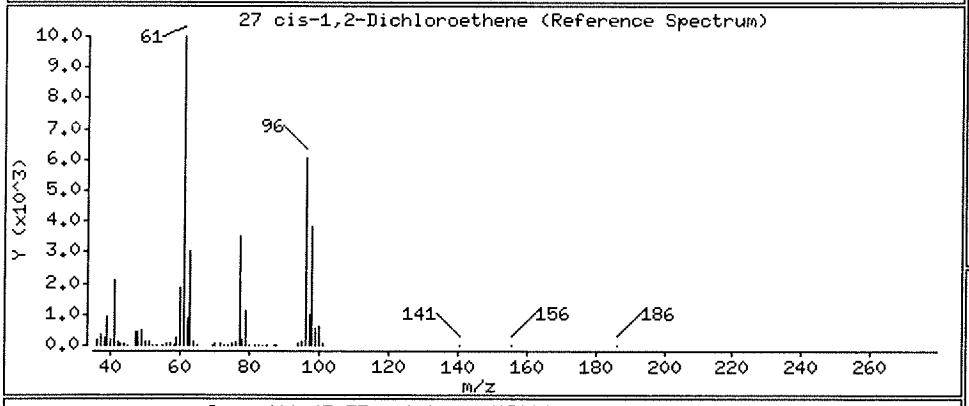
Concentration: 45.38 ug/l

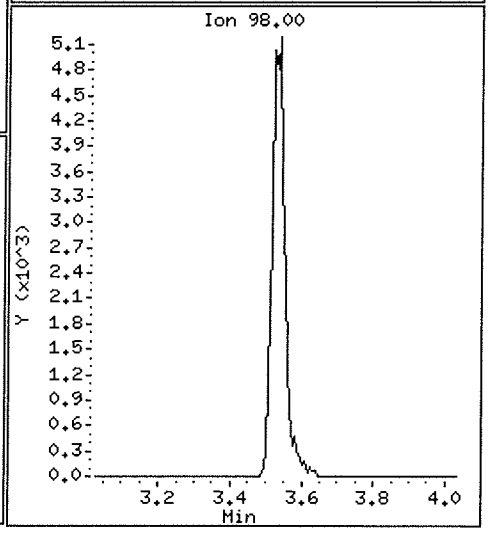


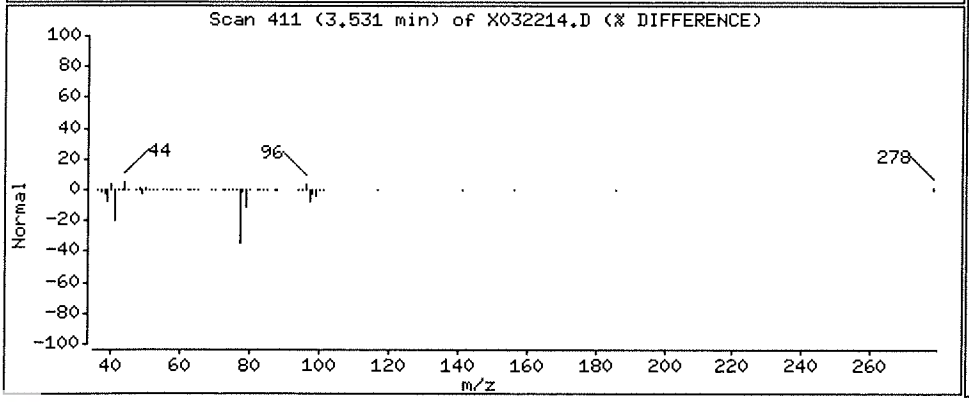












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032214.D

Date : 22-MAR-2020 16:44

Client ID: HS20030733-01

Instrument: voa6.i

Sample Info: HS20030733-01;HS20030733-01;;;

Purge Volume: 5.0

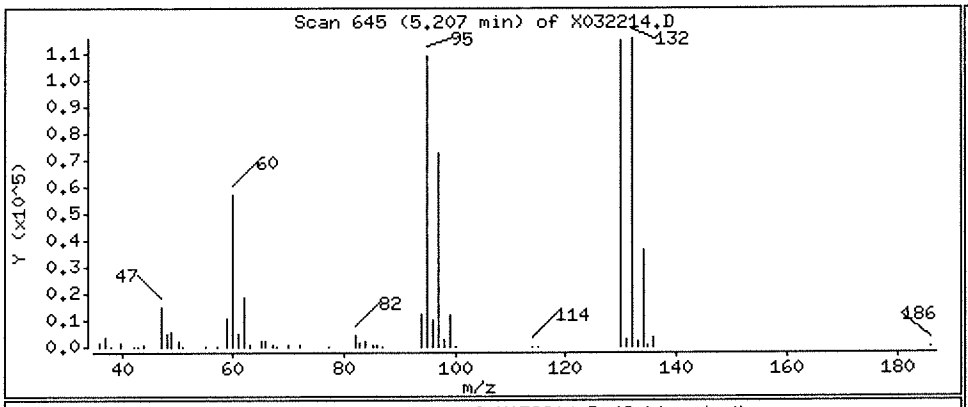
Operator: PC

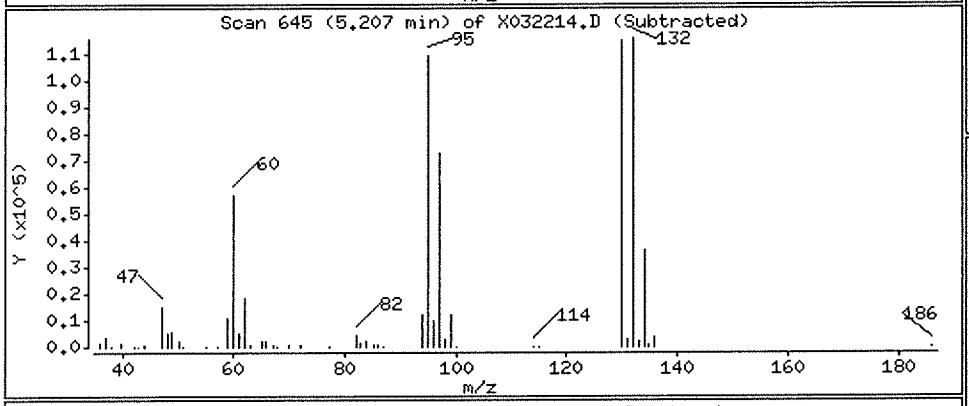
Column phase: DB624

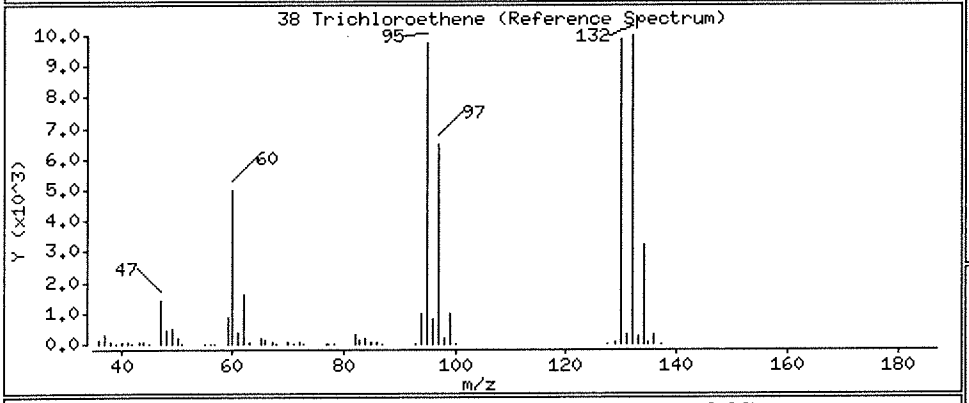
Column diameter: 0.18

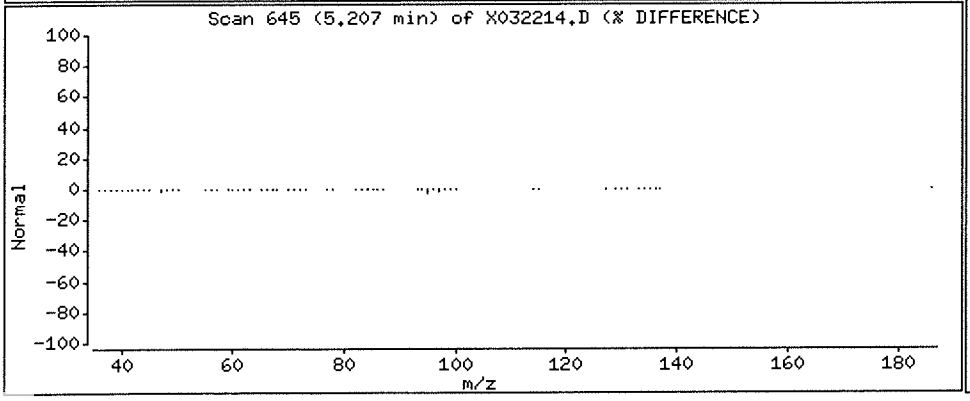
38 Trichloroethene

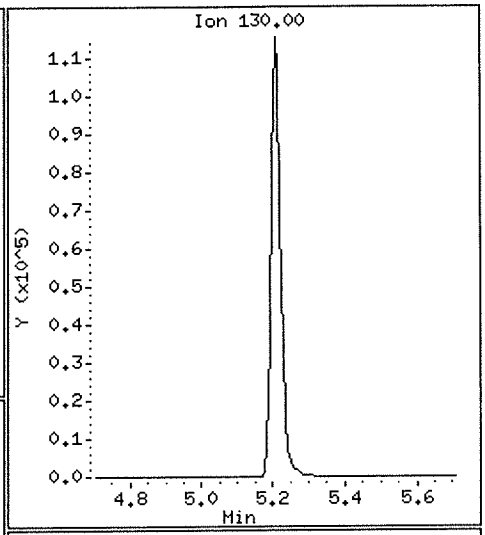
Concentration: 518.00 ug/l

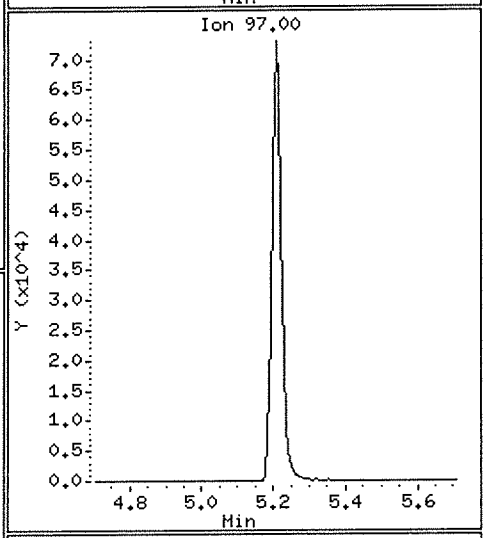


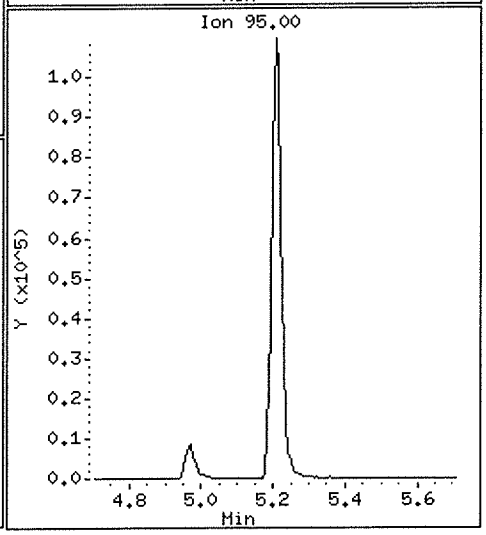












ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032215.D
Lab Smp Id: HS20030733-05 Client Smp ID: HS20030733-05
Inj Date : 22-MAR-2020 17:08
Operator : PC Inst ID: voa6.i
Smp Info : HS20030733-05;HS20030733-05;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 15-Apr-2020 12:39 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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

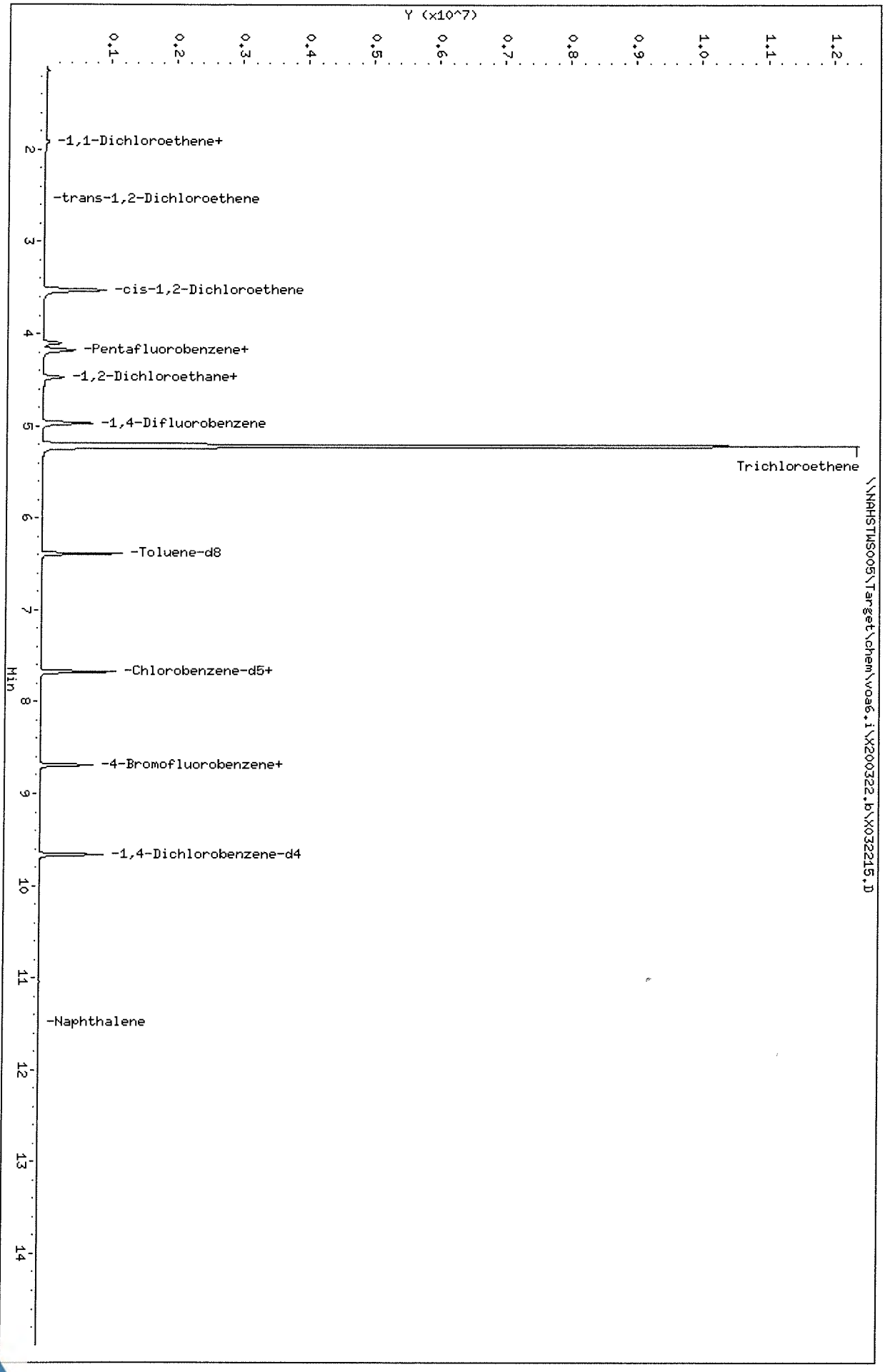
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	395491	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	184819	47.0268	47.02
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	227209	45.7144	45.71
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	590028	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	491405	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	659025	52.3567	52.35
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	232958	49.2611	49.26
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	231147	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	31660	5.25448	5.25
11 1,1-Dichloroethene	96	1.911	1.912	(0.457)	7703	2.29855	2.29(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	442758	98.3057	98.30
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	10699	1.71635	1.71(a)
38 Trichloroethene	130	5.213	5.207	(1.049)	4129188	1009.69	1009.69(A)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032215.D
Date : 22-MAR-2020 17:08
Client ID: HS200307333-05
Sample Info: HS200307333-05;HS200307333-05;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032215.D

Date : 22-MAR-2020 17:08

Client ID: HS20030733-05

Instrument: voa6.i

Sample Info: HS20030733-05;HS20030733-05;;;

Purge Volume: 5.0

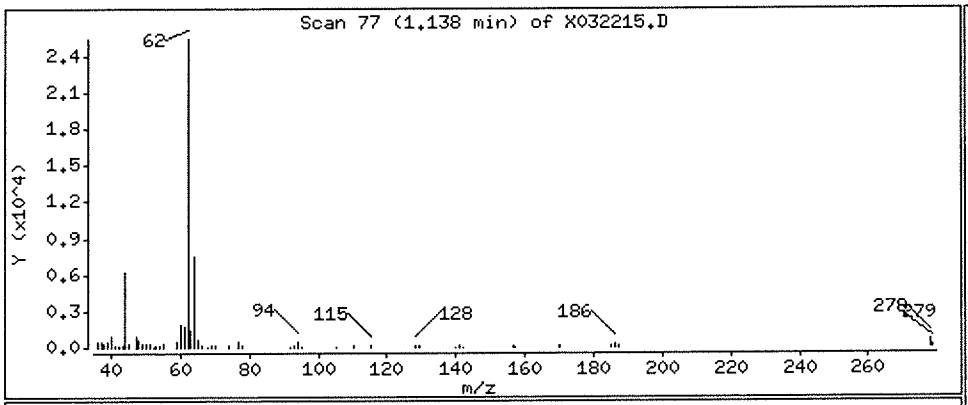
Operator: PC

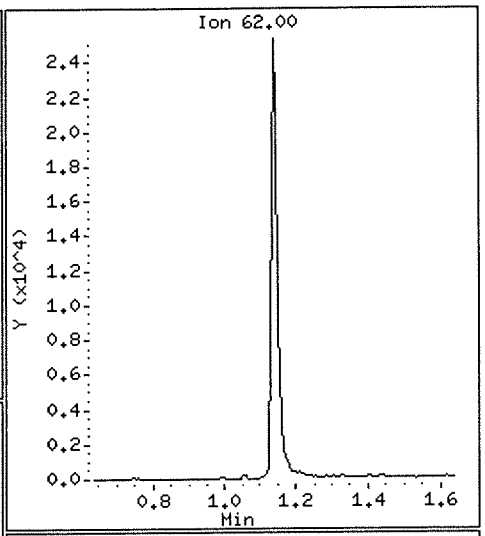
Column phase: DB624

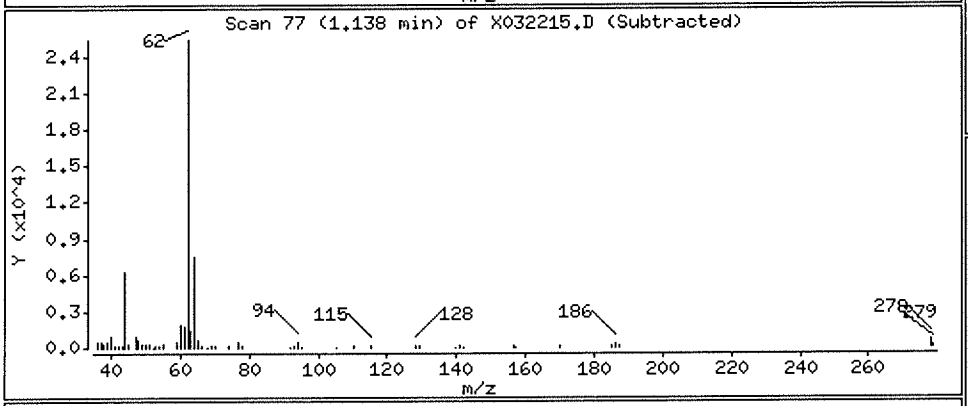
Column diameter: 0.18

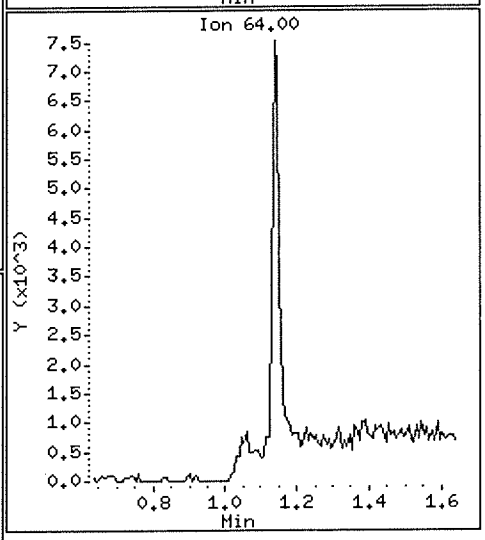
5 Vinyl Chloride

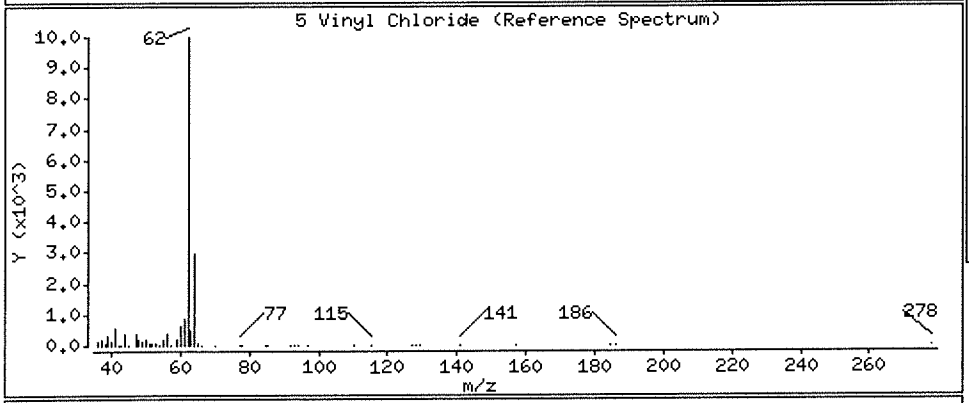
Concentration: 5.25 ug/l

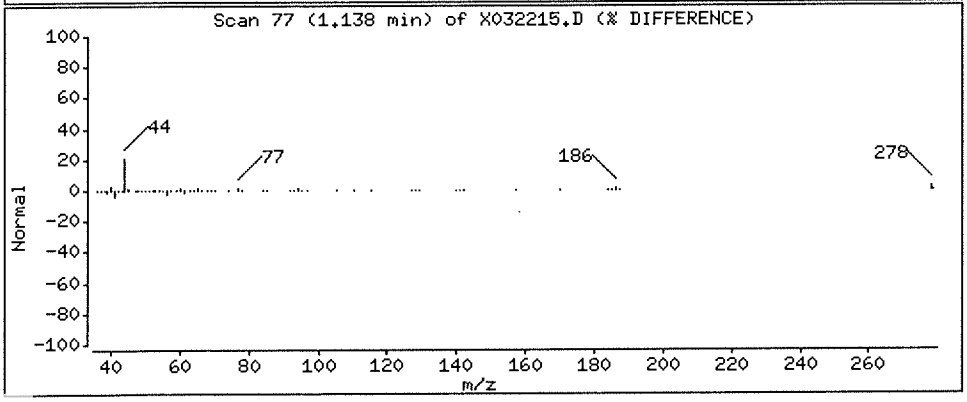












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032215.D

Date : 22-MAR-2020 17:08

Client ID: HS20030733-05

Instrument: voa6.i

Sample Info: HS20030733-05;HS20030733-05;;;

Purge Volume: 5.0

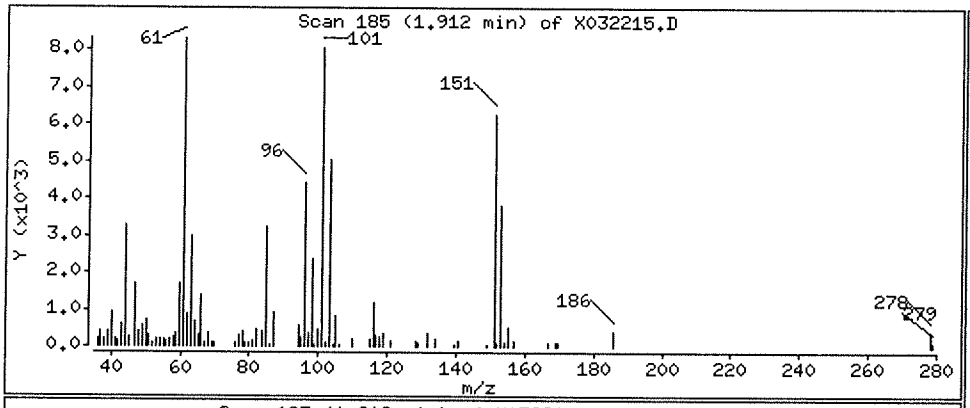
Operator: PC

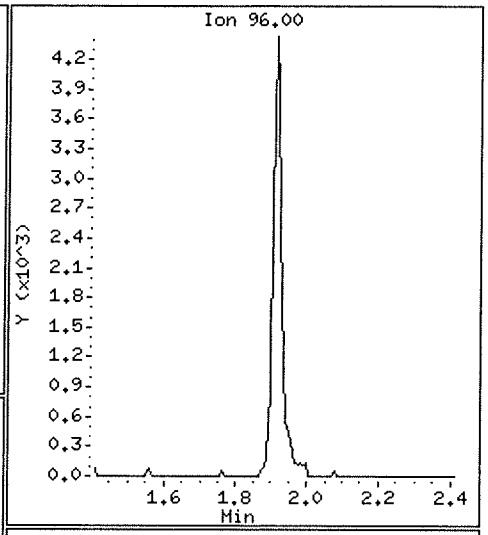
Column phase: DB624

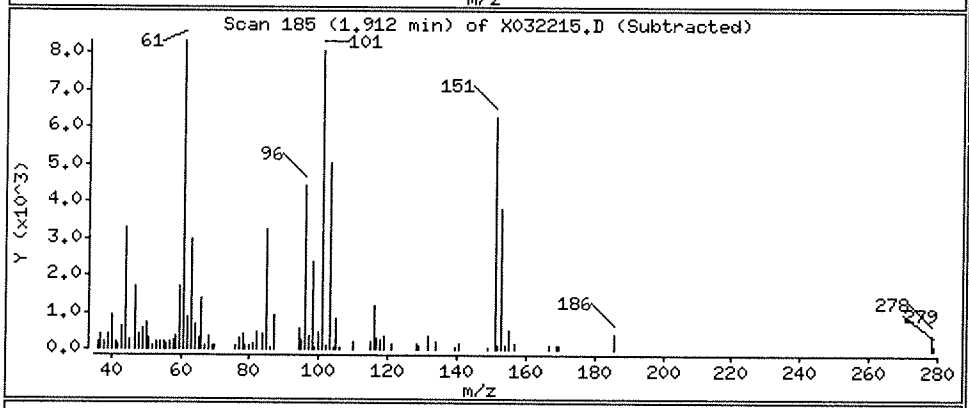
Column diameter: 0.18

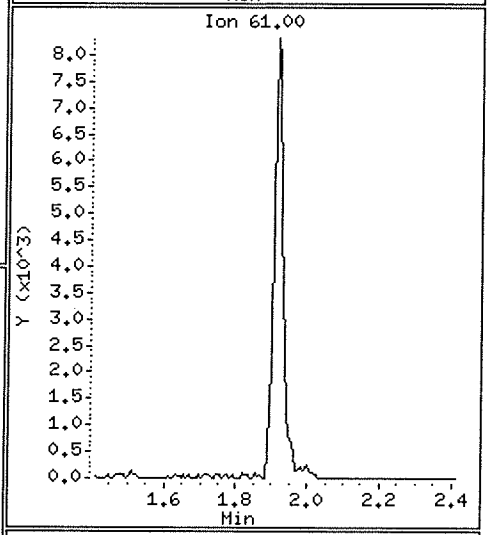
11 1,1-Dichloroethene

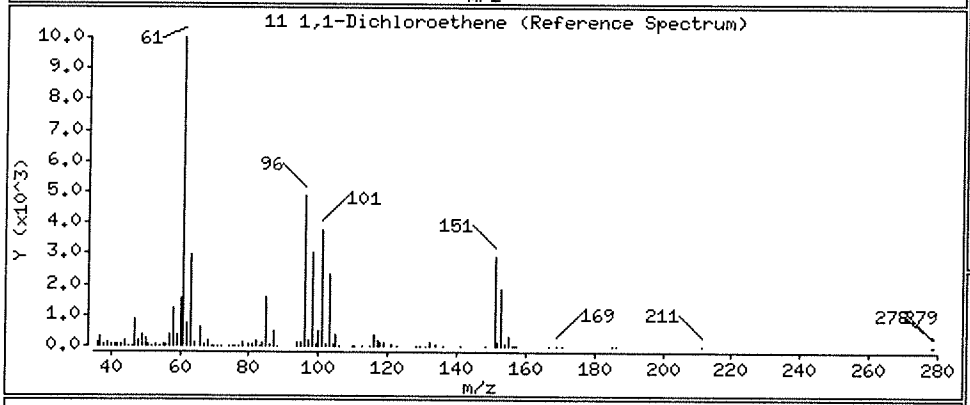
Concentration: 2.29 ug/l

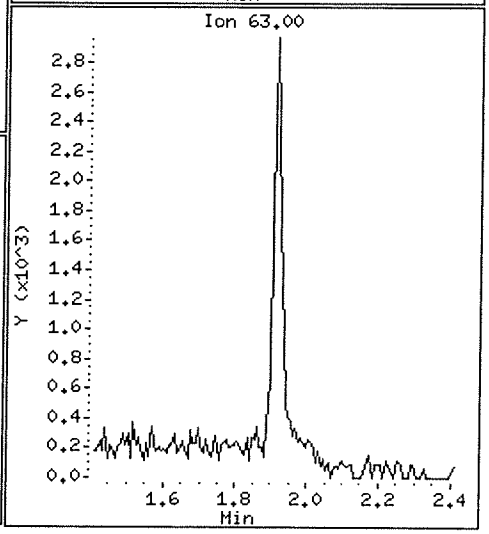


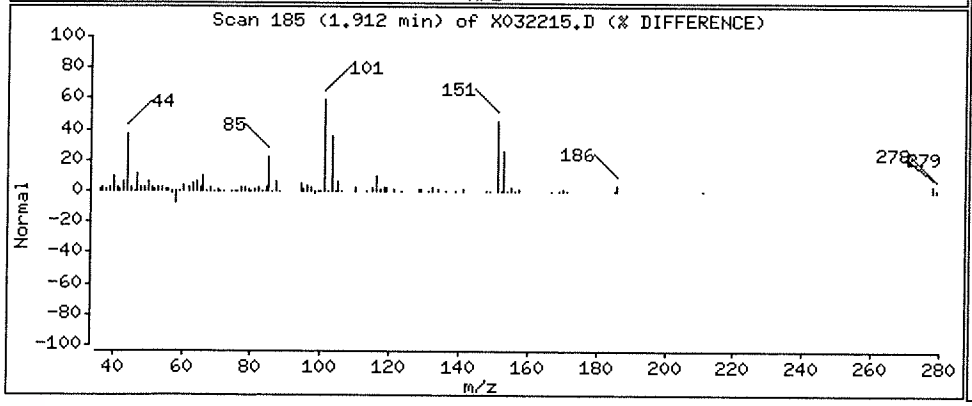












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032215.D

Date : 22-MAR-2020 17:08

Client ID: HS20030733-05

Instrument: voa6.i

Sample Info: HS20030733-05;HS20030733-05;;;

Purge Volume: 5.0

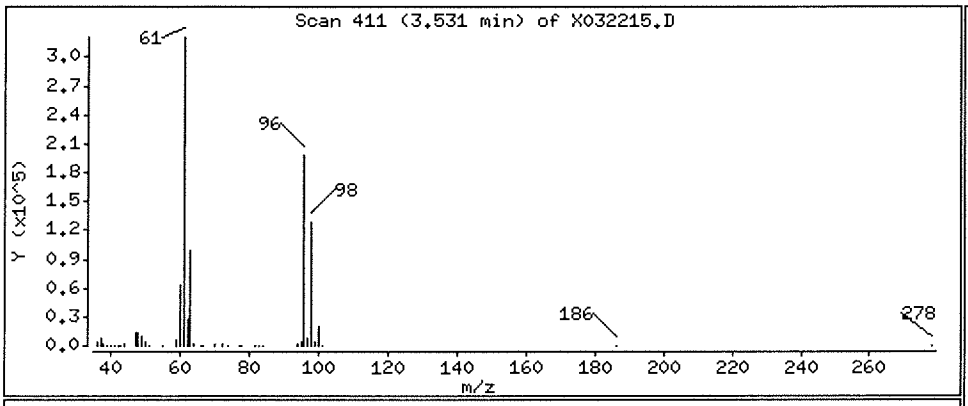
Operator: PC

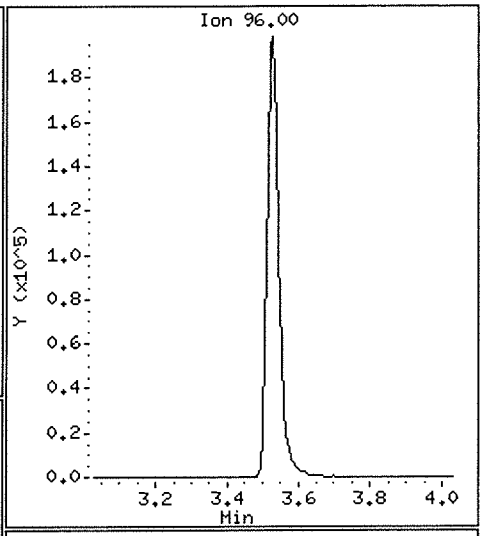
Column phase: DB624

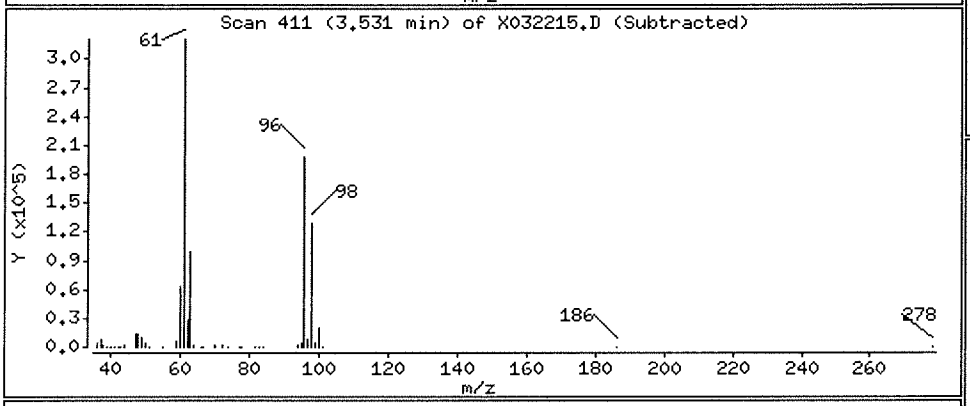
Column diameter: 0.18

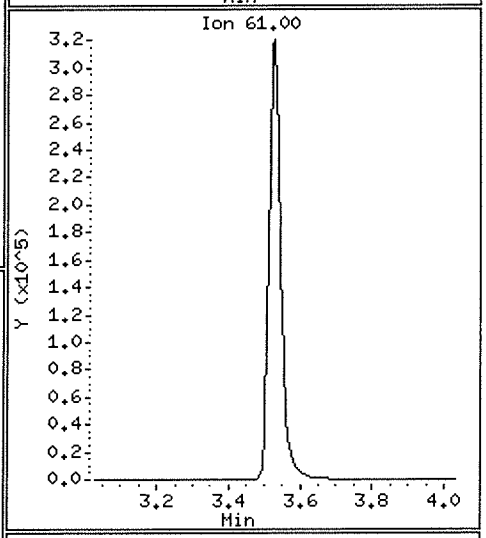
27 cis-1,2-Dichloroethene

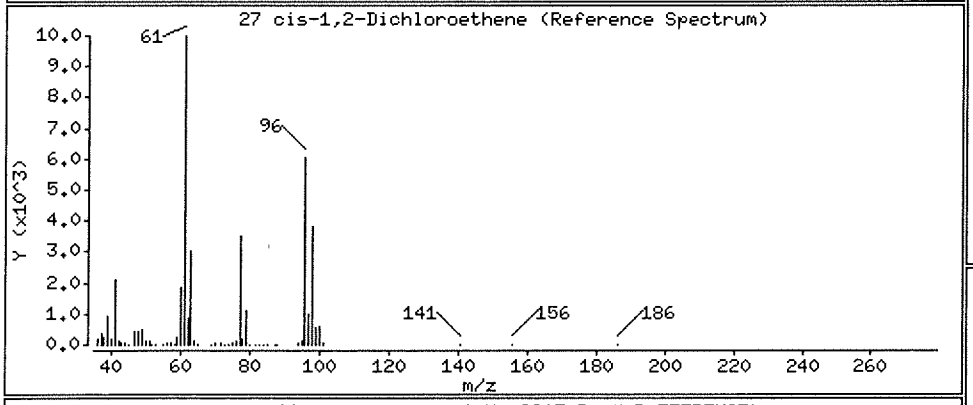
Concentration: 98.30 ug/l

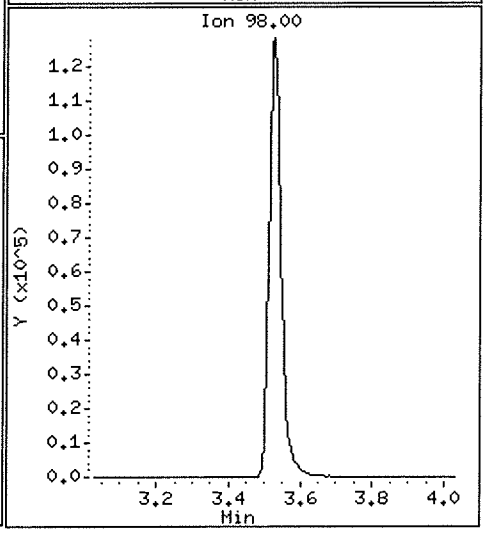


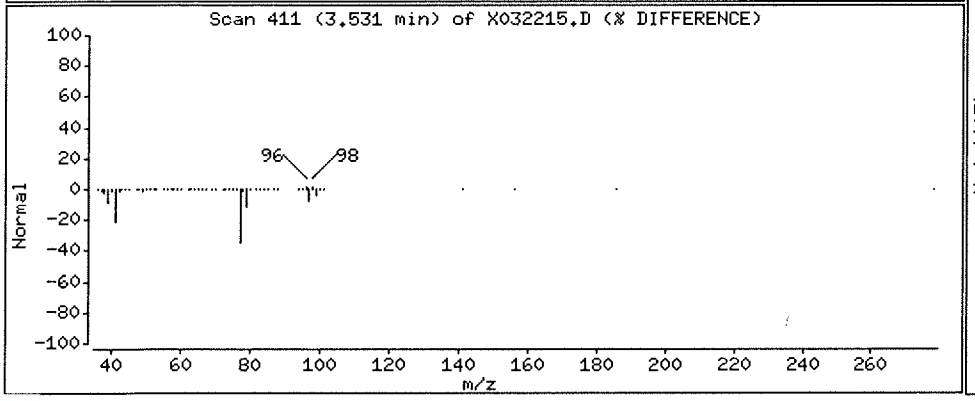












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032215.D

Date : 22-MAR-2020 17:08

Client ID: HS20030733-05

Instrument: voa6.i

Sample Info: HS20030733-05;HS20030733-05;;;

Purge Volume: 5.0

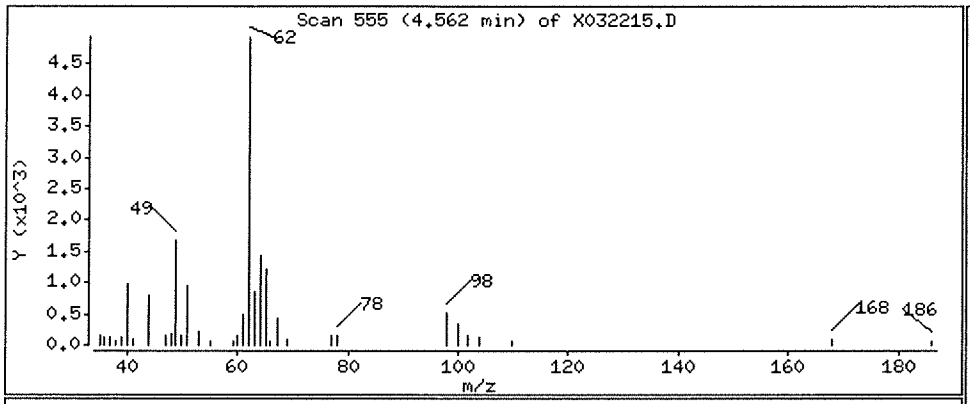
Operator: PC

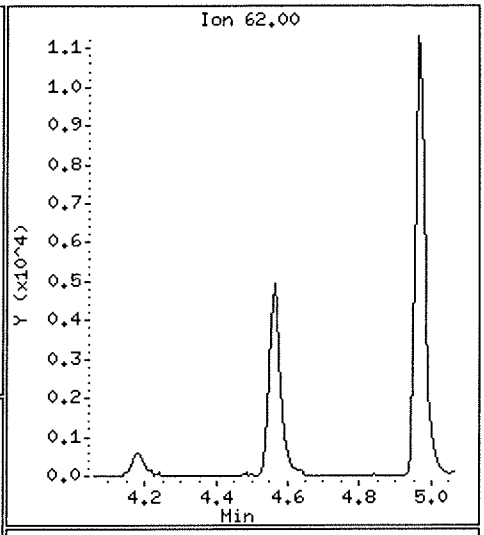
Column phase: DB624

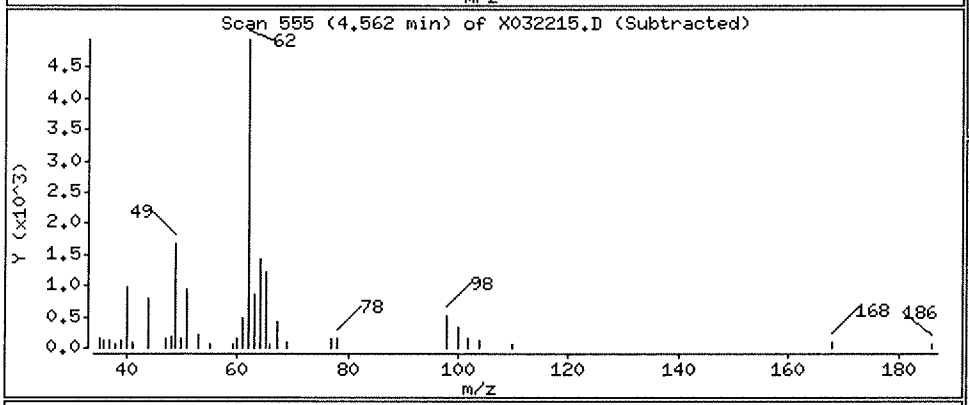
Column diameter: 0.18

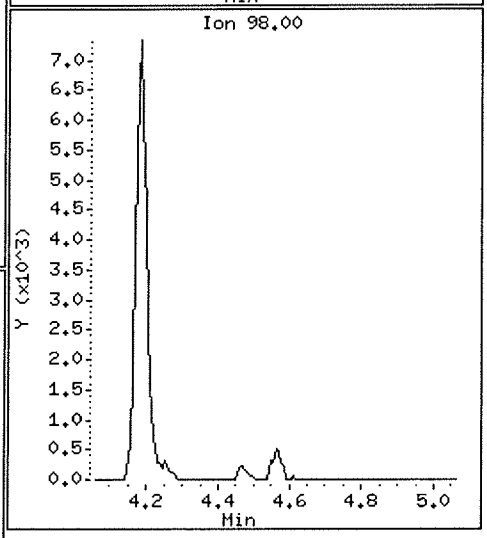
33 1,2-Dichloroethane

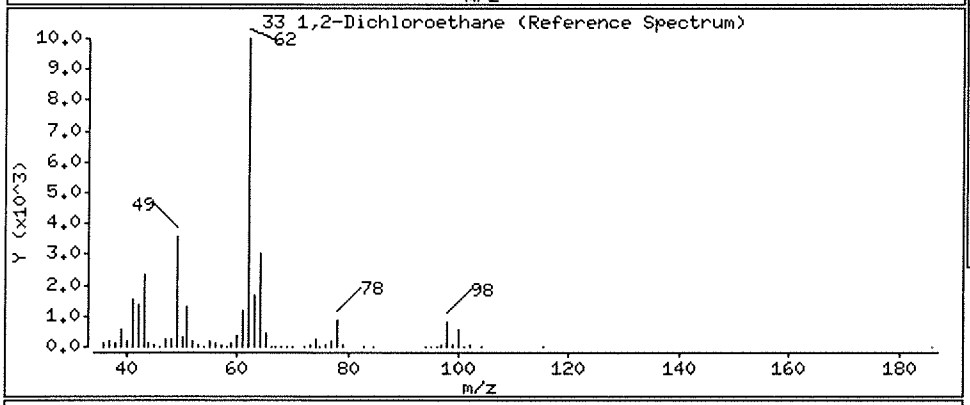
Concentration: 1.71 ug/l

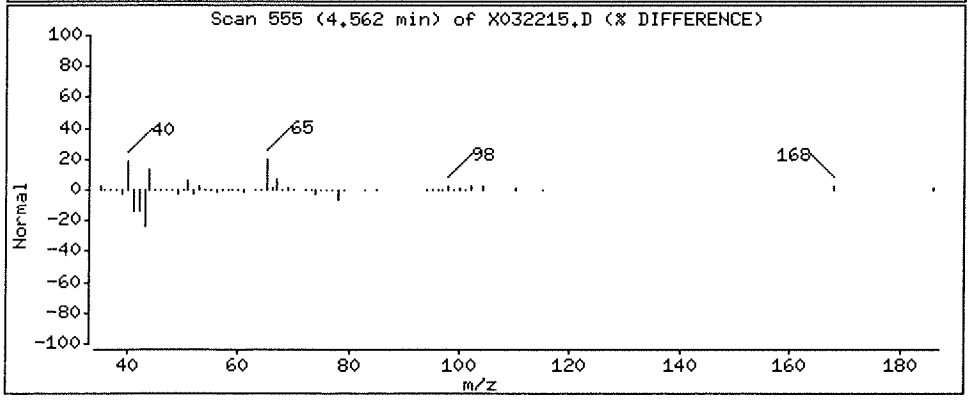












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032215.D

Date : 22-MAR-2020 17:08

Client ID: HS20030733-05

Instrument: voa6.i

Sample Info: HS20030733-05;HS20030733-05;;;

Purge Volume: 5.0

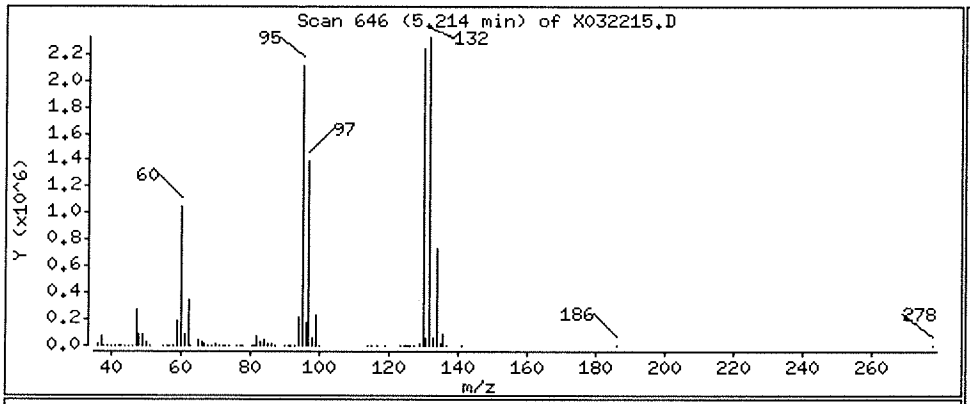
Operator: PC

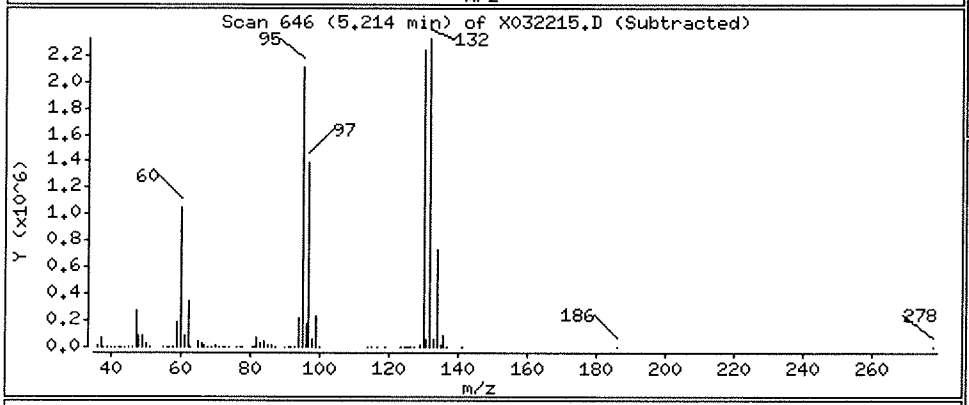
Column phase: DB624

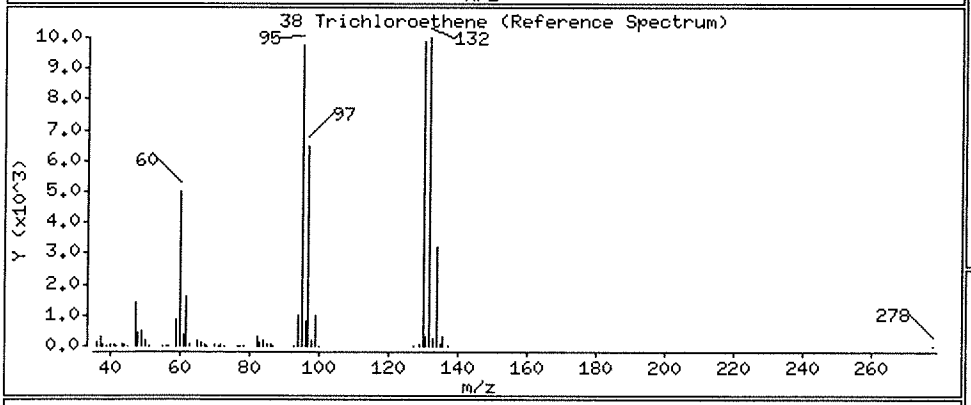
Column diameter: 0.18

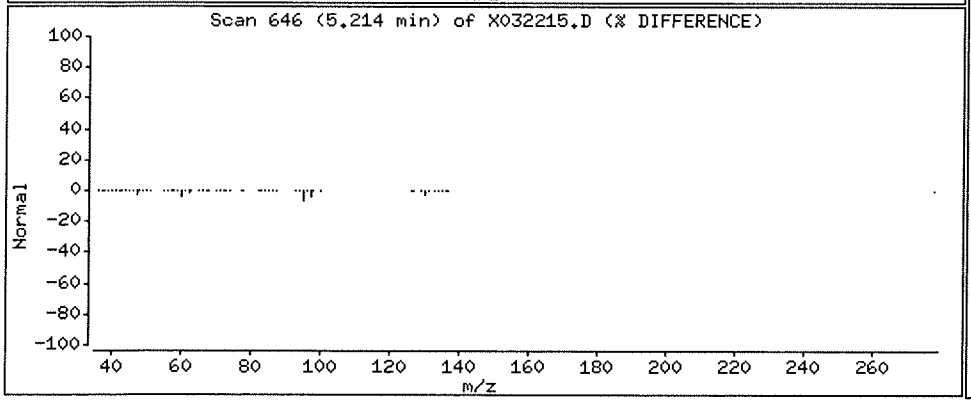
38 Trichloroethene

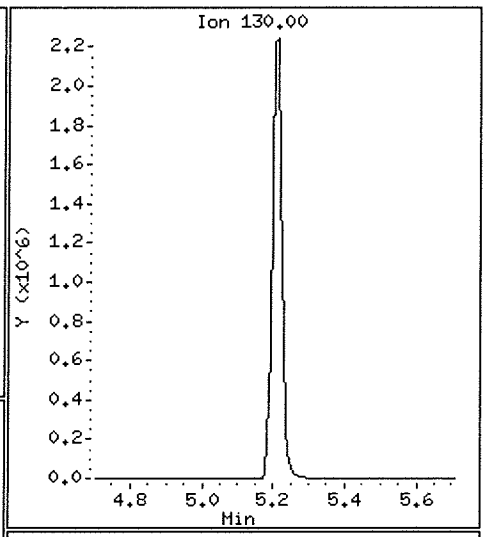
Concentration: 1009.69 ug/l

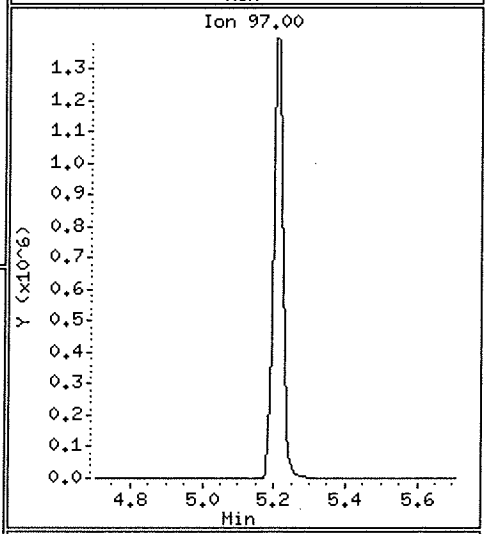


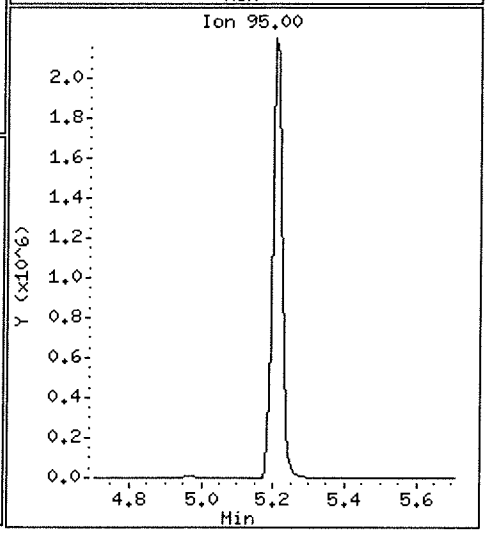












ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032216.D
Lab Smp Id: HS20030733-05 Client Smp ID: HS20030733-05
Inj Date : 22-MAR-2020 17:32
Operator : PC Inst ID: voa6.i
Smp Info : HS20030733-05;HS20030733-05;;;
Misc Info : HS18090001;WATER;0;25;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 15-Apr-2020 12:39 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 15
Dil Factor: 25.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	25.000	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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	390086	50.0000	
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	184912	47.7039	47.70
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	221982	45.2801	45.28
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	581654	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	493352	50.0000	
$	48 Toluene-d8	98	6.388	6.388	(0.833)	680143	53.8233	53.82
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	229125	48.2493	48.24
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	224714	50.0000	
	27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	17902	4.02986	100.74(a)
	38 Trichloroethene	130	5.207	5.207	(1.048)	173561	43.0511	1076.27

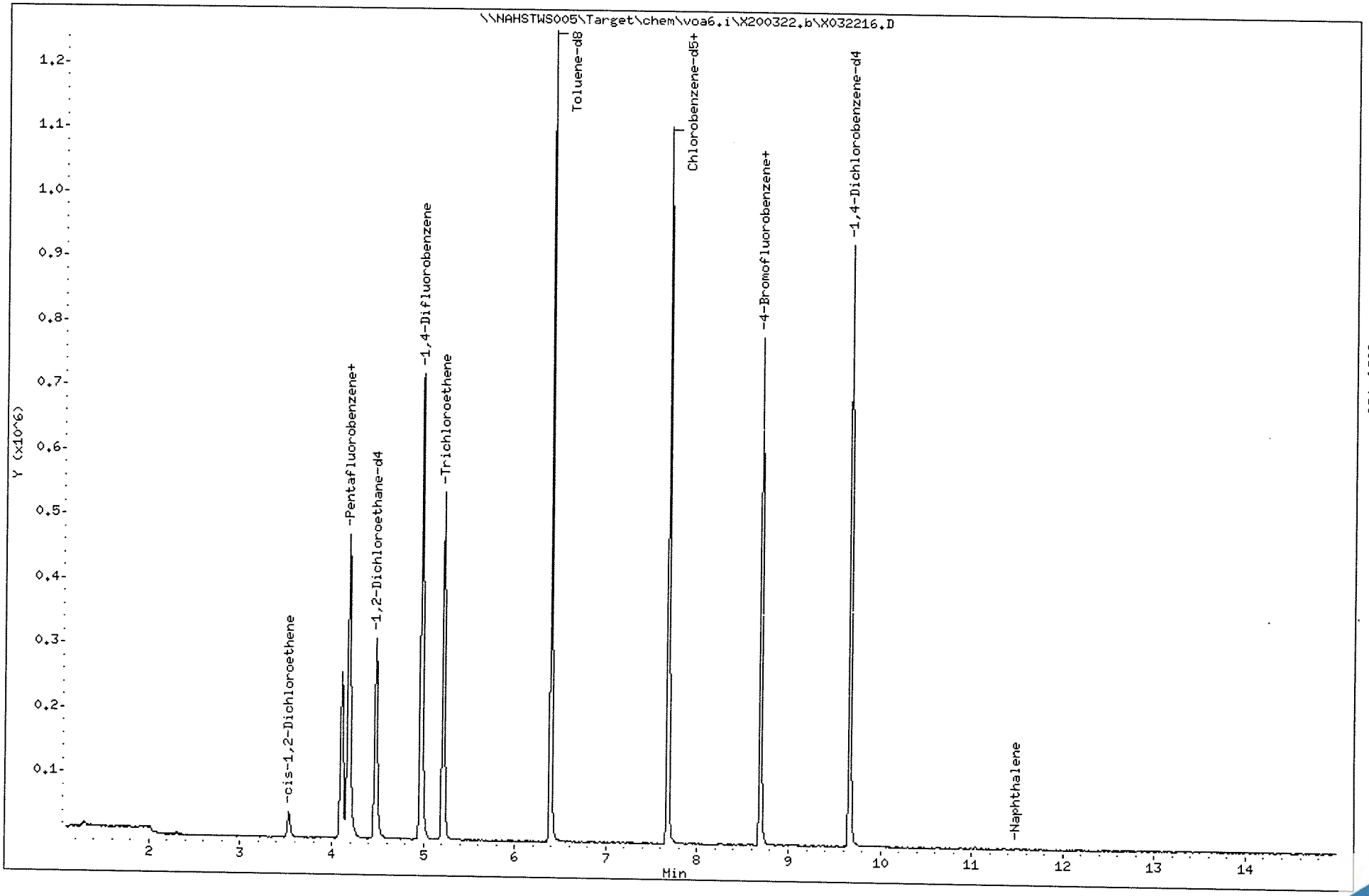
QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032216.D
Date : 22-MAR-2020 17:32
Client ID: HS20030733-05
Sample Info: HS20030733-05;HS20030733-05;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i

Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032216.D

Date : 22-MAR-2020 17:32

Client ID: HS20030733-05

Instrument: voa6.i

Sample Info: HS20030733-05;HS20030733-05;;;

Purge Volume: 5.0

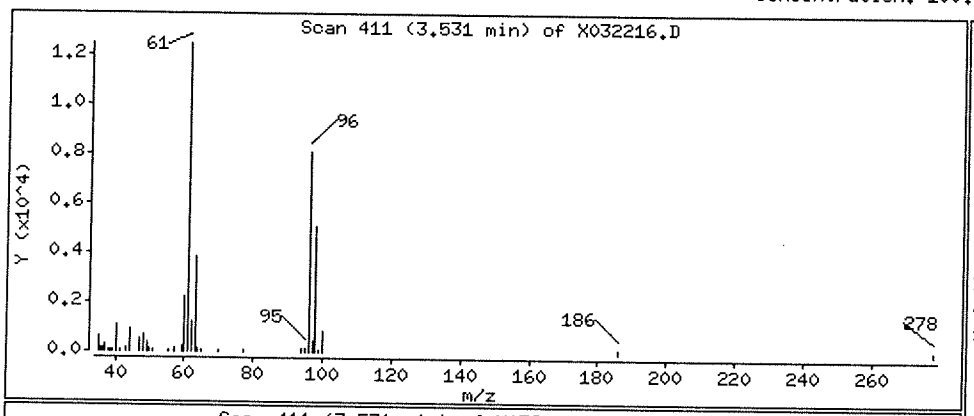
Operator: PC

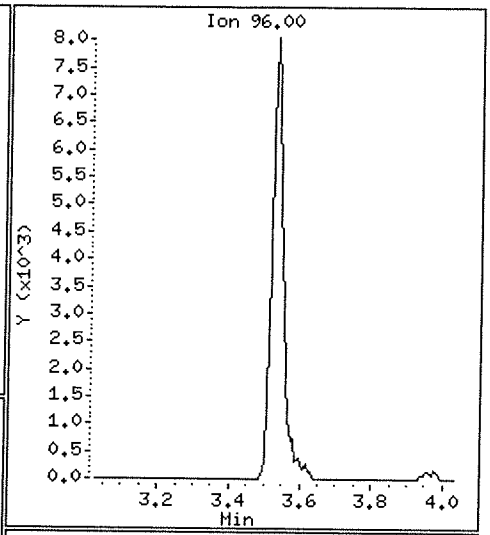
Column phase: DB624

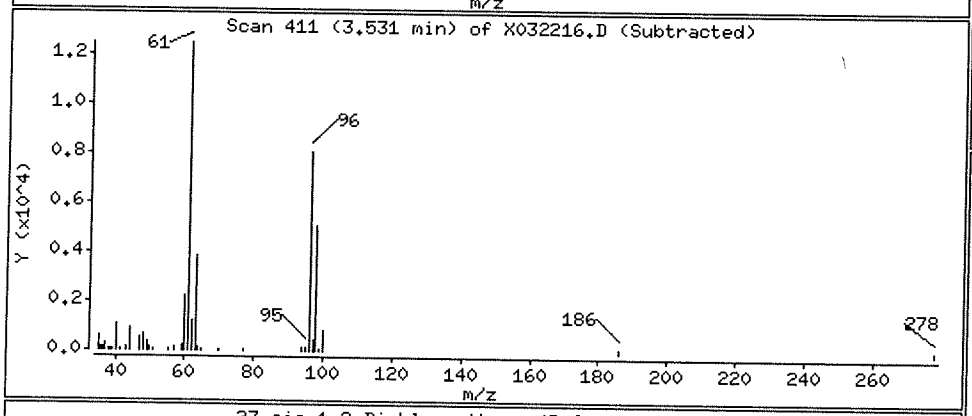
Column diameter: 0.18

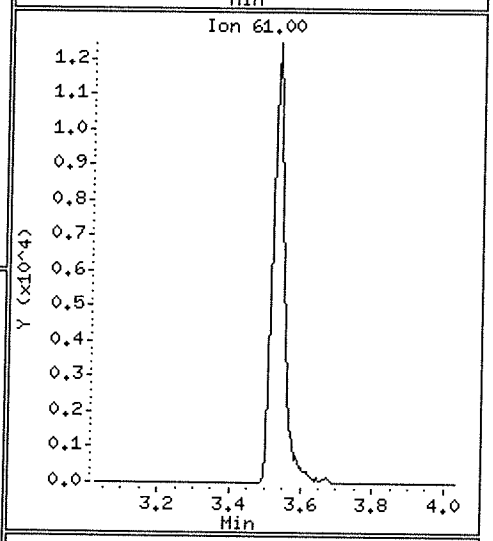
27 cis-1,2-Dichloroethene

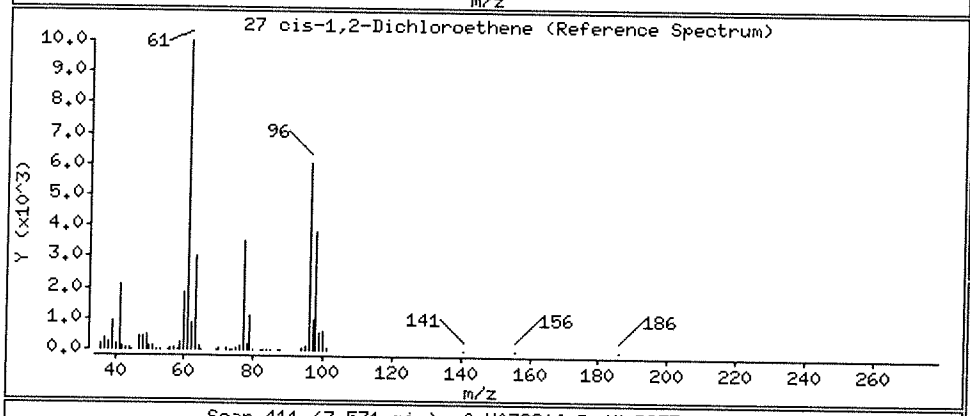
Concentration: 100.74 ug/l

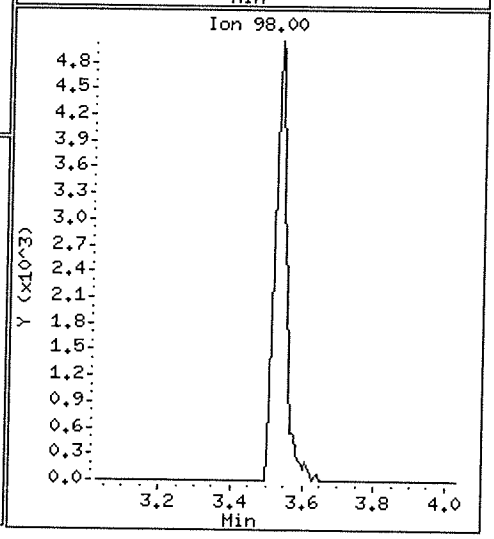


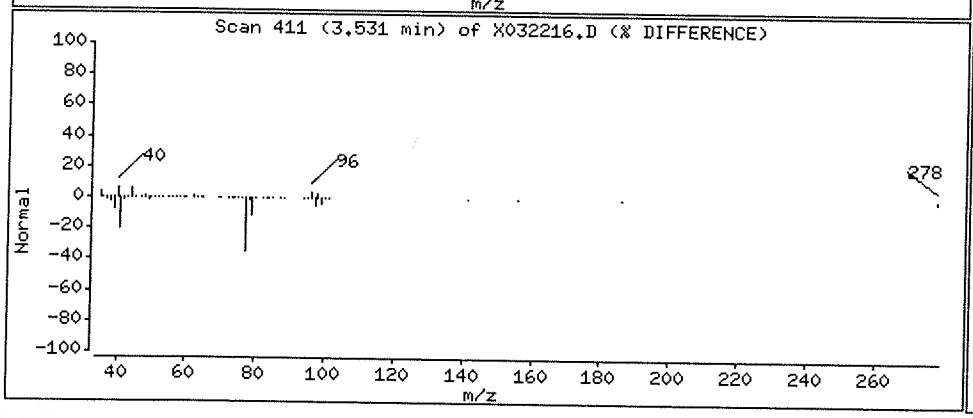












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032216.D

Date : 22-MAR-2020 17:32

Client ID: HS20030733-05

Instrument: voa6.i

Sample Info: HS20030733-05;HS20030733-05;;;

Purge Volume: 5.0

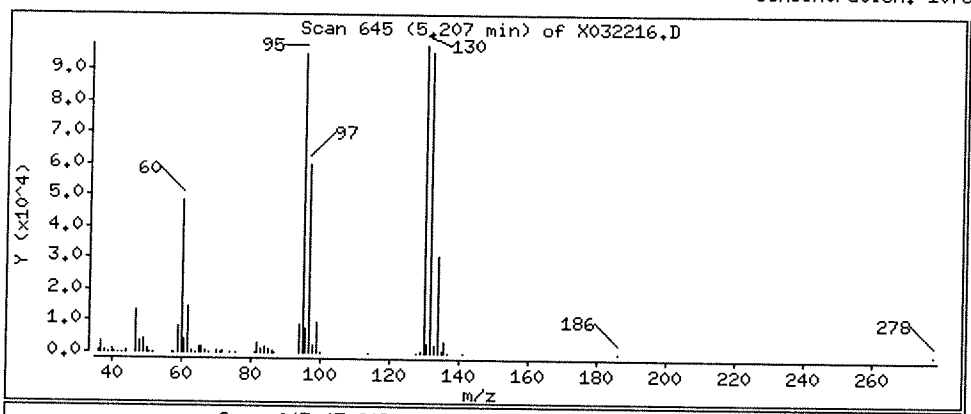
Operator: PC

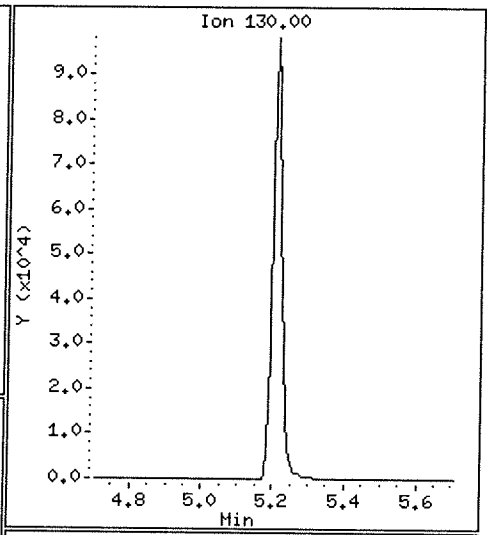
Column phase: DB624

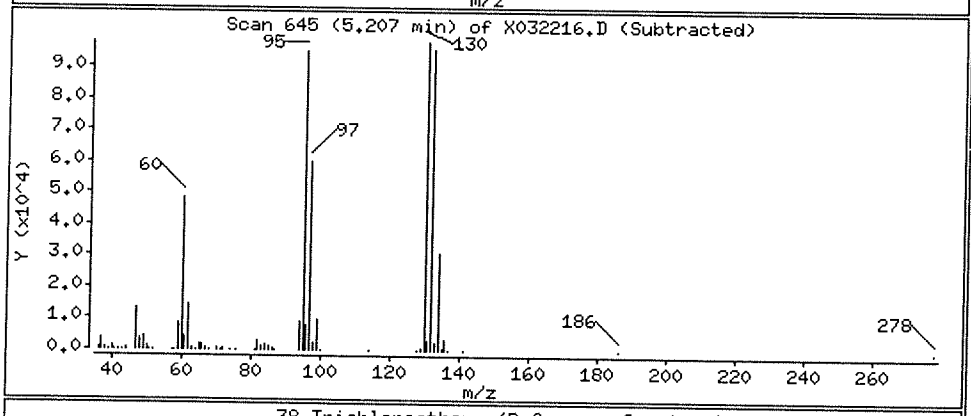
Column diameter: 0.18

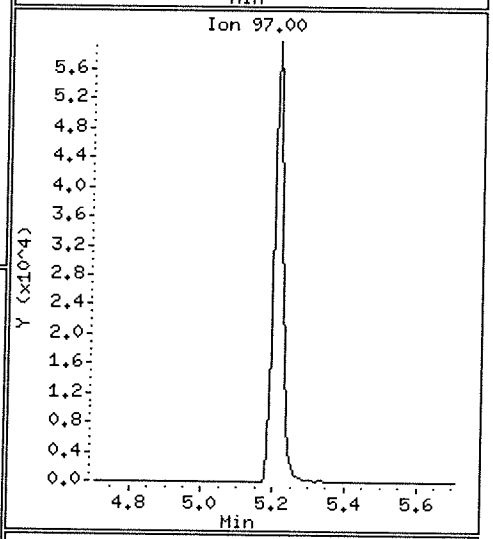
38 Trichloroethene

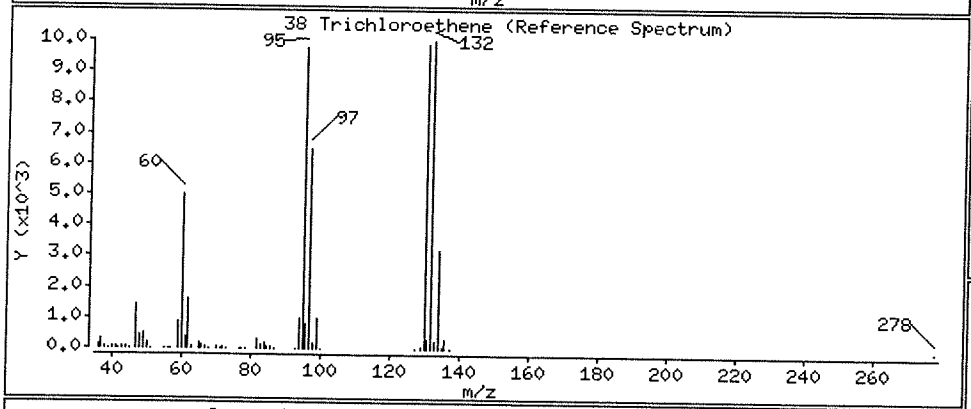
Concentration: 1076.27 ug/l

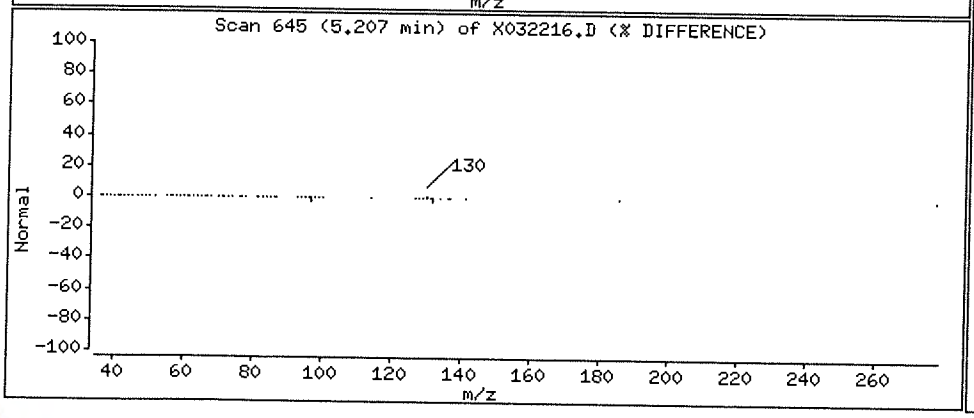


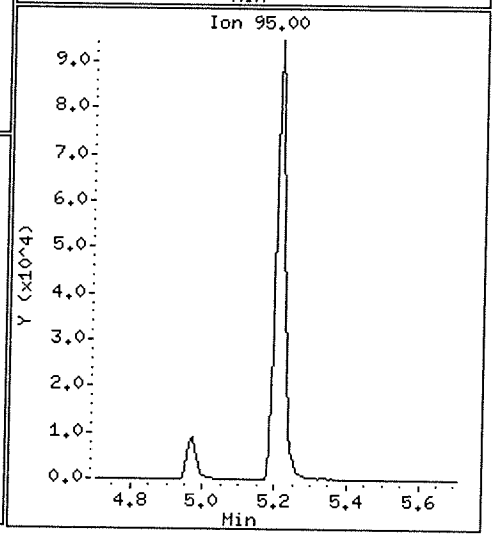












ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032217.D
Lab Smp Id: HS20030733-03 Client Smp ID: HS20030733-03
Inj Date : 22-MAR-2020 17:56
Operator : PC Inst ID: voa6.i
Smp Info : HS20030733-03;HS20030733-03;;;
Misc Info : HS18090001;WATER;0;5;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 15-Apr-2020 12:39 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 16
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	5.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

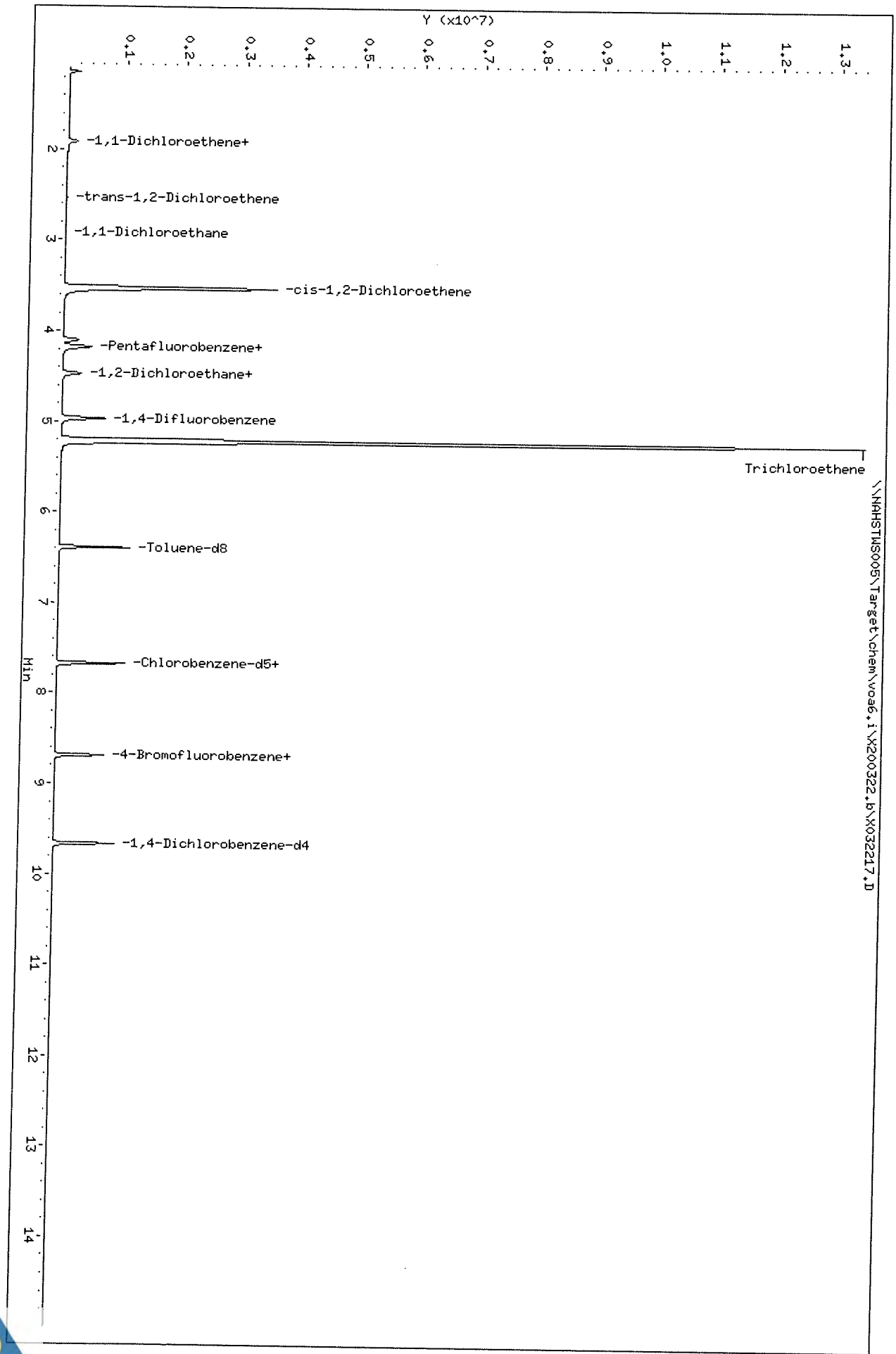
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	391147	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	184077	47.3589	47.35
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	225235	45.8209	45.82
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	586634	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	498398	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	659774	51.6797	51.67
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	239650	49.9722	49.97
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	248365	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	138015	23.1602	115.80
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	9357	2.82311	14.11(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	1653184	371.134	1855.66(A)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	4939	0.79691	3.98(a)
38 Trichloroethene	130	5.214	5.207	(1.049)	4528540	1113.75	5568.75(A)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032217.D
Date : 22-MAR-2020 17:56
Client ID: HS20030733-03
Sample Info: HS20030733-03;HS20030733-03;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032217.D

Date : 22-MAR-2020 17:56

Client ID: HS20030733-03

Instrument: voa6.i

Sample Info: HS20030733-03;HS20030733-03;;;

Purge Volume: 5.0

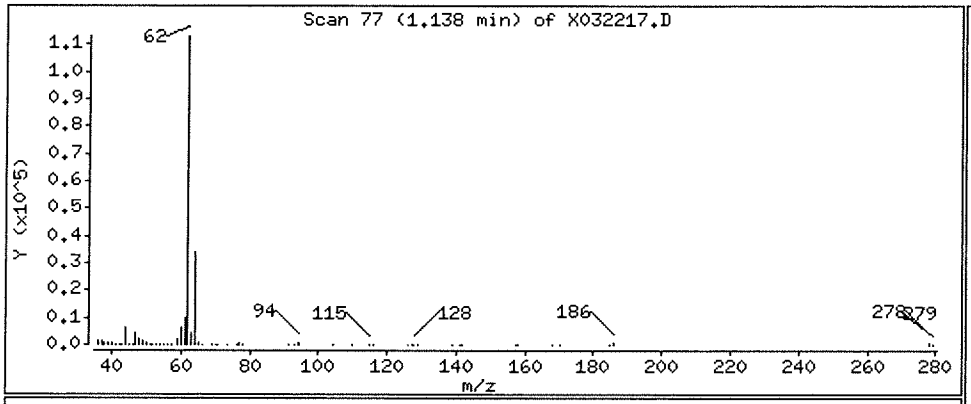
Operator: PC

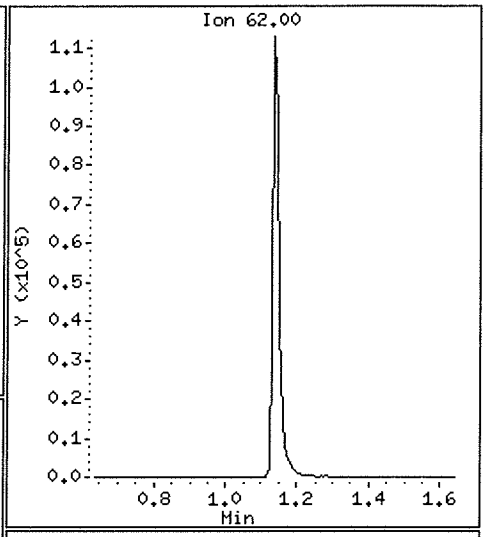
Column phase: DB624

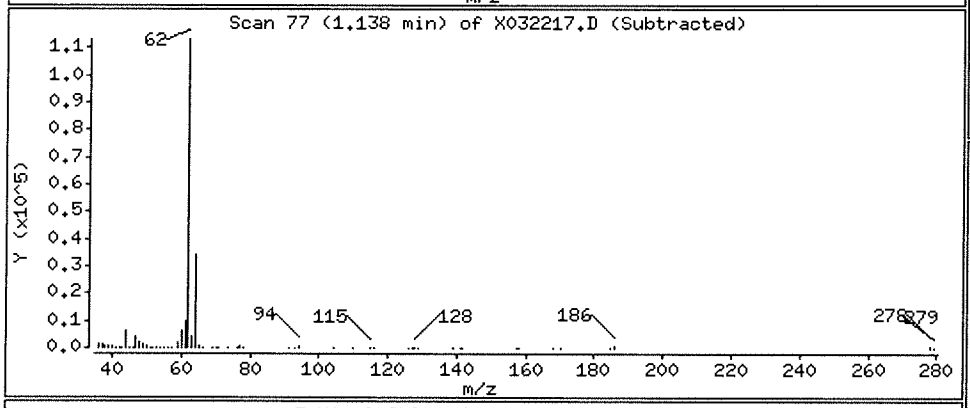
Column diameter: 0.18

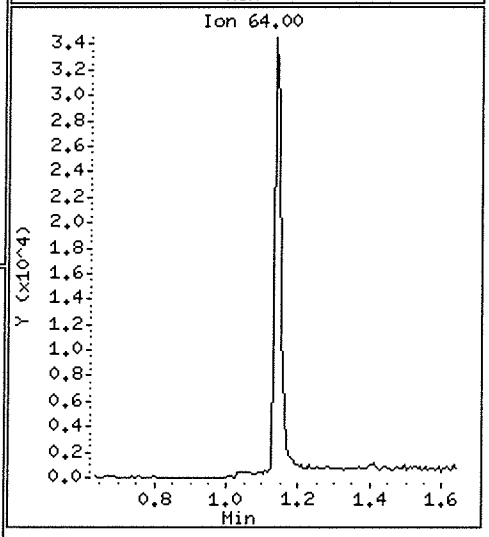
5 Vinyl Chloride

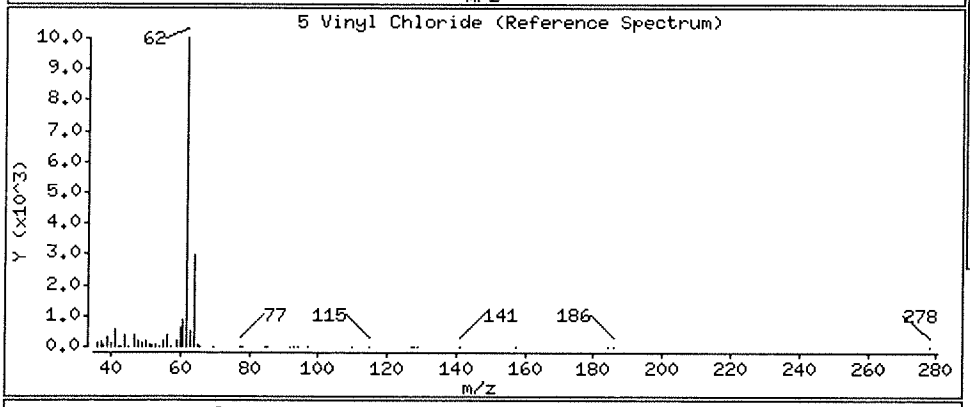
Concentration: 115.80 ug/l

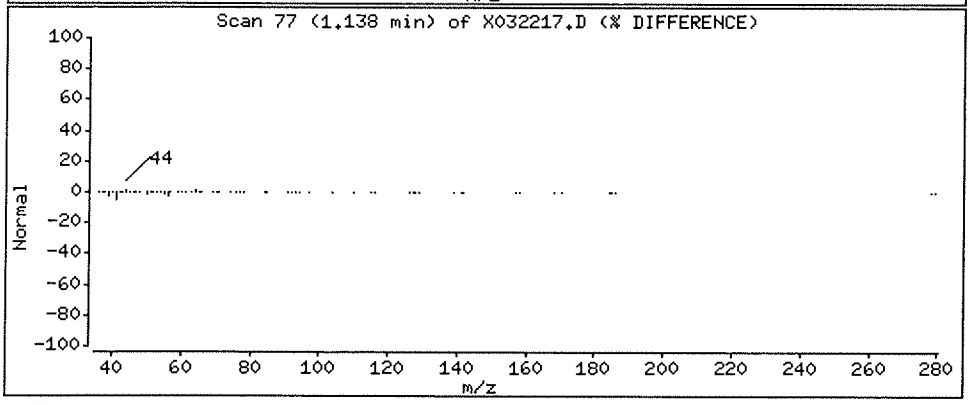












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032217.D

Date : 22-MAR-2020 17:56

Client ID: HS20030733-03

Instrument: voa6.i

Sample Info: HS20030733-03;HS20030733-03;;;

Purge Volume: 5.0

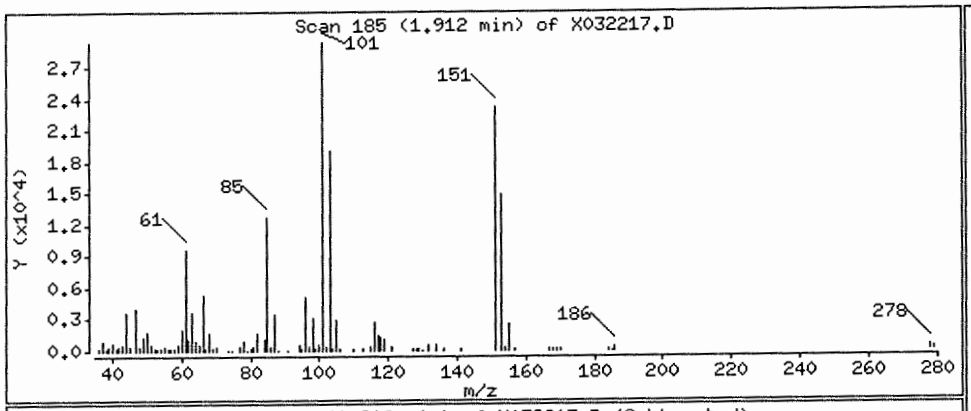
Operator: PC

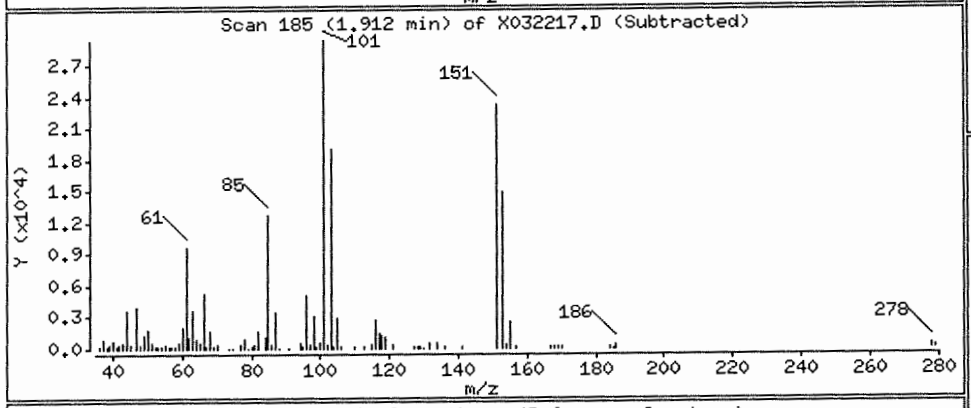
Column phase: DB624

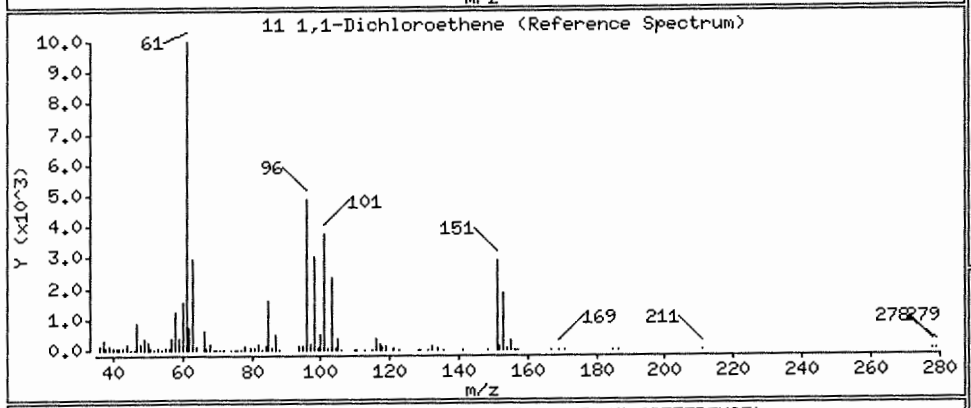
Column diameter: 0.18

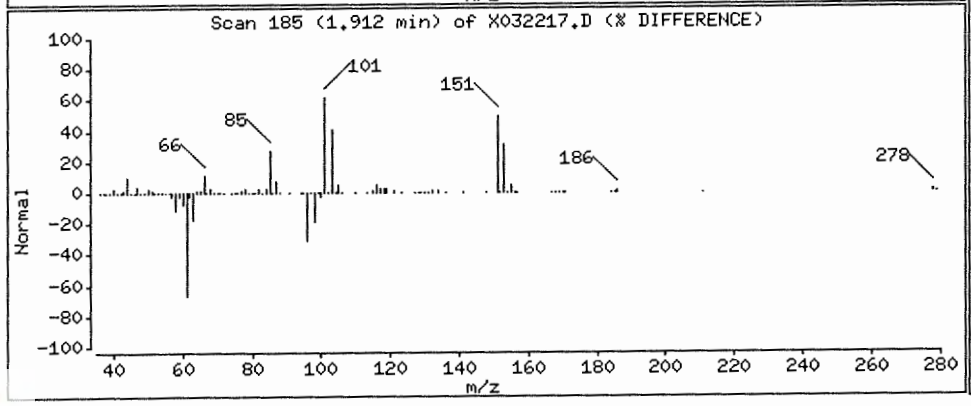
11 1,1-Dichloroethene

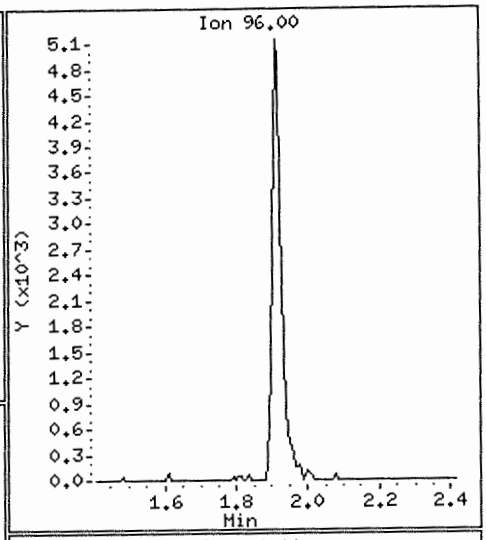
Concentration: 14.11 ug/l

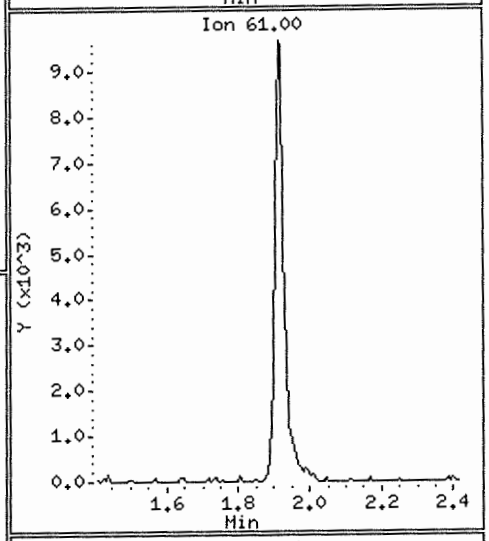


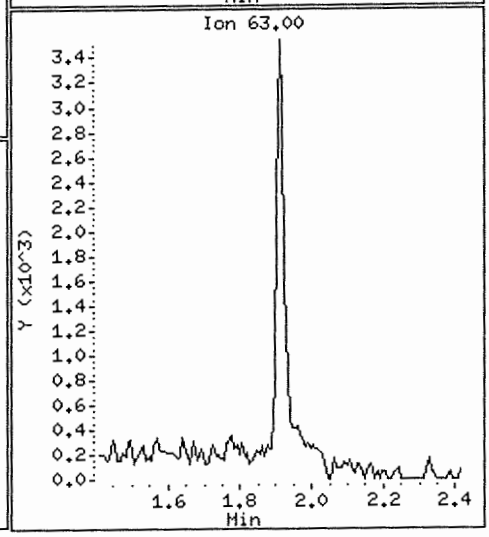












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Date : 22-MAR-2020 17:56

Client ID: HS20030733-03

Instrument: voa6.i

Sample Info: HS20030733-03;HS20030733-03;;;

Purge Volume: 5.0

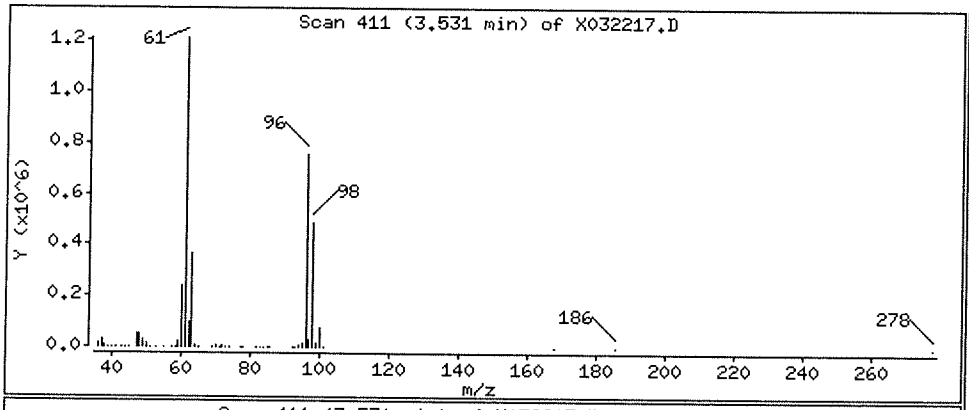
Operator: PC

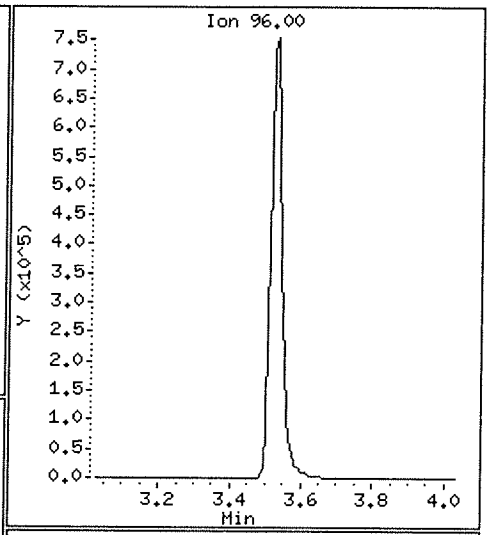
Column phase: DB624

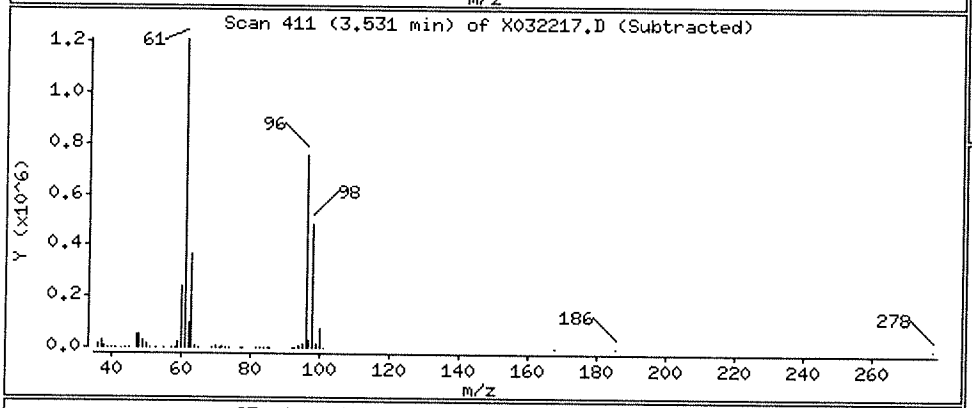
Column diameter: 0.18

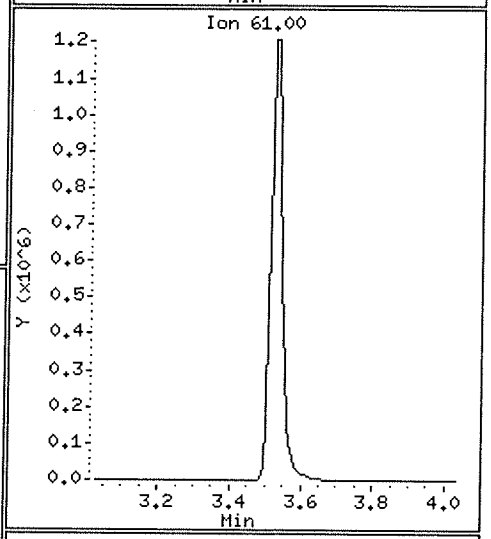
27 cis-1,2-Dichloroethene

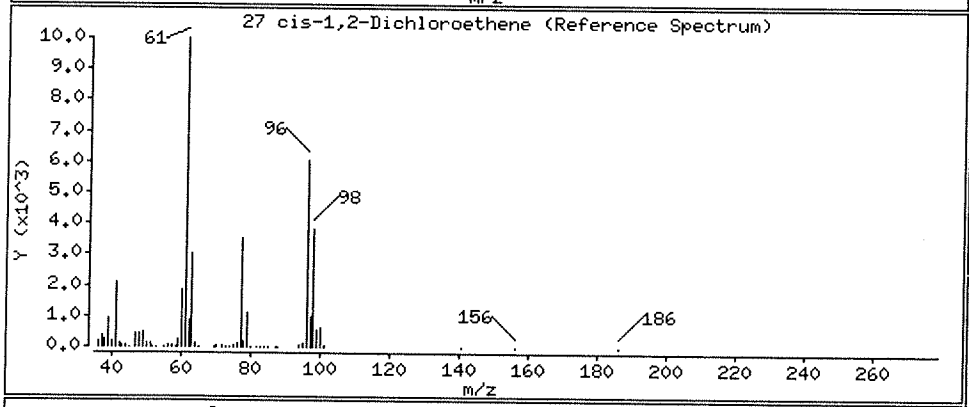
Concentration: 1855.66 ug/l

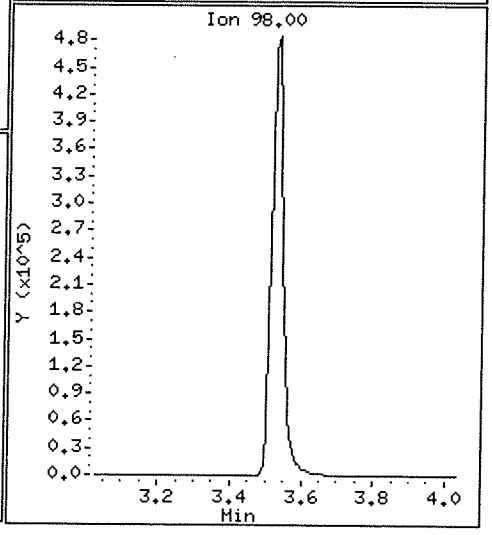


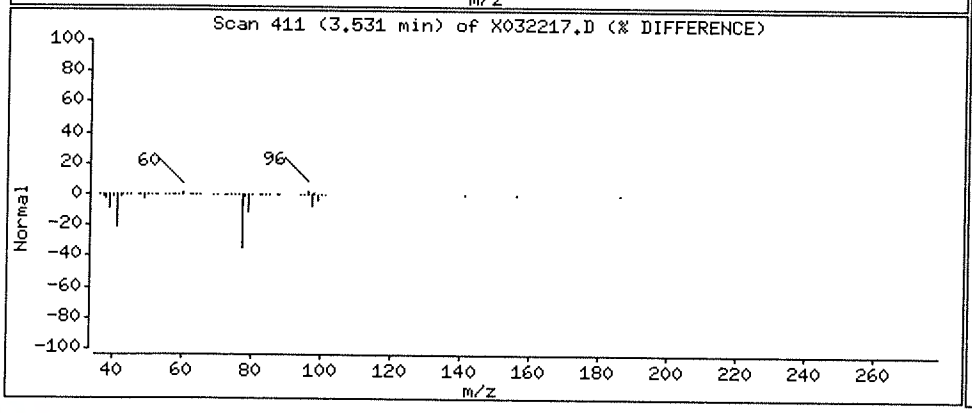












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Date : 22-MAR-2020 17:56

Client ID: HS20030733-03

Instrument: voa6.i

Sample Info: HS20030733-03;HS20030733-03;;;

Purge Volume: 5.0

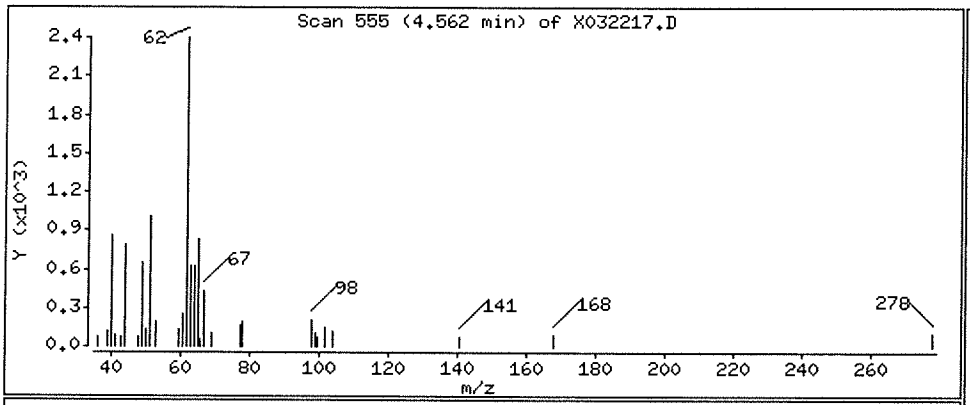
Operator: PC

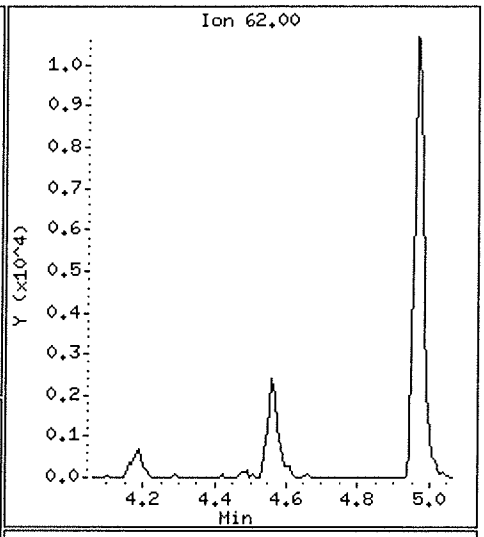
Column phase: DB624

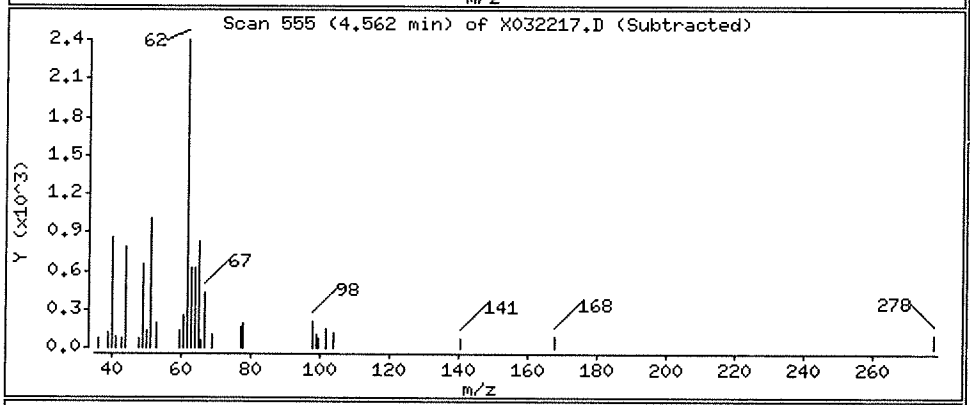
Column diameter: 0.18

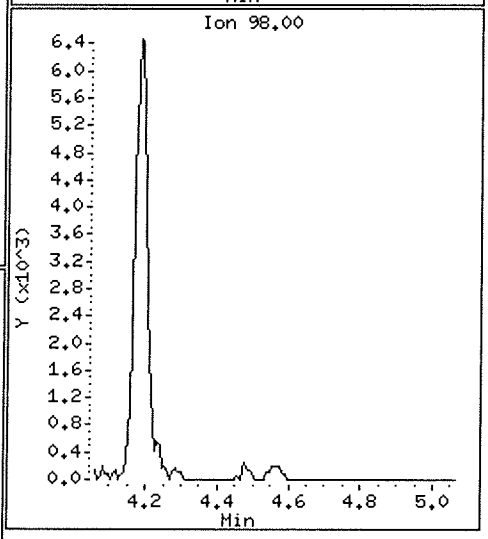
33 1,2-Dichloroethane

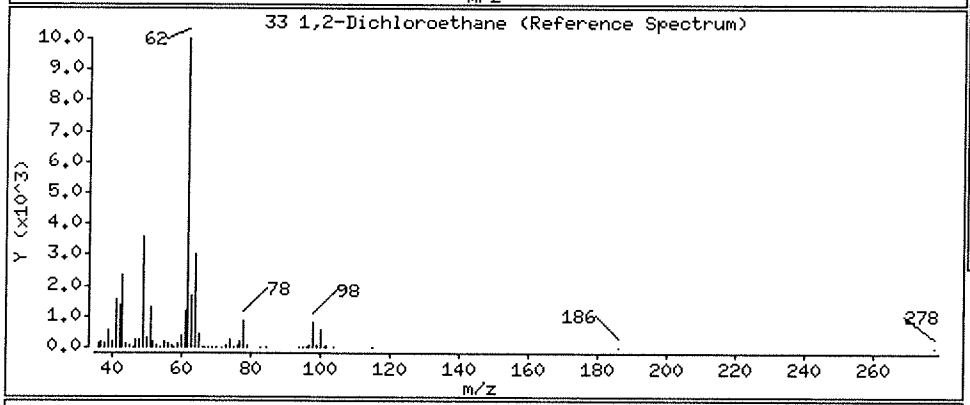
Concentration: 3.98 ug/l

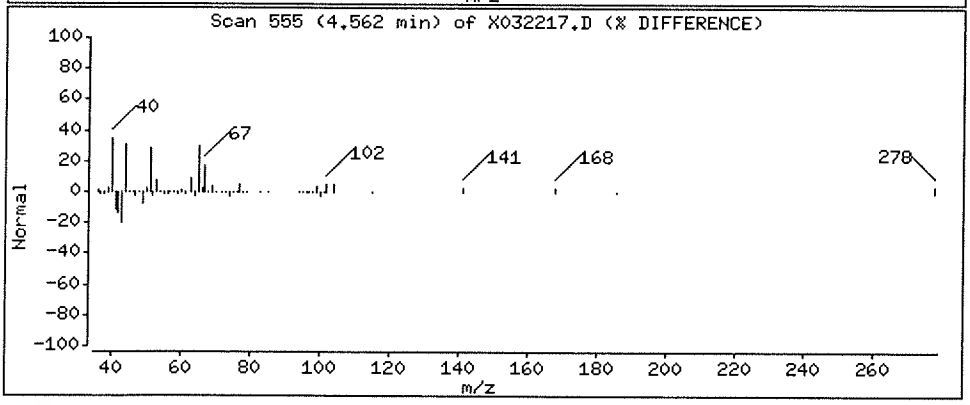












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032217.D

Date : 22-MAR-2020 17:56

Client ID: HS20030733-03

Instrument: voa6.i

Sample Info: HS20030733-03;HS20030733-03;;;

Purge Volume: 5.0

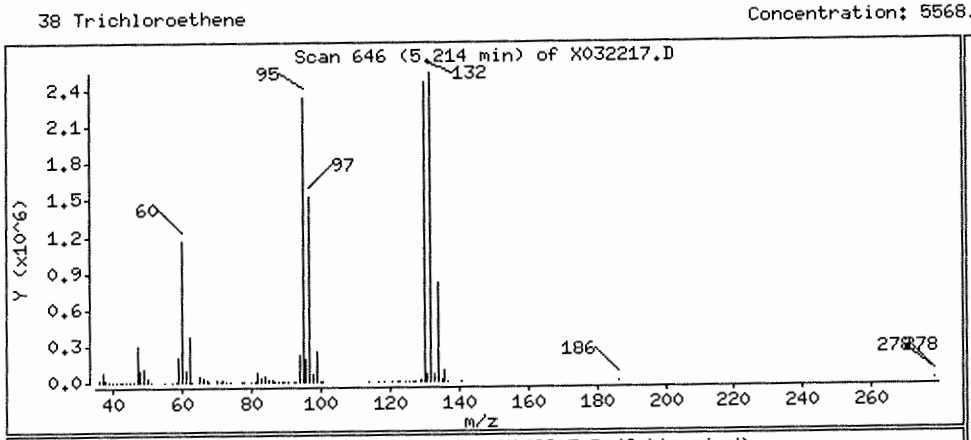
Operator: PC

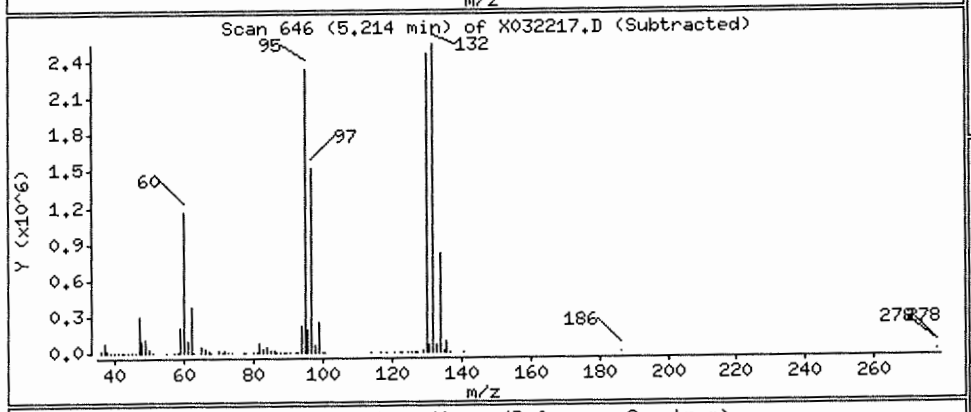
Column phase: DB624

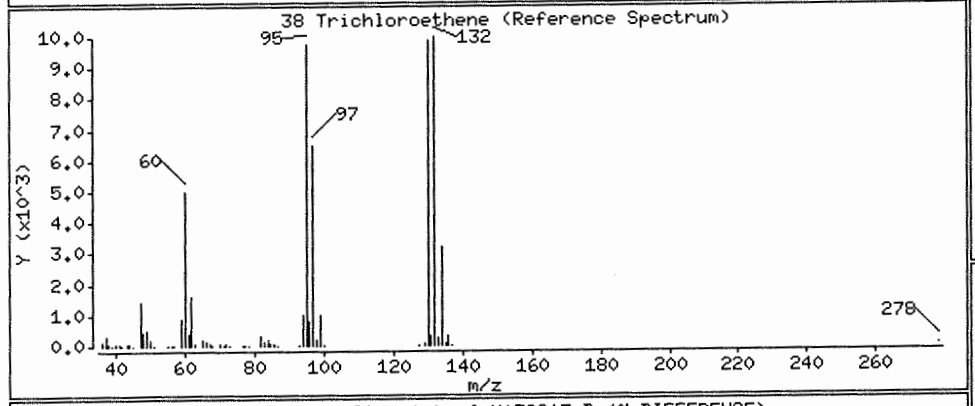
Column diameter: 0.18

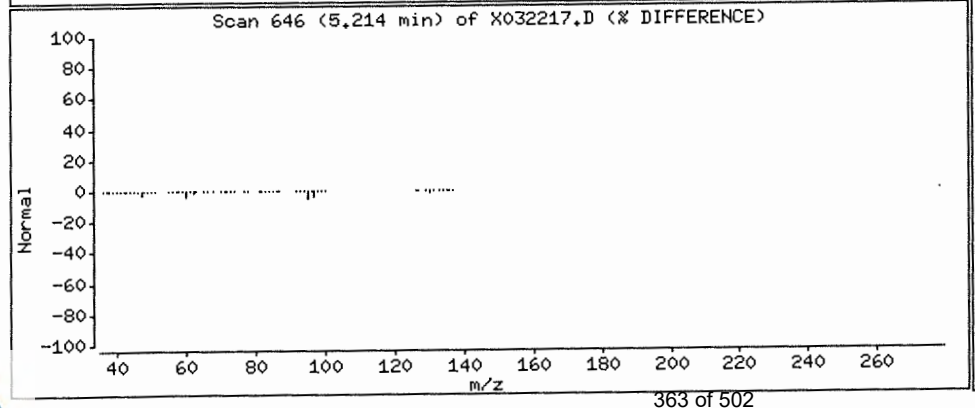
38 Trichloroethene

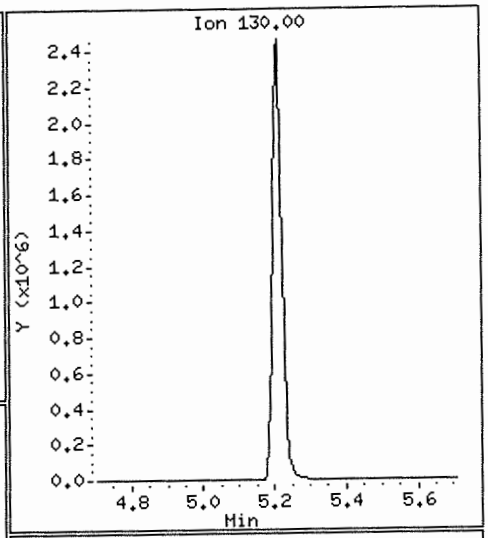
Concentration: 5568.75 ug/l

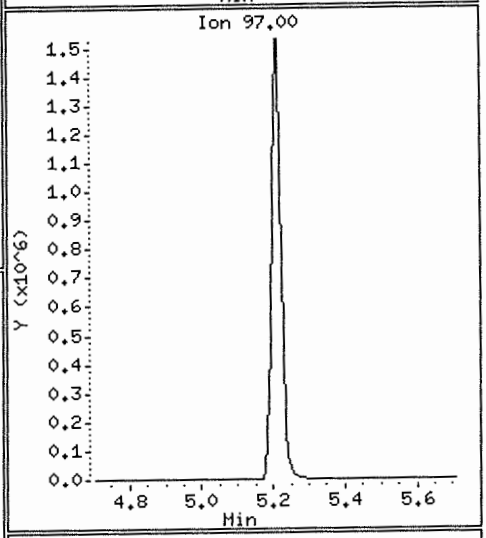


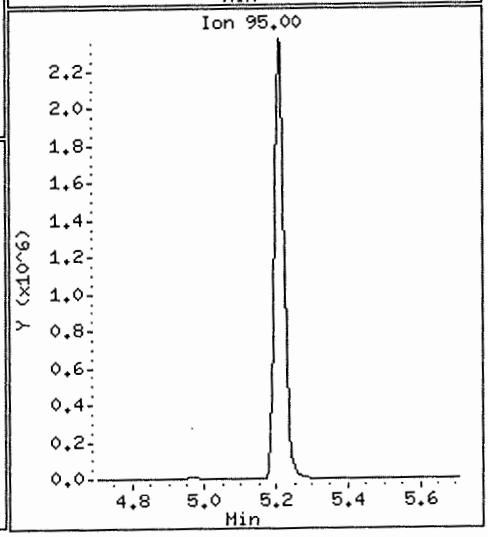












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032218.D Page 1
Report Date: 15-Apr-2020 12:41

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032218.D
Lab Smp Id: HS20030733-03 Client Smp ID: HS20030733-03
Inj Date : 22-MAR-2020 18:20
Operator : PC Inst ID: voa6.i
Smp Info : HS20030733-03;HS20030733-03;;;
Misc Info : HS18090001;WATER;0;50;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 15-Apr-2020 12:39 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 17
Dil Factor: 50.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	50.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

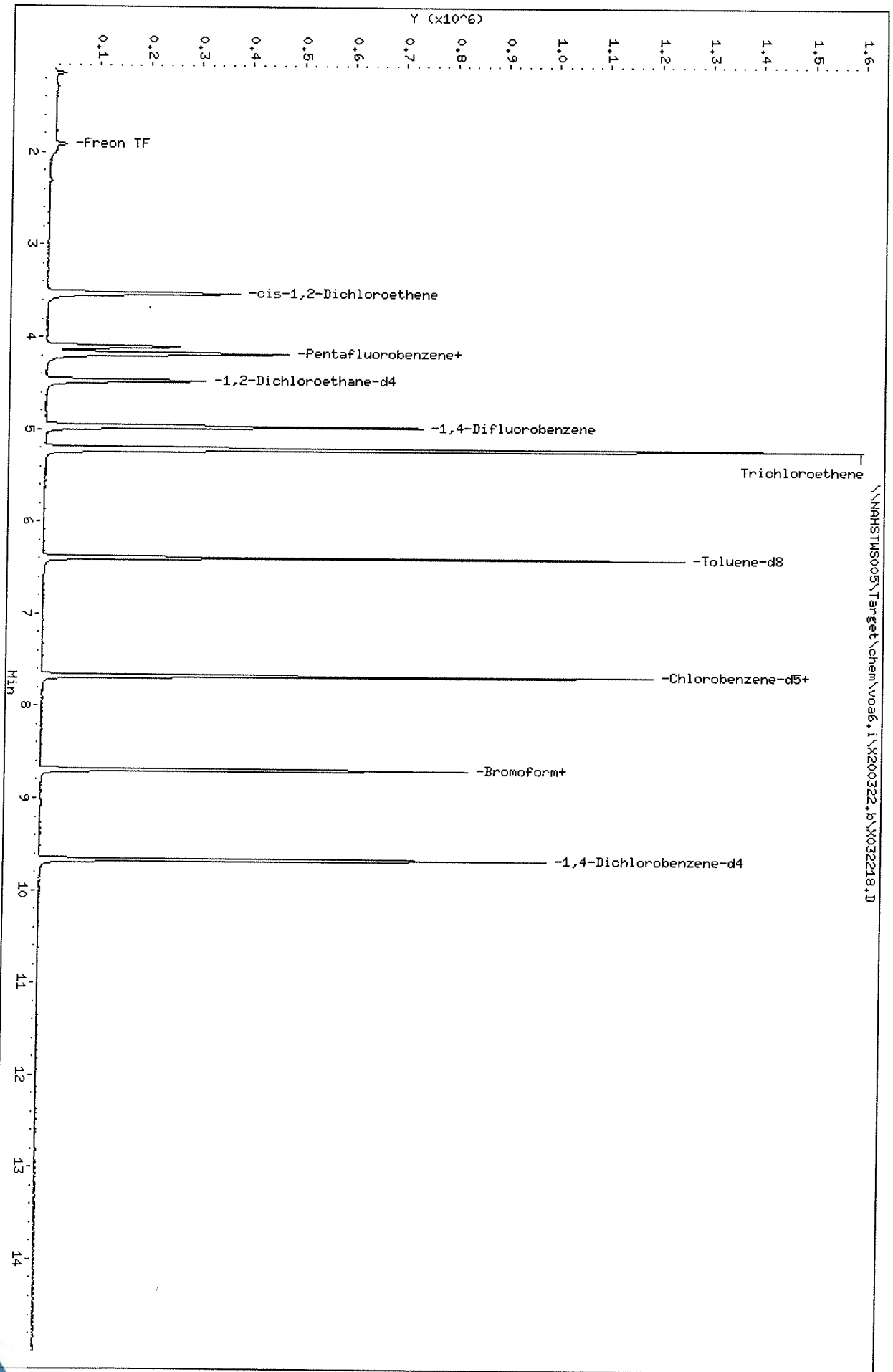
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	393140	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	186199	47.6627	47.66
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	226623	45.8697	45.86
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	588748	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	515797	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	688890	52.1409	52.14
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	242723	48.8952	48.89
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	242338	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	15429	2.57600	128.80(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	174729	39.0271	1951.35
38 Trichloroethene	130	5.207	5.207	(1.048)	519496	127.306	6365.31

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032218.D
Date : 22-MAR-2020 18:20
Client ID: HS20030733-03
Sample Info: HS20030733-03,HS20030733-03,,,
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032218.D

Date : 22-MAR-2020 18:20

Client ID: HS20030733-03

Instrument: voa6.i

Sample Info: HS20030733-03;HS20030733-03;;;

Purge Volume: 5.0

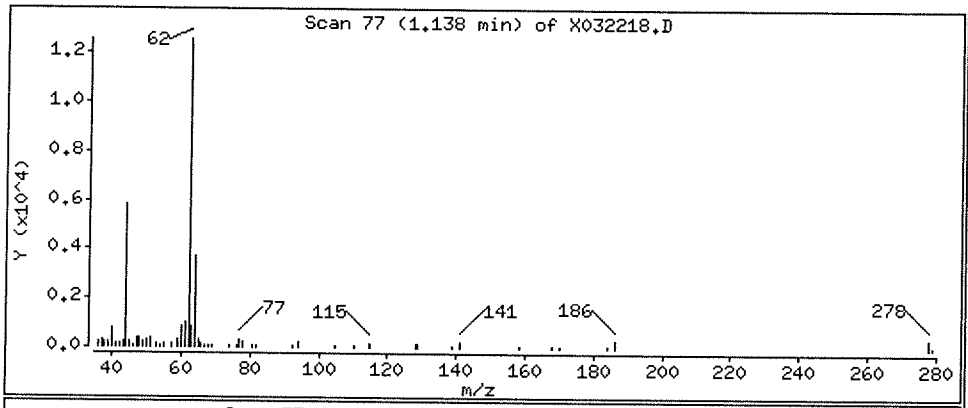
Operator: PC

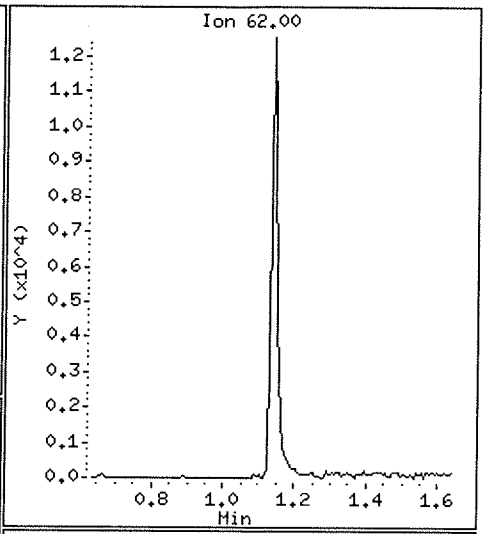
Column phase: DB624

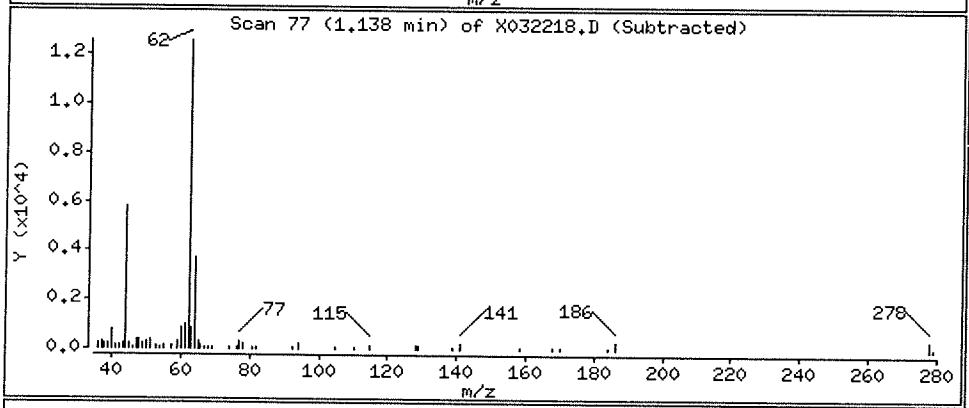
Column diameter: 0.18

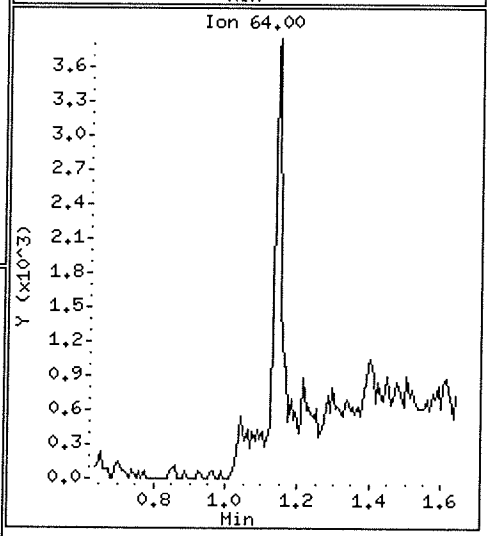
5 Vinyl Chloride

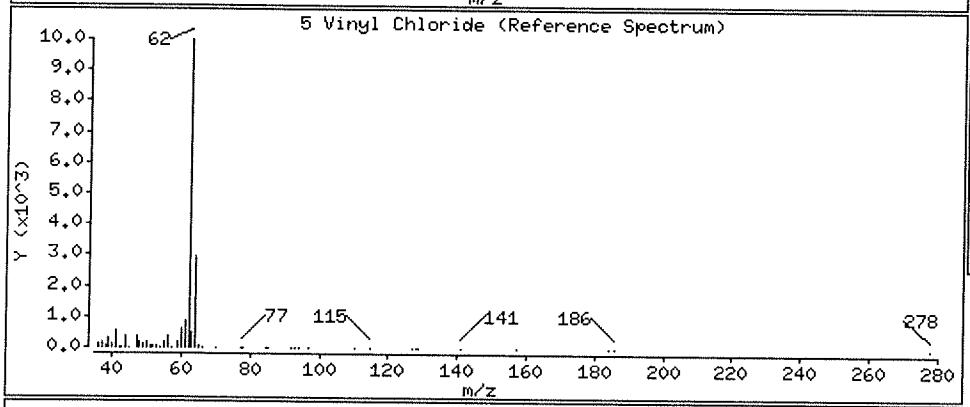
Concentration: 128.80 ug/l

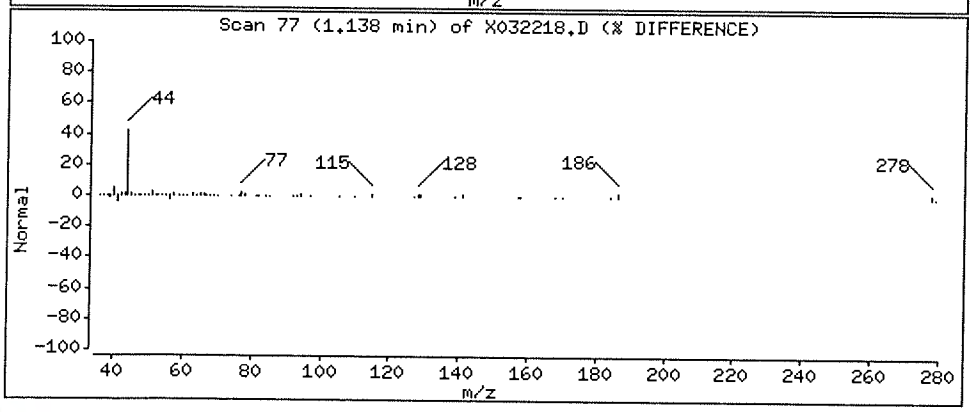












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032218.D

Date : 22-MAR-2020 18:20

Client ID: HS20030733-03

Instrument: voa6.i

Sample Info: HS20030733-03;HS20030733-03;;;

Purge Volume: 5.0

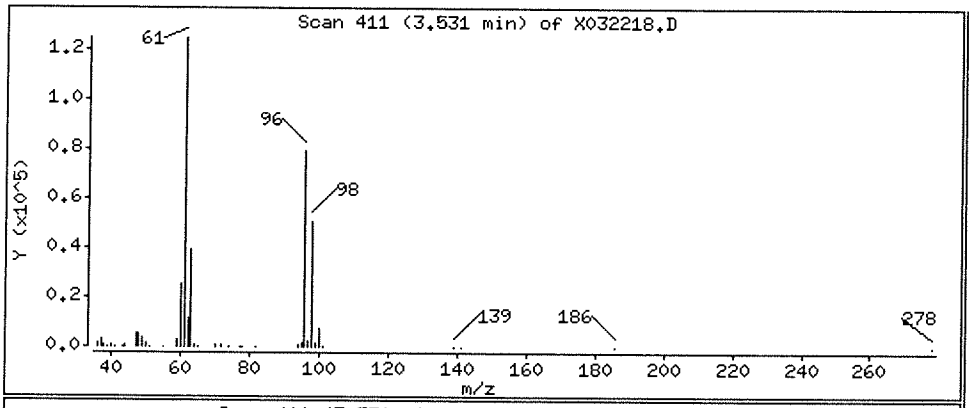
Operator: PC

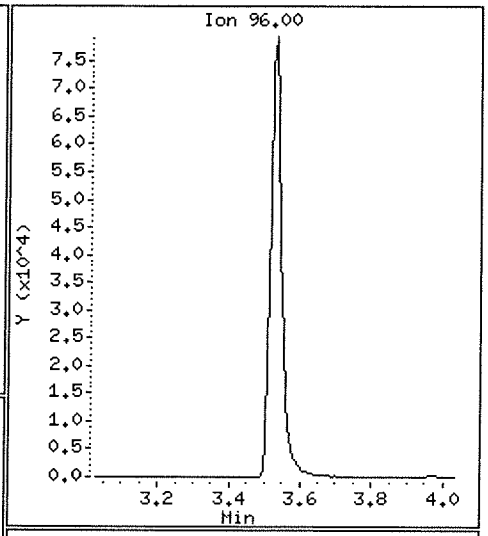
Column phase: DB624

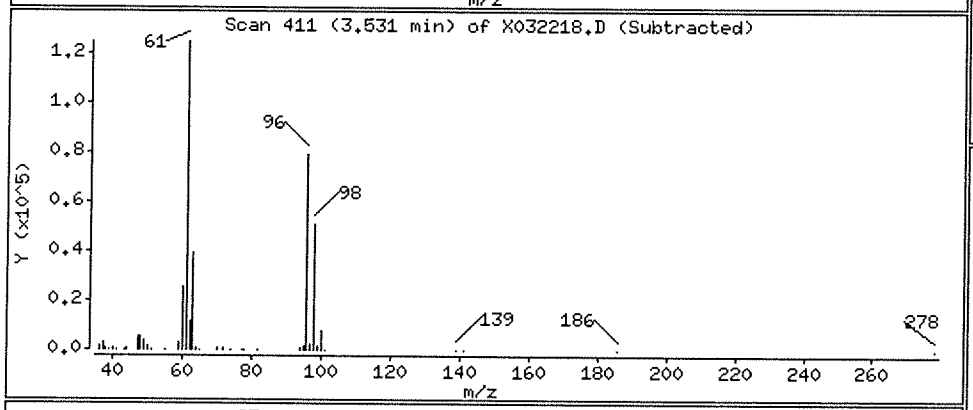
Column diameter: 0.18

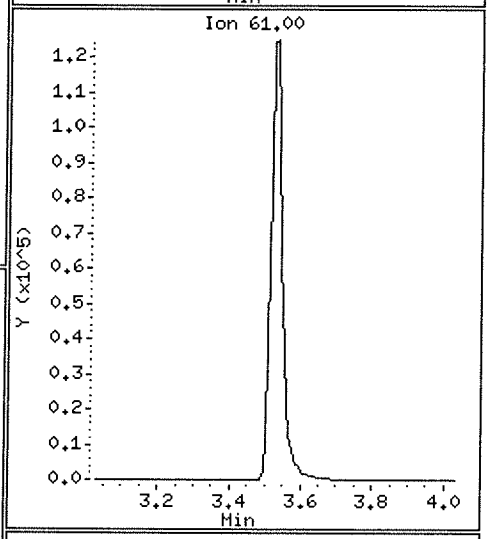
27 cis-1,2-Dichloroethene

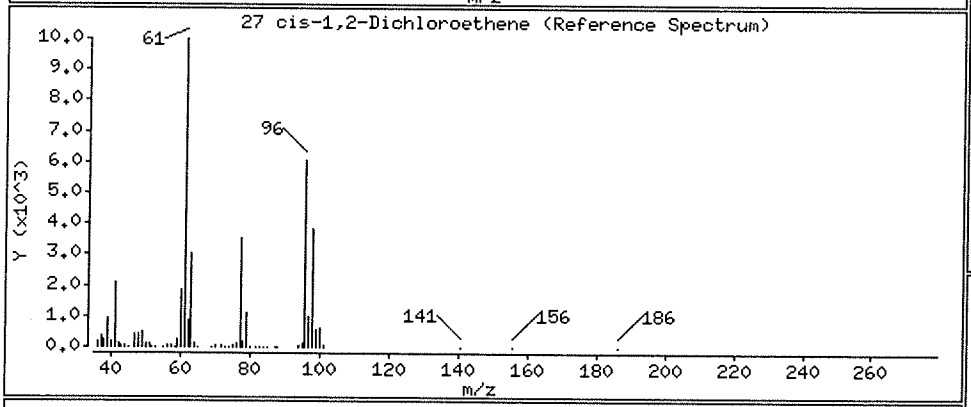
Concentration: 1951.35 ug/l

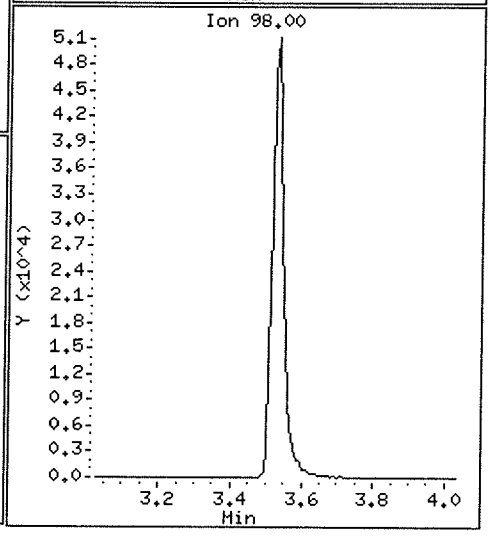


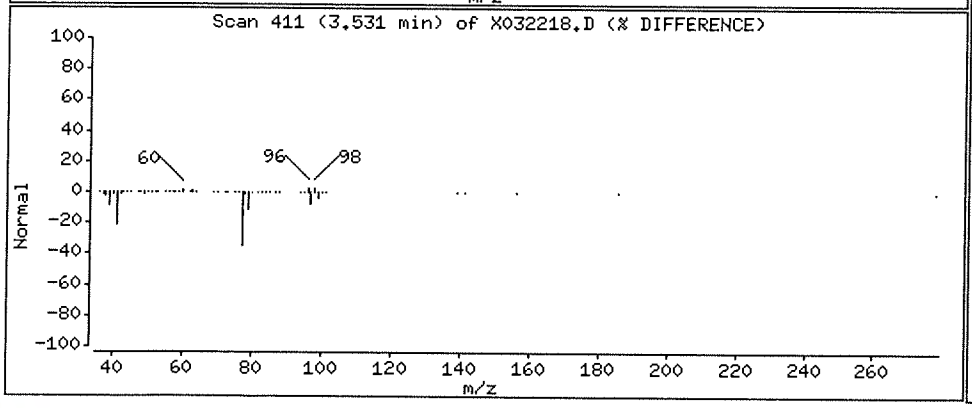












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Date : 22-MAR-2020 18:20

Client ID: HS20030733-03

Instrument: voa6.i

Sample Info: HS20030733-03;HS20030733-03;;;

Purge Volume: 5.0

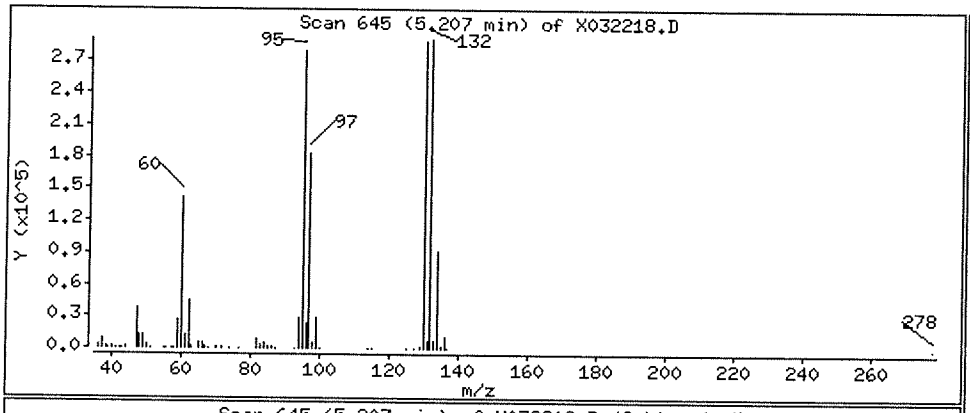
Operator: PC

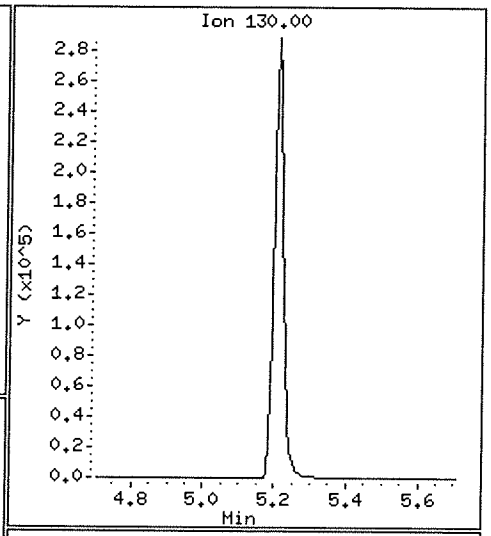
Column phase: DB624

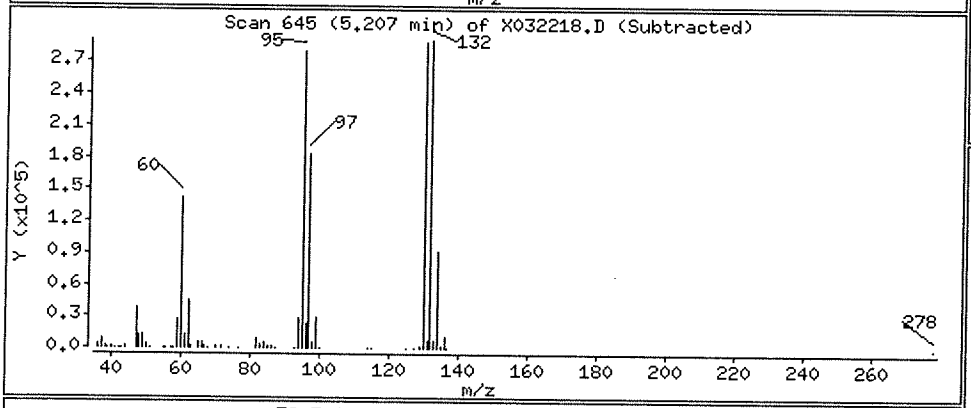
Column diameter: 0.18

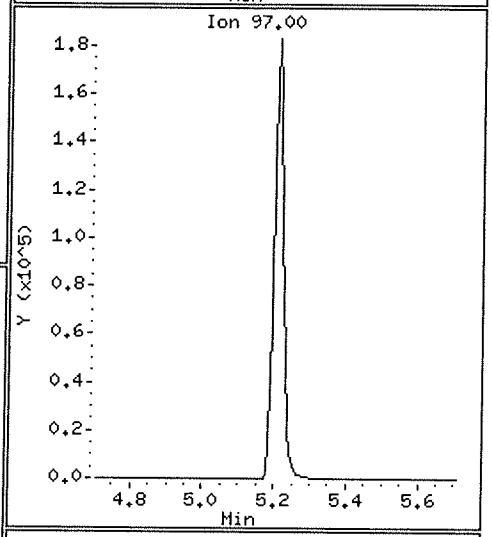
38 Trichloroethene

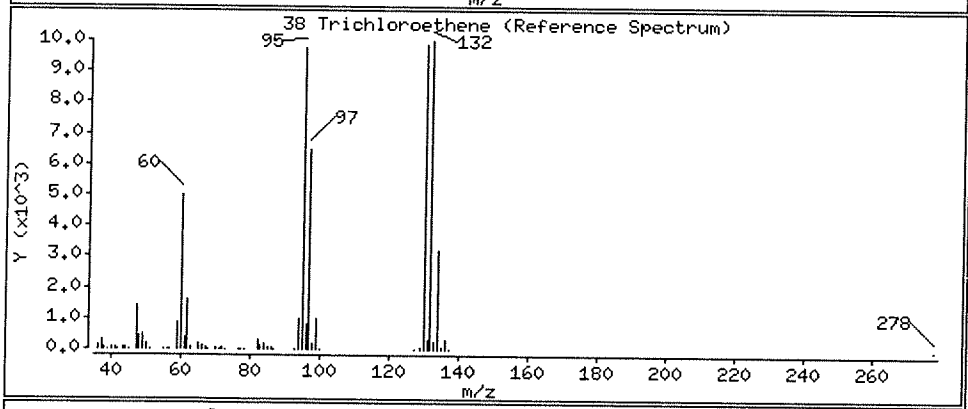
Concentration: 6365.31 ug/l

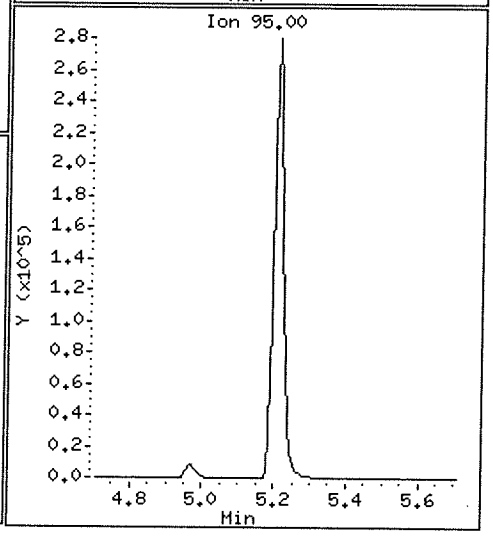


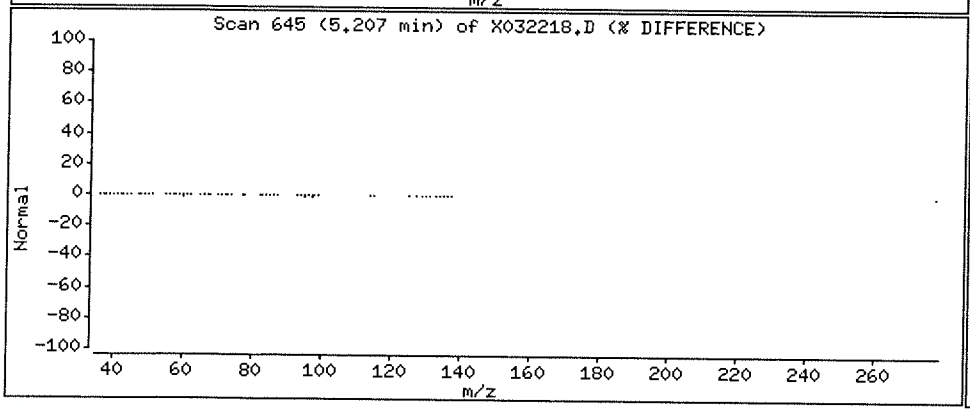












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032226.D Page 1
Report Date: 15-Apr-2020 12:41

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032226.D
Lab Smp Id: HS20030733-08 Client Smp ID: HS20030733-08
Inj Date : 22-MAR-2020 21:32
Operator : PC Inst ID: voa6.i
Smp Info : HS20030733-08;HS20030733-08;;;
Misc Info : HS18090001;WATER;0;5;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 15-Apr-2020 12:39 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 25
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

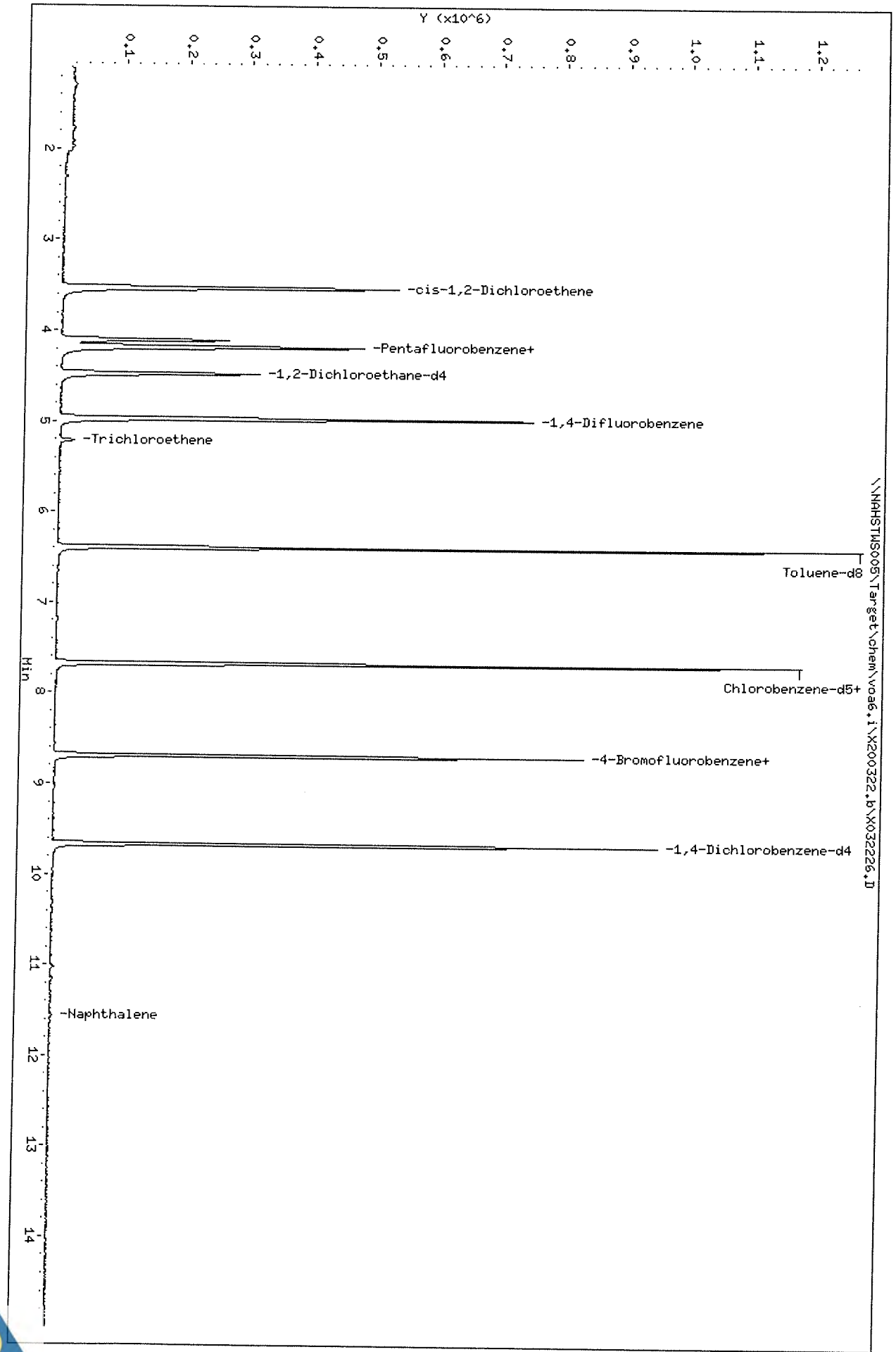
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	5.000	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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	402608	50.0000	
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	191145	47.7783	47.77
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	230676	45.5911	45.59
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	600055	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	519949	50.0000	
$	48 Toluene-d8	98	6.388	6.388	(0.833)	705683	52.9866	52.98
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	240375	48.0268	48.02
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	237560	50.0000	
	27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	248457	54.1898	270.94
	38 Trichloroethene	130	5.214	5.207	(1.049)	7346	1.76627	8.83(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032226.D
Date : 22-MAR-2020 21:32
Client ID: HS20030733-08
Sample Info: HS20030733-08;HS20030733-08;;;
Purge Volume: 5.0
Column phase: DB624
Instrument: voa6.i
Operator: PC
Column diameter: 0.18
Page 2
Y (x10^6)
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
Min
2
3
4
5
6
7
8
9
10
11
12
13
14
-cis-1,2-Dichloroethene
-Pentafluorobenzene+
-1,2-Dichloroethane-d4
-1,4-Difluorobenzene
-Trichloroethene
Toluene-d8
Chlorobenzene-d5+
-4-Bromofluorobenzene+
-1,4-Dichlorobenzene-d4
-Naphthalene
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Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032226.D

Date : 22-MAR-2020 21:32

Client ID: HS20030733-08

Instrument: voa6.i

Sample Info: HS20030733-08;HS20030733-08;;;

Purge Volume: 5.0

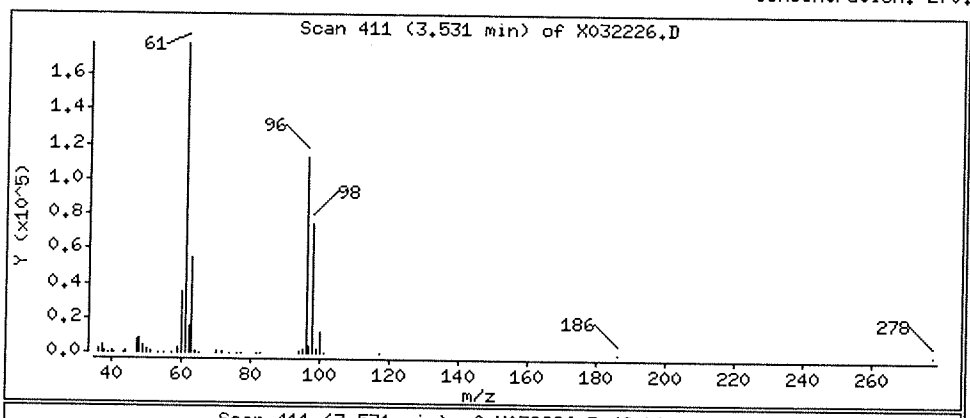
Operator: PC

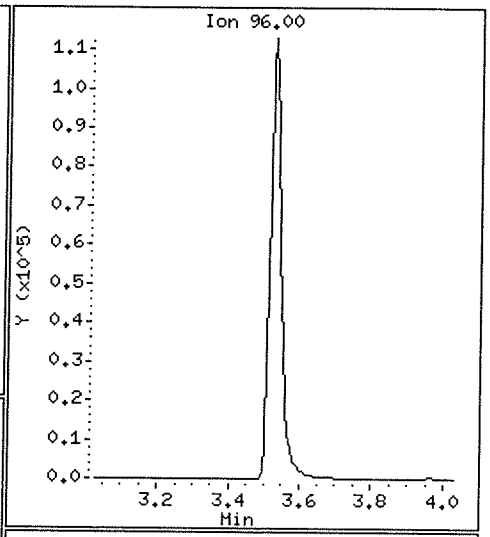
Column phase: DB624

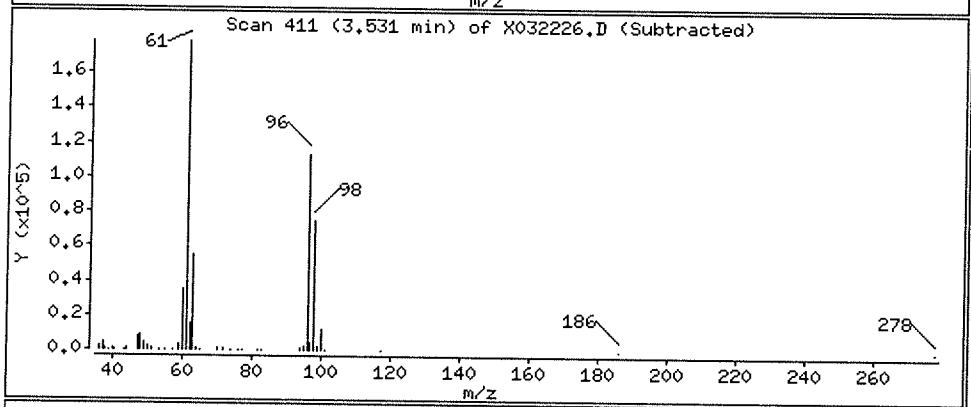
Column diameter: 0.18

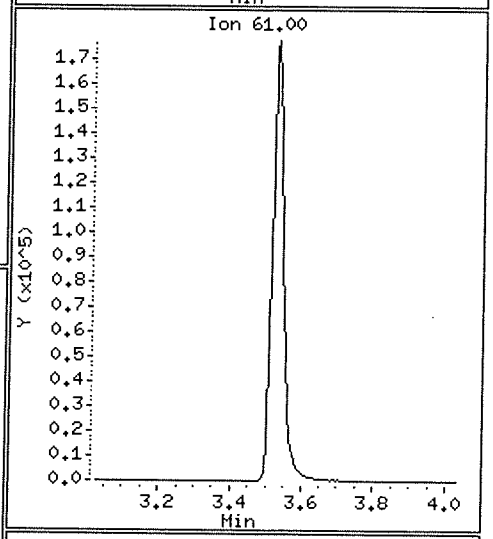
27 cis-1,2-Dichloroethene

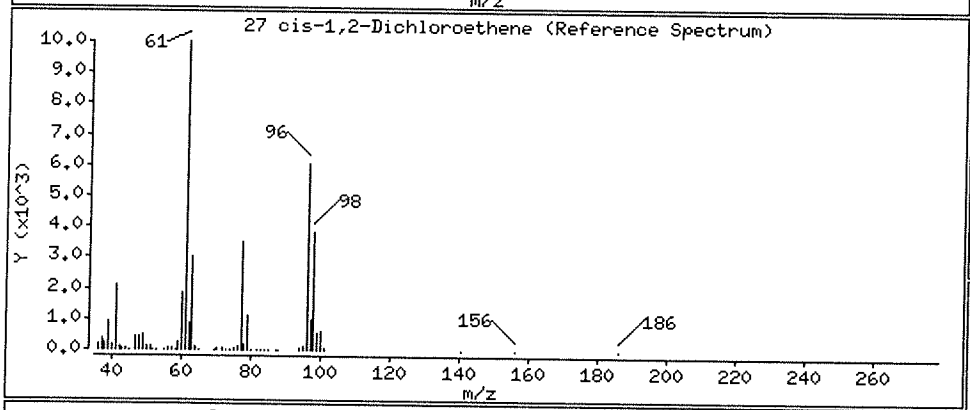
Concentration: 270.94 ug/l

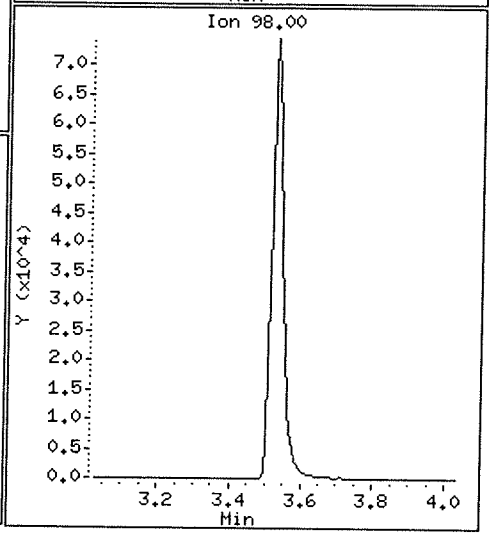


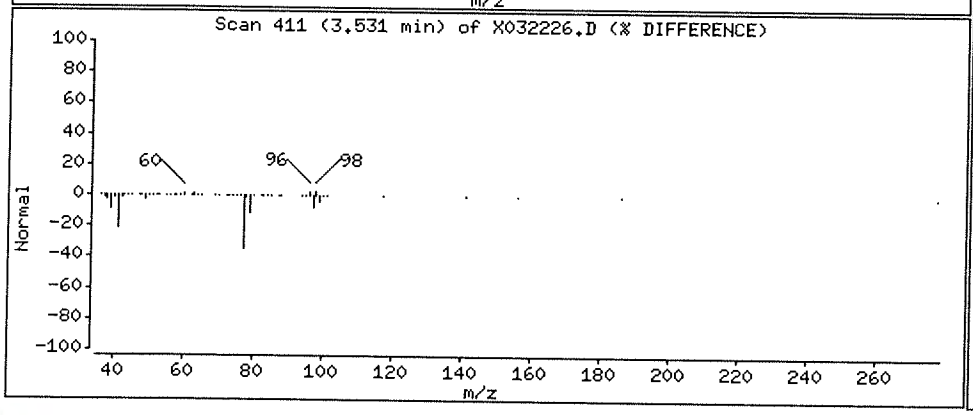












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032226.D

Date : 22-MAR-2020 21:32

Client ID: HS20030733-08

Instrument: voa6.i

Sample Info: HS20030733-08;HS20030733-08;;;

Purge Volume: 5.0

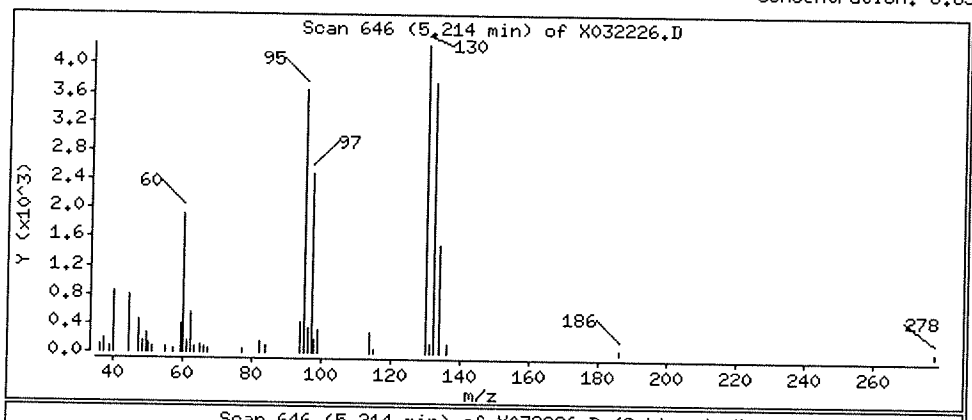
Operator: PC

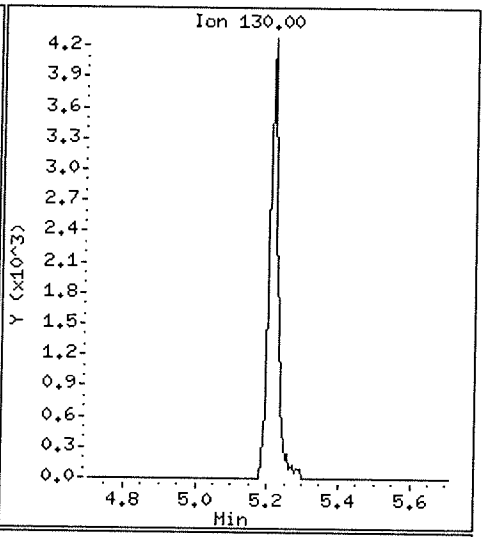
Column phase: DB624

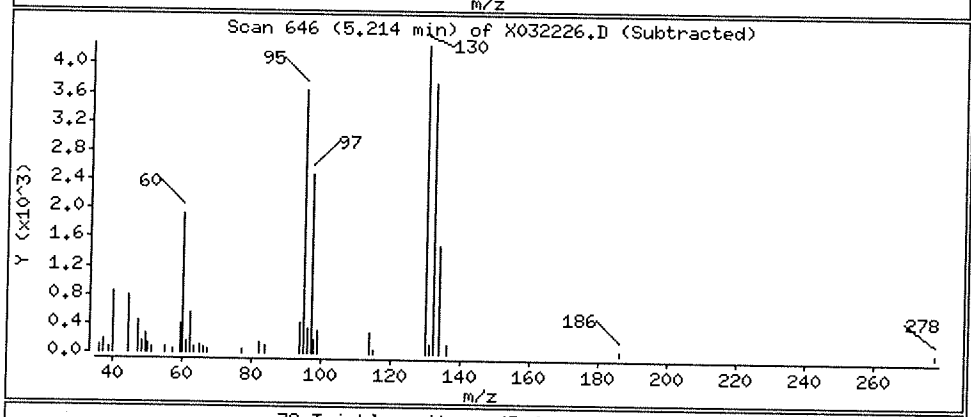
Column diameter: 0.18

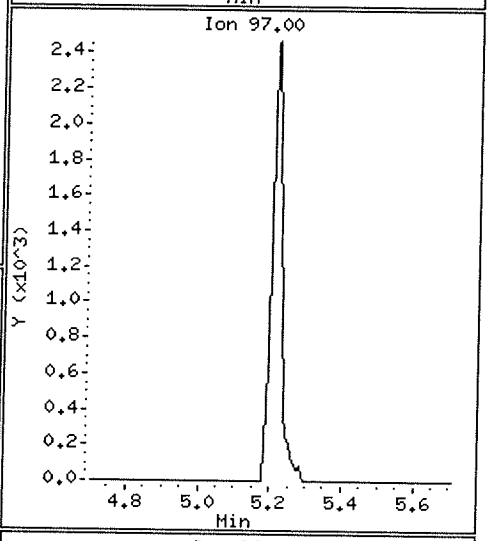
38 Trichloroethene

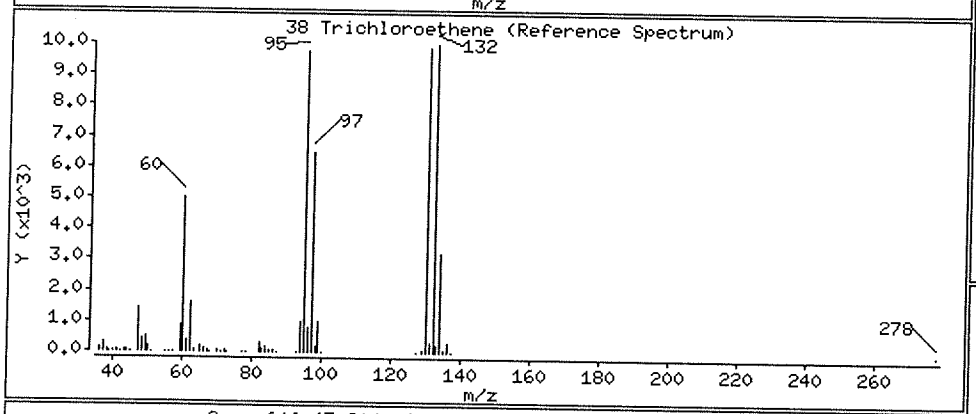
Concentration: 8.83 ug/l

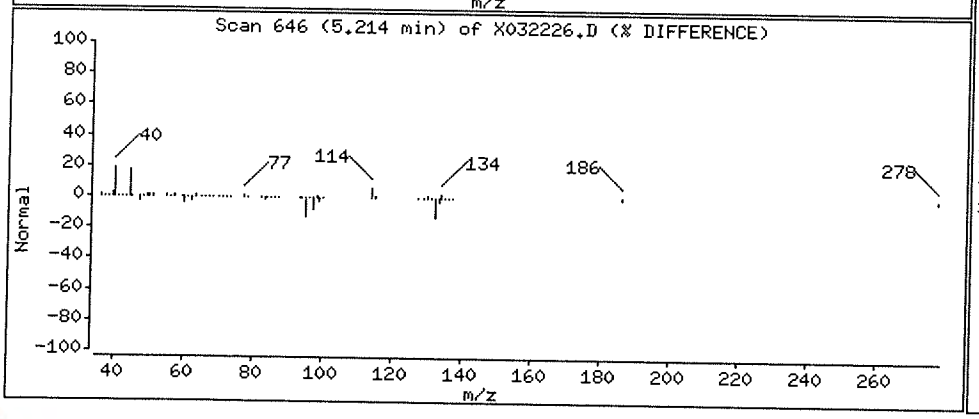


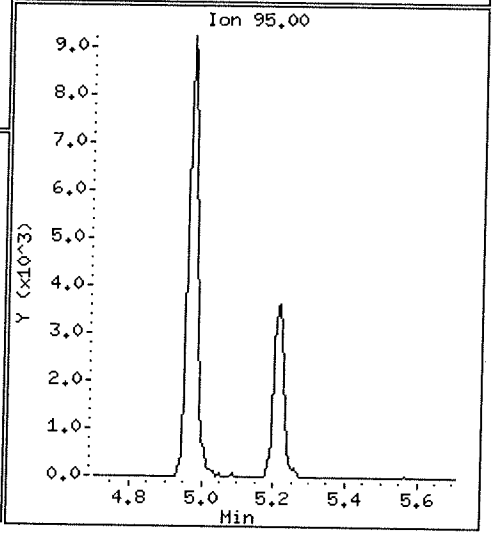


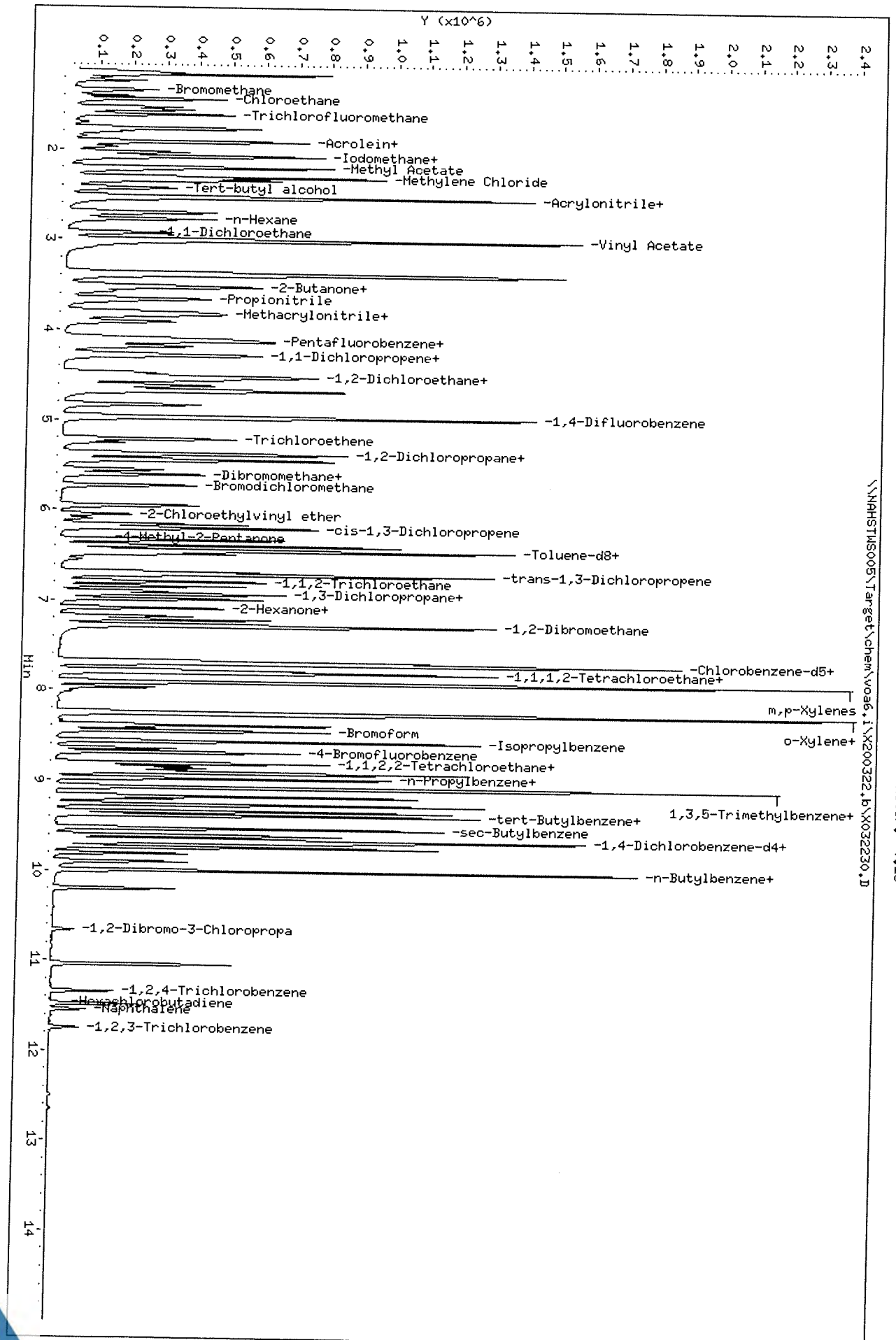












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032230.D
Date : 22-MAR-2020 23:09
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030838

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
1,3,5-Trimethylbenzene	50.00	50.48	101	80-120
2-Chlorotoluene	50.00	49.86	100	80-120
4-Chlorotoluene	50.00	50.32	101	80-120
tert-Butylbenzene	50.00	49.37	99	80-120
1,2,4-Trimethylbenzene	50.00	51.71	103	80-120
sec-Butylbenzene	50.00	50.63	101	80-120
p-Isopropyltoluene	50.00	51.73	103	80-120
1,3-Dichlorobenzene	50.00	51.18	102	80-120
1,4-Dichlorobenzene	50.00	48.99	98	80-120
n-Butylbenzene	50.00	52.63	105	80-120
1,2-Dichlorobenzene	50.00	51.45	103	80-120
1,2-Dibromo-3-Chloropro	50.00	50.81	102	80-120
1,2,4-Trichlorobenzene	50.00	51.33	103	80-120
Hexachlorobutadiene	50.00	50.08	100	80-120
Naphthalene	50.00	50.64	101	80-120
1,2,3-Trichlorobenzene	50.00	52.57	105	80-120
1-Chlorohexane	50.00	50.18	100	80-120
1,4-Dioxane	1000.00	1063.69	106	80-120
n-Hexane	50.00	53.69	107	80-120
Cyclohexane	50.00	52.43	105	80-120
Freon TF	50.00	52.46	105	80-120
Methylcyclohexane	50.00	50.64	101	80-120
Methyl Acetate	1000.00	53.58	5*	80-120
Tert-Butyl alcohol	50.00	1078.77	2158*	80-120
Dibromofluoromethane	50.00	52.34	105	80-120
1,2-Dichloroethane-d4	50.00	52.45	105	80-120
Toluene-d8	50.00	49.94	100	80-120
4-Bromofluorobenzene	50.00	50.83	102	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030838

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
Xylenes (total)	150.00	152.73	102	80-120
1,2-Dichloroethylene (t	100.00	100.68	101	80-120
Dichlorodifluoromethane	50.00	47.80	96	80-120
Chloromethane	50.00	47.95	96	80-120
Vinyl Chloride	50.00	47.84	96	80-120
Bromomethane	50.00	56.02	112	80-120
Chloroethane	50.00	49.70	99	80-120
Trichlorofluoromethane	50.00	51.46	103	80-120
Acrolein	100.00	95.63	96	80-120
Acetone	100.00	111.42	111	80-120
1,1-Dichloroethene	50.00	49.14	98	80-120
Iodomethane	100.00	97.24	97	80-120
Acrylonitrile	100.00	100.14	100	80-120
Methylene Chloride	50.00	51.71	103	80-120
Methyl tert-butyl ether	50.00	48.98	98	80-120
Carbon Disulfide	100.00	101.89	102	80-120
trans-1,2-Dichloroethen	50.00	50.69	101	80-120
Vinyl Acetate	100.00	104.72	105	80-120
1,1-Dichloroethane	50.00	51.04	102	80-120
2-Butanone	100.00	106.43	106	80-120
2,2-Dichloropropane	50.00	52.20	104	80-120
cis-1,2-Dichloroethene	50.00	49.99	100	80-120
Chloroform	50.00	49.48	99	80-120
Bromochloromethane	50.00	49.43	99	80-120
1,1,1-Trichloroethane	50.00	50.79	102	80-120
1,1-Dichloropropene	50.00	48.21	96	80-120
1,2-Dichloroethane	50.00	51.76	104	80-120
Carbon Tetrachloride	50.00	47.80	96	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030838

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
Benzene	50.00	49.74	99	80-120
Trichloroethene	50.00	50.47	101	80-120
Bromodichloromethane	50.00	49.67	99	80-120
2-Chloroethylvinyl ethe	100.00	106.99	107	80-120
1,2-Dichloropropane	50.00	49.37	99	80-120
Dibromomethane	50.00	50.57	101	80-120
4-Methyl-2-Pentanone	100.00	102.03	102	80-120
cis-1,3-Dichloropropene	50.00	51.07	102	80-120
Toluene	50.00	49.68	99	80-120
trans-1,3-Dichloroprope	50.00	52.11	104	80-120
2-Hexanone	100.00	103.01	103	80-120
1,1,2-Trichloroethane	50.00	49.65	99	80-120
1,3-Dichloropropane	50.00	49.69	99	80-120
Dibromochloromethane	50.00	50.41	101	80-120
Tetrachloroethene	50.00	49.80	100	80-120
1,2-Dibromoethane	50.00	49.62	99	80-120
Chlorobenzene	50.00	49.80	100	80-120
1,1,1,2-Tetrachloroetha	50.00	49.89	100	80-120
Ethylbenzene	50.00	50.58	101	80-120
m,p-Xylenes	100.00	102.04	102	80-120
o-Xylene	50.00	50.69	101	80-120
Styrene	50.00	51.02	102	80-120
Bromoform	50.00	51.96	104	80-120
Isopropylbenzene	50.00	50.93	102	80-120
1,1,2,2-Tetrachloroetha	50.00	48.52	97	80-120
1,2,3-Trichloropropane	50.00	50.62	101	80-120
n-Propylbenzene	50.00	51.27	102	80-120
Bromobenzene	50.00	49.83	100	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM III VOA

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030838

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
Benzene	50.00	49.74	99	80-120
Trichloroethene	50.00	50.47	101	80-120
Bromodichloromethane	50.00	49.67	99	80-120
2-Chloroethylvinyl ethe	50.00	106.99(ov	214*	80-120
1,2-Dichloropropane	50.00	49.37	99	80-120
Dibromomethane	50.00	50.57	101	80-120
4-Methyl-2-Pentanone	100.00	102.03	102	80-120
cis-1,3-Dichloropropene	50.00	51.07	102	80-120
Toluene	50.00	49.68	99	80-120
trans-1,3-Dichloroprope	50.00	52.11	104	80-120
2-Hexanone	100.00	103.01	103	80-120
1,1,2-Trichloroethane	50.00	49.65	99	80-120
1,3-Dichloropropane	50.00	49.69	99	80-120
Dibromochloromethane	50.00	50.41	101	80-120
Tetrachloroethene	50.00	49.80	100	80-120
1,2-Dibromoethane	50.00	49.62	99	80-120
Chlorobenzene	50.00	49.80	100	80-120
1,1,1,2-Tetrachloroetha	50.00	49.89	100	80-120
Ethylbenzene	50.00	50.58	101	80-120
m,p-Xylenes	100.00	102.04	102	80-120
o-Xylene	50.00	50.69	101	80-120
Styrene	50.00	51.02	102	80-120
Bromoform	50.00	51.96	104	80-120
Isopropylbenzene	50.00	50.93	102	80-120
1,1,2,2-Tetrachloroetha	50.00	48.52	97	80-120
1,2,3-Trichloropropane	50.00	50.62	101	80-120
n-Propylbenzene	50.00	51.27	102	80-120
Bromobenzene	50.00	49.83	100	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030838

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
Xylenes (total)	150.00	152.73	102	80-120
1,2-Dichloroethylene (t	50.00	100.68 100	201*	80-120
Dichlorodifluoromethane	50.00	47.80	96	80-120
Chloromethane	50.00	47.95	96	80-120
Vinyl Chloride	50.00	47.84	96	80-120
Bromomethane	50.00	56.02	112	80-120
Chloroethane	50.00	49.70	99	80-120
Trichlorofluoromethane	50.00	51.46	103	80-120
Acrolein	100.00	95.63	96	80-120
Acetone	100.00	111.42	111	80-120
1,1-Dichloroethene	50.00	49.14	98	80-120
Iodomethane	100.00	97.24	97	80-120
Acrylonitrile	100.00	100.14	100	80-120
Methylene Chloride	50.00	51.71	103	80-120
Methyl tert-butyl ether	50.00	48.98	98	80-120
Carbon Disulfide	100.00	101.89	102	80-120
trans-1,2-Dichloroethen	50.00	50.69	101	80-120
Vinyl Acetate	50.00	104.72 100	209*	80-120
1,1-Dichloroethane	50.00	51.04	102	80-120
2-Butanone	100.00	106.43	106	80-120
2,2-Dichloropropane	50.00	52.20	104	80-120
cis-1,2-Dichloroethene	50.00	49.99	100	80-120
Chloroform	50.00	49.48	99	80-120
Bromochloromethane	50.00	49.43	99	80-120
1,1,1-Trichloroethane	50.00	50.79	102	80-120
1,1-Dichloropropene	50.00	48.21	96	80-120
1,2-Dichloroethane	50.00	51.76	104	80-120
Carbon Tetrachloride	50.00	47.80	96	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030838

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
1,3,5-Trimethylbenzene	50.00	50.48	101	80-120
2-Chlorotoluene	50.00	49.86	100	80-120
4-Chlorotoluene	50.00	50.32	101	80-120
tert-Butylbenzene	50.00	49.37	99	80-120
1,2,4-Trimethylbenzene	50.00	51.71	103	80-120
sec-Butylbenzene	50.00	50.63	101	80-120
p-Isopropyltoluene	50.00	51.73	103	80-120
1,3-Dichlorobenzene	50.00	51.18	102	80-120
1,4-Dichlorobenzene	50.00	48.99	98	80-120
n-Butylbenzene	50.00	52.63	105	80-120
1,2-Dichlorobenzene	50.00	51.45	103	80-120
1,2-Dibromo-3-Chloropro	50.00	50.81	102	80-120
1,2,4-Trichlorobenzene	50.00	51.33	103	80-120
Hexachlorobutadiene	50.00	50.08	100	80-120
Naphthalene	50.00	50.64	101	80-120
1,2,3-Trichlorobenzene	50.00	52.57	105	80-120
1-Chlorohexane	50.00	50.18	100	80-120
1,4-Dioxane	1000.00	1063.69	106	80-120
n-Hexane	50.00	53.69	107	80-120
Cyclohexane	50.00	52.43	105	80-120
Freon TF	50.00	52.46	105	80-120
Methylcyclohexane	50.00	50.64	101	80-120
Methyl Acetate	50.00	53.58	107	80-120
Tert-Butyl alcohol	50.00	1078.77 (00	2158*	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

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HS20030733 RSK 175 Raw Data.

ALS WO# HS20030733

FID04 -Logbook

Batch: 26730
Date: 01-24-2017
Method: RSK 175 ICAL
Comments: Target Sequence 170124

Analyst: Nosa Izekor
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	ICAL1	CALIB_1	01-24-2017 09:06 am	1.00	0.00 mL	0.00 mL	001.D	Liquid	Y	NA
2	ICAL2	CALIB_2	01-24-2017 09:30 am	1.00	0.00 mL	0.00 mL	002.D	Liquid	Y	NA
3	ICAL3	CALIB_3	01-24-2017 09:59 am	1.00	0.00 mL	0.00 mL	003.D	Liquid	Y	NA
4	ICAL4	CALIB_4	01-24-2017 10:15 am	1.00	0.00 mL	0.00 mL	004.D	Liquid	Y	NA
5	ICAL5	CALIB_5	01-24-2017 10:39 am	1.00	0.00 mL	0.00 mL	005.D	Liquid	Y	NA
6	ICAL6	CALIB_6	01-24-2017 10:57 am	1.00	0.00 mL	0.00 mL	006.D	Liquid	Y	NA
7	ICAL7	CALIB_7	01-24-2017 11:13 am	1.00	0.00 mL	0.00 mL	007.D	Liquid	Y	NA
8	ICV	METHSPIKI	01-24-2017 12:05 pm	1.00	0.00 mL	0.00 mL	008.D	Liquid	Y	NA
9	LCS-170124	LCS	01-24-2017 12:24 pm	1.00	0.00 mL	0.00 mL	009.D	Liquid	Y	NA
10	LCSD-170124	LCSD	01-24-2017 12:40 pm	1.00	0.00 mL	0.00 mL	010.D	Liquid	Y	NA
11	MBLK-170124	MBLK	01-24-2017 12:57 pm	1.00	0.00 mL	0.00 mL	011.D	Liquid	Y	NA
12	HS17010778-01	SAMP	01-24-2017 01:14 pm	1.00	0.00 mL	0.00 mL	012.D	Liquid	Y	NA
13	HS17010779-01	SAMP	01-24-2017 01:31 pm	1.00	0.00 mL	0.00 mL	013.D	Liquid	Y	NA
14	HS17010779-01DUP	SAMP	01-24-2017 01:47 pm	1.00	0.00 mL	0.00 mL	014.D	Liquid	Y	NA
15	CCV	CCV	01-24-2017 02:01 pm	1.00	0.00 mL	0.00 mL	015.D	Liquid	Y	NA

Chemical	Value
ICAL STD ID	30010700217
ICV STD ID	30010700610

FORM 3
WATER GASES METHOD SPIKE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20030733

Matrix Spike - ENG SC Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
Ethene	16.800	19.090	114	75-125
Methane	9.647	9.597	99	75-125
Ethane	18.043	19.657	109	75-125
Propane	26.463	27.238	103	75-125
N-Butane	34.955	36.010	103	75-125

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

_____

FORM III GASES

FORM 6
GASES INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20030733

Instrument ID: FID-4 Calibration Date(s): 01/24/17 01/24/17

Column: RTX-PLOT ID: 0.53 (mm) Calibration Time(s): 0906 1113

LAB FILE ID: RF10: 001 RF25: 002 RF50: 003
RF100: 004 RF250: 005 RF500: 006

COMPOUND	RF10	RF25	RF50	RF100	RF250	RF500
Ethene	535.608	567.359	564.985	516.024	665.282	425.678
Methane	968.912	978.238	1019.699	880.798	960.713	930.704
Ethane	602.493	670.177	658.908	597.201	808.513	817.630
Propane	500	1279	2602	4785	18294	38286
N-Butane	438	936	2034	3864	18446	42817

FORM VI GASES

FORM 6
GASES INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS2003073

Instrument ID: FID-4 Calibration Date(s): 01/24/17 01/24/17

Column: RTX-PLOT ID: 0.53 (mm) Calibration Time(s): 0906 1113

RF1000: 007

COMPOUND	RF1000	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2	MA
Ethene	828.858	AVRG		586.256273		21.932	
Methane	1081.580	AVRG		974.377787		6.550	
Ethane	999.335	AVRG		736.322546		19.885	
Propane	96509	2ORDR	0.97987006	1.529e-003	-4.58e-009	0.9991365	0
N-Butane	114164	2ORDR	2.46870151	1.834e-003	-5.54e-009	0.9980766	0

FORM VI GASES

FORM 7B
GASES CALIBRATION VERIFICATION SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20030733

Instrument ID: FID-4 Calibration Date: 03/20/20 Time: 0923

Lab File ID: 001 Init. Calib. Date(s): 01/24/17 01/24/17

Init. Calib. Times: 0906 1113

GC Column: RTX-PLOT ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF250.00 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE
Ethane	719.48900	658.09455	0.01	8.53	20.00	AVRG
Methane	974.99200	904.01161	0.01	7.28	20.00	AVRG
Ethene	585.76000	561.48368	0.01	4.14	20.00	AVRG

FORM VII GASES

FORM 7B
GASES CALIBRATION VERIFICATION SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20030733

Instrument ID: FID-4 Calibration Date: 03/20/20 Time: 1109

Lab File ID: 011 Init. Calib. Date(s): 01/24/17 01/24/17

Init. Calib. Times: 0906 1113

GC Column: RTX-PLOT ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF250.00 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE
Ethane	719.48900	632.71075	0.01	12.06	20.00	AVRG
Methane	974.99200	947.75578	0.01	2.79	20.00	AVRG
Ethene	585.76000	556.79525	0.01	4.94	20.00	AVRG

FORM VII GASES

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\001.D
Report Date: 08-Apr-2020 11:43

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\001.D
Lab Smp Id: ICAL1 Client Smp ID: ICAL1
Inj Date : 24-JAN-2017 09:06
Operator : JA Inst ID: FID-4.i
Smp Info : ICAL1;ICAL1;;;
Misc Info :
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 09:06 Cal File: 001.D
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Methane	1.043	1.030	0.013	374	0.38600	0.383(a)
2 Ethene	1.553	1.556	-0.003	361	0.67400	0.615(a)
3 Ethane	1.716	1.723	-0.007	435	0.72200	0.590(a)
4 Propane	4.073	4.113	-0.040	500	1.05900	1.743
5 N-Butane	7.640	7.690	-0.050	438	1.39800	3.271

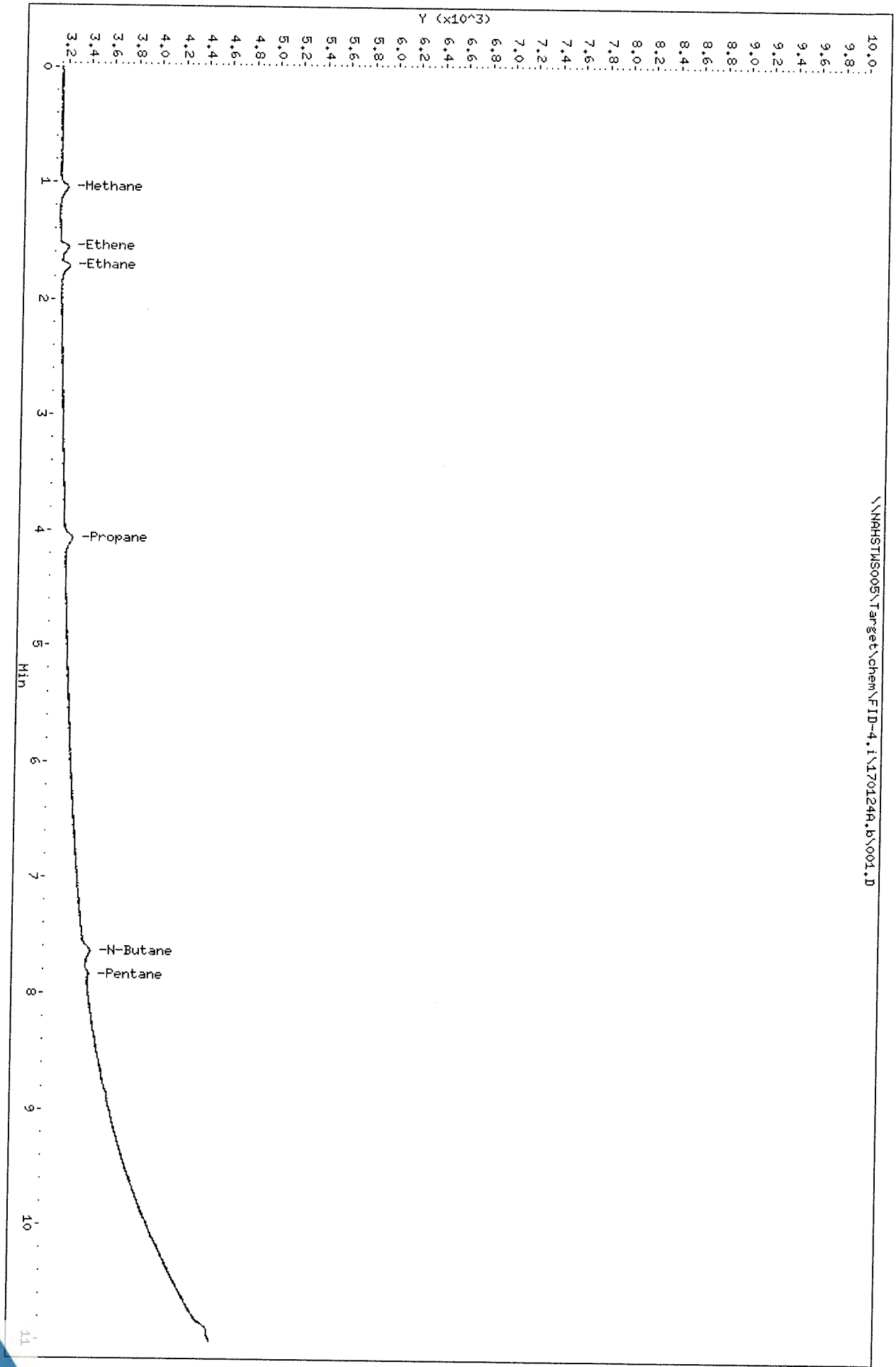
QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\001.D
Date : 24-JAN-2017 09:06
Client ID: ICAL1
Sample Info: ICAL1;ICAL1;;;

Instrument: FID-4.i
Operator: JA
Column diameter: 0.53

Column phase: Rtx-PLOT



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\002.D
Report Date: 08-Apr-2020 11:43

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\002.D
Lab Smp Id: ICAL2 Client Smp ID: ICAL2
Inj Date : 24-JAN-2017 09:30
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL2;ICAL2;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 09:59 Cal File: 003.D
Als bottle: 2 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

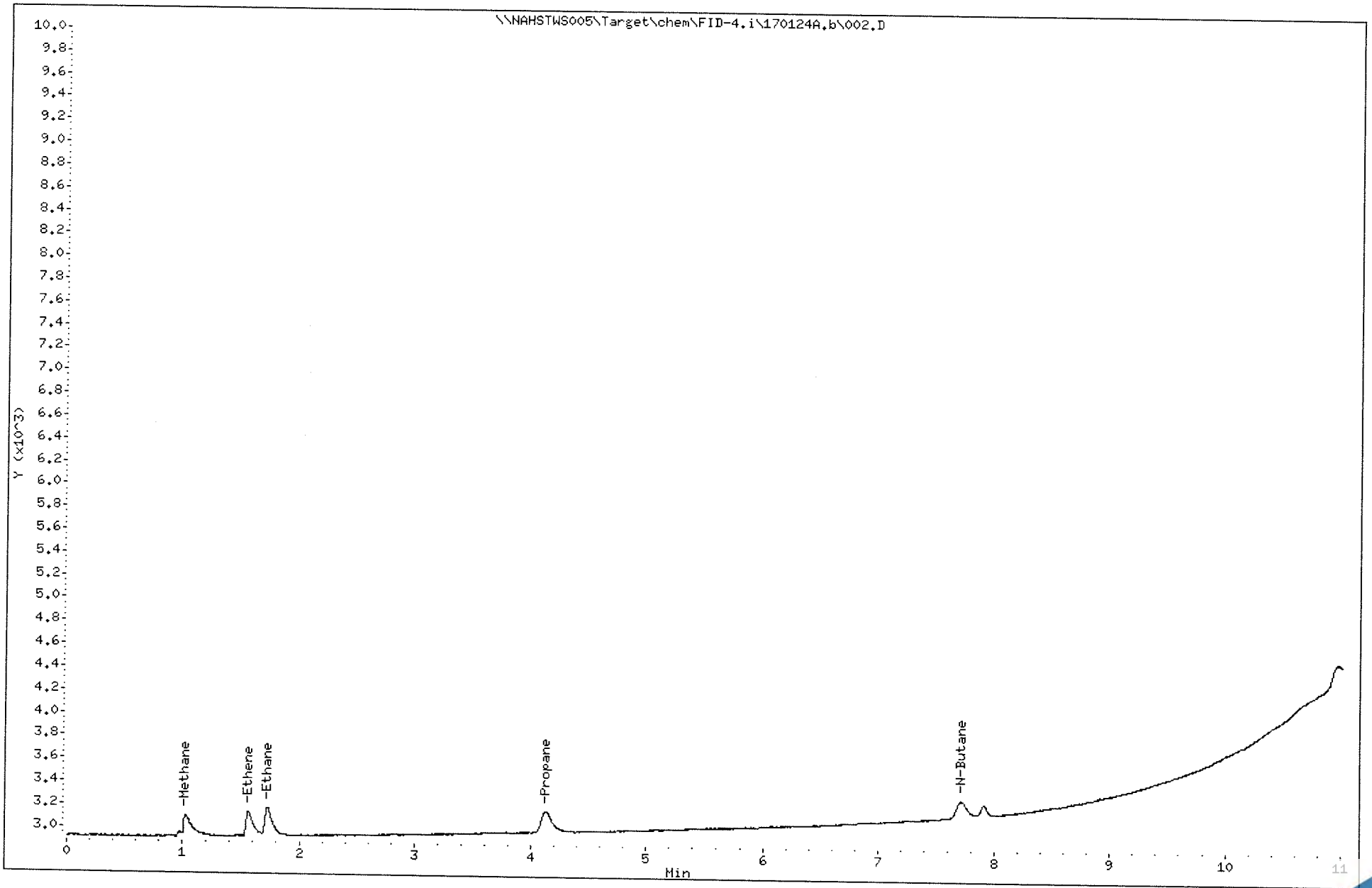
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	1.023	1.030	-0.007	944	0.96500	0.968
2 Ethene	1.560	1.556	0.004	956	1.68500	1.630
3 Ethane	1.723	1.723	0.000	1209	1.80400	1.641
4 Propane	4.123	4.113	0.010	1279	2.64600	2.927
5 N-Butane	7.716	7.690	0.026	936	3.49600	4.180

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\002.D
Date : 24-JAN-2017 09:30
Client ID: ICAL2
Sample Info: ICAL2;ICAL2;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\003.D Page 1
Report Date: 08-Apr-2020 11:43

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\003.D
Lab Smp Id: ICAL3 Client Smp ID: ICAL3
Inj Date : 24-JAN-2017 09:59
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL3;ICAL3;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 11:13 Cal File: 007.D
Als bottle: 3 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

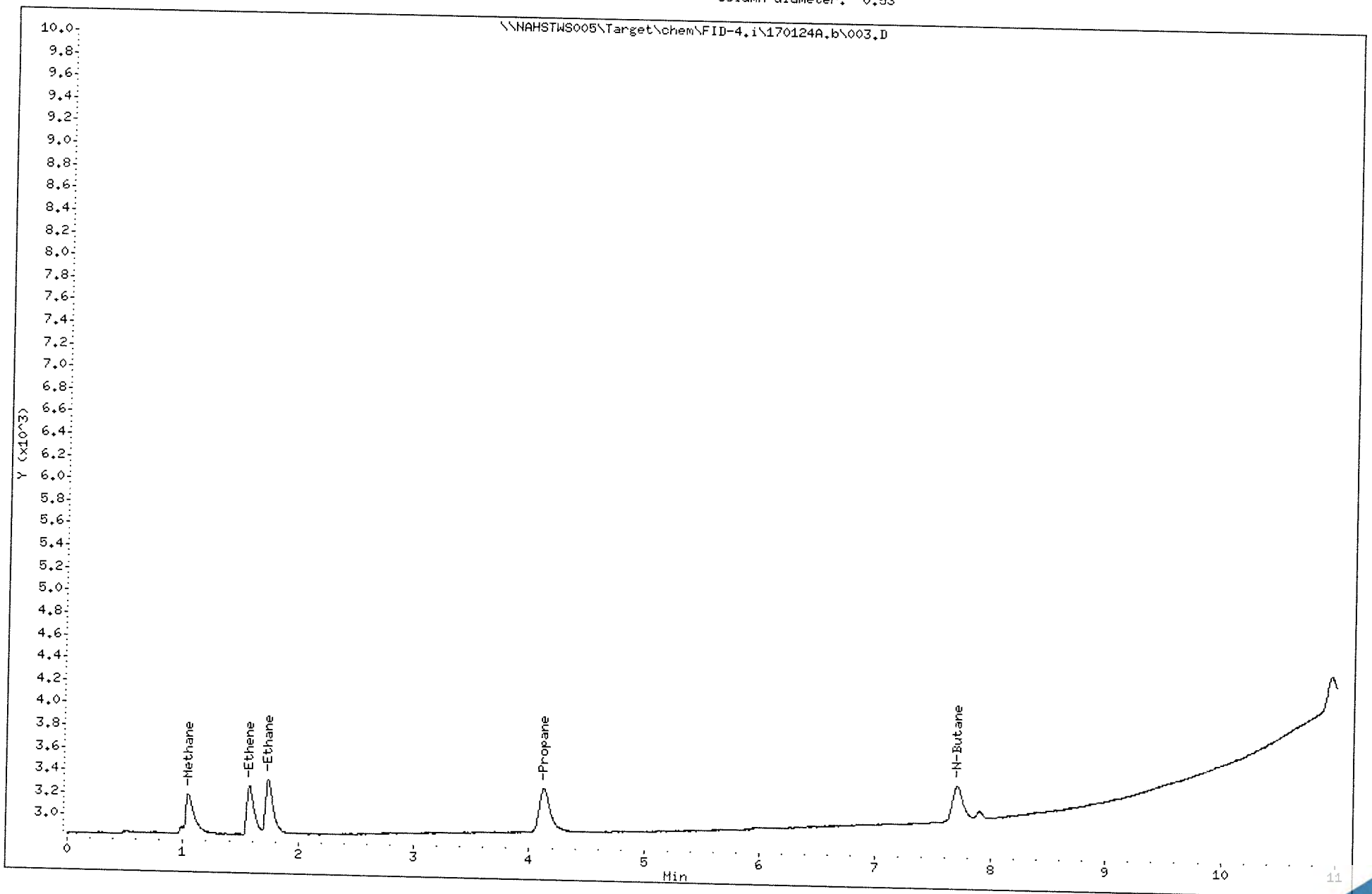
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	1.043	1.030	0.013	1967	1.92900	2.018
2 Ethene	1.570	1.556	0.014	1904	3.37000	3.247
3 Ethane	1.736	1.723	0.013	2378	3.60900	3.229
4 Propane	4.123	4.113	0.010	2602	5.29300	4.926
5 N-Butane	7.703	7.690	0.013	2034	6.99100	6.176

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\003.D
Date : 24-JAN-2017 09:59
Client ID: ICAL3
Sample Info: ICAL3;ICAL3;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\004.D
Report Date: 08-Apr-2020 11:43

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\004.D
Lab Smp Id: ICAL4 Client Smp ID: ICAL4
Inj Date : 24-JAN-2017 10:15
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL4;ICAL4;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 09:30 Cal File: 002.D
Als bottle: 4 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	1.033	1.030	0.003	3399	3.85900	3.488
2 Ethene	1.563	1.556	0.007	3478	6.74000	5.932
3 Ethane	1.726	1.723	0.003	4310	7.21700	5.853
4 Propane	4.120	4.113	0.007	4785	10.5850	8.190
5 N-Butane	7.703	7.690	0.013	3864	13.9820	9.473 (M)

QC Flag Legend

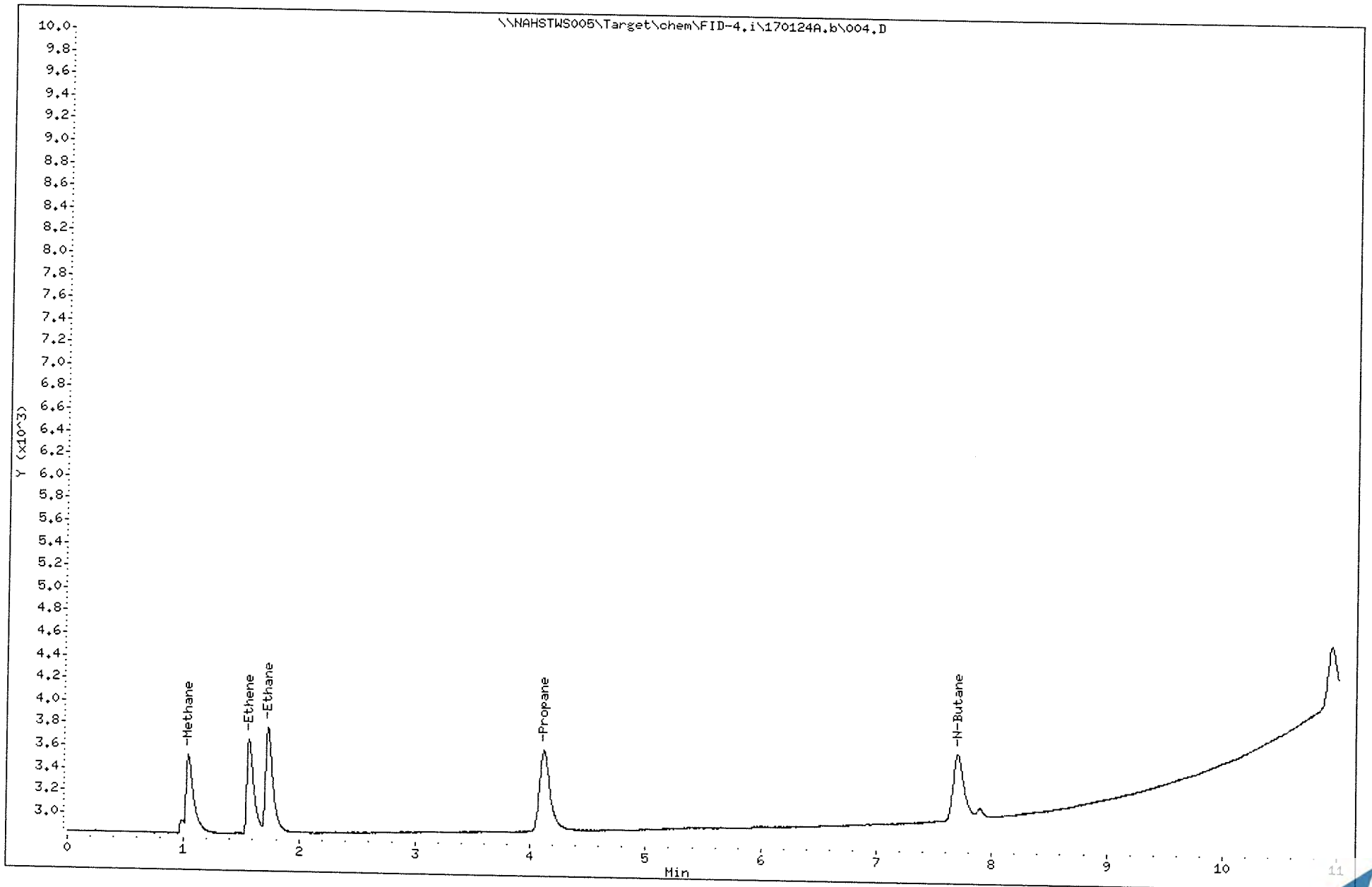
M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\004.D
Date : 24-JAN-2017 10:15
Client ID: ICAL4
Sample Info: ICAL4;ICAL4;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\005.D
Report Date: 08-Apr-2020 11:43

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\005.D
Lab Smp Id: ICAL5 Client Smp ID: ICAL5
Inj Date : 24-JAN-2017 10:39
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL5;ICAL5;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:39 Cal File: 005.D
Als bottle: 5 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Methane	1.043	1.030	0.013	9268	9.64700	9.511
2 Ethene	1.570	1.556	0.014	11210	16.8500	19.121
3 Ethane	1.733	1.723	0.010	14588	18.0430	19.811
4 Propane	4.120	4.113	0.007	18294	26.4630	27.415
5 N-Butane	7.700	7.690	0.010	18446	34.9550	34.419(M)

QC Flag Legend

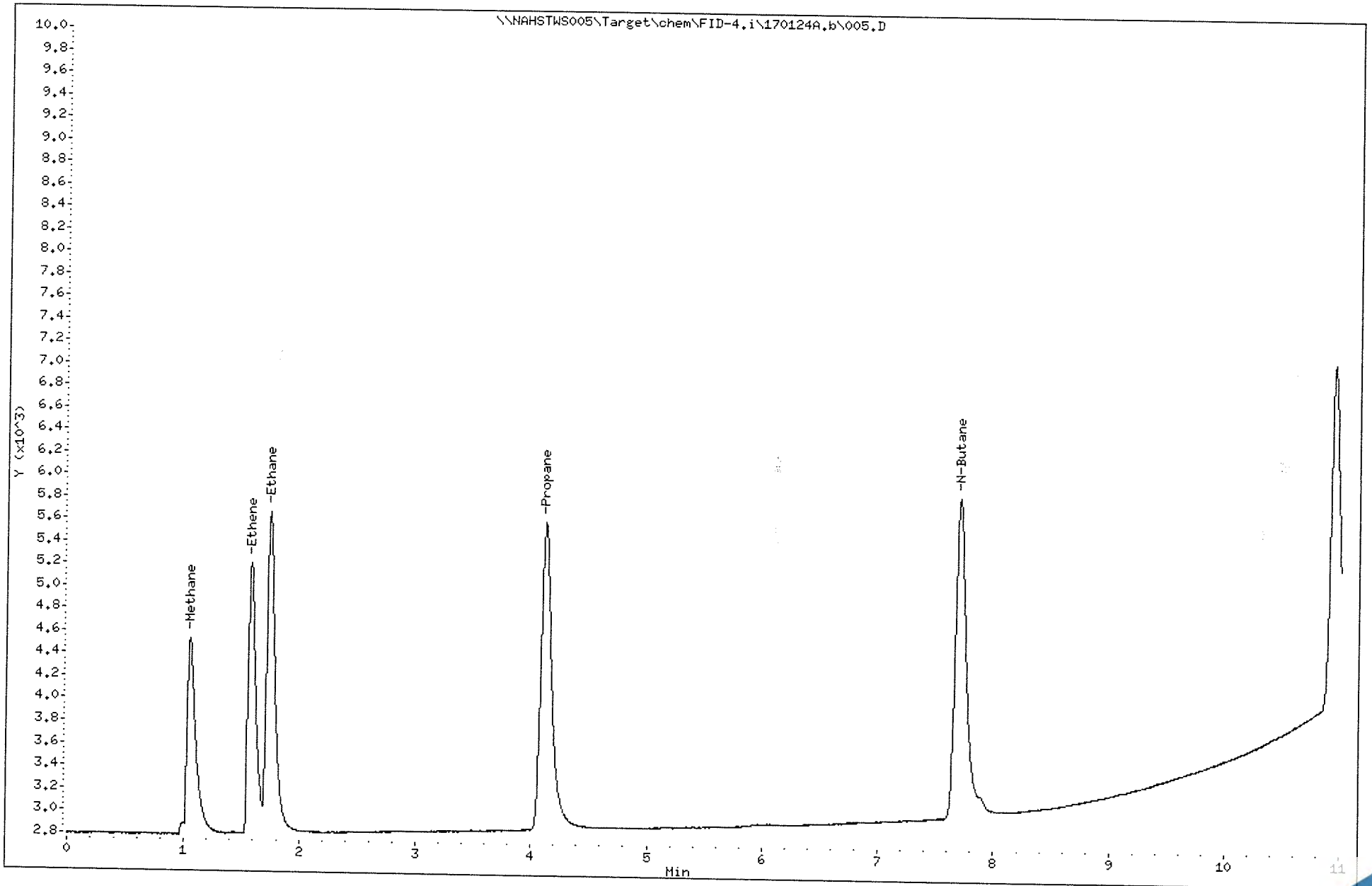
M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\005.D
Date : 24-JAN-2017 10:39
Client ID: ICAL5
Sample Info: ICAL5;ICAL5;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\006.D
Report Date: 08-Apr-2020 11:43

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\006.D
Lab Smp Id: ICAL6 Client Smp ID: ICAL6
Inj Date : 24-JAN-2017 10:57
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL6;ICAL6;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:39 Cal File: 005.D
Als bottle: 6 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

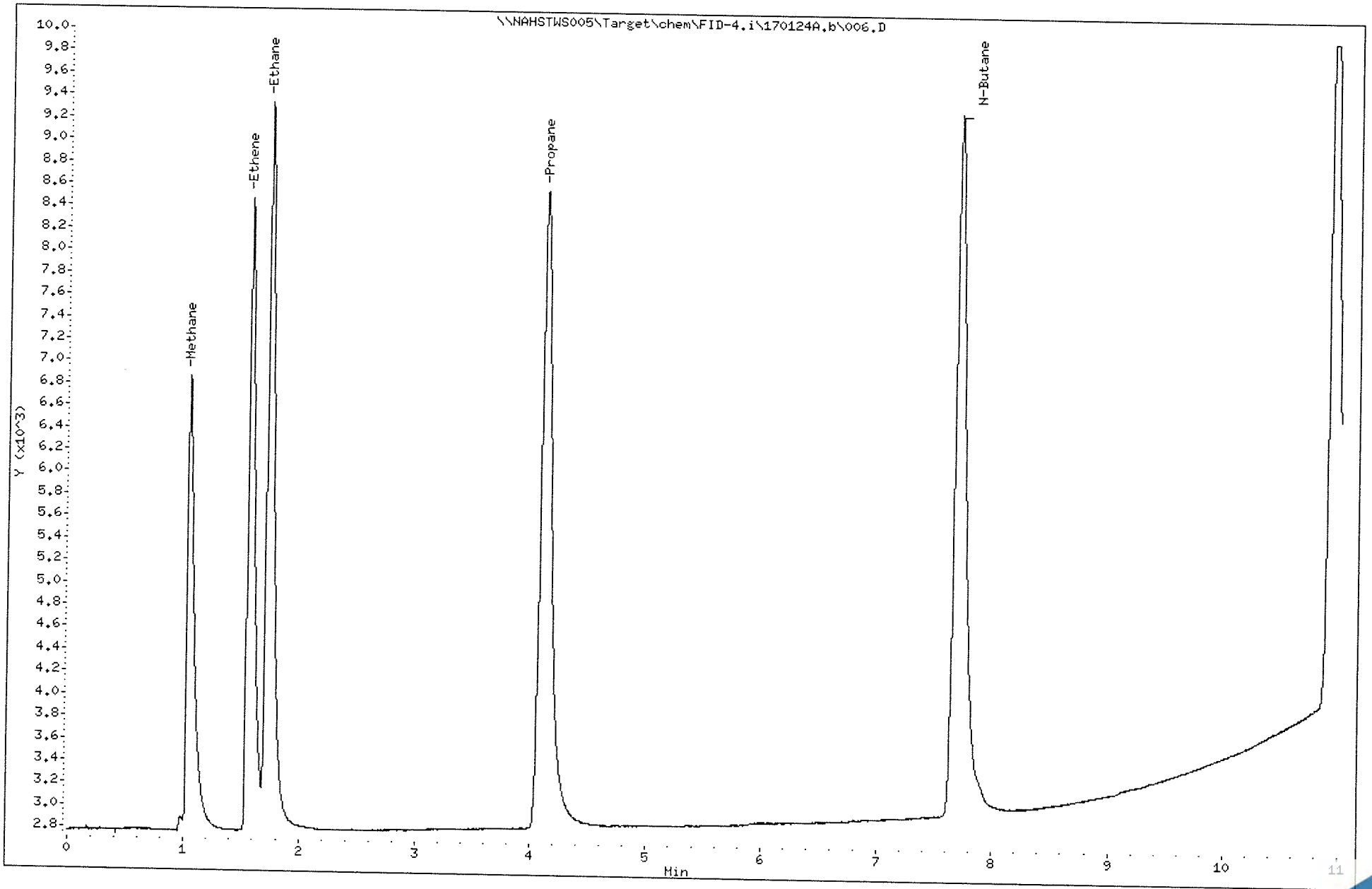
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	1.023	1.030	-0.007	17957	19.2940	18.429
2 Ethene	1.550	1.556	-0.006	22910	53.8200	39.078
3 Ethane	1.716	1.723	-0.007	29505	36.0860	40.070
4 Propane	4.110	4.113	-0.003	38286	52.9260	52.796
5 N-Butane	7.696	7.690	0.006	42817	69.9110	70.855

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\006.D
Date : 24-JAN-2017 10:57
Client ID: ICAL6
Sample Info: ICAL6;ICAL6;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\007.D
Report Date: 08-Apr-2020 11:43

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\007.D
Lab Smp Id: ICAL7 Client Smp ID: ICAL7
Inj Date : 24-JAN-2017 11:13
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL7;ICAL7;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:57 Cal File: 006.D
Als bottle: 7 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	1.030	1.030	0.000	41736	38.5880	42.833(A)
2 Ethene	1.556	1.556	0.000	55865	67.4000	95.291(A)
3 Ethane	1.723	1.723	0.000	72124	72.1720	97.951(A)
4 Propane	4.113	4.113	0.000	96509	105.852	105.844
5 N-Butane	7.690	7.690	0.000	114164	139.821	139.707

QC Flag Legend

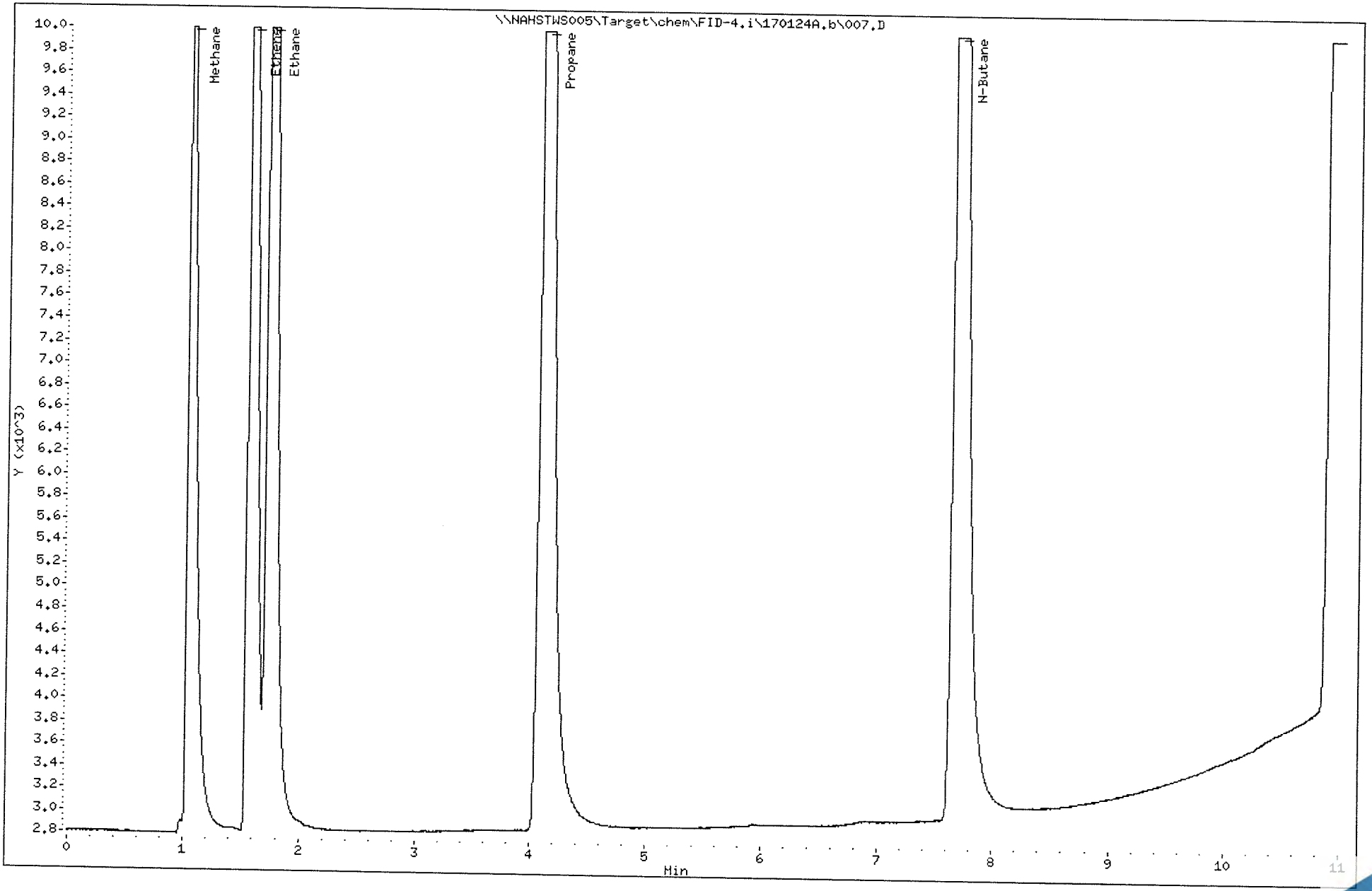
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\007.D
Date : 24-JAN-2017 11:13
Client ID: ICAL7
Sample Info: ICAL7;ICAL7;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\008.D
Report Date: 08-Apr-2020 11:43

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\008.D
Lab Smp Id: ICV
Client Smp ID: ICV
Inj Date : 24-JAN-2017 12:05
Operator : MA
Inst ID: FID-4.i
Smp Info : ICV;ICV;;;
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad
Quant Type: ESTD
Cal Date : 24-JAN-2017 11:13
Cal File: 007.D
Als bottle: 8
QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: Falcon
Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

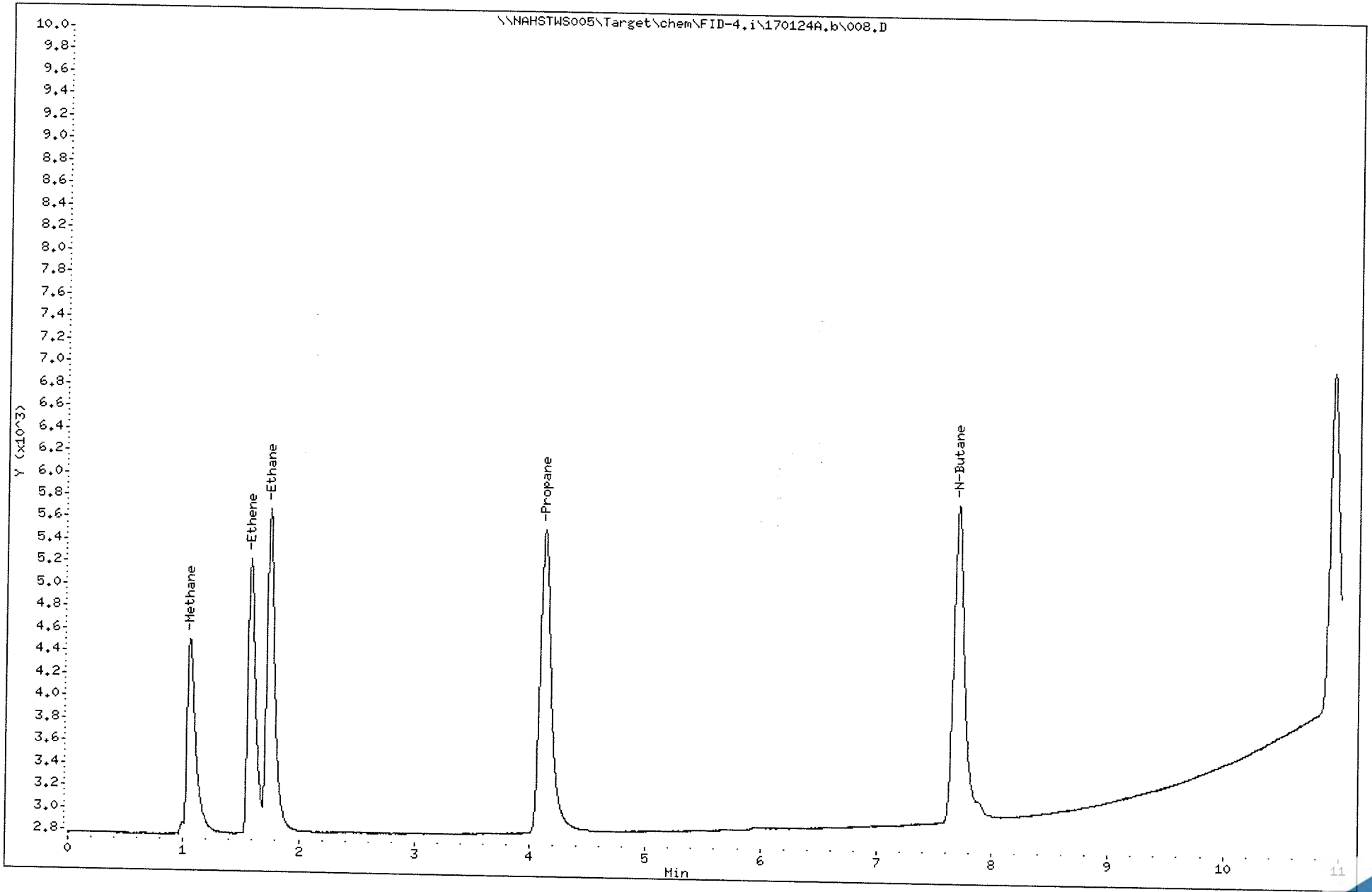
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/L)
1 Methane	1.046	1.030	0.016	9352	9.59792	9.597
2 Ethene	1.573	1.556	0.017	11192	19.0906	19.090
3 Ethane	1.736	1.723	0.013	14474	19.6571	19.657
4 Propane	4.116	4.113	0.003	18164	27.2381	27.238
5 N-Butane	7.696	7.690	0.006	19425	36.0103	36.010

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\008.D
Date : 24-JAN-2017 12:05
Client ID: ICV
Sample Info: ICV;ICV;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53



FID04 -Logbook

Batch: 40090
Date: 03-20-2020
Method: rsk 175
Comments:

Analyst: Purvi Lad
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	RSK-CCV	CCV	03-20-2020 09:23 am	1.00	0.00 mL	0.00 mL	001.D	Liquid	Y	NA
2	LCS-200320	LCS	03-20-2020 09:31 am	1.00	0.00 mL	0.00 mL	002.D	Liquid	Y	NA
3	LCSD-200320	LCSD	03-20-2020 09:42 am	1.00	0.00 mL	0.00 mL	003.D	Liquid	Y	NA
4	MBLK-200320	MBLK	03-20-2020 09:55 am	1.00	0.00 mL	0.00 mL	004.D	Liquid	Y	NA
5	HS20030733-01	SAMP	03-20-2020 10:09 am	1.00	0.00 mL	30.95	005.D	Liquid	Y	<2
6	HS20030733-01DUP	SAMP	03-20-2020 10:18 am	1.00	0.00 mL	0.00 mL	006.D	Liquid	Y	NA
7	HS20030733-02	SAMP	03-20-2020 10:27 am	1.00	0.00 mL	30.11	007.D	Liquid	Y	<2
8	HS20030733-03	SAMP	03-20-2020 10:36 am	1.00	0.00 mL	30.04	008.D	Liquid	Y	<2
9	HS20030733-06	SAMP	03-20-2020 10:46 am	1.00	0.00 mL	31.37	009.D	Liquid	Y	<2
10	HS20030796-01	SAMP	03-20-2020 10:58 am	1.00	0.00 mL	30.61	010.D	Liquid	Y	<2
11	RSK-CCV	CCV	03-20-2020 11:09 am	1.00	0.00 mL	0.00 mL	011.D	Liquid	Y	NA
12	HS20030796-01	SAMP	03-20-2020 11:17 am	10.00	0.00 mL	0.00 mL	012.D	Liquid	Y	NA
13	HS20030796-02	SAMP	03-20-2020 11:31 am	1.00	0.00 mL	31.47	013.D	Liquid	Y	<2
14	HS20030796-03	SAMP	03-20-2020 11:39 am	1.00	0.00 mL	30.08	014.D	Liquid	Y	<2
15	HS20030796-04	SAMP	03-20-2020 11:47 am	1.00	0.00 mL	31.52	015.D	Liquid	Y	<2
16	HS20030796-05	SAMP	03-20-2020 12:01 pm	1.00	0.00 mL	30.08	016.D	Liquid	Y	<2
17	HS20030796-06	SAMP	03-20-2020 12:11 pm	1.00	0.00 mL	32.44	017.D	Liquid	Y	<2
18	HS20030796-08	SAMP	03-20-2020 12:21 pm	1.00	0.00 mL	29.53	018.D	Liquid	Y	<2
19	HS20030796-09	SAMP	03-20-2020 12:37 pm	1.00	0.00 mL	30.03	019.D	Liquid	Y	<2
20	HS20030796-10	SAMP	03-20-2020 12:48 pm	1.00	0.00 mL	30.67	020.D	Liquid	Y	<2
21	HS20030796-10	SAMP	03-20-2020 12:58 pm	20.00	0.00 mL	0.00 mL	021.D	Liquid	Y	NA
22	RSK-CCV	CCV	03-20-2020 01:10 pm	1.00	0.00 mL	0.00 mL	022.D	Liquid	Y	NA

Chemical	Value
pH Paper	300107043-22
CCV/LC/LSD/MS/MSD	300107035-01

Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\001.D
Report Date: 08-Apr-2020 11:57

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\001.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 20-MAR-2020 09:23
Operator : PL Inst ID: FID-4.i
Smp Info : RSK-CCV;RSK-CCV;2;4
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\RSKNI3.m
Meth Date : 08-Apr-2020 11:57 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: ALSHSW7104

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

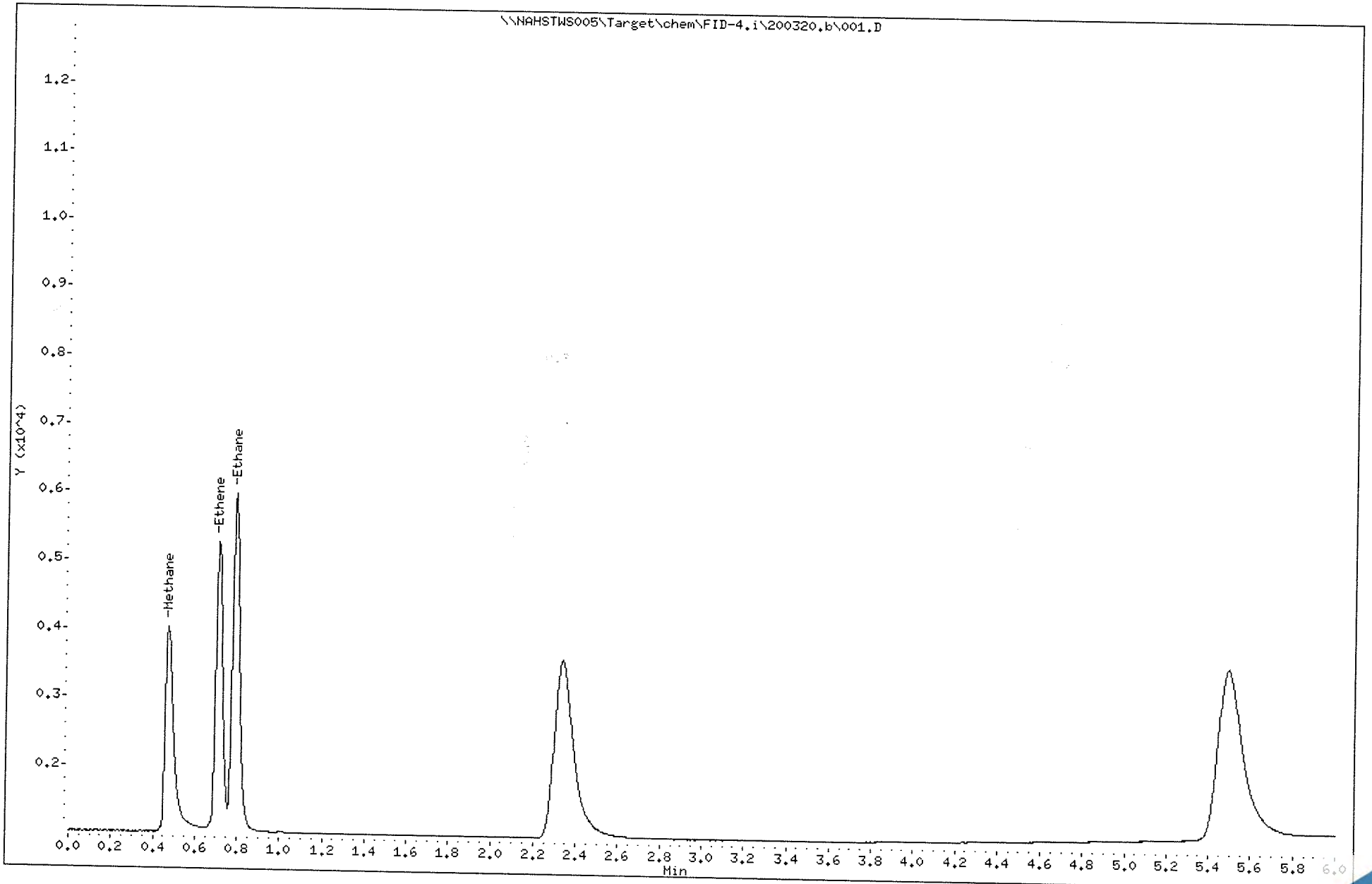
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	0.466	0.466	0.000	8721	9.64700	8.944
2 Ethene	0.706	0.706	0.000	9461	16.8500	16.151
3 Ethane	0.786	0.786	0.000	11874	18.0430	16.503

Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\001.D
Date : 20-MAR-2020 09:23
Client ID: RSK-CCV
Sample Info: RSK-CCV;RSK-CCV;2;4

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\002.D Page 1
Report Date: 08-Apr-2020 11:57

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\002.D
Lab Smp Id: LCS-200320 Client Smp ID: LCS-200320
Inj Date : 20-MAR-2020 09:31
Operator : PL Inst ID: FID-4.i
Smp Info : LCS-200320;LCS-200320;3;;LCS
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\RSKNI3.m
Meth Date : 08-Apr-2020 11:57 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 2 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: ALSHSW7104

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
1 Methane	0.473	0.466	0.007	8239	8.45032	8.450
2 Ethene	0.710	0.706	0.004	8662	14.7876	14.787(M)
3 Ethane	0.790	0.786	0.004	11300	15.7056	15.705

QC Flag Legend

M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\002.D
Report Date: 08-Apr-2020 11:57

ALS Laboratory Group

RECOVERY REPORT

Client Name: ENG SC
Sample Matrix: LIQUID
Lab Smp Id: LCS-200320
Level: LOW
Data Type: GC DATA
SpikeList File: LCSRSKNI3.spk
Sublist File: RSK175.sub
Client SDG: SDGa00148
Fraction: GASES
Client Smp ID: LCS-200320
Operator: PL
SampleType: LCS
Quant Type: ESTD
Method File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\RSKNI3.m
Misc Info: ;1;0;1

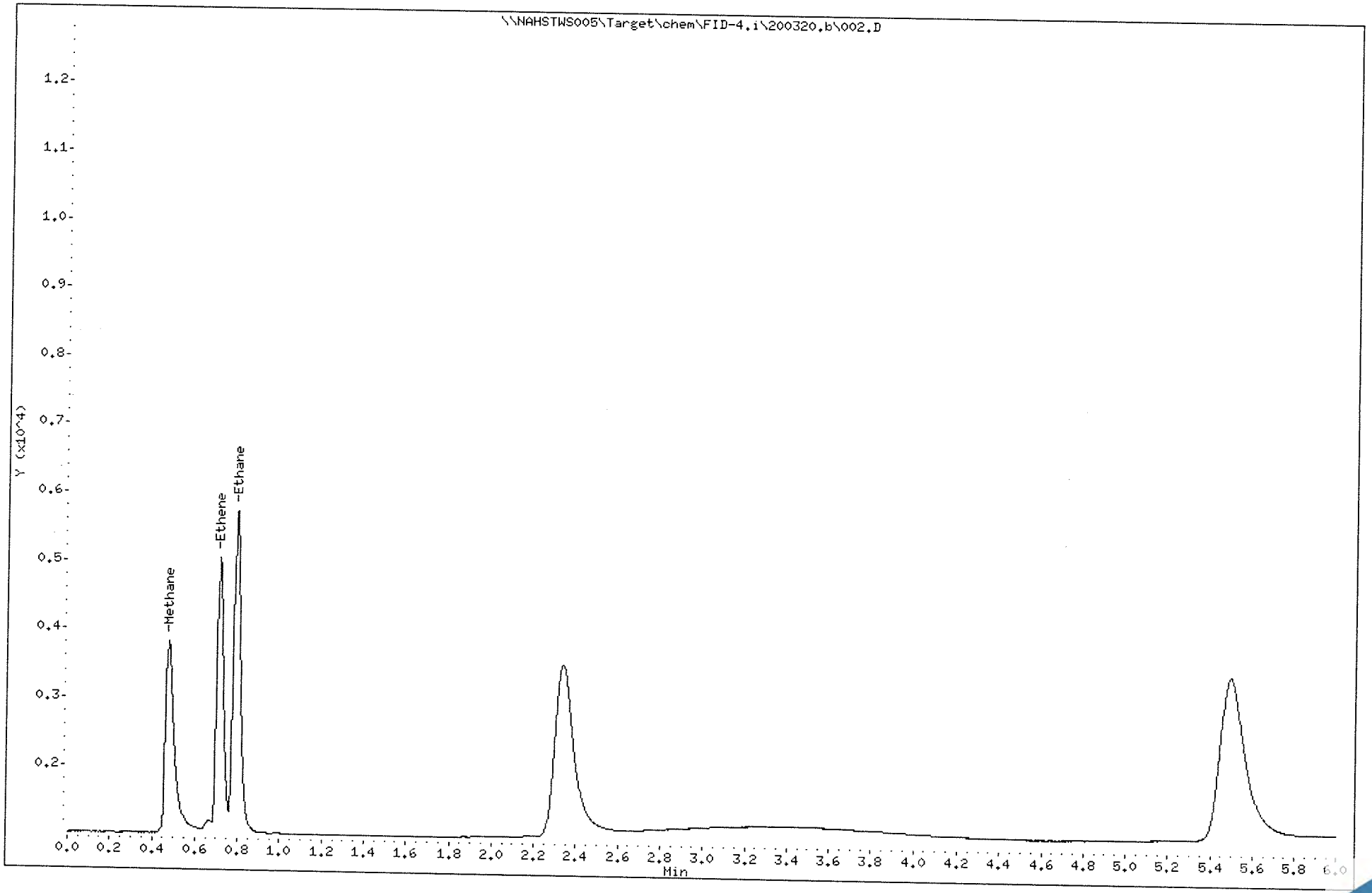
SPIKE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
1 Methane	9.647	8.450	87.60	75-125
2 Ethene	16.800	14.787	88.02	75-125
3 Ethane	18.043	15.705	87.05	75-125

Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\002.D
Date : 20-MAR-2020 09:31
Client ID: LCS-200320
Sample Info: LCS-200320;LCS-200320;3;;LCS

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\003.D Page 1
Report Date: 08-Apr-2020 11:57

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\003.D
Lab Smp Id: LCSD-200320 Client Smp ID: LCSD-200320
Inj Date : 20-MAR-2020 09:42
Operator : PL Inst ID: FID-4.i
Smp Info : LCSD-200320;LCSD-200320;3;;LCSD
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\RSKNI3.m
Meth Date : 08-Apr-2020 11:57 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 3 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: ALSHSW7104

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
1 Methane	0.470	0.466	0.004	8709	8.93238	8.932
2 Ethene	0.710	0.706	0.004	8993	15.3527	15.352(M)
3 Ethane	0.790	0.786	0.004	11384	15.8223	15.822

QC Flag Legend

M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\003.D
Report Date: 08-Apr-2020 11:57

ALS Laboratory Group

RECOVERY REPORT

Client Name: ENG SC
Sample Matrix: LIQUID
Lab Smp Id: LCSD-200320
Level: LOW
Data Type: GC DATA
SpikeList File: LCSRSKNI3.spk
Sublist File: RSK175.sub
Method File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\RSKNI3.m
Misc Info: ;1;0;1

Client SDG: SDGa00148
Fraction: GASES
Client Smp ID: LCSD-200320
Operator: PL
SampleType: LCSD
Quant Type: ESTD

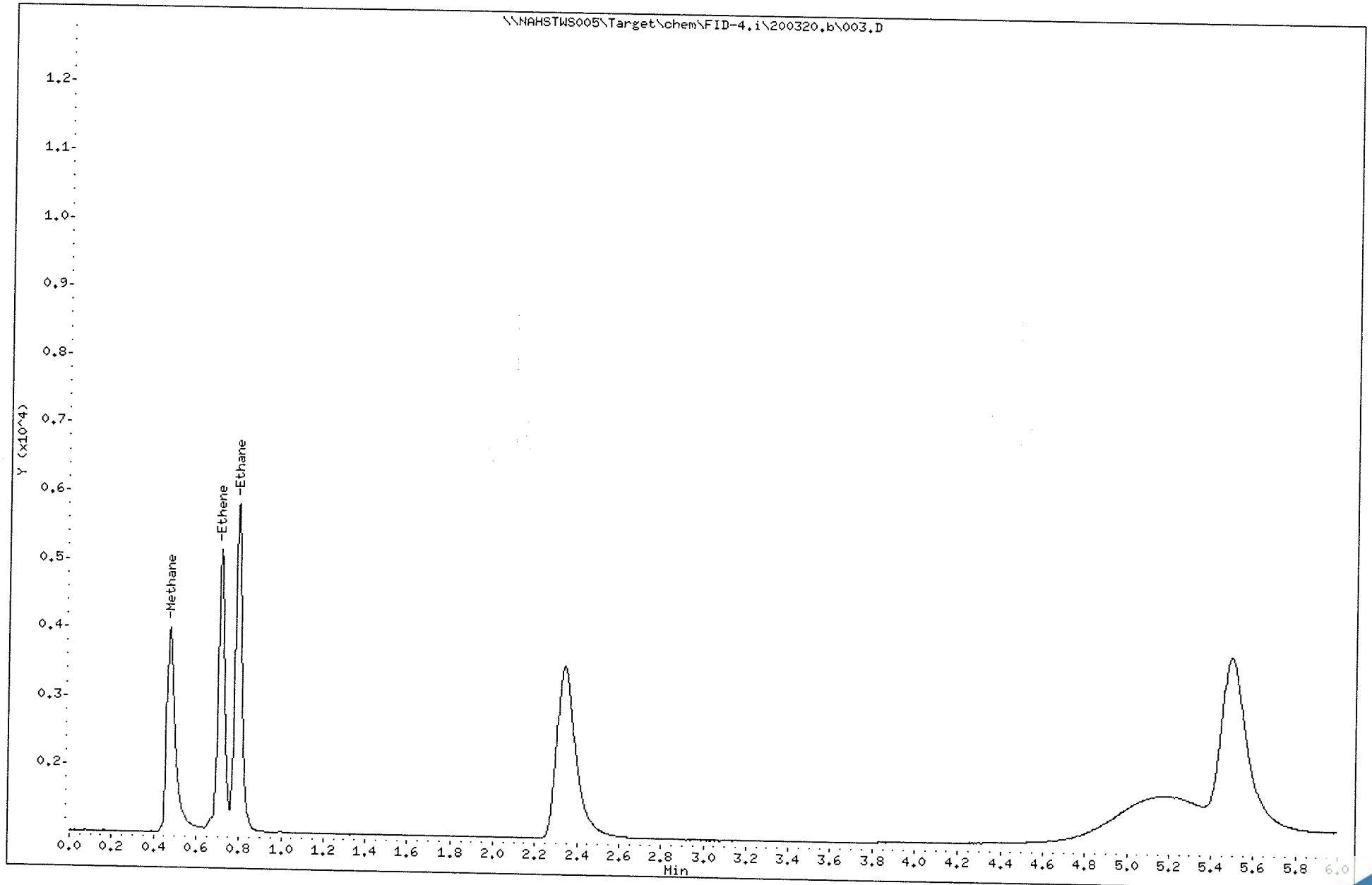
SPIKE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
1 Methane	9.647	8.932	92.59	75-125
2 Ethene	16.800	15.352	91.39	75-125
3 Ethane	18.043	15.822	87.69	75-125

Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\003.D
Date : 20-MAR-2020 09:42
Client ID: LCSD-200320
Sample Info: LCSD-200320;LCSD-200320;3;;LCSD

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\004.D Page 1
Report Date: 08-Apr-2020 11:57

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\004.D
Lab Smp Id: MBLK-200320 Client Smp ID: MBLK-200320
Inj Date : 20-MAR-2020 09:55
Operator : PL Inst ID: FID-4.i
Smp Info : MBLK-200320;MBLK-200320;3;;BLANK
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\RSKNI3.m
Meth Date : 08-Apr-2020 11:57 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 4 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: ALSHSW7104

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

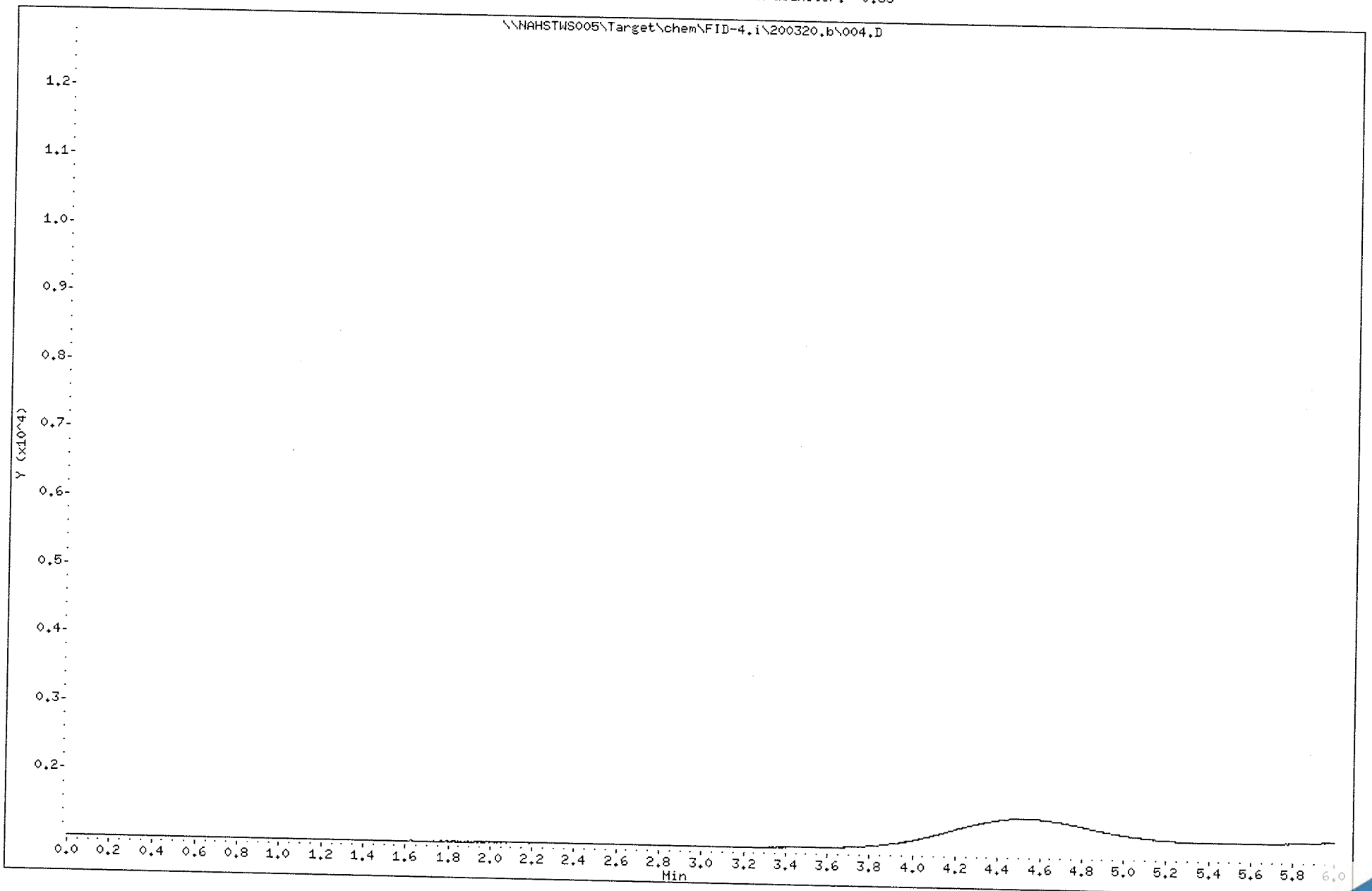
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/L)

Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\004.D
Date : 20-MAR-2020 09:55
Client ID: MBLK-200320
Sample Info: MBLK-200320;MBLK-200320;3;;BLANK

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\005.D
Report Date: 08-Apr-2020 11:57

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\005.D
Lab Smp Id: HS20030733-01 Client Smp ID: HS20030733-01
Inj Date : 20-MAR-2020 10:09
Operator : PL Inst ID: FID-4.i
Smp Info : HS20030733-01;HS20030733-01
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\RSKNI3.m
Meth Date : 08-Apr-2020 11:57 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 5
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: ALSHSW7104

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
1 Methane	0.473	0.466	0.007	4819	4.94260	4.942(M)
2 Ethene	0.706	0.706	0.000	3027	5.16764	5.167(M)
3 Ethane	0.790	0.786	0.004	300	0.41696	0.416(aM)

QC Flag Legend

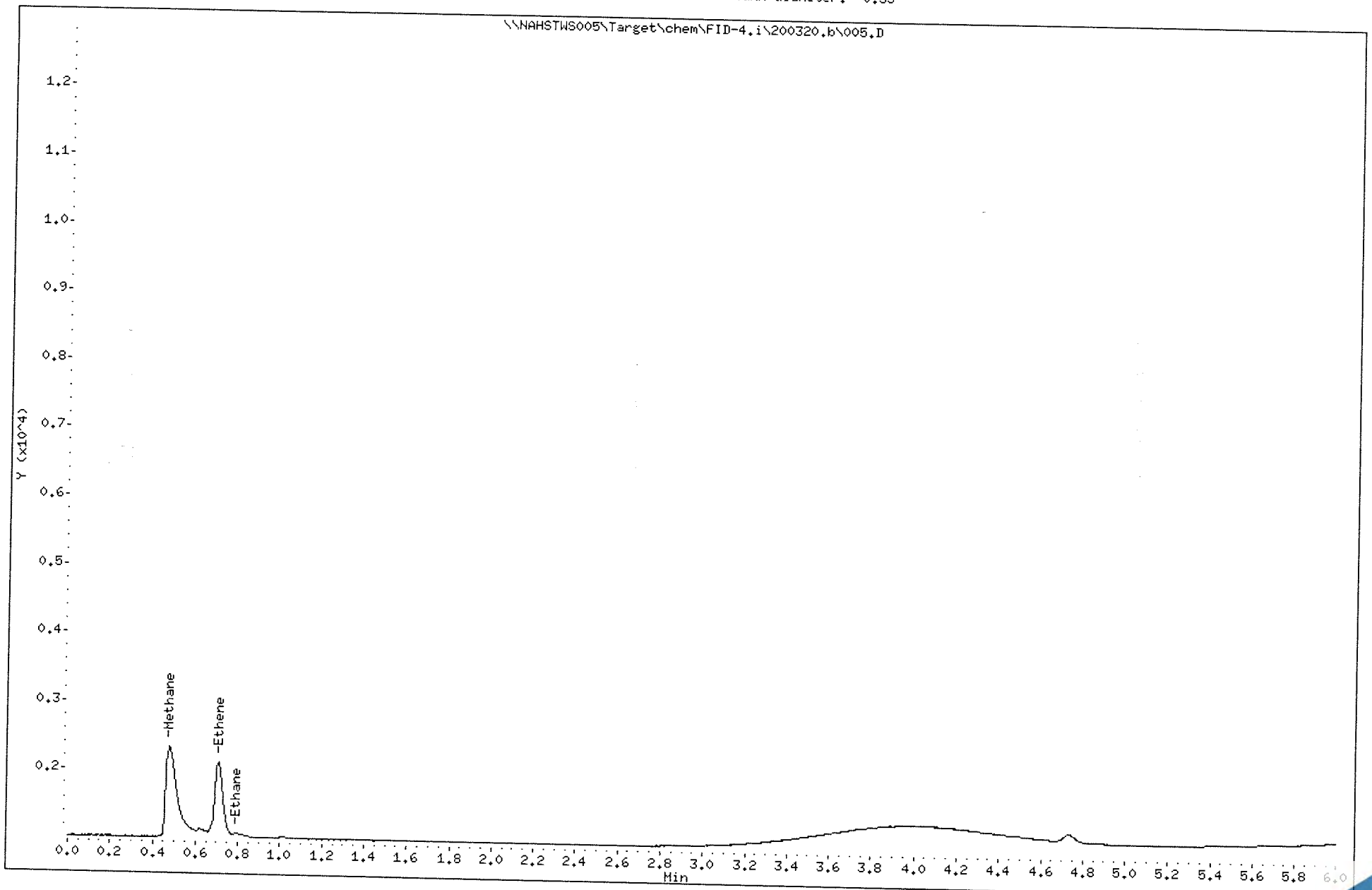
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\005.D
Date : 20-MAR-2020 10:09
Client ID: HS20030733-01
Sample Info: HS20030733-01;HS20030733-01

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



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Report Date: 08-Apr-2020 11:57

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\006.D
Lab Smp Id: HS20030733-01DUP Client Smp ID: HS20030733-01DUP
Inj Date : 20-MAR-2020 10:18
Operator : PL Inst ID: FID-4.i
Smp Info : HS20030733-01DUP;HS20030733-01DUP
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\RSKNI3.m
Meth Date : 08-Apr-2020 11:57 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 6
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: ALSHSW7104

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/L)
1 Methane	0.466	0.466	0.000	4602	4.72004	4.720 (M)
2 Ethene	0.700	0.706	-0.006	2784	4.75280	4.752 (M)
3 Ethane	0.806	0.786	0.020	281	0.39055	0.390 (aM)

QC Flag Legend

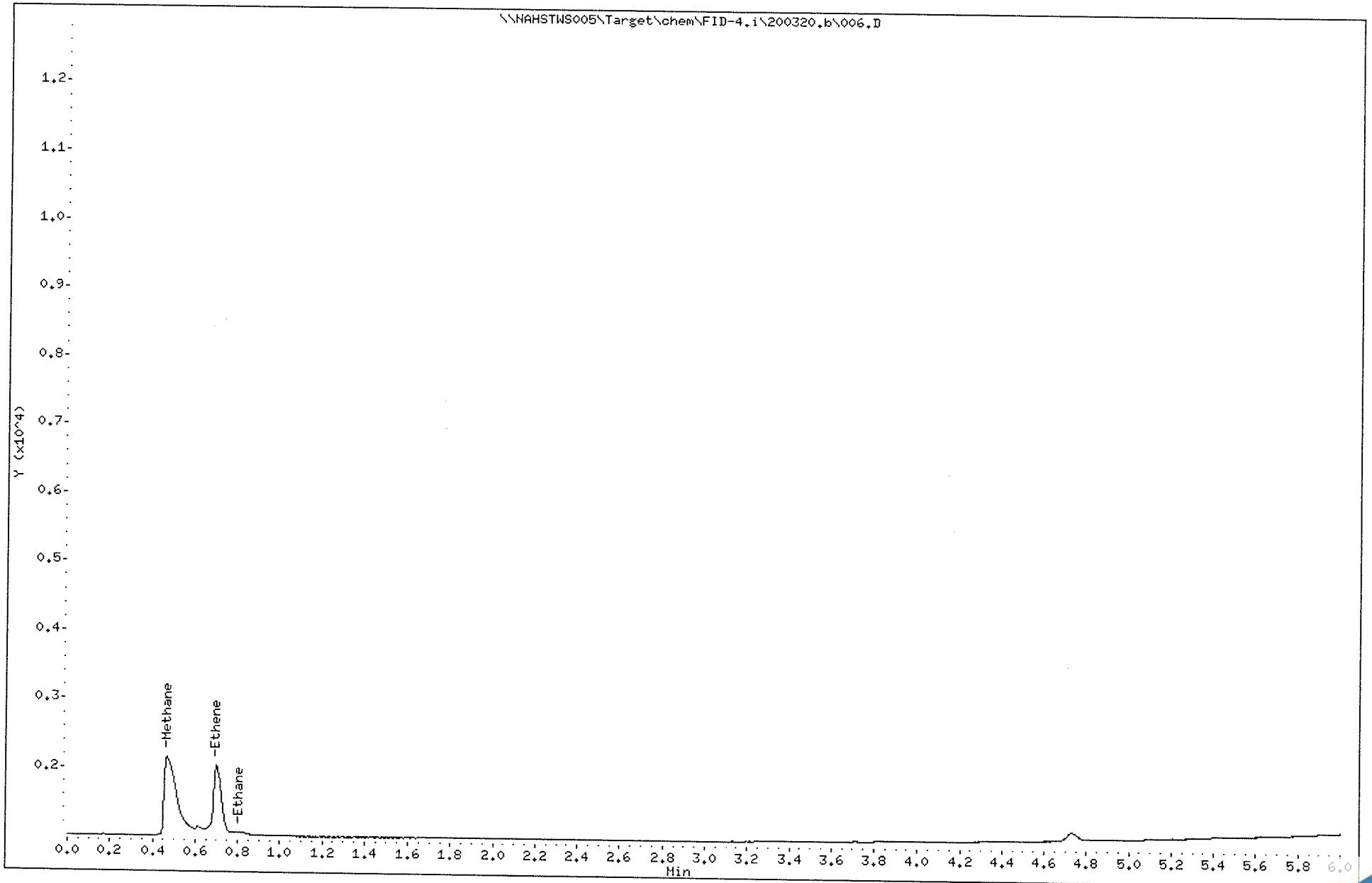
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\006.D
Date : 20-MAR-2020 10:18
Client ID: HS20030733-01DUP
Sample Info: HS20030733-01DUP;HS20030733-01DUP

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\007.D
Report Date: 08-Apr-2020 11:57

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\007.D
Lab Smp Id: HS20030733-02 Client Smp ID: HS20030733-02
Inj Date : 20-MAR-2020 10:27
Operator : PL Inst ID: FID-4.i
Smp Info : HS20030733-02;HS20030733-02
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\RSKNI3.m
Meth Date : 08-Apr-2020 11:57 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: ALSHSW7104

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
1 Methane	0.486	0.466	0.020	2904	2.97848	2.978 (M)
2 Ethene	0.683	0.706	-0.023	984	1.67987	1.679 (M)
3 Ethane	0.803	0.786	0.017	207	0.28770	0.287 (aM)

QC Flag Legend

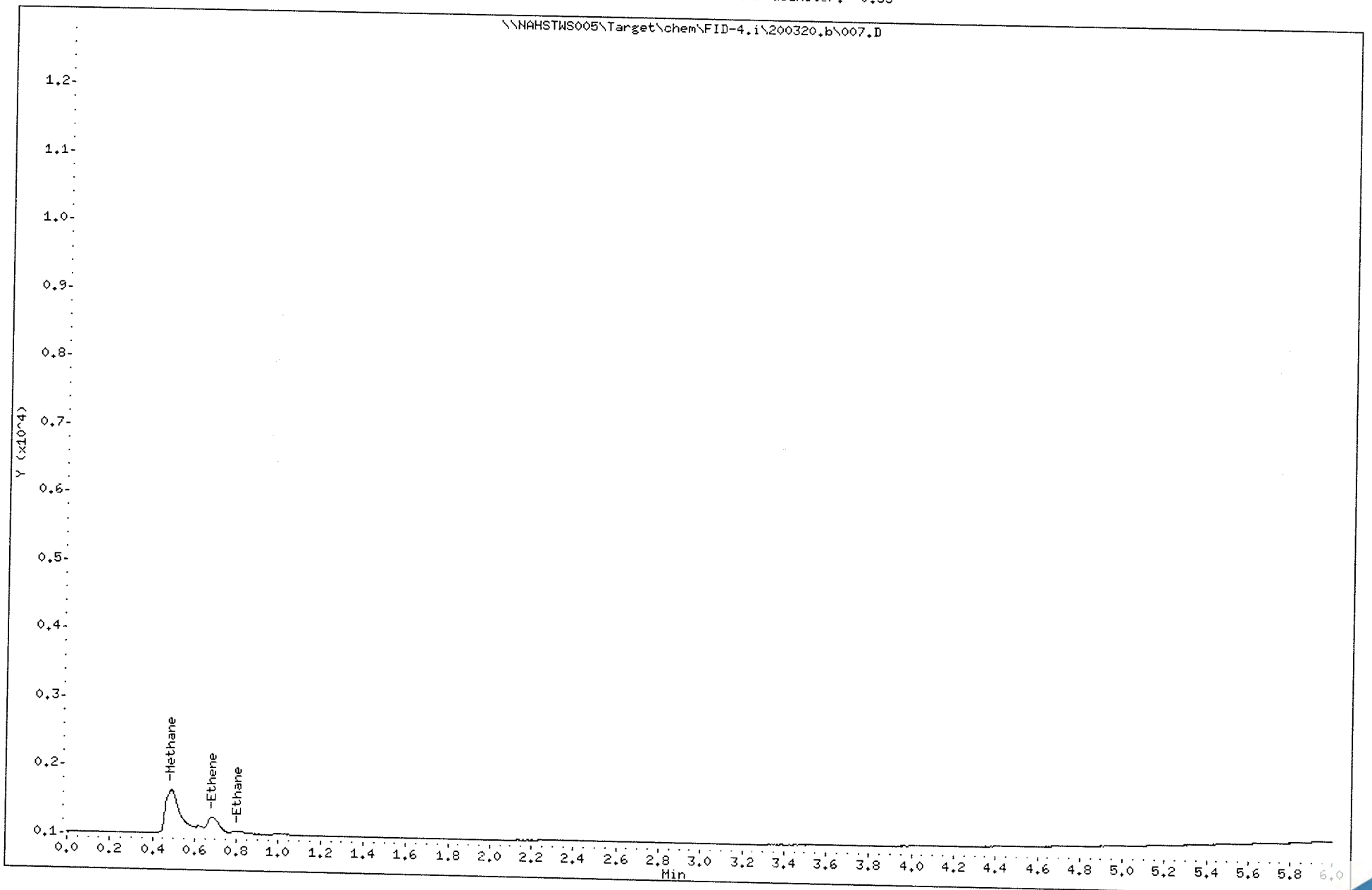
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\007.D
Date : 20-MAR-2020 10:27
Client ID: HS20030733-02
Sample Info: HS20030733-02;HS20030733-02

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\008.D Page 1
Report Date: 08-Apr-2020 11:57

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\008.D
Lab Smp Id: HS20030733-03 Client Smp ID: HS20030733-03
Inj Date : 20-MAR-2020 10:36
Operator : PL Inst ID: FID-4.i
Smp Info : HS20030733-03;HS20030733-03
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\RSKNI3.m
Meth Date : 08-Apr-2020 11:57 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: ALSHSW7104

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/L)
1 Methane	0.463	0.466	-0.003	15924	16.3324	16.332
2 Ethene	0.696	0.706	-0.010	5835	9.96141	9.961(M)
3 Ethane	0.783	0.786	-0.003	269	0.37388	0.373(aM)

QC Flag Legend

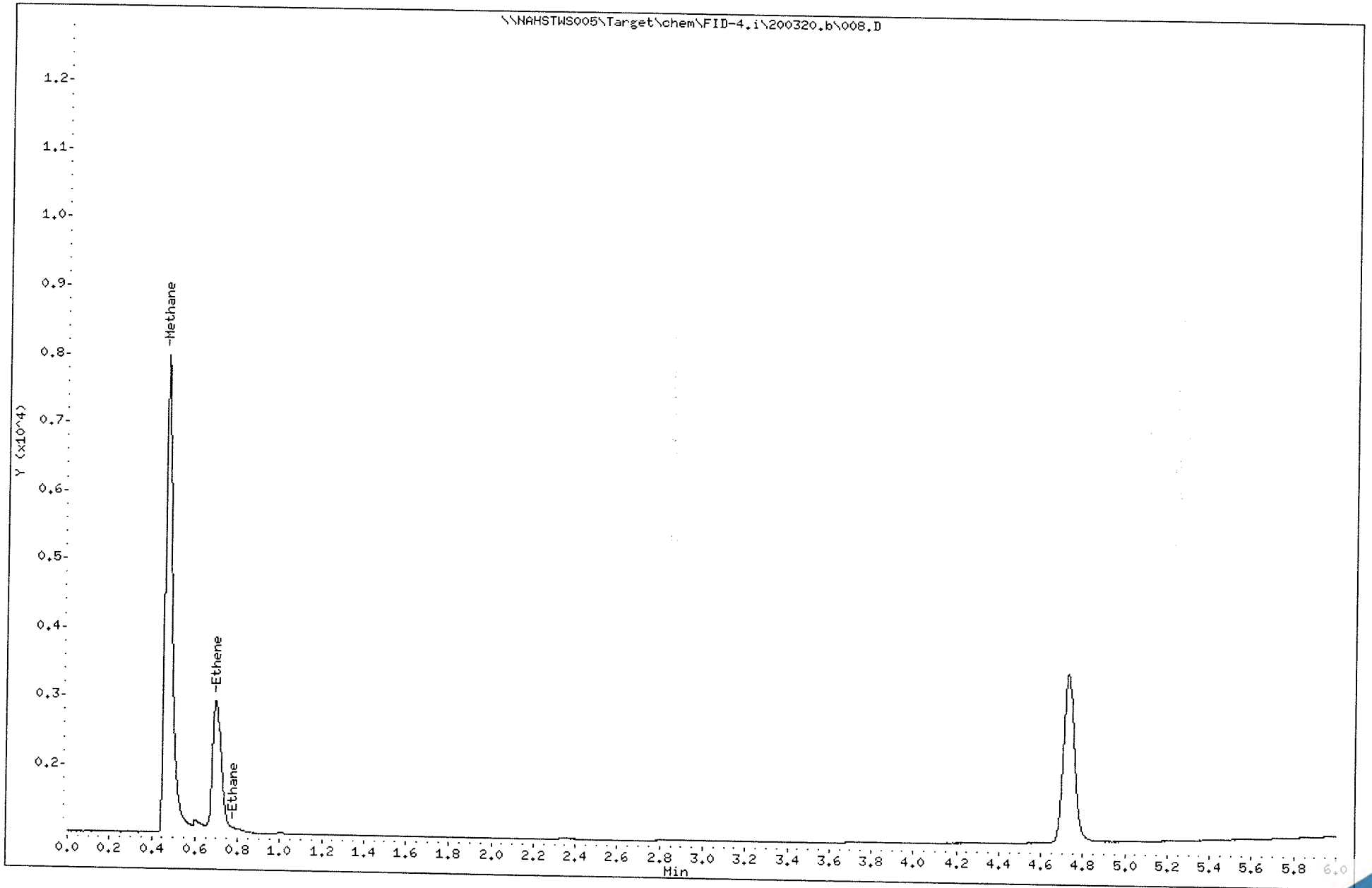
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\008.D
Date : 20-MAR-2020 10:36
Client ID: HS20030733-03
Sample Info: HS20030733-03;HS20030733-03

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\009.D
Report Date: 08-Apr-2020 11:57

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\009.D
Lab Smp Id: HS20030733-06 Client Smp ID: HS20030733-06
Inj Date : 20-MAR-2020 10:46
Operator : PL Inst ID: FID-4.i
Smp Info : HS20030733-06;HS20030733-06
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\RSKNI3.m
Meth Date : 08-Apr-2020 11:57 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: ALSHSW7104

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/L)
1 Methane	0.470	0.466	0.004	21522	22.0740	22.074 (M)
2 Ethene	0.696	0.706	-0.010	1321	2.25519	2.255 (M)
3 Ethane	0.803	0.786	0.017	267	0.37110	0.371 (aM)

QC Flag Legend

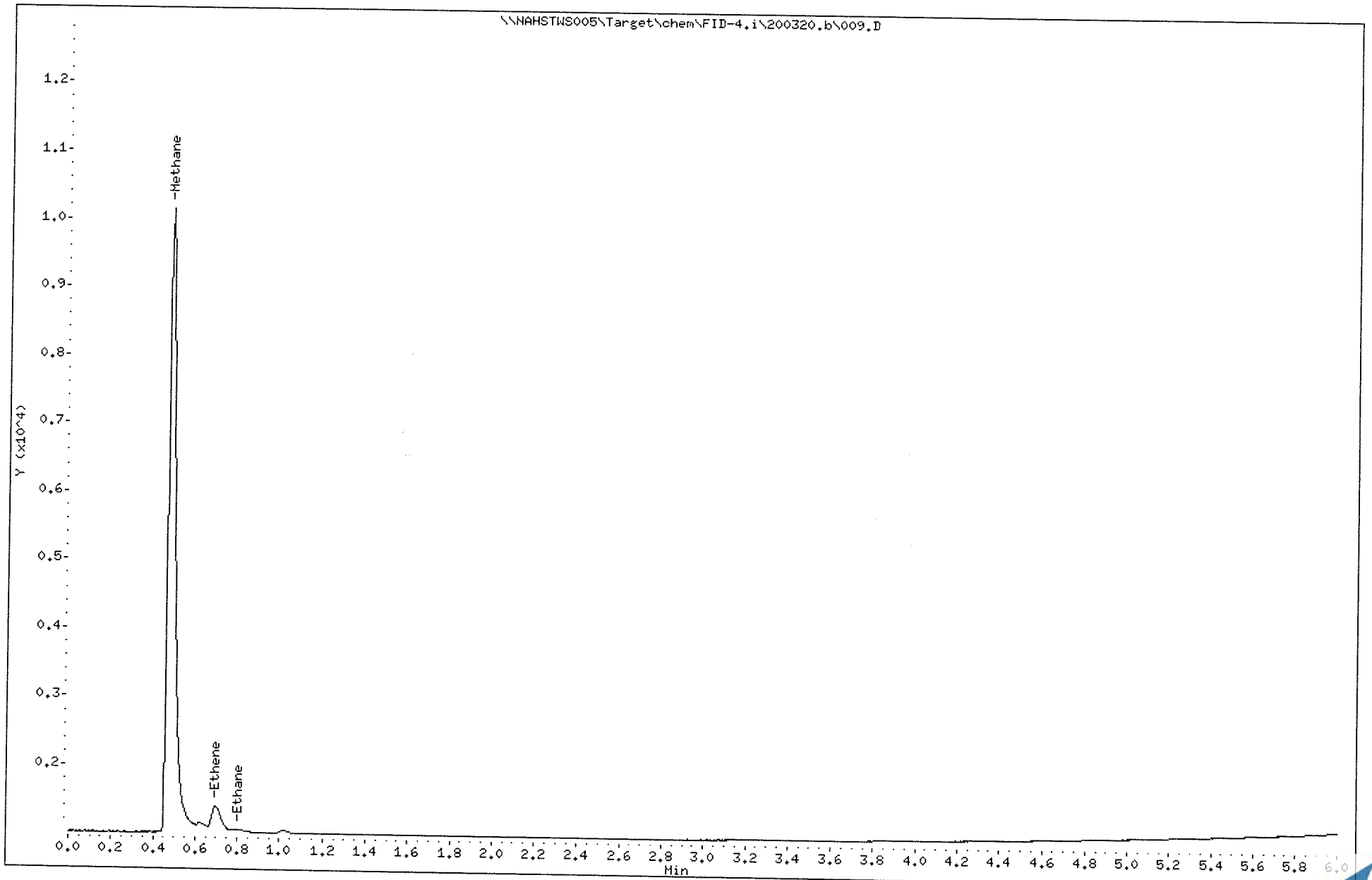
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\009.D
Date : 20-MAR-2020 10:46
Client ID: HS20030733-06
Sample Info: HS20030733-06;HS20030733-06

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\010.D
Report Date: 08-Apr-2020 11:57

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\010.D
Lab Smp Id: HS20030796-01 Client Smp ID: HS20030796-01
Inj Date : 20-MAR-2020 10:58
Operator : PL Inst ID: FID-4.i
Smp Info : HS20030796-01;HS20030796-01
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\RSKNI3.m
Meth Date : 08-Apr-2020 11:57 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: ALSHSW7104

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
1 Methane	0.466	0.466	0.000	287936	295.321	295.321(A)
2 Ethene	0.673	0.706	-0.033	2189	3.73702	3.737(M)
3 Ethane	0.803	0.786	0.017	656	0.91176	0.911(aM)

QC Flag Legend

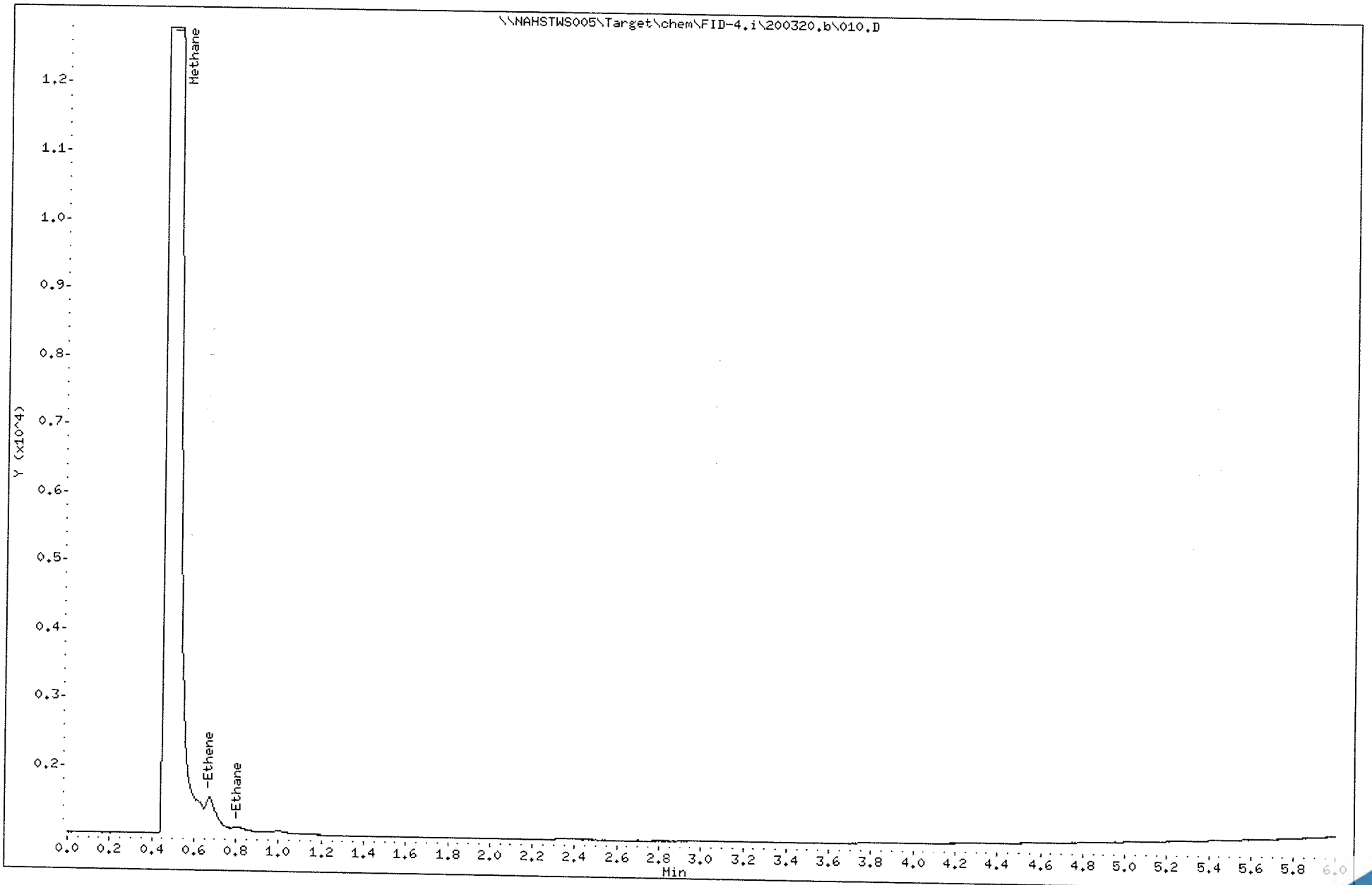
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\010.D
Date : 20-MAR-2020 10:58
Client ID: HS20030796-01
Sample Info: HS20030796-01;HS20030796-01

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\011.D
Report Date: 08-Apr-2020 11:57

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\011.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 20-MAR-2020 11:09
Operator : PL Inst ID: FID-4.i
Smp Info : RSK-CCV;RSK-CCV;2;4
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\200320.b\RSKNI3.m
Meth Date : 08-Apr-2020 11:57 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 11 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: ALSHSW7104

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

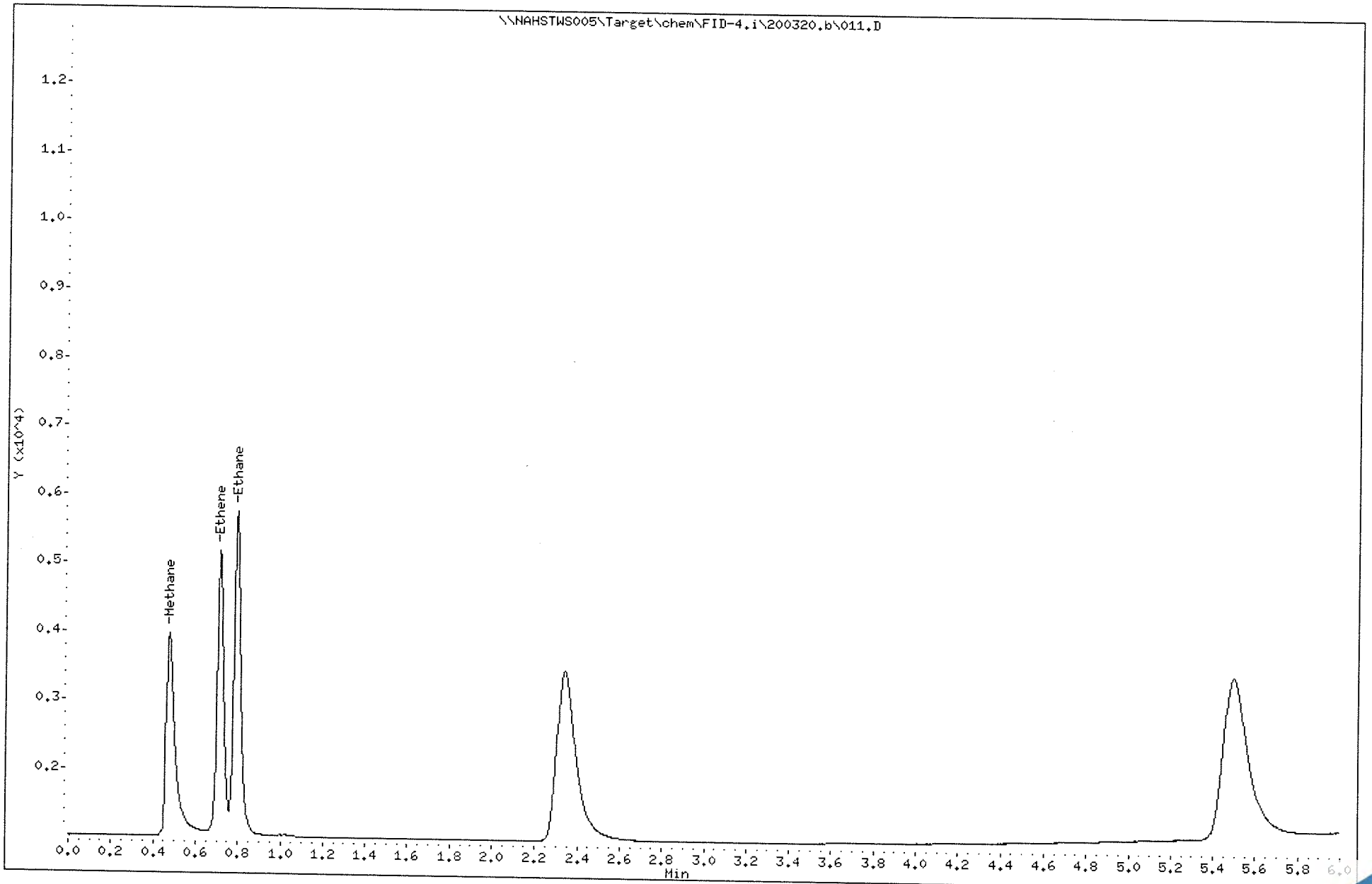
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	0.470	0.466	0.004	9143	9.64700	9.377
2 Ethene	0.710	0.706	0.004	9382	16.8500	16.016
3 Ethane	0.790	0.786	0.004	11416	18.0430	15.866

Data File: \\NAHSTWS005\Target\chem\FID-4.i\200320.b\011.D
Date : 20-MAR-2020 11:09
Client ID: RSK-CCV
Sample Info: RSK-CCV;RSK-CCV;2;4

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



HS20030733 Wet Chem Raw Data (IC)

ALS WO# HS20030733

Sequence: 032420
Last Update Operator: Janki.Desai

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	Processing Method	Volume	Status	Inject Time
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	STD2	NEW PRGM	Calibration	GA2	1.0000	2	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 7:57:16 PM -06:00
	STD3		Calibration	GA3	1.0000	3	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 8:15:24 PM -06:00
	STD4		Calibration	GA4	1.0000	4	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 8:33:31 PM -06:00
	STD5	NO2/PO4	Calibration	GA5	1.0000	5	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 8:51:36 PM -06:00
	STD6	MAX 10PPM	Calibration	GA6	1.0000	6	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 9:09:41 PM -06:00
	ICV	2970209123	Unknown	GA7	1.0000		Anions Prog	Anions Proce	5.0	Finished	2/5/2020 9:27:48 PM -06:00
	ICB		Unknown	GA8	1.0000		Anions Prog	Anions Proce	5.0	Finished	2/5/2020 9:45:53 PM -06:00
	CCV1		Unknown	BA3	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/25/2020 12:16:39 PM -05:00
	CCB		Unknown	BA4	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/25/2020 12:34:48 PM -05:00
	MBLK-03.24.20 W	2ND BATCH	Unknown	RA1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/25/2020 3:10:20 PM -05:00
	HS20030733-04	2ND BATCH 1	Unknown	GA3	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/25/2020 3:28:29 PM -05:00
	HS20030733-05DF10	2	Unknown	GA4	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/25/2020 3:46:35 PM -05:00
	HS20030733-07	3	Unknown	GA5	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/25/2020 4:04:43 PM -05:00
	HS20030733-08	4	Unknown	GA6	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/25/2020 4:22:48 PM -05:00
	HS20030733-03DF500	5	Unknown	GA7	500.0000		Anions Prog	Anions Proce	5.0	Finished	3/25/2020 4:40:59 PM -05:00
	HS20030733-06DF500	6	Unknown	GA8	500.0000		Anions Prog	Anions Proce	5.0	Finished	3/25/2020 4:59:04 PM -05:00
	CCV		Unknown	BA1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/25/2020 5:17:17 PM -05:00
	CCB		Unknown	BA2	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/25/2020 5:35:24 PM -05:00
	LCS-03.24.20		Unknown	RA2	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/25/2020 6:29:23 PM -05:00
	LCSD-03.24.20		Unknown	RA3	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/25/2020 6:47:29 PM -05:00
	CCV1		Unknown	BA3	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/25/2020 10:31:31 PM -05:00
	CCB		Unknown	BA4	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/25/2020 10:49:40 PM -05:00
	HS20030838-01	15	Unknown	RB5	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/25/2020 11:44:06 PM -05:00
	HS20030838-01MS		Unknown	RB7	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 12:20:19 AM -05:00
	HS20030838-01MSD		Unknown	RB8	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 12:38:26 AM -05:00
	CCV		Unknown	BA1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 2:08:55 AM -05:00
	CCB		Unknown	BA2	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 2:27:01 AM -05:00
	CCV1		Unknown	BA3	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 5:46:07 AM -05:00

Sequence: 032420
Last Update Operator: Janki.Desai

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	Processing Method	Volume	Status	Inject Time
	CCB		Unknown	BA4	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 6:04:12 AM -05:00
	CCV1		Unknown	BA3	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 12:42:34 PM -05:00
	CCB		Unknown	BA4	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 1:00:40 PM -05:00
	HS20030877-01DF500		Unknown	BB4	500.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 3:07:27 PM -05:00
	HS20030877-01MSDF500		Unknown	BB5	500.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 3:25:32 PM -05:00
	HS20030877-01MSDDF500		Unknown	BB6	500.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 3:43:37 PM -05:00
	CCV	8	Unknown	BA1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 7:01:57 PM -05:00
	CCB		Unknown	BA2	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/26/2020 7:20:03 PM -05:00

Sequence: 030820
Injection #6: STD6

Calibration

Peak No.	Peak Name	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	*Fluoride*	*Lin, WithOffset, 1/*	*Area*	*6*	*13.4314*	*0.99915*	*-0.0083*	*0.3414*	*0.0000*
2	Chloride	Lin, WithOffset, 1/	Area	6	2.2020	0.99998	-0.0141	0.2320	0.0000
3	Nitrite,N	Lin, WithOffset, 1/	Area	5	19.9747	0.99771	-0.0251	0.4962	0.0000
4	Bromide	Lin, WithOffset, 1/	Area	6	12.1436	0.99933	-0.0033	0.0991	0.0000
5	Sulfate	Lin, WithOffset, 1/	Area	6	4.2312	0.99991	-0.0170	0.1679	0.0000
6	Nitrate	Lin, WithOffset, 1/	Area	6	2.3081	0.99997	-0.0076	0.5843	0.0000
7	Chlorate	Lin, WithOffset, 1/	Area	6	9.7729	0.99945	0.0017	0.0949	0.0000
8	Phosphate	Lin, WithOffset, 1/	Area	5	18.6678	0.99857	-0.0214	0.2119	0.0000
Maximum					**19.9747**	0.99998			
Minimum					2.2020	**0.99771**			

Sequence: 030820
Injection #6: STD6

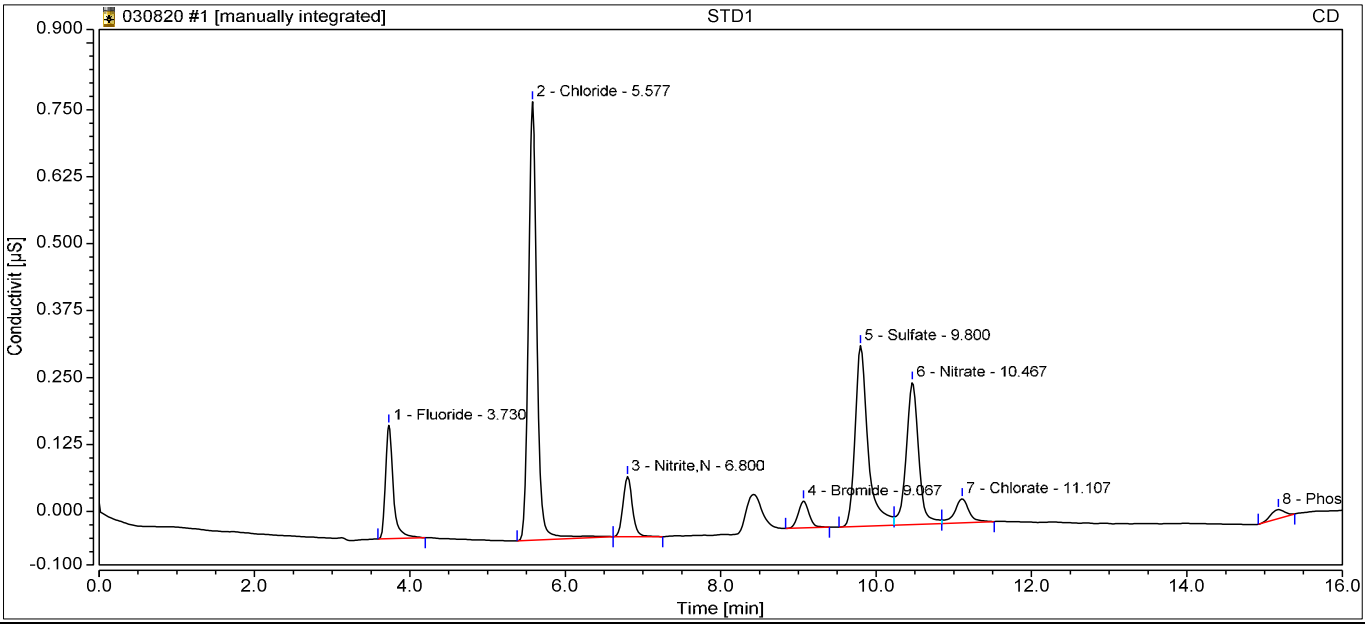
Calibration

Peak No.	Peak Name	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	*Fluoride*	*Lin, WithOffset, 1/*	*Area*	*6*	*13.4314*	*0.99915*	*-0.0083*	*0.3414*	*0.0000*
2	Chloride	Lin, WithOffset, 1/	Area	6	2.2020	0.99998	-0.0141	0.2320	0.0000
3	Nitrite,N	Lin, WithOffset, 1/	Area	5	19.9747	0.99771	-0.0251	0.4962	0.0000
4	Bromide	Lin, WithOffset, 1/	Area	6	12.1436	0.99933	-0.0033	0.0991	0.0000
5	Sulfate	Lin, WithOffset, 1/	Area	6	4.2312	0.99991	-0.0170	0.1679	0.0000
6	Nitrate	Lin, WithOffset, 1/	Area	6	2.3081	0.99997	-0.0076	0.5843	0.0000
7	Chlorate	Lin, WithOffset, 1/	Area	6	9.7729	0.99945	0.0017	0.0949	0.0000
8	Phosphate	Lin, WithOffset, 1/	Area	5	18.6678	0.99857	-0.0214	0.2119	0.0000
Maximum					**19.9747**	0.99998			
Minimum					2.2020	**0.99771**			

1 STD1

Sample Name:	**STD1**	*Injection Volume:*	**5.00**
Vial Number:	**GA1**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 19:39**	*Sample Weight:*	**1.0000**

Run Time:



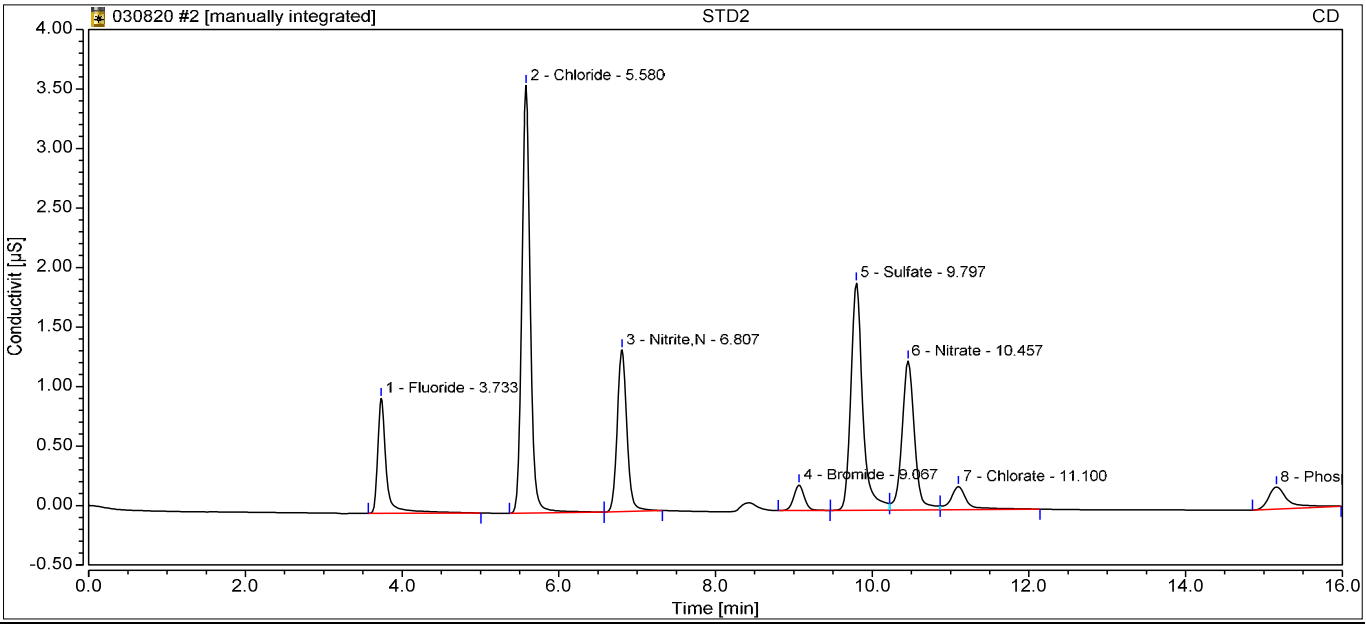
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.024	0.0955	0.0955	1.0000
2	5.58	Chloride	BMB	0.103	0.5065	0.5065	1.0000
3	6.80	Nitrite,N	BMB	0.016	0.0821	0.0821	1.0000
4	9.07	Bromide	BMB	0.008	0.1156	0.1156	1.0000
5	9.80	Sulfate	BM	0.065	0.4885	0.4885	1.0000
6	10.47	Nitrate	M	0.049	0.0974	0.0974	1.0000
7	11.11	Chlorate	MB	0.010	0.0834	0.0834	1.0000
8	15.18	Phosphate	BMB*	0.003	0.1173	0.1173	1.0000
Total:			**0.000**	**0.279**		**1.59**	

2 STD2

Sample Name:	**STD2**	*Injection Volume:*	**5.00**
Vial Number:	**GA2**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 19:57**	*Sample Weight:*	**1.0000**

Run Time:



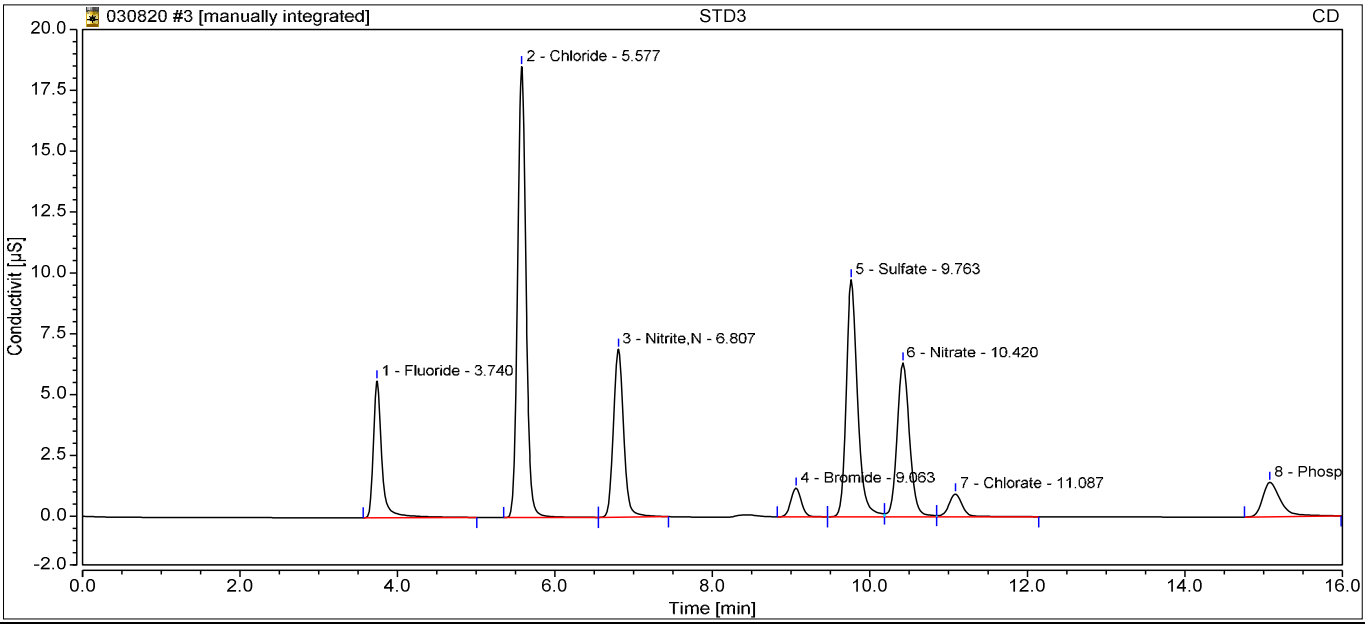
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.123	0.3833	0.3833	1.0000
2	5.58	Chloride	BMb*	0.449	1.9963	1.9963	1.0000
3	6.81	Nitrite,N	bMB*	0.194	0.4423	0.4423	1.0000
4	9.07	Bromide	BMB	0.034	0.3722	0.3722	1.0000
5	9.80	Sulfate	BM	0.335	2.0973	2.0973	1.0000
6	10.46	Nitrate	M	0.232	0.4103	0.4103	1.0000
7	11.10	Chlorate	MB	0.047	0.4759	0.4759	1.0000
8	15.16	Phosphate	BMB	0.053	0.3518	0.3518	1.0000
Total:			**0.000**	**1.467**		**6.53**	

3 STD3

Sample Name:	**STD3**	*Injection Volume:*	**5.00**
Vial Number:	**GA3**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 20:15**	*Sample Weight:*	**1.0000**

Run Time:



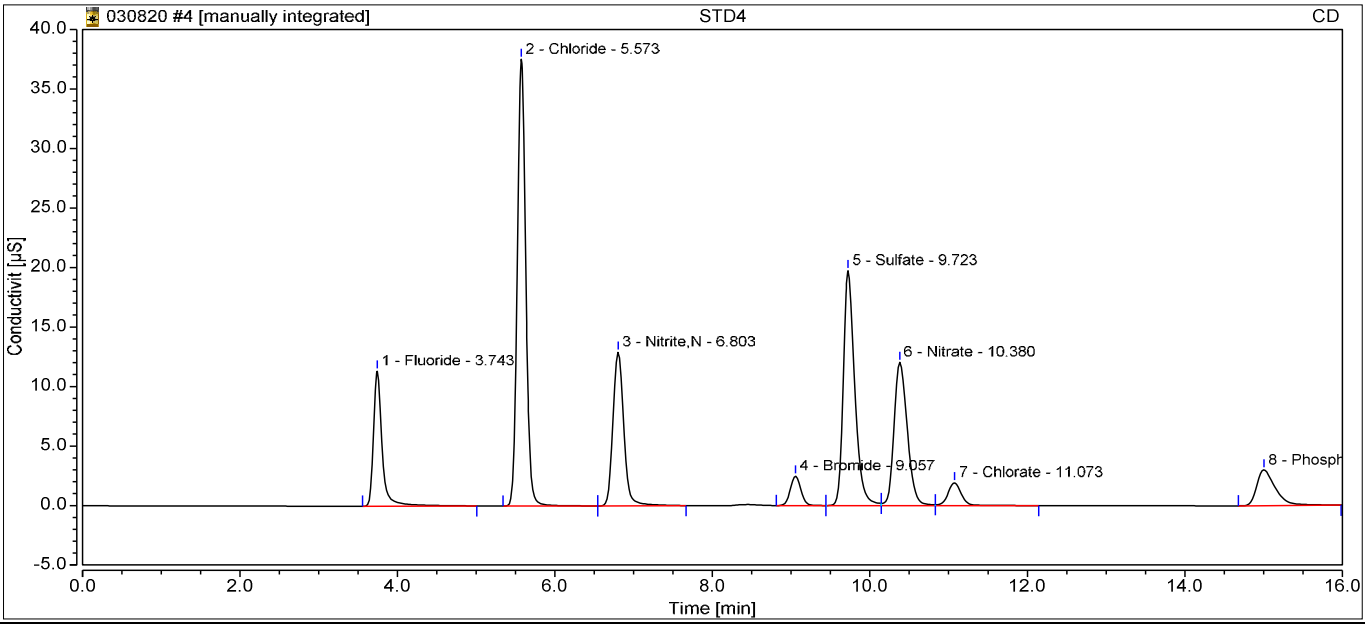
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.701	2.0769	2.0769	1.0000
2	5.58	Chloride	BMb*	2.284	9.9073	9.9073	1.0000
3	6.81	Nitrite,N	bMB*	1.029	2.1245	2.1245	1.0000
4	9.06	Bromide	BM	0.182	1.8657	1.8657	1.0000
5	9.76	Sulfate	M	1.624	9.7730	9.7730	1.0000
6	10.42	Nitrate	M	1.160	1.9980	1.9980	1.0000
7	11.09	Chlorate	MB	0.189	1.9689	1.9689	1.0000
8	15.08	Phosphate	BMB	0.374	1.8664	1.8664	1.0000
Total:			**0.000**	**7.542**		**31.58**	

4 STD4

Sample Name:	**STD4**	*Injection Volume:*	**5.00**
Vial Number:	**GA4**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 20:33**	*Sample Weight:*	**1.0000**

Run Time:



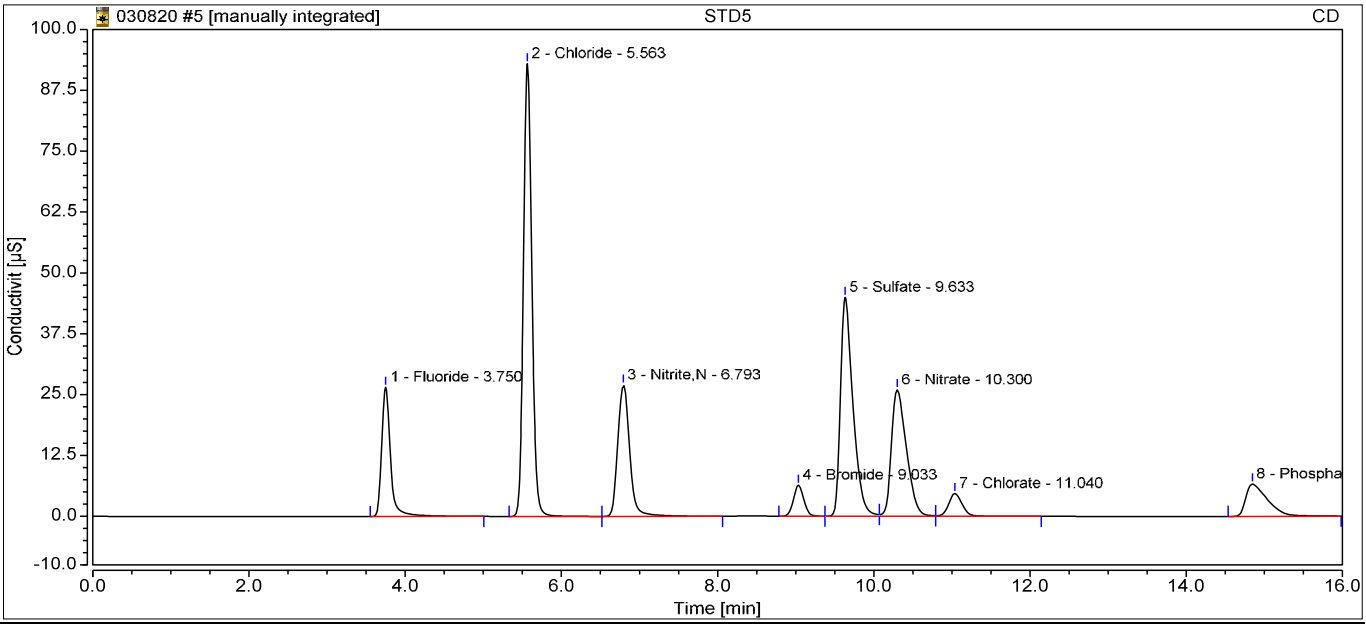
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.428	4.2080	4.2080	1.0000
2	5.57	Chloride	BMb*	4.627	20.0069	20.0069	1.0000
3	6.80	Nitrite,N	bMB*	2.046	4.1745	4.1745	1.0000
4	9.06	Bromide	BM	0.382	3.8871	3.8871	1.0000
5	9.72	Sulfate	M	3.337	19.9713	19.9713	1.0000
6	10.38	Nitrate	M	2.343	4.0228	4.0228	1.0000
7	11.07	Chlorate	MB	0.380	3.9830	3.9830	1.0000
8	15.00	Phosphate	BMB	0.824	3.9874	3.9874	1.0000
Total:			**0.000**	**15.366**		**64.24**	

5 STD5

Sample Name:	**STD5**	*Injection Volume:*	**5.00**
Vial Number:	**GA5**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 20:51**	*Sample Weight:*	**1.0000**

Run Time:



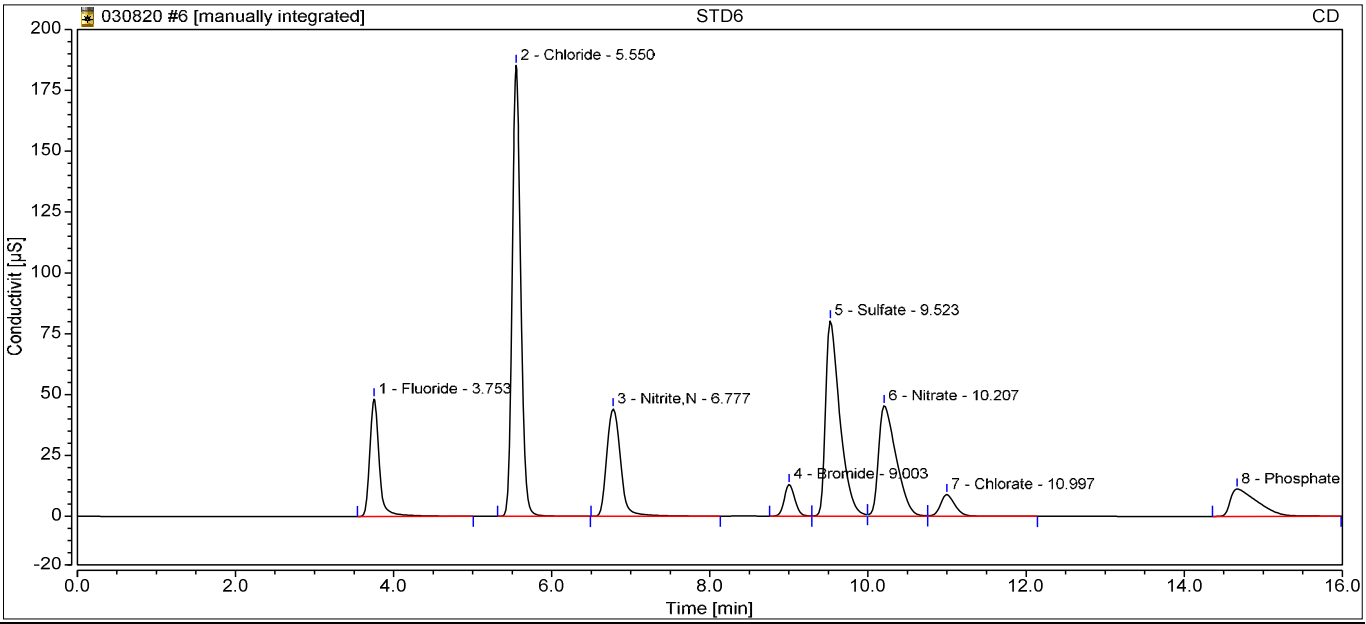
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	3.472	10.1940	10.1940	1.0000
2	5.56	Chloride	BMB	11.516	49.7057	49.7057	1.0000
3	6.79	Nitrite,N	BMB*	4.776	9.6766	9.6766	1.0000
4	9.03	Bromide	BM	0.981	9.9279	9.9279	1.0000
5	9.63	Sulfate	M	8.325	49.6811	49.6811	1.0000
6	10.30	Nitrate	M	5.799	9.9382	9.9382	1.0000
7	11.04	Chlorate	MB	0.944	9.9252	9.9252	1.0000
8	14.85	Phosphate	BMB	2.135	10.1771	10.1771	1.0000
Total:			**0.000**	**37.949**		**159.23**	

6 STD6

Sample Name:	**STD6**	*Injection Volume:*	**5.00**
Vial Number:	**GA6**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 21:09**	*Sample Weight:*	**1.0000**

Run Time:



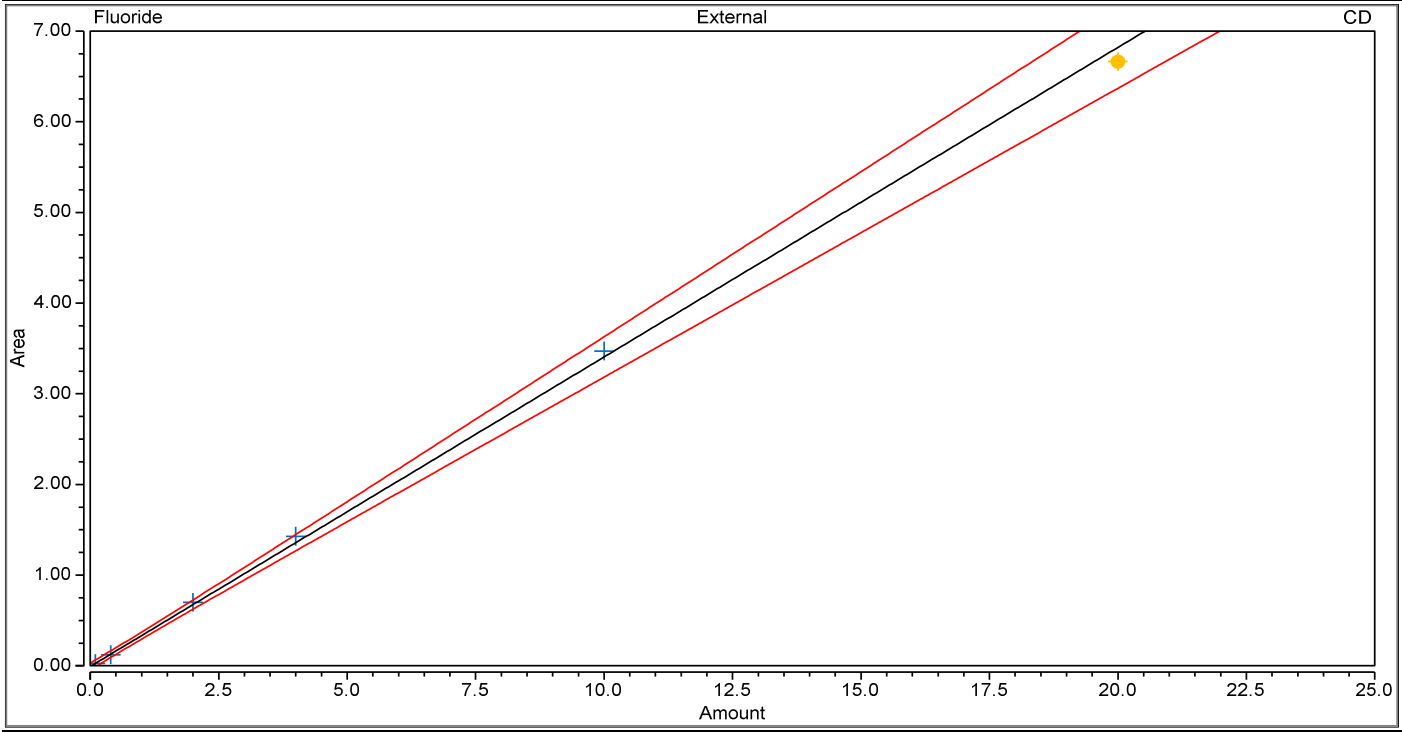
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	6.664	19.5424	19.5424	1.0000
2	5.55	Chloride	BMB	23.270	100.3774	100.3774	1.0000
3	6.78	Nitrite,N	BMB*	8.893	17.9725	17.9725	1.0000
4	9.00	Bromide	BM	2.012	20.3316	20.3316	1.0000
5	9.52	Sulfate	M	16.857	100.4888	100.4888	1.0000
6	10.21	Nitrate	M	11.698	20.0333	20.0333	1.0000
7	11.00	Chlorate	MB	1.906	20.0635	20.0635	1.0000
8	14.67	Phosphate	BMB	4.450	21.0985	21.0985	1.0000
Total:			**0.000**	**75.750**		**319.91**	

Calibration

Calibration Details	Fluoride		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0083
Evaluation Type	Area	*Slope (C1)*	0.3414
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9991

Calibration Plot **Fluoride**



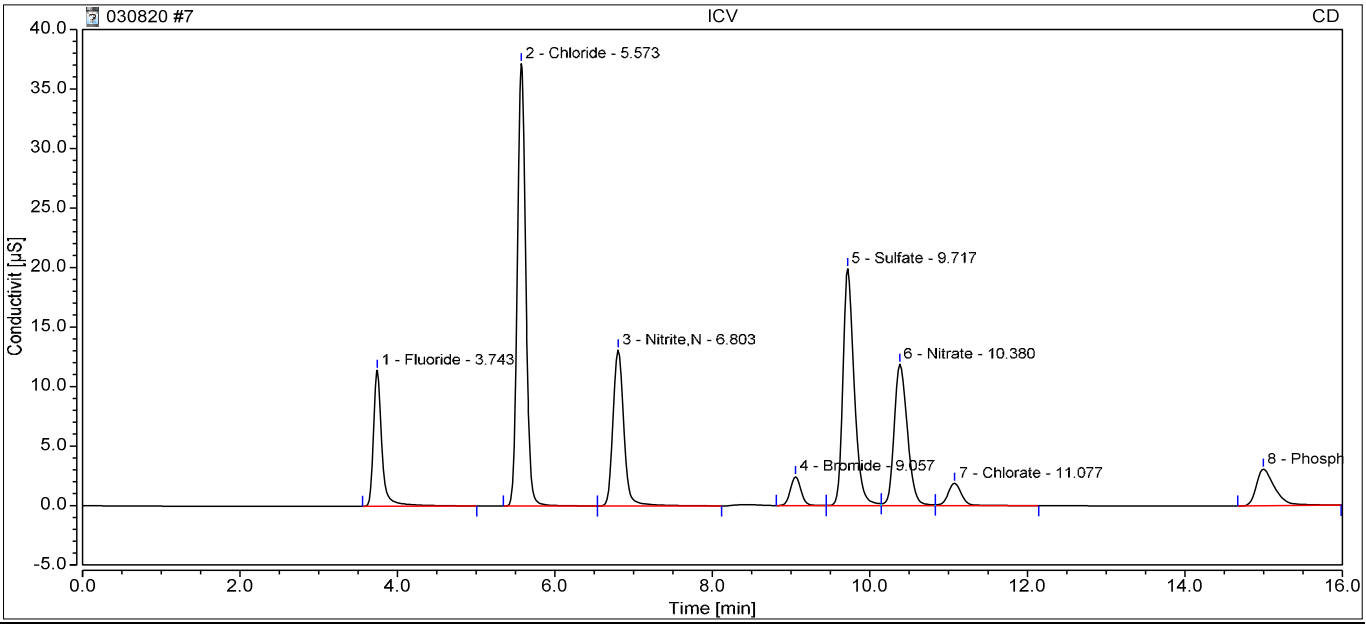
Calibration Results **Fluoride**

No.	Injection Name	Calibration Level	X Value CD Fluoride	Y Value CD Fluoride	Y Value CD Fluoride	Area µS*min CD Fluoride	Height µS CD Fluoride
1	STD1	1	0.1000	0.0243	0.0243	0.024	0.212
2	STD2	2	0.4000	0.1226	0.1226	0.123	0.964
3	STD3	3	2.0000	0.7008	0.7008	0.701	5.614
4	STD4	4	4.0000	1.4284	1.4284	1.428	11.345
5	STD5	5	10.0000	3.4723	3.4723	3.472	26.547
6	STD6	6	20.0000	6.6641	6.6641	6.664	48.233

7 ICV

Sample Name:	**ICV**	*Injection Volume:*	**5.00**
Vial Number:	**GA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 21:27**	*Sample Weight:*	**1.0000**

Run Time:



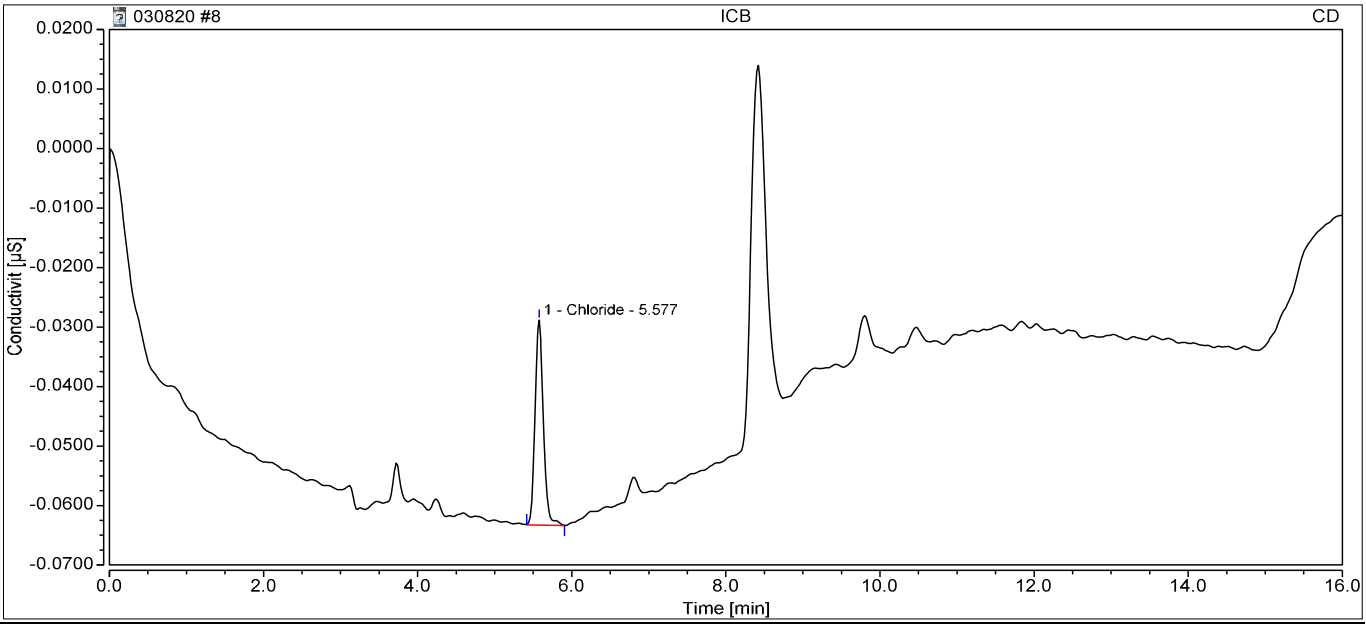
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.412	4.1607	4.1607	1.0000
2	5.57	Chloride	BMB	4.570	19.7627	19.7627	1.0000
3	6.80	Nitrite,N	BMB	2.081	4.2442	4.2442	1.0000
4	9.06	Bromide	BM	0.374	3.8104	3.8104	1.0000
5	9.72	Sulfate	M	3.327	19.9126	19.9126	1.0000
6	10.38	Nitrate	M	2.299	3.9478	3.9478	1.0000
7	11.08	Chlorate	MB	0.379	3.9799	3.9799	1.0000
8	15.00	Phosphate	BMB	0.835	4.0417	4.0417	1.0000
Total:			**0.000**	**15.278**		**63.86**	

8 ICB

Sample Name:	**ICB**	*Injection Volume:*	**5.00**
Vial Number:	**GA8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 21:45**	*Sample Weight:*	**1.0000**

Run Time:



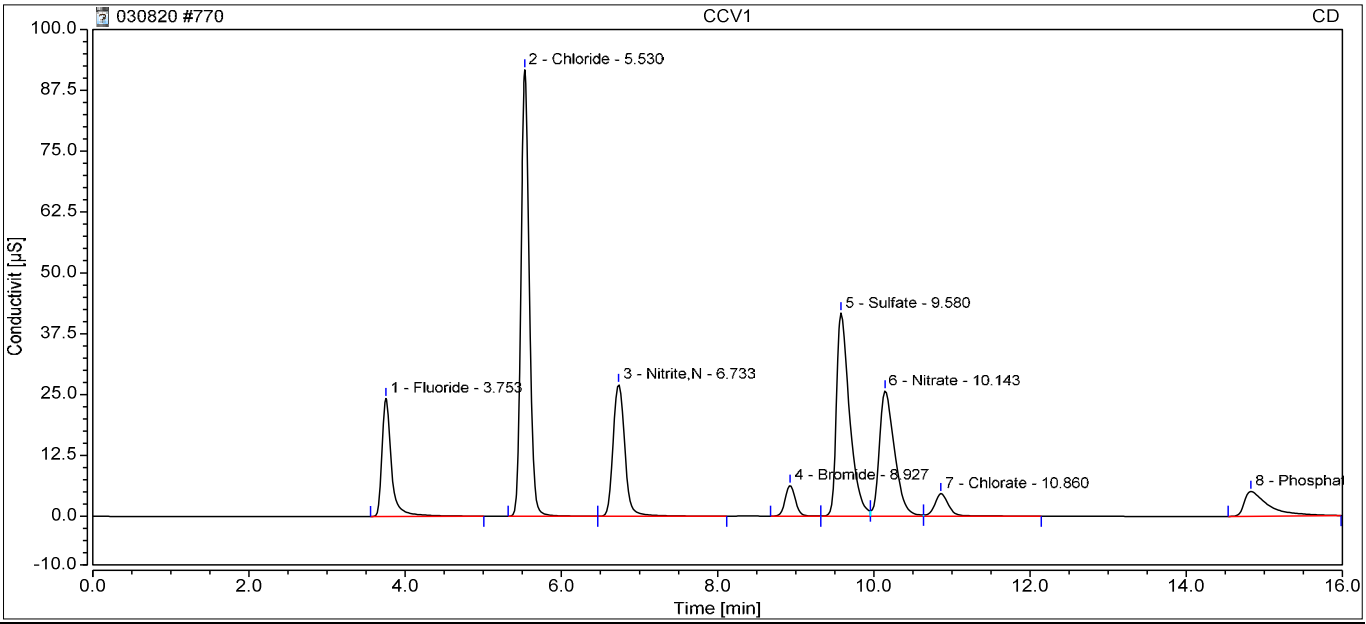
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.58	Chloride	BMB	0.004	0.0794	0.0794	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.004**		**0.08**	

770 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**RC1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/17/2020 17:45**	*Sample Weight:*	**1.0000**

Run Time:



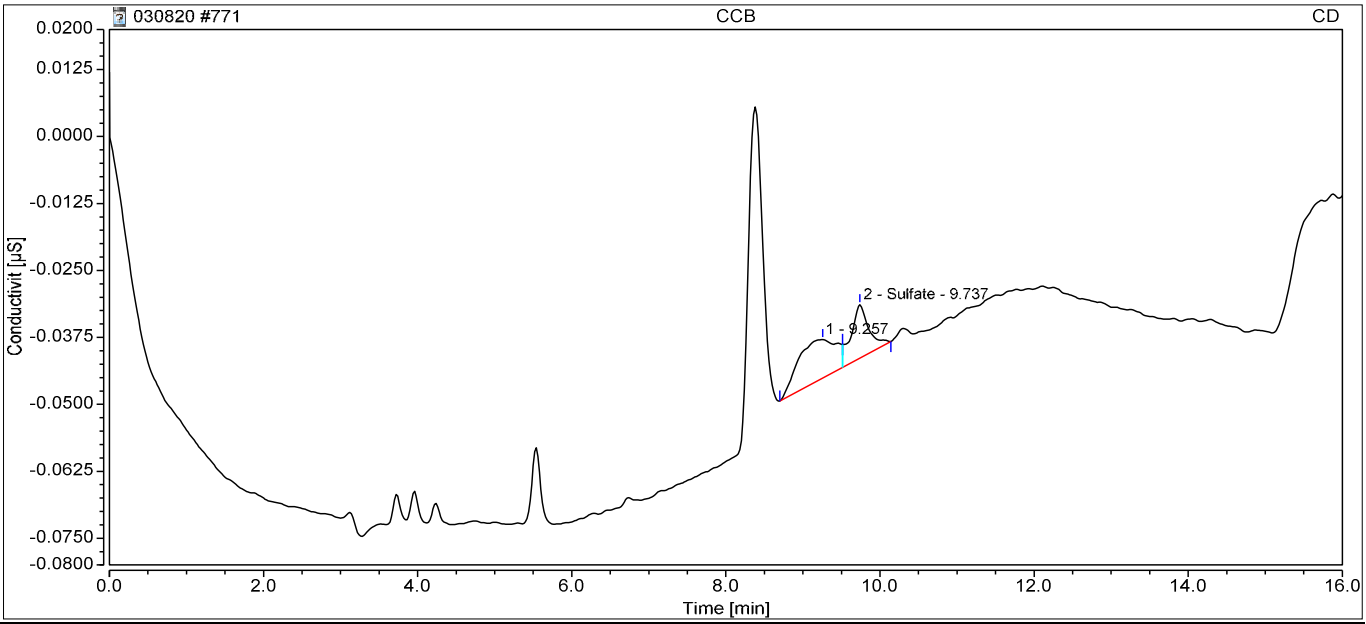
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	3.424	10.0512	10.0512	1.0000
2	5.53	Chloride	BMB	11.293	48.7450	48.7450	1.0000
3	6.73	Nitrite,N	BMB	4.741	9.6056	9.6056	1.0000
4	8.93	Bromide	BM	0.961	9.7308	9.7308	1.0000
5	9.58	Sulfate	M	8.125	48.4895	48.4895	1.0000
6	10.14	Nitrate	M	5.794	9.9297	9.9297	1.0000
7	10.86	Chlorate	MB	0.969	10.1946	10.1946	1.0000
8	14.83	Phosphate	BMB	1.846	8.8102	8.8102	1.0000
Total:			**0.000**	**37.154**		**155.56**	

771 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**RE2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/17/2020 18:03**	*Sample Weight:*	**1.0000**

Run Time:



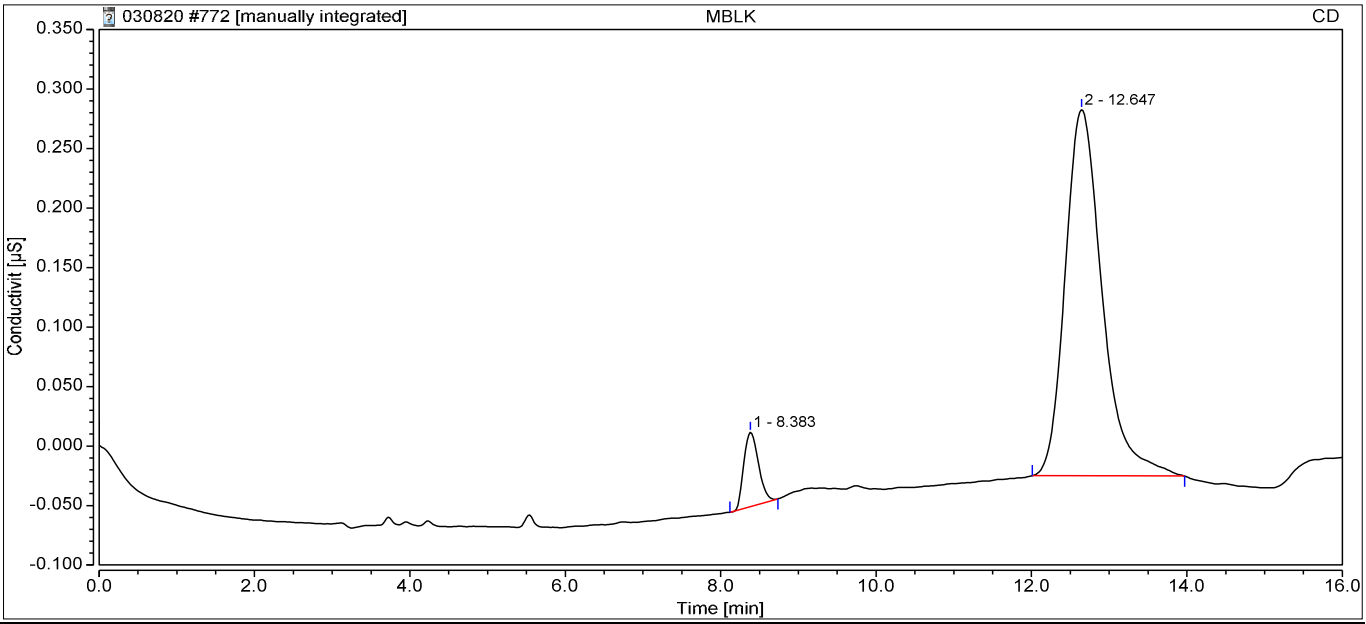
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
2	9.74	Sulfate	MB	0.003	0.1173	0.1173	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.003**		**0.12**	

772 MBLK

Sample Name:	**MBLK**	*Injection Volume:*	**5.00**
Vial Number:	**RA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/17/2020 19:51**	*Sample Weight:*	**1.0000**

Run Time:



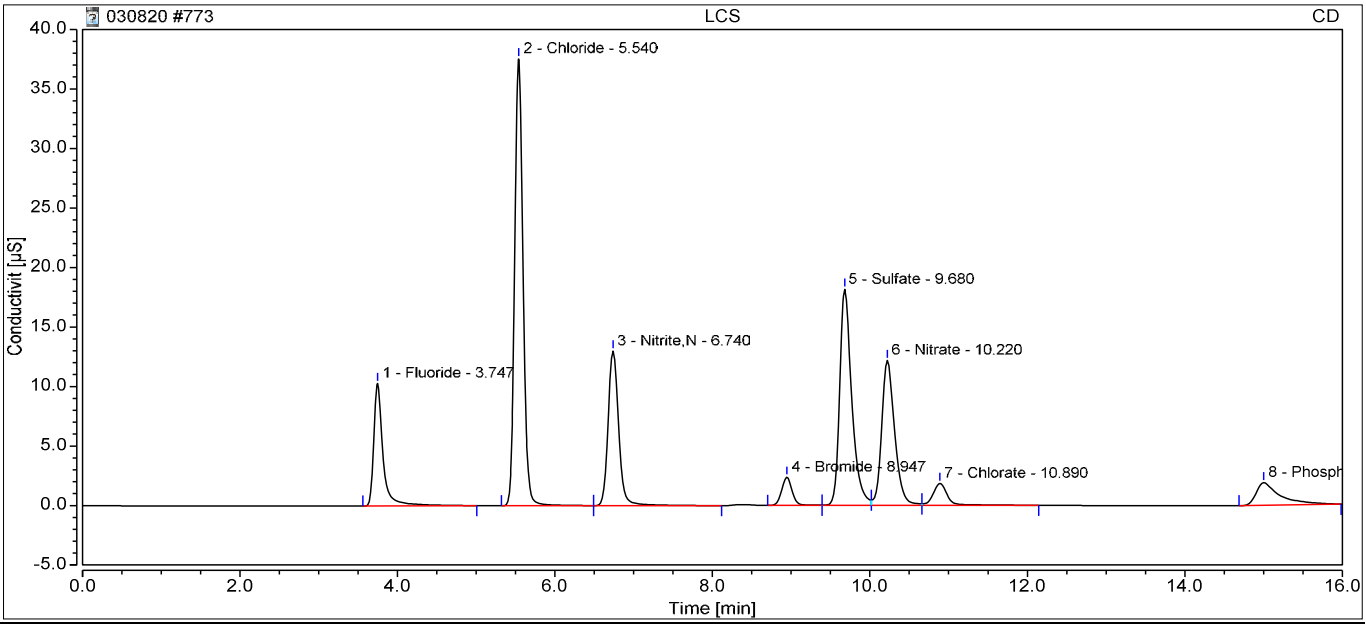
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

773 LCS

Sample Name:	**LCS**	*Injection Volume:*	**5.00**
Vial Number:	**RA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/17/2020 20:10**	*Sample Weight:*	**1.0000**

Run Time:



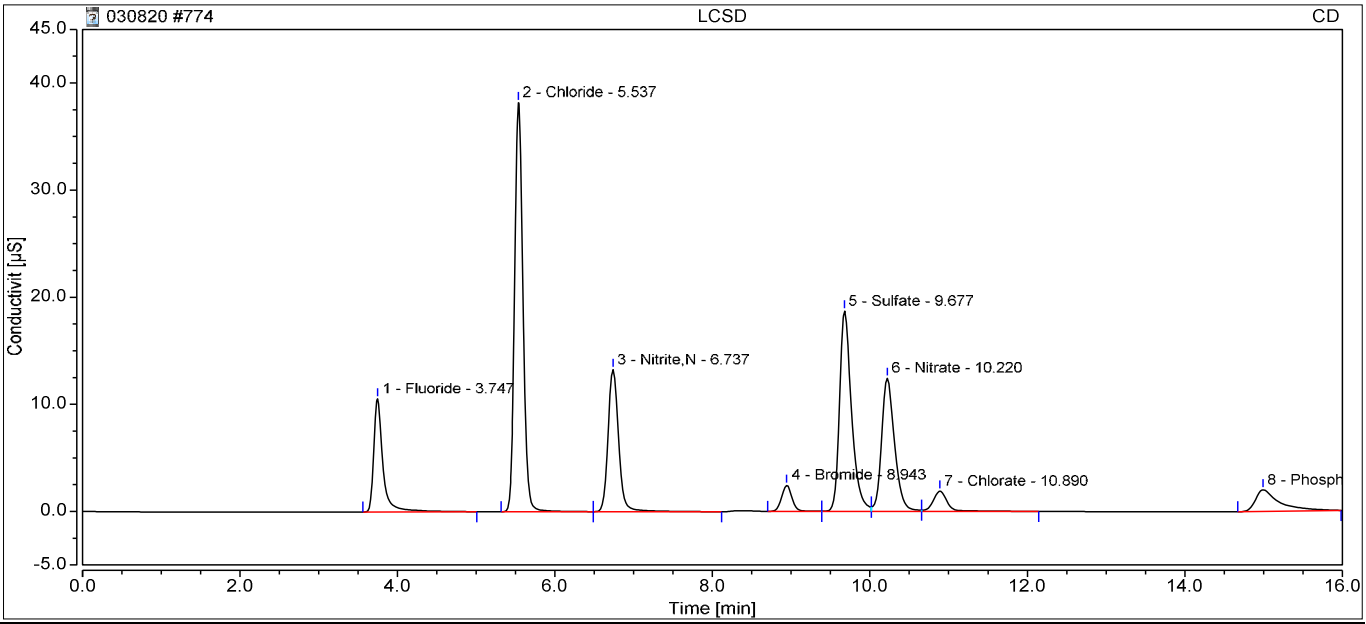
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	1.396	4.1118	4.1118	1.0000
2	5.54	Chloride	BMB	4.581	19.8096	19.8096	1.0000
3	6.74	Nitrite,N	BMB	2.030	4.1422	4.1422	1.0000
4	8.95	Bromide	BM	0.369	3.7597	3.7597	1.0000
5	9.68	Sulfate	M	3.233	19.3535	19.3535	1.0000
6	10.22	Nitrate	M	2.336	4.0103	4.0103	1.0000
7	10.89	Chlorate	MB	0.396	4.1557	4.1557	1.0000
8	15.00	Phosphate	BMB	0.677	3.2954	3.2954	1.0000
Total:			**0.000**	**15.018**		**62.64**	

774 LCSD

Sample Name:	**LCSD**	*Injection Volume:*	**5.00**
Vial Number:	**RA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/17/2020 20:28**	*Sample Weight:*	**1.0000**

Run Time:



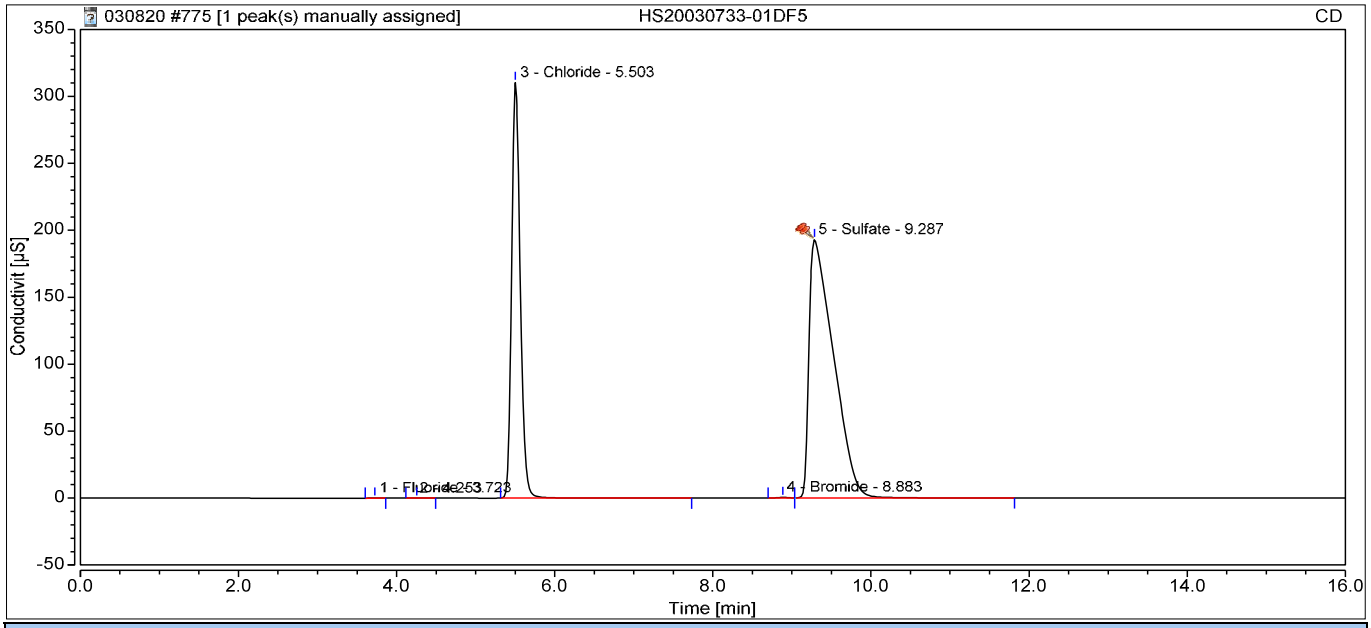
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	1.428	4.2062	4.2062	1.0000
2	5.54	Chloride	BMB	4.661	20.1541	20.1541	1.0000
3	6.74	Nitrite,N	BMB	2.079	4.2400	4.2400	1.0000
4	8.94	Bromide	BM	0.375	3.8143	3.8143	1.0000
5	9.68	Sulfate	M	3.317	19.8578	19.8578	1.0000
6	10.22	Nitrate	M	2.385	4.0940	4.0940	1.0000
7	10.89	Chlorate	MB	0.402	4.2205	4.2205	1.0000
8	14.99	Phosphate	BMB	0.710	3.4528	3.4528	1.0000
Total:			**0.000**	**15.357**		**64.04**	

775 HS20030733-01DF5

Sample Name:	**HS20030733-01DF5**	*Injection Volume:*	**5.00**
Vial Number:	**RA6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**5.0000**
Recording Time:	**03/17/2020 20:46**	*Sample Weight:*	**1.0000**

Run Time:



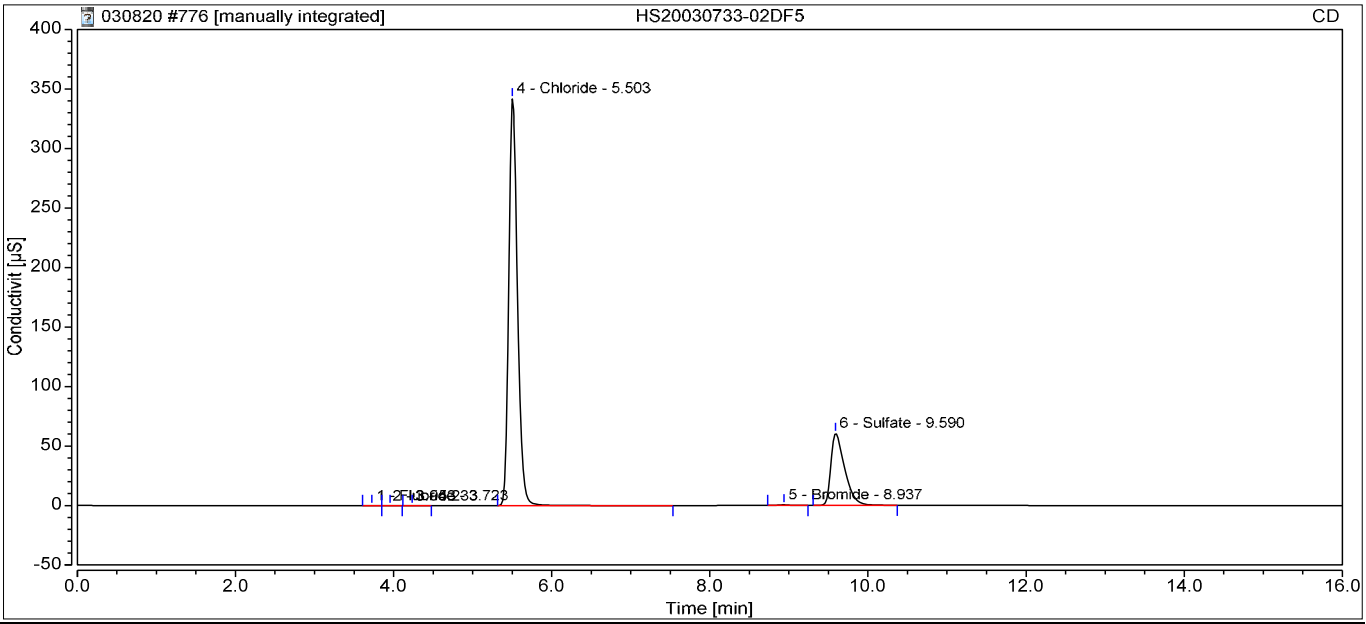
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.006	0.0413	0.2066	5.0000
3	5.50	Chloride	BMB	39.545	170.5374	852.6870	5.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	5.0000
4	8.88	Bromide	BM	0.060	0.6380	3.1900	5.0000
5	9.29	Sulfate	MB^	69.122	411.7396	2058.6981	5.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	5.0000
Total:			**0.000**	**108.732**		**2914.78**	

776 HS20030733-02DF5

Sample Name:	**HS20030733-02DF5**	*Injection Volume:*	**5.00**
Vial Number:	**RA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**5.0000**
Recording Time:	**03/17/2020 21:04**	*Sample Weight:*	**1.0000**

Run Time:



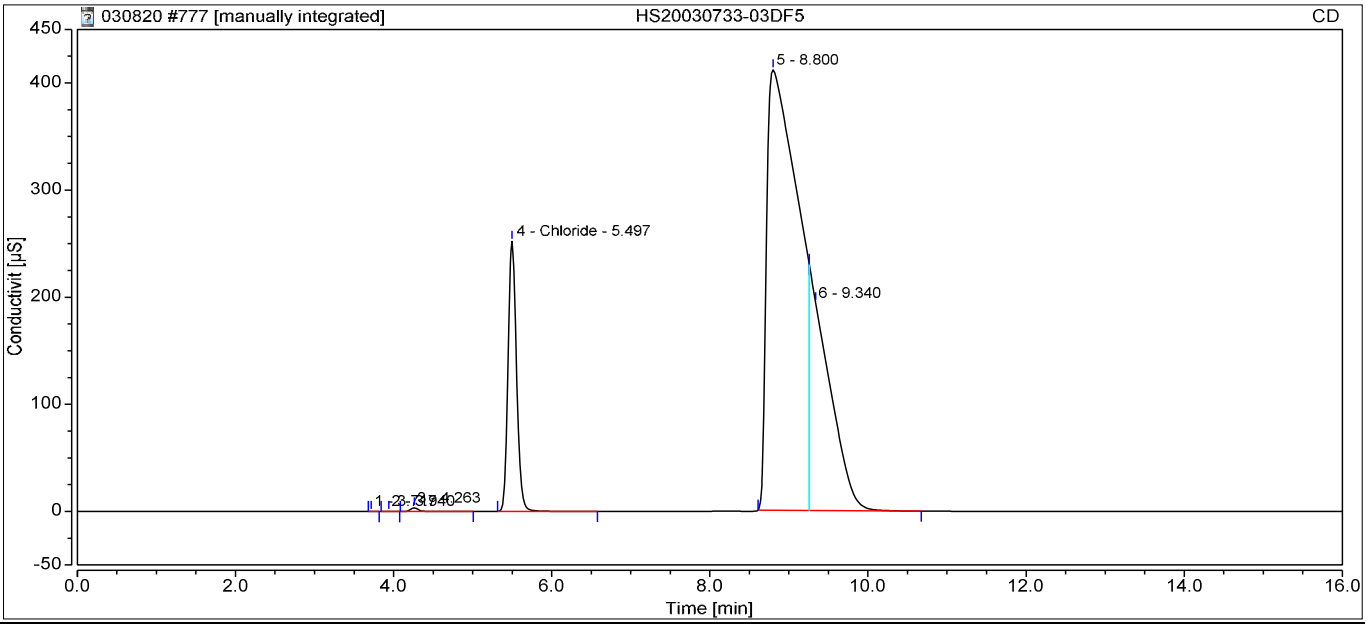
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.004	0.0365	0.1827	5.0000
4	5.50	Chloride	BMB	44.096	190.1578	950.7889	5.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	5.0000
5	8.94	Bromide	BMB	0.076	0.7993	3.9964	5.0000
6	9.59	Sulfate	BMB*	12.333	73.5468	367.7339	5.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	5.0000
Total:			**0.000**	**56.509**		**1322.70**	

777 HS20030733-03DF5

Sample Name:	**HS20030733-03DF5**	*Injection Volume:*	**5.00**
Vial Number:	**RA8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**5.0000**
Recording Time:	**03/17/2020 21:22**	*Sample Weight:*	**1.0000**

Run Time:



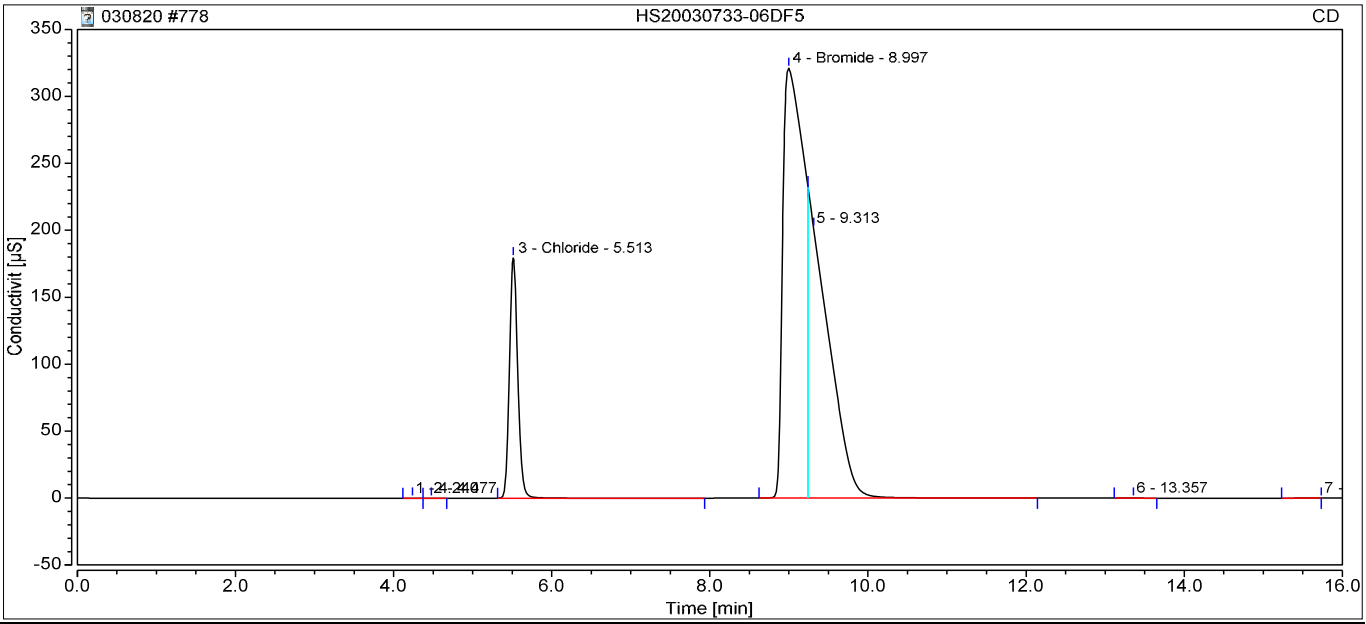
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	5.0000
4	5.50	Chloride	BMB	31.557	136.1013	680.5064	5.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	5.0000
Total:			**0.000**	**31.557**		**680.51**	

778 HS20030733-06DF5

Sample Name:	**HS20030733-06DF5**	*Injection Volume:*	**5.00**
Vial Number:	**RB1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**5.0000**
Recording Time:	**03/17/2020 21:40**	*Sample Weight:*	**1.0000**

Run Time:



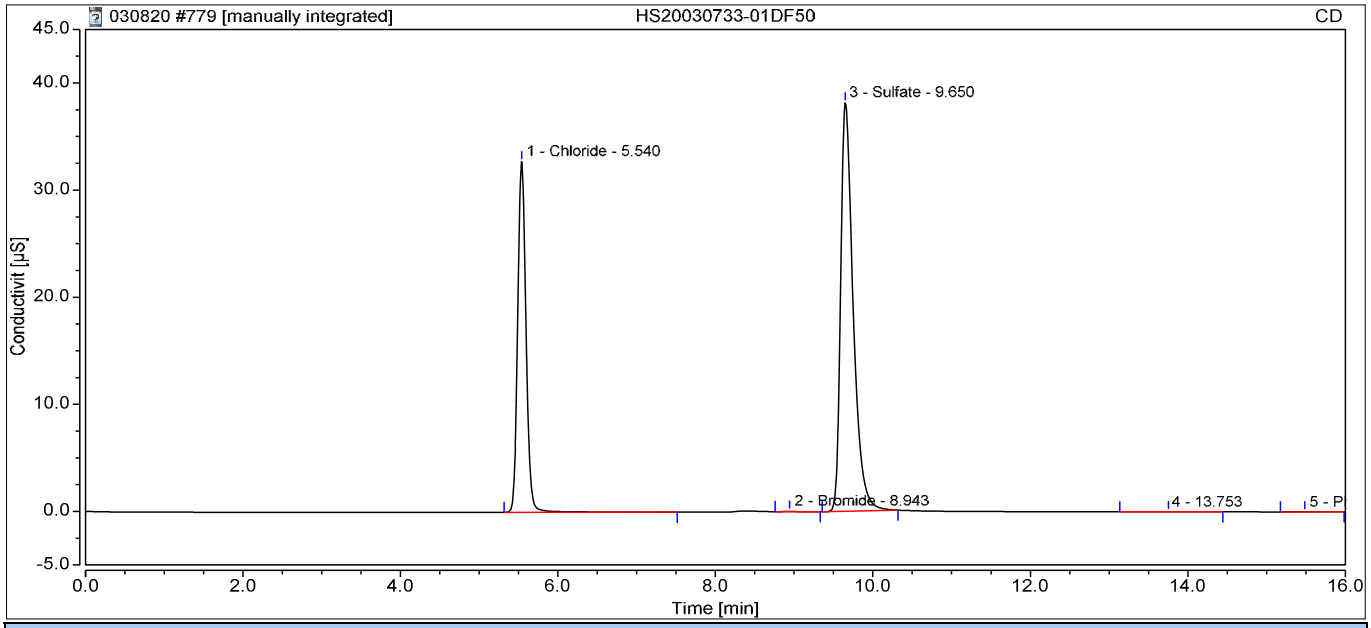
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	5.0000
3	5.51	Chloride	BMB	22.169	95.6290	478.1449	5.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	5.0000
4	9.00	Bromide	BM	96.240	970.9132	4854.5660	5.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	5.0000
Total:			**0.000**	**118.409**		**5332.71**	

779 HS20030733-01DF50

Sample Name:	**HS20030733-01DF50**	*Injection Volume:*	**5.00**
Vial Number:	**RB2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**50.0000**
Recording Time:	**03/17/2020 21:58**	*Sample Weight:*	**1.0000**

Run Time:



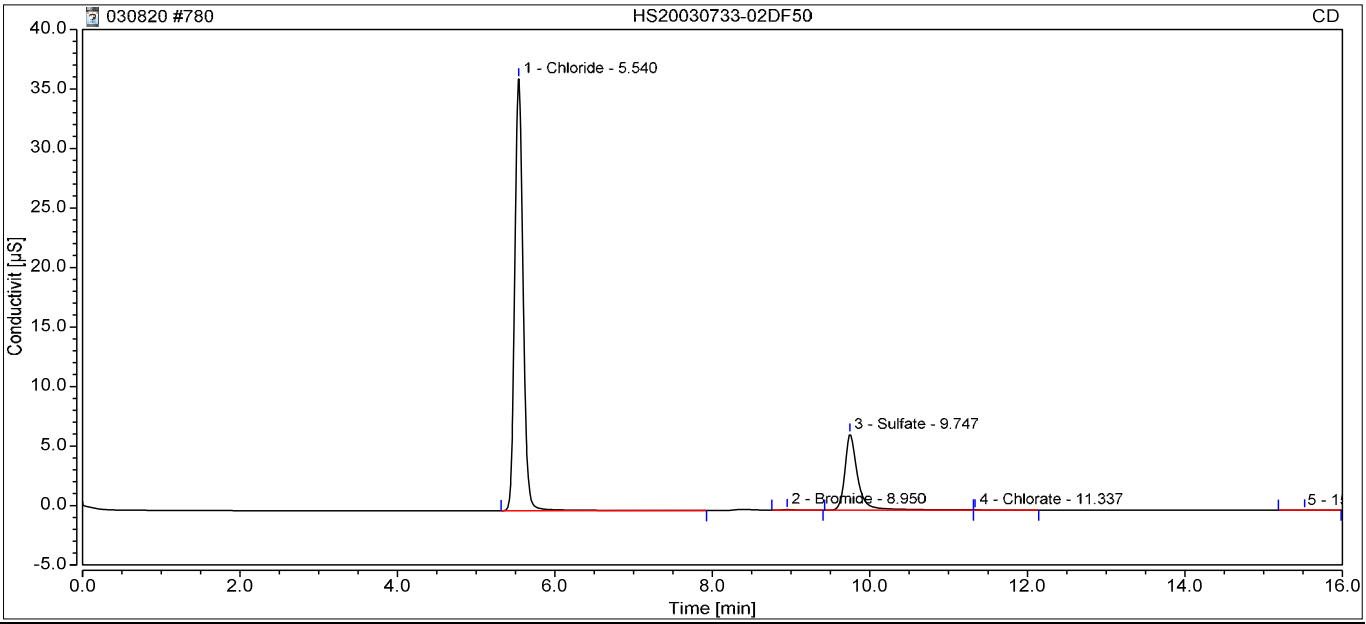
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	50.0000
1	5.54	Chloride	BMB	3.983	17.2298	861.4908	50.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	50.0000
2	8.94	Bromide	BMB	0.006	0.0972	4.8621	50.0000
3	9.65	Sulfate	BMB*	7.013	41.8678	2093.3912	50.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	50.0000
5	15.48	Phosphate	BMB	0.005	0.1227	6.1349	50.0000
Total:			**0.000**	**11.007**		**2965.88**	

780 HS20030733-02DF50

Sample Name:	**HS20030733-02DF50**	*Injection Volume:*	**5.00**
Vial Number:	**RB3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**50.0000**
Recording Time:	**03/17/2020 22:16**	*Sample Weight:*	**1.0000**

Run Time:



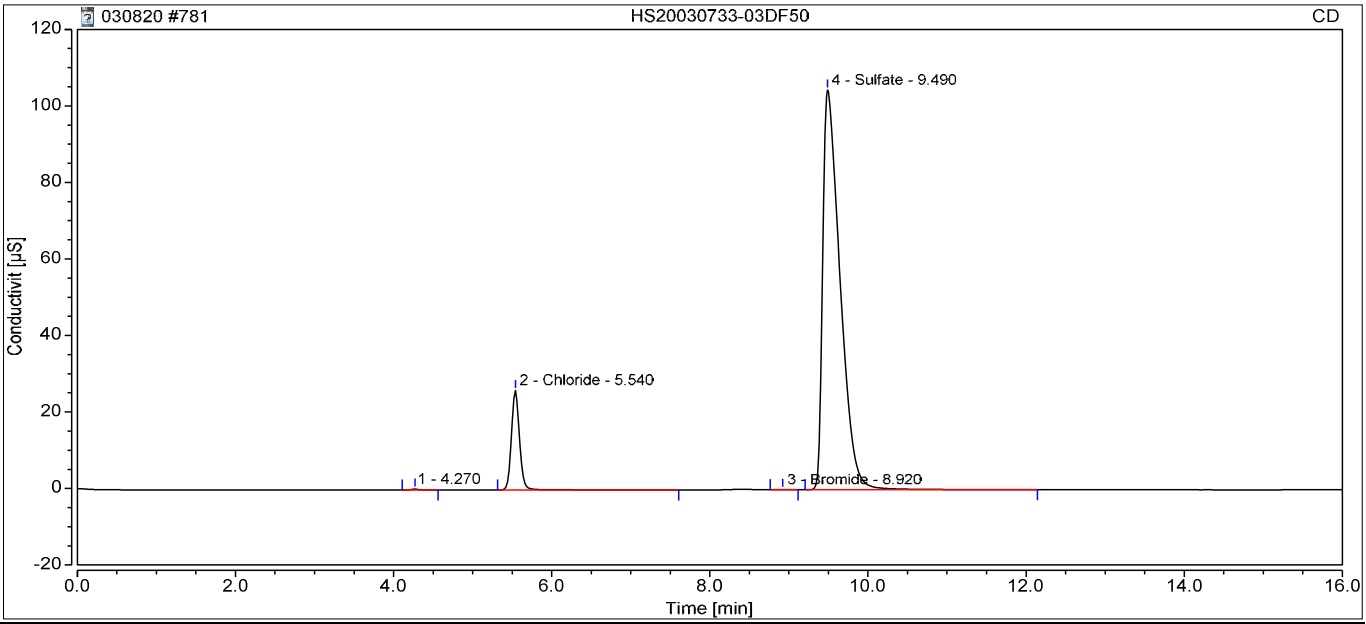
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	50.0000
1	5.54	Chloride	BMB	4.426	19.1416	957.0787	50.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	50.0000
2	8.95	Bromide	BMB	0.008	0.1124	5.6177	50.0000
3	9.75	Sulfate	BM	1.221	7.3715	368.5756	50.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	50.0000
4	11.34	Chlorate	MB	0.004	0.0285	1.4251	50.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	50.0000
Total:			**0.000**	**5.659**		**1332.70**	

781 HS20030733-03DF50

Sample Name:	**HS20030733-03DF50**	*Injection Volume:*	**5.00**
Vial Number:	**RB4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**50.0000**
Recording Time:	**03/17/2020 22:34**	*Sample Weight:*	**1.0000**

Run Time:



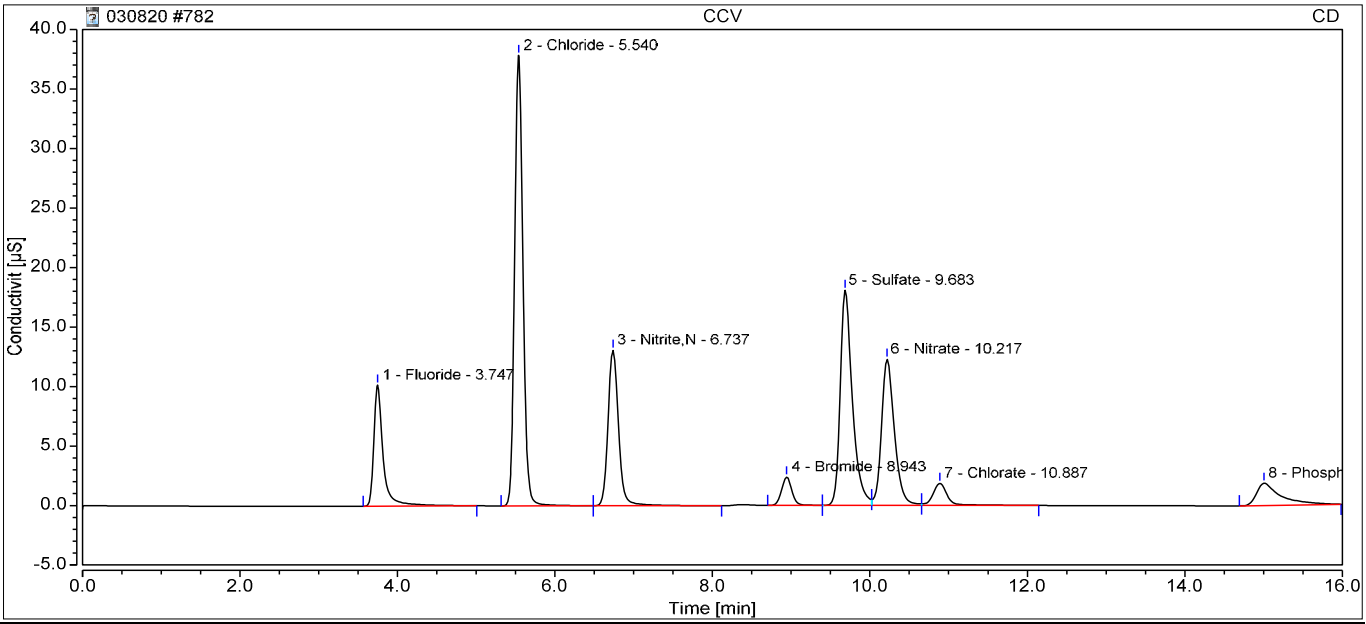
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	50.0000
2	5.54	Chloride	BMB	3.159	13.6779	683.8929	50.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	50.0000
3	8.92	Bromide	BMB	0.005	0.0810	4.0475	50.0000
4	9.49	Sulfate	BMB	26.502	157.9262	7896.3093	50.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	50.0000
Total:			**0.000**	**29.665**		**8584.25**	

782 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**RA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/17/2020 22:52**	*Sample Weight:*	**1.0000**

Run Time:



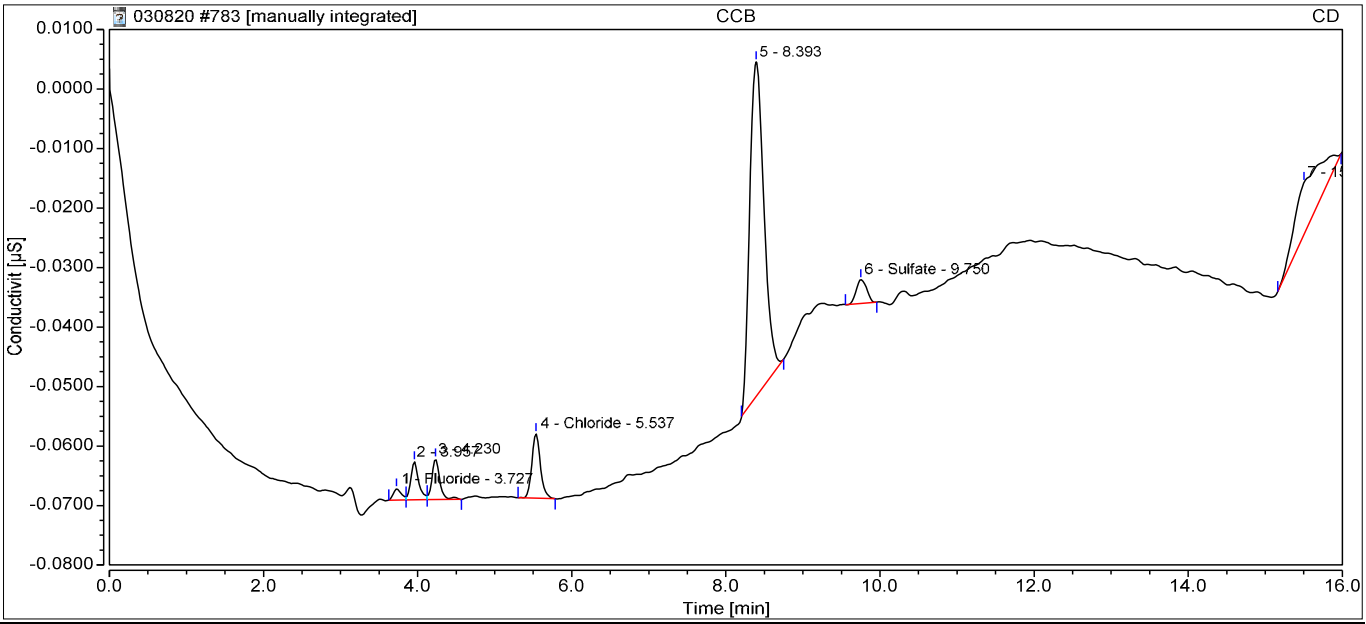
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	1.390	4.0965	4.0965	1.0000
2	5.54	Chloride	BMB	4.595	19.8694	19.8694	1.0000
3	6.74	Nitrite,N	BMB	2.037	4.1552	4.1552	1.0000
4	8.94	Bromide	BM	0.367	3.7382	3.7382	1.0000
5	9.68	Sulfate	M	3.243	19.4141	19.4141	1.0000
6	10.22	Nitrate	M	2.346	4.0283	4.0283	1.0000
7	10.89	Chlorate	MB	0.400	4.1954	4.1954	1.0000
8	15.01	Phosphate	BMB	0.668	3.2536	3.2536	1.0000
Total:			**0.000**	**15.046**		**62.75**	

783 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**RE1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/17/2020 23:11**	*Sample Weight:*	**1.0000**

Run Time:



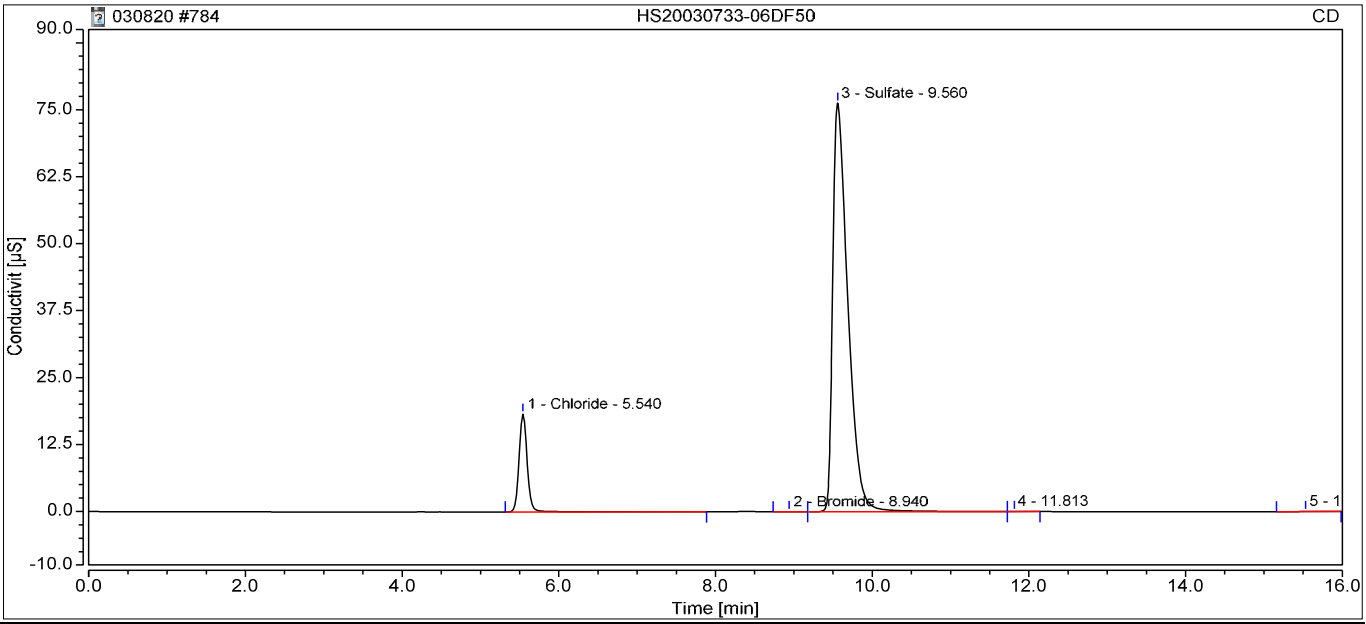
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BM *	0.000	0.0249	0.0249	1.0000
4	5.54	Chloride	BMB*	0.001	0.0670	0.0670	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
6	9.75	Sulfate	BMB*	0.001	0.1050	0.1050	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.002**		**0.20**	

784 HS20030733-06DF50

Sample Name:	**HS20030733-06DF50**	*Injection Volume:*	**5.00**
Vial Number:	**RB5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**50.0000**
Recording Time:	**03/17/2020 23:29**	*Sample Weight:*	**1.0000**

Run Time:



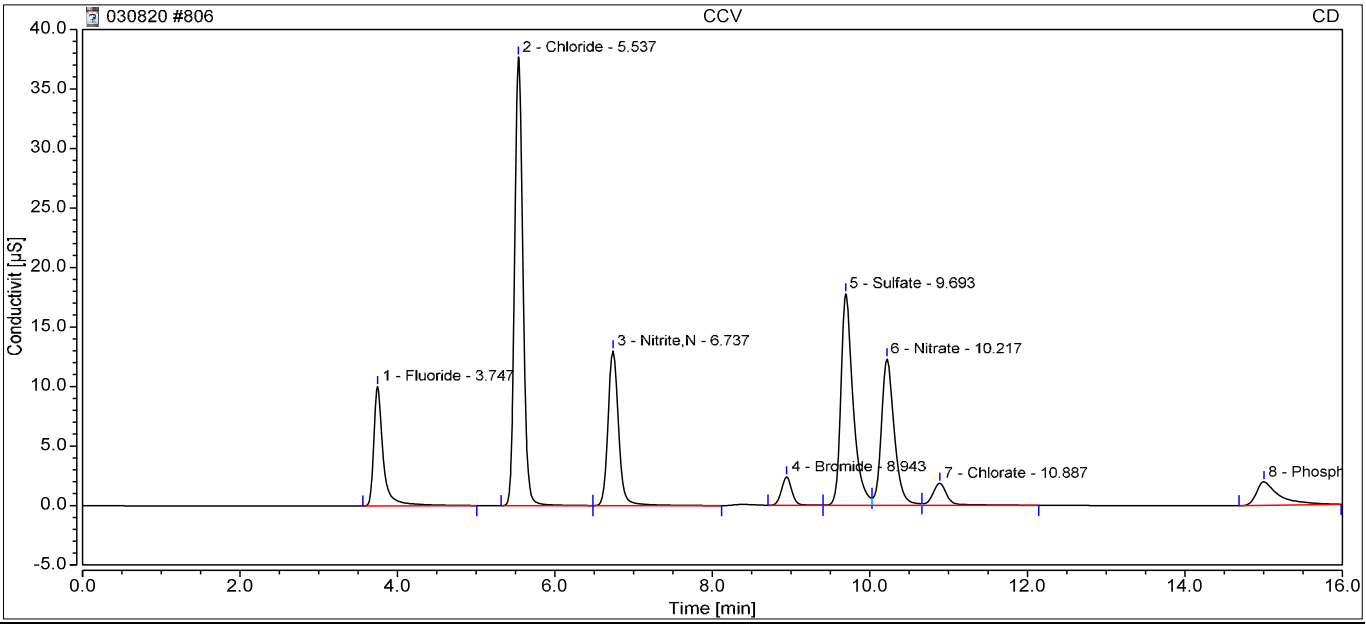
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	50.0000
1	5.54	Chloride	BMB	2.221	9.6340	481.6999	50.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	50.0000
2	8.94	Bromide	BM	0.004	0.0742	3.7095	50.0000
3	9.56	Sulfate	M	17.015	101.4316	5071.5810	50.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	50.0000
Total:			**0.000**	**19.240**		**5556.99**	

806 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**RA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/18/2020 06:07**	*Sample Weight:*	**1.0000**

Run Time:



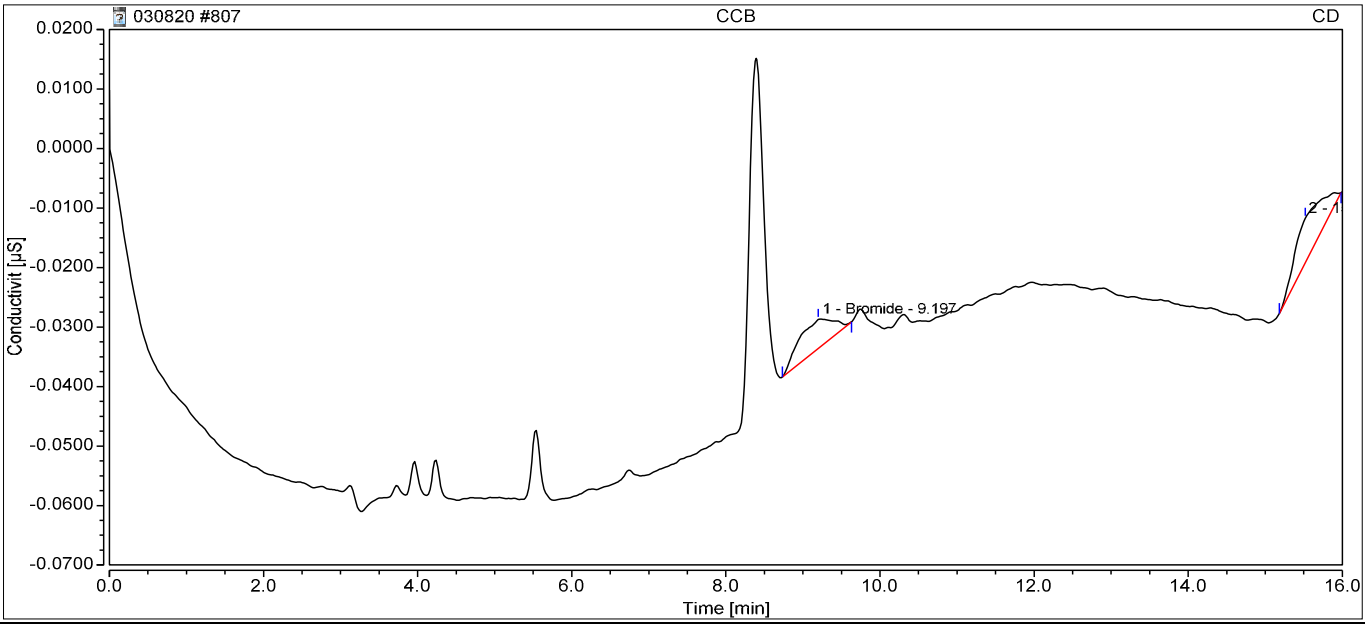
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	1.391	4.0971	4.0971	1.0000
2	5.54	Chloride	BMB	4.591	19.8531	19.8531	1.0000
3	6.74	Nitrite,N	BMB	2.034	4.1497	4.1497	1.0000
4	8.94	Bromide	BM	0.366	3.7219	3.7219	1.0000
5	9.69	Sulfate	M	3.207	19.1991	19.1991	1.0000
6	10.22	Nitrate	M	2.351	4.0370	4.0370	1.0000
7	10.89	Chlorate	MB	0.397	4.1676	4.1676	1.0000
8	15.00	Phosphate	BMB	0.664	3.2358	3.2358	1.0000
Total:			**0.000**	**15.001**		**62.46**	

807 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**RE1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/18/2020 06:25**	*Sample Weight:*	**1.0000**

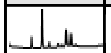
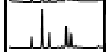
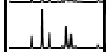
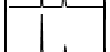
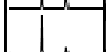
Run Time:



Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
1	9.20	Bromide	BMB	0.003	0.0600	0.0600	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.003**		**0.06**	

Sequence: 030820
Last Update Operator: alshs.nouser

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	Processing Method	Volume	Status	Inject Time
	STD1	2970209205	Calibration	GA1	1.0000	1	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 7:39:11 PM -06:00
	STD2	NEW PRGM	Calibration	GA2	1.0000	2	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 7:57:16 PM -06:00
	STD3		Calibration	GA3	1.0000	3	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 8:15:24 PM -06:00
	STD4		Calibration	GA4	1.0000	4	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 8:33:31 PM -06:00
	STD5	NO2/PO4	Calibration	GA5	1.0000	5	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 8:51:36 PM -06:00
	STD6	MAX 10PPM	Calibration	GA6	1.0000	6	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 9:09:41 PM -06:00
	ICV	2970209123	Unknown	GA7	1.0000		Anions Prog	Anions Proce	5.0	Finished	2/5/2020 9:27:48 PM -06:00
	ICB		Unknown	GA8	1.0000		Anions Prog	Anions Proce	5.0	Finished	2/5/2020 9:45:53 PM -06:00
	CCV1		Unknown	RC1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/17/2020 5:45:00 PM -05:00
	CCB		Unknown	RE2	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/17/2020 6:03:05 PM -05:00
	MBLK	short hold	Unknown	RA3	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/17/2020 7:51:54 PM -05:00
	LCS	short hold	Unknown	RA4	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/17/2020 8:10:00 PM -05:00
	LCSD	short hold	Unknown	RA5	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/17/2020 8:28:07 PM -05:00
	HS20030733-01DF5	short hold	Unknown	RA6	5.0000		Anions Prog	Anions Proce	5.0	Finished	3/17/2020 8:46:14 PM -05:00
	HS20030733-02DF5	short hold	Unknown	RA7	5.0000		Anions Prog	Anions Proce	5.0	Finished	3/17/2020 9:04:19 PM -05:00
	HS20030733-03DF5	short hold	Unknown	RA8	5.0000		Anions Prog	Anions Proce	5.0	Finished	3/17/2020 9:22:25 PM -05:00
	HS20030733-06DF5	short hold	Unknown	RB1	5.0000		Anions Prog	Anions Proce	5.0	Finished	3/17/2020 9:40:32 PM -05:00
	HS20030733-01DF50	short hold	Unknown	RB2	50.0000		Anions Prog	Anions Proce	5.0	Finished	3/17/2020 9:58:39 PM -05:00
	HS20030733-02DF50	short hold	Unknown	RB3	50.0000		Anions Prog	Anions Proce	5.0	Finished	3/17/2020 10:16:45 PM -05:00
	HS20030733-03DF50	short hold	Unknown	RB4	50.0000		Anions Prog	Anions Proce	5.0	Finished	3/17/2020 10:34:51 PM -05:00
	CCV		Unknown	RA1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/17/2020 10:52:56 PM -05:00
	CCB		Unknown	RE1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/17/2020 11:11:02 PM -05:00
	HS20030733-06DF50		Unknown	RB5	50.0000		Anions Prog	Anions Proce	5.0	Finished	3/17/2020 11:29:09 PM -05:00
	CCV		Unknown	RA1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/18/2020 6:07:24 AM -05:00
	CCB		Unknown	RE1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/18/2020 6:25:32 AM -05:00

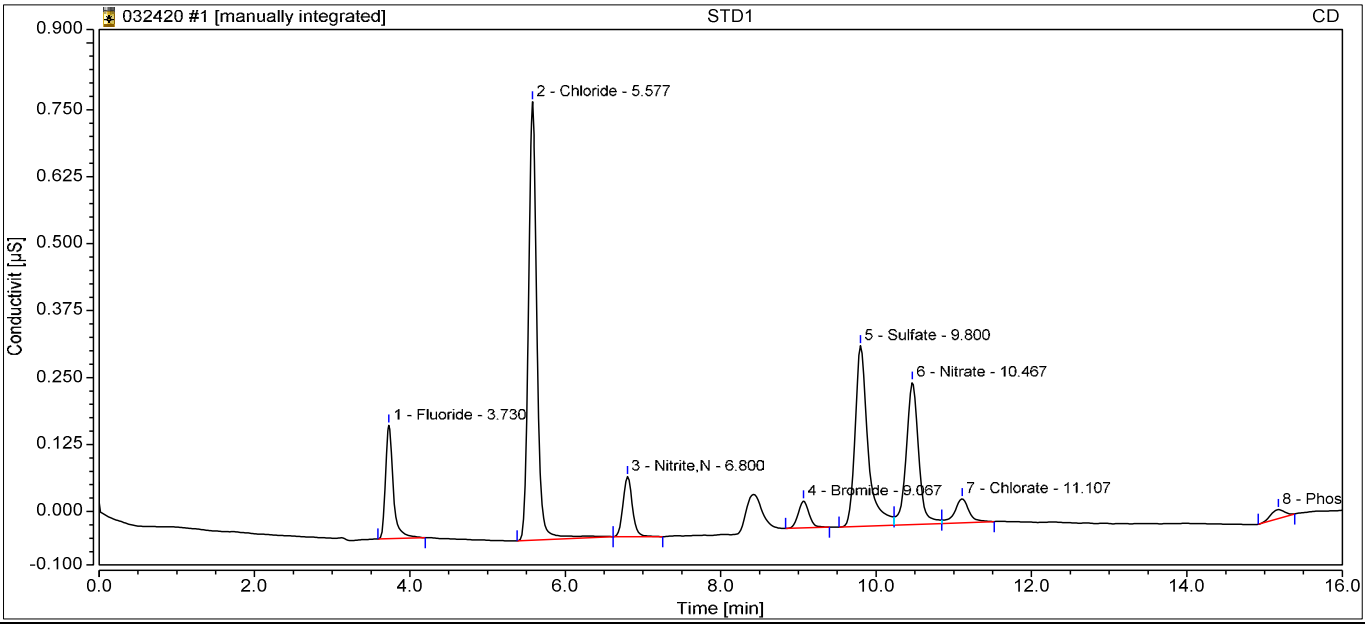
Sequence: 030820
Last Update Operator: alshs.nouser

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	Processing Method	Volume	Status	Inject Time

1 STD1

Sample Name:	**STD1**	*Injection Volume:*	**5.00**
Vial Number:	**GA1**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 19:39**	*Sample Weight:*	**1.0000**

Run Time:



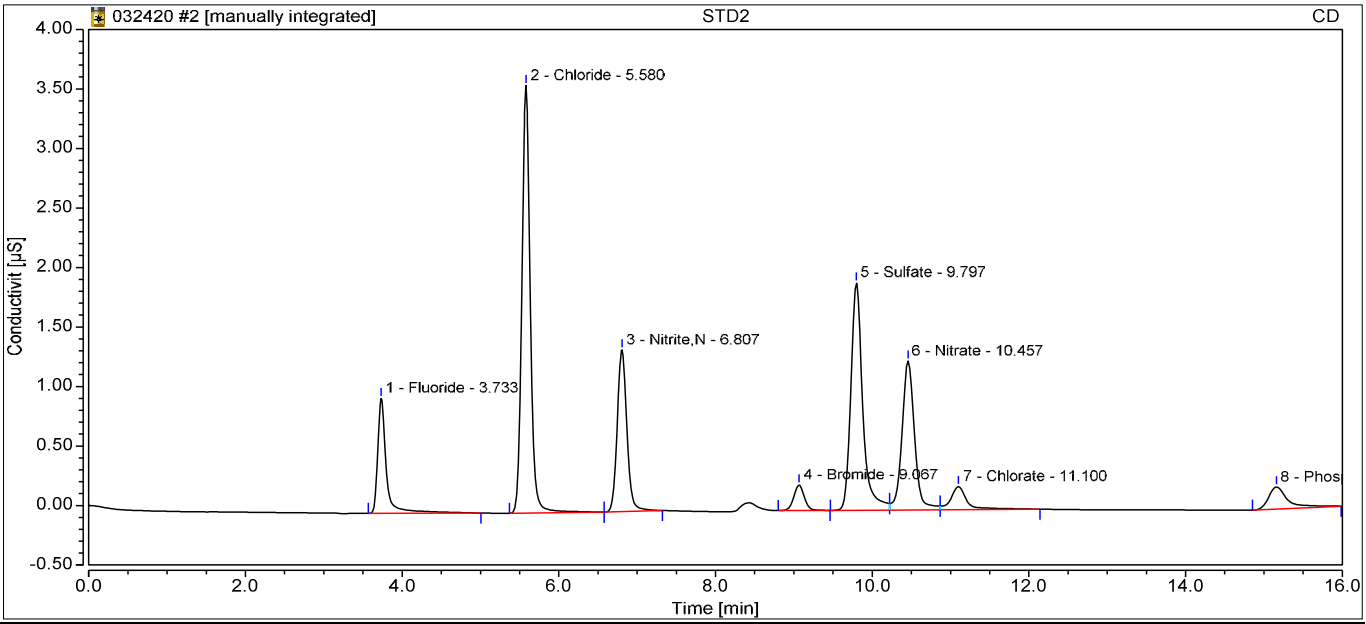
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.024	0.0955	0.0955	1.0000
2	5.58	Chloride	BMB	0.103	0.5065	0.5065	1.0000
3	6.80	Nitrite,N	BMB	0.016	0.0673	0.0673	1.0000
4	9.07	Bromide	BMB	0.008	0.1156	0.1156	1.0000
5	9.80	Sulfate	BM	0.065	0.4885	0.4885	1.0000
6	10.47	Nitrate	M	0.049	0.0974	0.0974	1.0000
7	11.11	Chlorate	MB	0.010	0.0834	0.0834	1.0000
8	15.18	Phosphate	BMB*	0.003	0.1235	0.1235	1.0000
Total:			**0.000**	**0.279**		**1.58**	

2 STD2

Sample Name:	**STD2**	*Injection Volume:*	**5.00**
Vial Number:	**GA2**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 19:57**	*Sample Weight:*	**1.0000**

Run Time:



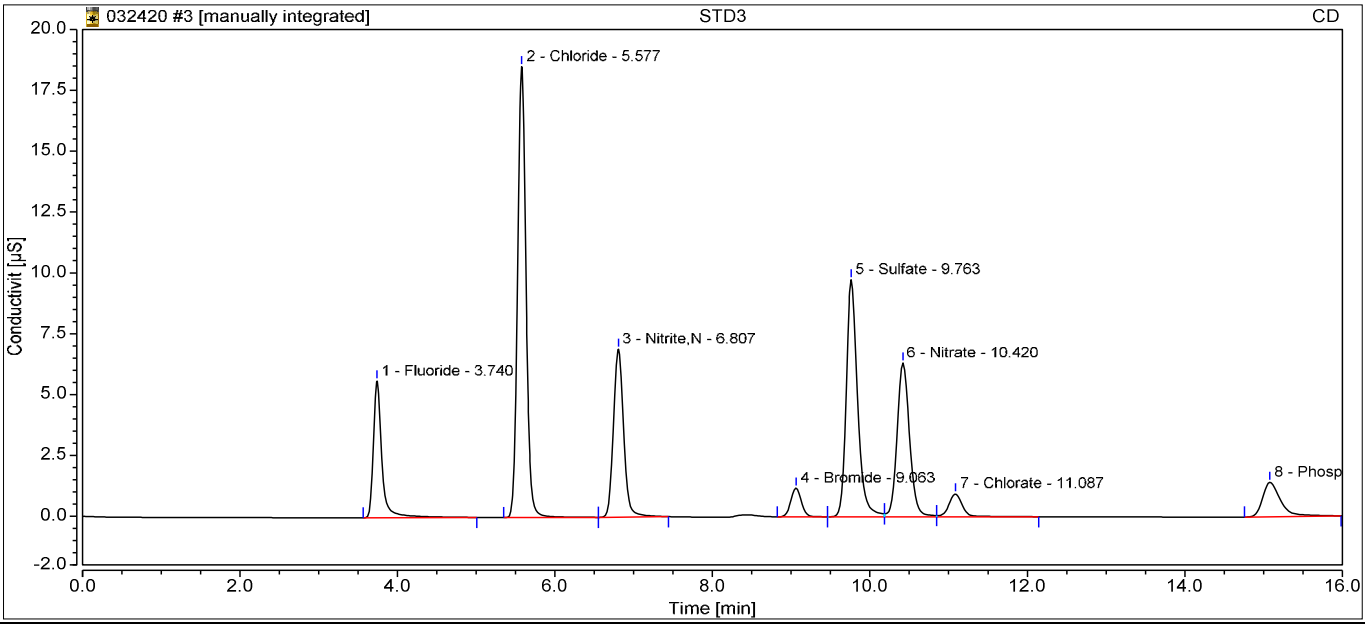
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.123	0.3833	0.3833	1.0000
2	5.58	Chloride	BMb*	0.449	1.9963	1.9963	1.0000
3	6.81	Nitrite,N	bMB*	0.194	0.4500	0.4500	1.0000
4	9.07	Bromide	BMB	0.034	0.3722	0.3722	1.0000
5	9.80	Sulfate	BM	0.335	2.0973	2.0973	1.0000
6	10.46	Nitrate	M	0.232	0.4103	0.4103	1.0000
7	11.10	Chlorate	MB	0.047	0.4759	0.4759	1.0000
8	15.16	Phosphate	BMB	0.053	0.3508	0.3508	1.0000
Total:			**0.000**	**1.467**		**6.54**	

3 STD3

Sample Name:	**STD3**	*Injection Volume:*	**5.00**
Vial Number:	**GA3**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 20:15**	*Sample Weight:*	**1.0000**

Run Time:



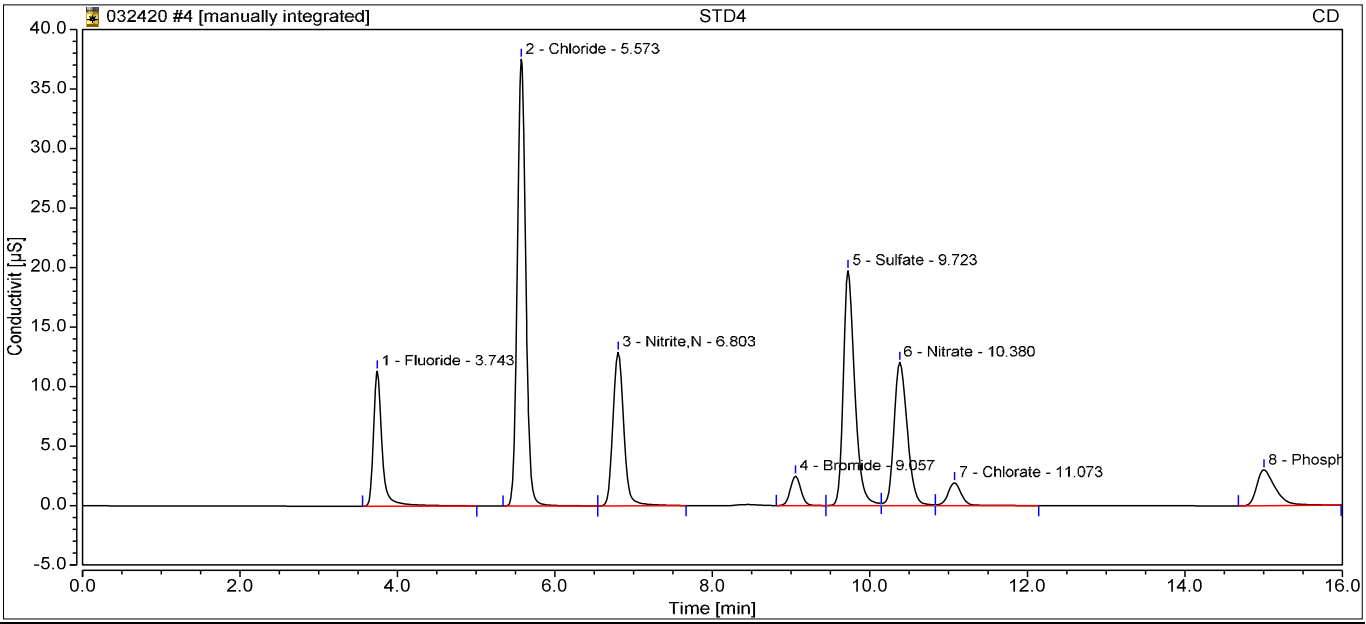
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.701	2.0769	2.0769	1.0000
2	5.58	Chloride	BMb*	2.284	9.9073	9.9073	1.0000
3	6.81	Nitrite,N	bMB*	1.029	2.2369	2.2369	1.0000
4	9.06	Bromide	BM	0.182	1.8657	1.8657	1.0000
5	9.76	Sulfate	M	1.624	9.7730	9.7730	1.0000
6	10.42	Nitrate	M	1.160	1.9980	1.9980	1.0000
7	11.09	Chlorate	MB	0.189	1.9689	1.9689	1.0000
8	15.08	Phosphate	BMB	0.374	1.8187	1.8187	1.0000
Total:			**0.000**	**7.542**		**31.65**	

4 STD4

Sample Name:	**STD4**	*Injection Volume:*	**5.00**
Vial Number:	**GA4**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 20:33**	*Sample Weight:*	**1.0000**

Run Time:



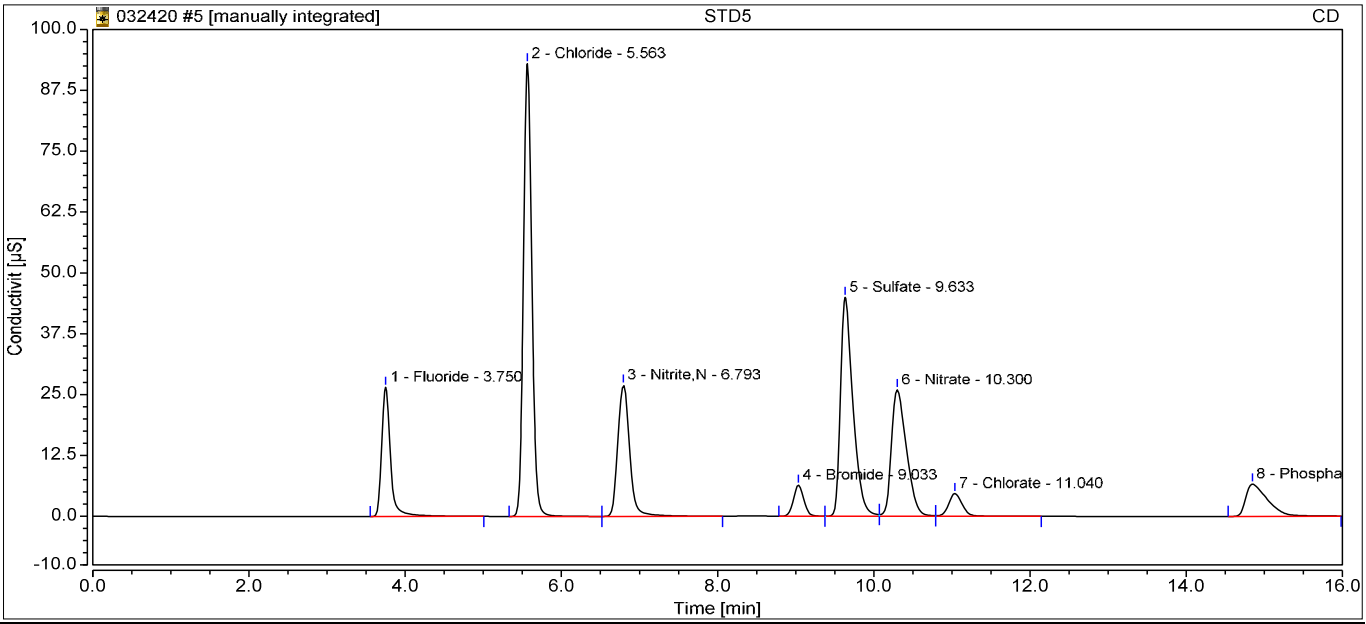
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.428	4.2080	4.2080	1.0000
2	5.57	Chloride	BMb*	4.627	20.0069	20.0069	1.0000
3	6.80	Nitrite,N	bMB*	2.046	4.4146	4.4146	1.0000
4	9.06	Bromide	BM	0.382	3.8871	3.8871	1.0000
5	9.72	Sulfate	M	3.337	19.9713	19.9713	1.0000
6	10.38	Nitrate	M	2.343	4.0228	4.0228	1.0000
7	11.07	Chlorate	MB	0.380	3.9830	3.9830	1.0000
8	15.00	Phosphate	BMB	0.824	3.8745	3.8745	1.0000
Total:			**0.000**	**15.366**		**64.37**	

5 STD5

Sample Name:	**STD5**	*Injection Volume:*	**5.00**
Vial Number:	**GA5**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 20:51**	*Sample Weight:*	**1.0000**

Run Time:



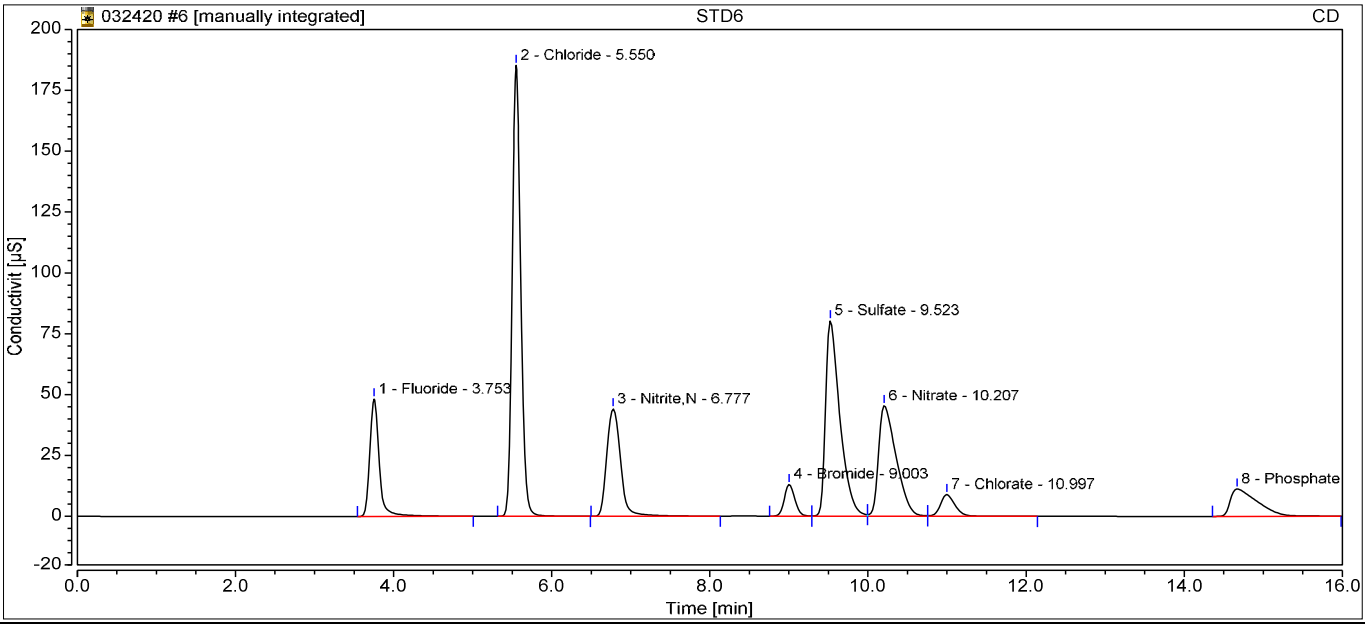
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	3.472	10.1940	10.1940	1.0000
2	5.56	Chloride	BMB	11.516	49.7057	49.7057	1.0000
3	6.79	Nitrite,N	BMB*	4.776	10.2593	10.2593	1.0000
4	9.03	Bromide	BM	0.981	9.9279	9.9279	1.0000
5	9.63	Sulfate	M	8.325	49.6811	49.6811	1.0000
6	10.30	Nitrate	M	5.799	9.9382	9.9382	1.0000
7	11.04	Chlorate	MB	0.944	9.9252	9.9252	1.0000
8	14.85	Phosphate	BMB	2.135	9.8737	9.8737	1.0000
Total:			**0.000**	**37.949**		**159.51**	

6 STD6

Sample Name:	**STD6**	*Injection Volume:*	**5.00**
Vial Number:	**GA6**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 21:09**	*Sample Weight:*	**1.0000**

Run Time:



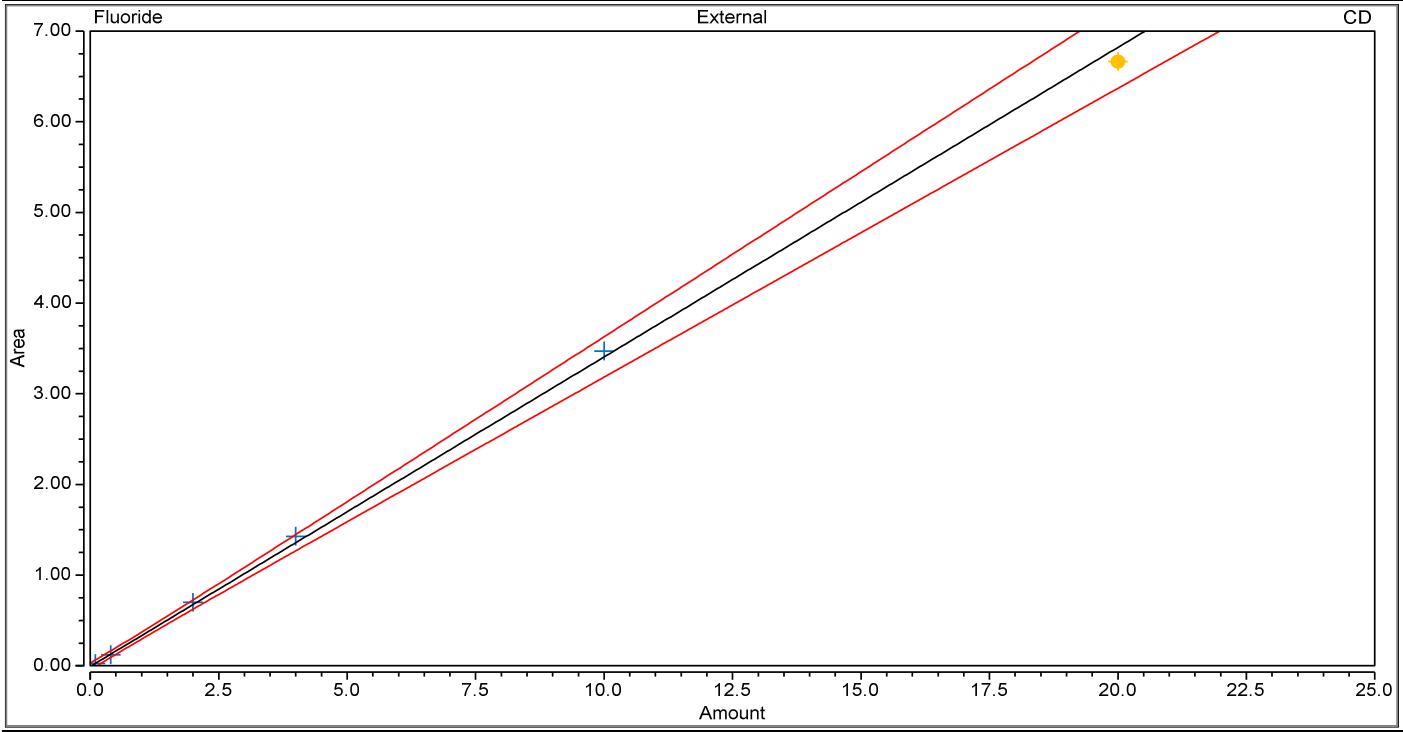
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	6.664	19.5424	19.5424	1.0000
2	5.55	Chloride	BMB	23.270	100.3774	100.3774	1.0000
3	6.78	Nitrite,N	BMB*	8.893	19.0718	19.0718	1.0000
4	9.00	Bromide	BM	2.012	20.3316	20.3316	1.0000
5	9.52	Sulfate	M	16.857	100.4888	100.4888	1.0000
6	10.21	Nitrate	M	11.698	20.0333	20.0333	1.0000
7	11.00	Chlorate	MB	1.906	20.0635	20.0635	1.0000
8	14.67	Phosphate	BMB	4.450	20.4589	20.4589	1.0000
Total:			**0.000**	**75.750**		**320.37**	

Calibration

Calibration Details	Fluoride		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0083
Evaluation Type	Area	*Slope (C1)*	0.3414
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9991

Calibration Plot **Fluoride**



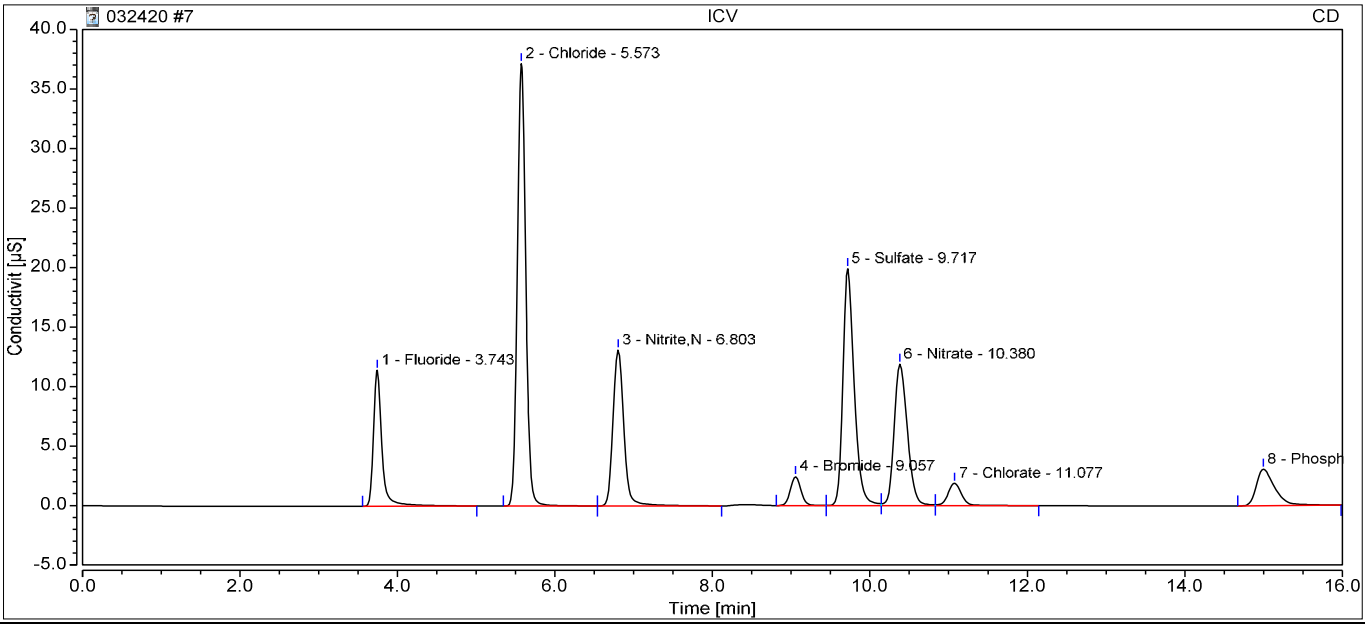
Calibration Results **Fluoride**

No.	Injection Name	Calibration Level	X Value CD Fluoride	Y Value CD Fluoride	Y Value CD Fluoride	Area µS*min CD Fluoride	Height µS CD Fluoride
1	STD1	1	0.1000	0.0243	0.0243	0.024	0.212
2	STD2	2	0.4000	0.1226	0.1226	0.123	0.964
3	STD3	3	2.0000	0.7008	0.7008	0.701	5.614
4	STD4	4	4.0000	1.4284	1.4284	1.428	11.345
5	STD5	5	10.0000	3.4723	3.4723	3.472	26.547
6	STD6	6	20.0000	6.6641	6.6641	6.664	48.233

7 ICV

Sample Name:	**ICV**	*Injection Volume:*	**5.00**
Vial Number:	**GA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 21:27**	*Sample Weight:*	**1.0000**

Run Time:



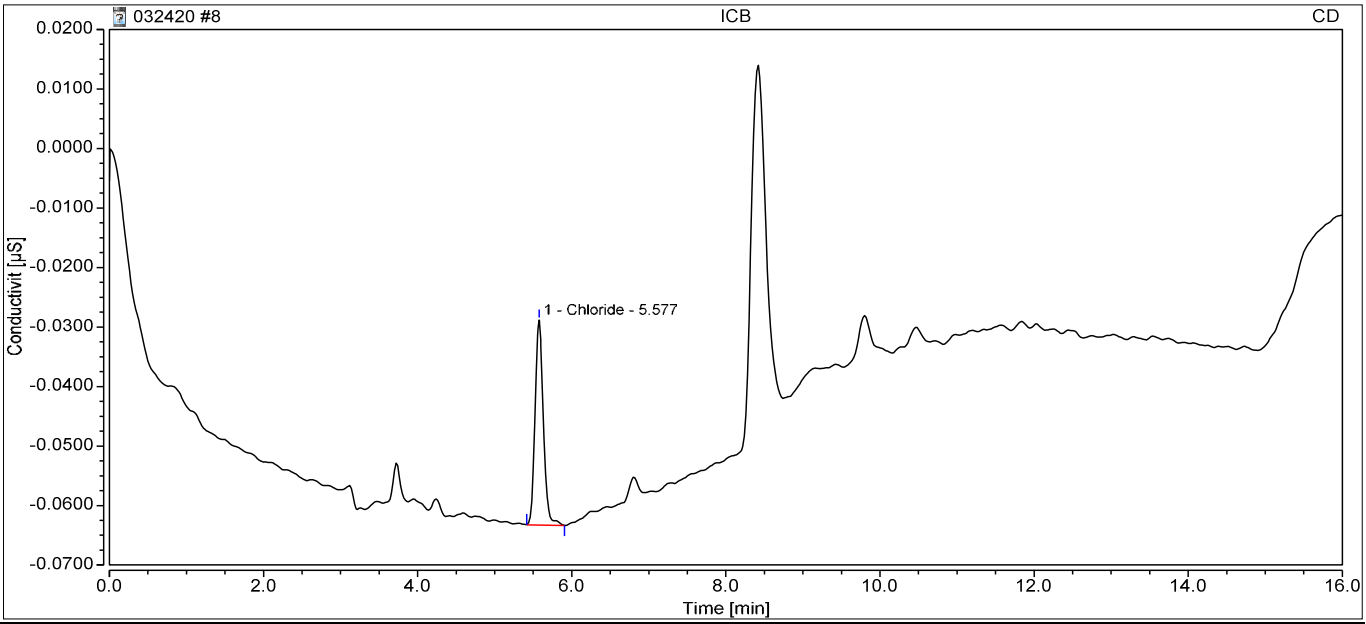
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.412	4.1607	4.1607	1.0000
2	5.57	Chloride	BMB	4.570	19.7627	19.7627	1.0000
3	6.80	Nitrite,N	BMB	2.081	4.4887	4.4887	1.0000
4	9.06	Bromide	BM	0.374	3.8104	3.8104	1.0000
5	9.72	Sulfate	M	3.327	19.9126	19.9126	1.0000
6	10.38	Nitrate	M	2.299	3.9478	3.9478	1.0000
7	11.08	Chlorate	MB	0.379	3.9799	3.9799	1.0000
8	15.00	Phosphate	BMB	0.835	3.9271	3.9271	1.0000
Total:			**0.000**	**15.278**		**63.99**	

8 ICB

Sample Name:	**ICB**	*Injection Volume:*	**5.00**
Vial Number:	**GA8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 21:45**	*Sample Weight:*	**1.0000**

Run Time:



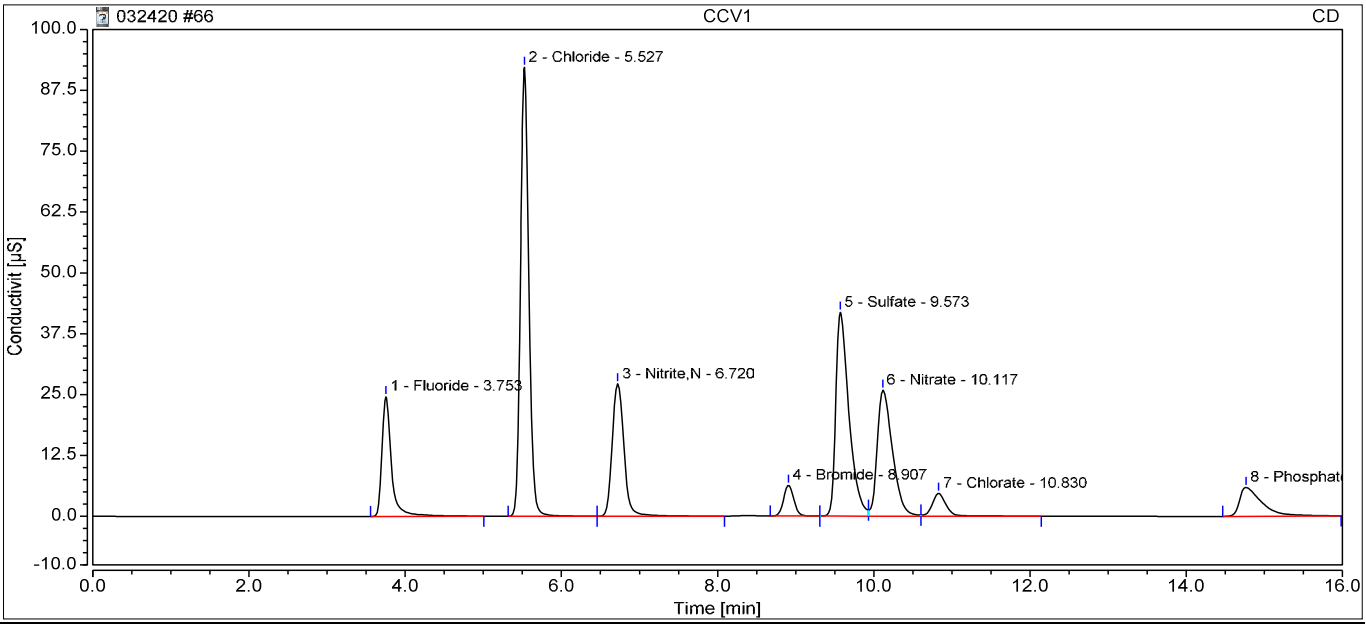
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.58	Chloride	BMB	0.004	0.0794	0.0794	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.004**		**0.08**	

66 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/25/2020 12:16**	*Sample Weight:*	**1.0000**

Run Time:



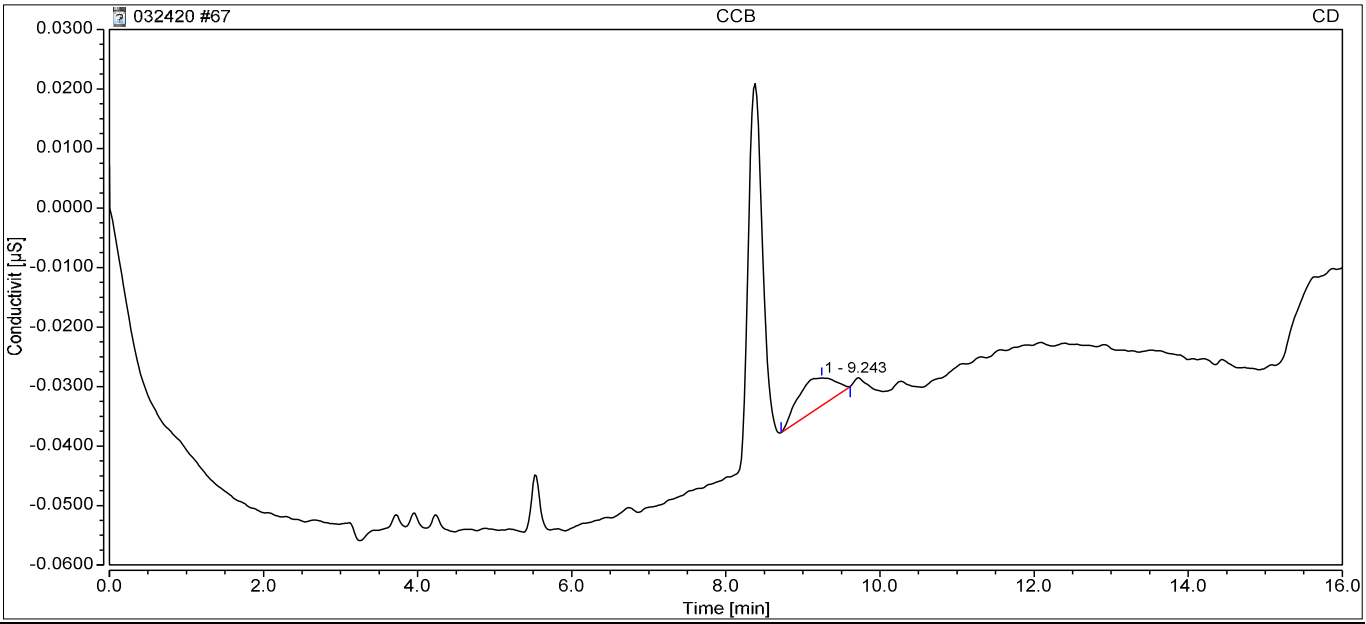
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	3.454	10.1403	10.1403	1.0000
2	5.53	Chloride	BMB	11.410	49.2500	49.2500	1.0000
3	6.72	Nitrite,N	BMB	4.765	10.2358	10.2358	1.0000
4	8.91	Bromide	BM	0.958	9.6999	9.6999	1.0000
5	9.57	Sulfate	M	8.164	48.7186	48.7186	1.0000
6	10.12	Nitrate	M	5.822	9.9774	9.9774	1.0000
7	10.83	Chlorate	MB	0.960	10.0951	10.0951	1.0000
8	14.77	Phosphate	BMB	1.971	9.1203	9.1203	1.0000
Total:			**0.000**	**37.504**		**157.24**	

67 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/25/2020 12:34**	*Sample Weight:*	**1.0000**

Run Time:



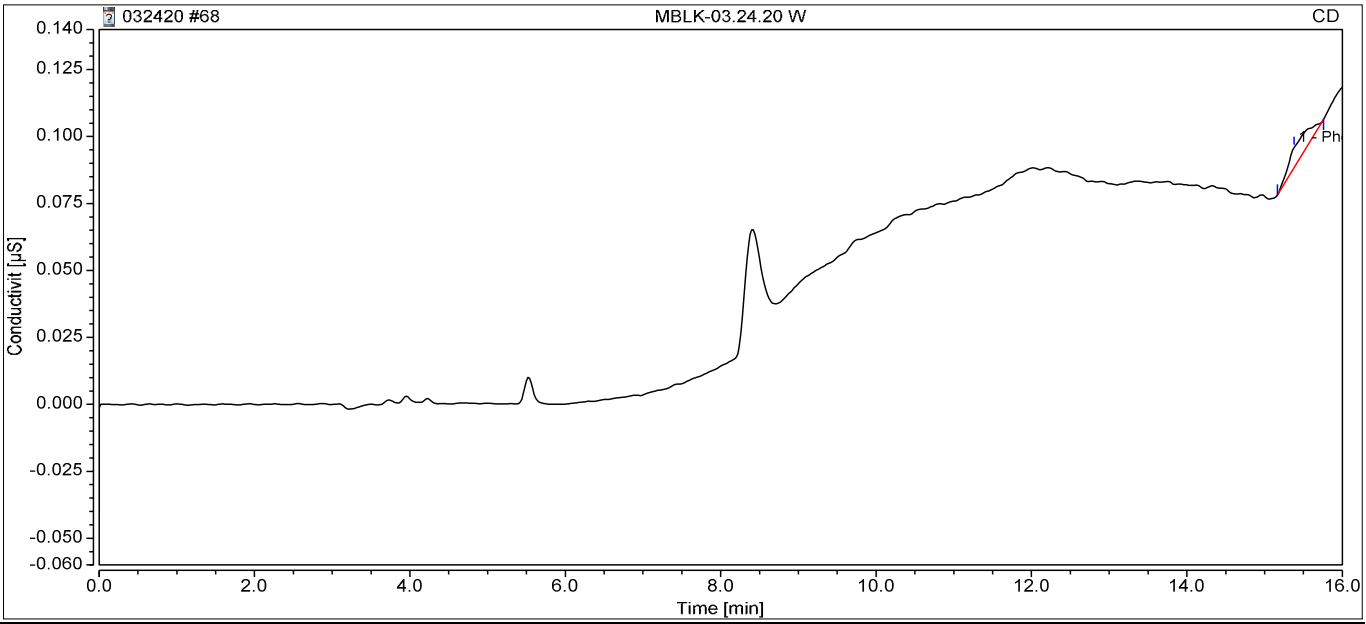
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

68 MBLK-03.24.20 W

Sample Name:	**MBLK-03.24.20 W**	*Injection Volume:*	**5.00**
Vial Number:	**RA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/25/2020 15:10**	*Sample Weight:*	**1.0000**

Run Time:



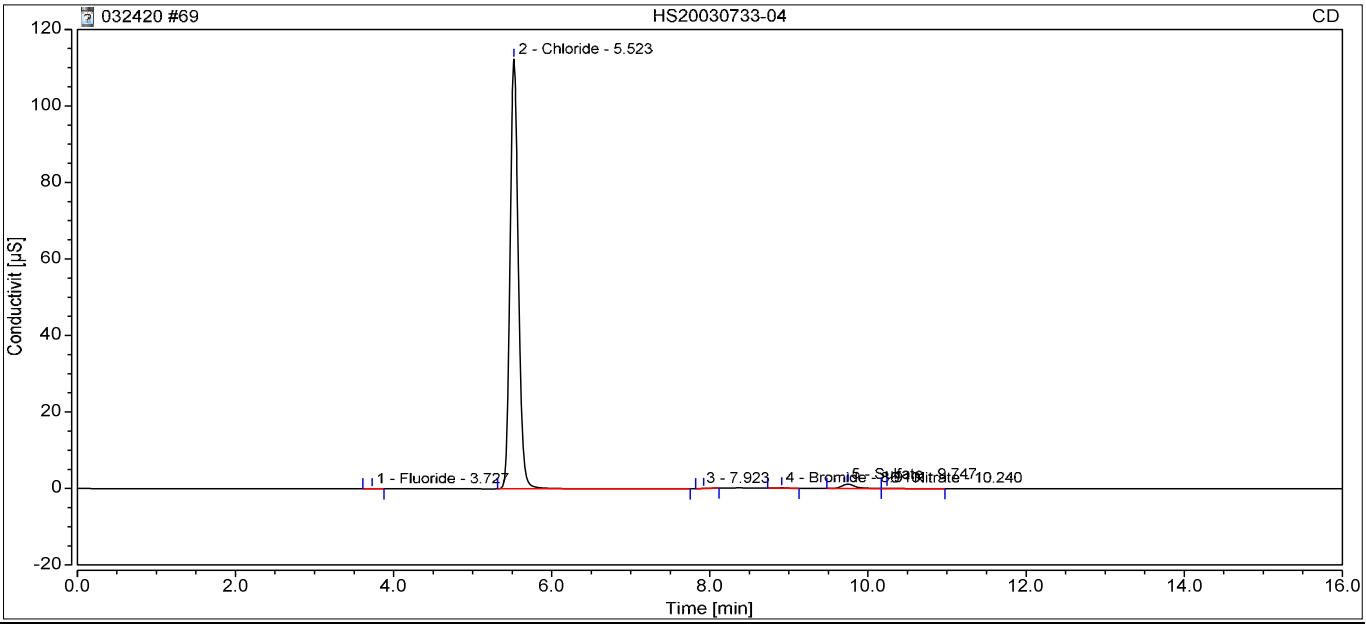
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
1	15.38	Phosphate	BMB	0.003	0.1191	0.1191	1.0000
Total:			**0.000**	**0.003**		**0.12**	

69 HS20030733-04

Sample Name:	**HS20030733-04**	*Injection Volume:*	**5.00**
Vial Number:	**GA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/25/2020 15:28**	*Sample Weight:*	**1.0000**

Run Time:



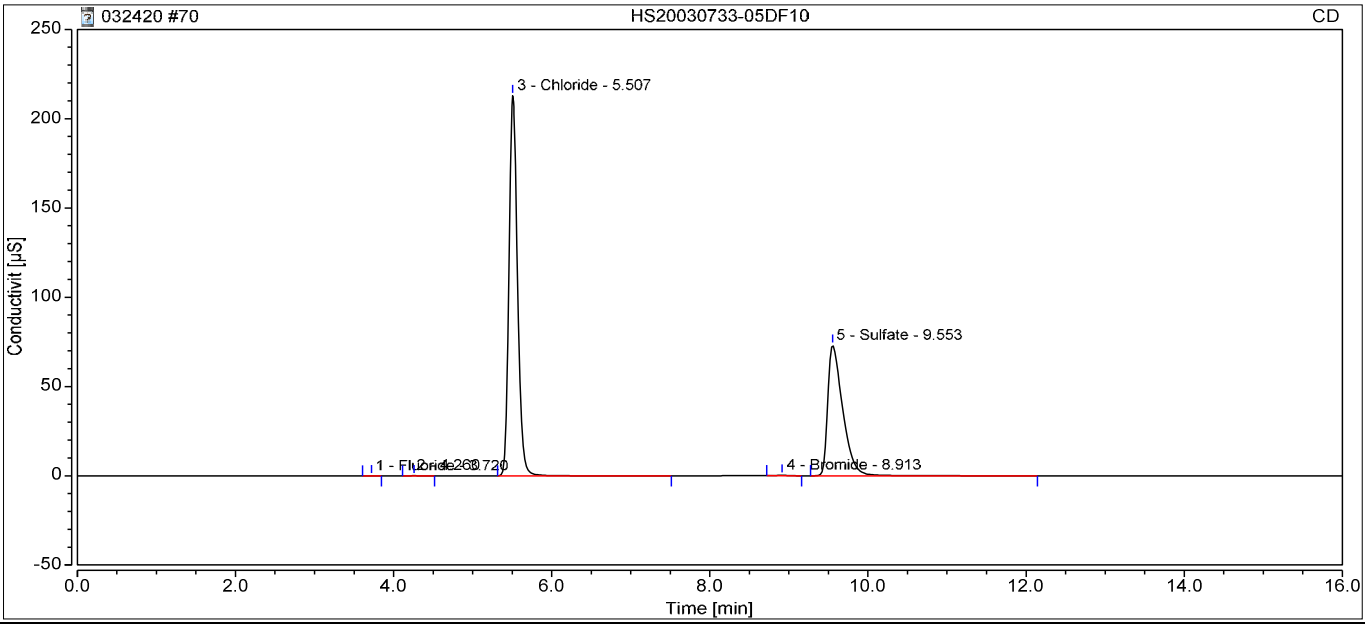
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.004	0.0364	0.0364	1.0000
2	5.52	Chloride	BMB	13.885	59.9192	59.9192	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
4	8.91	Bromide	BMB	0.017	0.2063	0.2063	1.0000
5	9.75	Sulfate	BM	0.234	1.4924	1.4924	1.0000
6	10.24	Nitrate	MB	0.014	0.0374	0.0374	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**14.154**		**61.69**	

70 HS20030733-05DF10

Sample Name:	**HS20030733-05DF10**	*Injection Volume:*	**5.00**
Vial Number:	**GA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/25/2020 15:46**	*Sample Weight:*	**1.0000**

Run Time:

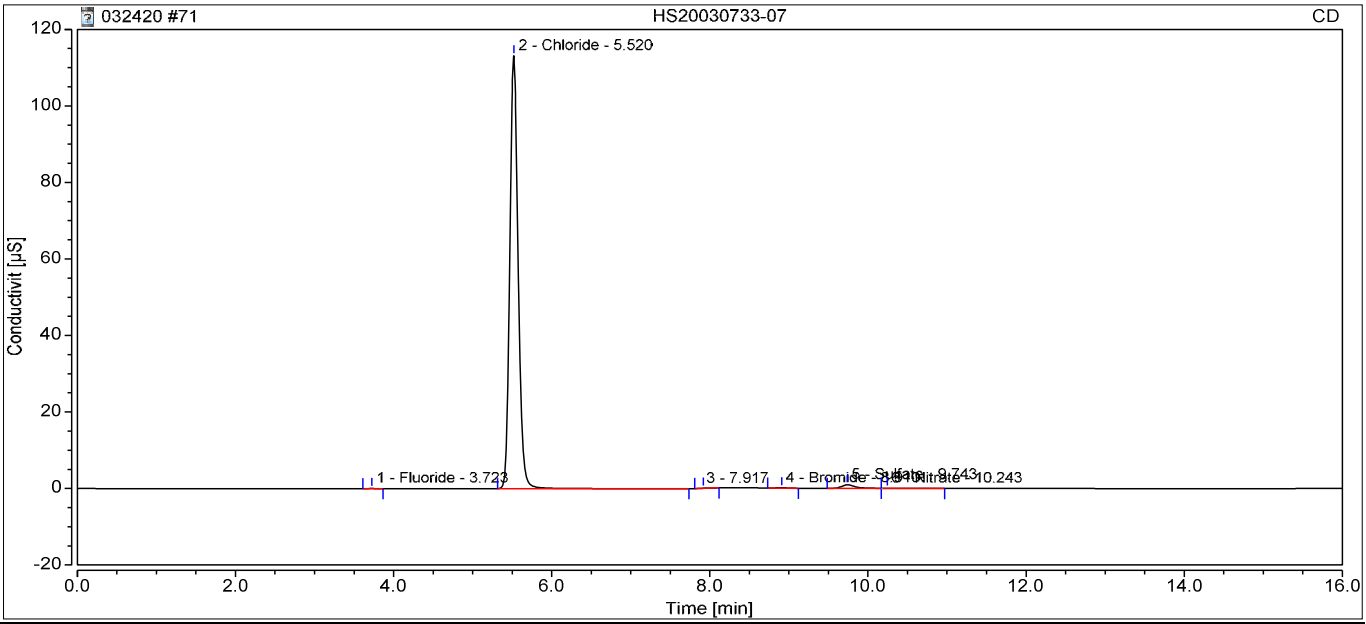


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.002	0.0314	0.0314	1.0000
3	5.51	Chloride	BMB	26.880	115.9394	115.9394	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
4	8.91	Bromide	BMB	0.045	0.4845	0.4845	1.0000
5	9.55	Sulfate	BMB	16.079	95.8579	95.8579	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**43.006**		**212.31**	

71	*HS20030733-07*		
Sample Name:	**HS20030733-07**	*Injection Volume:*	**5.00**
Vial Number:	**GA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/25/2020 16:04**	*Sample Weight:*	**1.0000**

Run Time:

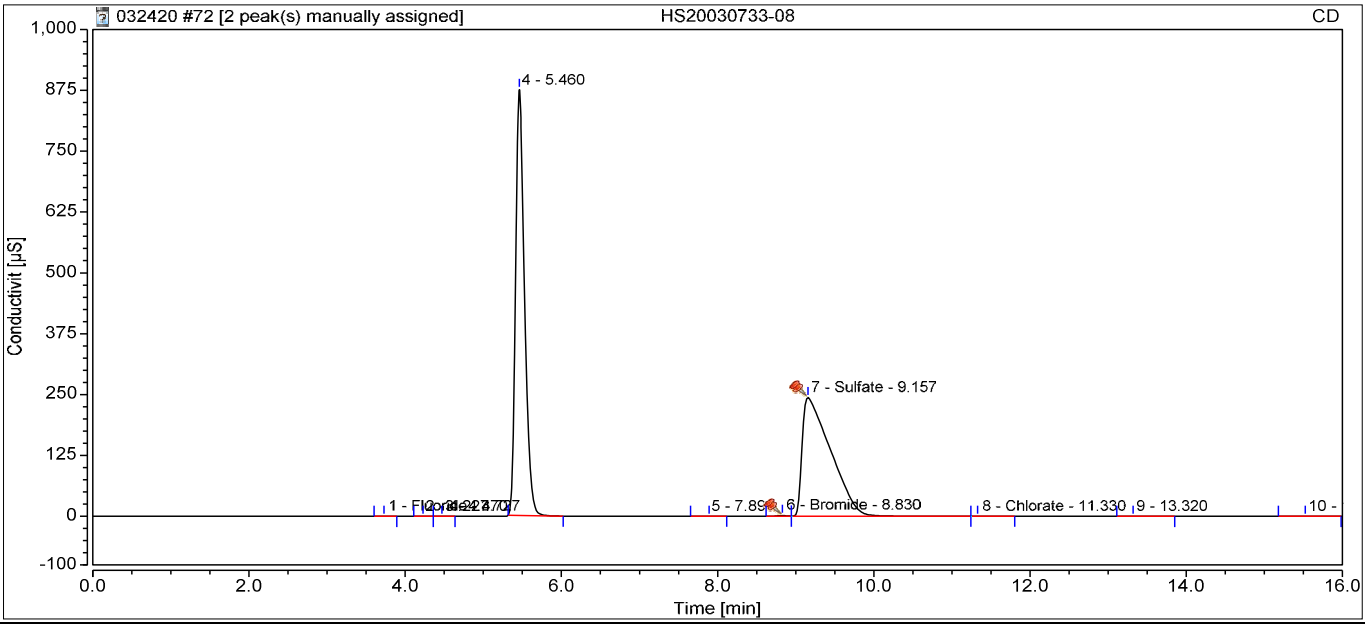


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.004	0.0365	0.0365	1.0000
2	5.52	Chloride	BMB	13.967	60.2712	60.2712	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
4	8.91	Bromide	BMB	0.017	0.2089	0.2089	1.0000
5	9.74	Sulfate	BM	0.193	1.2506	1.2506	1.0000
6	10.24	Nitrate	MB	0.012	0.0335	0.0335	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**14.193**		**61.80**	

72	*HS20030733-08*		
Sample Name:	**HS20030733-08**	*Injection Volume:*	**5.00**
Vial Number:	**GA6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/25/2020 16:22**	*Sample Weight:*	**1.0000**

Run Time:



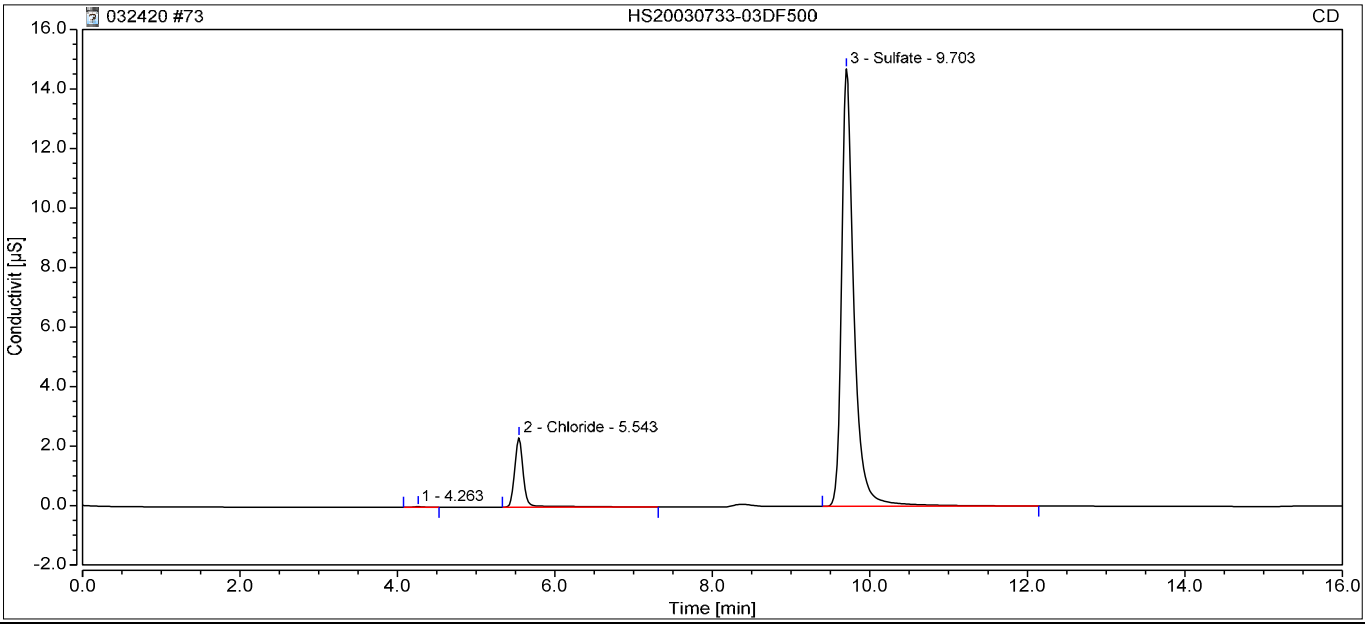
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.021	0.0847	0.0847	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
6	8.83	Bromide	BM ^	0.211	2.1599	2.1599	1.0000
7	9.16	Sulfate	M ^	102.272	609.1600	609.1600	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
8	11.33	Chlorate	MB	0.003	0.0183	0.0183	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**102.507**		**611.42**	

73 HS20030733-03DF500

Sample Name:	**HS20030733-03DF500**	*Injection Volume:*	**5.00**
Vial Number:	**GA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**500.0000**
Recording Time:	**03/25/2020 16:40**	*Sample Weight:*	**1.0000**

Run Time:



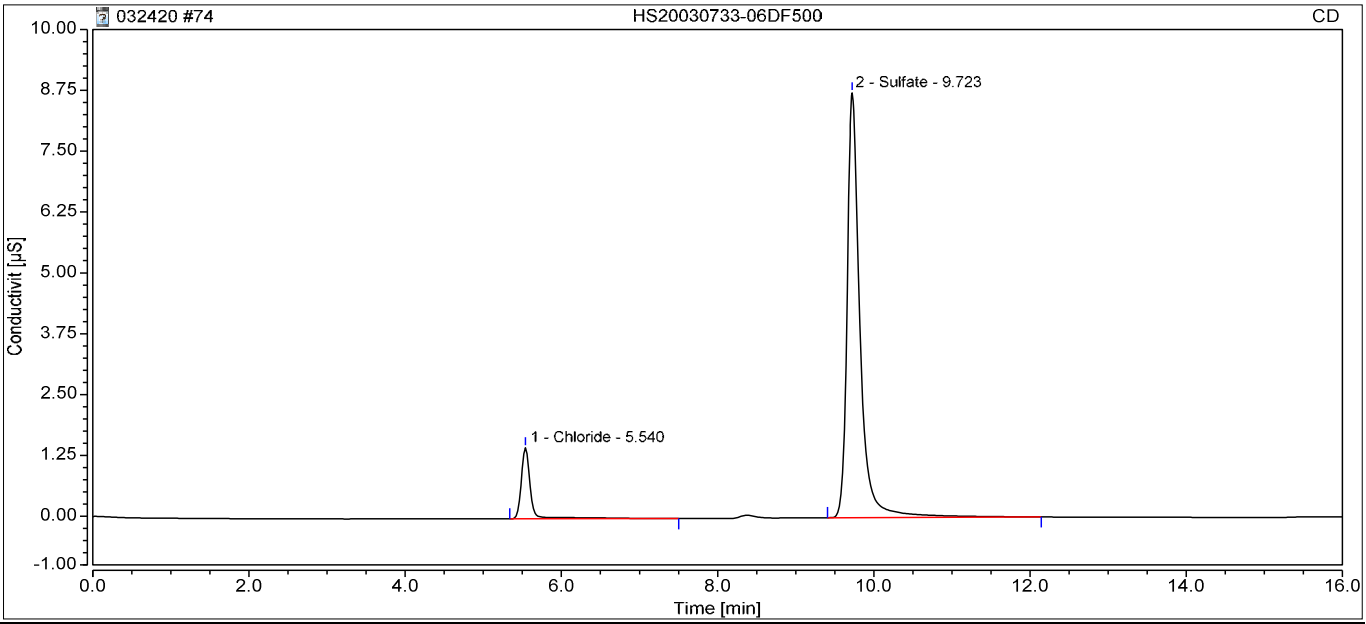
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	500.0000
2	5.54	Chloride	BMB	0.309	1.3943	697.1567	500.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	500.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	500.0000
3	9.70	Sulfate	BMB	2.690	16.1209	8060.4459	500.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	500.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	500.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	500.0000
Total:			**0.000**	**2.999**		**8757.60**	

74 HS20030733-06DF500

Sample Name:	**HS20030733-06DF500**	*Injection Volume:*	**5.00**
Vial Number:	**GA8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**500.0000**
Recording Time:	**03/25/2020 16:59**	*Sample Weight:*	**1.0000**

Run Time:



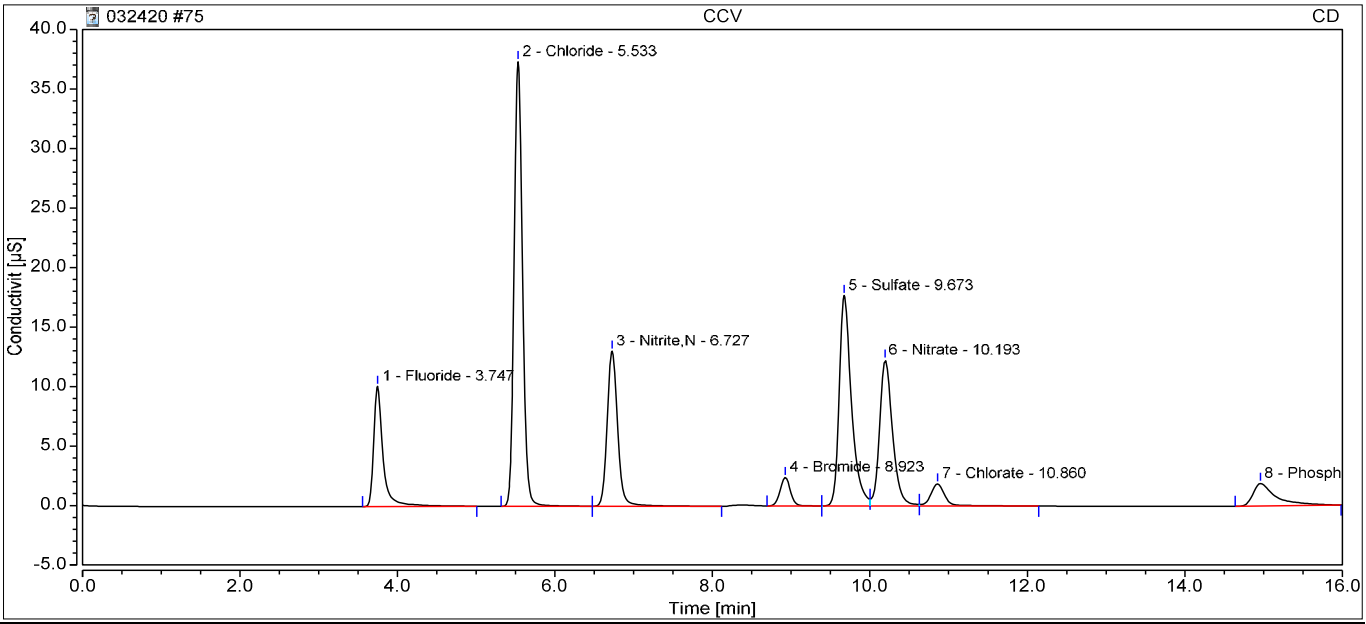
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	500.0000
1	5.54	Chloride	BMB	0.205	0.9465	473.2587	500.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	500.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	500.0000
2	9.72	Sulfate	BMB	1.663	10.0042	5002.1131	500.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	500.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	500.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	500.0000
Total:			**0.000**	**1.868**		**5475.37**	

75 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/25/2020 17:17**	*Sample Weight:*	**1.0000**

Run Time:



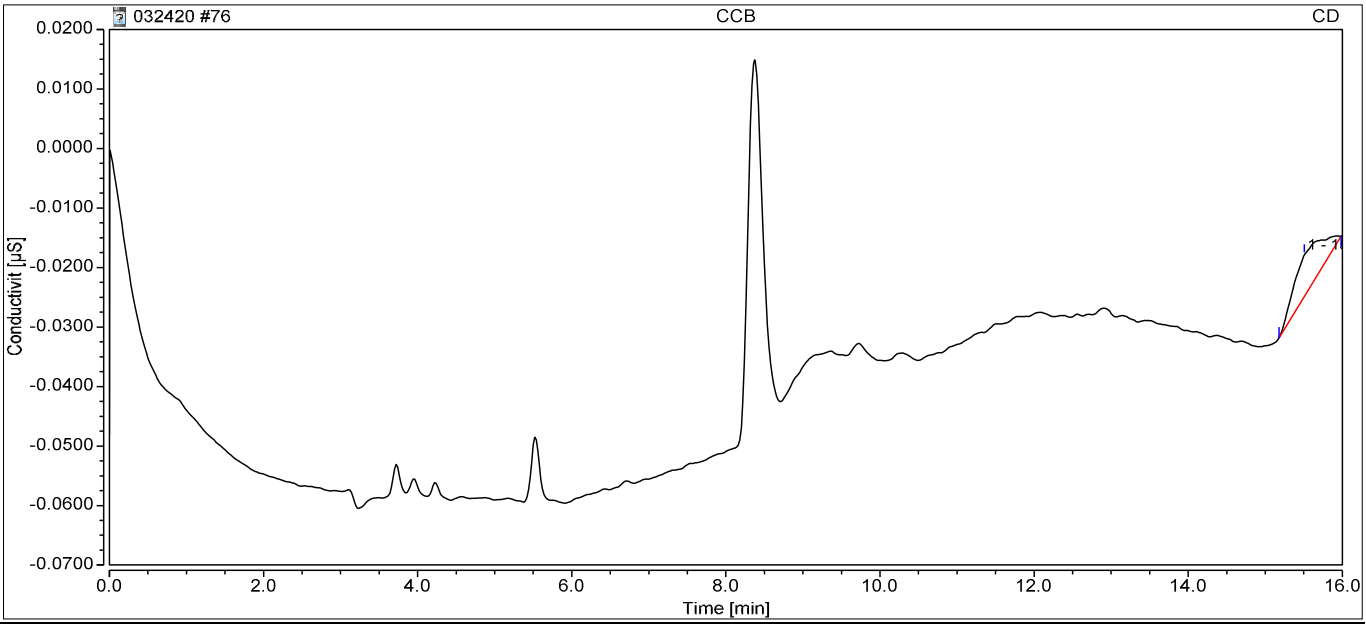
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	1.395	4.1098	4.1098	1.0000
2	5.53	Chloride	BMB	4.575	19.7825	19.7825	1.0000
3	6.73	Nitrite,N	BMB	2.035	4.3899	4.3899	1.0000
4	8.92	Bromide	BM	0.364	3.7054	3.7054	1.0000
5	9.67	Sulfate	M	3.198	19.1475	19.1475	1.0000
6	10.19	Nitrate	M	2.345	4.0266	4.0266	1.0000
7	10.86	Chlorate	MB	0.393	4.1201	4.1201	1.0000
8	14.96	Phosphate	BMB	0.646	3.0629	3.0629	1.0000
Total:			**0.000**	**14.951**		**62.34**	

76 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/25/2020 17:35**	*Sample Weight:*	**1.0000**

Run Time:



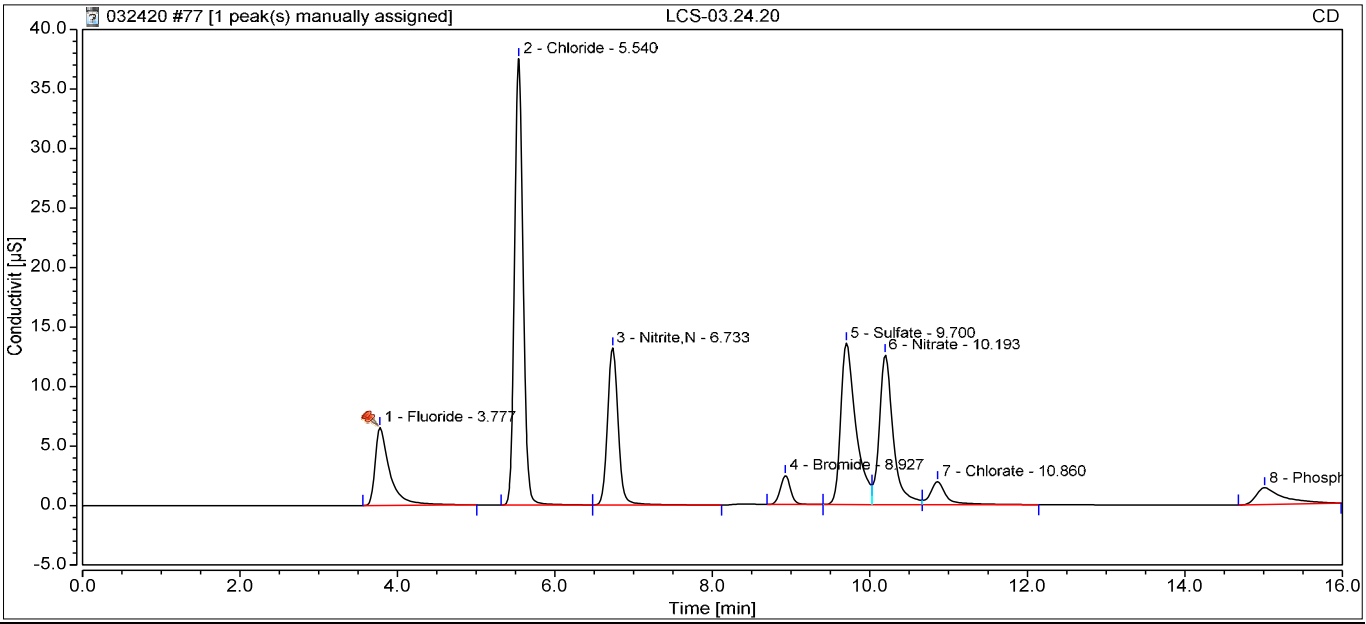
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

77 LCS-03.24.20

Sample Name:	**LCS-03.24.20**	*Injection Volume:*	**5.00**
Vial Number:	**RA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/25/2020 18:29**	*Sample Weight:*	**1.0000**

Run Time:



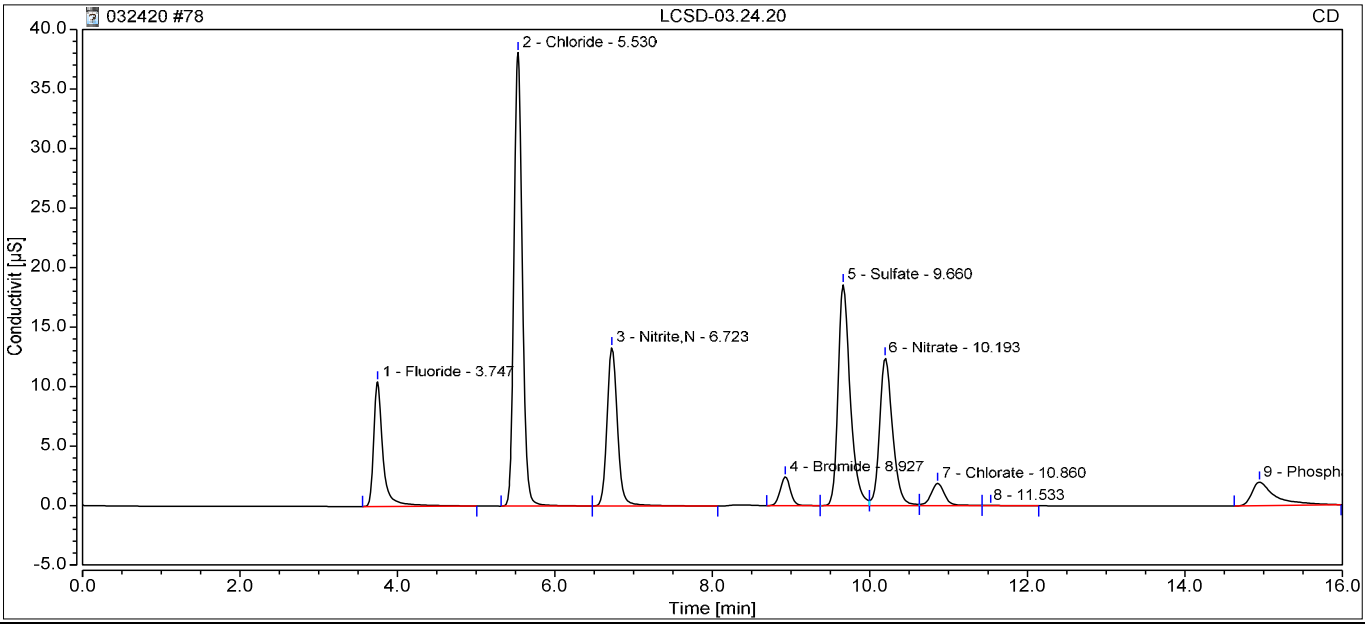
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.78	Fluoride	BMB^	1.408	4.1467	4.1467	1.0000
2	5.54	Chloride	BMB	4.684	20.2537	20.2537	1.0000
3	6.73	Nitrite,N	BMB	2.085	4.4984	4.4984	1.0000
4	8.93	Bromide	BM	0.368	3.7416	3.7416	1.0000
5	9.70	Sulfate	M	3.048	18.2550	18.2550	1.0000
6	10.19	Nitrate	M	2.575	4.4197	4.4197	1.0000
7	10.86	Chlorate	MB	0.453	4.7490	4.7490	1.0000
8	15.01	Phosphate	BMB	0.569	2.7115	2.7115	1.0000
Total:			**0.000**	**15.190**		**62.78**	

78 LCSD-03.24.20

Sample Name:	**LCSD-03.24.20**	*Injection Volume:*	**5.00**
Vial Number:	**RA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/25/2020 18:47**	*Sample Weight:*	**1.0000**

Run Time:



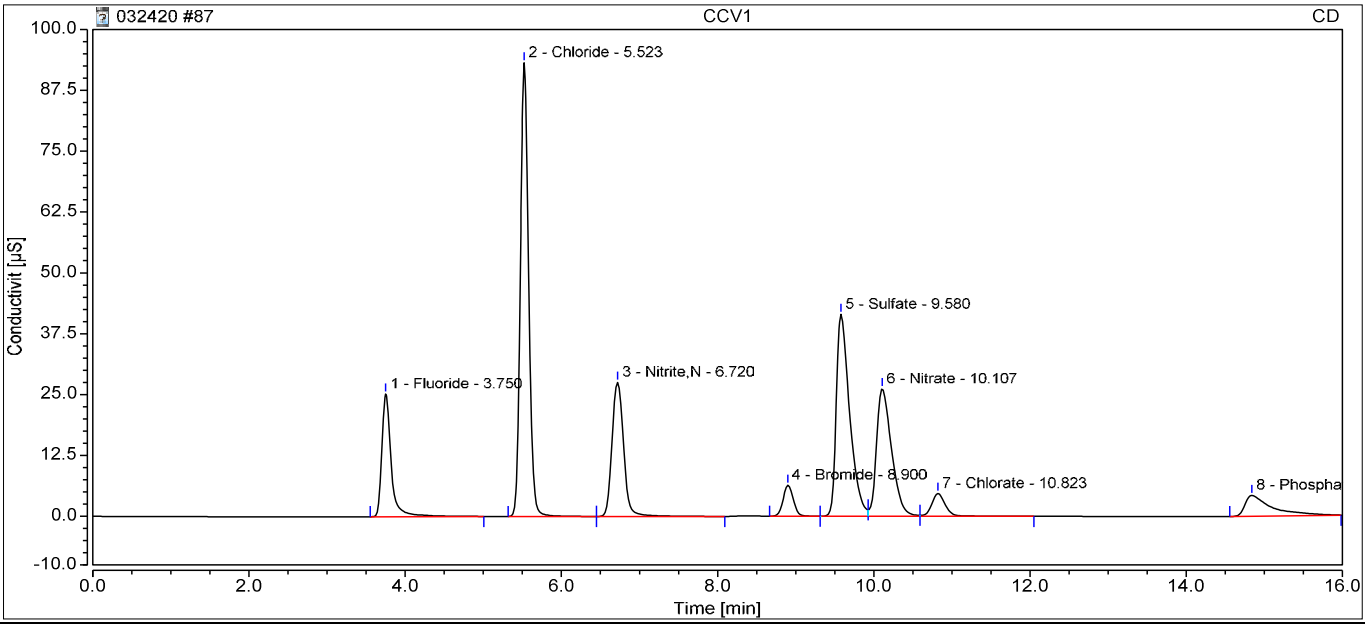
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	1.423	4.1906	4.1906	1.0000
2	5.53	Chloride	BMB	4.646	20.0889	20.0889	1.0000
3	6.72	Nitrite,N	BMB	2.067	4.4583	4.4583	1.0000
4	8.93	Bromide	BM	0.370	3.7671	3.7671	1.0000
5	9.66	Sulfate	M	3.310	19.8159	19.8159	1.0000
6	10.19	Nitrate	M	2.377	4.0803	4.0803	1.0000
7	10.86	Chlorate	M	0.384	4.0296	4.0296	1.0000
9	14.95	Phosphate	BMB	0.684	3.2380	3.2380	1.0000
Total:			**0.000**	**15.261**		**63.67**	

87 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/25/2020 22:31**	*Sample Weight:*	**1.0000**

Run Time:



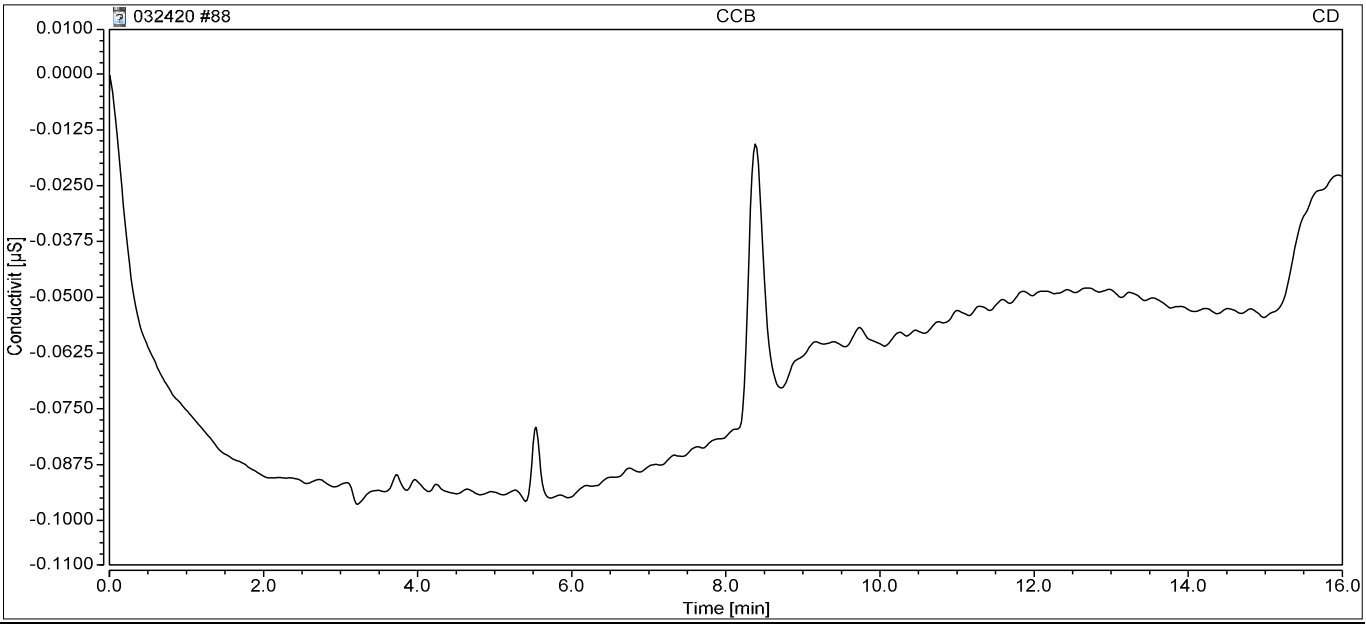
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	3.477	10.2075	10.2075	1.0000
2	5.52	Chloride	BMB	11.408	49.2416	49.2416	1.0000
3	6.72	Nitrite,N	BMB	4.768	10.2419	10.2419	1.0000
4	8.90	Bromide	BM	0.959	9.7105	9.7105	1.0000
5	9.58	Sulfate	M	8.208	48.9840	48.9840	1.0000
6	10.11	Nitrate	M	5.837	10.0034	10.0034	1.0000
7	10.82	Chlorate	MB	0.957	10.0638	10.0638	1.0000
8	14.84	Phosphate	BMB	1.722	7.9851	7.9851	1.0000
Total:			**0.000**	**37.338**		**156.44**	

88 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/25/2020 22:49**	*Sample Weight:*	**1.0000**

Run Time:

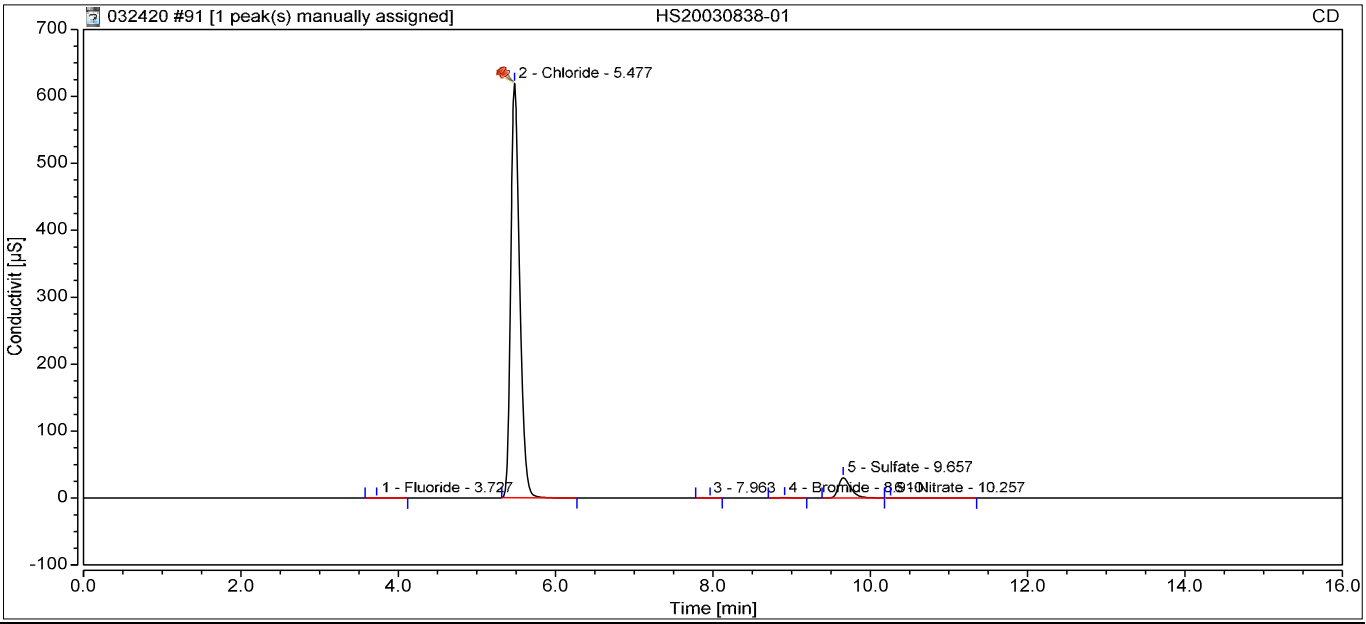


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

91	*HS20030838-01*		
Sample Name:	**HS20030838-01**	*Injection Volume:*	**5.00**
Vial Number:	**RB5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/25/2020 23:44**	*Sample Weight:*	**1.0000**

Run Time:



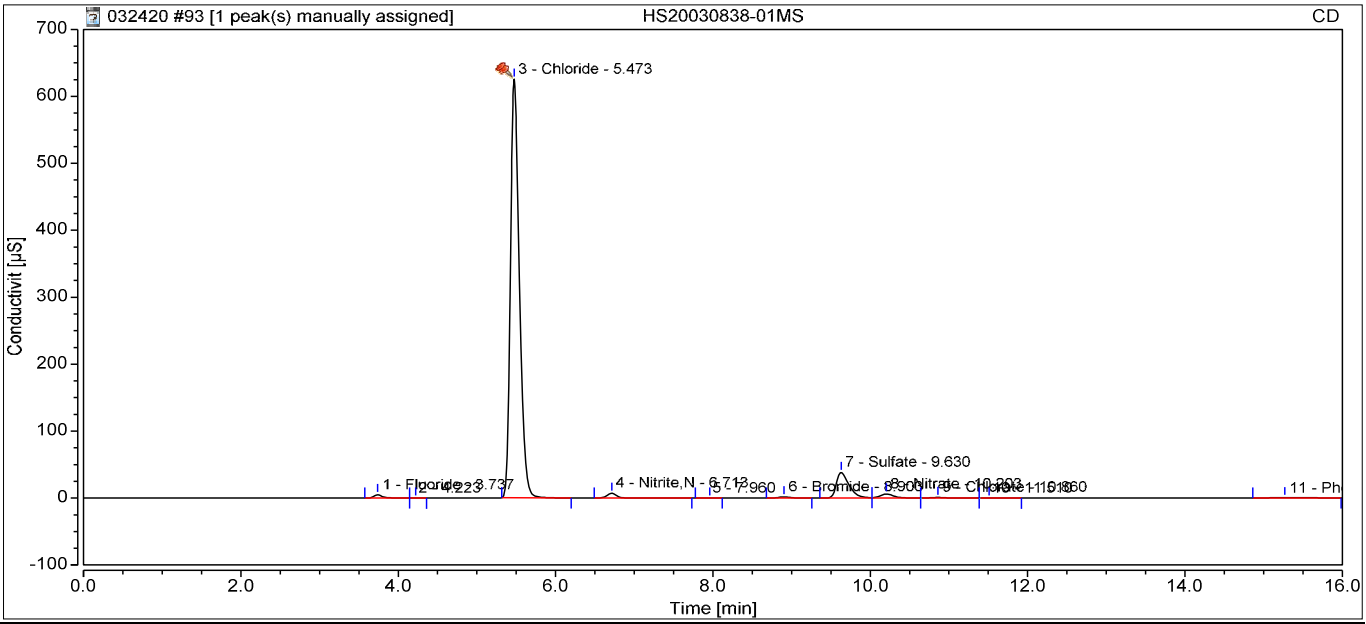
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.025	0.0978	0.0978	1.0000
2	5.48	Chloride	BMB^	81.749	352.4777	352.4777	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
4	8.91	Bromide	BMB	0.073	0.7681	0.7681	1.0000
5	9.66	Sulfate	BM	5.483	32.7551	32.7551	1.0000
6	10.26	Nitrate	MB	0.051	0.1010	0.1010	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**87.381**		**386.20**	

93 HS20030838-01MS

Sample Name:	**HS20030838-01MS**	*Injection Volume:*	**5.00**
Vial Number:	**RB7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2020 00:20**	*Sample Weight:*	**1.0000**

Run Time:



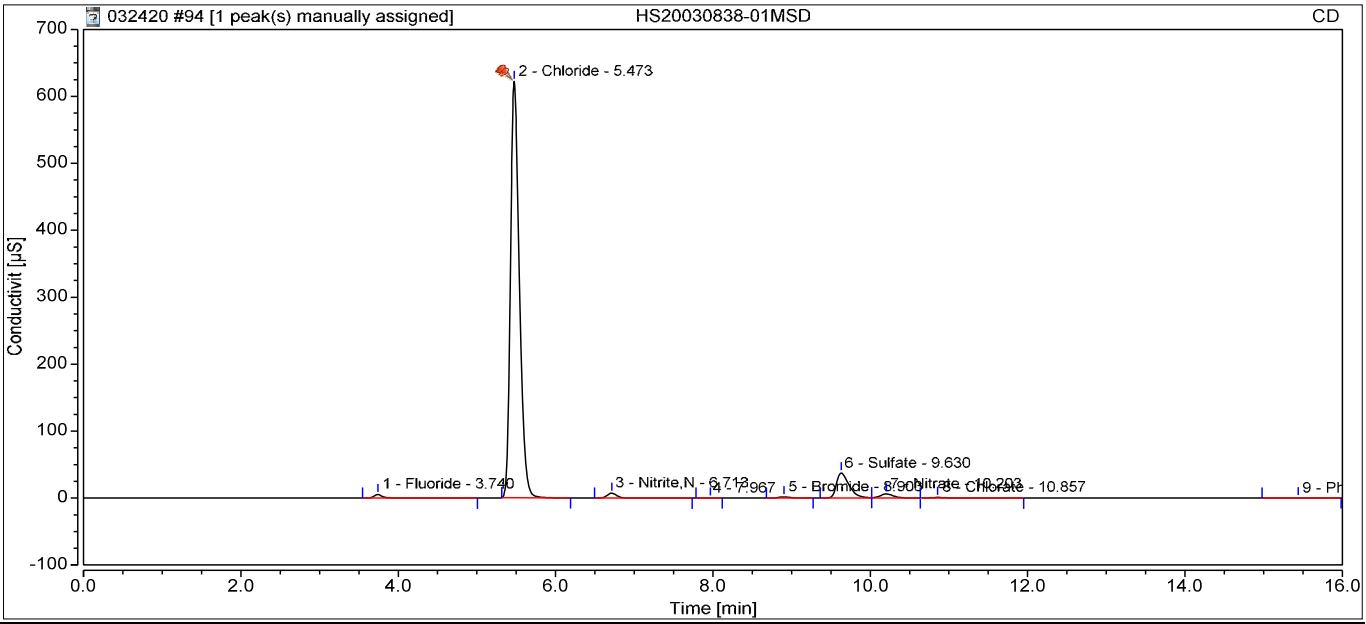
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.637	1.8890	1.8890	1.0000
3	5.47	Chloride	BMB^	82.579	356.0555	356.0555	1.0000
4	6.71	Nitrite,N	BMB	1.039	2.2579	2.2579	1.0000
6	8.90	Bromide	BMB	0.250	2.5535	2.5535	1.0000
7	9.63	Sulfate	BM	7.131	42.5698	42.5698	1.0000
8	10.20	Nitrate	M	1.198	2.0635	2.0635	1.0000
9	10.86	Chlorate	M	0.184	1.9187	1.9187	1.0000
11	15.27	Phosphate	BMB	0.342	1.6708	1.6708	1.0000
Total:			**0.000**	**93.359**		**410.98**	

94 HS20030838-01MSD

Sample Name:	**HS20030838-01MSD**	*Injection Volume:*	**5.00**
Vial Number:	**RB8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2020 00:38**	*Sample Weight:*	**1.0000**

Run Time:

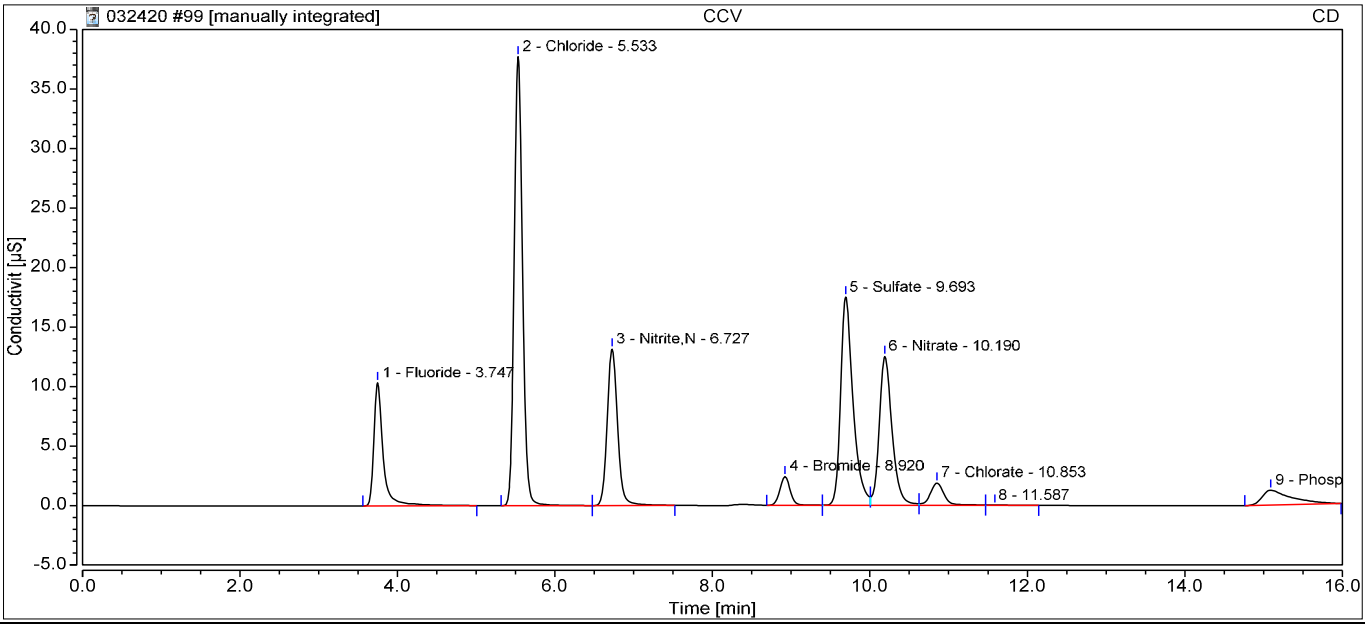


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.742	2.1968	2.1968	1.0000
2	5.47	Chloride	BMB^	82.058	353.8122	353.8122	1.0000
3	6.71	Nitrite,N	BMB	1.068	2.3208	2.3208	1.0000
5	8.90	Bromide	BMB	0.255	2.6094	2.6094	1.0000
6	9.63	Sulfate	BM	6.978	41.6576	41.6576	1.0000
7	10.20	Nitrate	M	1.233	2.1224	2.1224	1.0000
8	10.86	Chlorate	MB	0.193	2.0157	2.0157	1.0000
9	15.44	Phosphate	BMB	0.151	0.7970	0.7970	1.0000
Total:			**0.000**	**92.678**		**407.53**	

99 CCV			
Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2020 02:08**	*Sample Weight:*	**1.0000**

Run Time:



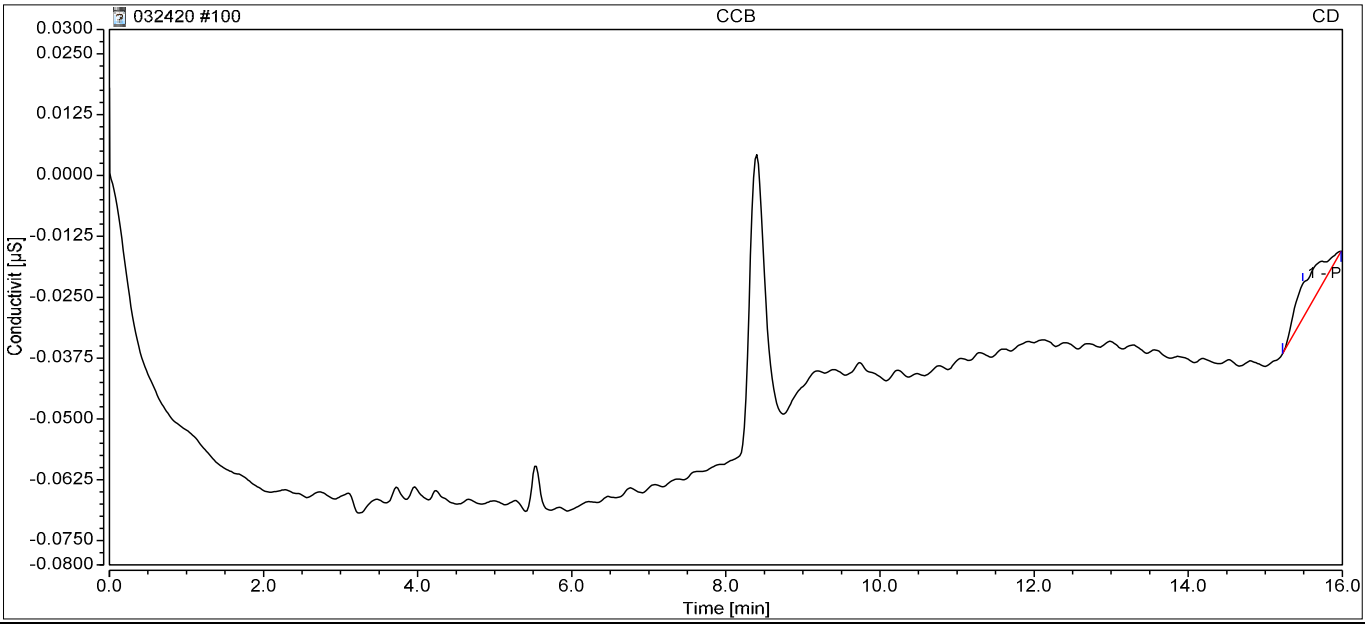
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	1.407	4.1465	4.1465	1.0000
2	5.53	Chloride	BMb*	4.578	19.7960	19.7960	1.0000
3	6.73	Nitrite,N	bMB*	2.022	4.3626	4.3626	1.0000
4	8.92	Bromide	BM	0.366	3.7285	3.7285	1.0000
5	9.69	Sulfate	M	3.219	19.2729	19.2729	1.0000
6	10.19	Nitrate	M	2.364	4.0587	4.0587	1.0000
7	10.85	Chlorate	M	0.388	4.0662	4.0662	1.0000
9	15.09	Phosphate	BMB	0.546	2.6048	2.6048	1.0000
Total:			**0.000**	**14.890**		**62.04**	

100 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2020 02:27**	*Sample Weight:*	**1.0000**

Run Time:



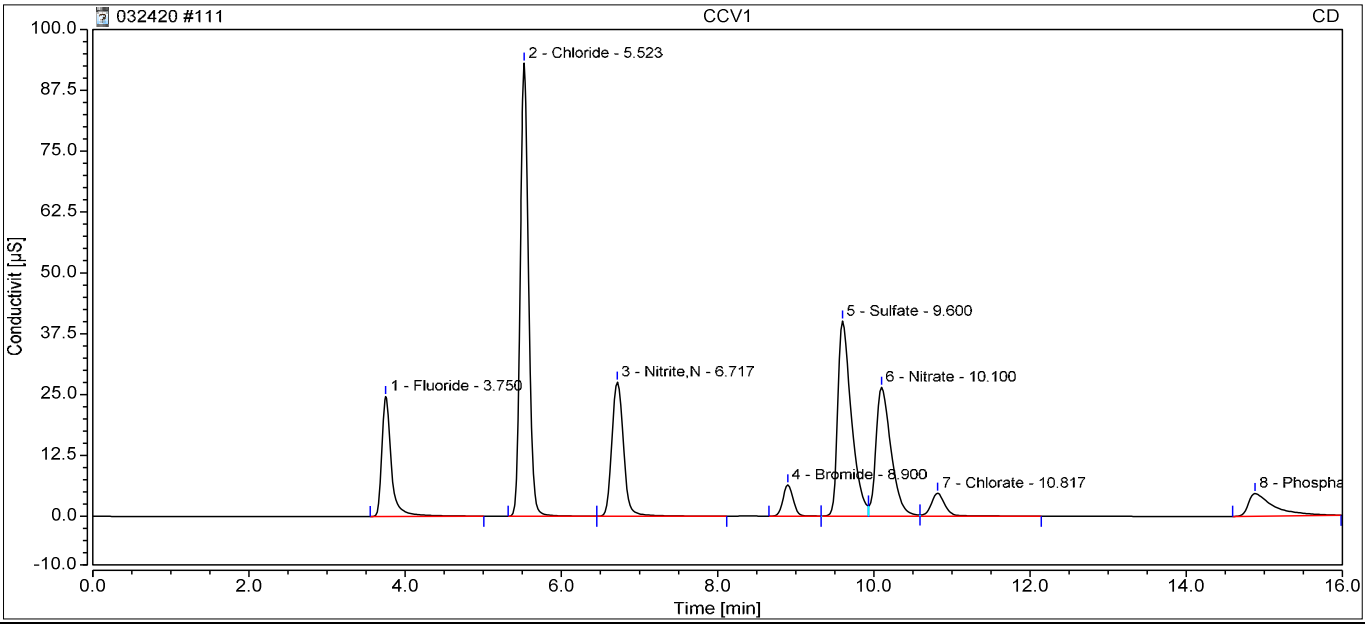
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
1	15.49	Phosphate	BMB	0.003	0.1215	0.1215	1.0000
Total:			**0.000**	**0.003**		**0.12**	

111 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2020 05:46**	*Sample Weight:*	**1.0000**

Run Time:



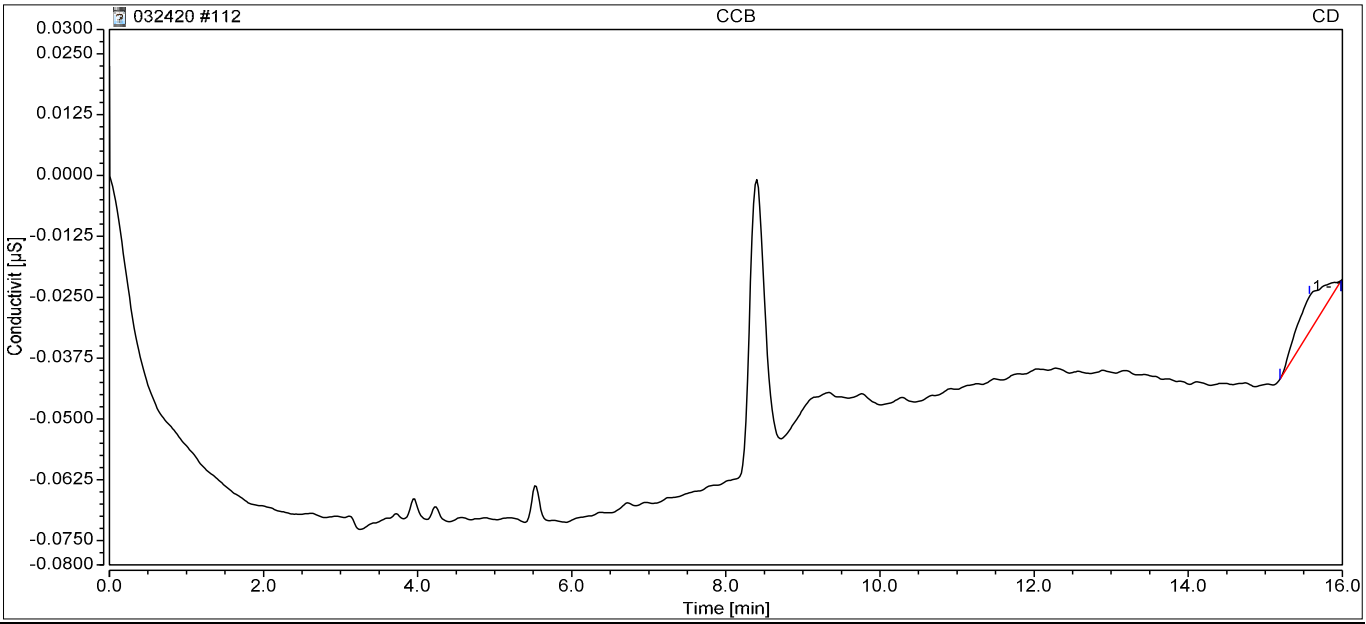
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	3.471	10.1911	10.1911	1.0000
2	5.52	Chloride	BMB	11.448	49.4113	49.4113	1.0000
3	6.72	Nitrite,N	BMB	4.799	10.3076	10.3076	1.0000
4	8.90	Bromide	BM	0.977	9.8865	9.8865	1.0000
5	9.60	Sulfate	M	8.120	48.4563	48.4563	1.0000
6	10.10	Nitrate	M	5.946	10.1898	10.1898	1.0000
7	10.82	Chlorate	MB	0.987	10.3826	10.3826	1.0000
8	14.88	Phosphate	BMB	1.758	8.1475	8.1475	1.0000
Total:			**0.000**	**37.506**		**156.97**	

112 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2020 06:04**	*Sample Weight:*	**1.0000**

Run Time:



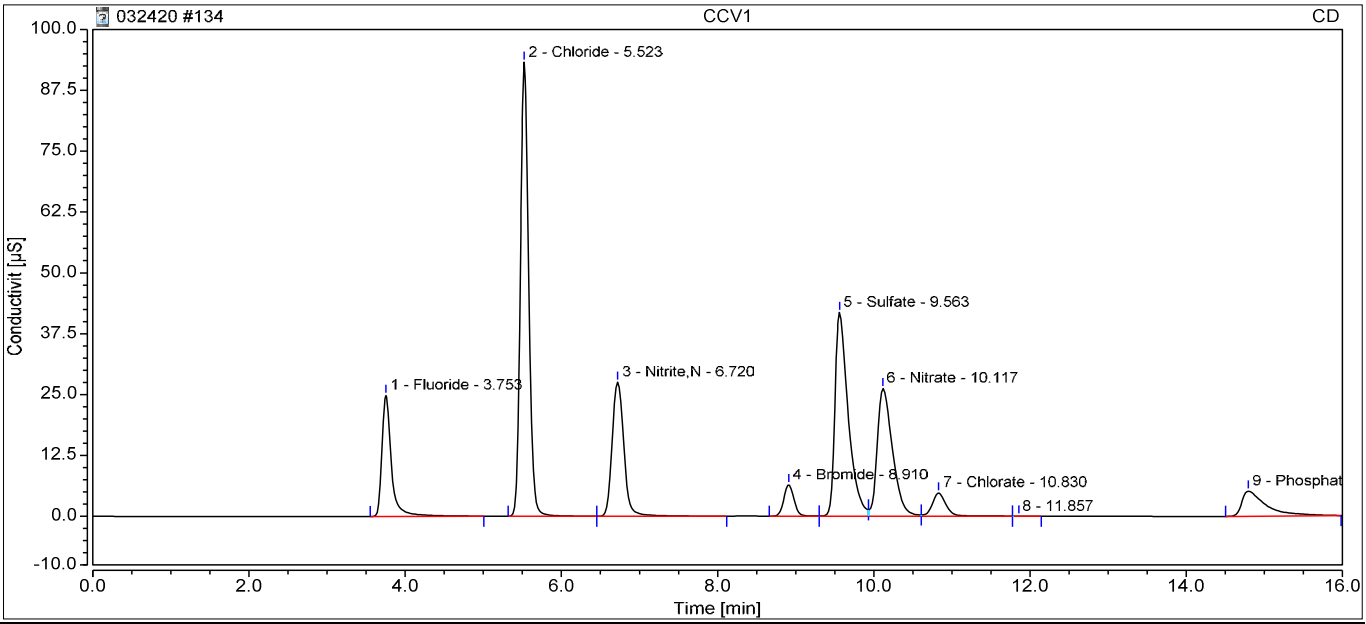
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

134 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2020 12:42**	*Sample Weight:*	**1.0000**

Run Time:



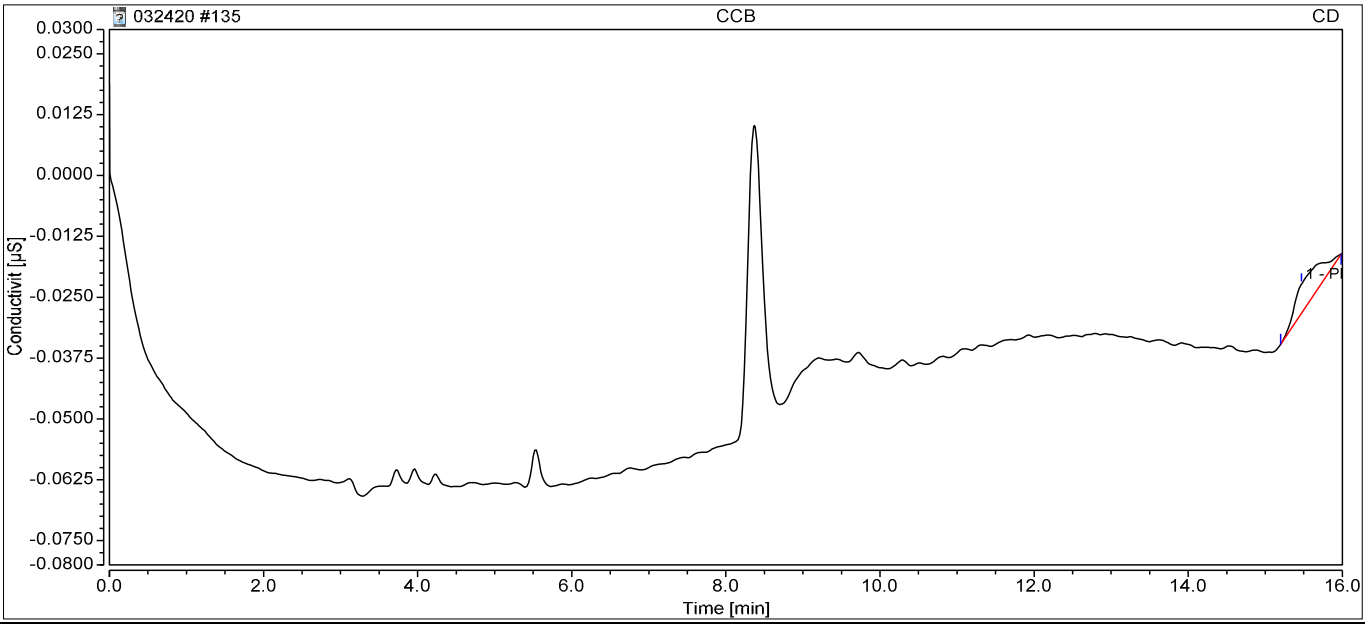
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	3.489	10.2435	10.2435	1.0000
2	5.52	Chloride	BMB	11.491	49.5978	49.5978	1.0000
3	6.72	Nitrite,N	BMB	4.816	10.3432	10.3432	1.0000
4	8.91	Bromide	BM	0.980	9.9155	9.9155	1.0000
5	9.56	Sulfate	M	8.235	49.1404	49.1404	1.0000
6	10.12	Nitrate	M	5.917	10.1388	10.1388	1.0000
7	10.83	Chlorate	M	0.985	10.3611	10.3611	1.0000
9	14.80	Phosphate	BMB	1.860	8.6164	8.6164	1.0000
Total:			**0.000**	**37.772**		**158.36**	

135 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2020 13:00**	*Sample Weight:*	**1.0000**

Run Time:



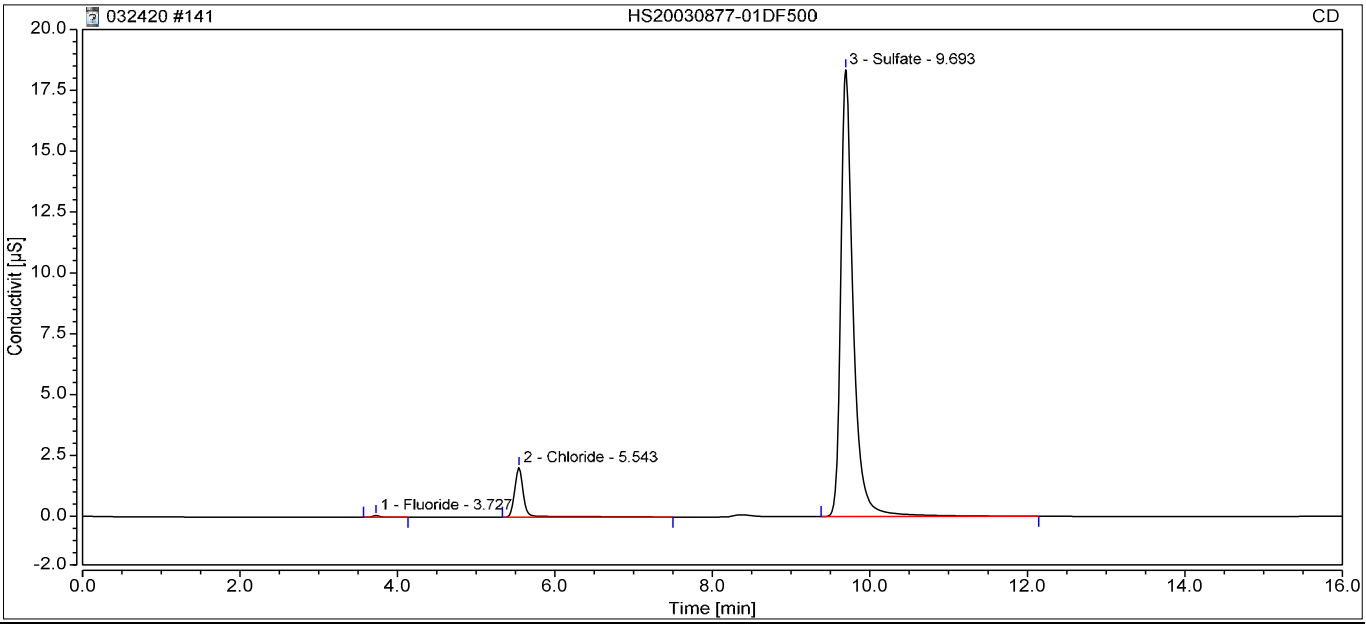
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
1	15.47	Phosphate	BMB	0.003	0.1195	0.1195	1.0000
Total:			**0.000**	**0.003**		**0.12**	

141 HS20030877-01DF500

Sample Name:	**HS20030877-01DF500**	*Injection Volume:*	**5.00**
Vial Number:	**BB4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**500.0000**
Recording Time:	**03/26/2020 15:07**	*Sample Weight:*	**1.0000**

Run Time:



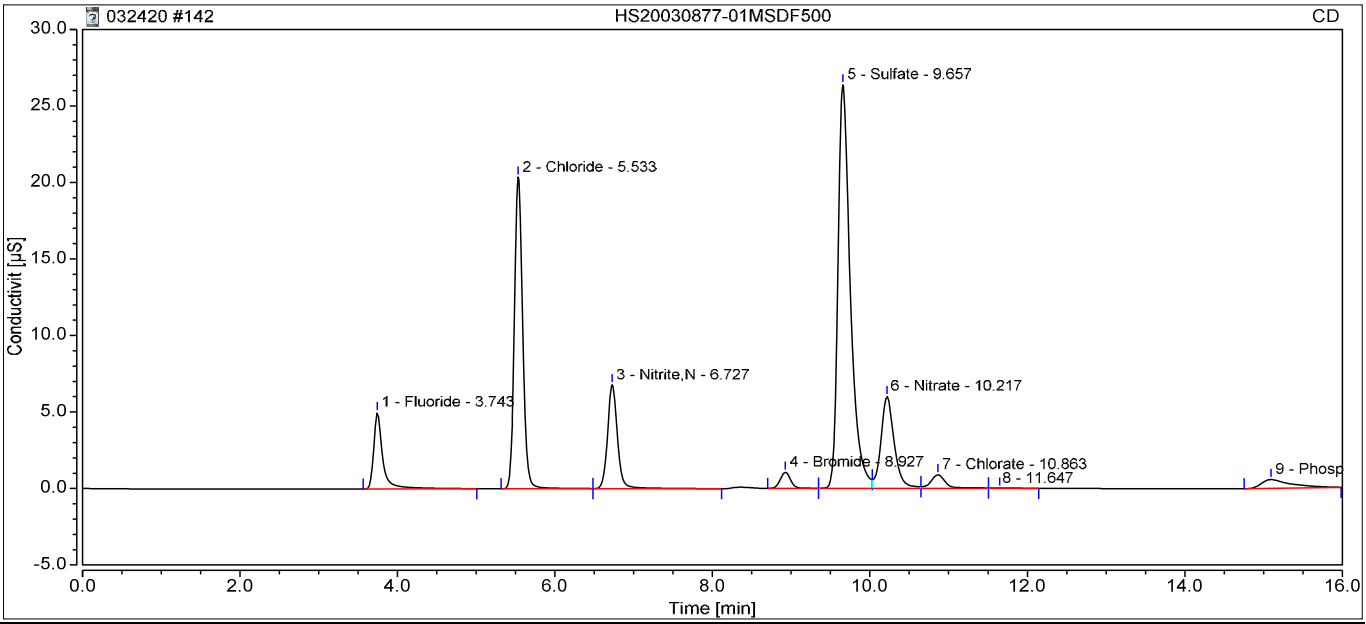
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.008	0.0474	23.7107	500.0000
2	5.54	Chloride	BMB	0.277	1.2555	627.7356	500.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	500.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	500.0000
3	9.69	Sulfate	BMB	3.365	20.1379	10068.9392	500.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	500.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	500.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	500.0000
Total:			**0.000**	**3.650**		**10720.39**	

142 HS20030877-01MSDF500

Sample Name:	**HS20030877-01MSDF500**	*Injection Volume:*	**5.00**
Vial Number:	**BB5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**500.0000**
Recording Time:	**03/26/2020 15:25**	*Sample Weight:*	**1.0000**

Run Time:



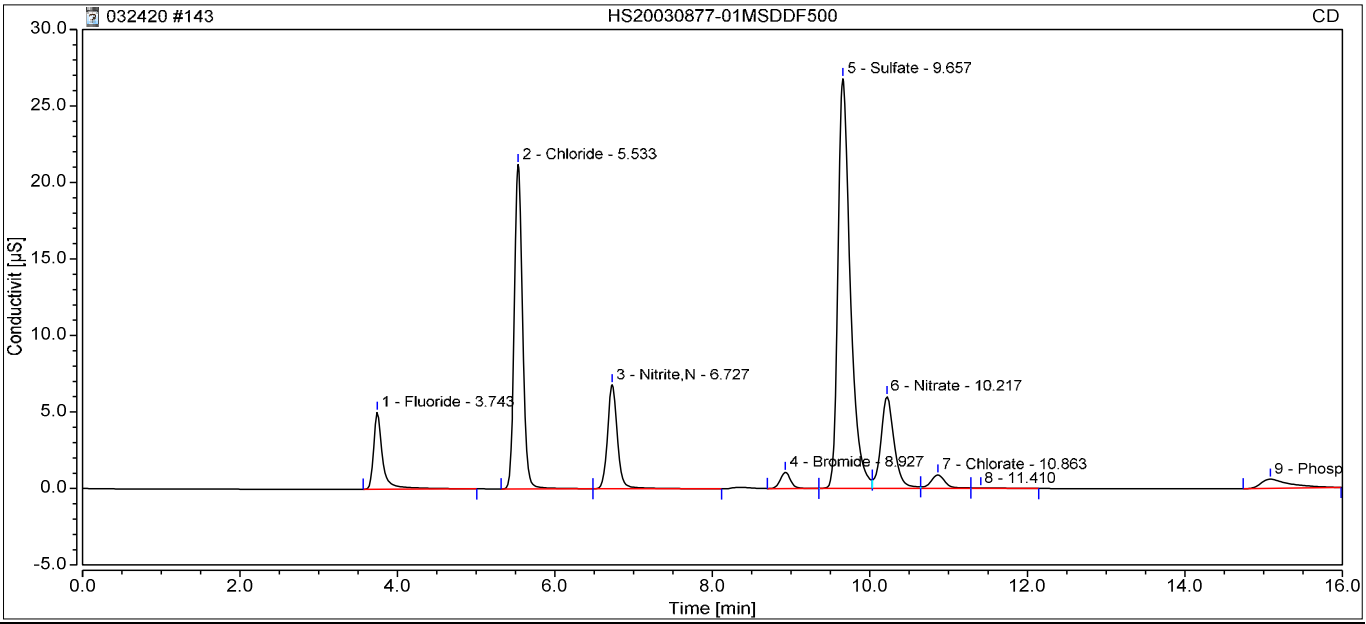
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.670	1.9865	993.2438	500.0000
2	5.53	Chloride	BMB	2.460	10.6675	5333.7417	500.0000
3	6.73	Nitrite,N	BMB	0.998	2.1702	1085.1237	500.0000
4	8.93	Bromide	BM	0.162	1.6714	835.7217	500.0000
5	9.66	Sulfate	M	4.798	28.6720	14336.0138	500.0000
6	10.22	Nitrate	M	1.178	2.0297	1014.8730	500.0000
7	10.86	Chlorate	M	0.196	2.0472	1023.6145	500.0000
9	15.09	Phosphate	BMB	0.252	1.2615	630.7710	500.0000
Total:			**0.000**	**10.715**		**25253.10**	

143 HS20030877-01MSDDF500

Sample Name:	**HS20030877-01MSDDF500**	*Injection Volume:*	**5.00**
Vial Number:	**BB6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**500.0000**
Recording Time:	**03/26/2020 15:43**	*Sample Weight:*	**1.0000**

Run Time:



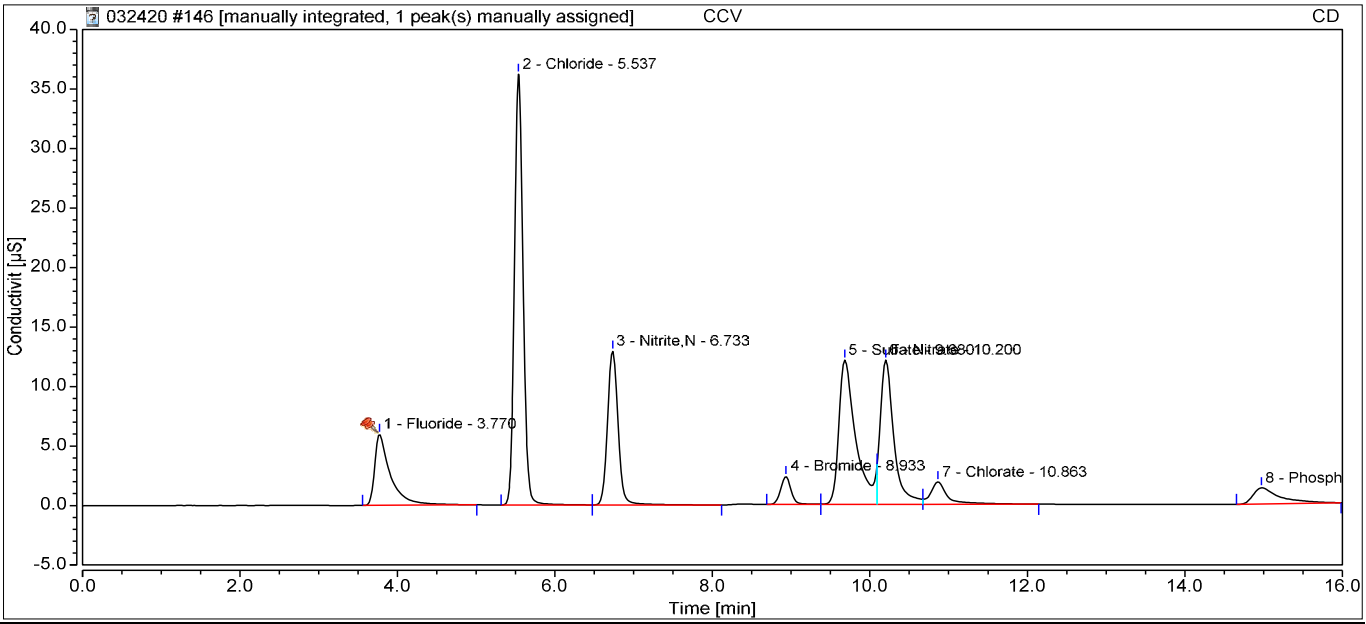
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.668	1.9813	990.6614	500.0000
2	5.53	Chloride	BMB	2.560	11.0975	5548.7320	500.0000
3	6.73	Nitrite,N	BMB	0.998	2.1708	1085.4157	500.0000
4	8.93	Bromide	BM	0.163	1.6745	837.2748	500.0000
5	9.66	Sulfate	M	4.870	29.1062	14553.1144	500.0000
6	10.22	Nitrate	M	1.178	2.0297	1014.8561	500.0000
7	10.86	Chlorate	M	0.190	1.9819	990.9458	500.0000
9	15.09	Phosphate	BMB	0.263	1.3119	655.9741	500.0000
Total:			**0.000**	**10.891**		**25676.97**	

146 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2020 19:01**	*Sample Weight:*	**1.0000**

Run Time:



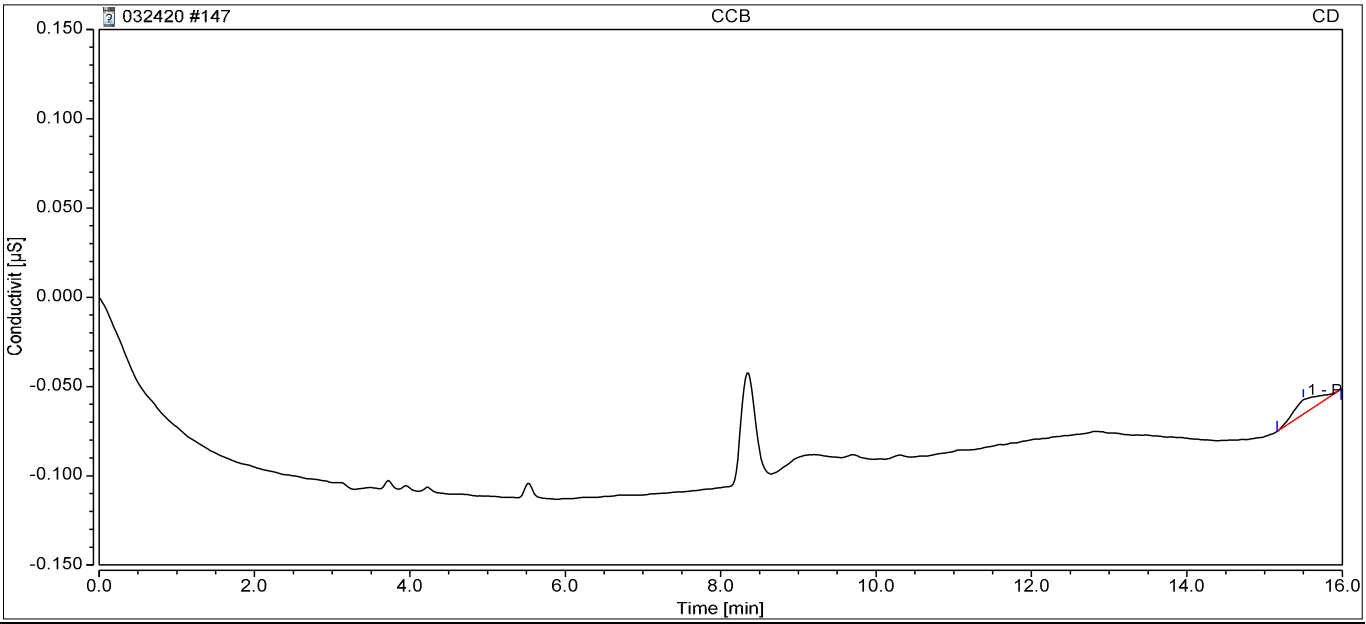
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.77	Fluoride	BMB^	1.380	4.0663	4.0663	1.0000
2	5.54	Chloride	BMB	4.546	19.6607	19.6607	1.0000
3	6.73	Nitrite,N	BMB	2.032	4.3843	4.3843	1.0000
4	8.93	Bromide	BM	0.362	3.6851	3.6851	1.0000
5	9.68	Sulfate	M *	3.042	18.2186	18.2186	1.0000
6	10.20	Nitrate	M *	2.389	4.1012	4.1012	1.0000
7	10.86	Chlorate	MB	0.475	4.9897	4.9897	1.0000
8	14.97	Phosphate	BMB	0.542	2.5888	2.5888	1.0000
Total:			**0.000**	**14.769**		**61.69**	

147 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/26/2020 19:20**	*Sample Weight:*	**1.0000**

Run Time:



Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
1	15.50	Phosphate	BMB	0.003	0.1215	0.1215	1.0000
Total:			**0.000**	**0.003**		**0.12**	

HS20030733 ALK

ALS WO# HS20030733

Report Date: 03/20/2020 : 8:19 AM

PC-TitratION PLUS
Calibration Report

Calibration Record # 2230

Calibration Settings

Calibration ID	PH CAL 4-7-10	Date	03/20/2020
Channel	1	Time	8:19 AM
Probe Type	pH	Temperature	294.31 K 21.16 C
Probe ID	PH ELECTRODE	Analysis Type	Single Line Fit

Calibration Results

Slope	-57.677	CorrCoeff	0.9998
Intercept	3.947	Equation:	Y = (-57.677) X + (3.947)

Calibration Validity True Operator

	Result	Minimum	Maximum
Slope	-57.677	-65.00	-53.00
Intercept	3.947	-100.00	100.00
Correlation Coefficient	0.9998	0.99	1.00

Note: "True" means the calibration was within the specified ranges
"False" means the calibration was NOT within the specified ranges

Calibration Data	Standard	Reading
	4.00	178.95
	7.00	0.00
	10.00	-167.11

358569

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Report Date: 3/20/2020 : 12:27 PM

PC-TitratION PLUS
Water Analysis Report

Run Number 3785 **Order Number** 20200320-2

SampleID	RunDate	RunTime	Temp	cond (uS)	pH	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	mLs @ 8.3	mLs @ 4.5	mLs @ 4.2
ICV-PH	3/20/2020	8:36 AM	20.98	-1.00	6.03	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
TAP WATER	3/20/2020	8:43 AM	21.34	-1.00	7.87	.00	321.28	321.28	.00	.00	.00	3.06	3.06
WBLKW1-032020	3/20/2020	8:48 AM	21.43	-1.00	5.79	.00	.51	.51	.00	.00	.00	.02	.02
WLCS1-032020	3/20/2020	8:57 AM	21.83	-1.00	10.99	522.52	1,009.17	.00	973.31	35.87	4.98	9.61	9.61
WLCSD1-032020	3/20/2020	9:05 AM	22.32	-1.00	10.98	518.60	1,004.54	.00	971.88	32.66	4.94	9.57	9.57
HS20030586-02	3/20/2020	9:13 AM	22.61	-1.00	7.80	.00	601.89	601.89	.00	.00	.00	5.73	5.73
HS20030586-02DUP	3/20/2020	9:21 AM	22.48	-1.00	7.78	.00	600.17	600.17	.00	.00	.00	5.72	5.72
HS20030586-01	3/20/2020	9:28 AM	21.92	-1.00	8.00	.00	580.48	580.48	.00	.00	.00	5.53	5.53
HS20030586-03	3/20/2020	9:35 AM	21.64	-1.00	8.07	.00	399.98	399.98	.00	.00	.00	3.81	3.81
HS20030586-04	3/20/2020	9:49 AM	21.48	-1.00	7.81	.00	2,256.18	2,256.18	.00	.00	.00	21.49	21.49
HS20030733-01	3/20/2020	9:55 AM	21.27	-1.00	7.51	.00	389.48	389.48	.00	.00	.00	3.71	3.71
CCV-PH	3/20/2020	9:58 AM	21.28	-1.00	7.06	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCV-ALK	3/20/2020	10:07 AM	21.21	-1.00	10.98	517.94	1,006.62	.00	977.37	29.26	4.93	9.59	9.59
DI RINSE	3/20/2020	10:12 AM	21.15	-1.00	5.89	.00	.49	.49	.00	.00	.00	.02	.02
HS20030744-01	3/20/2020	10:17 AM	21.15	-1.00	5.63	.00	.31	.31	.00	.00	.00	.02	.02
HS20030733-02	3/20/2020	10:23 AM	21.21	-1.00	7.11	.00	168.03	168.03	.00	.00	.00	1.60	1.60
HS20030733-03	3/20/2020	10:31 AM	21.14	-1.00	7.35	.00	1,010.36	1,010.36	.00	.00	.00	9.62	9.62
HS20030733-06	3/20/2020	10:36 AM	21.79	-1.00	5.74	.00	32.38	32.38	.00	.00	.00	.31	.31
HS20030751-01	3/20/2020	10:43 AM	22.05	-1.00	7.54	.00	427.64	427.64	.00	.00	.00	4.07	4.07
HS20030751-02	3/20/2020	10:51 AM	22.40	-1.00	7.39	.00	527.52	527.52	.00	.00	.00	5.02	5.02
HS20030751-03	3/20/2020	10:58 AM	22.69	-1.00	7.40	.00	550.80	550.80	.00	.00	.00	5.25	5.25
HS20030751-04	3/20/2020	11:05 AM	22.83	-1.00	7.98	.00	634.99	634.99	.00	.00	.00	6.05	6.05
HS20030751-05	3/20/2020	11:12 AM	22.99	-1.00	7.47	.00	545.22	545.22	.00	.00	.00	5.19	5.19
CCV-PH	3/20/2020	11:15 AM	23.07	-1.00	7.07	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCV-ALK	3/20/2020	11:23 AM	22.92	-1.00	10.93	515.33	1,021.15	.00	1,011.64	9.51	4.91	9.73	9.73
DI RINSE	3/20/2020	11:29 AM	23.23	-1.00	5.87	.00	.39	.39	.00	.00	.00	.02	.02
HS20030751-06	3/20/2020	11:36 AM	22.52	-1.00	7.69	.00	503.10	503.10	.00	.00	.00	4.79	4.79

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Run Number 3785 **Order Number** 20200320-2

SampleID	RunDate	RunTime	Temp	cond (uS)	pH	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	mLs @ 8.3	mLs @ 4.5	mLs @ 4.2
TH HS20030792-01 NR	3/20/2020	11:51 AM	22.10	-1.00	8.17	.00	.00	.00	.00	.00	.00	.00	.00
HS20030774-01	3/20/2020	11:57 AM	21.71	-1.00	8.48	7.59	228.67	213.50	15.17	.00	.07	2.18	2.18
HS20030877-01	3/20/2020	12:10 PM	21.58	-1.00	8.41	33.62	1,853.25	1,786.00	67.25	.00	.32	17.65	17.65
CCV-PH	3/20/2020	12:12 PM	22.20	-1.00	7.06	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCV-ALK	3/20/2020	12:20 PM	22.19	-1.00	10.92	512.13	1,016.33	.00	1,008.41	7.93	4.88	9.68	9.68
DI RINSE	3/20/2020	12:25 PM	22.63	-1.00	5.96	.00	.38	.38	.00	.00	.00	.02	.02

PC-TitratION PLUS by Man-Tech Associates, Inc.

GENERAL RESULTS REPORT.SRW

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April 02, 2020

Susan Huang
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS20030888**

Laboratory Results for: **Longhorn Army Ammunition Plant - 16**

Dear Susan,

ALS Environmental received 11 sample(s) on Mar 19, 2020 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: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Work Order: HS20030888

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20030888-01	16WW44-200317	Groundwater		17-Mar-2020 08:20	19-Mar-2020 08:50	☐
HS20030888-02	16WW37-200317	Groundwater		17-Mar-2020 09:15	19-Mar-2020 08:50	☐
HS20030888-03	16WW38-200317	Groundwater		17-Mar-2020 10:00	19-Mar-2020 08:50	☐
HS20030888-04	16WW14-200317	Groundwater		17-Mar-2020 10:50	19-Mar-2020 08:50	☐
HS20030888-05	16RW06-200317	Groundwater		17-Mar-2020 11:40	19-Mar-2020 08:50	☐
HS20030888-06	16PM03-200317	Groundwater		17-Mar-2020 12:35	19-Mar-2020 08:50	☐
HS20030888-07	16PM02-200317	Groundwater		17-Mar-2020 13:25	19-Mar-2020 08:50	☐
HS20030888-08	16RW07-200317	Groundwater		17-Mar-2020 14:15	19-Mar-2020 08:50	☐
HS20030888-09	16RW11-200317	Groundwater		17-Mar-2020 15:00	19-Mar-2020 08:50	☐
HS20030888-10	16WW51-200317	Groundwater		17-Mar-2020 15:50	19-Mar-2020 08:50	☐
HS20030888-11	Trip Blank	Water	CG-021720-07	17-Mar-2020 00:00	19-Mar-2020 08:50	☐

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
Project: Longhorn Army Ammunition Plant - 16
Work Order: HS20030888

Work Order Comments

- The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.
- The analysis for Perchlorate was subcontracted to ALS Salt Lake City, UT. Final report attached.

GCMS Volatiles by Method SW8260

Batch ID: R358682,R358746,R358758,R358856

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R359369

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW44-200317
Collection Date: 17-Mar-2020 08:20

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	22-Mar-2020 14:44
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:44
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:44
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:44
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	22-Mar-2020 14:44
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:44
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:44
Surr: 1,2-Dichloroethane-d4	*89.5*			**0**	*81-118*	*%REC*	*1*	*22-Mar-2020 14:44*
Surr: 4-Bromofluorobenzene	*98.0*			**0**	*85-114*	*%REC*	*1*	*22-Mar-2020 14:44*
Surr: Dibromofluoromethane	*95.9*			**0**	*80-119*	*%REC*	*1*	*22-Mar-2020 14:44*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*22-Mar-2020 14:44*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW37-200317
Collection Date: 17-Mar-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	22-Mar-2020 21:56
1,1-Dichloroethene	**0.82**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 21:56
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 21:56
cis-1,2-Dichloroethene	**6.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 21:56
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	22-Mar-2020 21:56
Trichloroethene	**110**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 21:56
Vinyl chloride	**2.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 21:56
Surr: 1,2-Dichloroethane-d4	*90.5*			**0**	*81-118*	*%REC*	*1*	*22-Mar-2020 21:56*
Surr: 4-Bromofluorobenzene	*96.6*			**0**	*85-114*	*%REC*	*1*	*22-Mar-2020 21:56*
Surr: Dibromofluoromethane	*94.6*			**0**	*80-119*	*%REC*	*1*	*22-Mar-2020 21:56*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*22-Mar-2020 21:56*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW38-200317
Collection Date: 17-Mar-2020 10:00

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	2.5	U	1.5	2.5	5.0	UG/L	5	24-Mar-2020 03:44
1,1-Dichloroethene	**13**		**1.0**	**2.5**	**5.0**	**UG/L**	5	24-Mar-2020 03:44
1,2-Dichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	24-Mar-2020 03:44
cis-1,2-Dichloroethene	**200**		**1.0**	**2.5**	**5.0**	**UG/L**	5	24-Mar-2020 03:44
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	24-Mar-2020 03:44
Trichloroethene	**3,000**		**10**	**25**	**50**	**UG/L**	50	24-Mar-2020 04:57
Vinyl chloride	**95**		**1.0**	**2.5**	**5.0**	**UG/L**	5	24-Mar-2020 03:44
Surr: 1,2-Dichloroethane-d4	*90.4*			**0**	*81-118*	*%REC*	*50*	*24-Mar-2020 04:57*
Surr: 1,2-Dichloroethane-d4	*90.2*			**0**	*81-118*	*%REC*	*5*	*24-Mar-2020 03:44*
Surr: 4-Bromofluorobenzene	*97.6*			**0**	*85-114*	*%REC*	*5*	*24-Mar-2020 03:44*
Surr: 4-Bromofluorobenzene	*96.4*			**0**	*85-114*	*%REC*	*50*	*24-Mar-2020 04:57*
Surr: Dibromofluoromethane	*93.9*			**0**	*80-119*	*%REC*	*5*	*24-Mar-2020 03:44*
Surr: Dibromofluoromethane	*94.7*			**0**	*80-119*	*%REC*	*50*	*24-Mar-2020 04:57*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*5*	*24-Mar-2020 03:44*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*50*	*24-Mar-2020 04:57*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW14-200317
Collection Date: 17-Mar-2020 10:50

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	22-Mar-2020 22:21
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 22:21
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 22:21
cis-1,2-Dichloroethene	**1.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 22:21
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	22-Mar-2020 22:21
Trichloroethene	**33**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 22:21
Vinyl chloride	**0.40**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 22:21
Surr: 1,2-Dichloroethane-d4	*91.4*			**0**	*81-118*	*%REC*	*1*	*22-Mar-2020 22:21*
Surr: 4-Bromofluorobenzene	*97.5*			**0**	*85-114*	*%REC*	*1*	*22-Mar-2020 22:21*
Surr: Dibromofluoromethane	*94.7*			**0**	*80-119*	*%REC*	*1*	*22-Mar-2020 22:21*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*22-Mar-2020 22:21*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16RW06-200317
Collection Date: 17-Mar-2020 11:40

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	22-Mar-2020 22:45
1,1-Dichloroethene	**0.90**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 22:45
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 22:45
cis-1,2-Dichloroethene	**1.9**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 22:45
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	22-Mar-2020 22:45
Trichloroethene	**86**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 22:45
Vinyl chloride	**0.84**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 22:45
Surr: 1,2-Dichloroethane-d4	*91.5*			**0**	*81-118*	*%REC*	*1*	*22-Mar-2020 22:45*
Surr: 4-Bromofluorobenzene	*98.6*			**0**	*85-114*	*%REC*	*1*	*22-Mar-2020 22:45*
Surr: Dibromofluoromethane	*95.0*			**0**	*80-119*	*%REC*	*1*	*22-Mar-2020 22:45*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*22-Mar-2020 22:45*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16PM03-200317
Collection Date: 17-Mar-2020 12:35

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	5.0	U	3.0	5.0	10	UG/L	10	24-Mar-2020 17:29
1,1-Dichloroethene	**66**		**2.0**	**5.0**	**10**	**UG/L**	10	24-Mar-2020 17:29
1,2-Dichloroethane	**21**		**2.0**	**5.0**	**10**	**UG/L**	10	24-Mar-2020 17:29
cis-1,2-Dichloroethene	**6,600**		**10**	**25**	**50**	**UG/L**	50	24-Mar-2020 06:57
Methylene chloride	10	U	4.0	10	20	UG/L	10	24-Mar-2020 17:29
Trichloroethene	**9,700**		**10**	**25**	**50**	**UG/L**	50	24-Mar-2020 06:57
Vinyl chloride	**370**		**2.0**	**5.0**	**10**	**UG/L**	10	24-Mar-2020 17:29
Surr: 1,2-Dichloroethane-d4	*91.8*			**0**	*81-118*	*%REC*	*50*	*24-Mar-2020 06:57*
Surr: 1,2-Dichloroethane-d4	*92.9*			**0**	*81-118*	*%REC*	*10*	*24-Mar-2020 17:29*
Surr: 4-Bromofluorobenzene	*96.0*			**0**	*85-114*	*%REC*	*50*	*24-Mar-2020 06:57*
Surr: 4-Bromofluorobenzene	*98.3*			**0**	*85-114*	*%REC*	*10*	*24-Mar-2020 17:29*
Surr: Dibromofluoromethane	*94.5*			**0**	*80-119*	*%REC*	*50*	*24-Mar-2020 06:57*
Surr: Dibromofluoromethane	*95.3*			**0**	*80-119*	*%REC*	*10*	*24-Mar-2020 17:29*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*50*	*24-Mar-2020 06:57*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*10*	*24-Mar-2020 17:29*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16PM02-200317
Collection Date: 17-Mar-2020 13:25

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	25	U	15	25	50	UG/L	50	24-Mar-2020 07:45
1,1-Dichloroethene	**32**	J	**10**	**25**	**50**	**UG/L**	50	24-Mar-2020 07:45
1,2-Dichloroethane	25	U	10	25	50	UG/L	50	24-Mar-2020 07:45
cis-1,2-Dichloroethene	**3,200**		**10**	**25**	**50**	**UG/L**	50	24-Mar-2020 07:45
Methylene chloride	50	U	20	50	100	UG/L	50	24-Mar-2020 07:45
Trichloroethene	**21,000**		**100**	**250**	**500**	**UG/L**	500	24-Mar-2020 08:09
Vinyl chloride	**51**		**10**	**25**	**50**	**UG/L**	50	24-Mar-2020 07:45
Surr: 1,2-Dichloroethane-d4	*89.7*			**0**	*81-118*	*%REC*	*50*	*24-Mar-2020 07:45*
Surr: 1,2-Dichloroethane-d4	*90.4*			**0**	*81-118*	*%REC*	*500*	*24-Mar-2020 08:09*
Surr: 4-Bromofluorobenzene	*97.2*			**0**	*85-114*	*%REC*	*50*	*24-Mar-2020 07:45*
Surr: 4-Bromofluorobenzene	*96.2*			**0**	*85-114*	*%REC*	*500*	*24-Mar-2020 08:09*
Surr: Dibromofluoromethane	*94.3*			**0**	*80-119*	*%REC*	*50*	*24-Mar-2020 07:45*
Surr: Dibromofluoromethane	*92.8*			**0**	*80-119*	*%REC*	*500*	*24-Mar-2020 08:09*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*50*	*24-Mar-2020 07:45*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*500*	*24-Mar-2020 08:09*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16RW07-200317
Collection Date: 17-Mar-2020 14:15

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	2.5	U	1.5	2.5	5.0	UG/L	5	24-Mar-2020 17:05
1,1-Dichloroethene	**12**		**1.0**	**2.5**	**5.0**	**UG/L**	5	24-Mar-2020 17:05
1,2-Dichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	24-Mar-2020 17:05
cis-1,2-Dichloroethene	**120**		**1.0**	**2.5**	**5.0**	**UG/L**	5	24-Mar-2020 17:05
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	24-Mar-2020 17:05
Trichloroethene	**1,900**		**2.0**	**5.0**	**10**	**UG/L**	10	24-Mar-2020 06:09
Vinyl chloride	**76**		**1.0**	**2.5**	**5.0**	**UG/L**	5	24-Mar-2020 17:05
Surr: 1,2-Dichloroethane-d4	*90.8*			**0**	*81-118*	*%REC*	*10*	*24-Mar-2020 06:09*
Surr: 1,2-Dichloroethane-d4	*89.8*			**0**	*81-118*	*%REC*	*5*	*24-Mar-2020 17:05*
Surr: 4-Bromofluorobenzene	*97.0*			**0**	*85-114*	*%REC*	*10*	*24-Mar-2020 06:09*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*5*	*24-Mar-2020 17:05*
Surr: Dibromofluoromethane	*95.2*			**0**	*80-119*	*%REC*	*10*	*24-Mar-2020 06:09*
Surr: Dibromofluoromethane	*95.3*			**0**	*80-119*	*%REC*	*5*	*24-Mar-2020 17:05*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*10*	*24-Mar-2020 06:09*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*5*	*24-Mar-2020 17:05*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16RW11-200317
Collection Date: 17-Mar-2020 15:00

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	23-Mar-2020 22:56
1,1-Dichloroethene	**0.56**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	23-Mar-2020 22:56
1,2-Dichloroethane	**1.6**		**0.20**	**0.50**	**1.0**	**UG/L**	1	23-Mar-2020 22:56
cis-1,2-Dichloroethene	**73**		**0.20**	**0.50**	**1.0**	**UG/L**	1	23-Mar-2020 22:56
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	23-Mar-2020 22:56
Trichloroethene	**20**		**0.20**	**0.50**	**1.0**	**UG/L**	1	23-Mar-2020 22:56
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	23-Mar-2020 22:56
Surr: 1,2-Dichloroethane-d4	*90.1*			**0**	*81-118*	*%REC*	*1*	*23-Mar-2020 22:56*
Surr: 4-Bromofluorobenzene	*99.3*			**0**	*85-114*	*%REC*	*1*	*23-Mar-2020 22:56*
Surr: Dibromofluoromethane	*94.5*			**0**	*80-119*	*%REC*	*1*	*23-Mar-2020 22:56*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*23-Mar-2020 22:56*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW51-200317
Collection Date: 17-Mar-2020 15:50

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-10
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	24-Mar-2020 10:09
1,1-Dichloroethene	**1.4**		**0.20**	**0.50**	**1.0**	**UG/L**	1	24-Mar-2020 10:09
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	24-Mar-2020 10:09
cis-1,2-Dichloroethene	**25**		**0.20**	**0.50**	**1.0**	**UG/L**	1	24-Mar-2020 10:09
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	24-Mar-2020 10:09
Trichloroethene	**830**		**1.0**	**2.5**	**5.0**	**UG/L**	5	24-Mar-2020 05:21
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	24-Mar-2020 10:09
Surr: 1,2-Dichloroethane-d4	*90.3*			**0**	*81-118*	*%REC*	*5*	*24-Mar-2020 05:21*
Surr: 1,2-Dichloroethane-d4	*88.8*			**0**	*81-118*	*%REC*	*1*	*24-Mar-2020 10:09*
Surr: 4-Bromofluorobenzene	*95.7*			**0**	*85-114*	*%REC*	*5*	*24-Mar-2020 05:21*
Surr: 4-Bromofluorobenzene	*96.8*			**0**	*85-114*	*%REC*	*1*	*24-Mar-2020 10:09*
Surr: Dibromofluoromethane	*94.1*			**0**	*80-119*	*%REC*	*5*	*24-Mar-2020 05:21*
Surr: Dibromofluoromethane	*94.8*			**0**	*80-119*	*%REC*	*1*	*24-Mar-2020 10:09*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*5*	*24-Mar-2020 05:21*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*1*	*24-Mar-2020 10:09*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**3.71**		**0.150**	**0.500**	**0.500**	**mg/L**	5	30-Mar-2020 23:03
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	26-Mar-2020 09:32

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: Trip Blank
Collection Date: 17-Mar-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-11
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	22-Mar-2020 14:20
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:20
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:20
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:20
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	22-Mar-2020 14:20
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:20
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:20
Surr: 1,2-Dichloroethane-d4	*89.4*			**0**	*81-118*	*%REC*	*1*	*22-Mar-2020 14:20*
Surr: 4-Bromofluorobenzene	*97.0*			**0**	*85-114*	*%REC*	*1*	*22-Mar-2020 14:20*
Surr: Dibromofluoromethane	*95.1*			**0**	*80-119*	*%REC*	*1*	*22-Mar-2020 14:20*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*22-Mar-2020 14:20*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R358682 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20030888-11	Trip Blank	17 Mar 2020 00:00			22 Mar 2020 14:20	1
Batch ID: R358682 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20030888-01	16WW44-200317	17 Mar 2020 08:20			22 Mar 2020 14:44	1
HS20030888-02	16WW37-200317	17 Mar 2020 09:15			22 Mar 2020 21:56	1
HS20030888-04	16WW14-200317	17 Mar 2020 10:50			22 Mar 2020 22:21	1
HS20030888-05	16RW06-200317	17 Mar 2020 11:40			22 Mar 2020 22:45	1
Batch ID: R358746 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20030888-09	16RW11-200317	17 Mar 2020 15:00			23 Mar 2020 22:56	1
Batch ID: R358758 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20030888-03	16WW38-200317	17 Mar 2020 10:00			24 Mar 2020 04:57	50
HS20030888-03	16WW38-200317	17 Mar 2020 10:00			24 Mar 2020 03:44	5
HS20030888-06	16PM03-200317	17 Mar 2020 12:35			24 Mar 2020 06:57	50
HS20030888-07	16PM02-200317	17 Mar 2020 13:25			24 Mar 2020 08:09	500
HS20030888-07	16PM02-200317	17 Mar 2020 13:25			24 Mar 2020 07:45	50
HS20030888-08	16RW07-200317	17 Mar 2020 14:15			24 Mar 2020 06:09	10
HS20030888-10	16WW51-200317	17 Mar 2020 15:50			24 Mar 2020 10:09	1
HS20030888-10	16WW51-200317	17 Mar 2020 15:50			24 Mar 2020 05:21	5
Batch ID: R358856 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20030888-06	16PM03-200317	17 Mar 2020 12:35			24 Mar 2020 17:29	10
HS20030888-08	16RW07-200317	17 Mar 2020 14:15			24 Mar 2020 17:05	5
Batch ID: R358929 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Groundwater	
HS20030888-10	16WW51-200317	17 Mar 2020 15:50			26 Mar 2020 09:32	1
Batch ID: R359317 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20030888-01	16WW44-200317	17 Mar 2020 08:20			01 Apr 2020 14:16	1
HS20030888-02	16WW37-200317	17 Mar 2020 09:15			01 Apr 2020 14:16	1
HS20030888-03	16WW38-200317	17 Mar 2020 10:00			01 Apr 2020 14:16	1
HS20030888-04	16WW14-200317	17 Mar 2020 10:50			01 Apr 2020 14:16	1
HS20030888-05	16RW06-200317	17 Mar 2020 11:40			01 Apr 2020 14:16	1
HS20030888-06	16PM03-200317	17 Mar 2020 12:35			01 Apr 2020 14:16	1
HS20030888-07	16PM02-200317	17 Mar 2020 13:25			01 Apr 2020 14:16	1
HS20030888-08	16RW07-200317	17 Mar 2020 14:15			01 Apr 2020 14:16	1
HS20030888-09	16RW11-200317	17 Mar 2020 15:00			01 Apr 2020 14:16	1
HS20030888-10	16WW51-200317	17 Mar 2020 15:50			01 Apr 2020 14:16	1
Batch ID: R359369 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20030888-10	16WW51-200317	17 Mar 2020 15:50			30 Mar 2020 23:03	5

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R358682 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW1-200322** Units: **UG/L** Analysis Date: **22-Mar-2020 13:55**
Client ID: Run ID: **VOA6_358682** SeqNo: **5524950** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*45.31*	*1.0*	*50*	*0*	*90.6*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.37*	*1.0*	*50*	*0*	*96.7*	*85 - 114*				
Surr: Dibromofluoromethane	*47.15*	*1.0*	*50*	*0*	*94.3*	*80 - 119*				
Surr: Toluene-d8	*52.17*	*1.0*	*50*	*0*	*104*	*89 - 112*				

LCS Sample ID: **VLCSW-200322** Units: **UG/L** Analysis Date: **22-Mar-2020 13:07**
Client ID: Run ID: **VOA6_358682** SeqNo: **5524949** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	18.87	1.0	20	0	94.3	80 - 119				
1,1-Dichloroethene	18.61	1.0	20	0	93.0	71 - 131				
1,2-Dichloroethane	19.63	1.0	20	0	98.1	73 - 128				
cis-1,2-Dichloroethene	20.16	1.0	20	0	101	78 - 123				
Methylene chloride	19.54	2.0	20	0	97.7	74 - 124				
Trichloroethene	19.83	1.0	20	0	99.1	79 - 123				
Vinyl chloride	18.08	1.0	20	0	90.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.29*	*1.0*	*50*	*0*	*105*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.64*	*1.0*	*50*	*0*	*99.3*	*85 - 114*				
Surr: Dibromofluoromethane	*51.88*	*1.0*	*50*	*0*	*104*	*80 - 119*				
Surr: Toluene-d8	*50.26*	*1.0*	*50*	*0*	*101*	*89 - 112*				

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R358682 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20030888-01MS** Units: **UG/L** Analysis Date: **22-Mar-2020 15:56**
Client ID: **16WW44-200317** Run ID: **VOA6_358682** SeqNo: **5524955** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.7	1.0	20	0	98.5	80 - 119				
1,1-Dichloroethene	19.41	1.0	20	0	97.0	71 - 131				
1,2-Dichloroethane	19.71	1.0	20	0	98.6	73 - 128				
cis-1,2-Dichloroethene	19.39	1.0	20	0	96.9	78 - 123				
Methylene chloride	18.18	2.0	20	0	90.9	74 - 124				
Trichloroethene	21.91	1.0	20	0	110	79 - 123				
Vinyl chloride	19.26	1.0	20	0	96.3	58 - 137				
Surr: 1,2-Dichloroethane-d4	*45.31*	*1.0*	*50*	*0*	*90.6*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.99*	*1.0*	*50*	*0*	*98.0*	*85 - 114*				
Surr: Dibromofluoromethane	*47.73*	*1.0*	*50*	*0*	*95.5*	*80 - 119*				
Surr: Toluene-d8	*51.65*	*1.0*	*50*	*0*	*103*	*89 - 112*				

MSD Sample ID: **HS20030888-01MSD** Units: **UG/L** Analysis Date: **22-Mar-2020 16:20**
Client ID: **16WW44-200317** Run ID: **VOA6_358682** SeqNo: **5524956** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.83	1.0	20	0	99.1	80 - 119	19.7	0.625	20	
1,1-Dichloroethene	18.26	1.0	20	0	91.3	71 - 131	19.41	6.08	20	
1,2-Dichloroethane	19.55	1.0	20	0	97.7	73 - 128	19.71	0.835	20	
cis-1,2-Dichloroethene	18.67	1.0	20	0	93.4	78 - 123	19.39	3.76	20	
Methylene chloride	17.4	2.0	20	0	87.0	74 - 124	18.18	4.36	20	
Trichloroethene	20.18	1.0	20	0	101	79 - 123	21.91	8.25	20	
Vinyl chloride	18.09	1.0	20	0	90.4	58 - 137	19.26	6.3	20	
Surr: 1,2-Dichloroethane-d4	*45.14*	*1.0*	*50*	*0*	*90.3*	*81 - 118*	*45.31*	*0.37*	*20*	
Surr: 4-Bromofluorobenzene	*48.67*	*1.0*	*50*	*0*	*97.3*	*85 - 114*	*48.99*	*0.656*	*20*	
Surr: Dibromofluoromethane	*47.96*	*1.0*	*50*	*0*	*95.9*	*80 - 119*	*47.73*	*0.482*	*20*	
Surr: Toluene-d8	*52.32*	*1.0*	*50*	*0*	*105*	*89 - 112*	*51.65*	*1.29*	*20*	

The following samples were analyzed in this batch: HS20030888-01 HS20030888-02 HS20030888-04 HS20030888-05 HS20030888-11

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R358746 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200323** Units: **UG/L** Analysis Date: **23-Mar-2020 14:07**
Client ID: Run ID: **VOA6_358746** SeqNo: **5526485** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*45.1*	*1.0*	*50*	*0*	*90.2*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.57*	*1.0*	*50*	*0*	*97.1*	*85 - 114*				
Surr: Dibromofluoromethane	*48.06*	*1.0*	*50*	*0*	*96.1*	*80 - 119*				
Surr: Toluene-d8	*52.56*	*1.0*	*50*	*0*	*105*	*89 - 112*				

LCS Sample ID: **VLCSW-200323** Units: **UG/L** Analysis Date: **23-Mar-2020 12:55**
Client ID: Run ID: **VOA6_358746** SeqNo: **5526484** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.96	1.0	20	0	99.8	80 - 119				
1,1-Dichloroethene	19.69	1.0	20	0	98.4	71 - 131				
1,2-Dichloroethane	20.21	1.0	20	0	101	73 - 128				
cis-1,2-Dichloroethene	21.11	1.0	20	0	106	78 - 123				
Methylene chloride	20.36	2.0	20	0	102	74 - 124				
Trichloroethene	21.25	1.0	20	0	106	79 - 123				
Vinyl chloride	18.94	1.0	20	0	94.7	58 - 137				
Surr: 1,2-Dichloroethane-d4	*51.28*	*1.0*	*50*	*0*	*103*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.67*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*52.2*	*1.0*	*50*	*0*	*104*	*80 - 119*				
Surr: Toluene-d8	*50.75*	*1.0*	*50*	*0*	*102*	*89 - 112*				

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R358746 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20030586-02MS** Units: **UG/L** Analysis Date: **23-Mar-2020 16:56**
Client ID: Run ID: **VOA6_358746** SeqNo: **5526490** PrepDate: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	2069	100	2000	0	103	80 - 119				
1,1-Dichloroethene	1889	100	2000	0	94.5	71 - 131				
1,2-Dichloroethane	2029	100	2000	0	101	73 - 128				
cis-1,2-Dichloroethene	1985	100	2000	0	99.3	78 - 123				
Methylene chloride	1903	200	2000	0	95.2	74 - 124				
Trichloroethene	2109	100	2000	0	105	79 - 123				
Vinyl chloride	1918	100	2000	0	95.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*4522*	*100*	*5000*	*0*	*90.4*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*4911*	*100*	*5000*	*0*	*98.2*	*85 - 114*				
Surr: Dibromofluoromethane	*4783*	*100*	*5000*	*0*	*95.7*	*80 - 119*				
Surr: Toluene-d8	*5254*	*100*	*5000*	*0*	*105*	*89 - 112*				

MSD Sample ID: **HS20030586-02MSD** Units: **UG/L** Analysis Date: **23-Mar-2020 17:20**
Client ID: Run ID: **VOA6_358746** SeqNo: **5526491** PrepDate: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	1966	100	2000	0	98.3	80 - 119	2069	5.1	20	
1,1-Dichloroethene	1822	100	2000	0	91.1	71 - 131	1889	3.64	20	
1,2-Dichloroethane	1982	100	2000	0	99.1	73 - 128	2029	2.31	20	
cis-1,2-Dichloroethene	1898	100	2000	0	94.9	78 - 123	1985	4.5	20	
Methylene chloride	1759	200	2000	0	88.0	74 - 124	1903	7.86	20	
Trichloroethene	1941	100	2000	0	97.1	79 - 123	2109	8.28	20	
Vinyl chloride	1755	100	2000	0	87.7	58 - 137	1918	8.89	20	
Surr: 1,2-Dichloroethane-d4	*4513*	*100*	*5000*	*0*	*90.3*	*81 - 118*	*4522*	*0.194*	*20*	
Surr: 4-Bromofluorobenzene	*4868*	*100*	*5000*	*0*	*97.4*	*85 - 114*	*4911*	*0.866*	*20*	
Surr: Dibromofluoromethane	*4825*	*100*	*5000*	*0*	*96.5*	*80 - 119*	*4783*	*0.874*	*20*	
Surr: Toluene-d8	*5246*	*100*	*5000*	*0*	*105*	*89 - 112*	*5254*	*0.167*	*20*	

The following samples were analyzed in this batch: HS20030888-09

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R358758 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW1-200323** Units: **UG/L** Analysis Date: **24-Mar-2020 02:08**
Client ID: Run ID: **VOA6_358758** SeqNo: **5526706** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*45.53*	*1.0*	*50*	*0*	*91.1*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.56*	*1.0*	*50*	*0*	*97.1*	*85 - 114*				
Surr: Dibromofluoromethane	*47.72*	*1.0*	*50*	*0*	*95.4*	*80 - 119*				
Surr: Toluene-d8	*52.11*	*1.0*	*50*	*0*	*104*	*89 - 112*				

LCS Sample ID: **VLCSW-200323** Units: **UG/L** Analysis Date: **24-Mar-2020 01:20**
Client ID: Run ID: **VOA6_358758** SeqNo: **5526705** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.65	1.0	20	0	98.3	80 - 119				
1,1-Dichloroethene	18.78	1.0	20	0	93.9	71 - 131				
1,2-Dichloroethane	19.74	1.0	20	0	98.7	73 - 128				
cis-1,2-Dichloroethene	21.03	1.0	20	0	105	78 - 123				
Methylene chloride	20.09	2.0	20	0	100	74 - 124				
Trichloroethene	19.71	1.0	20	0	98.5	79 - 123				
Vinyl chloride	18.69	1.0	20	0	93.5	58 - 137				
Surr: 1,2-Dichloroethane-d4	*53.44*	*1.0*	*50*	*0*	*107*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.3*	*1.0*	*50*	*0*	*103*	*85 - 114*				
Surr: Dibromofluoromethane	*54.16*	*1.0*	*50*	*0*	*108*	*80 - 119*				
Surr: Toluene-d8	*50.7*	*1.0*	*50*	*0*	*101*	*89 - 112*				

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R358758 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20030771-04MS** Units: **UG/L** Analysis Date: **24-Mar-2020 04:08**
Client ID: Run ID: **VOA6_358758** SeqNo: **5526709** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	18.53	1.0	20	0	92.7	80 - 119				
1,1-Dichloroethene	17.66	1.0	20	0	88.3	71 - 131				
1,2-Dichloroethane	18.29	1.0	20	0	91.4	73 - 128				
cis-1,2-Dichloroethene	18.36	1.0	20	0	91.8	78 - 123				
Methylene chloride	17.68	2.0	20	0	88.4	74 - 124				
Trichloroethene	19.71	1.0	20	0	98.6	79 - 123				
Vinyl chloride	17.51	1.0	20	0	87.5	58 - 137				
Surr: 1,2-Dichloroethane-d4	*46.22*	*1.0*	*50*	*0*	*92.4*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.61*	*1.0*	*50*	*0*	*97.2*	*85 - 114*				
Surr: Dibromofluoromethane	*47.87*	*1.0*	*50*	*0*	*95.7*	*80 - 119*				
Surr: Toluene-d8	*51.38*	*1.0*	*50*	*0*	*103*	*89 - 112*				

MSD Sample ID: **HS20030771-04MSD** Units: **UG/L** Analysis Date: **24-Mar-2020 04:32**
Client ID: Run ID: **VOA6_358758** SeqNo: **5526710** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	18.72	1.0	20	0	93.6	80 - 119	18.53	1.01	20	
1,1-Dichloroethene	17.1	1.0	20	0	85.5	71 - 131	17.66	3.25	20	
1,2-Dichloroethane	17.95	1.0	20	0	89.7	73 - 128	18.29	1.88	20	
cis-1,2-Dichloroethene	17.47	1.0	20	0	87.3	78 - 123	18.36	4.97	20	
Methylene chloride	16.87	2.0	20	0	84.3	74 - 124	17.68	4.72	20	
Trichloroethene	18.42	1.0	20	0	92.1	79 - 123	19.71	6.8	20	
Vinyl chloride	17.04	1.0	20	0	85.2	58 - 137	17.51	2.74	20	
Surr: 1,2-Dichloroethane-d4	*46.73*	*1.0*	*50*	*0*	*93.5*	*81 - 118*	*46.22*	*1.09*	*20*	
Surr: 4-Bromofluorobenzene	*48.64*	*1.0*	*50*	*0*	*97.3*	*85 - 114*	*48.61*	*0.0591*	*20*	
Surr: Dibromofluoromethane	*47.25*	*1.0*	*50*	*0*	*94.5*	*80 - 119*	*47.87*	*1.32*	*20*	
Surr: Toluene-d8	*52.61*	*1.0*	*50*	*0*	*105*	*89 - 112*	*51.38*	*2.36*	*20*	

The following samples were analyzed in this batch: HS20030888-03 HS20030888-06 HS20030888-07 HS20030888-08 HS20030888-10

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R358856 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW1-200324** Units: **UG/L** Analysis Date: **24-Mar-2020 14:17**
Client ID: Run ID: **VOA6_358856** SeqNo: **5529172** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*45.39*	*1.0*	*50*	*0*	*90.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.06*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*48.02*	*1.0*	*50*	*0*	*96.0*	*80 - 119*				
Surr: Toluene-d8	*52.85*	*1.0*	*50*	*0*	*106*	*89 - 112*				

LCS Sample ID: **VLCSW-200324** Units: **UG/L** Analysis Date: **24-Mar-2020 13:29**
Client ID: Run ID: **VOA6_358856** SeqNo: **5529171** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	20.49	1.0	20	0	102	80 - 119				
1,1-Dichloroethene	19.58	1.0	20	0	97.9	71 - 131				
1,2-Dichloroethane	20.37	1.0	20	0	102	73 - 128				
cis-1,2-Dichloroethene	20.62	1.0	20	0	103	78 - 123				
Methylene chloride	19.71	2.0	20	0	98.6	74 - 124				
Vinyl chloride	18.73	1.0	20	0	93.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	*51.89*	*1.0*	*50*	*0*	*104*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.68*	*1.0*	*50*	*0*	*99.4*	*85 - 114*				
Surr: Dibromofluoromethane	*51.2*	*1.0*	*50*	*0*	*102*	*80 - 119*				
Surr: Toluene-d8	*49.77*	*1.0*	*50*	*0*	*99.5*	*89 - 112*				

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R358856 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20030892-06MS** Units: **UG/L** Analysis Date: **24-Mar-2020 17:53**
Client ID: Run ID: **VOA6_358856** SeqNo: **5529176** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,2-Trichloroethane	20.67	1.0	20	0	103	80 - 119				
1,1-Dichloroethene	19.62	1.0	20	0	98.1	71 - 131				
1,2-Dichloroethane	20.43	1.0	20	0	102	73 - 128				
cis-1,2-Dichloroethene	21.62	1.0	20	0	108	78 - 123				
Methylene chloride	18.26	2.0	20	0	91.3	74 - 124				
Vinyl chloride	19.06	1.0	20	0	95.3	58 - 137				
Surr: 1,2-Dichloroethane-d4	*45.87*	*1.0*	*50*	*0*	*91.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.09*	*1.0*	*50*	*0*	*98.2*	*85 - 114*				
Surr: Dibromofluoromethane	*47.45*	*1.0*	*50*	*0*	*94.9*	*80 - 119*				
Surr: Toluene-d8	*51.18*	*1.0*	*50*	*0*	*102*	*89 - 112*				

MSD Sample ID: **HS20030892-06MSD** Units: **UG/L** Analysis Date: **24-Mar-2020 18:17**
Client ID: Run ID: **VOA6_358856** SeqNo: **5529177** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,2-Trichloroethane	20.03	1.0	20	0	100	80 - 119	20.67	3.15	20	
1,1-Dichloroethene	18.16	1.0	20	0	90.8	71 - 131	19.62	7.72	20	
1,2-Dichloroethane	19.14	1.0	20	0	95.7	73 - 128	20.43	6.53	20	
cis-1,2-Dichloroethene	19.12	1.0	20	0	95.6	78 - 123	21.62	12.3	20	
Methylene chloride	17.86	2.0	20	0	89.3	74 - 124	18.26	2.23	20	
Vinyl chloride	17.57	1.0	20	0	87.9	58 - 137	19.06	8.16	20	
Surr: 1,2-Dichloroethane-d4	*44.83*	*1.0*	*50*	*0*	*89.7*	*81 - 118*	*45.87*	*2.29*	*20*	
Surr: 4-Bromofluorobenzene	*48.59*	*1.0*	*50*	*0*	*97.2*	*85 - 114*	*49.09*	*1.03*	*20*	
Surr: Dibromofluoromethane	*47.35*	*1.0*	*50*	*0*	*94.7*	*80 - 119*	*47.45*	*0.218*	*20*	
Surr: Toluene-d8	*52.4*	*1.0*	*50*	*0*	*105*	*89 - 112*	*51.18*	*2.36*	*20*	

The following samples were analyzed in this batch: HS20030888-06 HS20030888-08

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R359369 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK-03.30.20** Units: **mg/L** Analysis Date: **31-Mar-2020 02:41**
Client ID: Run ID: **ICS-Integrion_359369** SeqNo: **5541276** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **31-Mar-2020 02:59**
Client ID: Run ID: **ICS-Integrion_359369** SeqNo: **5541277** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.657	0.100	4	0	91.4	80 - 120				

LCSD Sample ID: **LCSD** Units: **mg/L** Analysis Date: **31-Mar-2020 03:17**
Client ID: Run ID: **ICS-Integrion_359369** SeqNo: **5541278** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.652	0.100	4	0	91.3	80 - 120	3.657	0.137	20	

MS Sample ID: **HS20031096-07MS** Units: **mg/L** Analysis Date: **30-Mar-2020 22:27**
Client ID: Run ID: **ICS-Integrion_359369** SeqNo: **5541271** PrepDate: DF: **500**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	937	50.0	1000	40.65	89.6	80 - 120				

MSD Sample ID: **HS20031096-07MSD** Units: **mg/L** Analysis Date: **30-Mar-2020 22:45**
Client ID: Run ID: **ICS-Integrion_359369** SeqNo: **5541272** PrepDate: DF: **500**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	911	50.0	1000	40.65	87.0	80 - 120	937	2.82	20	

The following samples were analyzed in this batch: HS20030888-10

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: **HS20030888**

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

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-19-25	30-Apr-2020

ALS Houston, US Date: 02-Apr-20

Sample Receipt Checklist

Client Name: CBI-Houston
Work Order: HS20030888
Date/Time Received: **19-Mar-2020 08:50**
Received by: **AC**

Checklist completed by: *Paresh M. Giga* eSignature 19-Mar-2020 Date
Reviewed by: *RJ Modashia* eSignature 20-Mar-2020 Date

Matrices: **GW/Water**
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 ☐	COC IDs:None
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):	1.6c U/c	IR25	
Cooler(s)/Kit(s):	43903		
Date/Time sample(s) sent to storage:	3/19/2020 17:10		
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:

APTIM

Page 1 of _____

COC ID: LHAAP16 March 2020 -ALS | TURNAROUND TIME: Normal | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	Longhorn AAP			Lab Name	ALS Laboratories			Email Invoice To	FedInvoices@aptim.com		
Project Number	501032			Lab Contact	RJ Modashia						
	LHAAP-16			Email	RJ.Modashia@alsglobal.com			Email Report To	Susan.Huang@aptim.com		
Address	1203-B East Grand Avenue			Address	10450 Stanciff Rd., Suite 210			Mail Reports To	Susan Huang		
	PMB 202							Address	4005 Port Chicago Highway, Suite 200		
City	Marshall	State	TX	City	Houston	State	TX	City	Concord	State	CA
Postal Code	75670	Country	USA	Postal Code	77099	Country	USA	Postal Code	94520	Country	USA
Phone Number	713.243.7264			Phone Number	281.575.2279 or 281.530.5656						
Project Manager	Praveen Srivastav							Shipping Company			

SAMPLE DETAILS

Sample ID	Location	Start Depth	End Depth	Depth Unit	Field Matrix	Date	Time (24hr)	# Of Cont.
16WW44-200317	LHAAP16				WG	3/17/20	0820	4
16WW44-200317-MS	LHAAP16				WG	3/17/20	0820	4
16WW44-200317-MSD	LHAAP16				WG	3/17/20	0820	4
16WW37-200317	LHAAP16				WG	3/17/20	0915	4
16WW38-200317	LHAAP 16				WG	3/17/20	1000	4
16WW14-200317	LHAAP16				WG	3/17/20	1050	4
16RW06-200317	LHAAP16				WG	3/17/20	1140	4
16PM03-200317	LHAAP16				WG	3/17/20	1235	4
16PM02-200317	LHAAP16				WG	3/17/20	1325	4
16RW07-200317	LHAAP16				WG	3/17/20	1415	4
16RW11-200317	LHAAP16				WG	3/17/20	1500	4
16WW51-200317	LHAAP16				WG	3/17/20	1550	7
TRIP BLANK	LHAAP16				W	3/17/20		2

ANALYSIS REQUESTED

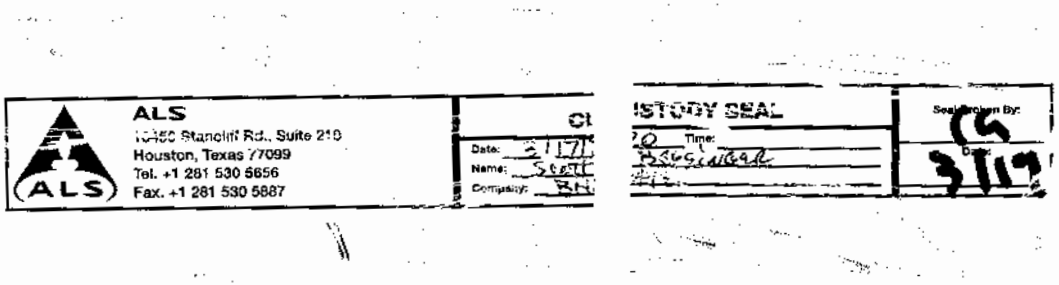
Sample Container and Preservatives	3-40 ml VOA/HCL	3-40 ml VOA/HCL	2-40ml Amber/H2SO4	1-250 ml PE/HNO3	1-250ml PE/Ice	1-250ml PE /Ice	1-250ml PE/Ice	1-125ml PE/Ice		
ANALYSIS	VOCs by SW8260B	MEE by RSK175	TOC by SM5310C	Metals (arsenic, chromium, manganese, nickel, and thallium) by SW6020	Anions (sulfate/nitrate/bromide) by SW9056	Anions (bromide only) by SW9056	Alkalinity by SM2320	Perchlorate by SW6850		
16WW44-200317	X							X		
16WW44-200317-MS	X							X		
16WW44-200317-MSD	X							X		
16WW37-200317	X							X		
16WW38-200317	X							X		
16WW14-200317	X							X		
16RW06-200317	X							X		
16PM03-200317	X							X		
16PM02-200317	X							X		
16RW07-200317	X							X		
16RW11-200317	X							X		
16WW51-200317	X		X			X		X		
TRIP BLANK	X									

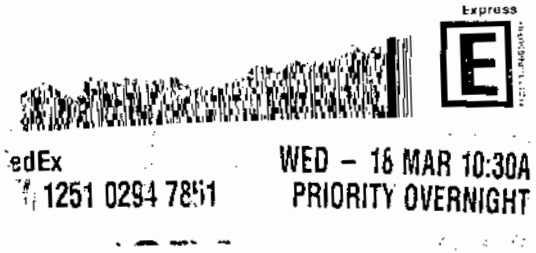
HS20030888

Aptim Environmental & Infrastucture, Inc.
Longhorn Army Ammunition Plant - 16

RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
[illegible] Basin / BHATE	3/17/20 1630	A C / ALS	3/19/2020 08:50

J/C 1.6 IR#25 CF=1.0 43903


ALS
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
Date:
Name:
Company:
STODY SEAL
Time:
Date:


Express
edEx
1251 0294 7851
WED – 16 MAR 10:30A
PRIORITY OVERNIGHT

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ALS Group USA, Corp
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Kelso, WA 98626
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www.alsglobal.com

March 25, 2020

Analytical Report for Service Request No: K2002471

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: HS20030888

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory March 20, 2020
For your reference, these analyses have been assigned our service request number **K2002471.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
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www.alsglobal.com

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Acronyms
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State Certifications, Accreditations, And Licenses
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Chain of Custody
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Raw Data
    General Chemistry

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
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.
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.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
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1317 South 13th Ave, Kelso, WA 98626 | 1-360-577-7222 | www.alsglobal.com

Client: ALS Environmental - US
Project: HS20030888
Sample Matrix: Ground Water

Service Request: K2002471
Date Received: 03/20/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

One ground water sample was received for analysis at ALS Environmental on 03/20/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 03/25/2020

Chain of Custody

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F: +1 281 530 5887
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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13557**

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

R 2002471

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20030888
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20030888-10**	**16WW51-200317**	**Groundwater**	**17 Mar 2020 15:50**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			02 Apr 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: J. Marrow Date/Time: 3/19/20 18:00

Received By: RJ Marrow ALS Date/Time: 3/20/20 0940

Cooler ID(s): Temperature(s):

PC KL

Cooler Receipt and Preservation Form

Client ALS-Houston Service Request K20 02471

Received: 3/20/20 Opened: 3/20/20 By: [illegible] Unloaded: 3/20/20 By: [illegible]

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 1 Ea. Side
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Temp Blank	Sample 1	Sample 2	Sample 3	Sample 4	IR GUN	Cooler / COC ID NA	Tracking Number NA	Filed
0.7	—	—	—	—	39800488WS	13557	125102956639	

4. Packing material: *Inserts* (*Baggies*) *Bubble Wrap* *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA (Y) N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
11. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

General Chemistry

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2002471
Project:	HS20030888	**Date Collected:**	03/17/20
Sample Matrix:	Ground Water	**Date Received:**	03/20/20
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
16WW51-200317	K2002471-001	**4.43**	0.50	0.20	0.07	1	03/22/20 12:54	
Method Blank	K2002471-MB	ND U	0.50	0.20	0.07	1	03/22/20 05:21	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2002471
Project	HS20030888	**Date Collected:**	03/17/20
Sample Matrix:	Ground Water	**Date Received:**	03/20/20
		Date Analyzed:	03/22/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	16WW51-200317	**Units:**	mg/L
Lab Code:	K2002471-001	**Basis:**	NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K2002471-001DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	4.43	4.30	4.37	3	10

Results flagged with an asterisk (*) indicate values outside control criteria.

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

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2002471
Project:	HS20030888	**Date Analyzed:**	03/22/20
Sample Matrix:	Ground Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	674225

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2002471-LCS	24.6	25.0	98	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2002471
Project: HS20030888

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C **Units:** mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	674225	KQ2004008-17	03/22/20 04:51	25.0	26.5	106	90-110
CCV2	674225	KQ2004008-18	03/22/20 09:35	25.0	25.8	103	90-110
CCV3	674225	KQ2004008-19	03/22/20 14:19	25.0	25.6	102	90-110
CCV4	674225	KQ2004008-20	03/22/20 18:35	25.0	25.3	101	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2002471
Project: HS20030888

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C **Units:**mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	674225	KQ2004008-21	03/22/20 05:06	0.50	0.20	0.07	ND	U
CCB2	674225	KQ2004008-22	03/22/20 09:49	0.50	0.20	0.07	ND	U
CCB3	674225	KQ2004008-23	03/22/20 14:33	0.50	0.20	0.07	ND	U
CCB4	674225	KQ2004008-24	03/22/20 18:50	0.50	0.20	0.07	ND	U

Raw Data

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General Chemistry

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Work Request # Original ( ) K2002276, 2337, 2353, 2365, 2412, 2432, 2434, 2416, 2424, 2434, 2462, 2470, 2471, 2489, 2492, 2496, 2457, 2456, 2422
IV II IV II IV I IV IV I II IV IV II I II IV I IV III

Tier:

Date Analyzed: 3/21/20

Analyst: RD

Analysis: TOC/DOC

Run # TOC: 674205, 674225, 674226, DOC: 674227

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1.	Is the method name and number correct and appropriate?	yes/no/NA
2.	Holding times met for all analyses and for all samples?	yes/no/NA
3.	Are calculations correct?	yes/no/NA
4.	Is the reporting basis correct? (Dry Weight)	yes/no/NA
5.	All quality control criteria met?	yes/no
6.	Is the calibration curve correlation coefficient ≥ 0.995?	yes/no/NA
7.	MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency?	yes/no/NA
8.	Are ICVs, CCVs, and CCBs all within acceptance limits?	yes/no/NA
9.	Are results for methods blanks all ND?	yes/no/NA
10.	Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.)	yes/no/NA
11.	Are all exceptions explained?	yes/no/NA
12.	Have all applicable service requests been reviewed?	yes/no/NA
13.	Are all samples labeled correctly?	yes/no/NA
14.	Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V)	yes/no/NA
15.	Are detection limits and units reported correctly?	yes/no/NA
16.	Is the unused space on the benchsheet crossed out?	yes/no/NA
17.	Was analysis turned in by the due date? (n-2) (If not record SR#)	yes/no/NA

COMMENTS: K2002416-3/3rd, 2412-4/4th, 2412 7/7d report a high %RSD. However, these samples are less than 5x the MRL

Final Approved by: _____ Date: 3/24/20

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674205 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002276-001	Carbon, Total Organic	N/A		Ground Water	5.85 mg/L	10 mL	58.5 mg/L	10	0.7	5.0			3/22/20 01:06:00	N	IV
K2002337-001	Carbon, Total Organic	N/A		Water	0.92 mg/L	10 mL	0.92 mg/L	1	0.07	0.50			3/21/20 20:51:00	N	II
K2002337-002	Carbon, Total Organic	N/A		Water	0.85 mg/L	10 mL	0.85 mg/L	1	0.07	0.50			3/21/20 21:48:00	N	II
K2002337-003	Carbon, Total Organic	N/A		Water	0.77 mg/L	10 mL	0.77 mg/L	1	0.07	0.50			3/21/20 22:16:00	N	II
K2002337-004	Carbon, Total Organic	N/A		Water	0.68 mg/L	10 mL	0.68 mg/L	1	0.07	0.50			3/21/20 22:44:00	N	II
K2002337-005	Carbon, Total Organic	N/A		Water	0.45 mg/L	10 mL	0.45 mg/L J	1	0.07	0.50			3/21/20 23:12:00	N	II
K2002337-006	Carbon, Total Organic	N/A		Water	1.87 mg/L	10 mL	1.87 mg/L	1	0.07	0.50			3/22/20 00:10:00	N	II
K2002337-007	Carbon, Total Organic	N/A		Water	0.63 mg/L	10 mL	0.63 mg/L	1	0.07	0.50			3/22/20 00:38:00	N	II
K2002353-001	Carbon, Total Organic	N/A		Ground Water	1.25 mg/L	10 mL	500 mg/L	400	30	200			3/22/20 02:03:00	N	IV
K2002365-001	Carbon, Total Organic	N/A		Water	6.75 mg/L	10 mL	6.75 mg/L	1	0.07	0.50			3/22/20 01:34:00	N	II
K2002412-001	Carbon, Total Organic	N/A		Ground Water	10.68 mg/L	10 mL	10.7 mg/L	1	0.07	0.50			3/22/20 02:59:00	N	IV
K2002412-002	Carbon, Total Organic	N/A		Ground Water	2.35 mg/L	10 mL	2.35 mg/L	1	0.07	0.50			3/22/20 03:27:00	N	IV
K2002412-003	Carbon, Total Organic	N/A		Ground Water	44.83 mg/L	10 mL	44.8 mg/L	1	0.07	0.50			3/22/20 03:55:00	N	IV
K2002412-004	Carbon, Total Organic	N/A		Ground Water	1.20 mg/L	10 mL	1.20 mg/L	1	0.07	0.50			3/22/20 04:23:00	N	IV
K2002412-005	Carbon, Total Organic	N/A		Ground Water	4.57 mg/L	10 mL	4.57 mg/L	1	0.07	0.50			3/22/20 05:50:00	N	IV
K2002412-006	Carbon, Total Organic	N/A		Ground Water	31.25 mg/L	10 mL	31.2 mg/L	1	0.07	0.50			3/22/20 06:18:00	N	IV
K2002412-007	Carbon, Total Organic	N/A		Ground Water	0.78 mg/L	10 mL	0.78 mg/L	1	0.07	0.50			3/22/20 06:46:00	N	IV
K2002412-008	Carbon, Total Organic	N/A		Ground Water	5.22 mg/L	10 mL	5.22 mg/L	1	0.07	0.50			3/22/20 07:14:00	N	IV
K2002434-001	Carbon, Total Organic	N/A		Water	0.24 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 07:42:00	N	I
K2002434-002	Carbon, Total Organic	N/A		Water	0.61 mg/L	10 mL	0.61 mg/L	1	0.07	0.50			3/22/20 08:10:00	N	I
KQ2003999-01	Carbon, Total Organic	CCV		Water	26.33 mg/L	10 mL	26.3 mg/L	1					3/21/20 19:52:00	N	II
KQ2003999-02	Carbon, Total Organic	CCV		Water	26.30 mg/L	10 mL	26.3 mg/L	1					3/21/20 23:40:00	N	II
KQ2003999-03	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	II
KQ2003999-04	Carbon, Total Organic	CCB		Water	-0.03 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/21/20 19:37:00	N	II
KQ2003999-05	Carbon, Total Organic	CCB		Water	0.12 mg/L	10 mL	0.12 mg/L J	1	0.07	0.50			3/21/20 23:55:00	N	II
KQ2003999-06	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	II
KQ2003999-07	Carbon, Total Organic	MB		Water	0.29 mg/L	10 mL	0.29 mg/L J	1	0.07	0.50			3/21/20 20:07:00	N	II
KQ2003999-08	Carbon, Total Organic	LCS		Water	24.88 mg/L	10 mL	24.9 mg/L	1	0.07	0.50	100		3/21/20 20:21:00	N	II
KQ2003999-09	Carbon, Total Organic	MS	K2002337-001	Water	29.48 mg/L	10 mL	29.5 mg/L	1	0.07	0.50	114		3/21/20 21:19:00	N	II
KQ2003999-10	Carbon, Total Organic	DUP	K2002276-001	Ground Water	5.92 mg/L	10 mL	59.2 mg/L	10	0.7	5.0		1	3/22/20 01:06:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674205 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2003999-11	Carbon, Total Organic	DUP	K2002337-001	Water	0.91 mg/L	10 mL	0.91 mg/L	1	0.07	0.50		1	3/21/20 20:51:00	N	II
KQ2003999-12	Carbon, Total Organic	DUP	K2002337-002	Water	0.79 mg/L	10 mL	0.79 mg/L	1	0.07	0.50		7	3/21/20 21:48:00	N	II
KQ2003999-13	Carbon, Total Organic	DUP	K2002337-003	Water	0.70 mg/L	10 mL	0.70 mg/L	1	0.07	0.50		10	3/21/20 22:16:00	N	II
KQ2003999-14	Carbon, Total Organic	DUP	K2002337-004	Water	0.67 mg/L	10 mL	0.67 mg/L	1	0.07	0.50		2	3/21/20 22:44:00	N	II
KQ2003999-15	Carbon, Total Organic	DUP	K2002337-005	Water	0.46 mg/L	10 mL	0.46 mg/L J	1	0.07	0.50		3	3/21/20 23:12:00	N	II
KQ2003999-16	Carbon, Total Organic	DUP	K2002337-006	Water	1.85 mg/L	10 mL	1.85 mg/L	1	0.07	0.50		1	3/22/20 00:10:00	N	II
KQ2003999-17	Carbon, Total Organic	DUP	K2002337-007	Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50		9	3/22/20 00:38:00	N	II
KQ2003999-18	Carbon, Total Organic	DUP	K2002353-001	Ground Water	1.19 mg/L	10 mL	480 mg/L	400	30	200		4	3/22/20 02:03:00	N	IV
KQ2003999-19	Carbon, Total Organic	DUP	K2002365-001	Water	6.74 mg/L	10 mL	6.74 mg/L	1	0.07	0.50		<1	3/22/20 01:34:00	N	II
KQ2003999-20	Carbon, Total Organic	DUP	K2002434-001	Water	0.19 mg/L	10 mL	0.19 mg/L J	1	0.07	0.50		NC	3/22/20 07:42:00	N	I
KQ2003999-21	Carbon, Total Organic	DUP	K2002434-002	Water	0.60 mg/L	10 mL	0.60 mg/L	1	0.07	0.50		2	3/22/20 08:10:00	N	I
KQ2003999-22	Carbon, Total Organic	DUP	K2002412-002	Ground Water	2.15 mg/L	10 mL	2.15 mg/L	1	0.07	0.50		9	3/22/20 03:27:00	N	IV
KQ2003999-23	Carbon, Total Organic	DUP	K2002412-001	Ground Water	10.27 mg/L	10 mL	10.3 mg/L	1	0.07	0.50		4	3/22/20 02:59:00	N	IV
KQ2003999-24	Carbon, Total Organic	DUP	K2002412-003	Ground Water	44.51 mg/L	10 mL	44.5 mg/L	1	0.07	0.50		<1	3/22/20 03:55:00	N	IV
KQ2003999-25	Carbon, Total Organic	DUP	K2002412-004	Ground Water	0.91 mg/L	10 mL	0.91 mg/L	1	0.07	0.50		27*	3/22/20 04:23:00	N	IV
KQ2003999-26	Carbon, Total Organic	DUP	K2002412-005	Ground Water	4.41 mg/L	10 mL	4.41 mg/L	1	0.07	0.50		4	3/22/20 05:50:00	N	IV
KQ2003999-27	Carbon, Total Organic	DUP	K2002412-006	Ground Water	30.72 mg/L	10 mL	30.7 mg/L	1	0.07	0.50		2	3/22/20 06:18:00	N	IV
KQ2003999-28	Carbon, Total Organic	DUP	K2002412-007	Ground Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50		30*	3/22/20 06:46:00	N	IV
KQ2003999-29	Carbon, Total Organic	DUP	K2002412-008	Ground Water	5.27 mg/L	10 mL	5.27 mg/L	1	0.07	0.50		<1	3/22/20 07:14:00	N	IV
KQ2003999-30	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	II
KQ2003999-31	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674225 **Method/Testcode:** 415.1/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002416-001	Carbon, Total Organic	N/A		Ground Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:07:00	Y	IV
K2002416-002	Carbon, Total Organic	N/A		Ground Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 10:33:00	N	IV
K2002416-003	Carbon, Total Organic	N/A		Ground Water	0.19 mg/L	10 mL	0.19 mg/L J	1	0.07	0.50			3/22/20 11:01:00	N	IV
K2002416-004	Carbon, Total Organic	N/A		Ground Water	0.54 mg/L	10 mL	0.54 mg/L	1	0.07	0.50			3/22/20 11:29:00	N	IV
K2002421-001	Carbon, Total Organic	N/A		Water	1.53 mg/L	10 mL	1.53 mg/L	1	0.07	0.50			3/22/20 15:45:00	N	IV
K2002421-002	Carbon, Total Organic	N/A		Water	0.79 mg/L	10 mL	0.79 mg/L	1	0.07	0.50			3/22/20 16:14:00	N	IV
K2002421-003	Carbon, Total Organic	N/A		Water	1.69 mg/L	10 mL	1.69 mg/L	1	0.07	0.50			3/22/20 16:42:00	N	IV
K2002421-004	Carbon, Total Organic	N/A		Water	0.82 mg/L	10 mL	0.82 mg/L	1	0.07	0.50			3/22/20 17:10:00	N	IV
K2002434-003	Carbon, Total Organic	N/A		Water	0.11 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 08:39:00	N	I
K2002462-001	Carbon, Total Organic	N/A		Water	2.96 mg/L	10 mL	2.96 mg/L	1	0.07	0.50			3/22/20 11:58:00	N	II
K2002470-001	Carbon, Total Organic	N/A		Water	2.07 mg/L	10 mL	2.07 mg/L	1	0.07	0.50			3/22/20 12:26:00	N	IV
K2002471-001	Carbon, Total Organic	N/A		Ground Water	4.43 mg/L	10 mL	4.43 mg/L	1	0.07	0.50			3/22/20 12:54:00	N	IV
K2002489-001	Carbon, Total Organic	N/A		Water	4.72 mg/L	10 mL	4.72 mg/L	1	0.07	0.50			3/22/20 13:22:00	N	II
K2002492-002	Carbon, Total Organic	N/A		Drinking Water	0.37 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 13:50:00	N	I
K2002496-001	Carbon, Total Organic	N/A		Water	14.38 mg/L	10 mL	14.4 mg/L	1	0.07	0.50			3/22/20 15:17:00	N	II
KQ2004008-01	Carbon, Total Organic	MS	K2002416-001	Ground Water	27.78 mg/L	10 mL	27.8 mg/L	1	0.07	0.50	111		3/22/20 10:04:00	N	IV
KQ2004008-02	Carbon, Total Organic	DUP	K2002416-001	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 09:07:00	N	IV
KQ2004008-03	Carbon, Total Organic	DUP	K2002416-002	Ground Water	0.01 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 10:33:00	N	IV
KQ2004008-04	Carbon, Total Organic	DUP	K2002416-003	Ground Water	0.16 mg/L	10 mL	0.16 mg/L J	1	0.07	0.50		21*	3/22/20 11:01:00	N	IV
KQ2004008-05	Carbon, Total Organic	DUP	K2002416-004	Ground Water	0.53 mg/L	10 mL	0.53 mg/L	1	0.07	0.50		2	3/22/20 11:29:00	N	IV
KQ2004008-06	Carbon, Total Organic	DUP	K2002421-001	Water	1.47 mg/L	10 mL	1.47 mg/L	1	0.07	0.50		4	3/22/20 15:45:00	N	IV
KQ2004008-07	Carbon, Total Organic	DUP	K2002421-002	Water	0.76 mg/L	10 mL	0.76 mg/L	1	0.07	0.50		3	3/22/20 16:14:00	N	IV
KQ2004008-08	Carbon, Total Organic	DUP	K2002421-003	Water	1.71 mg/L	10 mL	1.71 mg/L	1	0.07	0.50		1	3/22/20 16:42:00	N	IV
KQ2004008-09	Carbon, Total Organic	DUP	K2002421-004	Water	0.78 mg/L	10 mL	0.78 mg/L	1	0.07	0.50		5	3/22/20 17:10:00	N	IV
KQ2004008-10	Carbon, Total Organic	DUP	K2002434-003	Water	0.18 mg/L	10 mL	0.18 mg/L J	1	0.07	0.50		NC	3/22/20 08:39:00	N	I
KQ2004008-11	Carbon, Total Organic	DUP	K2002462-001	Water	2.96 mg/L	10 mL	2.96 mg/L	1	0.07	0.50		<1	3/22/20 11:58:00	N	II
KQ2004008-12	Carbon, Total Organic	DUP	K2002470-001	Water	1.98 mg/L	10 mL	1.98 mg/L	1	0.07	0.50		4	3/22/20 12:26:00	N	IV
KQ2004008-13	Carbon, Total Organic	DUP	K2002471-001	Ground Water	4.30 mg/L	10 mL	4.30 mg/L	1	0.07	0.50		3	3/22/20 12:54:00	N	IV
KQ2004008-14	Carbon, Total Organic	DUP	K2002489-001	Water	4.65 mg/L	10 mL	4.65 mg/L	1	0.07	0.50		2	3/22/20 13:22:00	N	II
KQ2004008-15	Carbon, Total Organic	DUP	K2002492-002	Drinking Water	0.40 mg/L	10 mL	0.40 mg/L J	1	0.07	0.50		NC	3/22/20 13:50:00	N	I

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674225 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2004008-16	Carbon, Total Organic	DUP	K2002496-001	Water	13.50 mg/L	10 mL	13.5 mg/L	1	0.07	0.50		6	3/22/20 15:17:00	N	II
KQ2004008-17	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	I
KQ2004008-17	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	I
KQ2004008-18	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	I
KQ2004008-18	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	I
KQ2004008-19	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	I
KQ2004008-19	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	I
KQ2004008-20	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	I
KQ2004008-20	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	I
KQ2004008-21	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	I
KQ2004008-21	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	I
KQ2004008-22	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	I
KQ2004008-22	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	I
KQ2004008-23	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	I
KQ2004008-23	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	I
KQ2004008-24	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	I
KQ2004008-24	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	I
KQ2004008-25	Carbon, Total Organic	MB		Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:21:00	N	I
KQ2004008-25	Carbon, Total Organic	MB		Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:21:00	N	I
KQ2004008-26	Carbon, Total Organic	LCS		Water	24.62 mg/L	10 mL	24.6 mg/L	1	0.07	0.50	98		3/22/20 05:35:00	N	I
KQ2004008-26	Carbon, Total Organic	LCS		Water	24.62 mg/L	10 mL	24.6 mg/L	1	0.07	0.50	98		3/22/20 05:35:00	N	I
KQ2004008-27	Carbon, Total Organic	N/A		Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:07:00	N	IV
KQ2004008-28	Carbon, Total Organic	MS	KQ2004008-27	Water	27.78 mg/L	10 mL	27.8 mg/L	1	0.07	0.50	111		3/22/20 10:04:00	N	IV
KQ2004008-29	Carbon, Total Organic	DUP	KQ2004008-27	Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 09:07:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674226 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002432-001	Carbon, Total Organic	N/A		Water	0.03 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 17:38:00	N	IV
K2002437-001	Carbon, Total Organic	N/A		Water	1.83 mg/L	10 mL	1.83 mg/L	1	0.07	0.50			3/22/20 19:04:00	N	I
K2002437-002	Carbon, Total Organic	N/A		Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			3/22/20 19:33:00	N	I
K2002437-003	Carbon, Total Organic	N/A		Water	3.10 mg/L	10 mL	3.10 mg/L	1	0.07	0.50			3/22/20 20:00:00	N	I
K2002437-004	Carbon, Total Organic	N/A		Water	0.71 mg/L	10 mL	0.71 mg/L	1	0.07	0.50			3/22/20 20:29:00	N	I
K2002437-005	Carbon, Total Organic	N/A		Water	0.59 mg/L	10 mL	0.59 mg/L	1	0.07	0.50			3/22/20 20:57:00	N	I
K2002456-001	Carbon, Total Organic	N/A		Water	1.07 mg/L	10 mL	1.07 mg/L	1	0.07	0.50			3/22/20 21:25:00	N	IV
K2002456-002	Carbon, Total Organic	N/A		Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			3/22/20 21:53:00	N	IV
K2002456-003	Carbon, Total Organic	N/A		Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50			3/22/20 22:21:00	N	IV
K2002456-004	Carbon, Total Organic	N/A		Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50			3/22/20 22:49:00	N	IV
KQ2004009-01	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	IV
KQ2004009-02	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	IV
KQ2004009-03	Carbon, Total Organic	CCV		Water	25.05 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	IV
KQ2004009-04	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	IV
KQ2004009-05	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	IV
KQ2004009-06	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	IV
KQ2004009-07	Carbon, Total Organic	MB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:48:00	N	IV
KQ2004009-08	Carbon, Total Organic	LCS		Water	24.66 mg/L	10 mL	24.7 mg/L	1	0.07	0.50	99		3/22/20 15:03:00	N	IV
KQ2004009-09	Carbon, Total Organic	MS	K2002432-001	Water	26.30 mg/L	10 mL	26.3 mg/L	1	0.07	0.50	105		3/22/20 18:06:00	N	IV
KQ2004009-10	Carbon, Total Organic	DUP	K2002432-001	Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 17:38:00	N	IV
KQ2004009-11	Carbon, Total Organic	DUP	K2002437-001	Water	1.78 mg/L	10 mL	1.78 mg/L	1	0.07	0.50		3	3/22/20 19:04:00	N	I
KQ2004009-12	Carbon, Total Organic	DUP	K2002437-002	Water	0.71 mg/L	10 mL	0.71 mg/L	1	0.07	0.50		2	3/22/20 19:33:00	N	I
KQ2004009-13	Carbon, Total Organic	DUP	K2002437-003	Water	3.13 mg/L	10 mL	3.13 mg/L	1	0.07	0.50		<1	3/22/20 20:00:00	N	I
KQ2004009-14	Carbon, Total Organic	DUP	K2002437-004	Water	0.64 mg/L	10 mL	0.64 mg/L	1	0.07	0.50		10	3/22/20 20:29:00	N	I
KQ2004009-15	Carbon, Total Organic	DUP	K2002437-005	Water	0.56 mg/L	10 mL	0.56 mg/L	1	0.07	0.50		4	3/22/20 20:57:00	N	I
KQ2004009-16	Carbon, Total Organic	DUP	K2002456-001	Water	1.04 mg/L	10 mL	1.04 mg/L	1	0.07	0.50		2	3/22/20 21:25:00	N	IV
KQ2004009-17	Carbon, Total Organic	DUP	K2002456-002	Water	0.66 mg/L	10 mL	0.66 mg/L	1	0.07	0.50		9	3/22/20 21:53:00	N	IV
KQ2004009-18	Carbon, Total Organic	DUP	K2002456-003	Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50		<1	3/22/20 22:21:00	N	IV
KQ2004009-19	Carbon, Total Organic	DUP	K2002456-004	Water	1.30 mg/L	10 mL	1.30 mg/L	1	0.07	0.50		4	3/22/20 22:49:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674227 **Method/Testcode:** SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002422-001	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	9.45 mg/L	10 mL	9.45 mg/L	1	0.07	0.50			3/23/20 02:23:00	N	III
K2002462-002	Carbon, Dissolved Organic	N/A		Water	4.12 mg/L	10 mL	4.12 mg/L	1	0.07	0.50			3/23/20 01:11:00	N	II
KQ2004010-01	Carbon, Dissolved Organic	CCV		Water	25.13 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	II
KQ2004010-01	Carbon, Dissolved Organic (DOC)	CCV		Water	25.13 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	II
KQ2004010-02	Carbon, Dissolved Organic	CCV		Water	25.06 mg/L	10 mL	25.1 mg/L	1					3/23/20 03:20:00	N	II
KQ2004010-02	Carbon, Dissolved Organic (DOC)	CCV		Water	25.06 mg/L	10 mL	25.1 mg/L	1					3/23/20 03:20:00	N	II
KQ2004010-03	Carbon, Dissolved Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	II
KQ2004010-03	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	II
KQ2004010-04	Carbon, Dissolved Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 03:35:00	N	II
KQ2004010-04	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 03:35:00	N	II
KQ2004010-05	Carbon, Dissolved Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:42:00	N	II
KQ2004010-05	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:42:00	N	II
KQ2004010-06	Carbon, Dissolved Organic	LCS		Water	24.20 mg/L	10 mL	24.2 mg/L	1	0.07	0.50	97		3/23/20 00:57:00	N	II
KQ2004010-06	Carbon, Dissolved Organic (DOC)	LCS		Water	24.20 mg/L	10 mL	24.2 mg/L	1	0.07	0.50	97		3/23/20 00:57:00	N	II
KQ2004010-07	Carbon, Dissolved Organic	MS	K2002462-002	Water	32.05 mg/L	10 mL	32.0 mg/L	1	0.07	0.50	112		3/23/20 01:40:00	N	II
KQ2004010-08	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	4.12 mg/L	10 mL	4.12 mg/L	1	0.07	0.50			3/23/20 01:11:00	N	III
KQ2004010-09	Carbon, Dissolved Organic (DOC)	MS	KQ2004010-08	Surface Water	32.05 mg/L	10 mL	32.0 mg/L	1	0.07	0.50	112		3/23/20 01:40:00	N	III
KQ2004010-10	Carbon, Dissolved Organic (DOC)	DUP	K2002422-001	Surface Water	9.61 mg/L	10 mL	9.61 mg/L	1	0.07	0.50		2	3/23/20 02:23:00	N	III
KQ2004010-11	Carbon, Dissolved Organic	DUP	K2002462-002	Water	4.07 mg/L	10 mL	4.07 mg/L	1	0.07	0.50		1	3/23/20 01:11:00	N	II
KQ2004010-12	Carbon, Dissolved Organic (DOC)	DUP	KQ2004010-08	Surface Water	4.07 mg/L	10 mL	4.07 mg/L	1	0.07	0.50		1	3/23/20 01:11:00	N	III

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

0.043	0.043			OBSERVATIONS	12	0.0432
0.366				STD Deviation	0.11429	ABOVE
0.200				AVERAGE	0.06658	ABOVE
0.055	0.055	0.055	######	UCL	0.18087	0.0545
0.136	0.136			LCL	-0.04772	0.1357
0.000						0
0.000						0
0.000				OBSERVATIONS	3	0
0.000				STD Deviation	0.02578	0
0.000				AVERAGE	0.07780	0
0.000				UCL	0.10358	0
0.000				LCL	0.05202	0
						0
						0
				OBSERVATIONS	1	0
				STD Deviation	#DIV/0!	0
				AVERAGE	0.05450	0
				UCL	#DIV/0!	0
				LCL	#DIV/0!	0
						0
						0
				OBSERVATIONS	0	0
				STD Deviation	#DIV/0!	0
				AVERAGE	#DIV/0!	0
						0
						0
						0
						0
						0

BLP 3/24/20

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccb	1	0.043	0.0778	-0.0346	-0.0346	<0.5	3/21/2020
3	ccv	1	26.406	0.0778	26.3280	26.328	26.3	3/21/2020
4	mb	1	0.366	0.0778	0.2878	0.2878	<0.5	3/21/2020
5	lcs	1	24.954	0.0778	24.8758	24.8758	24.9	3/21/2020
6	K2002337-001	1	0.994	0.0778	0.9162	0.9162	0.92	3/21/2020
7	K2002337-001	1	0.983	0.0778	0.9055	0.9055	0.9	3/21/2020
8	KQ2003999-09	1	29.561	0.0778	29.4834	29.4834	29	3/21/2020
9	K2002337-002	1	0.927	0.0778	0.8490	0.849	0.85	3/21/2020
10	K2002337-002	1	0.868	0.0778	0.7902	0.7902	0.79	3/21/2020
11	K2002337-003	1	0.851	0.0778	0.7733	0.7733	0.8	3/21/2020
12	K2002337-003	1	0.778	0.0778	0.6997	0.6997	0.70	3/21/2020
13	K2002337-004	1	0.759	0.0778	0.6814	0.6814	0.68	3/21/2020
14	K2002337-004	1	0.748	0.0778	0.6704	0.6704	0.67	3/21/2020
15	K2002337-005	1	0.530	0.0778	0.4518	0.4518	<0.5	3/21/2020
16	K2002337-005	1	0.543	0.0778	0.4649	0.4649	<0.5	3/21/2020
17	ccv	1	26.379	0.0778	26.3014	26.3014	26.30	3/21/2020
18	ccb	1	0.200	0.0778	0.1221	0.1221	<0.5	3/21/2020
19	K2002337-006	1	1.952	0.0778	1.8738	1.8738	1.9	3/22/2020
20	K2002337-006	1	1.929	0.0778	1.8513	1.8513	1.85	3/22/2020
21	K2002337-007	1	0.710	0.0778	0.6317	0.6317	0.63	3/22/2020
22	K2002337-007	1	0.658	0.0778	0.5798	0.5798	0.6	3/22/2020
23	K2002276-001	10	5.931	0.0778	5.8531	58.531	58.5	3/22/2020
24	K2002276-001	10	5.997	0.0778	5.9193	59.193	59.19	3/22/2020
25	K2002365-001	1	6.825	0.0778	6.7471	6.7471	6.75	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

	date	time
Analyzed By: KW	Date Analyzed 3/21/20	
Reviewed By:	Date Reviewed	

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ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002365-001	1	6.814	0.0778	6.7366	6.7366	6.74	3/22/2020
27	K2002353-001	400	1.325	0.0778	1.2473	498.92	498.92	3/22/2020
28	K2002353-001	400	1.272	0.0778	1.1941	477.64	477.6	3/22/2020
29	K2002412-001	1	10.758	0.0778	10.6798	10.6798	10.7	3/22/2020
30	K2002412-001	1	10.352	0.0778	10.2738	10.2738	10.3	3/22/2020
31	K2002412-002	1	2.431	0.0778	2.3535	2.3535	2.4	3/22/2020
32	K2002412-002	1	2.226	0.0778	2.1484	2.1484	2.1	3/22/2020
33	K2002412-003	1	44.908	0.0778	44.8304	44.8304	44.8	3/22/2020
34	K2002412-003	1	44.589	0.0778	44.5114	44.5114	44.5	3/22/2020
35	K2002412-004	1	1.276	0.0778	1.1981	1.1981	1.2	3/22/2020
36	K2002412-004	1	0.987	0.0778	0.9096	0.9096	0.9	3/22/2020
37	ccv	1	26.538	0.0778	26.4599	26.4599	26.5	3/22/2020
38	ccb	1	0.055	0.0778	-0.0233	-0.0233	<0.5	3/22/2020
39	K2002412-005	1	4.650	0.0778	4.5720	4.572	4.6	3/22/2020
40	K2002412-005	1	4.487	0.0778	4.4096	4.4096	4.4	3/22/2020
41	K2002412-006	1	31.326	0.0778	31.2482	31.2482	31.2	3/22/2020
42	K2002412-006	1	30.802	0.0778	30.7243	30.7243	30.7	3/22/2020
43	K2002412-007	1	0.861	0.0778	0.7828	0.7828	0.8	3/22/2020
44	K2002412-007	1	0.659	0.0778	0.5810	0.581	0.6	3/22/2020
45	K2002412-008	1	5.297	0.0778	5.2192	5.2192	5.2	3/22/2020
46	K2002412-008	1	5.349	0.0778	5.2707	5.2707	5.3	3/22/2020
47	K2002434-001	1	0.318	0.0778	0.2402	0.2402	<0.5	3/22/2020
48	K2002434-001	1	0.271	0.0778	0.1933	0.1933	<0.5	3/22/2020
49	K2002434-002	1	0.689	0.0778	0.6116	0.6116	0.6	3/22/2020
50	K2002434-002	1	0.674	0.0778	0.5965	0.5965	0.6	3/22/2020

Analyzed By: BCD	Date Analyzed 3/24/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
51	ccv	1	25.843	0.0778	25.7647	25.7647	25.76	3/22/2020
52	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
53		1		0.0000	0.0000	0	<0.5	
54		1		0.0000	0.0000	0	<0.5	
55		1		0.0000	0.0000	0	<0.5	
56		1		0.0000	0.0000	0	<0.5	
57		1		0.0000	0.0000	0	<0.5	
58		1		0.0000	0.0000	0	<0.5	
59		1		0.0000	0.0000	0	<0.5	
60		1		0.0000	0.0000	0	<0.5	
61		1		0.0000	0.0000	0	<0.5	
62		1		0.0000	0.0000	0	<0.5	
63		1		0.0000	0.0000	0	<0.5	
64		1		0.0000	0.0000	0	<0.5	
65		1		0.0000	0.0000	0	<0.5	
66		1		0.0000	0.0000	0	<0.5	
67		1		0.0000	0.0000	0	<0.5	
68		1		0.0000	0.0000	0	<0.5	
69		1		0.0000	0.0000	0	<0.5	
70		1		0.0000	0.0000	0	<0.5	
71		1		0.0000	0.0000	0	<0.5	
72		1		0.0000	0.0000	0	<0.5	
73		1		0.0000	0.0000	0	<0.5	
74		1		0.0000	0.0000	0	<0.5	
75		1		0.0000	0.0000	0	<0.5	

Analyzed By: BKP	Date Analyzed 3/24/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	26.538	0.0778	26.4599	26.4599	26.5	3/22/2020
3	ccb	1	0.055	0.0778	-0.0233	-0.0233	<0.5	3/22/2020
4	mb	1	0.136	0.0778	0.0579	0.0579	<0.5	3/22/2020
5	lcs	1	24.698	0.0778	24.6205	24.6205	24.6	3/22/2020
6	K2002434-003	1	0.192	0.0778	0.1139	0.1139	<0.5	3/22/2020
7	K2002434-003	1	0.258	0.0778	0.1797	0.1797	<0.5	3/22/2020
8	K2002416-001	1	0.099	0.0778	0.0207	0.0207	<0.5	3/22/2020
9	K2002416-001	1	0.083	0.0778	0.0048	0.0048	<0.5	3/22/2020
10	ccv	1	25.843	0.0778	25.7647	25.7647	25.76	3/22/2020
11	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
12	KQ2004008-01	1	27.862	0.0778	27.7842	27.7842	27.78	3/22/2020
13	K2002416-002	1	0.099	0.0778	0.0210	0.021	<0.5	3/22/2020
14	K2002416-002	1	0.085	0.0778	0.0067	0.0067	<0.5	3/22/2020
15	K2002416-003	1	0.271	0.0778	0.1932	0.1932	<0.5	3/22/2020
16	K2002416-003	1	0.235	0.0778	0.1572	0.1572	<0.5	3/22/2020
17	K2002416-004	1	1.615	0.0778	1.5370	1.537	1.54	3/22/2020
18	K2002416-004	1	1.605	0.0778	1.5267	1.5267	1.5	3/22/2020
19	K2002462-001	1	3.041	0.0778	2.9627	2.9627	3.0	3/22/2020
20	K2002462-001	1	3.038	0.0778	2.9600	2.96	2.96	3/22/2020
21	K2002470-001	1	2.148	0.0778	2.0704	2.0704	2.07	3/22/2020
22	K2002470-001	1	2.061	0.0778	1.9828	1.9828	2.0	3/22/2020
23	K2002471-001	1	4.509	0.0778	4.4308	4.4308	4.4	3/22/2020
24	K2002471-001	1	4.381	0.0778	4.3030	4.303	4.30	3/22/2020
25	K2002489-001	1	4.801	0.0778	4.7227	4.7227	4.72	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

date time

Analyzed By: [signature]	Date Analyzed 3/22/20
Reviewed By:	Date Reviewed

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ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002489-001	1	4.724	0.0778	4.6460	4.646	4.65	3/22/2020
27	K2002492-002	1	0.452	0.0778	0.3746	0.3746	<0.5	3/22/2020
28	K2002492-002	1	0.479	0.0778	0.4014	0.4014	<0.5	3/22/2020
29	ccv	1	25.695	0.0778	25.6168	25.6168	25.6	3/22/2020
30	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
31	K2002496-001	1	14.459	0.0778	14.3812	14.3812	14.4	3/22/2020
32	K2002496-001	1	13.578	0.0778	13.5000	13.5	13.5	3/22/2020
33	K2002421-001	1	1.605	0.0778	1.5272	1.5272	1.5	3/22/2020
34	K2002421-001	1	1.548	0.0778	1.4705	1.4705	1.5	3/22/2020
35	K2002421-002	1	0.866	0.0778	0.7878	0.7878	0.8	3/22/2020
36	K2002421-002	1	0.842	0.0778	0.7645	0.7645	0.8	3/22/2020
37	K2002421-003	1	1.766	0.0778	1.6881	1.6881	1.7	3/22/2020
38	K2002421-003	1	1.790	0.0778	1.7125	1.7125	1.7	3/22/2020
39	K2002421-004	1	0.896	0.0778	0.8180	0.818	0.8	3/22/2020
40	K2002421-004	1	0.859	0.0778	0.7812	0.7812	0.8	3/22/2020
41	ccv	1	25.418	0.0778	25.3398	25.3398	25.3	3/22/2020
42	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: KP	Date Analyzed 3/22/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.695	0.0778	25.6168	25.6168	25.6	3/22/2020
3	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
4	mb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
5	lcs	1	24.742	0.0778	24.6645	24.6645	24.7	3/22/2020
6	K2002432-001	1	0.108	0.0778	0.0305	0.0305	<0.5	3/22/2020
7	K2002432-001	1	0.143	0.0778	0.0649	0.0649	<0.5	3/22/2020
8	KQ2004009-09	1	26.380	0.0778	26.3020	26.302	26	3/22/2020
9	ccv	1	25.418	0.0778	25.3398	25.3398	25.34	3/22/2020
10	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
11	K2002437-001	1	1.911	0.0778	1.8331	1.8331	1.8	3/22/2020
12	K2002437-001	1	1.853	0.0778	1.7754	1.7754	1.78	3/22/2020
13	K2002437-002	1	0.802	0.0778	0.7246	0.7246	0.72	3/22/2020
14	K2002437-002	1	0.788	0.0778	0.7099	0.7099	0.71	3/22/2020
15	K2002437-003	1	3.181	0.0778	3.1028	3.1028	3.1	3/22/2020
16	K2002437-003	1	3.208	0.0778	3.1306	3.1306	3.1	3/22/2020
17	K2002437-004	1	0.783	0.0778	0.7056	0.7056	0.71	3/22/2020
18	K2002437-004	1	0.715	0.0778	0.6372	0.6372	0.6	3/22/2020
19	K2002437-005	1	0.665	0.0778	0.5874	0.5874	0.6	3/22/2020
20	K2002437-005	1	0.641	0.0778	0.5633	0.5633	0.56	3/22/2020
21	K2002456-001	1	1.145	0.0778	1.0675	1.0675	1.07	3/22/2020
22	K2002456-001	1	1.122	0.0778	1.0438	1.0438	1.0	3/22/2020
23	K2002456-002	1	0.794	0.0778	0.7165	0.7165	0.7	3/22/2020
24	K2002456-002	1	0.735	0.0778	0.6568	0.6568	0.66	3/22/2020
25	K2002456-003	1	1.431	0.0778	1.3528	1.3528	1.35	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

date time

Analyzed By: BDP	Date Analyzed 3/12/20
Reviewed By:	Date Reviewed

Revision 1, 2010 R:\WET\ANALYSES\TOC\TEMPLATE\TOCwaterLIMS

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002456-003	1	1.431	0.0778	1.3528	1.3528	1.35	3/22/2020
27	K2002456-004	1	1.433	0.0778	1.3548	1.3548	1.35	3/22/2020
28	K2002456-004	1	1.375	0.0778	1.2971	1.2971	1.3	3/22/2020
29	ccv	1	25.130	0.0778	25.0525	25.0525	25.1	3/23/2020
30	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
31		1		0.0000	0.0000	0	<0.5	
32		1		0.0000	0.0000	0	<0.5	
33		1		0.0000	0.0000	0	<0.5	
34		1		0.0000	0.0000	0	<0.5	
35		1		0.0000	0.0000	0	<0.5	
36		1		0.0000	0.0000	0	<0.5	
37		1		0.0000	0.0000	0	<0.5	
38		1		0.0000	0.0000	0	<0.5	
39		1		0.0000	0.0000	0	<0.5	
40		1		0.0000	0.0000	0	<0.5	
41		1		0.0000	0.0000	0	<0.5	
42		1		0.0000	0.0000	0	<0.5	
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: BCP	Date Analyzed 3/21/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.130	0.0778	25.0525	25.0525	25.1	3/23/2020
3	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
4	mb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
5	lcs	1	24.199	0.0778	24.1209	24.1209	24.1	3/23/2020
6	K2002462-002	1	4.117	0.0778	4.0393	4.0393	4.04	3/23/2020
7	K2002462-002	1	4.067	0.0778	3.9892	3.9892	4.0	3/23/2020
8	KQ2004010-07	1	32.047	0.0778	31.9695	31.9695	32	3/23/2020
9	K2002422-001	1	9.445	0.0778	9.3675	9.3675	9.37	3/23/2020
10	K2002422-001	1	9.612	0.0778	9.5338	9.5338	9.53	3/23/2020
11	ccv	1	25.060	0.0778	24.9820	24.982	25.0	3/23/2020
12	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
13		1		0.0000	0.0000	0	<0.5	
14		1		0.0000	0.0000	0	<0.5	
15		1		0.0000	0.0000	0	<0.5	
16		1		0.0000	0.0000	0	<0.5	
17		1		0.0000	0.0000	0	<0.5	
18		1		0.0000	0.0000	0	<0.5	
19		1		0.0000	0.0000	0	<0.5	
20		1		0.0000	0.0000	0	<0.5	
21		1		0.0000	0.0000	0	<0.5	
22		1		0.0000	0.0000	0	<0.5	
23		1		0.0000	0.0000	0	<0.5	
24		1		0.0000	0.0000	0	<0.5	
25		1		0.0000	0.0000	0	<0.5	

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

date time

Analyzed By: BCP	Date Analyzed 3/21/20
Reviewed By:	Date Reviewed

Revision 1, 2010 R:\WET\ANALYSES\TOC\TEMPLATE\TOCwaterLIMS

TOC: 674205, 674225, 674226
DOC: 674227

Schedule: 03212020

Version: 4
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2020/03/21 21:07 - Saturday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
74	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K2002337-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
4	Sample	K2002337-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
5	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
6	Sample	K2002337-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
7	Sample	K2002337-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
8	Sample	K2002337-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
9	Sample	K2002337-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
10	Sample	K2002337-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	K2002337-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	K2002276-001.01 10x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	K2002365-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
14	Sample	K2002353-001.01 400x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
15	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
16	Sample	K2002412-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
17	Sample	K2002412-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
18	Sample	K2002412-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
19	Sample	K2002412-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
21	Sample	K2002412-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K2002412-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
23	Sample	K2002412-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
24	Sample	K2002412-008.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
25	Sample	K2002434-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K2002434-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K2002434-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K2002416-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
29	Sample	K2002416-001.02 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
30	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
31	Sample	K2002416-002.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
32	Sample	K2002416-003.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
33	Sample	K2002416-004.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
34	Sample	K2002462-001.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
35	Sample	K2002470-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
36	Sample	K2002471-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
37	Sample	K2002489-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
38	Sample	K2002492-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready

Schedule: 03212020

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
39	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
40	Sample	K2002496-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
41	Sample	K2002421-001.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
42	Sample	K2002421-002.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
43	Sample	K2002421-003.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
44	Sample	K2002421-004.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
45	Sample	K2002432-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
46	Sample	K2002432-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
47	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
48	Sample	K2002437-001.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
49	Sample	K2002437-002.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
50	Sample	K2002437-003.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
51	Sample	K2002437-004.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
52	Sample	K2002437-005.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
53	Sample	K2002456-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
54	Sample	K2002456-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
55	Sample	K2002456-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
56	Sample	K2002456-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
57	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
58	Sample	MB4	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
59	Sample	K2002462-002.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
60	Sample	K2002462-002.04 ms doc	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
61	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
62	Sample	FB 3/19/20 1619	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
63	Sample	K2002422-001.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
64	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
					False	

Fusion Report - 03212020
Saturday, March 21, 2020 04:44 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/03/24 09:26 - Tuesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	03212020	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v2) Fusion1 (Fusion1) (v3) Fusion1 (Fusion1) (v4)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/03/21 16:44

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	12.01	16.15	4.14	49.81	08:01
2	TC Clean	18.09	21.86	3.77	49.56	07:17
3	TC Clean	6.93	10.79	3.86	49.61	07:02
4	TC Clean	5.02	8.90	3.88	49.63	07:01

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	74	TOC	RB	0.4528 ppm	0.0533 ppm	11.7700%	2020/03/21 17:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4804	4.8037	10.62	14.37	3.75	49.71	10:29
2	TOC	0.4973	4.9732	10.74	14.56	3.82	49.67	10:29
3	TOC	0.4567	4.5672	10.46	14.14	3.68	49.67	10:27
4	TOC	0.3769	3.7687	9.93	13.76	3.83	49.65	10:29

Dilution **Blank Contribution** **Method** **Calibration**

1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/03/21 18:14

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	9.17	13.91	4.74	49.79	07:59
2	TC Clean	6.79	10.62	3.83	49.55	07:20
3	TC Clean	4.32	8.23	3.91	49.61	07:00
4	TC Clean	3.54	7.40	3.86	49.60	07:01

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/03/21 18:48

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.92	4.73	3.81	49.82	07:59
2	TC Clean	8.57	12.40	3.83	49.62	07:17
3	TC Clean	4.30	8.10	3.80	49.63	07:00
4	TC Clean	3.55	7.36	3.81	49.65	07:03

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	D	TOC	RB	0.2621 ppm	0.0000 ppm	0.0000%	2020/03/21 19:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2621	2.6207	9.15	12.95	3.80	49.69	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCB — From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time

◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0432 ppm (PASS)	0.0000 ppm	0%	2020/03/21 19:37

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0432	0.4318	8.11	11.92	3.82	49.72	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.4058 ppm (PASS)	0.0000 ppm	0%	2020/03/21 19:52

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.4058	264.0582	185.40	189.22	3.82	49.75	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Sample

From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	1	TOC	MB1	0.3656 ppm	0.0000 ppm	0.0000%	2020/03/21 20:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3656	3.6557	9.85	13.62	3.77	49.76	10:35

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS

From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	24.9536 ppm (PASS)	0.0000 ppm	0%	2020/03/21 20:21

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.9536	249.5362	175.63	179.68	4.05	49.79	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	2	TOC	ICS	2.0813 ppm	0.0000 ppm	0.0000%	2020/03/21 20:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.0813	20.8126	21.39	25.32	3.93	49.83	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	3	TOC	K2002337-001.01	0.9886 ppm	0.0076 ppm	0.7700%	2020/03/21 20:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9940	9.9397	14.08	17.85	3.78	49.85	10:28
2	TOC	0.9833	9.8327	14.00	17.80	3.80	49.88	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	4	TOC	K2002337-001.01 ms	29.5612 ppm	0.0000 ppm	0.0000%	2020/03/21 21:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	29.5612	295.6123	206.19	209.98	3.79	49.90	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	5	TOC	RB	0.2728 ppm	0.0000 ppm	0.0000%	2020/03/21 21:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2728	2.7278	9.23	12.95	3.72	49.94	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	6	TOC	K2002337-002.01	0.8974 ppm	0.0415 ppm	4.6300%	2020/03/21 21:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9268	9.2676	13.62	17.26	3.63	49.95	10:26
2	TOC	0.8680	8.6802	13.23	17.12	3.89	49.98	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	7	TOC	K2002337-003.01	0.8143 ppm	0.0520 ppm	6.3900%	2020/03/21 22:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8511	8.5107	13.12	16.70	3.59	49.97	10:27
2	TOC	0.7775	7.7747	12.62	16.55	3.93	50.00	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	8	TOC	K2002337-004.01	0.7537 ppm	0.0078 ppm	1.0300%	2020/03/21 22:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7592	7.5918	12.50	16.55	4.05	50.01	10:30
2	TOC	0.7482	7.4817	12.42	16.32	3.90	50.00	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	9	TOC	K2002337-005.01	0.5361 ppm	0.0093 ppm	1.7300%	2020/03/21 23:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5296	5.2958	10.95	14.68	3.72	49.98	10:30
2	TOC	0.5427	5.4267	11.04	14.79	3.75	49.99	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.3792 ppm	0.0000 ppm	0%	2020/03/21 23:40

							(PASS)			

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.3792	263.7921	185.22	188.92	3.71	50.01	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.1999 ppm (PASS)	0.0000 ppm	0%	2020/03/21 23:55

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.1999	1.9991	9.16	12.96	3.80	50.00	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	10	TOC	K2002337-006.01	1.9404 ppm	0.0159 ppm	0.8200%	2020/03/22 00:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9516	19.5160	20.52	24.28	3.76	50.01	10:33
2	TOC	1.9291	19.2914	20.37	24.25	3.89	49.98	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	11	TOC	K2002337-007.01	0.6836 ppm	0.0367 ppm	5.3700%	2020/03/22 00:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7095	7.0951	12.16	15.91	3.75	49.97	10:25
2	TOC	0.6576	6.5762	11.81	15.68	3.87	49.95	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis	Sample ID	Result (ppmC)	Std. Dev.	RSD	Start Time

		Type			(ppmC)		
◆	12	TOC	K2002276-001.01 10x	5.9640 ppm	0.0468 ppm	0.7800%	2020/03/22 01:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.9309	59.3095	47.28	51.18	3.91	49.95	10:27
2	TOC	5.9971	59.9712	47.72	51.51	3.79	49.96	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	13	TOC	K2002365-001.01	6.8196 ppm	0.0075 ppm	0.1100%	2020/03/22 01:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.8249	68.2493	53.29	57.25	3.96	49.94	10:26
2	TOC	6.8144	68.1437	53.22	57.13	3.91	49.94	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	14	TOC	K2002353-001.01 400x	1.2985 ppm	0.0376 ppm	2.9000%	2020/03/22 02:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3251	13.2513	16.30	20.20	3.90	49.93	10:28
2	TOC	1.2719	12.7189	15.94	19.92	3.97	49.90	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	15	TOC	RB	0.0981 ppm	0.0036 ppm	3.6500%	2020/03/22 02:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1006	1.0059	8.07	11.84	3.77	49.88	10:26
2	TOC	0.0955	0.9553	8.03	12.08	4.05	49.88	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	16	TOC	K2002412-001.01	10.5546 ppm	0.2870 ppm	2.7200%	2020/03/22 02:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	10.7576	107.5758	79.74	83.68	3.95	49.85	10:29
2	TOC	10.3516	103.5163	77.01	80.95	3.94	49.85	10:26

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	17	TOC	K2002412-002.01	2.3288 ppm	0.1450 ppm	6.2300%	2020/03/22 03:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4313	24.3130	23.74	27.73	3.98	49.85	10:28
2	TOC	2.2262	22.2625	22.36	26.60	4.24	49.85	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	18	TOC	K2002412-003.01	44.7487 ppm	0.2255 ppm	0.5000%	2020/03/22 03:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	44.9082	449.0821	309.40	313.24	3.84	49.85	10:30
2	TOC	44.5892	445.8925	307.25	311.28	4.03	49.85	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	19	TOC	K2002412-004.01	1.1317 ppm	0.2040 ppm	18.0300%	2020/03/22 04:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2759	12.7591	15.97	20.08	4.10	49.87	10:27
2	TOC	0.9874	9.8743	14.03	18.07	4.04	49.92	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.5377 ppm (PASS)	0.0000 ppm	0%	2020/03/22 04:51

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.5377	265.3772	186.28	190.22	3.94	49.88	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	50 ppmC

met.	(v4)	(v32)

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0545 ppm (PASS)	0.0000 ppm	0%	2020/03/22 05:06

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0545	0.5449	8.18	12.24	4.06	49.92	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	20	TOC	MB2	0.1357 ppm	0.0000 ppm	0.0000%	2020/03/22 05:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1357	1.3568	8.30	12.27	3.97	49.92	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	24.6983 ppm (PASS)	0.0000 ppm	0%	2020/03/22 05:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.6983	246.9831	173.91	177.85	3.94	49.91	10:35

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

◈	21	TOC	K2002412-005.01	4.5686 ppm	0.1148 ppm	2.5100%	2020/03/22 05:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.6498	46.4975	38.66	42.58	3.92	49.92	10:28
2	TOC	4.4874	44.8737	37.57	41.59	4.02	49.93	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	22	TOC	K2002412-006.01	31.0641 ppm	0.3704 ppm	1.1900%	2020/03/22 06:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	31.3260	313.2600	218.06	222.06	4.00	49.92	10:27
2	TOC	30.8021	308.0213	214.54	218.63	4.09	49.93	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	23	TOC	K2002412-007.01	0.7597 ppm	0.1427 ppm	18.7800%	2020/03/22 06:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8606	8.6059	13.18	17.31	4.14	49.93	10:28
2	TOC	0.6588	6.5880	11.82	15.93	4.11	49.94	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	24	TOC	K2002412-008.01	5.3228 ppm	0.0364 ppm	0.6800%	2020/03/22 07:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.2970	52.9704	43.01	47.07	4.06	49.93	10:27
2	TOC	5.3485	53.4849	43.36	47.40	4.04	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	25	TOC	K2002434-001.01	0.2946 ppm	0.0331 ppm	11.2400%	2020/03/22 07:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3180	3.1799	9.53	13.49	3.96	49.96	10:27
2	TOC	0.2711	2.7115	9.22	13.14	3.93	49.95	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	26	TOC	K2002434-002.01	0.6819 ppm	0.0107 ppm	1.5700%	2020/03/22 08:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6894	6.8944	12.03	15.93	3.91	49.95	10:31
2	TOC	0.6743	6.7427	11.93	15.87	3.94	49.94	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	27	TOC	K2002434-003.01	0.2246 ppm	0.0465 ppm	20.6900%	2020/03/22 08:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1917	1.9174	8.68	12.65	3.97	49.94	10:25
2	TOC	0.2575	2.5746	9.12	13.14	4.02	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	28	TOC	K2002416-001.02	0.0905 ppm	0.0113 ppm	12.4200%	2020/03/22 09:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0985	0.9850	8.05	11.97	3.92	49.94	10:26
2	TOC	0.0826	0.8259	7.95	11.91	3.97	49.95	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8425 ppm (PASS)	0.0000 ppm	0%	2020/03/22 09:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8425	258.4255	181.61	185.65	4.04	49.95	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	50 ppmC

met.	(v4)	(v32)

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 09:49

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.06	10.95	3.89	49.94	10:28

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	29	TOC	K2002416-001.02 ms	27.8620 ppm	0.0000 ppm	0.0000%	2020/03/22 10:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.8620	278.6204	194.76	198.67	3.91	49.95	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	30	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 10:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.09	11.09	4.00	49.95	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	31	TOC	K2002416-002.02	0.0917 ppm	0.0101 ppm	11.0100%	2020/03/22 10:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0988	0.9880	8.06	12.13	4.08	49.96	10:26
2	TOC	0.0845	0.8453	7.96	12.11	4.15	49.97	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	32	TOC	K2002416-003.02	0.2530 ppm	0.0254 ppm	10.0600%	2020/03/22 11:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2710	2.7100	9.21	13.27	4.06	49.93	10:29
2	TOC	0.2350	2.3501	8.97	12.92	3.95	49.92	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	33	TOC	K2002416-004.02	1.6097 ppm	0.0073 ppm	0.4500%	2020/03/22 11:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6148	16.1479	18.25	22.09	3.84	49.94	10:26
2	TOC	1.6045	16.0453	18.18	22.08	3.90	49.92	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	34	TOC	K2002462-001.06	3.0392 ppm	0.0019 ppm	0.0600%	2020/03/22 11:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.0405	30.4052	27.84	31.73	3.89	49.91	10:31
2	TOC	3.0378	30.3785	27.82	31.60	3.78	49.91	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	35	TOC	K2002470-001.01	2.1044 ppm	0.0619 ppm	2.9400%	2020/03/22 12:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1482	21.4818	21.84	25.60	3.76	49.92	10:27
2	TOC	2.0606	20.6059	21.25	25.19	3.94	49.92	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	36	TOC	K2002471-001.01	4.4447 ppm	0.0904 ppm	2.0300%	2020/03/22 12:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.5086	45.0863	37.71	41.74	4.03	49.90	10:29

2	TOC	4.3808	43.8075	36.85	40.81	3.96	49.89	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	37	TOC	K2002489-001.01	4.7622 ppm	0.0543 ppm	1.1400%	2020/03/22 13:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.8005	48.0053	39.67	43.66	3.99	49.91	10:29
2	TOC	4.7238	47.2380	39.16	43.00	3.84	49.91	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	38	TOC	K2002492-002.01	0.4658 ppm	0.0189 ppm	4.0600%	2020/03/22 13:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4524	4.5241	10.43	14.40	3.97	49.90	10:27
2	TOC	0.4792	4.7918	10.61	14.28	3.66	49.89	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.6946 ppm (PASS)	0.0000 ppm	0%	2020/03/22 14:19

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.6946	256.9459	180.61	184.49	3.88	49.89	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 14:33

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.32	10.16	3.85	49.87	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	39	TOC	MB3	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 14:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.92	9.75	3.83	49.87	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.7423 ppm (PASS)	0.0000 ppm	0%	2020/03/22 15:03

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.7423	247.4232	174.21	178.06	3.85	49.87	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	40	TOC	K2002496-001.01	14.0184 ppm	0.6231 ppm	4.4400%	2020/03/22 15:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.4590	144.5901	104.63	108.44	3.81	49.85	10:28
2	TOC	13.5778	135.7782	98.70	102.54	3.83	49.84	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	41	TOC	K2002421-001.12	1.5767 ppm	0.0401 ppm	2.5400%	2020/03/22 15:45

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6050	16.0498	18.18	22.01	3.83	49.82	10:28
2	TOC	1.5483	15.4833	17.80	21.76	3.95	49.80	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	42	TOC	K2002421-002.12	0.8540 ppm	0.0165 ppm	1.9300%	2020/03/22 16:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8656	8.6565	13.21	17.17	3.96	49.80	10:29
2	TOC	0.8423	8.4230	13.06	16.87	3.81	49.81	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	43	TOC	K2002421-003.12	1.7781 ppm	0.0172 ppm	0.9700%	2020/03/22 16:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.7659	17.6587	19.27	23.22	3.95	49.79	10:29
2	TOC	1.7903	17.9026	19.43	23.24	3.81	49.77	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	44	TOC	K2002421-004.12	0.8774 ppm	0.0261 ppm	2.9700%	2020/03/22 17:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8958	8.9583	13.42	17.18	3.76	49.77	10:27
2	TOC	0.8590	8.5895	13.17	16.92	3.75	49.78	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	45	TOC	K2002432-001.01	0.1255 ppm	0.0243 ppm	19.3500%	2020/03/22 17:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1083	1.0832	8.12	11.94	3.82	49.80	10:28

2	TOC	0.1427	1.4267	8.35	12.16	3.81	49.84	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	46	TOC	K2002432-001.01 ms	26.3798 ppm	0.0000 ppm	0.0000%	2020/03/22 18:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	26.3798	263.7980	184.80	188.75	3.96	49.85	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	47	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 18:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.97	9.86	3.88	49.86	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.4176 ppm (PASS)	0.0000 ppm	0%	2020/03/22 18:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.4176	254.1757	178.75	182.64	3.89	49.88	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 18:50

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time

D	TOC	0 ppm	1	0.0000	0.0000	6.08	9.82	3.74	49.92	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	48	TOC	K2002437-001.03	1.8820 ppm	0.0408 ppm	2.1700%	2020/03/22 19:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9109	19.1085	20.24	24.02	3.78	49.93	10:29
2	TOC	1.8532	18.5316	19.85	23.57	3.71	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	49	TOC	K2002437-002.03	0.7951 ppm	0.0104 ppm	1.3100%	2020/03/22 19:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8024	8.0245	12.79	16.50	3.71	50.00	10:24
2	TOC	0.7877	7.8773	12.69	16.46	3.77	49.99	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	50	TOC	K2002437-003.03	3.1945 ppm	0.0197 ppm	0.6200%	2020/03/22 20:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.1806	31.8060	28.78	32.47	3.69	50.00	10:30
2	TOC	3.2084	32.0841	28.97	32.65	3.68	50.00	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	51	TOC	K2002437-004.03	0.7492 ppm	0.0484 ppm	6.4600%	2020/03/22 20:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7834	7.8341	12.66	16.42	3.76	50.00	10:32
2	TOC	0.7150	7.1501	12.20	15.91	3.71	50.03	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC)	CAS_salt_010711	CAS_salt_010711

(v1364) (v4) (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	52	TOC	K2002437-005.03	0.6532 ppm	0.0170 ppm	2.6100%	2020/03/22 20:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6652	6.6520	11.86	15.62	3.76	50.00	10:25
2	TOC	0.6411	6.4111	11.70	15.67	3.96	50.03	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	53	TOC	K2002456-001.01	1.1335 ppm	0.0168 ppm	1.4800%	2020/03/22 21:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1453	11.4535	15.09	18.93	3.84	50.00	10:25
2	TOC	1.1216	11.2156	14.93	18.88	3.94	50.02	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	54	TOC	K2002456-002.01	0.7645 ppm	0.0422 ppm	5.5200%	2020/03/22 21:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7943	7.9427	12.73	16.72	3.99	50.05	10:29
2	TOC	0.7346	7.3464	12.33	16.17	3.83	50.01	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	55	TOC	K2002456-003.01	1.4306 ppm	0.0000 ppm	0.0000%	2020/03/22 22:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4306	14.3056	17.01	21.07	4.05	50.03	10:28
2	TOC	1.4306	14.3056	17.01	20.90	3.89	50.04	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	56	TOC	K2002456-004.01	1.4038 ppm	0.0408 ppm	2.9100%	2020/03/22 22:49

Rep	Base	ppm	µg	Adjusted	NDIR (Abs)	Baseline	Pressure	Run

#	Analysis Type			(Abs)		(Abs)	(psig)	Time
1	TOC	1.4326	14.3264	17.03	21.09	4.07	50.03	10:26
2	TOC	1.3749	13.7494	16.64	20.59	3.96	50.03	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	57	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 23:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.12	9.08	3.96	50.08	10:29
2	TOC	0.0000	0.0000	5.08	8.91	3.83	50.03	10:26
3	TOC	0.0000	0.0000	4.92	8.74	3.82	50.02	10:27
4	TOC	0.0000	0.0000	4.82	8.59	3.76	50.04	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.1303 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:13

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.1303	251.3028	176.82	180.56	3.74	50.04	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:27

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.42	9.22	3.80	50.03	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	58	TOC	MB4	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 00:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.04	8.76	3.72	50.03	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.1987 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:57

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.1987	241.9868	170.55	174.42	3.87	50.01	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	59	TOC	K2002462-002.04 doc	4.0921 ppm	0.0354 ppm	0.8700%	2020/03/23 01:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.1171	41.1711	35.08	38.88	3.80	50.00	10:29
2	TOC	4.0670	40.6700	34.74	38.61	3.87	50.04	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	60	TOC	K2002462-002.04 ms doc	32.0473 ppm	0.0000 ppm	0.0000%	2020/03/23 01:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	32.0473	320.4734	222.91	226.80	3.89	50.01	10:31

Dilution	Blank Contribution	Method	Calibration

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	61	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 01:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.10	10.11	4.00	50.00	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	62	TOC	FB 3/19/20 1619	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 02:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.24	9.23	4.00	49.99	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	63	TOC	K2002422-001.04 doc	9.5284 ppm	0.1176 ppm	1.2300%	2020/03/23 02:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.4453	94.4531	70.91	74.94	4.03	50.01	10:29
2	TOC	9.6116	96.1156	72.03	75.73	3.70	49.98	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	64	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 02:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.59	9.48	3.89	49.99	10:29
2	TOC	0.0000	0.0000	5.25	9.15	3.90	49.99	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25	0 / infinity	25.0598	0.0000	0%	2020/03/23 03:20

					ppm [25 ppm]	(NA / NA)	ppm (PASS)	ppm		

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.0598	250.5980	176.34	180.27	3.92	49.97	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/23 03:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.46	9.42	3.96	50.00	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1364	1.7787	1.3950	0.0000	0.0000	0.0000	2020/03/19 15:10	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v32	Calibration curve formula:	TOC: y = 6.725x + 7.818
Ver Creation:	2020/03/11 15:55	r^2 value:	TOC: r^2 = 0.99921
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	5.8640	0.0000		2020/03/11 14:28
0.500 ppm	9.5210	0.5000		2020/03/11 14:42
1.0 ppm	12.5930	1.0000		2020/03/11 14:56
5.0 ppm	40.5270	5.0000		2020/03/11 15:10
10 ppm	79.5310	10.0000		2020/03/11 15:25
25 ppm	181.4610	25.0000		2020/03/11 15:39
50 ppm	340.5610	50.0000		2020/03/11 15:53

Methods

Name: CAS_salt_010711 (TOC)

Version: v4 Operator: Fusion1 (Fusion1)

Ver Creation: 2019/02/21 17:57

Comment:

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/03/23 03:50

ALS Environmental

StarLIMS Run: 674205, 674225, 674226, 674227

Analysis: DOC/TOC

Method: SM 5310 C, 9060A, 415.1, 9060

CCV: 11-GEN-05-82C 50 ppm LCS: 11-GEN-05-79J 25.0 ppm

ICAL Date: 3/11/2020

ICAL ID: 19-GEN-8-7-E->J

ICS ID: 11-GEN-05-78M

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 11-GEN-05-82C 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 19-GEN-08-9-H

21 % H3PO4: 19-GEN-08-8-K

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

21 BCP 3/24/20

Analyzed By: BCP	Date Analyzed: 3/24/20
Reviewed By:	Date Reviewed: 3/24/20

Case Narrative

Method: 6850
Analysis: Perchlorate
Analysis SOP: LC-MS-CLO4
ALS WO ID(s): 2008062; 2008310

Client: ALS Laboratories (Houston, TX)
Matrix: Water
ELMS Batch (HBN): 2362 (259687)

General Set Information: There were twenty field samples in these Work Orders. The samples were analyzed for perchlorate.

Method Summary: Each sample was prepared as noted below and analyzed using an Agilent 1100 LC/MSD system in select ion monitoring (SIM) mode at m/z 83 and 85, which corresponds to the loss of one oxygen atom from the perchlorate molecule. ChemStation software was used for instrument control and data analysis. The ion ratio of m/z 83 to 85 was used to positively identify the response peak as perchlorate. Quantitation was performed using the m/z 83 peak area. An internal standard (ISTD) of ^{18}O labeled perchlorate was added to each sample to establish the perchlorate peak retention time and used in quantitation.

Sample Preparation: A 10.0mL aliquot of each sample was transferred into a 15-mL centrifuge tube. 50µL of an ^{18}O labeled perchlorate solution was added to each sample as an internal standard. The samples were then capped, vortexed, and filtered into autosampler vial using Phenex PES membrane 0.45µm Syringe filters.

Holding Times: Holding times were met for all analyses.

Dilutions: NA

Method QC data: The method blank (LMB 701041) was less than 1/2 the CRDL. The recovery for the LCS (701038) was within acceptable parameters.

MS/MSD Analysis: MS/MSD was performed on samples 2008310002/03 (Client ID: 16WW44-200317). 3.0µL of Working Standard Solution Horizon ID 49947 was added to 10.0mL of sample preparation. The spike target was 3.µg/L. The MS/MSD percent recoveries and relative percent difference (RPD) were within the performance limits.

Instrument QC: Instrument initial and continuing calibrations were performed in accordance with published procedures.

NC/CAR(s): NA

Sample Calculation: Samples were reported in µg/L. Results were calculated in µg/L by the equation (A)x(B),

where: A = Analyte concentration from the standard curve (µg/L)
B = Dilution performed at time of analysis

Miscellaneous Comments: These samples were analyzed in accordance with the requirements found in the DOD QSM Version 5.1.1. Field sample 2008062001 had a positive result for perchlorate. However, because the 83/85 ion ratio failed, the result was not reported. The Reporting Limit Verification Standard (RLVS – 701039) is reported from the analysis of the Laboratory Control Sample (LCS – 701038) at a level of 3.0µg/L. Due to limitations of the Chemstation Software, some of the chromatographic peaks may require manual integrations. A manual integration was performed for one of the Initial Calibration analyses (datafile: 20SEPI03) along with datafiles 26MARD07.

Thomas Bosch — Analyst
March 29, 2020 — Date

ANALYTICAL REPORT

Report Date: March 31, 2020

RJ Modashia
ALS Environmental (Houston)
10450 Stancliff Road
Suite 210
Houston, TX 77099

Phone: 281 530-5656

E-mail: RJ.Modashia@ALSGlobal.com

Workorder: **34-2008310**
Project ID: HS20030888
Purchase Order: HS20030888
Project Manager Kevin W. Griffiths

Client Sample ID	Lab ID	Collect Date	Receive Date	Sampling Site
16WW44-200317	2008310001	03/17/20	03/20/20	
16WW37-200317	2008310004	03/17/20	03/20/20	
16WW38-200317	2008310005	03/17/20	03/20/20	
16WW14-200317	2008310006	03/17/20	03/20/20	
16RW06-200317	2008310007	03/17/20	03/20/20	
16PM03-200317	2008310008	03/17/20	03/20/20	
16PM02-200317	2008310009	03/17/20	03/20/20	
16RW07-200317	2008310010	03/17/20	03/20/20	
16RW11-200317	2008310011	03/17/20	03/20/20	
16WW51-200317	2008310012	03/17/20	03/20/20	

Client QC ID *	Lab ID	Collect Date	Receive Date	Sampling Site
16WW44-200317MS	2008310002	03/17/20	03/20/20	
16WW44-200317MSD	2008310003	03/17/20	03/20/20	

***Client QC is reported as part of the Quality Control results report, if requested.**

ANALYTICAL REPORT

Workorder: 34-2008310
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **16WW44-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310001 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 11:08 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW37-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310004 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 12:04 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW38-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310005 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 12:18 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW14-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310006 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 12:32 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

ANALYTICAL REPORT

Workorder: 34-2008310
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **16RW06-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310007 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 12:46 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16PM03-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310008 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 13:00 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	**400**	10	20	40	10	

Sample ID: **16PM02-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310009 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 13:14 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16RW07-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310010 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 13:28 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	**4.9**	1.0	2.0	4.0	1	

ANALYTICAL REPORT

Workorder: 34-2008310
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **16RW11-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310011 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 13:42 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW51-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310012 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 13:56 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method	Analyst	Peer Review
EPA 6850, DoD QSM	/S/ Thomas Bosch 03/27/2020 11:27	/S/ Stephen Brose 03/31/2020 15:31

Laboratory Contact Information

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Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: alslt.lab@ALSGlobal.com
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ANALYTICAL REPORT

Workorder: 34-2008310
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
The following was provided by the client: Sample ID, Collection Date, Sampling Location, Media Type, Sampling Parameter.
Collection Date, Media Type, and Sampling Parameter can potentially affect the validity of the results.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	PJLA (DoD ELAP)	L17-506	http://www.pjlabs.com
	PJLA (ISO 17025)	L17-507-R1	http://www.pjlabs.com
	Utah (TNI)	UT00953	http://lams.nelac-institute.org/search
	Iowa (TNI)	IA# 376	http://www.shl.uiowa.edu/labcert/idnr/
	Kansas	E-10416	http://www.kdheks.gov/envlab/disclaimer.html
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP)	101574	http://www.aihaaccreditedlabs.org
	DOECAP-AP	L18-606	http://www.pjlabs.com
	Washington	C596	https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Laboratory-Accreditation
Dietary Supplements	PJLA (ISO 17025)	L17-507-R1	http://www.pjlabs.com

Result Symbol Definitions

MDL = Method Detection Limit, a statistical estimate of method/media/instrument sensitivity.
RL = Reporting Limit, a verified value of method/media/instrument sensitivity.
CRDL = Contract Required Detection Limit
Reg. Limit = Regulatory Limit.
ND = Not Detected, testing result not detected above the MDL or RL.
< Means this testing result is less than the numerical value.
** No result could be reported, see sample comments for details.

Qualifier Symbol Definitions

U = Qualifier indicates that the analyte was not detected above the MDL.
J = Qualifier Indicates that the analyte value is between the MDL and the RL. It is also used to indicate an estimated value for tentatively identified compounds in mass spectrometry where a 1:1 response is assumed.
B = Qualifier indicates that the analyte was detected in the blank.
E = Qualifier indicates that the analyte result exceeds calibration range.
P = Qualifier indicates that the RPD between the two columns is greater than 40%.

Quality Control Sample Batch Report

Analysis Information

Workorder: 2008310

Limits:	Client SOW/Contract Specified	**Preparation:**	NA	**Analysis:**	EPA 6850, DoD QSM
Basis:	DoD QSM	**Batch:**	NA	**Batch:**	ELMS/2362 (HBN: 259687)
		Prepared By:	NA	**Analyzed By:**	Thomas Bosch

Blank

LMB: 701041
Analyzed: 03/26/2020 09:02
Units: ug/L

Analyte	Result	MDL	RL
Perchlorate	ND	1	2.00

Laboratory Control Sample

LCS: 701038
Analyzed: 03/26/2020 08:34
Dilution: 1
Units: ug/L

Analyte	Result	Target	% Rec	QC Limits	
Perchlorate	3.07	3.00	102	78.8	123.8

Matrix Spike - Matrix Spike Duplicate

Sample: 2008310001	**MS:** 2008310002	**MSD:** 2008310003
Analyzed: 03/26/2020 11:08	**Analyzed:** 03/26/2020 11:22	**Analyzed:** 03/26/2020 11:50
Dilution: 1	**Dilution:** 1	**Dilution:** 1
Units: ug/L	**Units:** ug/L	**Units:** ug/L

Analyte	Result	Result	Target	% Rec	QC Limits		Result	% Rec	RPD	QC Limits	
Perchlorate	ND	3.03	3	101	78.8	123.8	3	100	0.991	0.0	20.0

QC Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Analyst	Peer Review
/S/ Thomas Bosch	/S/ Stephen Brose
03/29/2020 11:11	03/31/2020 15:31

Symbols and Definitions

- * - Analyte above reporting limit or outside of control limits
- ▲ - Sample result is greater than 4 times the spike added
- ◆ - Sample and Matrix Duplicate less than 5 times the reporting limit
- ● - Result is above the calibration range
- # - The Matrix Spike, Matrix Spike duplicate or Matrix Duplicate is reported for your information only. The sample matrix may be inappropriate for the method selected.

RPD - Relative % Difference (Spike / Spike Duplicate)
ND - Not Detected (U - Qualifier also flags analyte as not detected)
NA - Not Applicable
QC results are not adjusted for moisture correction, where applicable

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18698 / #2

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID: 13558**

2008310

SUBCONTRACT TO:

ALS Laboratory Group
960 LeVoy Dr
Salt Lake City, UT 84123

Phone: +1 801 266 7700

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20030888
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20030888-01**	**16WW44-200317**	**Groundwater**	**17 Mar 2020 08:20**
	SUB_Perch-6850			02 Apr 2020
2.	**HS20030888-02**	**16WW37-200317**	**Groundwater**	**17 Mar 2020 09:15**
	SUB_Perch-6850			02 Apr 2020
3.	**HS20030888-03**	**16WW38-200317**	**Groundwater**	**17 Mar 2020 10:00**
	SUB_Perch-6850			02 Apr 2020
4.	**HS20030888-04**	**16WW14-200317**	**Groundwater**	**17 Mar 2020 10:50**
	SUB_Perch-6850			02 Apr 2020
5.	**HS20030888-05**	**16RW06-200317**	**Groundwater**	**17 Mar 2020 11:40**
	SUB_Perch-6850			02 Apr 2020
6.	**HS20030888-06**	**16PM03-200317**	**Groundwater**	**17 Mar 2020 12:35**
	SUB_Perch-6850			02 Apr 2020
7.	**HS20030888-07**	**16PM02-200317**	**Groundwater**	**17 Mar 2020 13:25**
	SUB_Perch-6850			02 Apr 2020
8.	**HS20030888-08**	**16RW07-200317**	**Groundwater**	**17 Mar 2020 14:15**
	SUB_Perch-6850			02 Apr 2020
9.	**HS20030888-09**	**16RW11-200317**	**Groundwater**	**17 Mar 2020 15:00**

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID: 13558**

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
		SUB_Perch-6850		02 Apr 2020
10.	**HS20030888-10**	**16WW51-200317**	**Groundwater**	**17 Mar 2020 15:50**
		SUB_Perch-6850		02 Apr 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
HS20030888-01 = MS/MSD

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 3/19/2020 1800.

Received By: Linda Van Jessel Date/Time: 03-19-20 2:56

Cooler ID(s): _____ Temperature(s): _____

ALS Environmental

CHAIN-OF-CUSTODY

Project / Job / Task: HS20030888	Split:	Workorder ID: 2008310	Level: ENV_LVL4	Requested Analysis
Client: ALS Environmental (Houston)		Account: 8101	Type: 125Poly	
Comments:			Preservatives: COOL	

Item	Collect Date/Time	Sample ID	Lab ID	QC	Matrix	Containers ID(s)	Containers Count	EPA 6850, DoD QSM
1	03/17/2020 08:20	16WW44-200317	2008310001		Water	A	1	A
2	03/17/2020 08:20	16WW44-200317MS	2008310002	MS	Water	A	1	A
3	03/17/2020 08:20	16WW44-200317MSD	2008310003	MSD	Water	A	1	A
4	03/17/2020 09:15	16WW37-200317	2008310004		Water	A	1	A
5	03/17/2020 10:00	16WW38-200317	2008310005		Water	A	1	A
6	03/17/2020 10:50	16WW14-200317	2008310006		Water	A	1	A
7	03/17/2020 11:40	16RW06-200317	2008310007		Water	A	1	A
8	03/17/2020 12:35	16PM03-200317	2008310008		Water	A	1	A
9	03/17/2020 13:25	16PM02-200317	2008310009		Water	A	1	A
10	03/17/2020 14:15	16RW07-200317	2008310010		Water	A	1	A

ORIGINAL FIELD SAMPLE CHAIN-OF-CUSTODY

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location
Warath, Julie	03/20/2020 08:56	ALS Sample Receiving	Sample Login
[signature]	3/20/20 1600	ISC	storage
R.33.1	03.25.20/10:45	T. Bosch	cool analysis

SAMPLE PREPARATION / ANALYSIS CHAIN-OF-CUSTODY

Sample Prep / Analysis for: _____ Lab Notebook No.: _____

Prepared / Analyzed by: _____ Date / Time: _____

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location

ALS Environmental

CHAIN-OF-CUSTODY

Project / Job / Task: HS20030888	***Split:***	**Workorder ID:** 2008310	**Level:** ENV_LVL4
Client: ALS Environmental (Houston)		**Account:** 8101	**Type:** 125Poly
Comments:			**Preservatives**

Item	Collect Date/Time	Sample ID	Lab ID	QC	Matrix	Containers ID(s)	Containers Count	Requested Analysis: EPA 6850, DoD QSM	COOL
11	03/17/2020 15:00	16RW11-200317	2008310011		Water	A	1	A	
12	03/17/2020 15:50	16WW51-200317	2008310012		Water	A	1	A	

ORIGINAL FIELD SAMPLE CHAIN-OF-CUSTODY

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location
Warath, Julie	03/20/2020 08:56	ALS Sample Receiving	Sample Login
[signature] 3/20/20 1600		15C	storage
R-33.1 03/25/20/10:45		T. Bush	cl04 analysis

SAMPLE PREPARATION / ANALYSIS CHAIN-OF-CUSTODY

Sample Prep / Analysis for: _____ Lab Notebook No.: _____

Prepared / Analyzed by: _____ Date / Time: _____

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location

ALS-SALT LAKE CITY-RELATED INFORMATION REPORT (CRIR)

COOLER OR CONTAINER INFORMATION CHECKLIST (Fill In or Circle)

Client Name: ALS Houston

Project/Task/Site: HS00030888 200631P

Date/Time of Receipt: 03-20-20 8:56

Number of Coolers Received: 1

Condition of Coolers:	Acceptable/Unacceptable	Temperature Control:	Present/Not Included
Cooler Custody Seals:	Present/Absent/NA Intact/Broken/NA	Location Temp Taken:	Control/Between Samples
Container Custody Seals:	Present/Absent/NA Intact/Broken/NA	Are all temperatures within project specific guidelines?	Yes/No/NA
Ice Present:	Yes/No/NA Frozen/Melted/NA	VOA Headspace Present?	Yes/No/NA

pH Check Performed:							
	Metals	Yes/No/NA	Total Phenolics	Yes/No/NA	NO3/NO2	Yes/No/NA
	Cyanide	Yes/No/NA	TPH – 418.1	Yes/No/NA	Oil & Grease	Yes/No/NA
	Sulfide	Yes/No/NA	COD	Yes/No/NA	Total Phosphorous	Yes/No/NA
	Ammonia	Yes/No/NA	TKN	Yes/No/NA	Gross A,B, Gamma Spec	Yes/No/NA

Cooler Received	Cooler Condition	Temp.	Cooler Received	Cooler Condition	Temp.	Cooler Received	Cooler Condition	Temp.
1	good	1 °C	4		°C	7		°C
2		°C	5		°C	8		°C
3		°C	6		°C	9		°C

Taken By: Jennifer Jassell (Signature) T Naitassell (Printed Name) 03-20-20 (Date)

CLIENT-RELATED INFORMATION

☐ Missing Cooler	☐ Missing Samples/Bottles	☐ Incorrect Preservation	☐ Insufficient Sample Volume
☐ Cooler Conditions	☐ Broken/Leaking Samples	☐ pH Criteria Not Met	☐ Chain of Custody Problems
☐ Missing Paperwork	☐ Incorrect Bottle Type	☐ Residual Chlorine Present	☐ Other:
☐ Missing/Incorrect Bottle Labels	☐ Cooler Temperatures Out of Range	☐ Head Space in Bottles	

BRIEFLY DESCRIBE THE PROBLEM AND THE ACTION TAKEN:

Client Notified? YES ☐ NO ☐

Response Required Within 24 Hours

PROJECT MANAGEMENT

PROJECT MANAGER COMMENTS:

ALS Project Manager: _____ (Printed Name) Returned to Sample Receipt by: _____ (Signature) Date: _____

Must Deliver Next Business Day
Time and Tempature Sensitive!

Part # 159469-434 RIT2 EXP 12/20 #

ORIGIN ID:SGRA (281) 530-5656
SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD
SUITE 210
HOUSTON, TX 77099
UNITED STATES US

SHIP DATE: 19MAR20
ACTWGT: 18.05 LB
CAD: 300130/CAFE3211
DIMS: 14x11x10 IN

BILL THIRD PARTY

5S1C2/64E0/104C

TO SAMPLE RECEIVING
ALS ENVIRONMENTAL
960 W. LEVOY DRIVE

SALT LAKE CITY UT 84123
(801) 266-7700
REF: HS20030888 - RJ

FedEx Express

J151119060501uu

FRI - 20 MAR 3:00P
STANDARD OVERNIGHT

TRK# 0201 1251 0295 6628

AX BTFA

84123
UT-US SLC

Batch Worklist

Batch: ELMS/ 2362 Created: 3/26/2020 08:10 Instrument: HBN: 259687

Rule: EPA 6850, DoD QSM Water Analyst: T. Bosch Status: WP

Workorder: 2008062 [ENV_LVL4]

Workorder: 2008310 [ENV_LVL4]

Pos	Lab ID	Sample ID	Prep Initial	Prep Final	Dust Weight	Type	Mx	Container	Procedure	Mgr	Expire Date	Due Date	Run Date
1	701037	CCV for HBN 259687 [ELMS/2362]				CCV	3		E685041C3Q	5311		4/1/2020	
2	701038	LCS for HBN 259687 [ELMS/2362]				LCS	3		E6850Q413Q	5311		4/1/2020	
3	701039	RLVS for HBN 259687 [ELMS/2362				RLVS	3		E685041C3Q	5311		4/1/2020	
4	701040	ICS for HBN 259687 [ELMS/2362]				ICS	3		E6850..D3Q	5311		4/1/2020	
5	701041	LMB for HBN 259687 [ELMS/2362]				LMB	3		E6850Q413Q	5311		4/1/2020	
6	2008062001	16WW56-200316				SAMPLE	3	2008062001-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
7	2008062002	16WW22-200316				SAMPLE	3	2008062002-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
8	2008062003	16WW41-200316				SAMPLE	3	2008062003-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
9	2008062004	16WW21-200316				SAMPLE	3	2008062004-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
10	2008062005	16WW39-200316				SAMPLE	3	2008062005-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
11	2008062006	16WW25-200316				SAMPLE	3	2008062006-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
12	2008062007	16WW21-200316-FD				FLDDUP	3	2008062007-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
13	2008062008	16WW49-200316				SAMPLE	3	2008062008-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
14	2008310001	16WW44-200317				SAMPLE	3	2008310001-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
15	2008310002	16WW44-200317MS				MS	3	2008310002-A	E6850Q413Q	5480		4/1/2020	
16	701042	CCV for HBN 259687 [ELMS/2362]				CCV	3		E685041C3Q	5311		4/1/2020	
17	2008310003	16WW44-200317MSD				MSD	3	2008310003-A	E6850Q413Q	5480		4/1/2020	
18	2008310004	16WW37-200317				SAMPLE	3	2008310004-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
19	2008310005	16WW38-200317				SAMPLE	3	2008310005-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
20	2008310006	16WW14-200317				SAMPLE	3	2008310006-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
21	2008310007	16RW06-200317				SAMPLE	3	2008310007-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
22	2008310008	16PM03-200317				SAMPLE	3	2008310008-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
23	2008310009	16PM02-200317				SAMPLE	3	2008310009-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
24	2008310010	16RW07-200317				SAMPLE	3	2008310010-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
25	2008310011	16RW11-200317				SAMPLE	3	2008310011-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
26	2008310012	16WW51-200317				SAMPLE	3	2008310012-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
27	701043	CCV for HBN 259687 [ELMS/2362]				CCV	3		E685041C3Q	5311		4/1/2020	
28	701102	CCV for HBN 259687 [ELMS/2362]				CCV	3		E685041C3Q	5311		4/1/2020	

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Analytical Documentation

Analyst Write-up

ALS Work Order #'s & Sample #( )'s: 2008062 (001-08); 2008310 (001-12)
ELMS Batch/HBN ID: 2362 (259687)
Prep Date: 03/24,25/2020 Analysis Date: 03/26/2020 Analyst: Tom Bosch
Analyte: **Perchlorate** Matrix: **Water** Method: **6850**
Sequence: \\HPCHEM\1\SEQUENCE\CLO4\2020\MAR\26MAR0D.s
Reported DL: **1.0µg/L** Reported LOD: **2.0µg/L** Reported LOQ: **4.0µg/L**

SAMPLE PREPARATION/ANALYSIS:

Water: Samples were prepared by Tom Bosch. 10.0mL of each sample was pipetted into a 15-mL centrifuge tube, and 50µL of an oxygen-18 labeled perchlorate solution was added as an internal standard. The samples were capped, vortexed, and filtered with Phenex PES membrane 0.45µm Syringe filters prior to analysis.

REAGENTS: Eluent A1: 95% ASTM Type II water (ALS)/5%ACN (B&J Lot DU461-US)/0.1% glacial acetic acid (JT-Baker Lot 122550).
Eluent B1: 95% ACN (B&J Lot DU461-US)/5% ASTM Type II water (ALS)/0.1% glacial acetic acid (JT-Baker Lot 122550).

STANDARDS: Internal Standard Spiking Solution Horizon# 47863. Dilutions of Working Standards (Horizon: 49947/48) used for ICAL, CCV's, RLVS and ICS.

CALIBRATION CURVE: Used curve from 09/20/2019, sequence 20SEP19D.s Offline Quantitation Method: CLO4-DP3.M

INSTRUMENT CONDITIONS: Samples were analyzed with an Agilent 1100 LC/MSD system, in negative SIM mode, monitoring m/z 83, 85, and 89.
Instrument ID: LCMS04 Online Acquisition Method: CLO4-AQN.M Fragmentor: 160 Output Gain: 10 Injection Volume: 40µL
Column: KP-RPPX C8 separator, 250mm Mobile Phase: 70% Eluent A1; 30% Eluent B1 Run time: 12.0min.

FLOW GRADIENT:

Time (min.)	Flow (mL/min)
0	0.65
5.8	0.65
5.9	0.25
10.3	0.25
10.5	0.65
12.0	0.65

QC DATA: 3.0µL of QC Solution Horizon ID 47516 was used for LCS 701038; Target = 3.0µg/L. ASTM type II water was used for LMB 701041.

MS/MSD: The Matrix Spike and duplicate (MS/MSD) was performed on samples 2008310002/03 (Client ID: 16WW44-200317). 3.0µl of Working Standard Solution Horizon ID 49947 was added to 10.0mL of sample preparation. Spike target = 3.0µg/L.

COMMENTS:

1) Results reported in µg/L.
2) All QC, Blank, CCV, and MS/MSD results were within method parameters. Field sample 2008062001 had a positive result for perchlorate. However, because the 83/85 ion ratio failed, the result was not reported.
3) Sample data can be viewed at two directories within the ALS system: \\ALSLTWS013\LCMS\LCMS04\2020\MAR\HBN# or through NuGenesis\Tree\PrintData\LCMS\DefaultView.
4) Notebook: \\alsltws013\ORGANIC\BOSCH\LCMS\Perchlorates\Waters\2020\DOD\259687-DoD-ALS-Hstn LCMS4 or through \\ALSLTWS013\DATAREVIEW\HBN#
5) The Reporting Limit Verification Standard (RLVS – 701039) is reported from the analysis of the Laboratory Control Sample (LCS – 701038) at a level of 3.0µg/L.
6) Due to limitations of the Chemstation Software, some of the chromatographic peaks require manual integration. Manual Integrations were performed for one of the Initial Calibration analyses (datafile: 20SEP103) along with datafile 26MARD07.

5.5 Chromatography (GC, HPLC and LC/MS) Technical Review

Note: It is the peer reviewer's responsibility to ensure that appropriate criteria are used as defined in the HORIZON PROFILE. The evaluation criteria are prioritized as per Section 2.2 of this SOP. These items must be checked for all projects. The following checklist will be completed by both the analyst and the peer reviewer and scanned into the HBN folder with the raw data.

Chromatography (GC, HPLC, LC/MS) Technical Review Criteria **Batch(es)/SDG:** ELMS: 2362 HBN: 259687 **Sample Set IDs if Applicable:** 2008062 / 2008310	**Analyst Initials**	**Reviewer Initials**
Sample positions on autosampler verified against instrument sequence	TB	NA
Calibration standards analyzed and meets criteria	TB	SB
Standards traceability checked and meets criteria	TB	SB
Standard curve coefficients evaluated and meet criteria	TB	SB
ICVs analyzed and meet acceptance criteria	TB	SB
CCVs analyzed and meet acceptance criteria	TB	SB
Retention Time Windows checked	TB	SB
For method 8081A, Endrin/DDT Breakdown is checked for compliance	—	—
Surrogate recoveries checked and appropriately addressed	—	—
Method Preparation Blanks analyzed and meet acceptance criteria	TB	SB
MSs, MSDs, and/or MDs analyzed and calculations checked; applicable	TB	SB
RLVS analyzed	TB	SB
Preparation and analysis hold times met	TB	SB
Preparation deviations and re-preparations noted when performed	TB	SB
Analysis deviations and re-analyses noted when performed	TB	SB
Sample dilution factors noted on reports	TB	SB
Electronic records in HBN transcription accuracy and completeness	TB	SB
Preparation and analysis calculations checked	TB	SB
NCRs are completed as necessary NC/CAR#_____	TB	SB
Report forms are complete and accurate	TB	SB
Manual integrations checked	TB	SB

STANDARD REPORT

Working Standard - CLO4ISTDWRK

CLO4ISTDWRK		Description - Perchlorate ISTD Wrk 1,000ug/L
Standard: 49946	**Created By:** Thomas Bosch	**Amount:** 25 mL
MFG: ALS/SLC	**Create Date:** 09/23/2019 03:09PM	**Expires:** 09/19/2020
MFG Lot: TNB: 09/20/2019	**Verified By:** Thomas Bosch	**Usable:** Yes
Pipette ID: Not Provided	**Verify Date:**	**Lab Lot:** CLO4ISTDWRK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	1000 ug/L
2	14797-73-0-89	Perchlorate 89	1000 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
47863	CLO4ISTDSTK	Perchlorate ISTD Stock	CLO4ISTDSTK	0.25 mL	12/05/2028

STANDARD REPORT

Constituent

Stock Standard - CLO4ISTDSTK

CLO4ISTDSTK		**Description - Perchlorate ISTD Stock**
Standard: 47863	**Created By:** Thomas Bosch	**Amount:** 1 mL
MFG: Cambridge Isotope	**Create Date:** 05/23/2019 10:05AM	**Expires:** 12/05/2028
MFG Lot: SDIH-016	**Verified By:** Thomas Bosch	**Usable:** Yes
Part ID: OLM-7310-S	**Verify Date:**	**Lab Lot:** CLO4ISTDSTK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	100 ug/mL
2	14797-73-0-89	Perchlorate 89	100 ug/mL

STANDARD REPORT

Working Standard - CLO4 WRK

CLO4 WRK — **Description - 6850 WKG Std 100.ug/L**

Standard: 49948
MFG: ALS/SLC
MFG Lot: TNB: 09/20/2019
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 09/20/2019 03:09PM

Amount: 10 mL
Expires: 07/25/2020
Usable: Yes
Lab Lot: CLO4 WRK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	0.1 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	0.1 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
49947	CLO4 INT	6850 Intermdt AccStd 10.ug/mL	CLO4 INT	0.1 mL	07/25/2020

STANDARD REPORT

Constituent

Stock Standard - CLO4 STOCK

CLO4 STOCK	Description - 6850 Stock AccStd 1,000ug/mL

Standard: 43659
MFG: AccuStandard
MFG Lot: 218065075
Part ID: IC-PER-10X-1

Created By: Thomas Bosch
Create Date: 09/17/2018 09:09AM

Amount: 100 mL
Expires: 07/25/2020
Usable: Yes
Lab Lot: CLO4 STOCK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	1000 ug/mL

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O		**Description - ASTM Type II Water**
Standard: 109	**Created By:** ALS Support (Lims)	**Amount:** 1000 L
MFG: DCL In House	**Create Date:** 10/06/2005 09:10AM	**Expires:** 11/07/2025
MFG Lot: Not Provided		**Usable:** Yes
Part ID: Not Provided		**Lab Lot:** LAB 109

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Working Standard - CLO4 INT

CLO4 INT	Description - 6850 Intermdt AccStd 10.ug/mL

Standard: 49947
MFG: ALS/SLC
MFG Lot: TNB: 09/20/2019
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 09/23/2019 03:09PM

Amount: 10 mL
Expires: 07/25/2020
Usable: Yes
Lab Lot: CLO4 INT

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
43659	CLO4 STOCK	6850 Stock AccStd 1,000ug/mL	CLO4 STOCK	0.1 mL	07/25/2020

STANDARD REPORT

Working Standard - CLO4 QC WRK

CLO4 QC WRK — **Description - 6850 QC WKG STD 100ug/L**

Standard: 47516
MFG: ALS/SLC
MFG Lot: TNB: 05/06/2019
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 05/06/2019 03:05PM

Amount: 10 mL
Expires: 03/31/2020
Usable: Yes
Lab Lot: CLO4 QC WRK 100.ug/L

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	100 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
47515	CLO4 QC INT	6850 QC Intrmdt Std-QC 10ug/mL	CLO4 QC INT 10.ug/mL	0.1 mL	03/31/2020

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O			**Description - ASTM Type II Water**
Standard: 109	**Created By:** ALS Support (Lims)	**Amount:** 1000 L	
MFG: DCL In House	**Create Date:** 10/06/2005 09:10AM	**Expires:** 11/07/2025	
MFG Lot: Not Provided		**Usable:** Yes	
Part ID: Not Provided		**Lab Lot:** LAB 109	

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Stock Standard - CLO4 QCSTOCK

CLO4 QCSTOCK			**Description - 6850 QC Stock STD 1,000ug/mL**
Standard: 36748	**Created By:** Thomas Bosch	**Amount:** 100 mL	
MFG: Ultra Scientific	**Create Date:** 05/11/2017 01:05PM	**Expires:** 03/31/2020	
MFG Lot: CP-0860		**Usable:** Yes	
Part ID: ICC-013		**Lab Lot:** CLO4 QC STOCK	

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL

STANDARD REPORT

Constituent

Working Standard - CLO4 QC INT

CLO4 QC INT		**Description - 6850 QC Intrmdt Std-QC 10ug/mL**
Standard: **47515**	**Created By:** Thomas Bosch	**Amount:** 10 mL
MFG: ALS/SLC	**Create Date:** 05/06/2019 03:05PM	**Expires:** 03/31/2020
MFG Lot: TNB: 05/06/2019		**Usable:** Yes
Pipette ID: Not Provided		**Lab Lot:** CLO4 QC INT 10.ug/mL

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
36748	CLO4 QCSTOCK	6850 QC Stock STD 1,000ug/mL	CLO4 QC STOCK	0.1 mL	03/31/2020

125 Market Street
New Haven, CT 06513
USA

AccuStandard®

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

S 43659

AccuTrace™ Reference Standard

Catalog No: IC-PER-10X-1
Description: Perchlorate Standard
Element: Perchlorate (ClO_4)
SRM: Ind. Std.
Lot: 218065075
Matrix: Water
Hazards: *Refer to SDS for complete safety information*

Date Certified: Jun 25, 2018
Expiration: Jul 25, 2020
Sample Size: 100 mL
Components: 1
Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO 17034 Scope of Accreditation: Yes

GHS

Signal Word: None

Component		SRM #	Prepared Concentration (µg/mL)
ClO_4	Perchlorate	Ind. Std.	1000

The gravimetric uncertainty for this product is ±0.24%.

The final solution was checked against an independent standard to verify its concentration.

We use the highest purity raw materials available to minimize impurity levels in the final solution. Typically 99.999%+ pure starting materials are used as well as ASTM Type I 18 megohm deionized water.

All solutions are filtered through a 0.2 µm filter prior to being bottled.

All glassware used in preparation is Class A and calibrated regularly.

All weights are traceable through NIST, Test No. 822-275872-11

All bottles are triple rinsed with deionized water prior to use.

Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware.

We certify the accuracy of this standard to be ±0.5% of the stated value until its expiration date provided it is kept tightly capped and stored under the conditions stated above.

Certified By: Meigan O'Leary

Meigan O'Leary, Inorganic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO 17034, ISO/IEC 17025 and certified to ISO 9001:2015

QR-ORG/INO-001
Rev. 5/18

AccuStandard

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: ICC-013
Lot Number: CP-0860

S 36748

Lot Issue Date: 29-Feb 2016
Expiration Date: 31-Mar 2020

Product Name: Perchlorate IC Standard

Description:
This Reference Material (RM) was gravimetrically prepared in accordance with ISO Guide 34 and under ULTRA Scientific's ISO 9001 registered quality system. The neat materials used for this product have been verified by ULTRA's ISO 17025 laboratory and under ULTRA's ISO Guide 34 accreditation. The analyte concentrations were verified by ULTRA's ISO 17025 accredited laboratory. For each analyte, the true value, with its uncertainty value calculated at the 95% confidence level, is reported below.

Analyte	Starting Material	Lot Number	Purity (%)	Calculated Value	True Value	Traceability & Method
perchlorate	potassium perchlorate	RM07987	100	1001 ± 5 µg/mL	976 ± 6 µg/mL	NIST SRM 3141A; ICP-OES

Solvent: water (low TOC, < 50 ppb)

Storage: Store at Room Temperature (15° to 30°C).

Traceability:
Traceability has been established through an unbroken chain of comparisons, each having stated uncertainties. Comparisons are based on appropriate physical or chemical measurements, including gravimetric or volumetric dilution, where the mass or volume of a solution before and after dilution is measured. The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1, ISO 9001, ISO 17025, and ISO Guide 34. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 819.

Estimation of Uncertainties:
The true value is reported, with its uncertainty value calculated at the 95% confidence level.

Homogeneity:
This RM was formulated and unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening and should be processed without delay for the true value to be valid within the stated uncertainties. Do not pipet from the bottle. Do not return any material removed for pipetting to the bottle. Tightly cap the bottle after removing any material and store according to the instructions noted above.

Hazards:
Refer to the Safety Data Sheet for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid, within the measurement uncertainty specified, until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER
ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 9001 Registered Quality System – TUV USA

250 SMITH STREET • NORTH KINGSTOWN, RHODE ISLAND 02852 • WWW.ULTRASCI.COM

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: ICC-013 **Lot Issue Date:** 29-Feb 2016
Lot Number: CP-0860 **Expiration Date:** 31-Mar 2020

Maintenance of Certification:
The real-time, long term stability of the RM may be monitored over the lifetime of the certification. If substantive changes occur that affect the certification before the expiration of this certificate, ULTRA Scientific will notify the purchaser.

Peter A. King, Ph.D.
VP, Technical Operations

Daniel J. Lamendola
Director of QA/RA

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

Cambridge Isotope Laboratories, Inc. Certificate of Analysis

S 47863

Product Name: PERCHLORIC ACID, SODIUM SALT
(Isotopic Label & Enrichment Specification) (18O4, 90%+) 100 UG/ML IN WATER

Lot Number: SDIH-016

Catalog Number: OLM-7310-S

Product Information

Chemical Purity Specification:	≥ 98%
MW*: * For isotopically labeled compounds, MW listed is for the fully enriched product.	130.44
Labeled CAS Number:	NA
Unlabeled CAS Number:	7601-89-0
Chemical Formula:	NaCl*O4
Storage:	Store at room temperature away from light and moisture.
Stability:	See storage and expiration date.

$NaCl^{18}O_4$

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number . Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Sashi Sivendran-Basak

Sashi Sivendran-Basak, Ph.D., Quality Review

Quality Control Tests and Results

QC Release Date	12/05/2018
Expiration Date	12/05/2028
Concentration Based on Gravimetry	100.0 ± 1.0 µg/mL (k=2)
Chemical Purity of Neat Material(s)	98%
LC/MS for Concentration	105.4 ± 1.1 µg/mL (k=2)

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

Batch Report: C:\HPCHEM\1\DATA\26MAR20D\26MAR20S.B

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DP3.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorat RT	Perchlorate Amount
*	701037 CCV@25	Vial 71	1	Control	1	1.31519e6	7.596	24.50269
*	701038 LCS@3.	Vial 72	1	Control	2	1.66008e5	7.469	3.07012
*	701040 ICS@3.0	Vial 73	1	Control	3	9.99850e4	7.425	2.96673
*	701041 LMB	Vial 74	1	Control	4	0.00000	0.000	0.00000
*	2008062001	Vial 75	1	Sample	5	1.09960e5	6.921	2.23127
*	2008062002	Vial 76	1	Sample	6	0.00000	0.000	0.00000
*	2008062003	Vial 77	1	Sample	7	1.17976e7	6.021	147.31769 Dil
*	2008062004	Vial 78	1	Sample	8	0.00000	0.000	0.00000
*	2008062005	Vial 79	1	Sample	9	3.68639e6	7.063	61.54884
*	2008062006	Vial 80	1	Sample	10	0.00000	0.000	0.00000
*	2008062007	Vial 81	1	Sample	11	0.00000	0.000	0.00000
*	2008062008	Vial 82	1	Sample	12	0.00000	0.000	0.00000
*	2008310001	Vial 83	1	Sample	13	0.00000	0.000	0.00000
*	2008310002 MS	Vial 84	1	Sample	14	1.61579e5	7.624	3.03065
*	701042 CCV@25	Vial 71	1	Control	15	1.25770e6	7.542	25.04210
*	2008310003 MSD	Vial 85	1	Sample	16	1.56764e5	7.529	3.00067
*	2008310004	Vial 86	1	Sample	17	0.00000	0.000	0.00000
*	2008310005	Vial 87	1	Sample	18	0.00000	0.000	0.00000
*	2008310006	Vial 88	1	Sample	19	0.00000	0.000	0.00000
*	2008310007	Vial 89	1	Sample	20	0.00000	0.000	0.00000
*	2008310008 10X	Vial 90	1	Sample	21	2.26474e6	7.461	396.52335
*	2008310009	Vial 91	1	Sample	22	0.00000	0.000	0.00000
*	2008310010	Vial 92	1	Sample	23	2.13687e5	7.243	4.87047
*	2008310011	Vial 93	1	Sample	24	0.00000	0.000	0.00000
*	2008310012	Vial 94	1	Sample	25	0.00000	0.000	0.00000
*	701043 CCV@25	Vial 71	1	Control	26	1.23305e6	7.642	25.29232
*	2008062003 10X	Vial 95	1	Sample	27	1.66187e6	7.172	308.79978
*	701102 CCV@25	Vial 71	1	Control	28	1.21579e6	7.568	25.02152

#	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-IS RT	CLO4-89-ISTD Amount
*	701037 CCV@25	Vial 71	1	Control	1	1.83781e5	7.637	5.00000
*	701038 LCS@3.	Vial 72	1	Control	2	1.99015e5	7.478	5.00000
*	701040 ICS@3.0	Vial 73	1	Control	3	1.23987e5	7.431	5.00000
*	701041 LMB	Vial 74	1	Control	4	1.77630e5	7.646	5.00000
*	2008062001	Vial 75	1	Sample	5	1.80290e5	6.911	5.00000
*	2008062002	Vial 76	1	Sample	6	2.21066e5	7.204	5.00000
*	2008062003	Vial 77	1	Sample	7	1.80433e5	5.955	5.00000
*	2008062004	Vial 78	1	Sample	8	2.38862e5	7.519	5.00000
*	2008062005	Vial 79	1	Sample	9	1.77448e5	7.086	5.00000
*	2008062006	Vial 80	1	Sample	10	1.94128e5	8.130	5.00000
*	2008062007	Vial 81	1	Sample	11	1.72495e5	7.483	5.00000
*	2008062008	Vial 82	1	Sample	12	2.20984e5	7.241	5.00000
*	2008310001	Vial 83	1	Sample	13	2.23497e5	7.586	5.00000
*	2008310002 MS	Vial 84	1	Sample	14	1.96195e5	7.631	5.00000
*	701042 CCV@25	Vial 71	1	Control	15	1.71580e5	7.576	5.00000
*	2008310003 MSD	Vial 85	1	Sample	16	1.92226e5	7.553	5.00000
*	2008310004	Vial 86	1	Sample	17	1.66041e5	7.125	5.00000
*	2008310005	Vial 87	1	Sample	18	1.63139e5	7.338	5.00000
*	2008310006	Vial 88	1	Sample	19	1.67930e5	7.299	5.00000
*	2008310007	Vial 89	1	Sample	20	1.37320e5	7.249	5.00000
*	2008310008 10X	Vial 90	1	Sample	21	1.83925e5	7.486	50.00000
*	2008310009	Vial 91	1	Sample	22	2.26093e5	7.401	5.00000
*	2008310010	Vial 92	1	Sample	23	1.61722e5	7.250	5.00000
*	2008310011	Vial 93	1	Sample	24	1.41774e5	7.091	5.00000
*	2008310012	Vial 94	1	Sample	25	1.86602e5	7.252	5.00000

Batch Report: C:\HPCHEM\1\DATA\26MAR20D\26MAR20S.B

#	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-IS RT	CLO4-89-ISTD Amount
*	701043 CCV@25	Vial 71	1	Control	26	1.66381e5	7.665	5.00000
*	2008062003 10X	Vial 95	1	Sample	27	1.79512e5	7.187	50.00000
*	701102 CCV@25	Vial 71	1	Control	28	1.66012e5	7.575	5.00000

#	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
*	701037 CCV@25	Vial 71	1	Control	1	4.23244e5	7.613	25.73518
*	701038 LCS@3.	Vial 72	1	Control	2	5.75315e4	7.501	3.40153
*	701040 ICS@3.0	Vial 73	1	Control	3	3.96560e4	7.435	3.77484
*	701041 LMB	Vial 74	1	Control	4	0.00000	0.000	0.00000
*	2008062001	Vial 75	1	Sample	5	1.31311e4	6.920	7.42428e-1
*	2008062002	Vial 76	1	Sample	6	0.00000	0.000	0.00000
*	2008062003	Vial 77	1	Sample	7	3.62321e6	6.035	150.65418
*	2008062004	Vial 78	1	Sample	8	0.00000	0.000	0.00000
*	2008062005	Vial 79	1	Sample	9	1.09785e6	7.077	60.87616
*	2008062006	Vial 80	1	Sample	10	0.00000	0.000	0.00000
*	2008062007	Vial 81	1	Sample	11	0.00000	0.000	0.00000
*	2008062008	Vial 82	1	Sample	12	0.00000	0.000	0.00000
*	2008310001	Vial 83	1	Sample	13	0.00000	0.000	0.00000
*	2008310002 MS	Vial 84	1	Sample	14	5.55387e4	7.622	3.32853
*	701042 CCV@25	Vial 71	1	Control	15	4.03497e5	7.547	26.23064
*	2008310003 MSD	Vial 85	1	Sample	16	5.07657e4	7.527	3.09739
*	2008310004	Vial 86	1	Sample	17	0.00000	0.000	0.00000
*	2008310005	Vial 87	1	Sample	18	0.00000	0.000	0.00000
*	2008310006	Vial 88	1	Sample	19	0.00000	0.000	0.00000
*	2008310007	Vial 89	1	Sample	20	0.00000	0.000	0.00000
*	2008310008 10X	Vial 90	1	Sample	21	7.08209e5	7.477	407.04413
*	2008310009	Vial 91	1	Sample	22	0.00000	0.000	0.00000
*	2008310010	Vial 92	1	Sample	23	6.45639e4	7.251	4.73281
*	2008310011	Vial 93	1	Sample	24	0.00000	0.000	0.00000
*	2008310012	Vial 94	1	Sample	25	0.00000	0.000	0.00000
*	701043 CCV@25	Vial 71	1	Control	26	3.91623e5	7.660	26.25206
*	2008062003 10X	Vial 95	1	Sample	27	4.89002e5	7.190	299.63811
*	701102 CCV@25	Vial 71	1	Control	28	3.97063e5	7.579	26.63751

*** End of Report ***

Sequence: C:\HPCHEM\1\SEQUENCE\CLO4\2020\MAR\26MAR20D.S

Sequence Table:

Method and Injection Info Part:

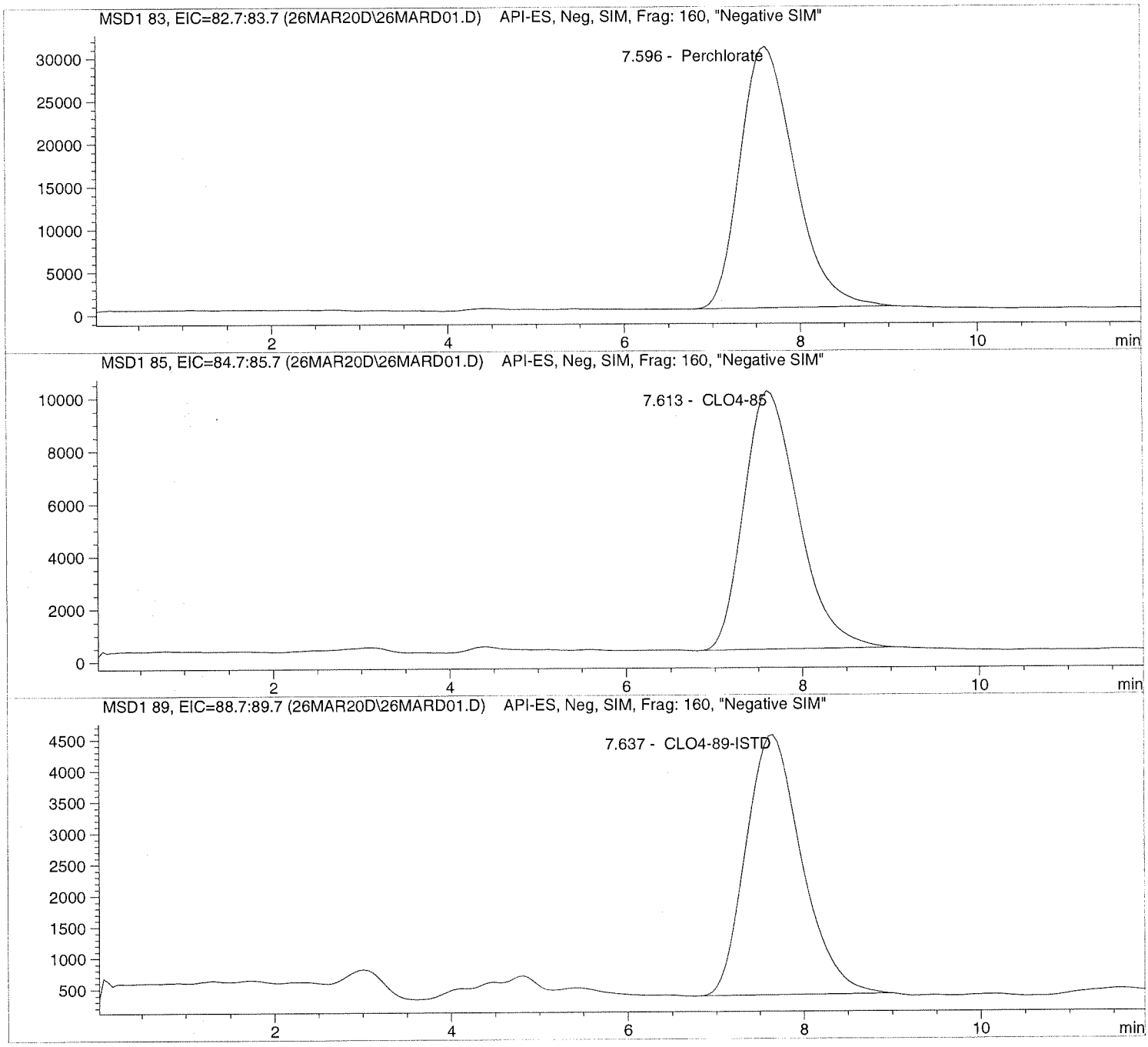
Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 71	701037 CCV@25	CLO4-AQN	1	Ctrl Samp		
2	Vial 72	701038 LCS@3.	CLO4-AQN	1	Ctrl Samp		
3	Vial 73	701040 ICS@3.0	CLO4-AQN	1	Ctrl Samp		
4	Vial 74	701041 LMB	CLO4-AQN	1	Ctrl Samp		
5	Vial 75	2008062001	CLO4-AQN	1	Sample		
6	Vial 76	2008062002	CLO4-AQN	1	Sample		
7	Vial 77	2008062003	CLO4-AQN	1	Sample		
8	Vial 78	2008062004	CLO4-AQN	1	Sample		
9	Vial 79	2008062005	CLO4-AQN	1	Sample		
10	Vial 80	2008062006	CLO4-AQN	1	Sample		
11	Vial 81	2008062007	CLO4-AQN	1	Sample		
12	Vial 82	2008062008	CLO4-AQN	1	Sample		
13	Vial 83	2008310001	CLO4-AQN	1	Sample		
14	Vial 84	2008310002 MS	CLO4-AQN	1	Sample		
15	Vial 71	701042 CCV@25	CLO4-AQN	1	Ctrl Samp		
16	Vial 85	2008310003 MSD	CLO4-AQN	1	Sample		
17	Vial 86	2008310004	CLO4-AQN	1	Sample		
18	Vial 87	2008310005	CLO4-AQN	1	Sample		
19	Vial 88	2008310006	CLO4-AQN	1	Sample		
20	Vial 89	2008310007	CLO4-AQN	1	Sample		
21	Vial 90	2008310008 10X	CLO4-AQN	1	Sample		
22	Vial 91	2008310009	CLO4-AQN	1	Sample		
23	Vial 92	2008310010	CLO4-AQN	1	Sample		
24	Vial 93	2008310011	CLO4-AQN	1	Sample		
25	Vial 94	2008310012	CLO4-AQN	1	Sample		
26	Vial 71	701043 CCV@25	CLO4-AQN	1	Ctrl Samp		
27	Vial 95	2008062003 10X	CLO4-AQN	1	Sample		
28	Vial 71	701102 CCV@25	CLO4-AQN	1	Ctrl Samp		

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD01.D Sample Name: 701037 CCV@25

Injection Date:	3/26/2020 08:19:01	Seq Line:	1
Sample Name:	701037 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD01.D Sample Name: 701037 CCV@25

Injection Date:	3/26/2020 08:19:01	Seq Line:	1
Sample Name:	701037 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.596	PBA	1315193.4	24.5027	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.613	PBA	423244.0	25.7352	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.637	PBA	183780.9	5.0000	CLO4-89-ISTD

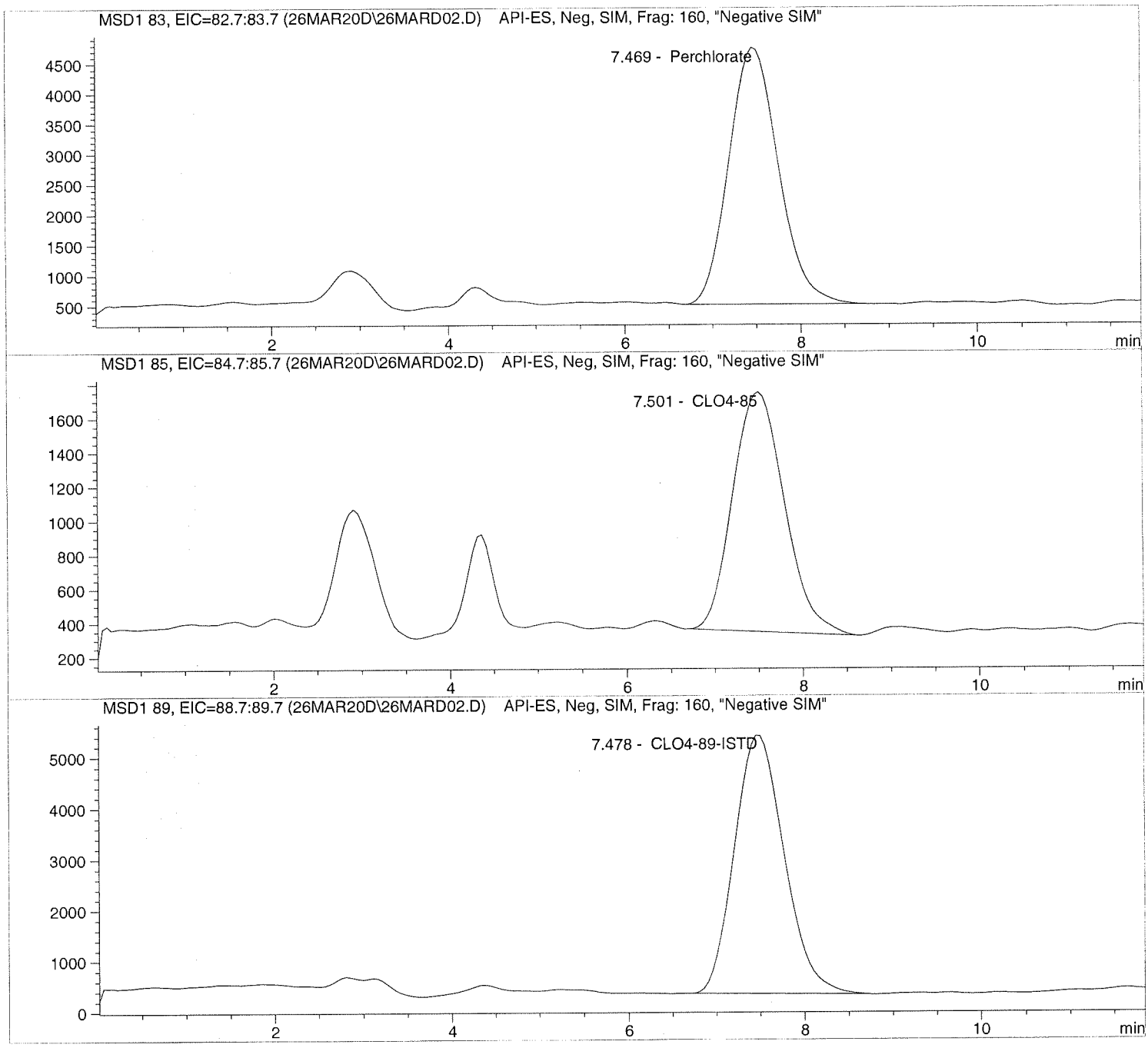
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD02.D Sample Name: 701038 LCS@3.

Injection Date:	3/26/2020 08:34:46	Seq Line:	2
Sample Name:	701038 LCS@3.	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD02.D Sample Name: 701038 LCS@3.

Injection Date:	3/26/2020 08:34:46	Seq Line:	2
Sample Name:	701038 LCS@3.	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	3.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.469	PBA	166008.5	3.0701	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.501	PBA	57531.5	3.4015	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.478	PBA	199014.8	5.0000	CLO4-89-ISTD

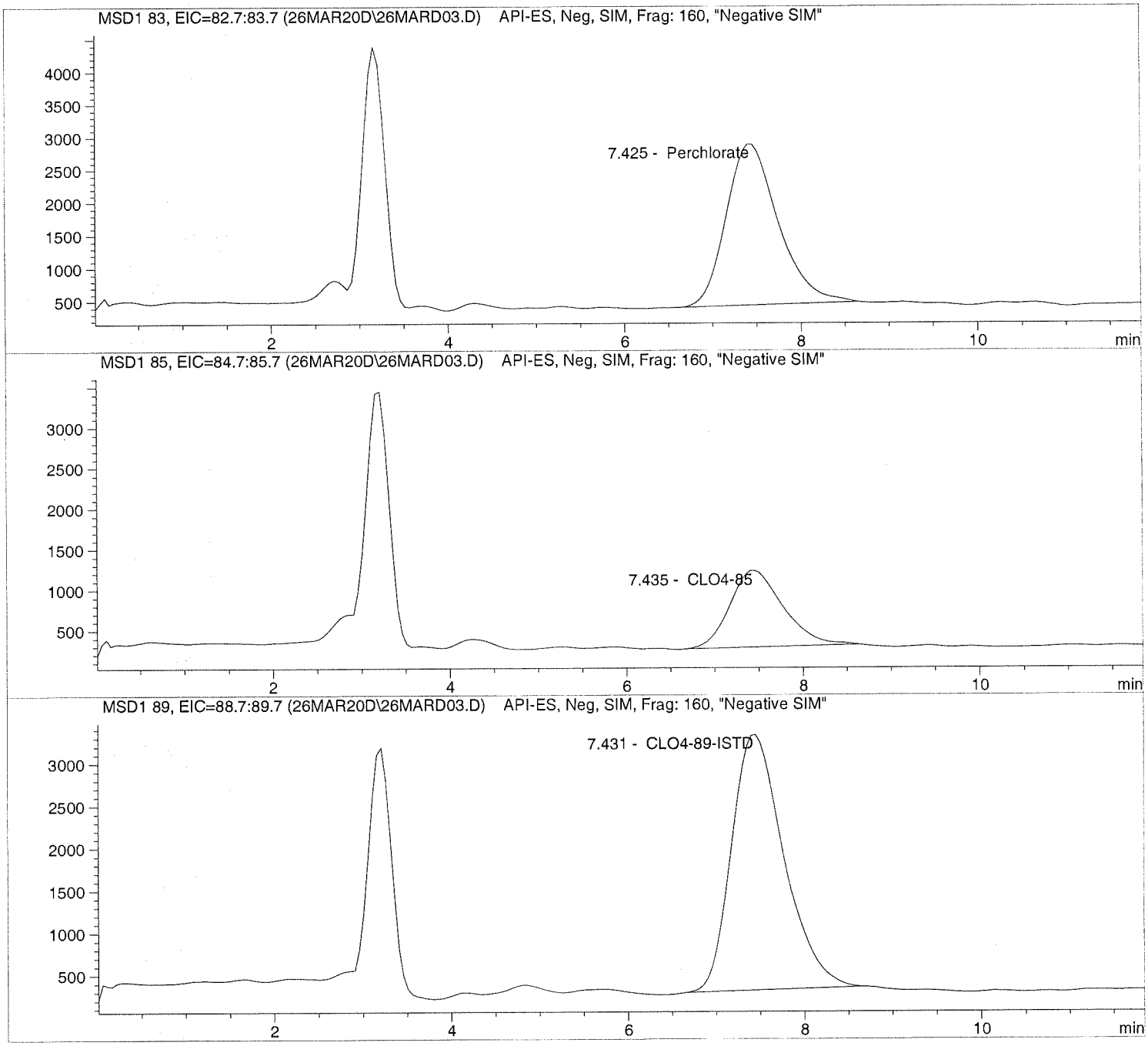
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD03.D Sample Name: 701040 ICS@3.0

Injection Date:	3/26/2020 08:48:42	Seq Line:	3
Sample Name:	701040 ICS@3.0	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD03.D Sample Name: 701040 ICS@3.0

Injection Date:	3/26/2020 08:48:42	Seq Line:	3
Sample Name:	701040 ICS@3.0	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	3.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.425	PBA	99985.0	2.9667	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.435	PBA	39656.0	3.7748	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.431	PBA	123986.5	5.0000	CLO4-89-ISTD

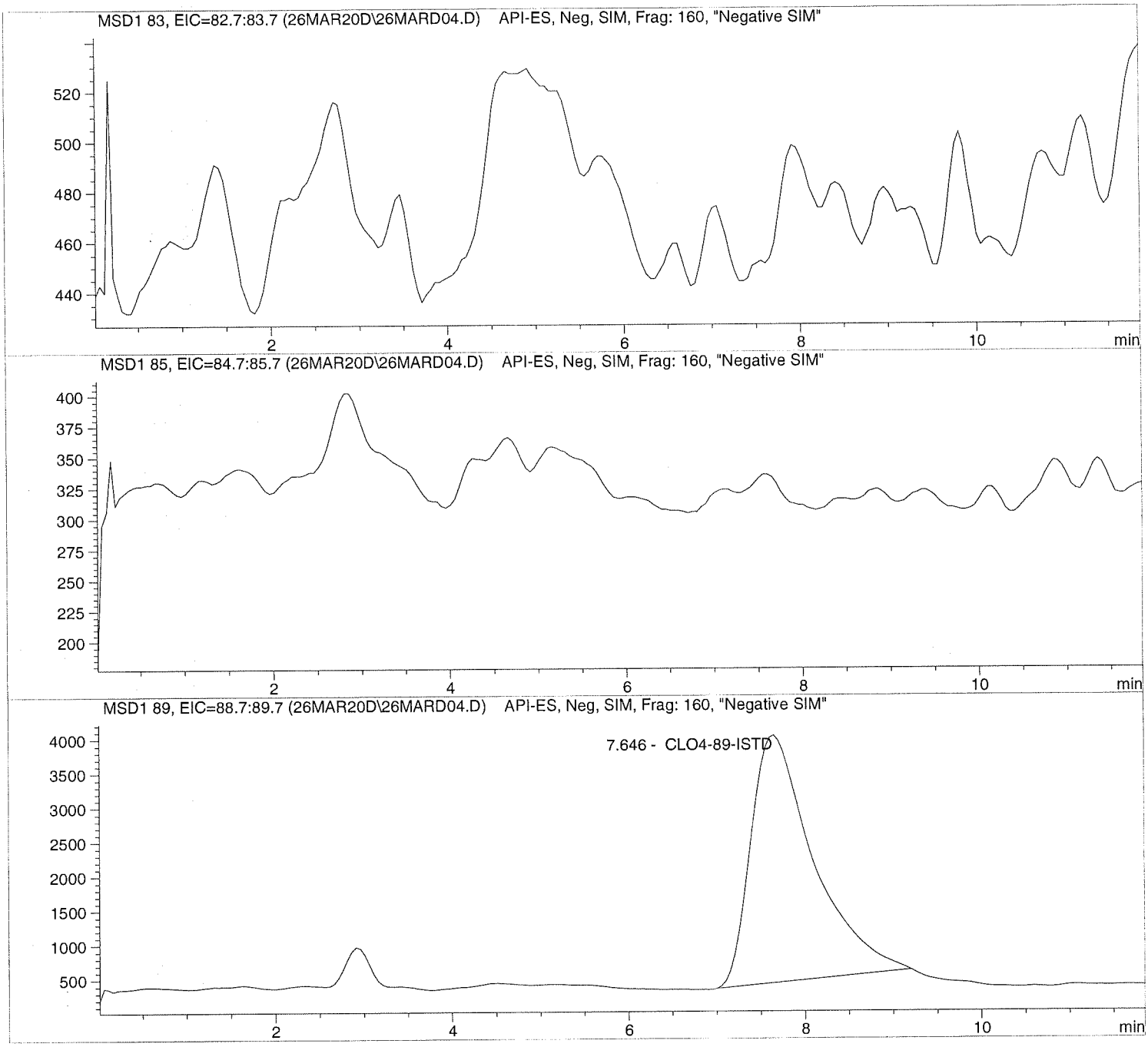
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD04.D Sample Name: 701041 LMB

Injection Date:	3/26/2020 09:02:43	Seq Line:	4
Sample Name:	701041 LMB	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD04.D Sample Name: 701041 LMB

Injection Date:	3/26/2020 09:02:43	Seq Line:	4
Sample Name:	701041 LMB	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.646	PBA	177629.6	5.0000	CLO4-89-ISTD

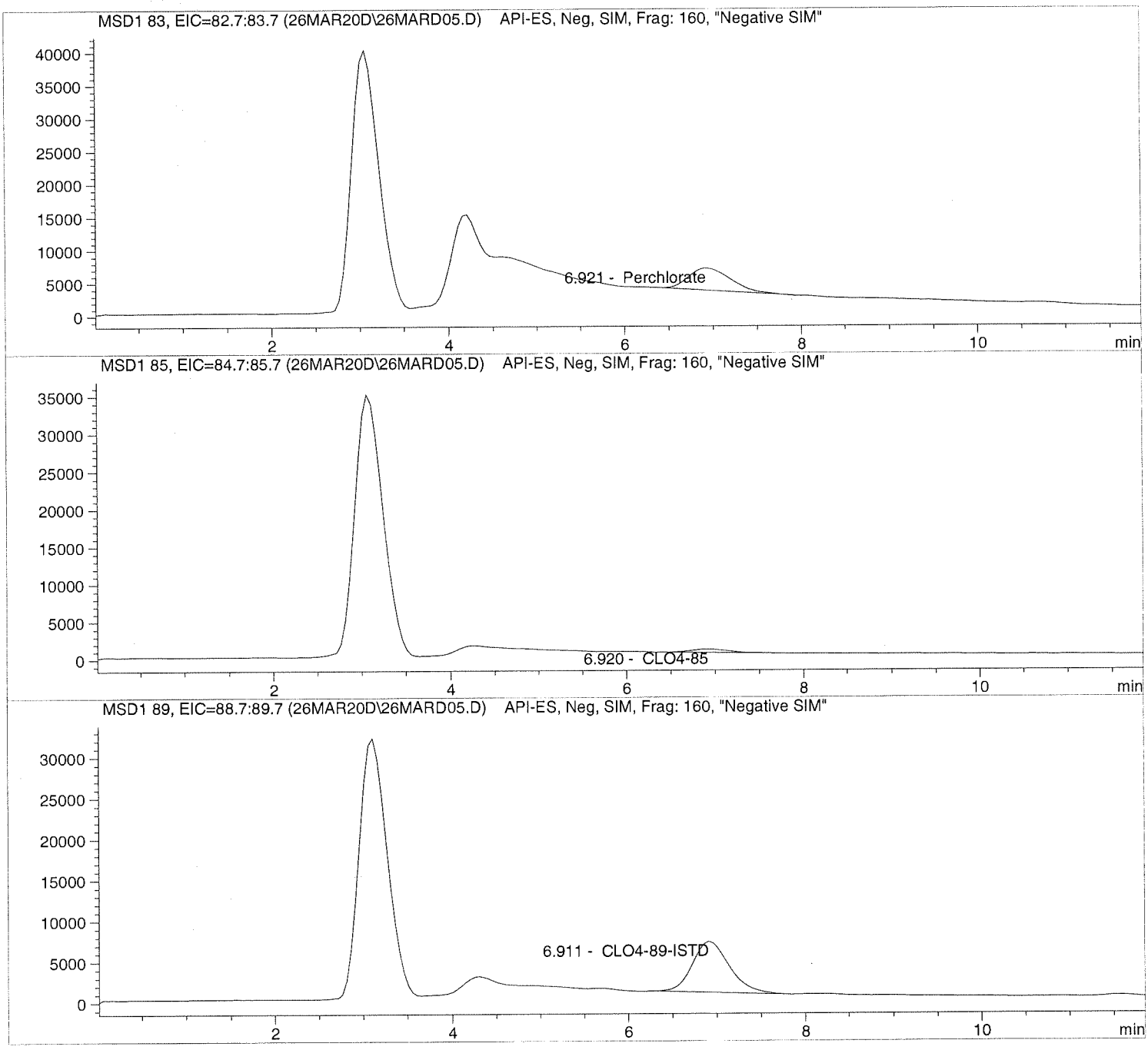
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD05.D Sample Name: 2008062001

Injection Date:	3/26/2020 09:16:42	Seq Line:	5
Sample Name:	2008062001	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD05.D Sample Name: 2008062001

Injection Date:	3/26/2020 09:16:42	Seq Line:	5
Sample Name:	2008062001	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.921	PBA	109960.3	2.2313	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.920	PBA	13131.1	0.7424	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.911	PBA	180290.0	5.0000	CLO4-89-ISTD

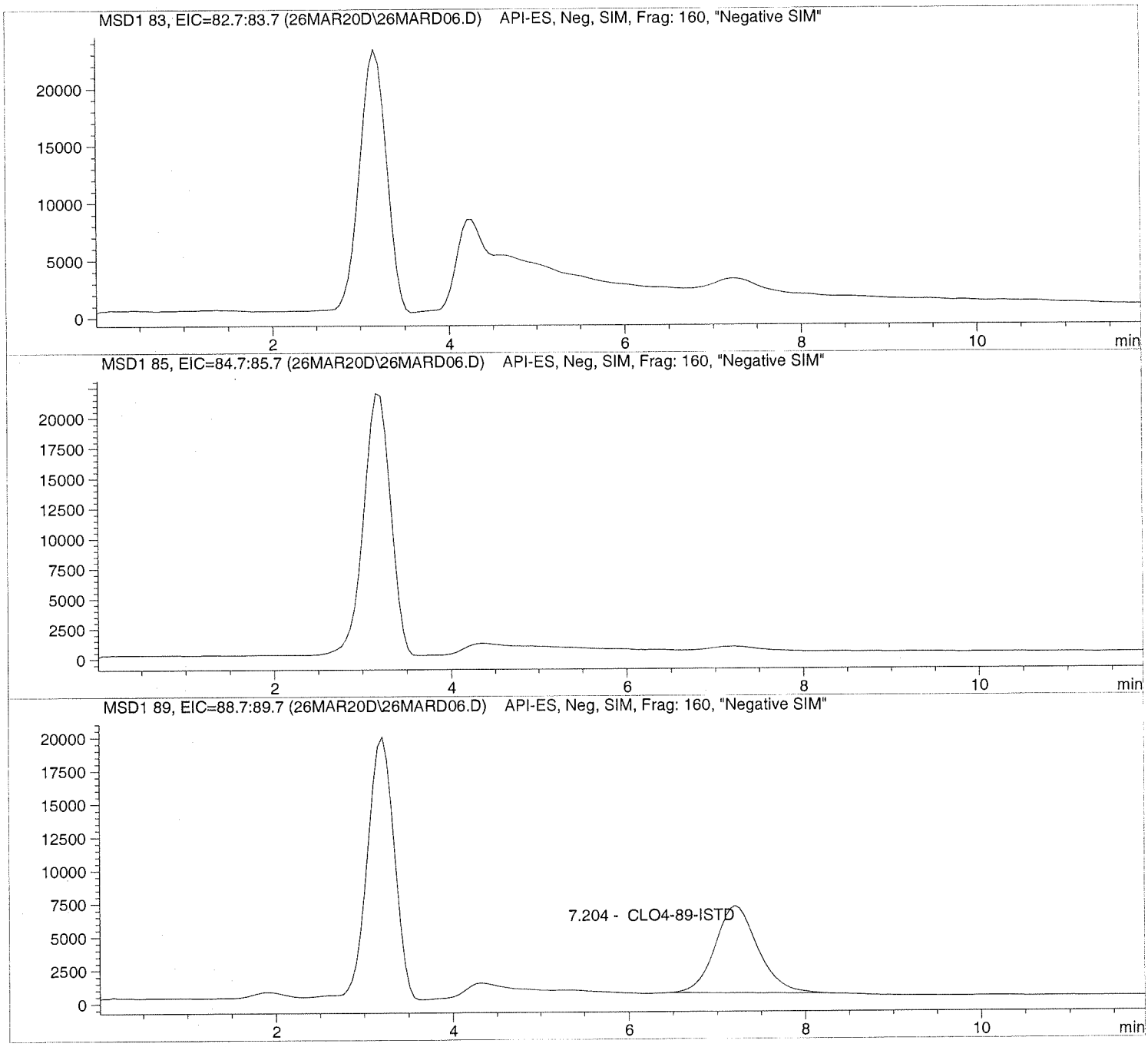
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD06.D Sample Name: 2008062002

Injection Date:	3/26/2020 09:30:41	Seq Line:	6
Sample Name:	2008062002	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD06.D Sample Name: 2008062002

Injection Date:	3/26/2020 09:30:41	Seq Line:	6
Sample Name:	2008062002	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.204	PBA	221065.7	5.0000	CLO4-89-ISTD

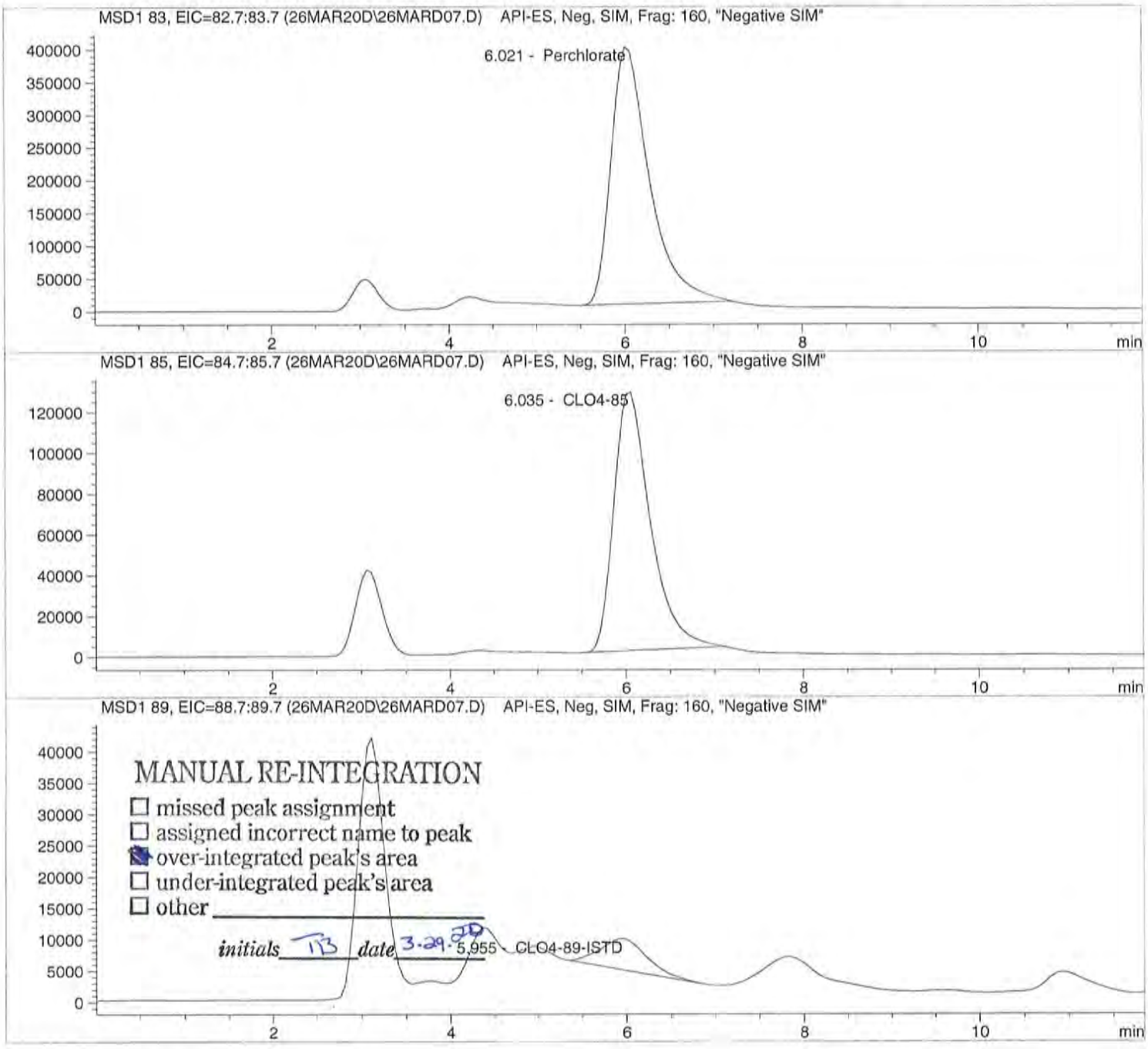
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD07.D Sample Name: 2008062003

Injection Date:	3/26/2020 09:44:40	Seq Line:	7
Sample Name:	2008062003	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD07.D Sample Name: 2008062003

Injection Date:	3/26/2020 09:44:40	Seq Line:	7
Sample Name:	2008062003	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.021	PBA	11797552.0	147.3177	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.035	PBA	3623208.0	150.6542	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
5.955	MM	180433.5	5.0000	CLO4-89-ISTD

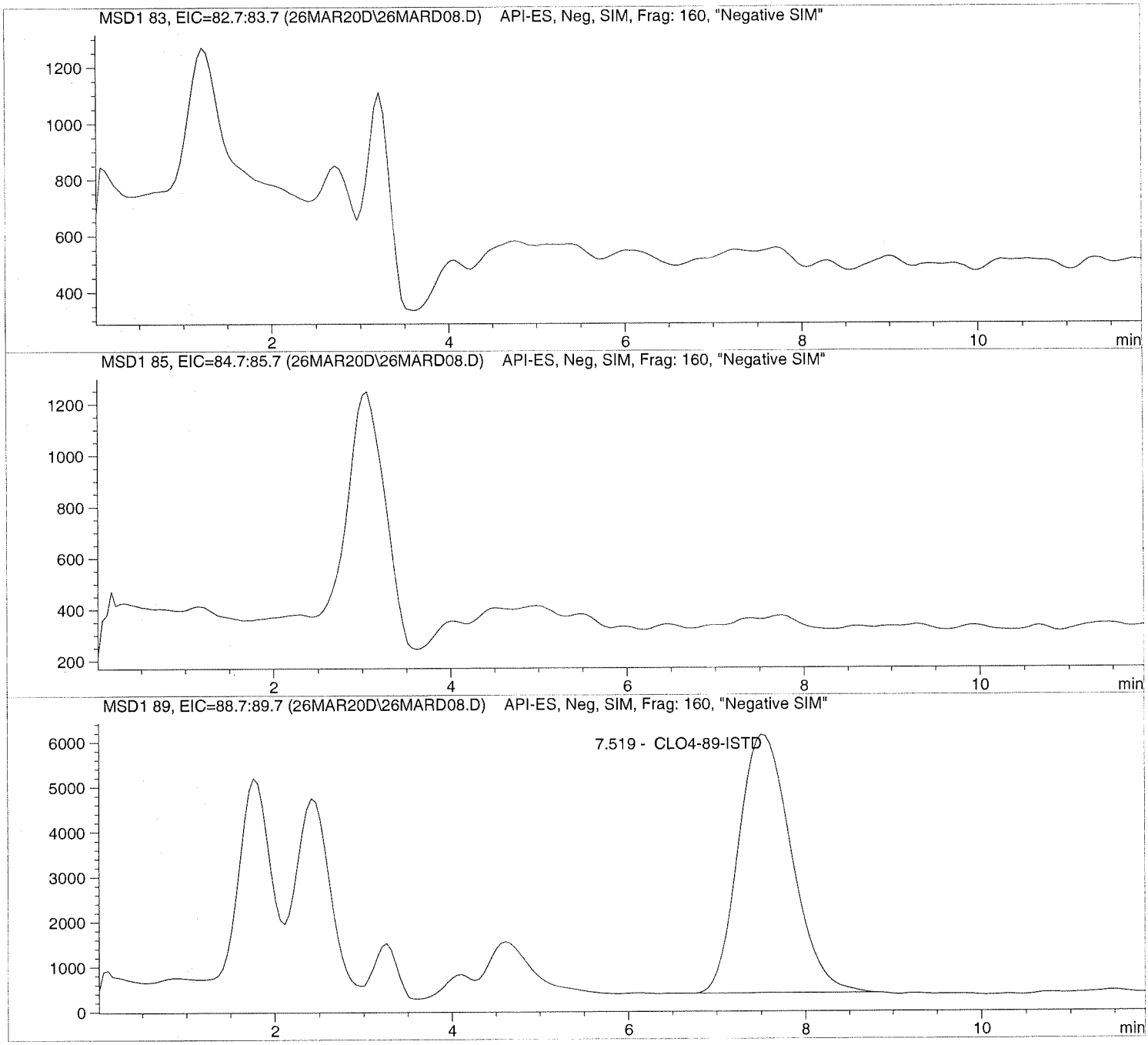
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD08.D Sample Name: 2008062004

Injection Date:	3/26/2020 09:58:39	Seq Line:	8
Sample Name:	2008062004	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD08.D Sample Name: 2008062004

Injection Date:	3/26/2020 09:58:39	Seq Line:	8
Sample Name:	2008062004	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.519	PBA	238862.2	5.0000	CLO4-89-ISTD

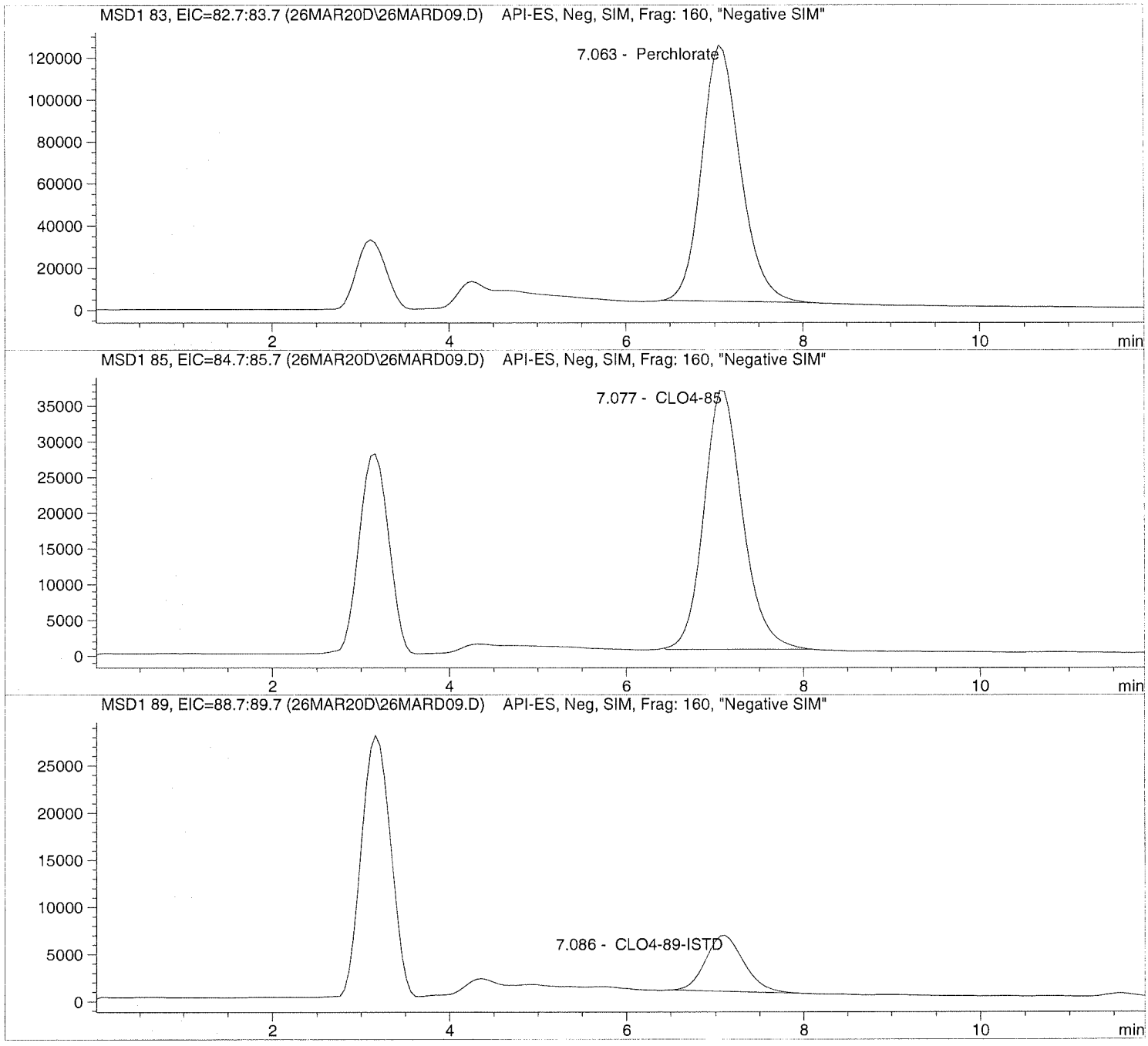
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD09.D Sample Name: 2008062005

Injection Date:	3/26/2020 10:12:38	Seq Line:	9
Sample Name:	2008062005	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD09.D Sample Name: 2008062005

Injection Date:	3/26/2020 10:12:38	Seq Line:	9
Sample Name:	2008062005	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.063	BBA	3686393.8	61.5488	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.077	BBA	1097853.7	60.8762	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.086	PBA	177447.9	5.0000	CLO4-89-ISTD

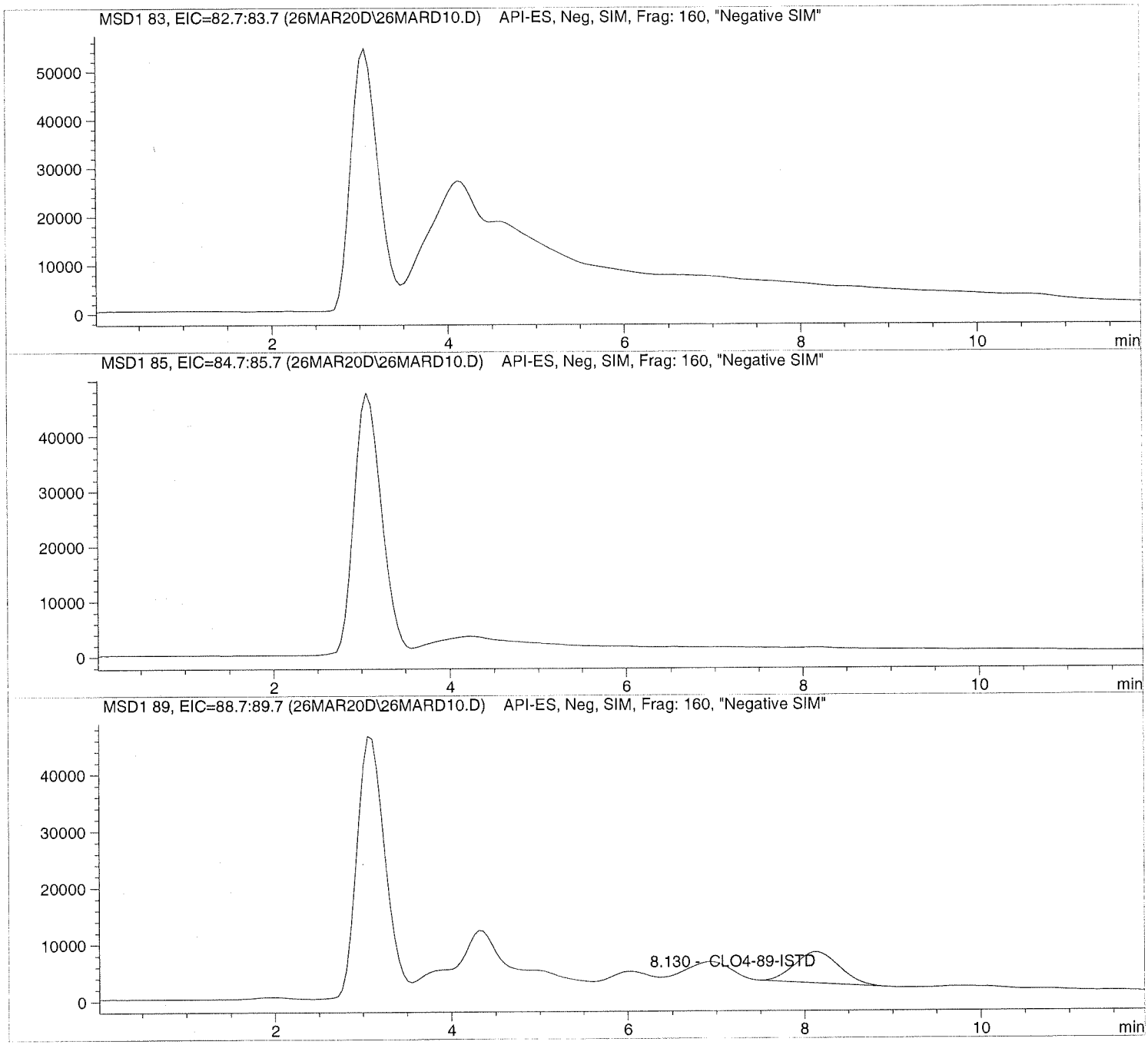
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD10.D Sample Name: 2008062006

Injection Date:	3/26/2020 10:26:37	Seq Line:	10
Sample Name:	2008062006	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD10.D Sample Name: 2008062006

Injection Date:	3/26/2020 10:26:37	Seq Line:	10
Sample Name:	2008062006	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.130	VBA	194127.8	5.0000	CLO4-89-ISTD

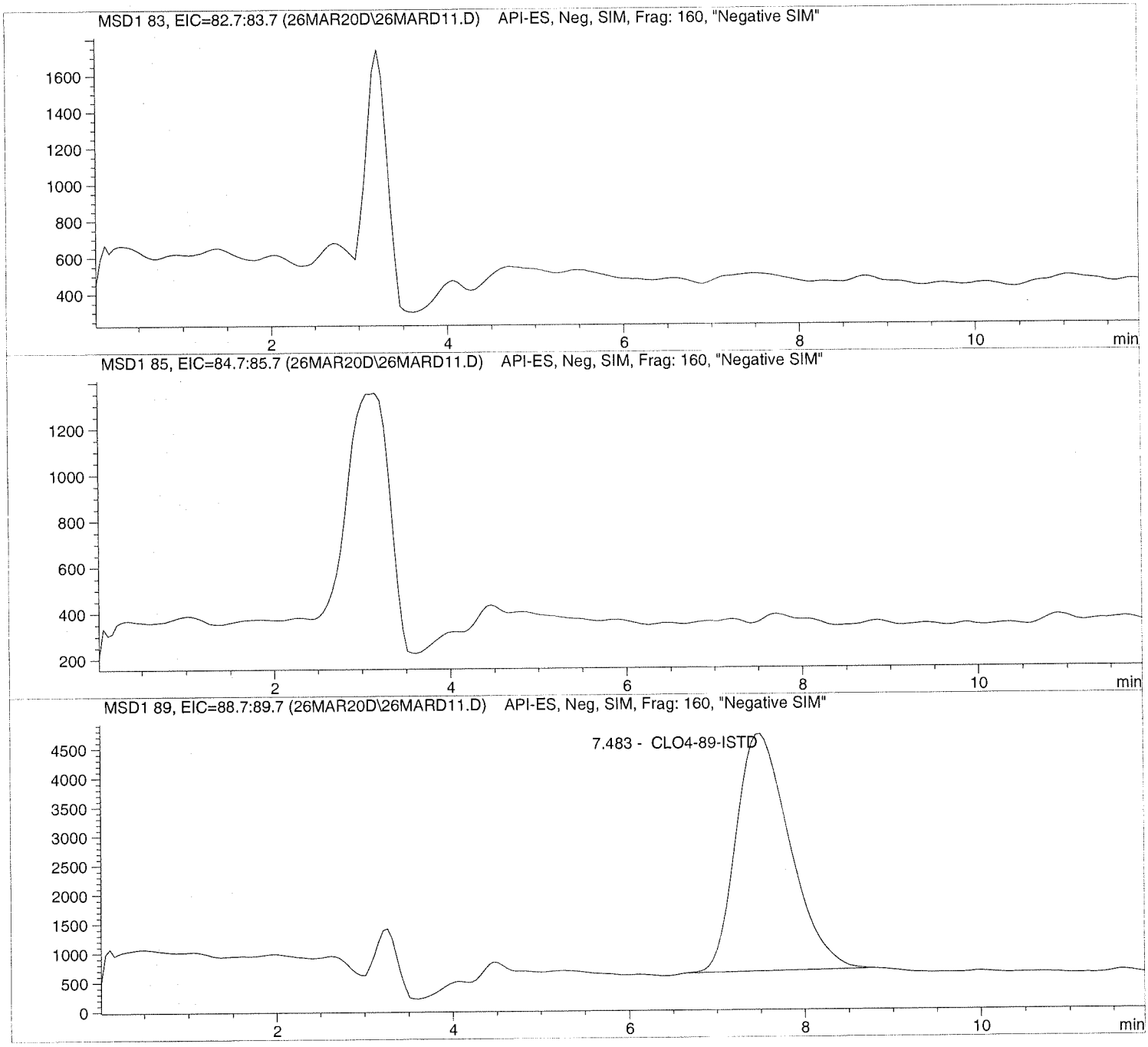
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD11.D Sample Name: 2008062007

Injection Date:	3/26/2020 10:40:42	Seq Line:	11
Sample Name:	2008062007	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD11.D Sample Name: 2008062007

Injection Date:	3/26/2020 10:40:42	Seq Line:	11
Sample Name:	2008062007	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.483	BBA	172495.2	5.0000	CLO4-89-ISTD

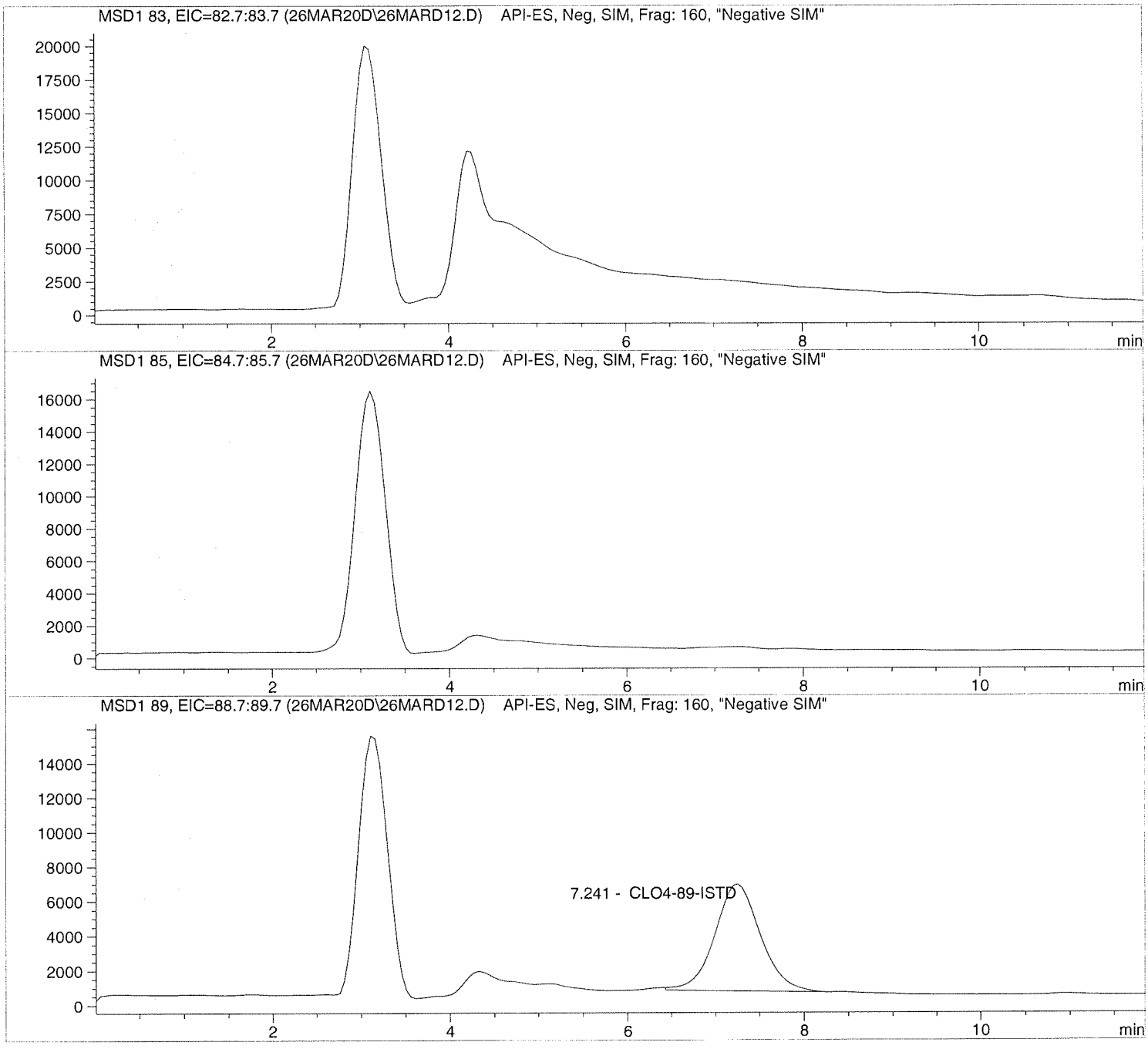
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD12.D Sample Name: 2008062008

Injection Date:	3/26/2020 10:54:39	Seq Line:	12
Sample Name:	2008062008	Location:	Vial 82
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD12.D Sample Name: 2008062008

Injection Date:	3/26/2020 10:54:39	Seq Line:	12
Sample Name:	2008062008	Location:	Vial 82
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.241	BBA	220984.2	5.0000	CLO4-89-ISTD

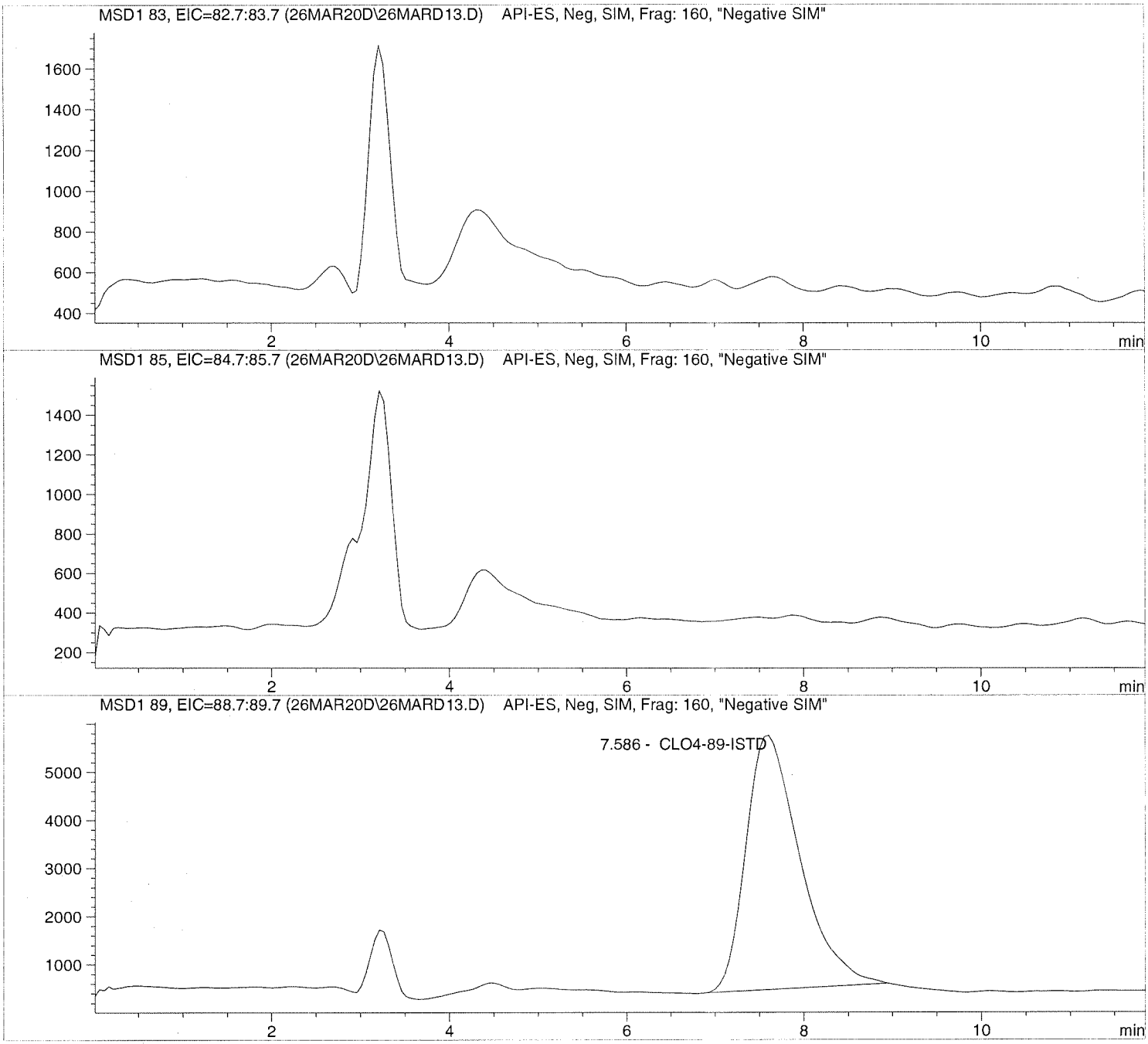
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD13.D Sample Name: 2008310001

Injection Date:	3/26/2020 11:08:35	Seq Line:	13
Sample Name:	2008310001	Location:	Vial 83
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD13.D Sample Name: 2008310001

Injection Date:	3/26/2020 11:08:35	Seq Line:	13
Sample Name:	2008310001	Location:	Vial 83
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.586	PBA	223497.3	5.0000	CLO4-89-ISTD

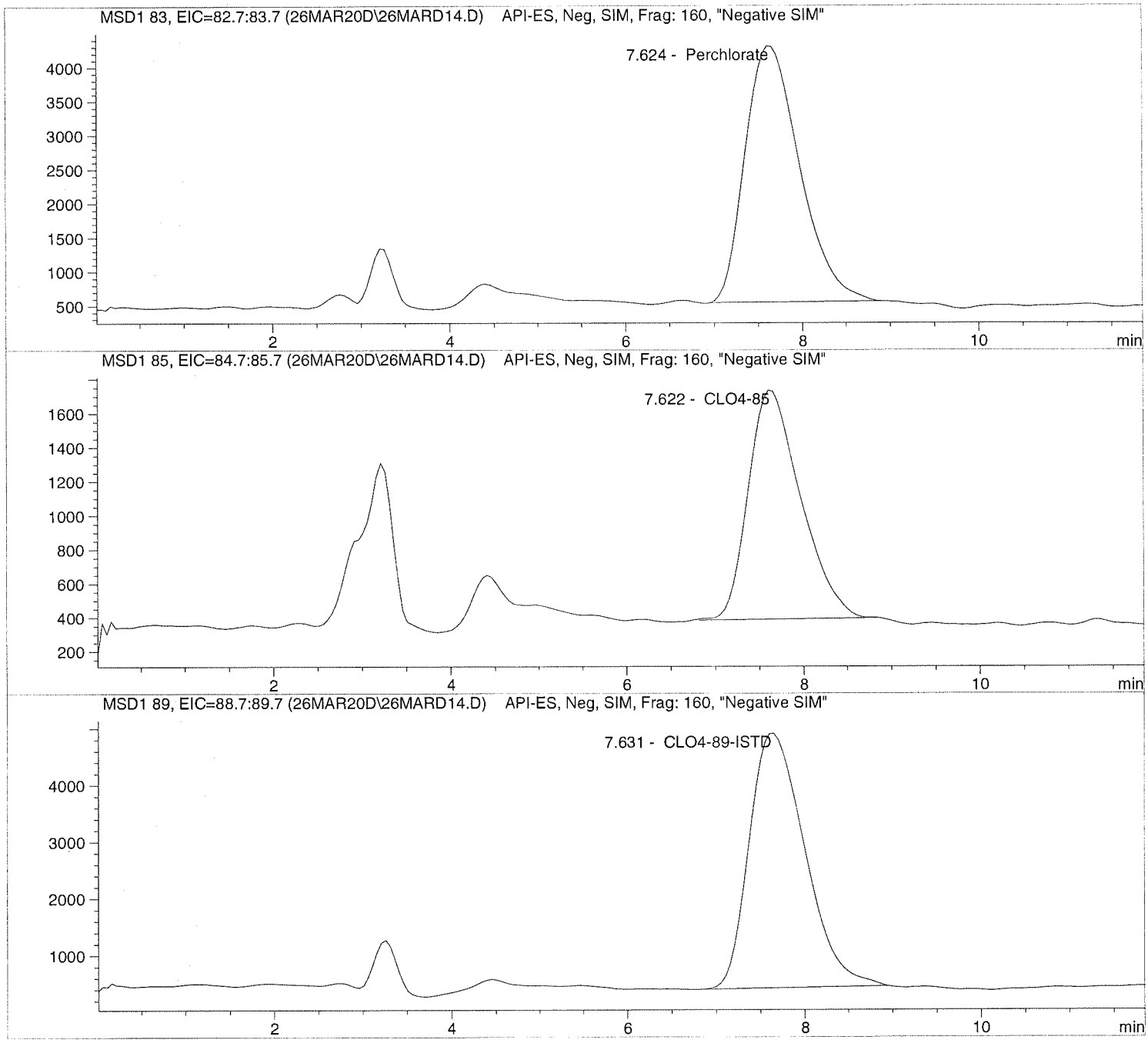
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD14.D Sample Name: 2008310002 MS

Injection Date:	3/26/2020 11:22:32	Seq Line:	14
Sample Name:	2008310002 MS	Location:	Vial 84
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD14.D Sample Name: 2008310002 MS

Injection Date:	3/26/2020 11:22:32	Seq Line:	14
Sample Name:	2008310002 MS	Location:	Vial 84
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.624	PBA	161578.6	3.0306	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.622	BBA	55538.7	3.3285	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.631	PBA	196195.3	5.0000	CLO4-89-ISTD

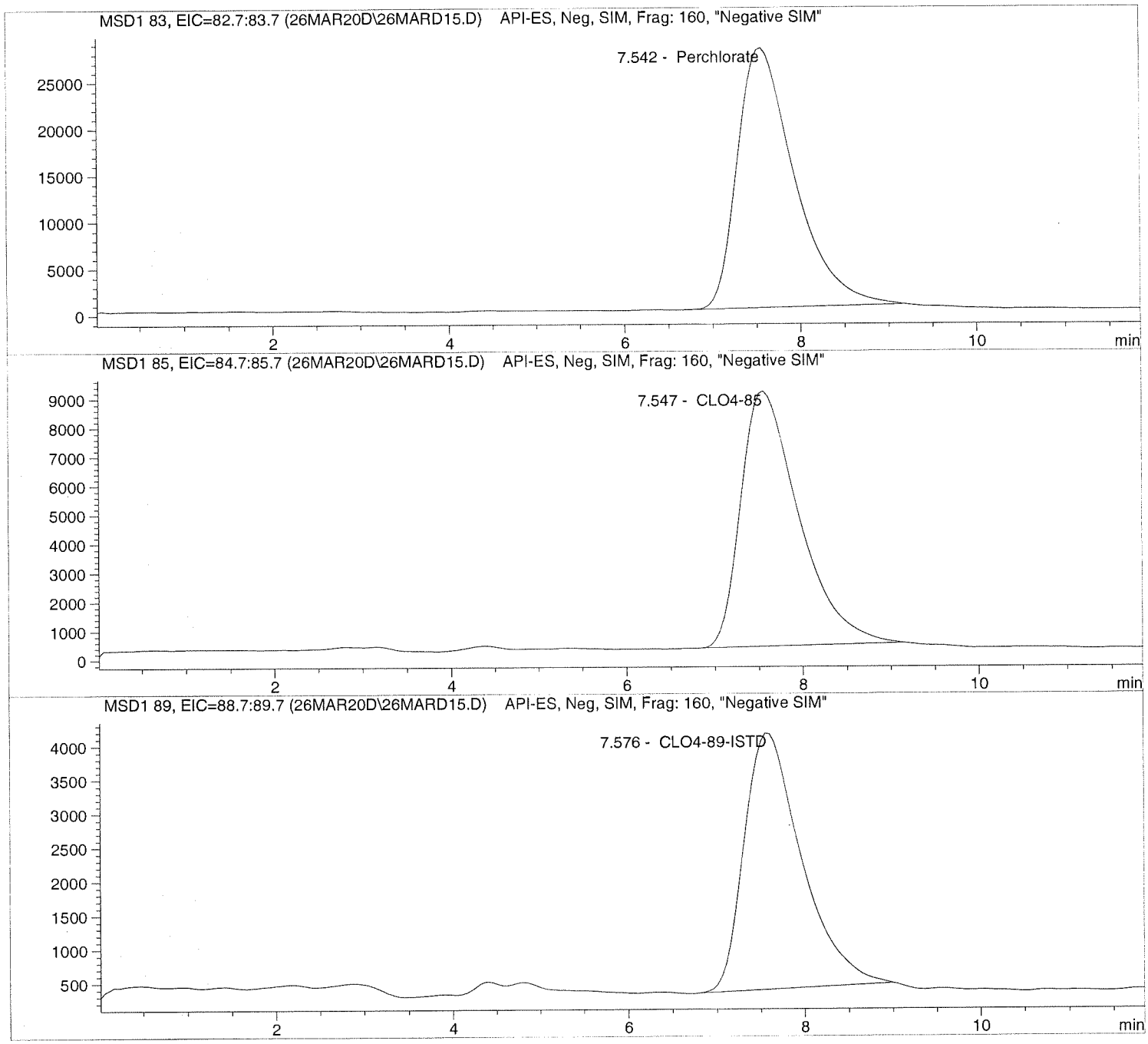
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD15.D Sample Name: 701042 CCV@25

Injection Date:	3/26/2020 11:36:32	Seq Line:	15
Sample Name:	701042 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD15.D Sample Name: 701042 CCV@25

Injection Date:	3/26/2020 11:36:32	Seq Line:	15
Sample Name:	701042 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.542	PBA	1257703.0	25.0421	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.547	PBA	403497.3	26.2306	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.576	PBA	171579.5	5.0000	CLO4-89-ISTD

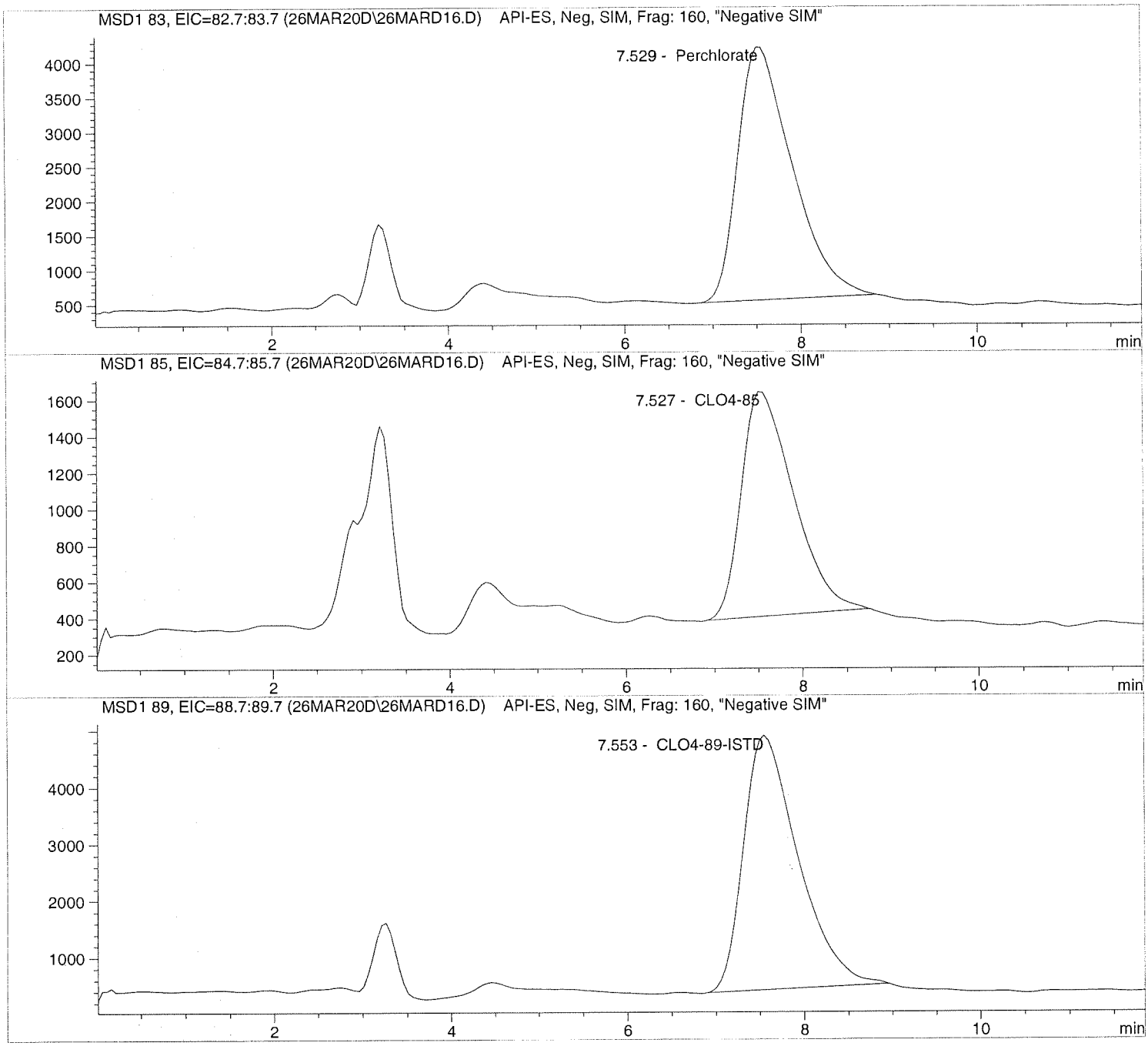
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD16.D Sample Name: 2008310003 MSD

Injection Date:	3/26/2020 11:50:32	Seq Line:	16
Sample Name:	2008310003 MSD	Location:	Vial 85
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD16.D Sample Name: 2008310003 MSD

Injection Date:	3/26/2020 11:50:32	Seq Line:	16
Sample Name:	2008310003 MSD	Location:	Vial 85
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.529	PBA	156764.3	3.0007	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.527	PBA	50765.7	3.0974	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.553	PBA	192226.0	5.0000	CLO4-89-ISTD

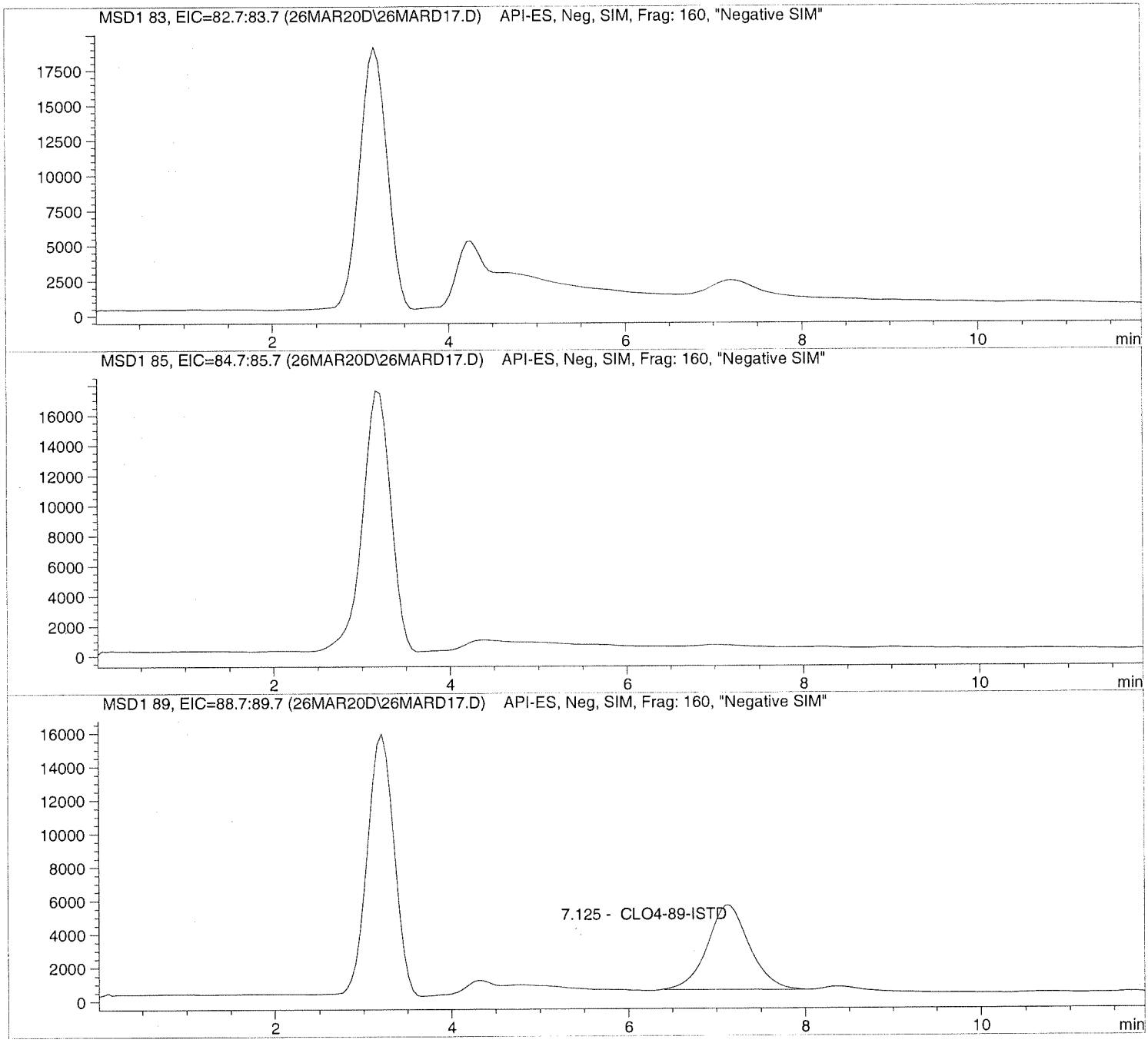
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD17.D Sample Name: 2008310004

Injection Date:	3/26/2020 12:04:29	Seq Line:	17
Sample Name:	2008310004	Location:	Vial 86
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD17.D Sample Name: 2008310004

Injection Date:	3/26/2020 12:04:29	Seq Line:	17
Sample Name:	2008310004	Location:	Vial 86
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.125	PBA	166041.3	5.0000	CLO4-89-ISTD

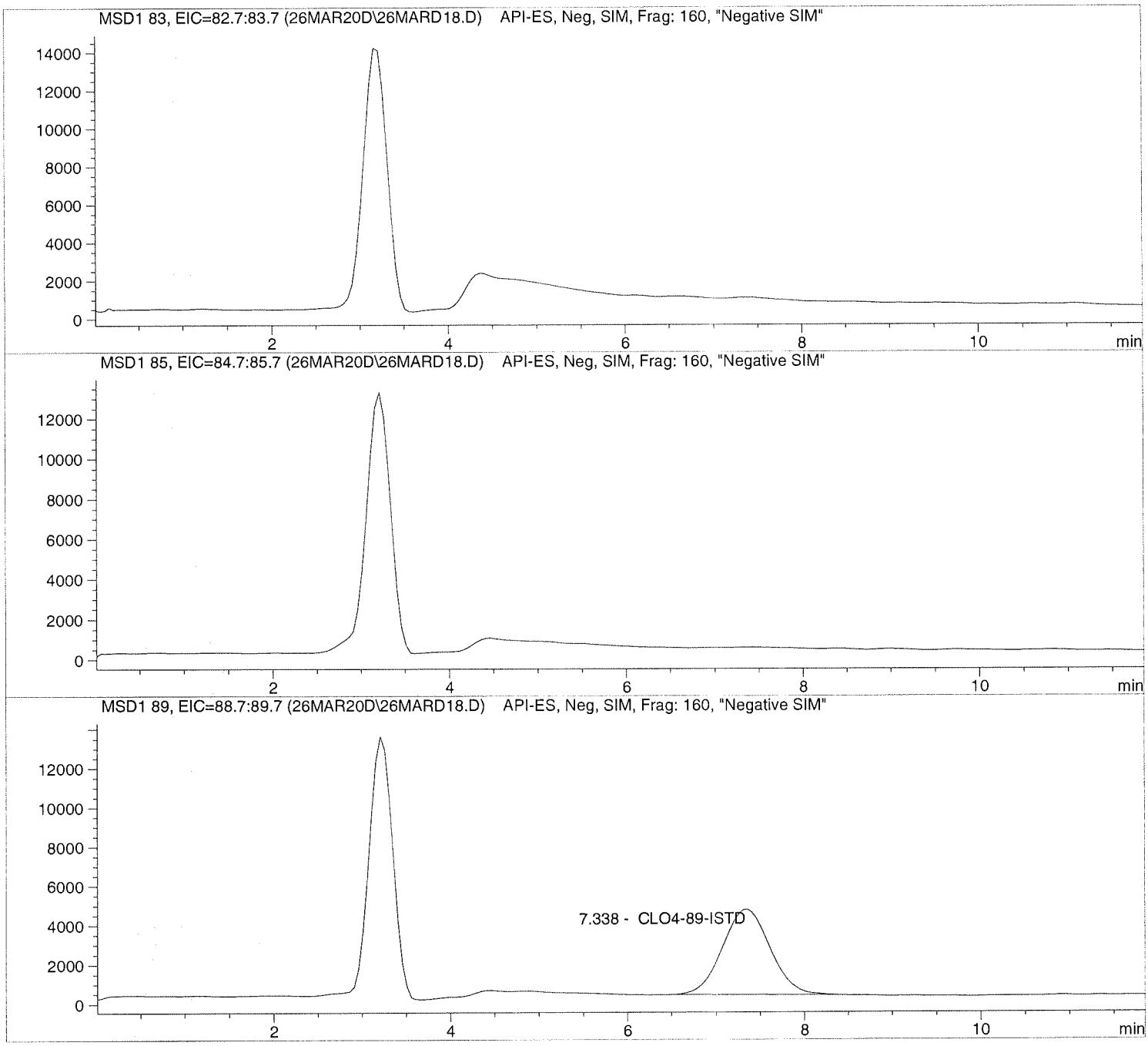
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD18.D Sample Name: 2008310005

Injection Date:	3/26/2020 12:18:26	Seq Line:	18
Sample Name:	2008310005	Location:	Vial 87
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD18.D Sample Name: 2008310005

Injection Date:	3/26/2020 12:18:26	Seq Line:	18
Sample Name:	2008310005	Location:	Vial 87
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.338	PBA	163139.4	5.0000	CLO4-89-ISTD

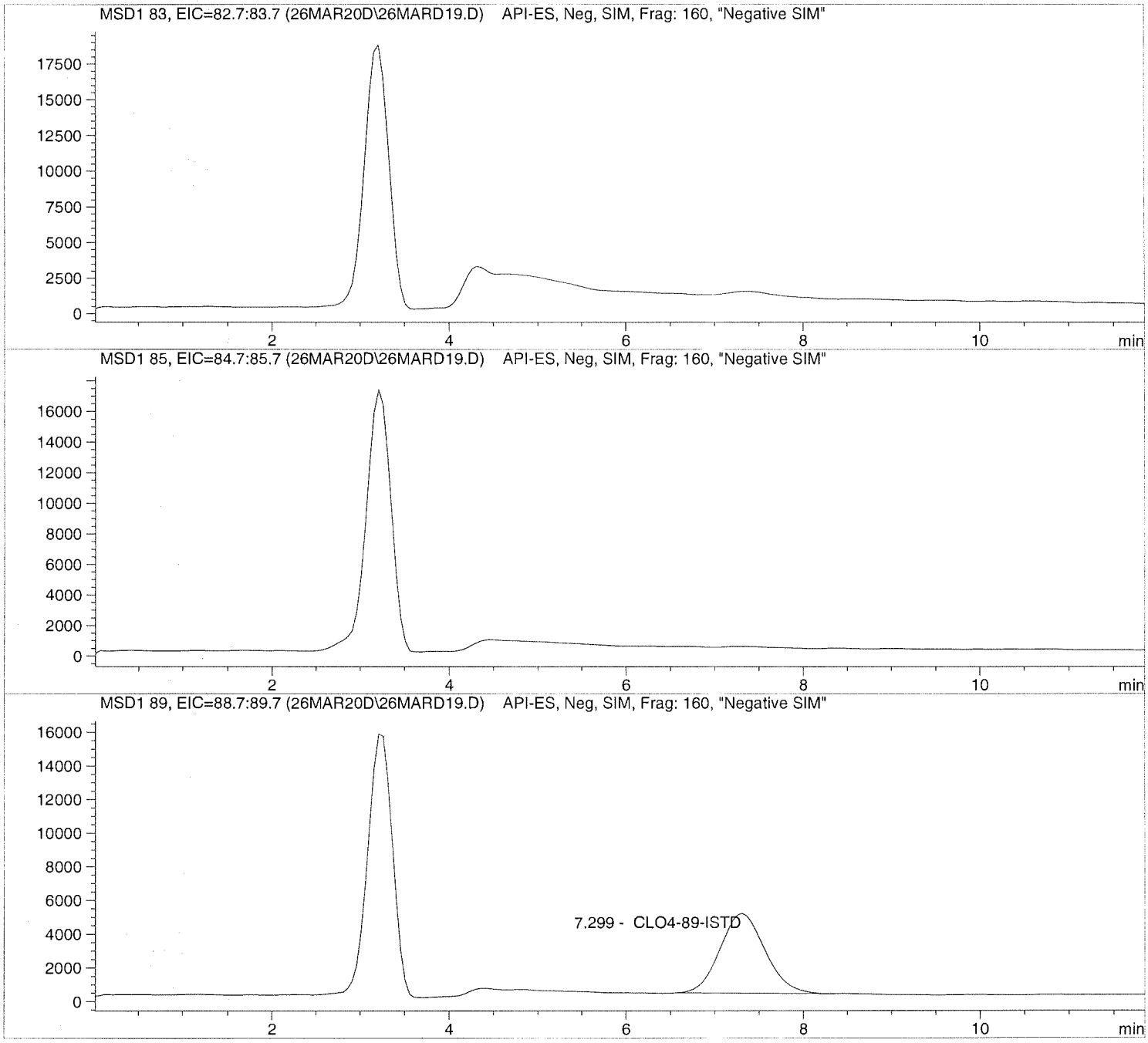
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD19.D Sample Name: 2008310006

Injection Date:	3/26/2020 12:32:24	Seq Line:	19
Sample Name:	2008310006	Location:	Vial 88
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD19.D Sample Name: 2008310006

Injection Date:	3/26/2020 12:32:24	Seq Line:	19
Sample Name:	2008310006	Location:	Vial 88
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.299	PBA	167930.1	5.0000	CLO4-89-ISTD

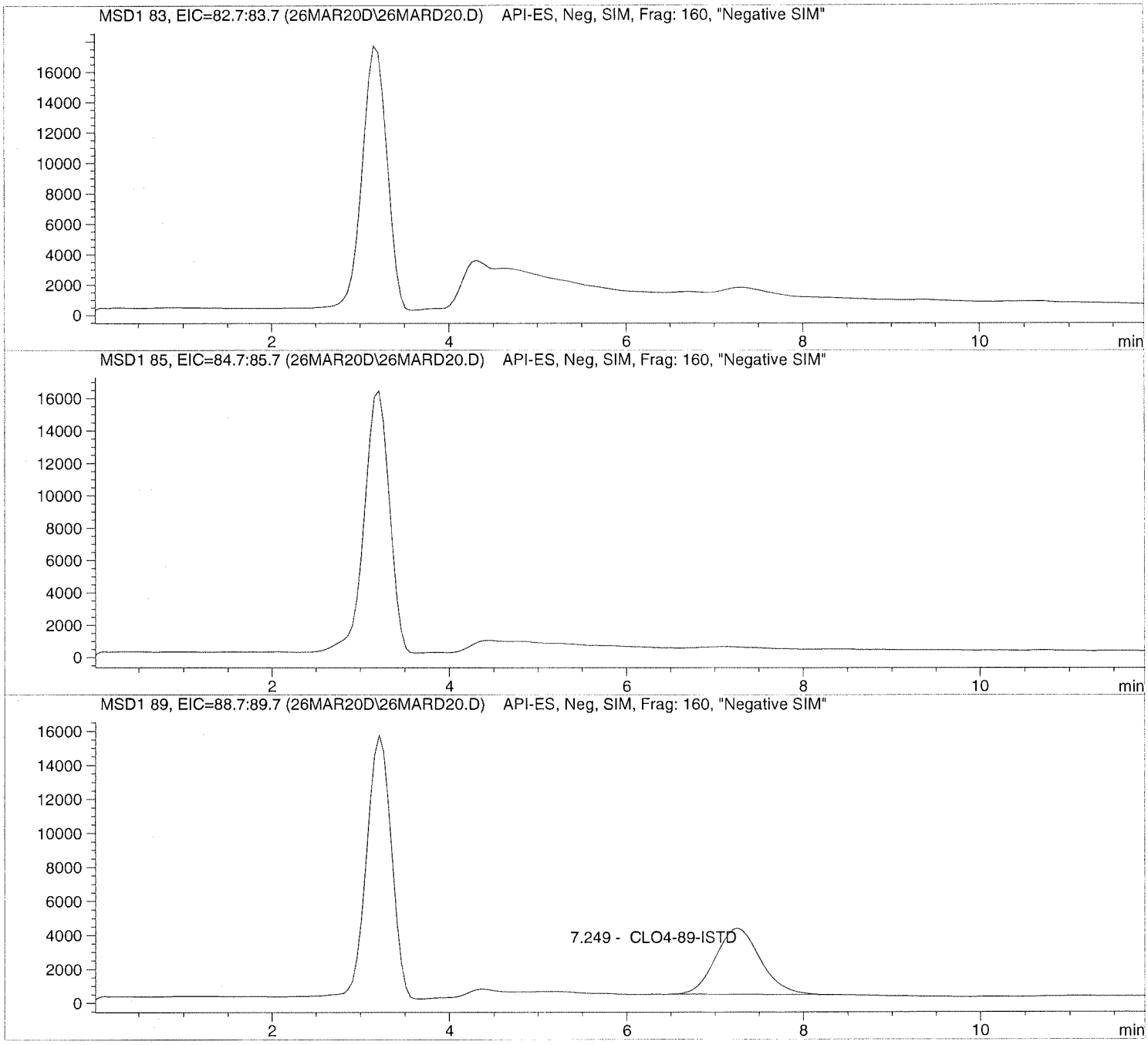
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD20.D Sample Name: 2008310007

Injection Date:	3/26/2020 12:46:26	Seq Line:	20
Sample Name:	2008310007	Location:	Vial 89
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD20.D Sample Name: 2008310007

Injection Date:	3/26/2020 12:46:26	Seq Line:	20
Sample Name:	2008310007	Location:	Vial 89
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.249	PBA	137319.5	5.0000	CLO4-89-ISTD

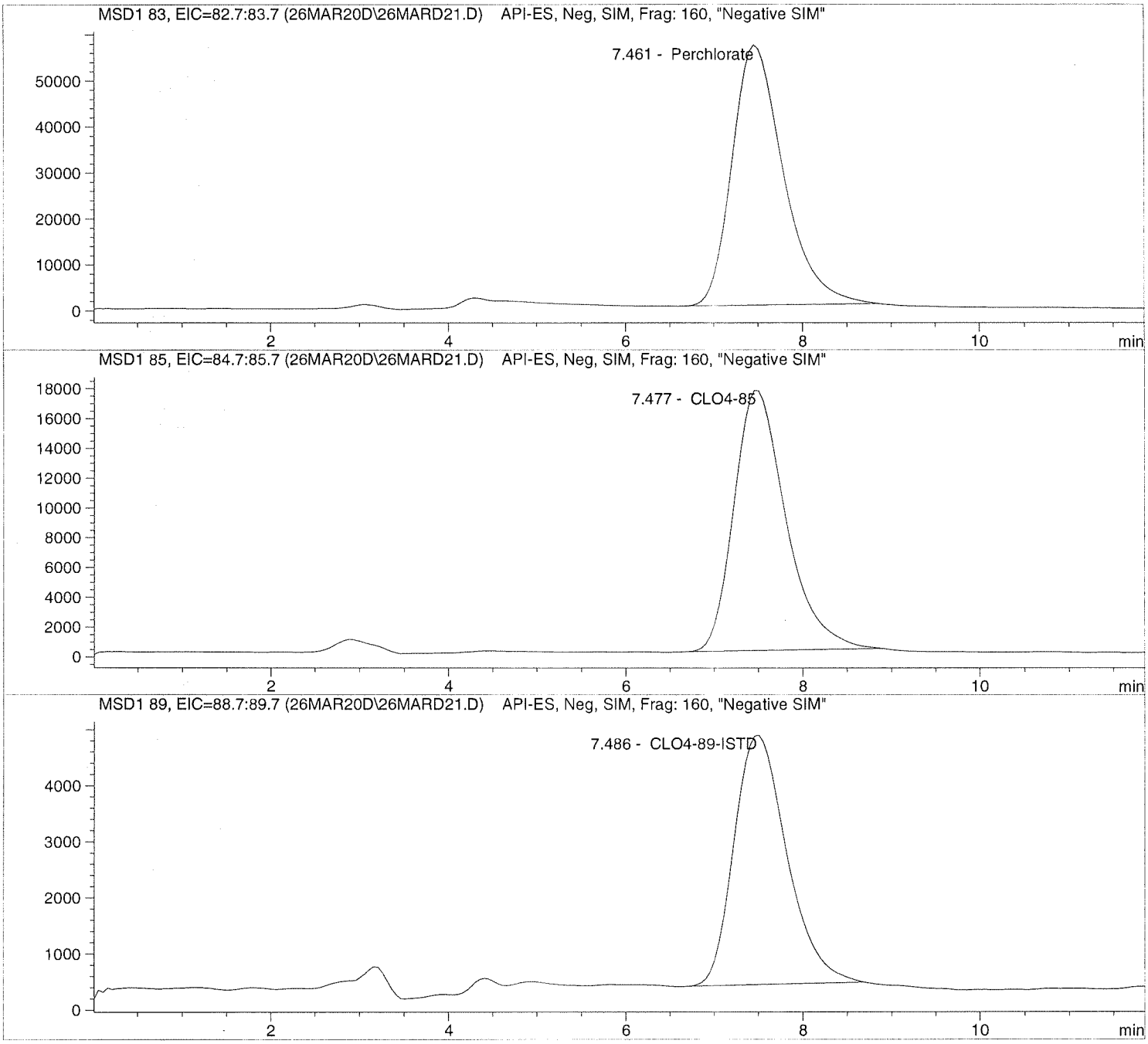
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD21.D Sample Name: 2008310008 10X

Injection Date:	3/26/2020 13:00:24	Seq Line:	21
Sample Name:	2008310008 10X	Location:	Vial 90
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD21.D Sample Name: 2008310008 10X

Injection Date:	3/26/2020 13:00:24	Seq Line:	21
Sample Name:	2008310008 10X	Location:	Vial 90
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	10.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.461	PBA	2264742.3	396.5233	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.477	PBA	708208.9	407.0441	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.486	PBA	183925.3	50.0000	CLO4-89-ISTD

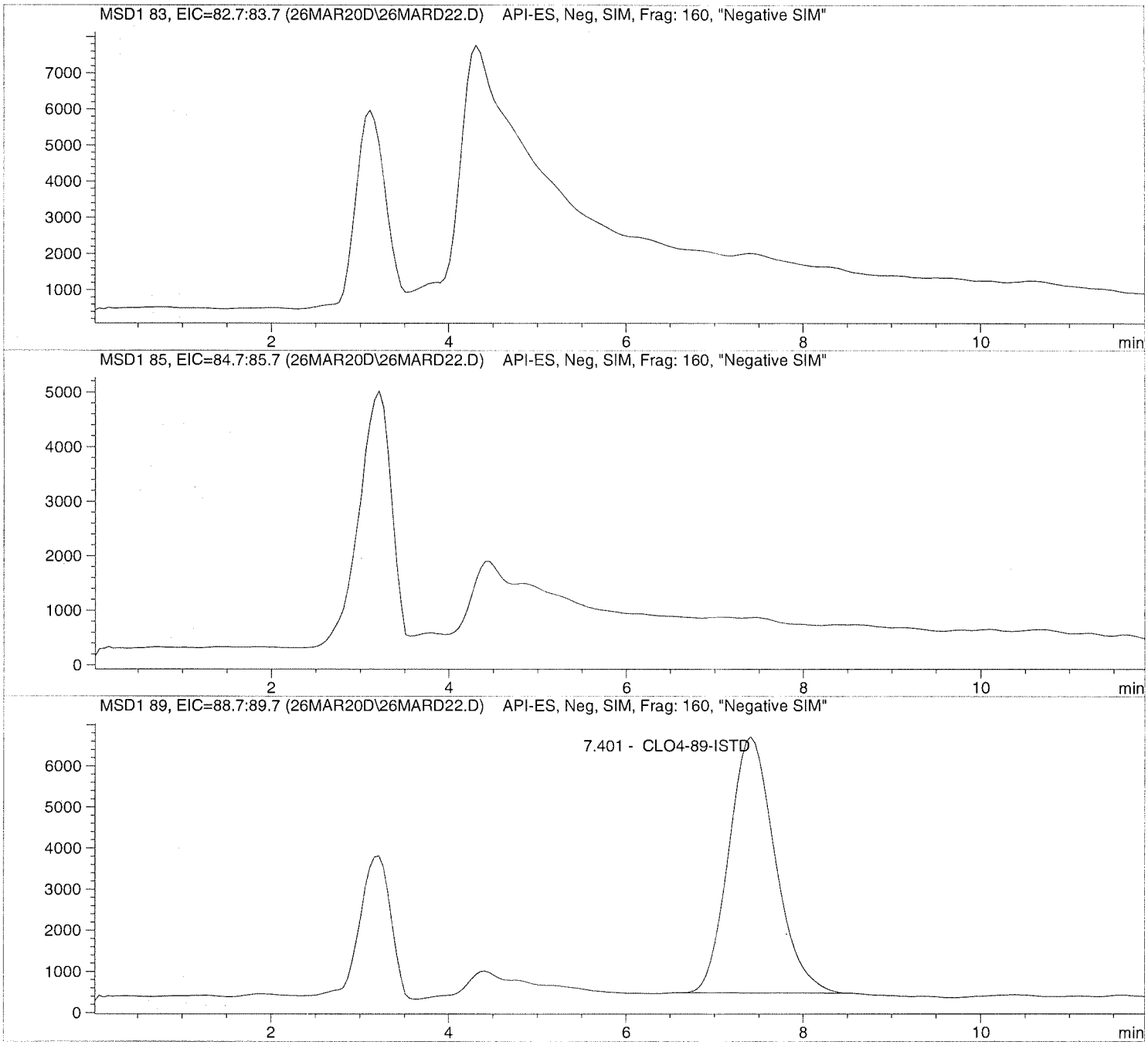
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD22.D Sample Name: 2008310009

Injection Date:	3/26/2020 13:14:36	Seq Line:	22
Sample Name:	2008310009	Location:	Vial 91
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD22.D Sample Name: 2008310009

Injection Date:	3/26/2020 13:14:36	Seq Line:	22
Sample Name:	2008310009	Location:	Vial 91
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.401	PBA	226092.7	5.0000	CLO4-89-ISTD

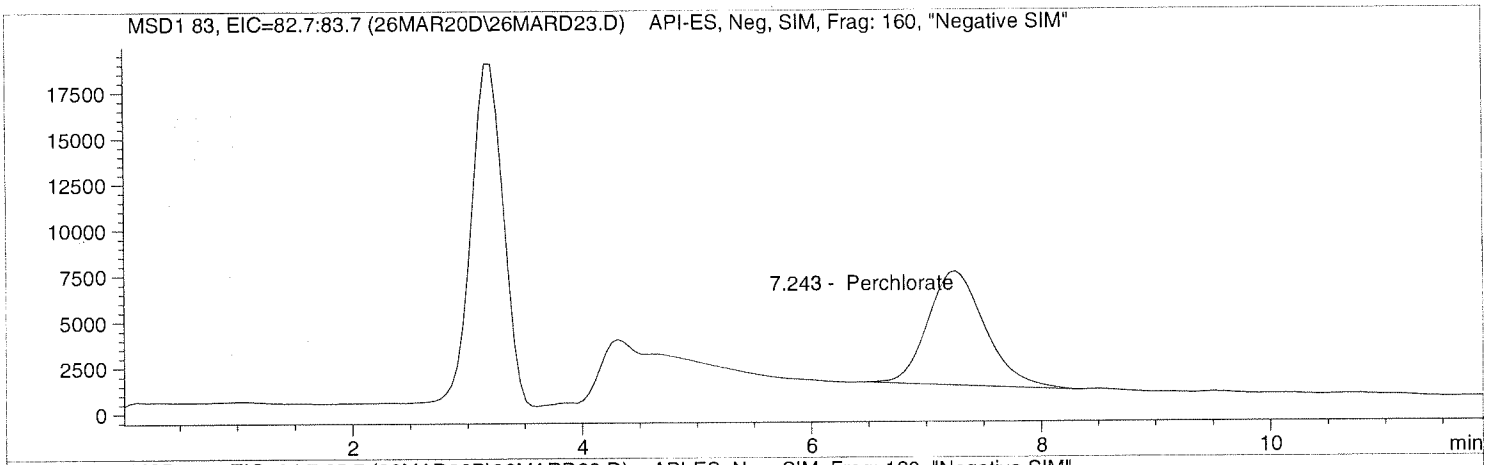
*** End of Report ***

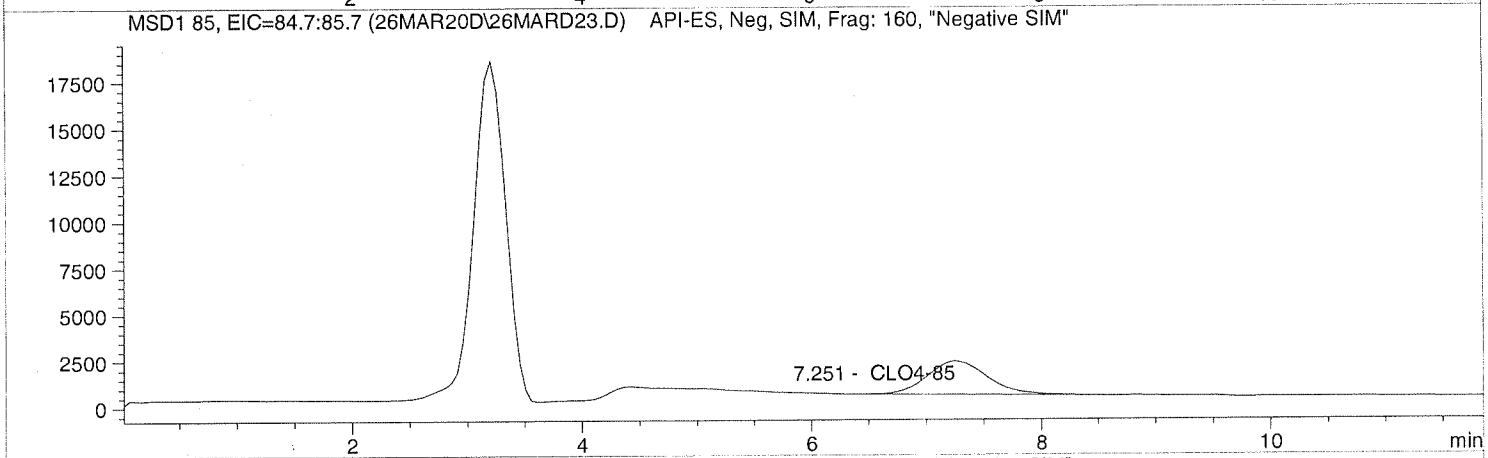
Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD23.D Sample Name: 2008310010

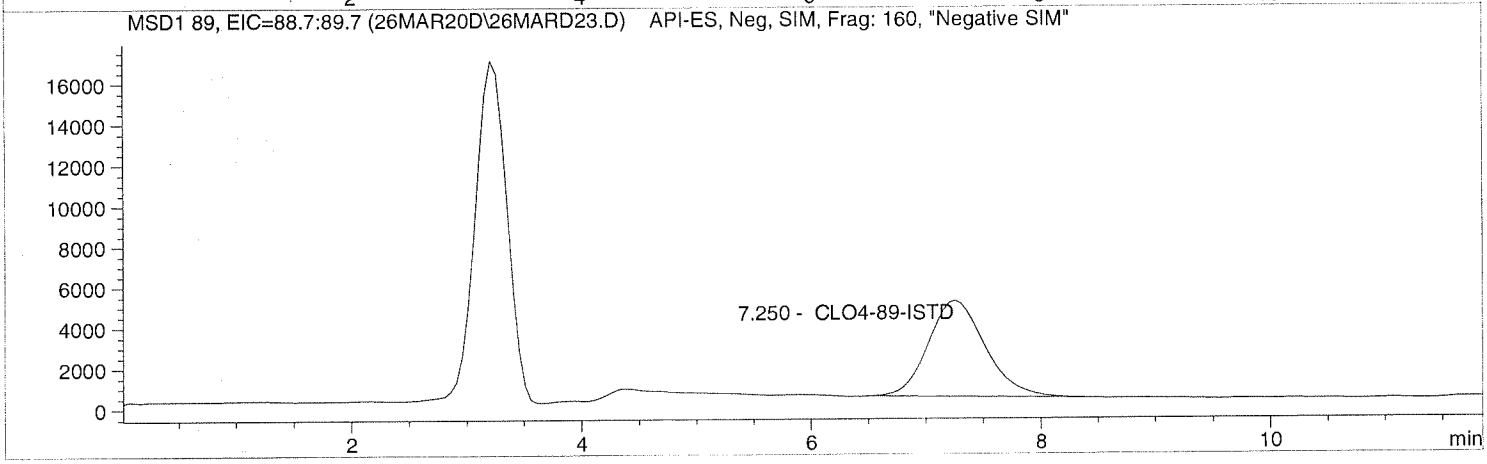
Injection Date:	3/26/2020 13:28:31	Seq Line:	23
Sample Name:	2008310010	Location:	Vial 92
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD23.D Sample Name: 2008310010

Injection Date:	3/26/2020 13:28:31	Seq Line:	23
Sample Name:	2008310010	Location:	Vial 92
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.243	BBA	213687.0	4.8705	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.251	PBA	64563.9	4.7328	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.250	PBA	161722.0	5.0000	CLO4-89-ISTD

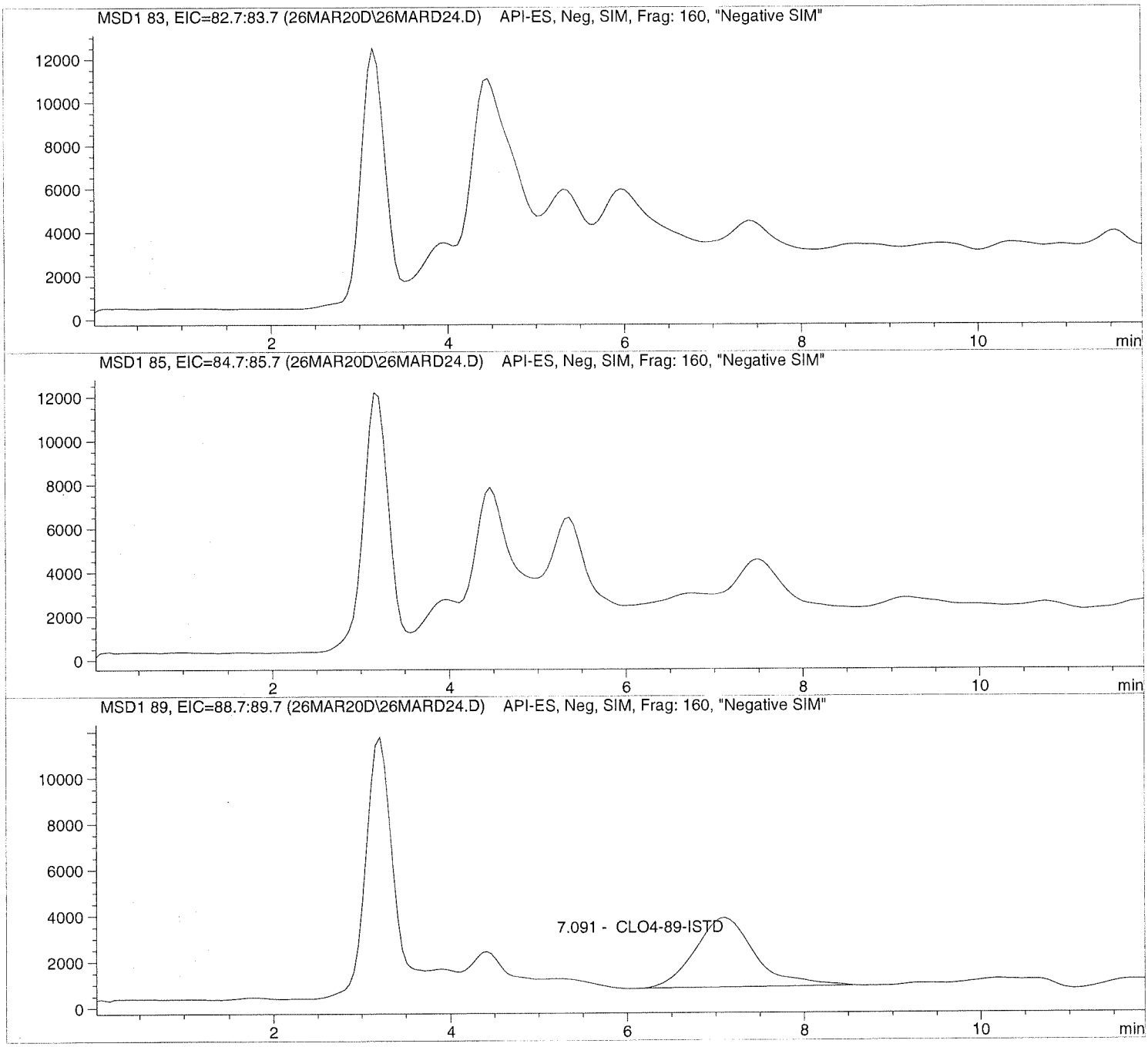
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD24.D Sample Name: 2008310011

Injection Date:	3/26/2020 13:42:47	Seq Line:	24
Sample Name:	2008310011	Location:	Vial 93
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD24.D Sample Name: 2008310011

Injection Date:	3/26/2020 13:42:47	Seq Line:	24
Sample Name:	2008310011	Location:	Vial 93
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.091	PBA	141774.2	5.0000	CLO4-89-ISTD

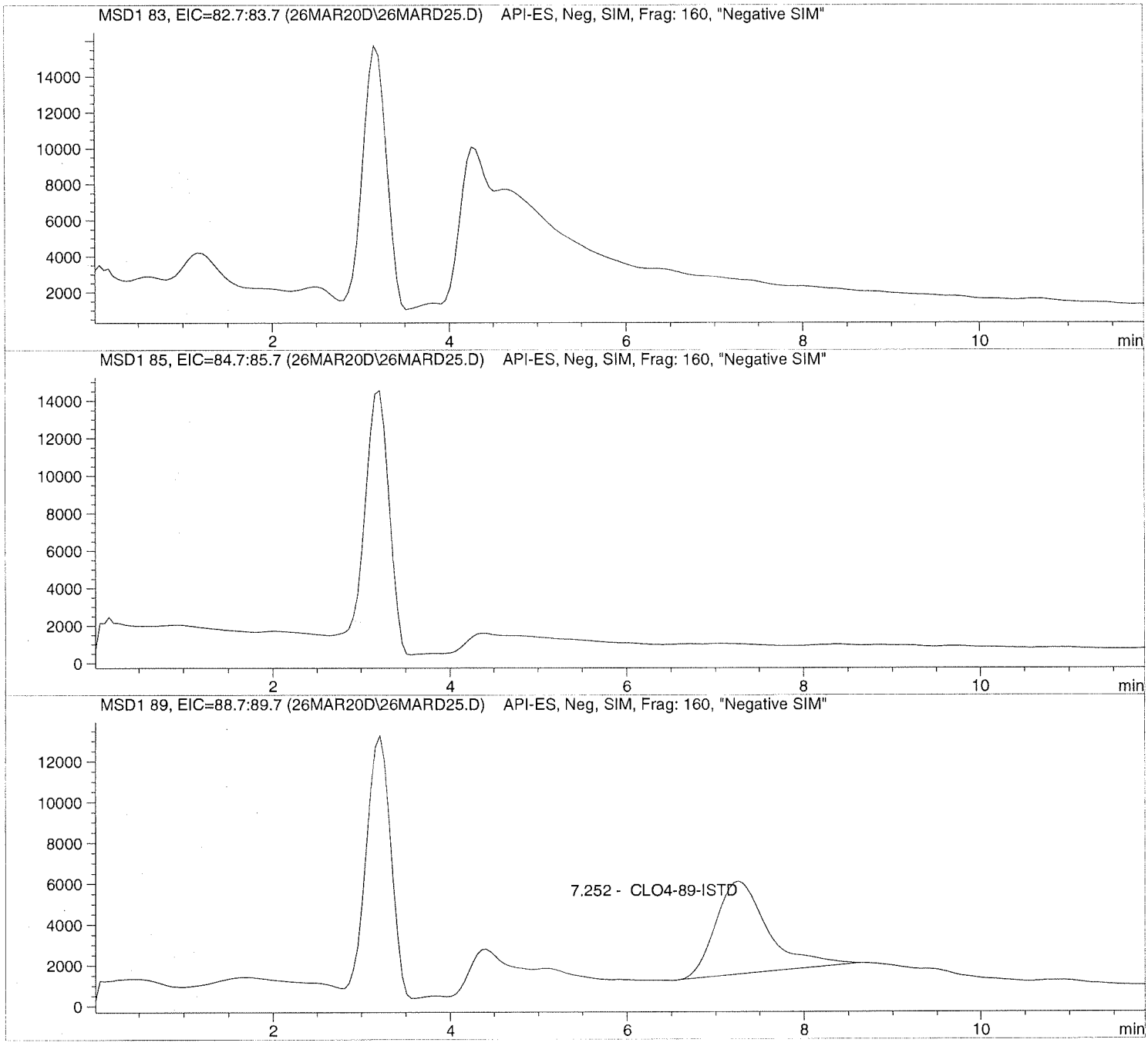
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD25.D Sample Name: 2008310012

Injection Date:	3/26/2020 13:56:46	Seq Line:	25
Sample Name:	2008310012	Location:	Vial 94
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD25.D Sample Name: 2008310012

Injection Date:	3/26/2020 13:56:46	Seq Line:	25
Sample Name:	2008310012	Location:	Vial 94
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.252	PBA	186601.9	5.0000	CLO4-89-ISTD

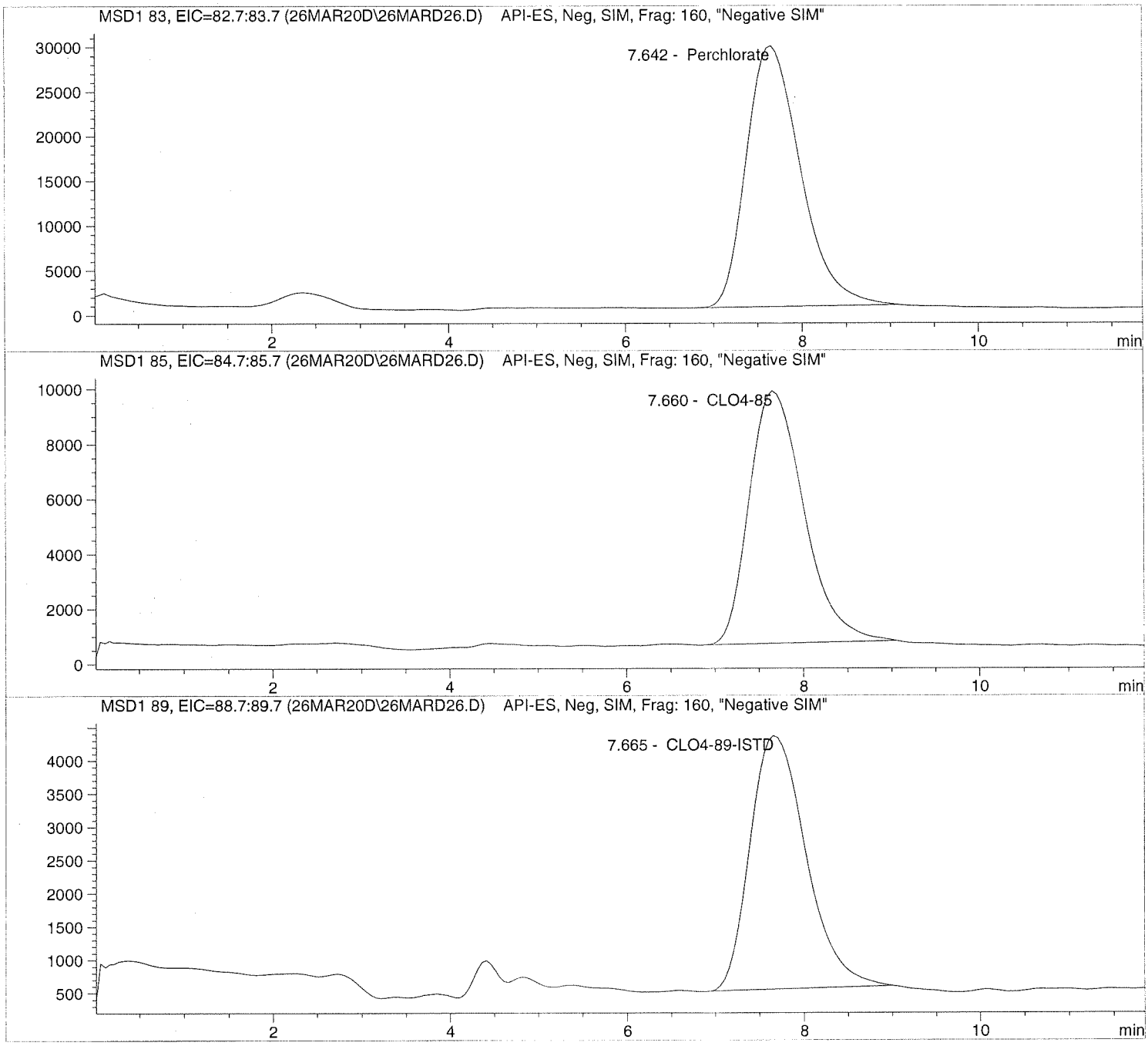
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD26.D Sample Name: 701043 CCV@25

Injection Date:	3/26/2020 14:10:42	Seq Line:	26
Sample Name:	701043 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD26.D Sample Name: 701043 CCV@25

Injection Date:	3/26/2020 14:10:42	Seq Line:	26
Sample Name:	701043 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.642	PBA	1233054.6	25.2923	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.660	PBA	391623.1	26.2521	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.665	PBA	166381.0	5.0000	CLO4-89-ISTD

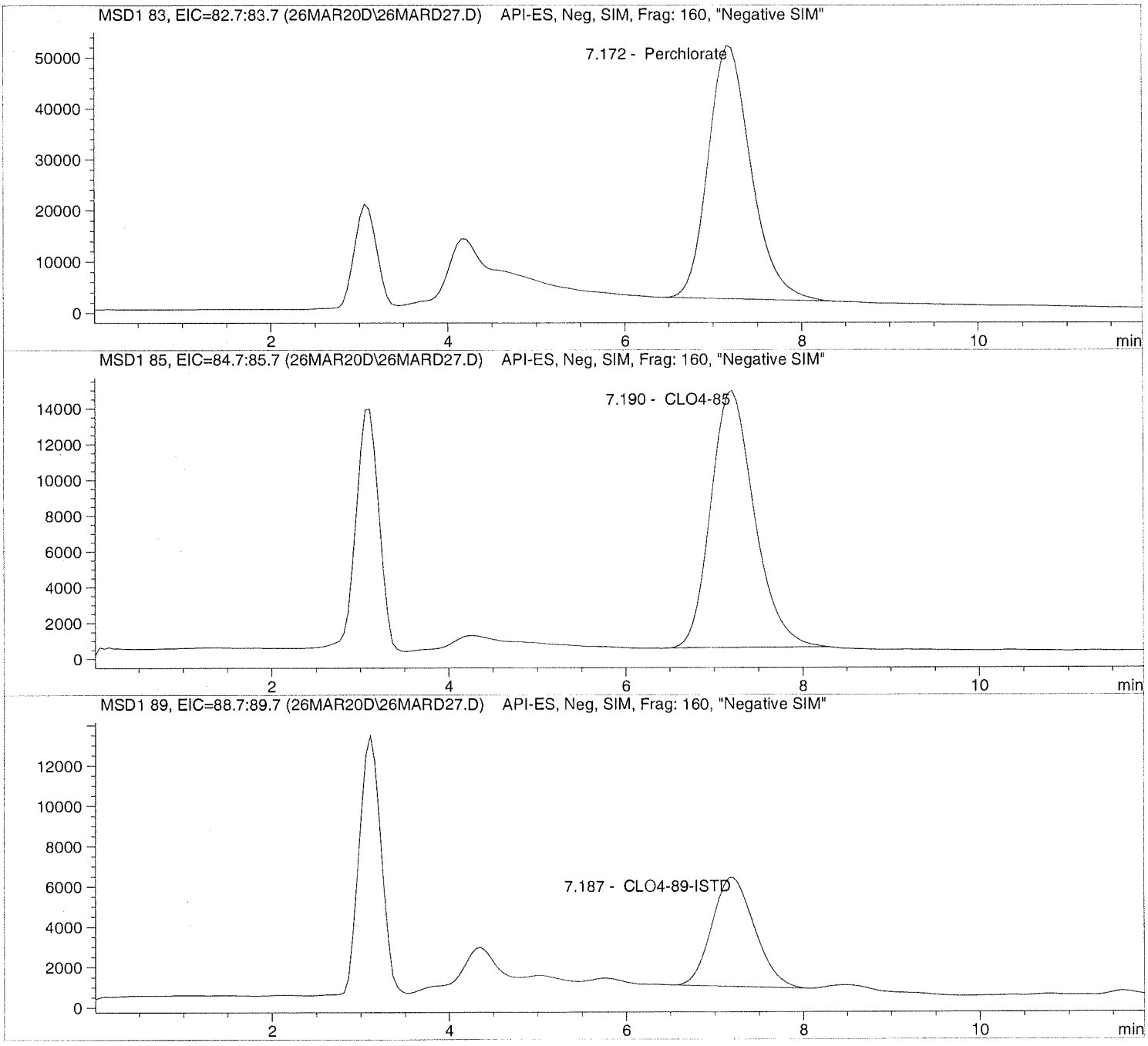
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD27.D Sample Name: 2008062003 10X

Injection Date:	3/26/2020 14:24:42	Seq Line:	27
Sample Name:	2008062003 10X	Location:	Vial 95
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD27.D Sample Name: 2008062003 10X

Injection Date:	3/26/2020 14:24:42	Seq Line:	27
Sample Name:	2008062003 10X	Location:	Vial 95
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	10.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.172	BBA	1661872.5	308.7998	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.190	PBA	489002.0	299.6381	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.187	PBA	179512.0	50.0000	CLO4-89-ISTD

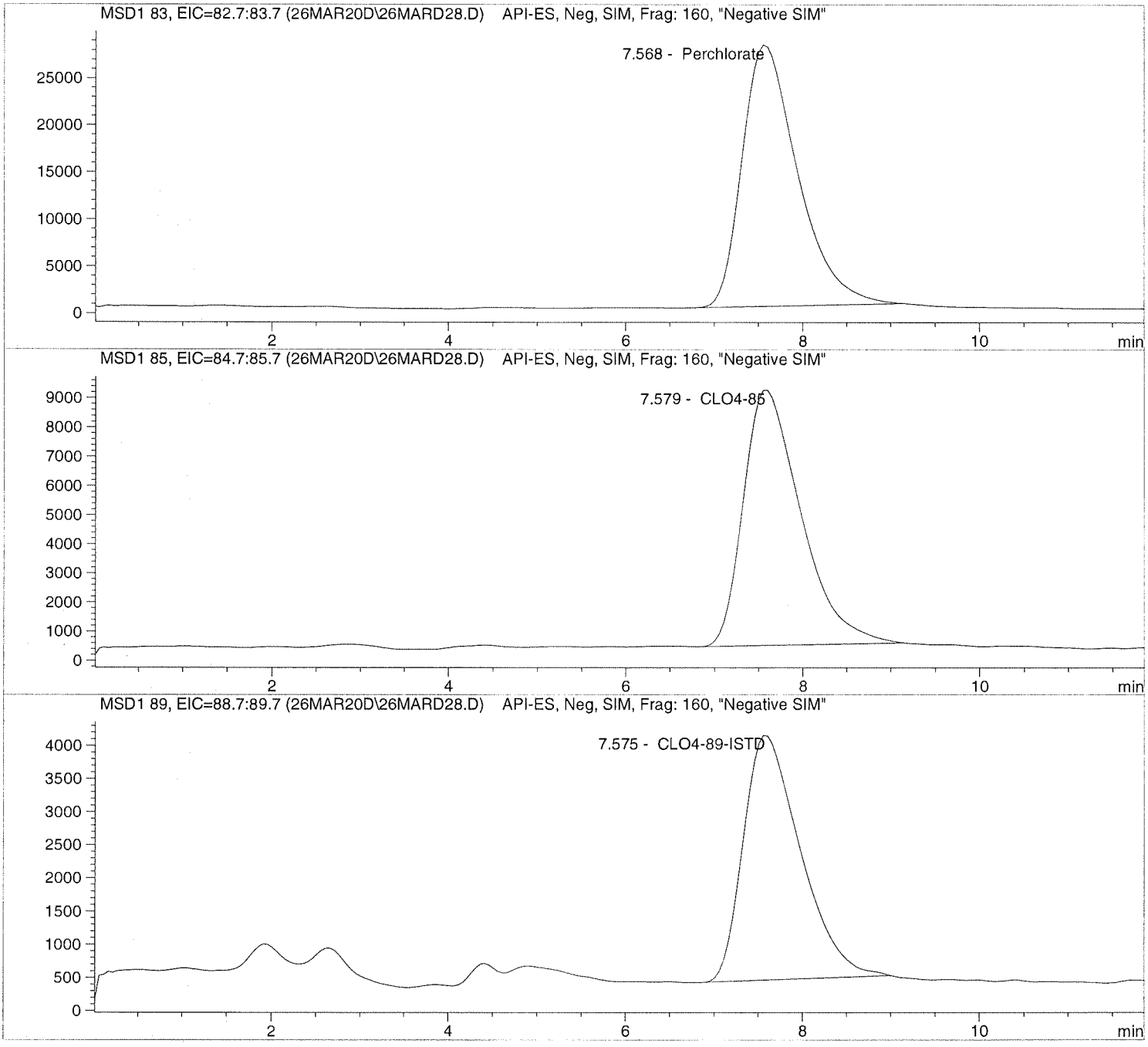
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD28.D Sample Name: 701102 CCV@25

Injection Date:	3/26/2020 14:38:44	Seq Line:	28
Sample Name:	701102 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD28.D Sample Name: 701102 CCV@25

Injection Date:	3/26/2020 14:38:44	Seq Line:	28
Sample Name:	701102 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.568	PBA	1215789.9	25.0215	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.579	PBA	397063.1	26.6375	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.575	PBA	166012.1	5.0000	CLO4-89-ISTD

*** End of Report ***

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

Initial Calibration

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

Calibration Table

Perchlorate

Calib. Data Modified : 9/23/2019 12:20:59 PM

Calculate : Internal Standard
Based on : Peak Area

Rel. Reference Window : 20.000 %
Abs. Reference Window : 0.000 min
Rel. Non-ref. Window : 20.000 %
Abs. Non-ref. Window : 0.000 min
Use Multiplier & Dilution Factor with ISTDs
Uncalibrated Peaks : not reported
Partial Calibration : No recalibration if peaks missing

Curve Type : Quadratic (some peaks differ, see below)
Origin : Ignored (some peaks differ, see below)
Weight : Linear (Amnt) (some peaks differ, see below)

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Default Sample ISTD Information (if not set in sample table):

ISTD #	ISTD Amount	Name
1	5.00000	CLO4-89-ISTD

Signal 1: MSD1 83, EIC=82.7:83.7
Signal 2: MSD1 85, EIC=84.7:85.7
Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Sig	Lvl	Amount	Area	Amt/Area	Ref	Grp	Name
7.750	1	3	1.00000	5.39218e4	1.85454e-5		1	Perchlorate
		4	2.00000	1.32825e5	1.50574e-5			
		5	5.00000	2.76271e5	1.80982e-5			
		6	10.00000	5.61298e5	1.78159e-5			
		7	25.00000	1.51820e6	1.64669e-5			
		8	50.00000	3.31156e6	1.50986e-5			
		9	75.00000	5.23914e6	1.43153e-5			
7.767	3	3	5.00000	2.14568e5	2.33026e-5	+I1		CLO4-89-ISTD
		4	5.00000	2.04758e5	2.44190e-5			
		5	5.00000	2.13407e5	2.34294e-5			
		6	5.00000	2.09246e5	2.38953e-5			
		7	5.00000	2.07403e5	2.41077e-5			
		8	5.00000	2.02929e5	2.46391e-5			
		9	5.00000	1.97933e5	2.52611e-5			
7.778	2	3	1.00000	1.70436e4	5.86732e-5		1	CLO4-85
		4	2.00000	4.20754e4	4.75337e-5			
		5	5.00000	9.24707e4	5.40712e-5			
		6	10.00000	1.68622e5	5.93041e-5			
		7	25.00000	4.63724e5	5.39114e-5			
		8	50.00000	9.95933e5	5.02042e-5			

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

RetTime [min]	Sig	Lvl	Amount	Area	Amt/Area	Ref	Grp	Name
		9	75.00000	1.58066e6	4.74484e-5			

More compound-specific settings:

Compound: Perchlorate
- Time Window : From 3.581 min To 11.899 min
- Curve Type : Quadratic
- Origin : Ignored
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 0.5
  - Level 5 : 0.2
  - Level 6 : 0.1
  - Level 7 : 0.04
  - Level 8 : 0.02
  - Level 9 : 0.013333

Compound: CLO4-89-ISTD
- Time Window : From 3.581 min To 11.896 min
- Curve Type : Linear
- Origin : Included
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 1
  - Level 5 : 1
  - Level 6 : 1
  - Level 7 : 1
  - Level 8 : 1
  - Level 9 : 1

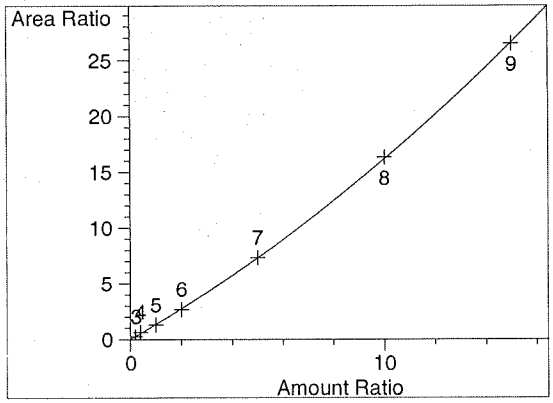
Compound: CLO4-85
- Time Window : From 3.601 min To 11.913 min
- Curve Type : Quadratic
- Origin : Ignored
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 0.5
  - Level 5 : 0.2
  - Level 6 : 0.1
  - Level 7 : 0.04
  - Level 8 : 0.02
  - Level 9 : 0.013333

Peak Sum Table

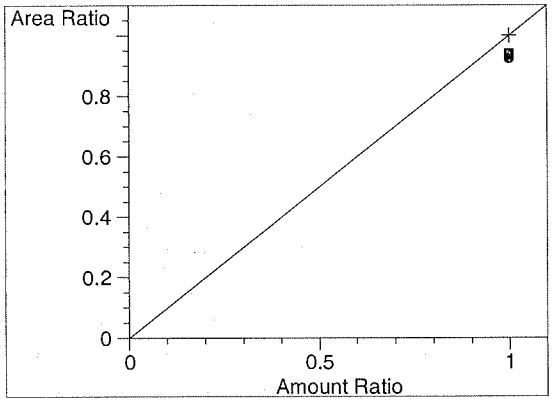
No Entries in table

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

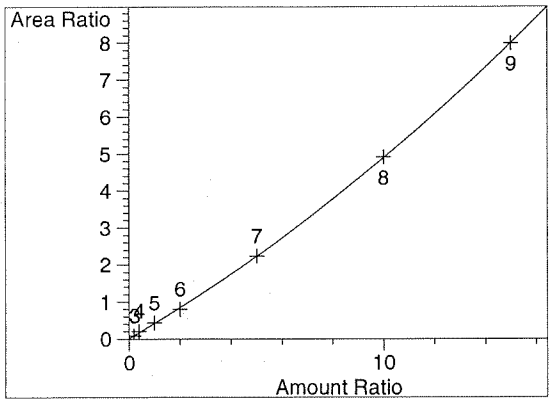
Calibration Curves



Perchlorate at exp. RT: 7.750
MSD1 83, EIC=82.7:83.7
Correlation: 0.99975
Residual Std. Dev.: 0.10284
Formula: $y = ax^2 + bx + c$
a: 3.10463e-2
b: 1.30369
c: 2.19496e-2
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 0.5
Level 5 : 0.2
Level 6 : 0.1
Level 7 : 0.04
Level 8 : 0.02
Level 9 : 0.013333



CLO4-89-ISTD at exp. RT: 7.767
MSD1 89, EIC=88.7:89.7
Correlation: 1.00000
Residual Std. Dev.: 0.00000
Formula: $y = mx + b$
m: 1.00000
b: 0.00000
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 1
Level 5 : 1
Level 6 : 1
Level 7 : 1
Level 8 : 1
Level 9 : 1



CLO4-85 at exp. RT: 7.778
MSD1 85, EIC=84.7:85.7
Correlation: 0.99969
Residual Std. Dev.: 0.02601
Formula: $y = ax^2 + bx + c$
a: 8.85207e-3
b: 3.99283e-1
c: 1.33505e-2
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 0.5
Level 5 : 0.2
Level 6 : 0.1
Level 7 : 0.04
Level 8 : 0.02
Level 9 : 0.013333

Batch Report: C:\HPCHEM\1\DATA\20SEP19I\20SEP19D.B

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DP3.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorat RT	Perchlorate Amount
#*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	5.39218e4	7.750	8.75982e-1
#*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	1.32825e5	7.797	2.37682
#*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	2.76271e5	7.770	4.77237
#*	CLO4@ 10.ug/L	Vial 76	1	Control	6	5.61298e5	7.785	9.75097
#*	CLO4@ 25.ug/L	Vial 77	1	Control	7	1.51820e6	7.741	25.01082
#*	CLO4@ 50.ug/L	Vial 78	1	Control	8	3.31156e6	7.775	50.40300
#*	CLO4@ 75.ug/L	Vial 79	1	Control	9	5.23914e6	7.736	74.79107
#*	ICAL Verf@10ug/L	Vial 80	1	Control	11	5.74879e5	7.756	10.11855

#	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-IS RT	CLO4-89-ISTD Amount
#*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	2.14568e5	7.767	5.00000
#*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	2.04758e5	7.816	5.00000
#*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	2.13407e5	7.793	5.00000
#*	CLO4@ 10.ug/L	Vial 76	1	Control	6	2.09246e5	7.798	5.00000
#*	CLO4@ 25.ug/L	Vial 77	1	Control	7	2.07403e5	7.763	5.00000
#*	CLO4@ 50.ug/L	Vial 78	1	Control	8	2.02929e5	7.800	5.00000
#*	CLO4@ 75.ug/L	Vial 79	1	Control	9	1.97933e5	7.765	5.00000
#*	ICAL Verf@10ug/L	Vial 80	1	Control	11	2.06243e5	7.776	5.00000

#	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
#*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	1.70436e4	7.778	8.24488e-1
#*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	4.20754e4	7.805	2.38090
#*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	9.24707e4	7.787	5.14166
#*	CLO4@ 10.ug/L	Vial 76	1	Control	6	1.68622e5	7.781	9.52209
#*	CLO4@ 25.ug/L	Vial 77	1	Control	7	4.63724e5	7.760	25.04916
#*	CLO4@ 50.ug/L	Vial 78	1	Control	8	9.95933e5	7.793	50.14223
#*	CLO4@ 75.ug/L	Vial 79	1	Control	9	1.58066e6	7.758	74.93659
#*	ICAL Verf@10ug/L	Vial 80	1	Control	11	1.71000e5	7.760	9.79043

*** End of Report ***

Sequence: C:\HPCHEM\1\SEQUENCE\CLO4\2019\SEP\20SEP19I.S

Sequence Table:

Method and Injection Info Part:

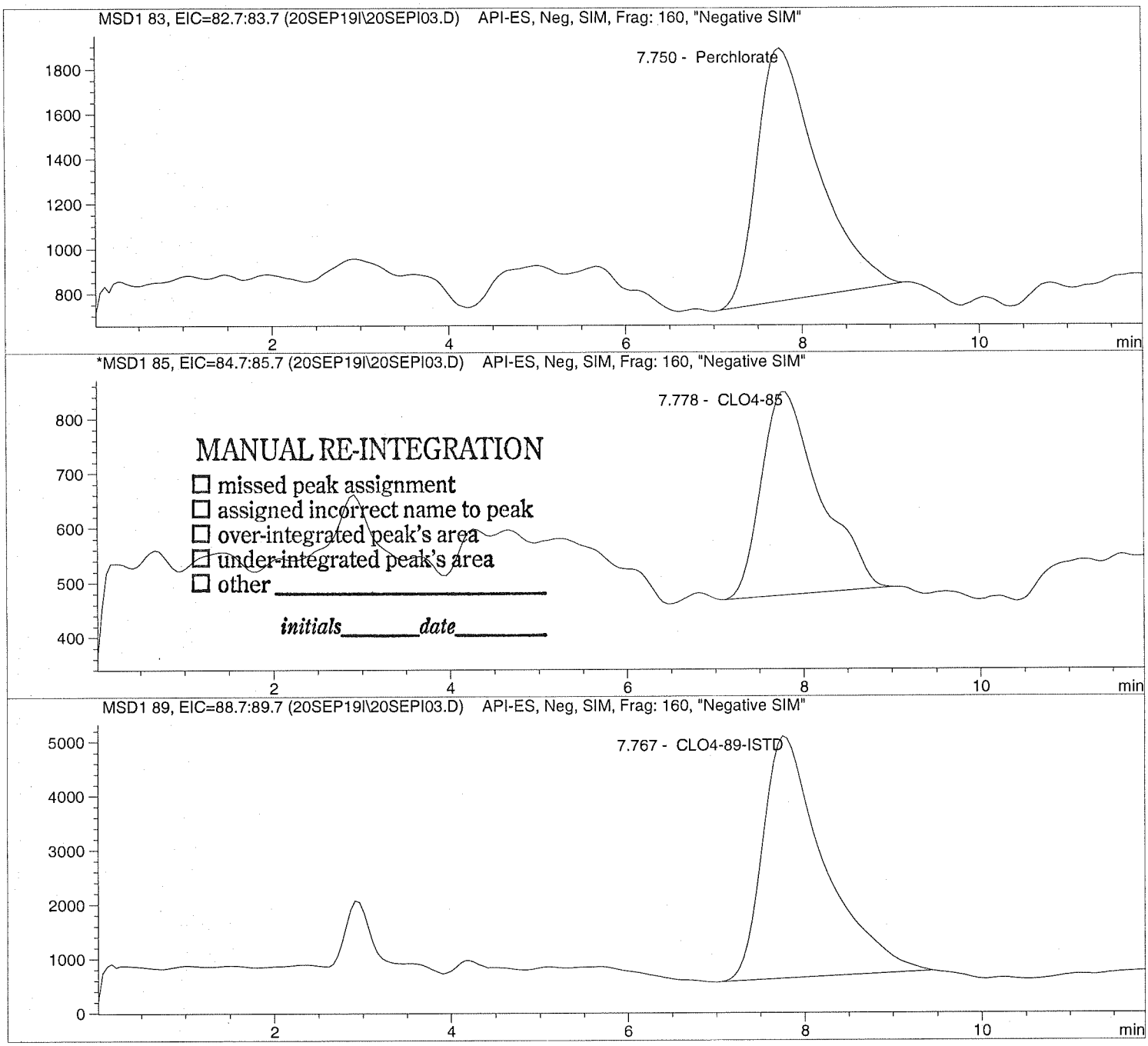
Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 71	CLO4@ 0.2ug/L	CLO4-AQN	1	Ctrl Samp		
2	Vial 72	CLO4@ 0.5ug/L	CLO4-AQN	1	Ctrl Samp		
3	Vial 73	CLO4@ 1.0ug/L	CLO4-AQN	1	Ctrl Samp		
4	Vial 74	CLO4@ 2.0ug/L	CLO4-AQN	1	Ctrl Samp		
5	Vial 75	CLO4@ 5.0ug/L	CLO4-AQN	1	Ctrl Samp		
6	Vial 76	CLO4@ 10.ug/L	CLO4-AQN	1	Ctrl Samp		
7	Vial 77	CLO4@ 25.ug/L	CLO4-AQN	1	Ctrl Samp		
8	Vial 78	CLO4@ 50.ug/L	CLO4-AQN	1	Ctrl Samp		
9	Vial 79	CLO4@ 75.ug/L	CLO4-AQN	1	Ctrl Samp		
10	Vial 71	CLO4@ 0.2ug/L	CLO4-AQN	1	Ctrl Samp		
11	Vial 80	ICAL Verf@10ug/L	CLO4-AQN	1	Ctrl Samp		

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.750	PBA	53921.8	0.8760	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.778	MM	17043.6	0.8245	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.767	PBA	214568.1	5.0000	CLO4-89-ISTD

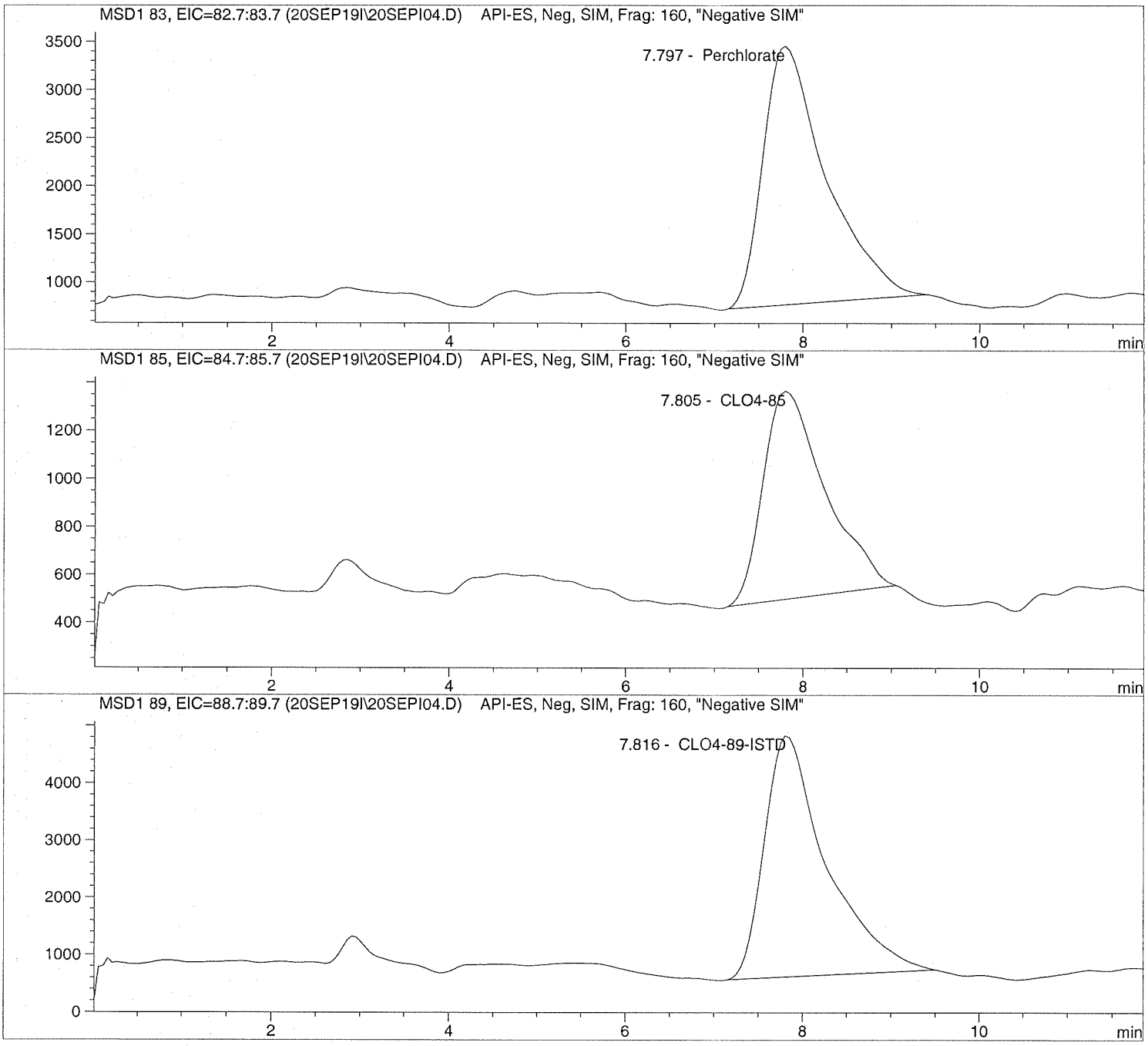
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI04.D Sample Name: CLO4@ 2.0ug/L

Injection Date:	9/20/2019 09:37:58	Seq Line:	4
Sample Name:	CLO4@ 2.0ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI04.D Sample Name: CLO4@ 2.0ug/L

Injection Date:	9/20/2019 09:37:58	Seq Line:	4
Sample Name:	CLO4@ 2.0ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	2.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.797	PBA	132825.2	2.3768	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.805	PBA	42075.4	2.3809	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.816	PBA	204758.3	5.0000	CLO4-89-ISTD

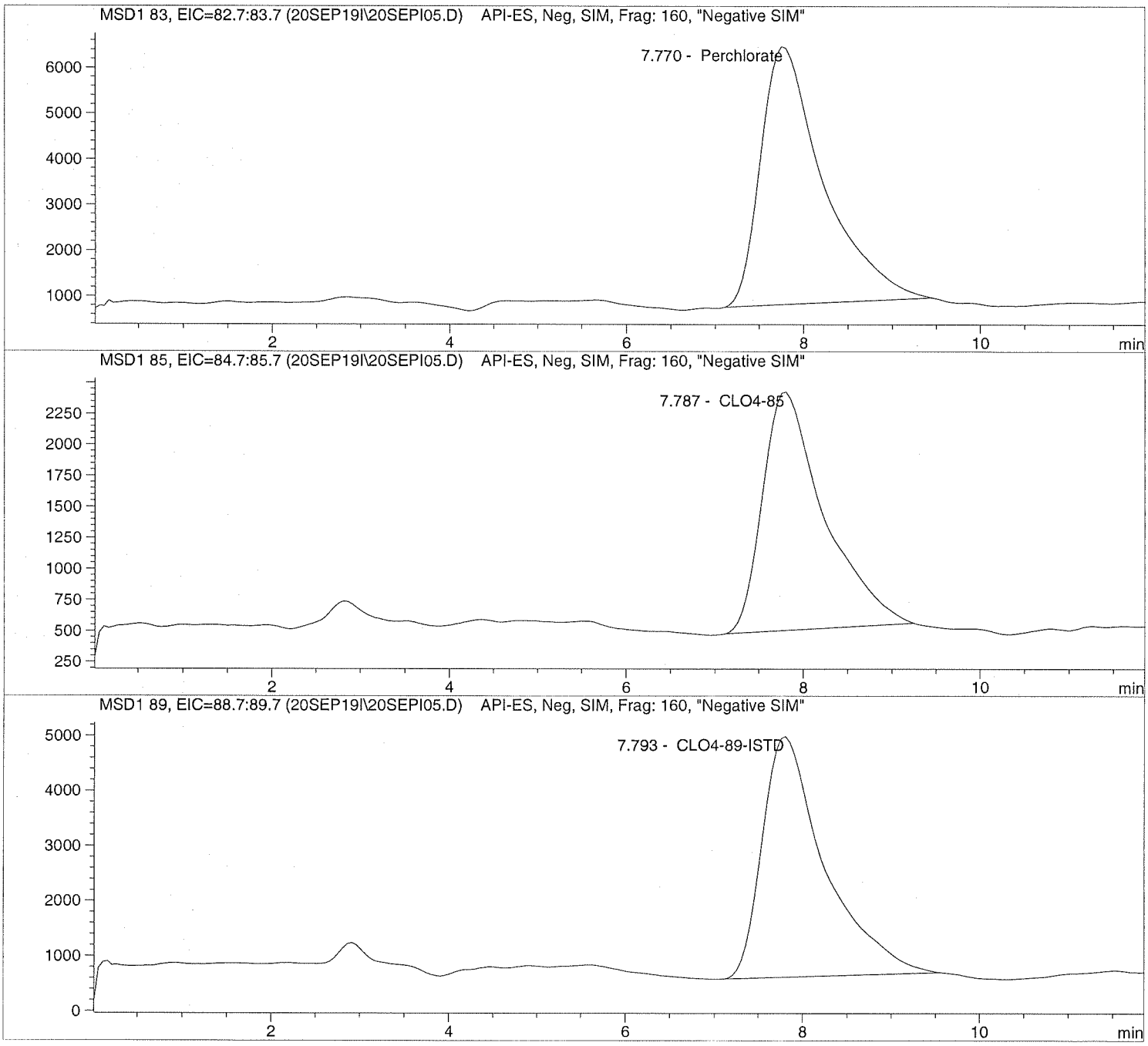
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI05.D Sample Name: CLO4@ 5.0ug/L

Injection Date:	9/20/2019 09:51:49	Seq Line:	5
Sample Name:	CLO4@ 5.0ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI05.D Sample Name: CLO4@ 5.0ug/L

Injection Date:	9/20/2019 09:51:49	Seq Line:	5
Sample Name:	CLO4@ 5.0ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	5.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.770	PBA	276270.7	4.7724	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.787	PBA	92470.7	5.1417	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.793	PBA	213407.0	5.0000	CLO4-89-ISTD

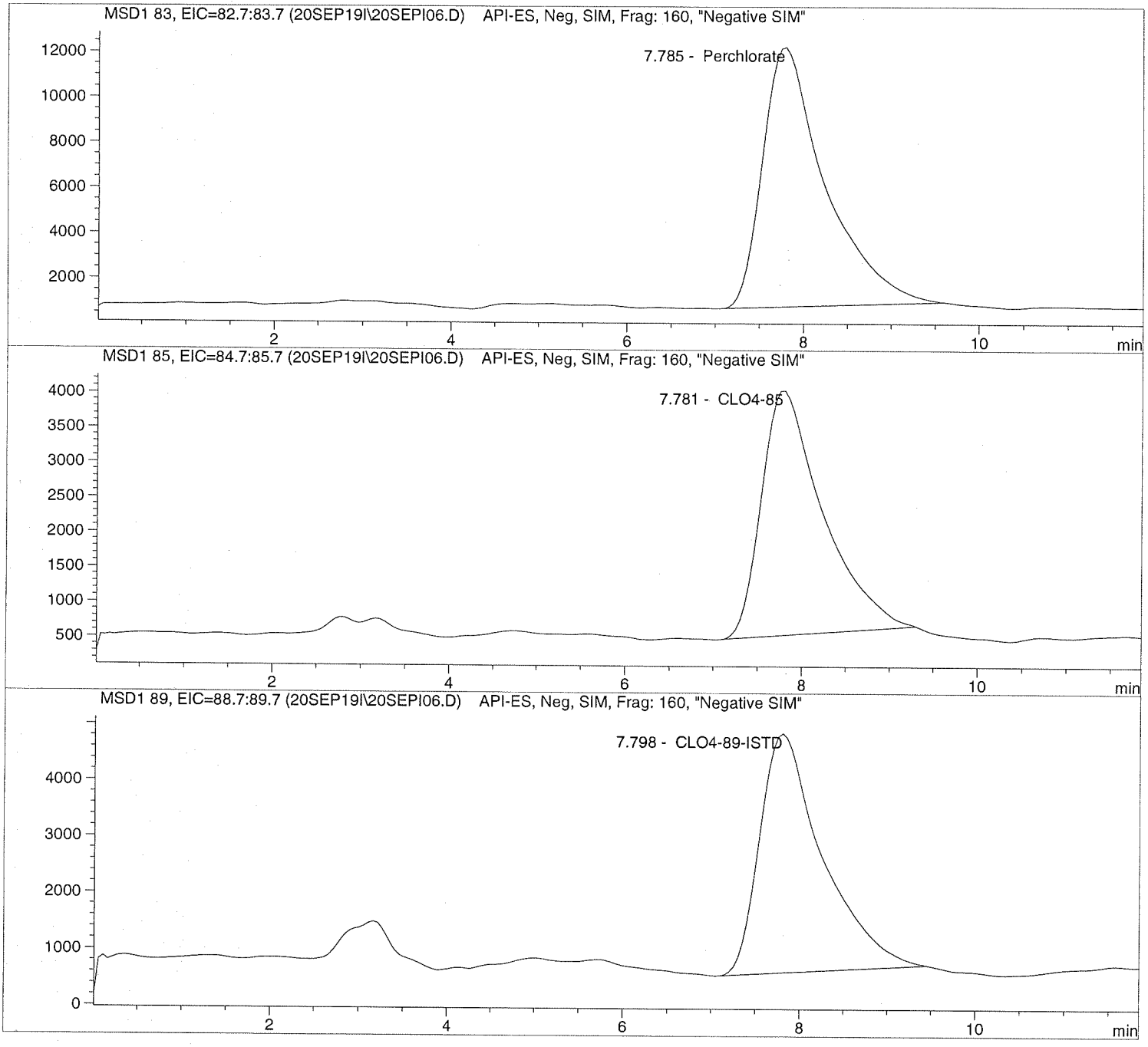
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI06.D Sample Name: CLO4@ 10.ug/L

Injection Date:	9/20/2019 10:05:36	Seq Line:	6
Sample Name:	CLO4@ 10.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI06.D Sample Name: CLO4@ 10.ug/L

Injection Date:	9/20/2019 10:05:36	Seq Line:	6
Sample Name:	CLO4@ 10.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.785	PBA	561297.7	9.7510	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.781	PBA	168622.4	9.5221	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.798	PBA	209246.3	5.0000	CLO4-89-ISTD

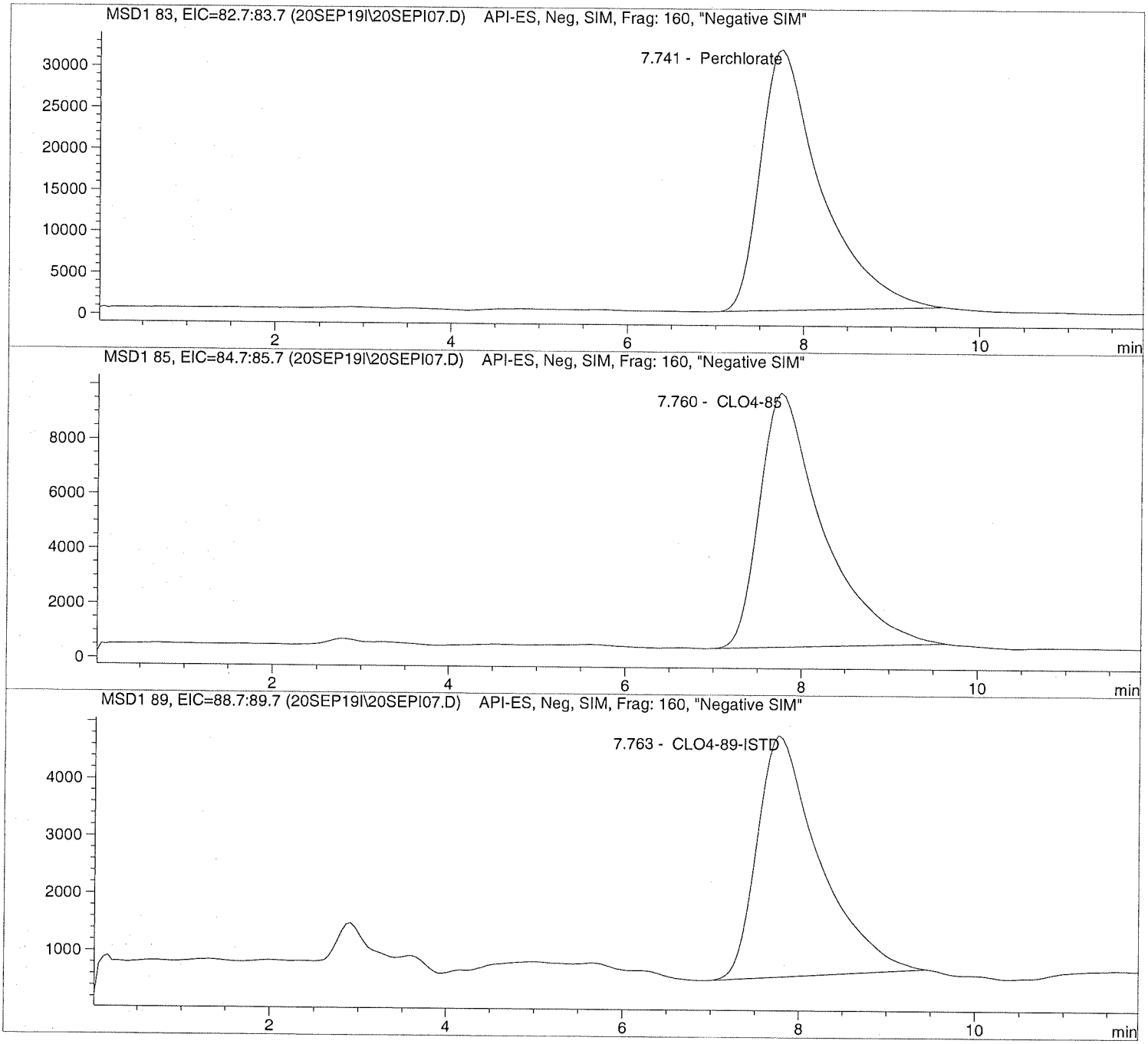
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI07.D Sample Name: CLO4@ 25.ug/L

Injection Date:	9/20/2019 10:19:23	Seq Line:	7
Sample Name:	CLO4@ 25.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI07.D Sample Name: CLO4@ 25.ug/L

Injection Date:	9/20/2019 10:19:23	Seq Line:	7
Sample Name:	CLO4@ 25.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.741	PBA	1518197.9	25.0108	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.760	PBA	463724.0	25.0492	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.763	PBA	207402.8	5.0000	CLO4-89-ISTD

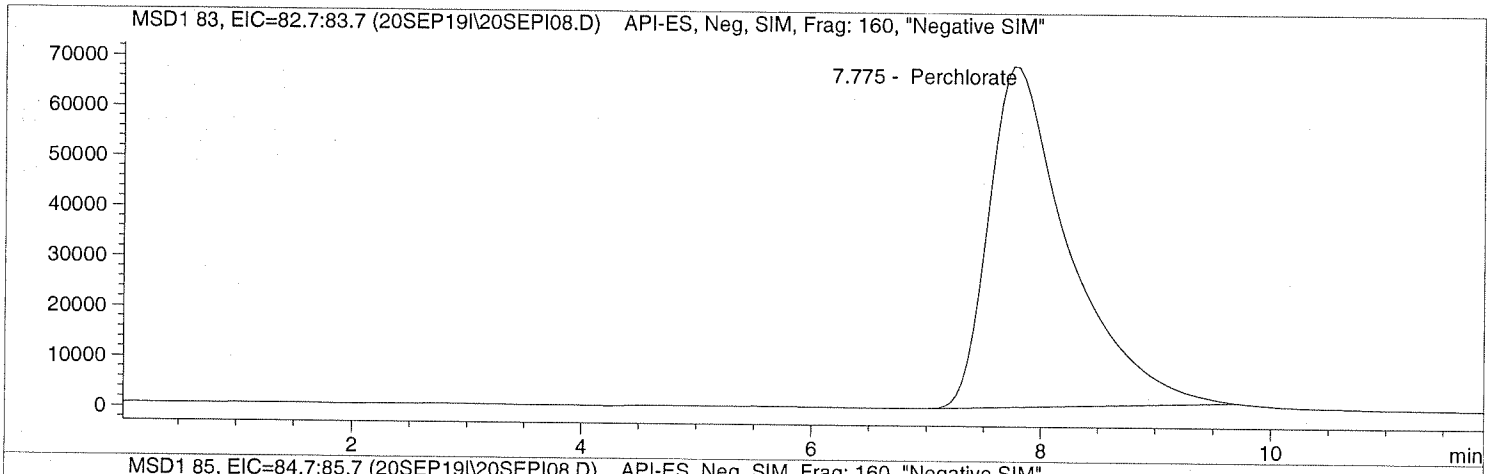
*** End of Report ***

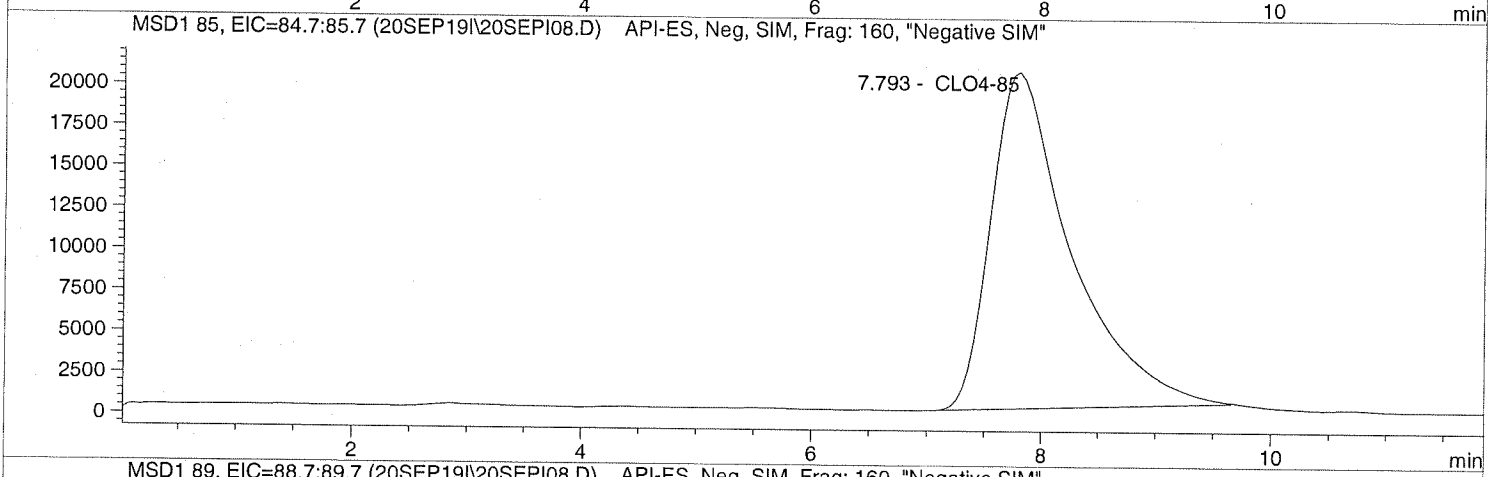
Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI08.D Sample Name: CLO4@ 50.ug/L

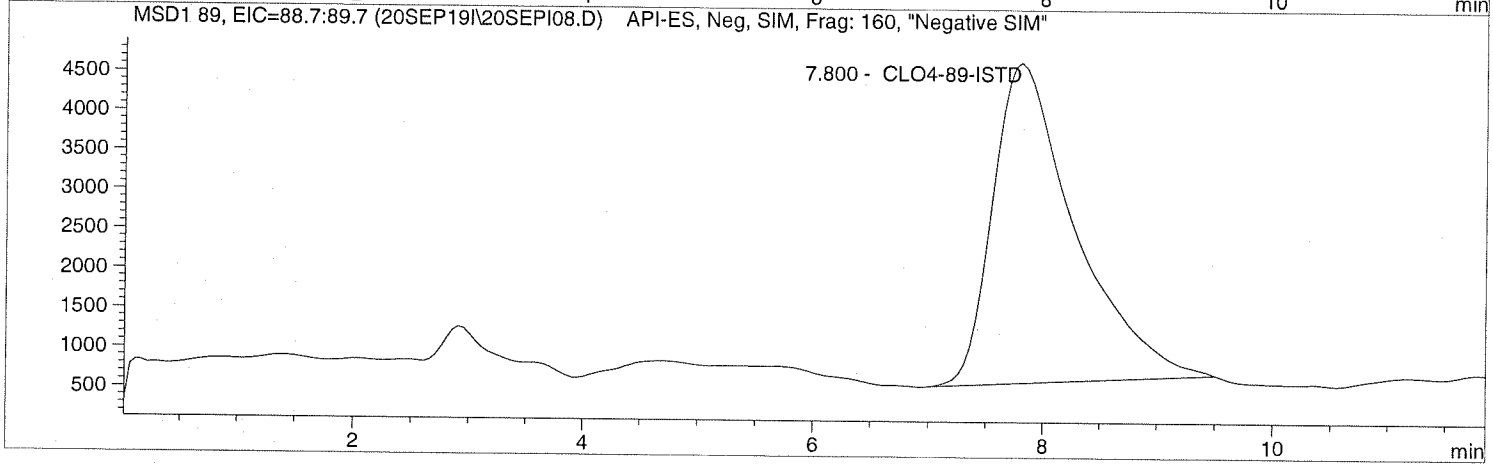
Injection Date:	9/20/2019 10:33:18	Seq Line:	8
Sample Name:	CLO4@ 50.ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI08.D Sample Name: CLO4@ 50.ug/L

Injection Date:	9/20/2019 10:33:18	Seq Line:	8
Sample Name:	CLO4@ 50.ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	50.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.775	PBA	3311559.2	50.4030	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.793	PBA	995933.0	50.1422	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.800	PBA	202929.2	5.0000	CLO4-89-ISTD

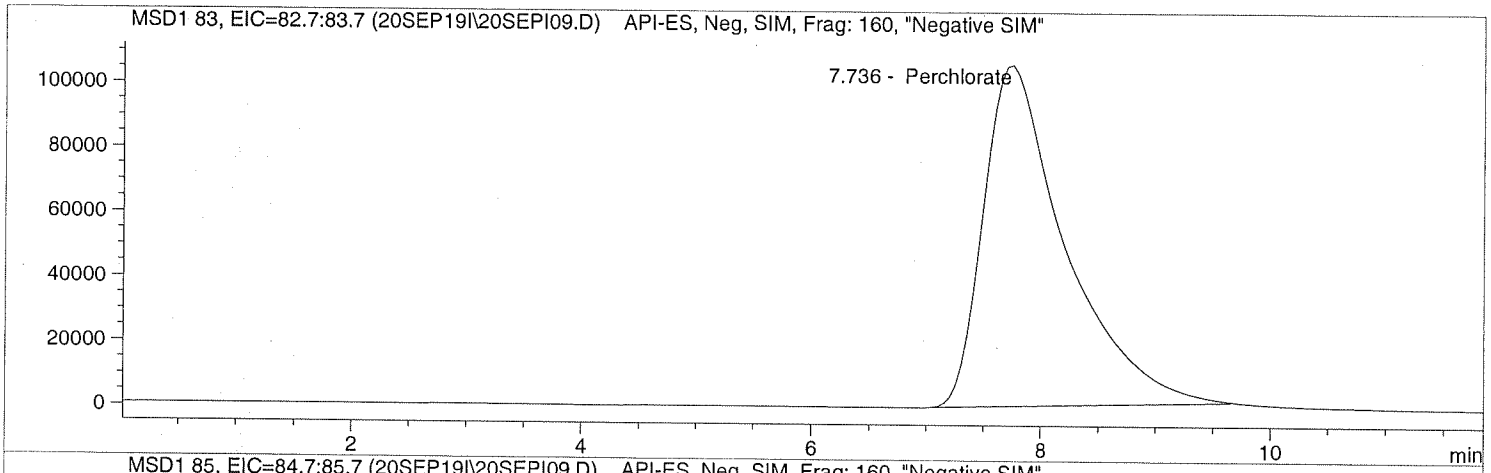
*** End of Report ***

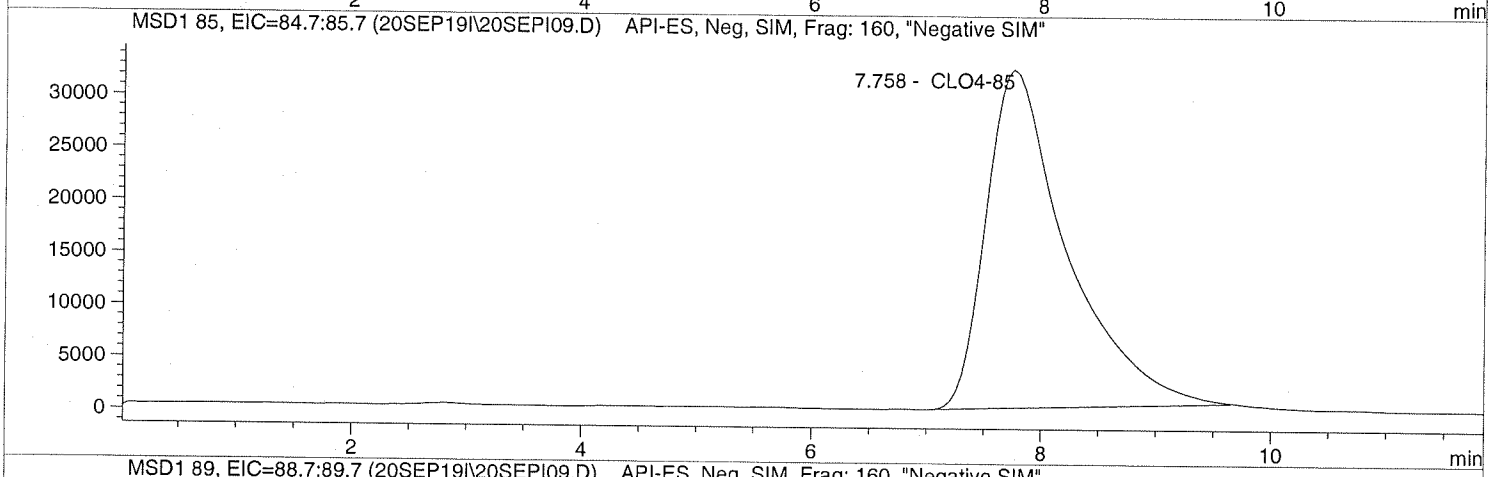
Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI09.D Sample Name: CLO4@ 75.ug/L

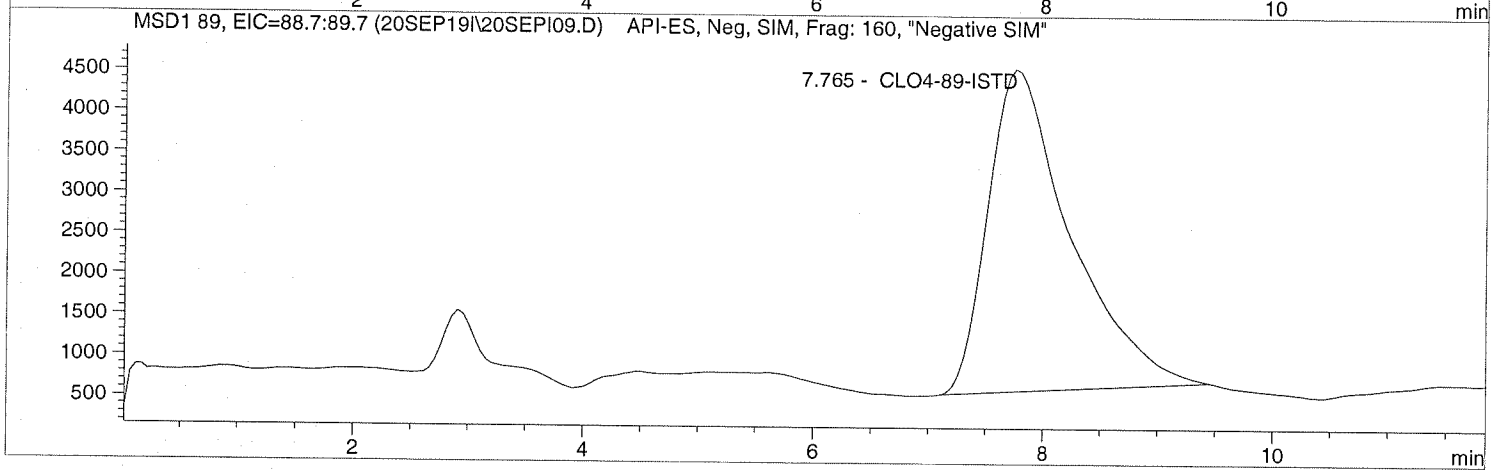
Injection Date:	9/20/2019 10:47:05	Seq Line:	9
Sample Name:	CLO4@ 75.ug/L	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI09.D Sample Name: CLO4@ 75.ug/L

Injection Date:	9/20/2019 10:47:05	Seq Line:	9
Sample Name:	CLO4@ 75.ug/L	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	75.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.736	PBA	5239145.0	74.7911	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.758	PBA	1580664.2	74.9366	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.765	PBA	197932.5	5.0000	CLO4-89-ISTD

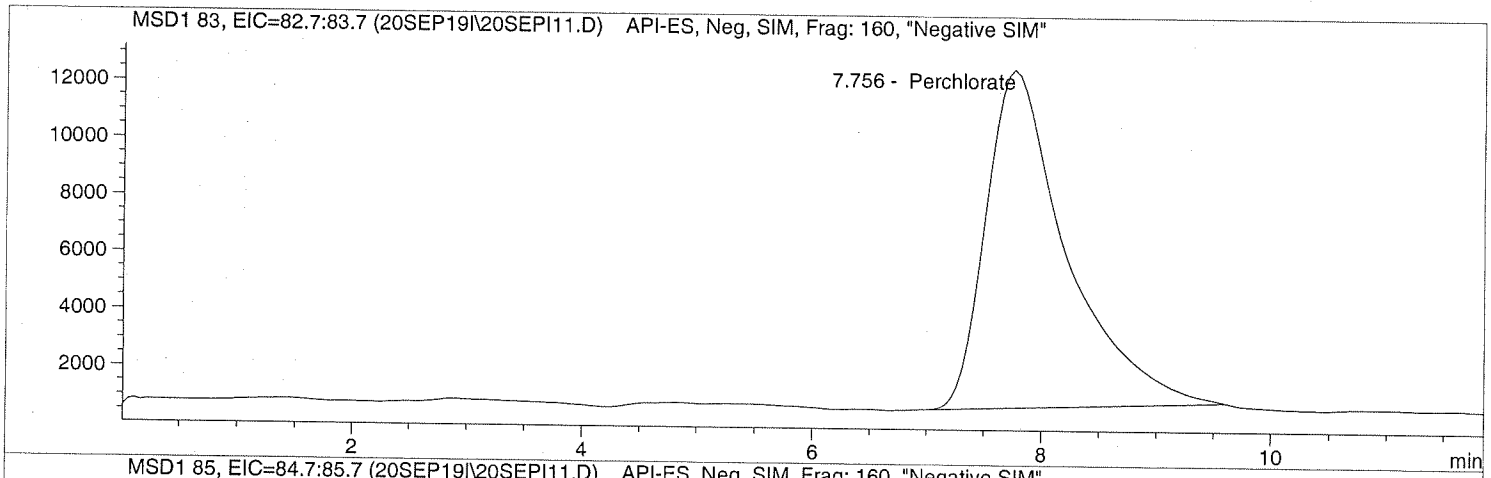
*** End of Report ***

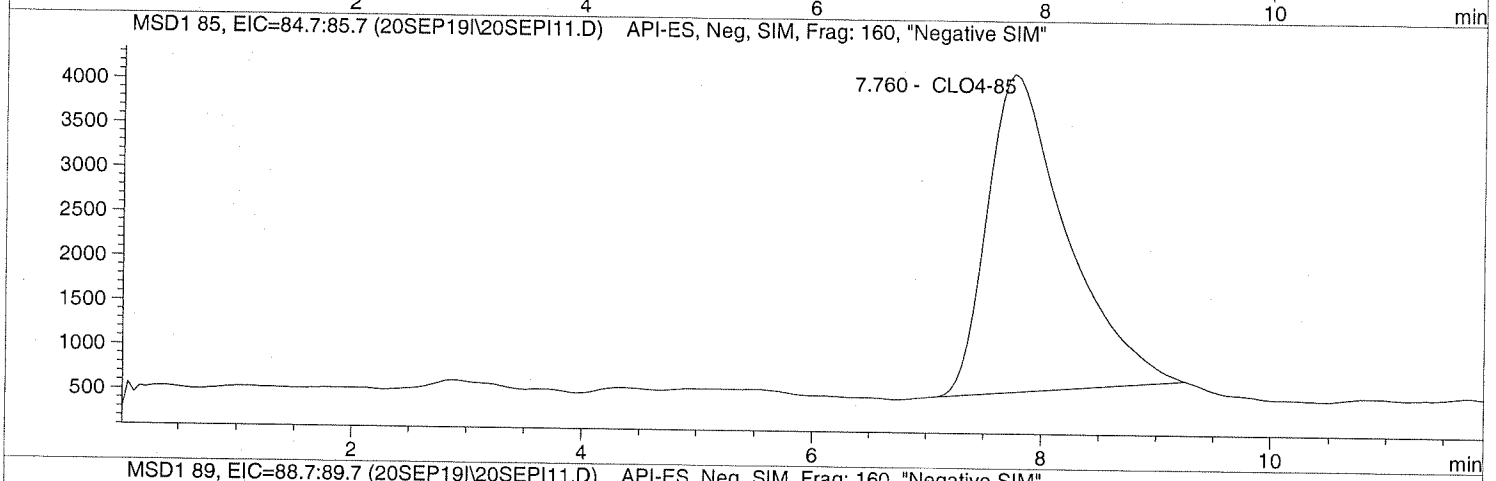
Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI11.D Sample Name: ICAL Verf@10ug/L

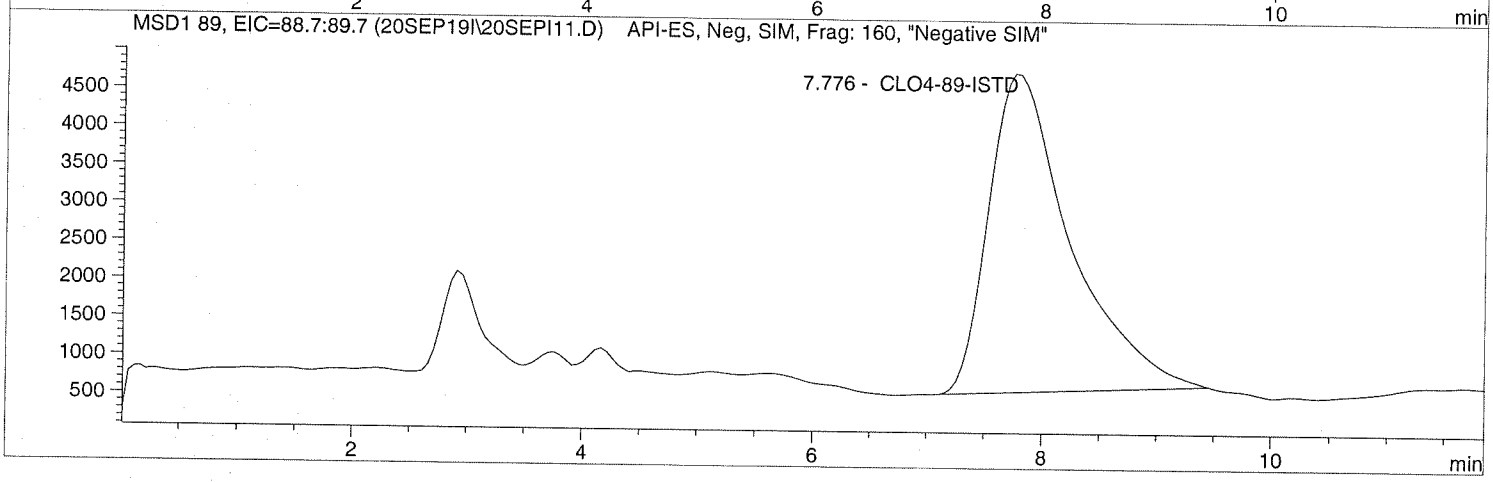
Injection Date:	9/20/2019 11:14:45	Seq Line:	11
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI11.D Sample Name: ICAL Verf@10ug/L

Injection Date:	9/20/2019 11:14:45	Seq Line:	11
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.756	PBA	574879.4	10.1185	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.760	PBA	171000.4	9.7904	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.776	PBA	206243.3	5.0000	CLO4-89-ISTD

*** End of Report ***

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

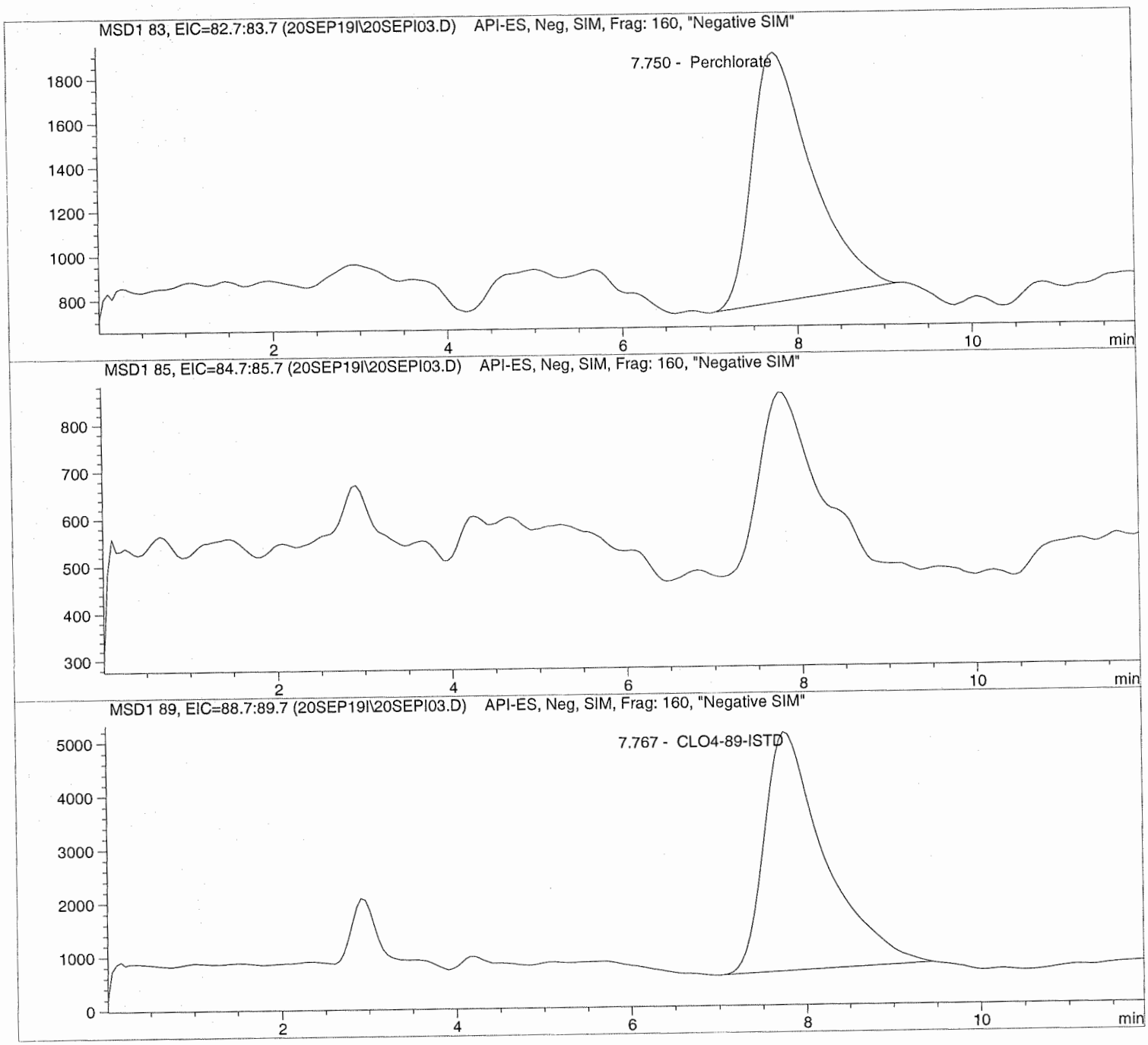
Unmodified

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:27:11

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	9/23/2019 12:27:11

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.750	PBA	53921.8	0.8760	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.767	PBA	214568.1	5.0000	CLO4-89-ISTD

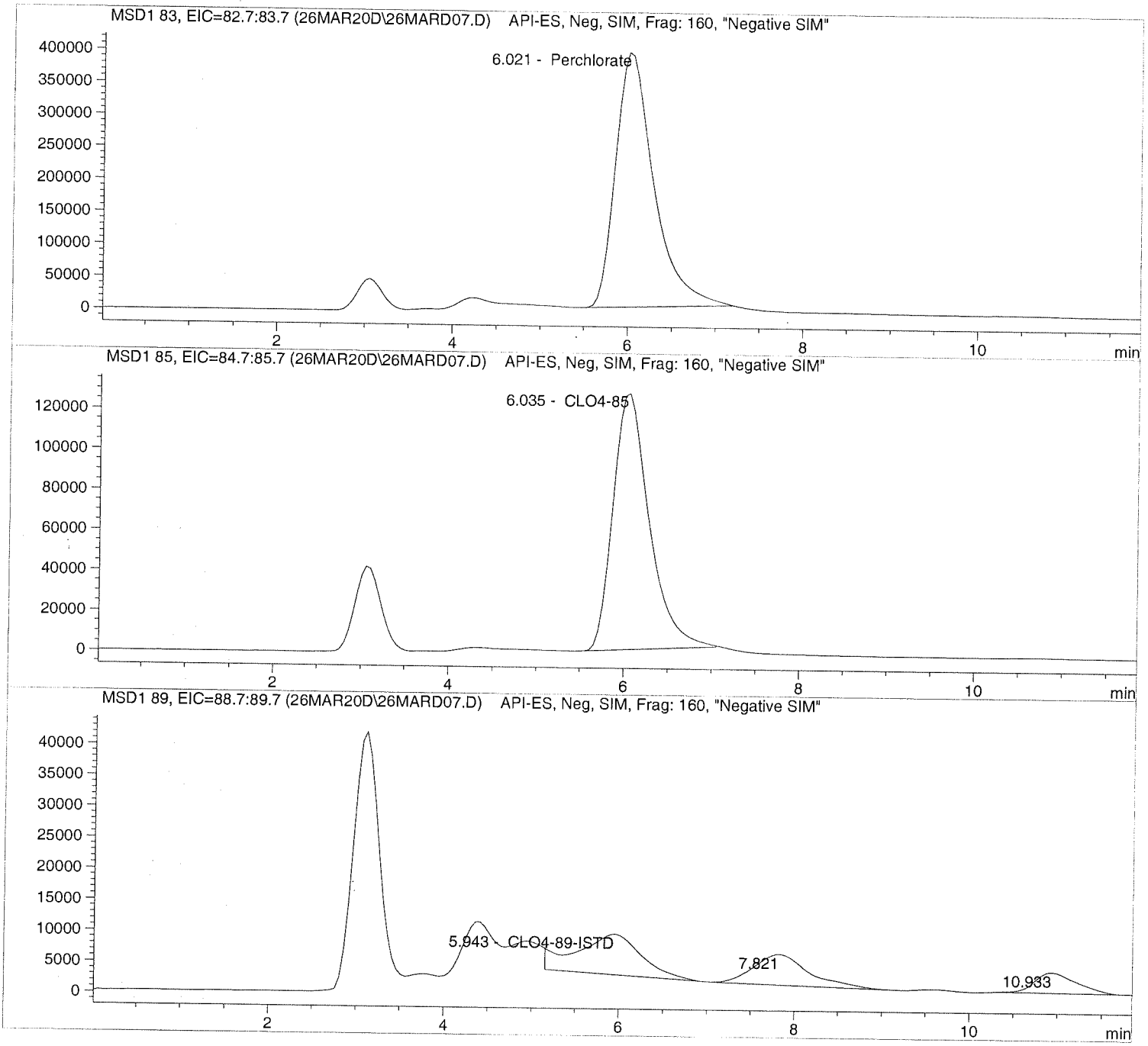
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD07.D Sample Name: 2008062003

Injection Date:	3/26/2020 09:44:40	Seq Line:	7
Sample Name:	2008062003	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD07.D Sample Name: 2008062003

Injection Date:	3/26/2020 09:44:40	Seq Line:	7
Sample Name:	2008062003	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.021	PBA	11797552.0	94.0331	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.035	PBA	3623208.0	95.7707	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
5.943	BB	332132.3	5.0000	CLO4-89-ISTD
7.821	VBA	216345.0	0.0000	
10.933	PPA	109265.2	0.0000	

*** End of Report ***

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WorkOrder: HS20030888

Longhorn Army Ammunition Plant - 16

Aptim Environmental & Infrastucture, Inc.

Susan Huang
2500 City West Blvd., Suite 1700
Houston TX 77042

24-Apr-2020

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COC

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HS20030888 ALS Salt Lake City Combined Report 2008310

HS20030888 8260 Raw Data

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HS20030888 Longhorn Army Ammunition Plant
16 Final

ALS WO# HS20030888

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April 02, 2020

Susan Huang
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS20030888**

Laboratory Results for: **Longhorn Army Ammunition Plant - 16**

Dear Susan,

ALS Environmental received 11 sample(s) on Mar 19, 2020 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: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Work Order: HS20030888

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20030888-01	16WW44-200317	Groundwater		17-Mar-2020 08:20	19-Mar-2020 08:50	☐
HS20030888-02	16WW37-200317	Groundwater		17-Mar-2020 09:15	19-Mar-2020 08:50	☐
HS20030888-03	16WW38-200317	Groundwater		17-Mar-2020 10:00	19-Mar-2020 08:50	☐
HS20030888-04	16WW14-200317	Groundwater		17-Mar-2020 10:50	19-Mar-2020 08:50	☐
HS20030888-05	16RW06-200317	Groundwater		17-Mar-2020 11:40	19-Mar-2020 08:50	☐
HS20030888-06	16PM03-200317	Groundwater		17-Mar-2020 12:35	19-Mar-2020 08:50	☐
HS20030888-07	16PM02-200317	Groundwater		17-Mar-2020 13:25	19-Mar-2020 08:50	☐
HS20030888-08	16RW07-200317	Groundwater		17-Mar-2020 14:15	19-Mar-2020 08:50	☐
HS20030888-09	16RW11-200317	Groundwater		17-Mar-2020 15:00	19-Mar-2020 08:50	☐
HS20030888-10	16WW51-200317	Groundwater		17-Mar-2020 15:50	19-Mar-2020 08:50	☐
HS20030888-11	Trip Blank	Water	CG-021720-07	17-Mar-2020 00:00	19-Mar-2020 08:50	☐

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Work Order: HS20030888

CASE NARRATIVE

Work Order Comments

- The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.
- The analysis for Perchlorate was subcontracted to ALS Salt Lake City, UT. Final report attached.

GCMS Volatiles by Method SW8260

Batch ID: R358682,R358746,R358758,R358856

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R359369

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW44-200317
Collection Date: 17-Mar-2020 08:20

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	22-Mar-2020 14:44
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:44
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:44
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:44
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	22-Mar-2020 14:44
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:44
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:44
Surr: 1,2-Dichloroethane-d4	*89.5*			**0**	*81-118*	*%REC*	*1*	*22-Mar-2020 14:44*
Surr: 4-Bromofluorobenzene	*98.0*			**0**	*85-114*	*%REC*	*1*	*22-Mar-2020 14:44*
Surr: Dibromofluoromethane	*95.9*			**0**	*80-119*	*%REC*	*1*	*22-Mar-2020 14:44*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*22-Mar-2020 14:44*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW37-200317
Collection Date: 17-Mar-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	22-Mar-2020 21:56
1,1-Dichloroethene	**0.82**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 21:56
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 21:56
cis-1,2-Dichloroethene	**6.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 21:56
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	22-Mar-2020 21:56
Trichloroethene	**110**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 21:56
Vinyl chloride	**2.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 21:56
Surr: 1,2-Dichloroethane-d4	*90.5*			**0**	*81-118*	*%REC*	*1*	*22-Mar-2020 21:56*
Surr: 4-Bromofluorobenzene	*96.6*			**0**	*85-114*	*%REC*	*1*	*22-Mar-2020 21:56*
Surr: Dibromofluoromethane	*94.6*			**0**	*80-119*	*%REC*	*1*	*22-Mar-2020 21:56*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*22-Mar-2020 21:56*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW38-200317
Collection Date: 17-Mar-2020 10:00

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	2.5	U	1.5	2.5	5.0	UG/L	5	24-Mar-2020 03:44
1,1-Dichloroethene	**13**		**1.0**	**2.5**	**5.0**	**UG/L**	5	24-Mar-2020 03:44
1,2-Dichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	24-Mar-2020 03:44
cis-1,2-Dichloroethene	**200**		**1.0**	**2.5**	**5.0**	**UG/L**	5	24-Mar-2020 03:44
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	24-Mar-2020 03:44
Trichloroethene	**3,000**		**10**	**25**	**50**	**UG/L**	50	24-Mar-2020 04:57
Vinyl chloride	**95**		**1.0**	**2.5**	**5.0**	**UG/L**	5	24-Mar-2020 03:44
Surr: 1,2-Dichloroethane-d4	*90.4*			**0**	*81-118*	*%REC*	*50*	*24-Mar-2020 04:57*
Surr: 1,2-Dichloroethane-d4	*90.2*			**0**	*81-118*	*%REC*	*5*	*24-Mar-2020 03:44*
Surr: 4-Bromofluorobenzene	*97.6*			**0**	*85-114*	*%REC*	*5*	*24-Mar-2020 03:44*
Surr: 4-Bromofluorobenzene	*96.4*			**0**	*85-114*	*%REC*	*50*	*24-Mar-2020 04:57*
Surr: Dibromofluoromethane	*93.9*			**0**	*80-119*	*%REC*	*5*	*24-Mar-2020 03:44*
Surr: Dibromofluoromethane	*94.7*			**0**	*80-119*	*%REC*	*50*	*24-Mar-2020 04:57*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*5*	*24-Mar-2020 03:44*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*50*	*24-Mar-2020 04:57*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW14-200317
Collection Date: 17-Mar-2020 10:50

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	22-Mar-2020 22:21
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 22:21
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 22:21
cis-1,2-Dichloroethene	**1.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 22:21
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	22-Mar-2020 22:21
Trichloroethene	**33**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 22:21
Vinyl chloride	**0.40**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 22:21
Surr: 1,2-Dichloroethane-d4	*91.4*			**0**	*81-118*	*%REC*	*1*	*22-Mar-2020 22:21*
Surr: 4-Bromofluorobenzene	*97.5*			**0**	*85-114*	*%REC*	*1*	*22-Mar-2020 22:21*
Surr: Dibromofluoromethane	*94.7*			**0**	*80-119*	*%REC*	*1*	*22-Mar-2020 22:21*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*22-Mar-2020 22:21*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16RW06-200317
Collection Date: 17-Mar-2020 11:40

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	22-Mar-2020 22:45
1,1-Dichloroethene	**0.90**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 22:45
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 22:45
cis-1,2-Dichloroethene	**1.9**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 22:45
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	22-Mar-2020 22:45
Trichloroethene	**86**		**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 22:45
Vinyl chloride	**0.84**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Mar-2020 22:45
Surr: 1,2-Dichloroethane-d4	*91.5*			**0**	*81-118*	*%REC*	*1*	*22-Mar-2020 22:45*
Surr: 4-Bromofluorobenzene	*98.6*			**0**	*85-114*	*%REC*	*1*	*22-Mar-2020 22:45*
Surr: Dibromofluoromethane	*95.0*			**0**	*80-119*	*%REC*	*1*	*22-Mar-2020 22:45*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*22-Mar-2020 22:45*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16PM03-200317
Collection Date: 17-Mar-2020 12:35

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	5.0	U	3.0	5.0	10	UG/L	10	24-Mar-2020 17:29
1,1-Dichloroethene	**66**		**2.0**	**5.0**	**10**	**UG/L**	10	24-Mar-2020 17:29
1,2-Dichloroethane	**21**		**2.0**	**5.0**	**10**	**UG/L**	10	24-Mar-2020 17:29
cis-1,2-Dichloroethene	**6,600**		**10**	**25**	**50**	**UG/L**	50	24-Mar-2020 06:57
Methylene chloride	10	U	4.0	10	20	UG/L	10	24-Mar-2020 17:29
Trichloroethene	**9,700**		**10**	**25**	**50**	**UG/L**	50	24-Mar-2020 06:57
Vinyl chloride	**370**		**2.0**	**5.0**	**10**	**UG/L**	10	24-Mar-2020 17:29
Surr: 1,2-Dichloroethane-d4	*91.8*			**0**	*81-118*	*%REC*	*50*	*24-Mar-2020 06:57*
Surr: 1,2-Dichloroethane-d4	*92.9*			**0**	*81-118*	*%REC*	*10*	*24-Mar-2020 17:29*
Surr: 4-Bromofluorobenzene	*96.0*			**0**	*85-114*	*%REC*	*50*	*24-Mar-2020 06:57*
Surr: 4-Bromofluorobenzene	*98.3*			**0**	*85-114*	*%REC*	*10*	*24-Mar-2020 17:29*
Surr: Dibromofluoromethane	*94.5*			**0**	*80-119*	*%REC*	*50*	*24-Mar-2020 06:57*
Surr: Dibromofluoromethane	*95.3*			**0**	*80-119*	*%REC*	*10*	*24-Mar-2020 17:29*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*50*	*24-Mar-2020 06:57*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*10*	*24-Mar-2020 17:29*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16PM02-200317
Collection Date: 17-Mar-2020 13:25

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	25	U	15	25	50	UG/L	50	24-Mar-2020 07:45
1,1-Dichloroethene	**32**	J	**10**	**25**	**50**	**UG/L**	50	24-Mar-2020 07:45
1,2-Dichloroethane	25	U	10	25	50	UG/L	50	24-Mar-2020 07:45
cis-1,2-Dichloroethene	**3,200**		**10**	**25**	**50**	**UG/L**	50	24-Mar-2020 07:45
Methylene chloride	50	U	20	50	100	UG/L	50	24-Mar-2020 07:45
Trichloroethene	**21,000**		**100**	**250**	**500**	**UG/L**	500	24-Mar-2020 08:09
Vinyl chloride	**51**		**10**	**25**	**50**	**UG/L**	50	24-Mar-2020 07:45
Surr: 1,2-Dichloroethane-d4	*89.7*			**0**	*81-118*	*%REC*	*50*	*24-Mar-2020 07:45*
Surr: 1,2-Dichloroethane-d4	*90.4*			**0**	*81-118*	*%REC*	*500*	*24-Mar-2020 08:09*
Surr: 4-Bromofluorobenzene	*97.2*			**0**	*85-114*	*%REC*	*50*	*24-Mar-2020 07:45*
Surr: 4-Bromofluorobenzene	*96.2*			**0**	*85-114*	*%REC*	*500*	*24-Mar-2020 08:09*
Surr: Dibromofluoromethane	*94.3*			**0**	*80-119*	*%REC*	*50*	*24-Mar-2020 07:45*
Surr: Dibromofluoromethane	*92.8*			**0**	*80-119*	*%REC*	*500*	*24-Mar-2020 08:09*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*50*	*24-Mar-2020 07:45*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*500*	*24-Mar-2020 08:09*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16RW07-200317
Collection Date: 17-Mar-2020 14:15

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	2.5	U	1.5	2.5	5.0	UG/L	5	24-Mar-2020 17:05
1,1-Dichloroethene	**12**		**1.0**	**2.5**	**5.0**	**UG/L**	5	24-Mar-2020 17:05
1,2-Dichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	24-Mar-2020 17:05
cis-1,2-Dichloroethene	**120**		**1.0**	**2.5**	**5.0**	**UG/L**	5	24-Mar-2020 17:05
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	24-Mar-2020 17:05
Trichloroethene	**1,900**		**2.0**	**5.0**	**10**	**UG/L**	10	24-Mar-2020 06:09
Vinyl chloride	**76**		**1.0**	**2.5**	**5.0**	**UG/L**	5	24-Mar-2020 17:05
Surr: 1,2-Dichloroethane-d4	*90.8*			**0**	*81-118*	*%REC*	*10*	*24-Mar-2020 06:09*
Surr: 1,2-Dichloroethane-d4	*89.8*			**0**	*81-118*	*%REC*	*5*	*24-Mar-2020 17:05*
Surr: 4-Bromofluorobenzene	*97.0*			**0**	*85-114*	*%REC*	*10*	*24-Mar-2020 06:09*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*5*	*24-Mar-2020 17:05*
Surr: Dibromofluoromethane	*95.2*			**0**	*80-119*	*%REC*	*10*	*24-Mar-2020 06:09*
Surr: Dibromofluoromethane	*95.3*			**0**	*80-119*	*%REC*	*5*	*24-Mar-2020 17:05*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*10*	*24-Mar-2020 06:09*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*5*	*24-Mar-2020 17:05*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16RW11-200317
Collection Date: 17-Mar-2020 15:00

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	23-Mar-2020 22:56
1,1-Dichloroethene	**0.56**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	23-Mar-2020 22:56
1,2-Dichloroethane	**1.6**		**0.20**	**0.50**	**1.0**	**UG/L**	1	23-Mar-2020 22:56
cis-1,2-Dichloroethene	**73**		**0.20**	**0.50**	**1.0**	**UG/L**	1	23-Mar-2020 22:56
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	23-Mar-2020 22:56
Trichloroethene	**20**		**0.20**	**0.50**	**1.0**	**UG/L**	1	23-Mar-2020 22:56
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	23-Mar-2020 22:56
Surr: 1,2-Dichloroethane-d4	*90.1*			**0**	*81-118*	*%REC*	*1*	*23-Mar-2020 22:56*
Surr: 4-Bromofluorobenzene	*99.3*			**0**	*85-114*	*%REC*	*1*	*23-Mar-2020 22:56*
Surr: Dibromofluoromethane	*94.5*			**0**	*80-119*	*%REC*	*1*	*23-Mar-2020 22:56*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*23-Mar-2020 22:56*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: 16WW51-200317
Collection Date: 17-Mar-2020 15:50

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-10
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	24-Mar-2020 10:09
1,1-Dichloroethene	**1.4**		**0.20**	**0.50**	**1.0**	**UG/L**	1	24-Mar-2020 10:09
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	24-Mar-2020 10:09
cis-1,2-Dichloroethene	**25**		**0.20**	**0.50**	**1.0**	**UG/L**	1	24-Mar-2020 10:09
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	24-Mar-2020 10:09
Trichloroethene	**830**		**1.0**	**2.5**	**5.0**	**UG/L**	5	24-Mar-2020 05:21
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	24-Mar-2020 10:09
Surr: 1,2-Dichloroethane-d4	*90.3*			**0**	*81-118*	*%REC*	*5*	*24-Mar-2020 05:21*
Surr: 1,2-Dichloroethane-d4	*88.8*			**0**	*81-118*	*%REC*	*1*	*24-Mar-2020 10:09*
Surr: 4-Bromofluorobenzene	*95.7*			**0**	*85-114*	*%REC*	*5*	*24-Mar-2020 05:21*
Surr: 4-Bromofluorobenzene	*96.8*			**0**	*85-114*	*%REC*	*1*	*24-Mar-2020 10:09*
Surr: Dibromofluoromethane	*94.1*			**0**	*80-119*	*%REC*	*5*	*24-Mar-2020 05:21*
Surr: Dibromofluoromethane	*94.8*			**0**	*80-119*	*%REC*	*1*	*24-Mar-2020 10:09*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*5*	*24-Mar-2020 05:21*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*1*	*24-Mar-2020 10:09*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**3.71**		**0.150**	**0.500**	**0.500**	**mg/L**	5	30-Mar-2020 23:03
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	01-Apr-2020 14:16
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	26-Mar-2020 09:32

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
Sample ID: Trip Blank
Collection Date: 17-Mar-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20030888
Lab ID:HS20030888-11
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	22-Mar-2020 14:20
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:20
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:20
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:20
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	22-Mar-2020 14:20
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:20
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	22-Mar-2020 14:20
Surr: 1,2-Dichloroethane-d4	*89.4*			**0**	*81-118*	*%REC*	*1*	*22-Mar-2020 14:20*
Surr: 4-Bromofluorobenzene	*97.0*			**0**	*85-114*	*%REC*	*1*	*22-Mar-2020 14:20*
Surr: Dibromofluoromethane	*95.1*			**0**	*80-119*	*%REC*	*1*	*22-Mar-2020 14:20*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*22-Mar-2020 14:20*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R358682 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20030888-11	Trip Blank	17 Mar 2020 00:00			22 Mar 2020 14:20	1
Batch ID: R358682 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20030888-01	16WW44-200317	17 Mar 2020 08:20			22 Mar 2020 14:44	1
HS20030888-02	16WW37-200317	17 Mar 2020 09:15			22 Mar 2020 21:56	1
HS20030888-04	16WW14-200317	17 Mar 2020 10:50			22 Mar 2020 22:21	1
HS20030888-05	16RW06-200317	17 Mar 2020 11:40			22 Mar 2020 22:45	1
Batch ID: R358746 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20030888-09	16RW11-200317	17 Mar 2020 15:00			23 Mar 2020 22:56	1
Batch ID: R358758 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20030888-03	16WW38-200317	17 Mar 2020 10:00			24 Mar 2020 04:57	50
HS20030888-03	16WW38-200317	17 Mar 2020 10:00			24 Mar 2020 03:44	5
HS20030888-06	16PM03-200317	17 Mar 2020 12:35			24 Mar 2020 06:57	50
HS20030888-07	16PM02-200317	17 Mar 2020 13:25			24 Mar 2020 08:09	500
HS20030888-07	16PM02-200317	17 Mar 2020 13:25			24 Mar 2020 07:45	50
HS20030888-08	16RW07-200317	17 Mar 2020 14:15			24 Mar 2020 06:09	10
HS20030888-10	16WW51-200317	17 Mar 2020 15:50			24 Mar 2020 10:09	1
HS20030888-10	16WW51-200317	17 Mar 2020 15:50			24 Mar 2020 05:21	5
Batch ID: R358856 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20030888-06	16PM03-200317	17 Mar 2020 12:35			24 Mar 2020 17:29	10
HS20030888-08	16RW07-200317	17 Mar 2020 14:15			24 Mar 2020 17:05	5
Batch ID: R358929 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Groundwater	
HS20030888-10	16WW51-200317	17 Mar 2020 15:50			26 Mar 2020 09:32	1
Batch ID: R359317 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20030888-01	16WW44-200317	17 Mar 2020 08:20			01 Apr 2020 14:16	1
HS20030888-02	16WW37-200317	17 Mar 2020 09:15			01 Apr 2020 14:16	1
HS20030888-03	16WW38-200317	17 Mar 2020 10:00			01 Apr 2020 14:16	1
HS20030888-04	16WW14-200317	17 Mar 2020 10:50			01 Apr 2020 14:16	1
HS20030888-05	16RW06-200317	17 Mar 2020 11:40			01 Apr 2020 14:16	1
HS20030888-06	16PM03-200317	17 Mar 2020 12:35			01 Apr 2020 14:16	1
HS20030888-07	16PM02-200317	17 Mar 2020 13:25			01 Apr 2020 14:16	1
HS20030888-08	16RW07-200317	17 Mar 2020 14:15			01 Apr 2020 14:16	1
HS20030888-09	16RW11-200317	17 Mar 2020 15:00			01 Apr 2020 14:16	1
HS20030888-10	16WW51-200317	17 Mar 2020 15:50			01 Apr 2020 14:16	1
Batch ID: R359369 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20030888-10	16WW51-200317	17 Mar 2020 15:50			30 Mar 2020 23:03	5

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R358682 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW1-200322** Units: **UG/L** Analysis Date: **22-Mar-2020 13:55**
Client ID: Run ID: **VOA6_358682** SeqNo: **5524950** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*45.31*	*1.0*	*50*	*0*	*90.6*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.37*	*1.0*	*50*	*0*	*96.7*	*85 - 114*				
Surr: Dibromofluoromethane	*47.15*	*1.0*	*50*	*0*	*94.3*	*80 - 119*				
Surr: Toluene-d8	*52.17*	*1.0*	*50*	*0*	*104*	*89 - 112*				

LCS Sample ID: **VLCSW-200322** Units: **UG/L** Analysis Date: **22-Mar-2020 13:07**
Client ID: Run ID: **VOA6_358682** SeqNo: **5524949** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	18.87	1.0	20	0	94.3	80 - 119				
1,1-Dichloroethene	18.61	1.0	20	0	93.0	71 - 131				
1,2-Dichloroethane	19.63	1.0	20	0	98.1	73 - 128				
cis-1,2-Dichloroethene	20.16	1.0	20	0	101	78 - 123				
Methylene chloride	19.54	2.0	20	0	97.7	74 - 124				
Trichloroethene	19.83	1.0	20	0	99.1	79 - 123				
Vinyl chloride	18.08	1.0	20	0	90.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.29*	*1.0*	*50*	*0*	*105*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.64*	*1.0*	*50*	*0*	*99.3*	*85 - 114*				
Surr: Dibromofluoromethane	*51.88*	*1.0*	*50*	*0*	*104*	*80 - 119*				
Surr: Toluene-d8	*50.26*	*1.0*	*50*	*0*	*101*	*89 - 112*				

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R358682 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20030888-01MS** Units: **UG/L** Analysis Date: **22-Mar-2020 15:56**
Client ID: **16WW44-200317** Run ID: **VOA6_358682** SeqNo: **5524955** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.7	1.0	20	0	98.5	80 - 119				
1,1-Dichloroethene	19.41	1.0	20	0	97.0	71 - 131				
1,2-Dichloroethane	19.71	1.0	20	0	98.6	73 - 128				
cis-1,2-Dichloroethene	19.39	1.0	20	0	96.9	78 - 123				
Methylene chloride	18.18	2.0	20	0	90.9	74 - 124				
Trichloroethene	21.91	1.0	20	0	110	79 - 123				
Vinyl chloride	19.26	1.0	20	0	96.3	58 - 137				
Surr: 1,2-Dichloroethane-d4	*45.31*	*1.0*	*50*	*0*	*90.6*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.99*	*1.0*	*50*	*0*	*98.0*	*85 - 114*				
Surr: Dibromofluoromethane	*47.73*	*1.0*	*50*	*0*	*95.5*	*80 - 119*				
Surr: Toluene-d8	*51.65*	*1.0*	*50*	*0*	*103*	*89 - 112*				

MSD Sample ID: **HS20030888-01MSD** Units: **UG/L** Analysis Date: **22-Mar-2020 16:20**
Client ID: **16WW44-200317** Run ID: **VOA6_358682** SeqNo: **5524956** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.83	1.0	20	0	99.1	80 - 119	19.7	0.625	20	
1,1-Dichloroethene	18.26	1.0	20	0	91.3	71 - 131	19.41	6.08	20	
1,2-Dichloroethane	19.55	1.0	20	0	97.7	73 - 128	19.71	0.835	20	
cis-1,2-Dichloroethene	18.67	1.0	20	0	93.4	78 - 123	19.39	3.76	20	
Methylene chloride	17.4	2.0	20	0	87.0	74 - 124	18.18	4.36	20	
Trichloroethene	20.18	1.0	20	0	101	79 - 123	21.91	8.25	20	
Vinyl chloride	18.09	1.0	20	0	90.4	58 - 137	19.26	6.3	20	
Surr: 1,2-Dichloroethane-d4	*45.14*	*1.0*	*50*	*0*	*90.3*	*81 - 118*	*45.31*	*0.37*	*20*	
Surr: 4-Bromofluorobenzene	*48.67*	*1.0*	*50*	*0*	*97.3*	*85 - 114*	*48.99*	*0.656*	*20*	
Surr: Dibromofluoromethane	*47.96*	*1.0*	*50*	*0*	*95.9*	*80 - 119*	*47.73*	*0.482*	*20*	
Surr: Toluene-d8	*52.32*	*1.0*	*50*	*0*	*105*	*89 - 112*	*51.65*	*1.29*	*20*	

The following samples were analyzed in this batch: HS20030888-01 HS20030888-02 HS20030888-04 HS20030888-05 HS20030888-11

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R358746 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-200323** Units: **UG/L** Analysis Date: **23-Mar-2020 14:07**
Client ID: Run ID: **VOA6_358746** SeqNo: **5526485** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*45.1*	*1.0*	*50*	*0*	*90.2*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.57*	*1.0*	*50*	*0*	*97.1*	*85 - 114*				
Surr: Dibromofluoromethane	*48.06*	*1.0*	*50*	*0*	*96.1*	*80 - 119*				
Surr: Toluene-d8	*52.56*	*1.0*	*50*	*0*	*105*	*89 - 112*				

LCS Sample ID: **VLCSW-200323** Units: **UG/L** Analysis Date: **23-Mar-2020 12:55**
Client ID: Run ID: **VOA6_358746** SeqNo: **5526484** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.96	1.0	20	0	99.8	80 - 119				
1,1-Dichloroethene	19.69	1.0	20	0	98.4	71 - 131				
1,2-Dichloroethane	20.21	1.0	20	0	101	73 - 128				
cis-1,2-Dichloroethene	21.11	1.0	20	0	106	78 - 123				
Methylene chloride	20.36	2.0	20	0	102	74 - 124				
Trichloroethene	21.25	1.0	20	0	106	79 - 123				
Vinyl chloride	18.94	1.0	20	0	94.7	58 - 137				
Surr: 1,2-Dichloroethane-d4	*51.28*	*1.0*	*50*	*0*	*103*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.67*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*52.2*	*1.0*	*50*	*0*	*104*	*80 - 119*				
Surr: Toluene-d8	*50.75*	*1.0*	*50*	*0*	*102*	*89 - 112*				

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R358746 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20030586-02MS** Units: **UG/L** Analysis Date: **23-Mar-2020 16:56**
Client ID: Run ID: **VOA6_358746** SeqNo: **5526490** PrepDate: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	2069	100	2000	0	103	80 - 119				
1,1-Dichloroethene	1889	100	2000	0	94.5	71 - 131				
1,2-Dichloroethane	2029	100	2000	0	101	73 - 128				
cis-1,2-Dichloroethene	1985	100	2000	0	99.3	78 - 123				
Methylene chloride	1903	200	2000	0	95.2	74 - 124				
Trichloroethene	2109	100	2000	0	105	79 - 123				
Vinyl chloride	1918	100	2000	0	95.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*4522*	*100*	*5000*	*0*	*90.4*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*4911*	*100*	*5000*	*0*	*98.2*	*85 - 114*				
Surr: Dibromofluoromethane	*4783*	*100*	*5000*	*0*	*95.7*	*80 - 119*				
Surr: Toluene-d8	*5254*	*100*	*5000*	*0*	*105*	*89 - 112*				

MSD Sample ID: **HS20030586-02MSD** Units: **UG/L** Analysis Date: **23-Mar-2020 17:20**
Client ID: Run ID: **VOA6_358746** SeqNo: **5526491** PrepDate: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	1966	100	2000	0	98.3	80 - 119	2069	5.1	20	
1,1-Dichloroethene	1822	100	2000	0	91.1	71 - 131	1889	3.64	20	
1,2-Dichloroethane	1982	100	2000	0	99.1	73 - 128	2029	2.31	20	
cis-1,2-Dichloroethene	1898	100	2000	0	94.9	78 - 123	1985	4.5	20	
Methylene chloride	1759	200	2000	0	88.0	74 - 124	1903	7.86	20	
Trichloroethene	1941	100	2000	0	97.1	79 - 123	2109	8.28	20	
Vinyl chloride	1755	100	2000	0	87.7	58 - 137	1918	8.89	20	
Surr: 1,2-Dichloroethane-d4	*4513*	*100*	*5000*	*0*	*90.3*	*81 - 118*	*4522*	*0.194*	*20*	
Surr: 4-Bromofluorobenzene	*4868*	*100*	*5000*	*0*	*97.4*	*85 - 114*	*4911*	*0.866*	*20*	
Surr: Dibromofluoromethane	*4825*	*100*	*5000*	*0*	*96.5*	*80 - 119*	*4783*	*0.874*	*20*	
Surr: Toluene-d8	*5246*	*100*	*5000*	*0*	*105*	*89 - 112*	*5254*	*0.167*	*20*	

The following samples were analyzed in this batch: HS20030888-09

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R358758 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW1-200323** Units: **UG/L** Analysis Date: **24-Mar-2020 02:08**
Client ID: Run ID: **VOA6_358758** SeqNo: **5526706** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*45.53*	*1.0*	*50*	*0*	*91.1*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.56*	*1.0*	*50*	*0*	*97.1*	*85 - 114*				
Surr: Dibromofluoromethane	*47.72*	*1.0*	*50*	*0*	*95.4*	*80 - 119*				
Surr: Toluene-d8	*52.11*	*1.0*	*50*	*0*	*104*	*89 - 112*				

LCS Sample ID: **VLCSW-200323** Units: **UG/L** Analysis Date: **24-Mar-2020 01:20**
Client ID: Run ID: **VOA6_358758** SeqNo: **5526705** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.65	1.0	20	0	98.3	80 - 119				
1,1-Dichloroethene	18.78	1.0	20	0	93.9	71 - 131				
1,2-Dichloroethane	19.74	1.0	20	0	98.7	73 - 128				
cis-1,2-Dichloroethene	21.03	1.0	20	0	105	78 - 123				
Methylene chloride	20.09	2.0	20	0	100	74 - 124				
Trichloroethene	19.71	1.0	20	0	98.5	79 - 123				
Vinyl chloride	18.69	1.0	20	0	93.5	58 - 137				
Surr: 1,2-Dichloroethane-d4	*53.44*	*1.0*	*50*	*0*	*107*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.3*	*1.0*	*50*	*0*	*103*	*85 - 114*				
Surr: Dibromofluoromethane	*54.16*	*1.0*	*50*	*0*	*108*	*80 - 119*				
Surr: Toluene-d8	*50.7*	*1.0*	*50*	*0*	*101*	*89 - 112*				

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R358758 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20030771-04MS** Units: **UG/L** Analysis Date: **24-Mar-2020 04:08**
Client ID: Run ID: **VOA6_358758** SeqNo: **5526709** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	18.53	1.0	20	0	92.7	80 - 119				
1,1-Dichloroethene	17.66	1.0	20	0	88.3	71 - 131				
1,2-Dichloroethane	18.29	1.0	20	0	91.4	73 - 128				
cis-1,2-Dichloroethene	18.36	1.0	20	0	91.8	78 - 123				
Methylene chloride	17.68	2.0	20	0	88.4	74 - 124				
Trichloroethene	19.71	1.0	20	0	98.6	79 - 123				
Vinyl chloride	17.51	1.0	20	0	87.5	58 - 137				
Surr: 1,2-Dichloroethane-d4	*46.22*	*1.0*	*50*	*0*	*92.4*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.61*	*1.0*	*50*	*0*	*97.2*	*85 - 114*				
Surr: Dibromofluoromethane	*47.87*	*1.0*	*50*	*0*	*95.7*	*80 - 119*				
Surr: Toluene-d8	*51.38*	*1.0*	*50*	*0*	*103*	*89 - 112*				

MSD Sample ID: **HS20030771-04MSD** Units: **UG/L** Analysis Date: **24-Mar-2020 04:32**
Client ID: Run ID: **VOA6_358758** SeqNo: **5526710** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	18.72	1.0	20	0	93.6	80 - 119	18.53	1.01	20	
1,1-Dichloroethene	17.1	1.0	20	0	85.5	71 - 131	17.66	3.25	20	
1,2-Dichloroethane	17.95	1.0	20	0	89.7	73 - 128	18.29	1.88	20	
cis-1,2-Dichloroethene	17.47	1.0	20	0	87.3	78 - 123	18.36	4.97	20	
Methylene chloride	16.87	2.0	20	0	84.3	74 - 124	17.68	4.72	20	
Trichloroethene	18.42	1.0	20	0	92.1	79 - 123	19.71	6.8	20	
Vinyl chloride	17.04	1.0	20	0	85.2	58 - 137	17.51	2.74	20	
Surr: 1,2-Dichloroethane-d4	*46.73*	*1.0*	*50*	*0*	*93.5*	*81 - 118*	*46.22*	*1.09*	*20*	
Surr: 4-Bromofluorobenzene	*48.64*	*1.0*	*50*	*0*	*97.3*	*85 - 114*	*48.61*	*0.0591*	*20*	
Surr: Dibromofluoromethane	*47.25*	*1.0*	*50*	*0*	*94.5*	*80 - 119*	*47.87*	*1.32*	*20*	
Surr: Toluene-d8	*52.61*	*1.0*	*50*	*0*	*105*	*89 - 112*	*51.38*	*2.36*	*20*	

The following samples were analyzed in this batch: HS20030888-03 HS20030888-06 HS20030888-07 HS20030888-08 HS20030888-10

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R358856 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW1-200324** Units: **UG/L** Analysis Date: **24-Mar-2020 14:17**
Client ID: Run ID: **VOA6_358856** SeqNo: **5529172** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*45.39*	*1.0*	*50*	*0*	*90.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.06*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*48.02*	*1.0*	*50*	*0*	*96.0*	*80 - 119*				
Surr: Toluene-d8	*52.85*	*1.0*	*50*	*0*	*106*	*89 - 112*				

LCS Sample ID: **VLCSW-200324** Units: **UG/L** Analysis Date: **24-Mar-2020 13:29**
Client ID: Run ID: **VOA6_358856** SeqNo: **5529171** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	20.49	1.0	20	0	102	80 - 119				
1,1-Dichloroethene	19.58	1.0	20	0	97.9	71 - 131				
1,2-Dichloroethane	20.37	1.0	20	0	102	73 - 128				
cis-1,2-Dichloroethene	20.62	1.0	20	0	103	78 - 123				
Methylene chloride	19.71	2.0	20	0	98.6	74 - 124				
Vinyl chloride	18.73	1.0	20	0	93.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	*51.89*	*1.0*	*50*	*0*	*104*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.68*	*1.0*	*50*	*0*	*99.4*	*85 - 114*				
Surr: Dibromofluoromethane	*51.2*	*1.0*	*50*	*0*	*102*	*80 - 119*				
Surr: Toluene-d8	*49.77*	*1.0*	*50*	*0*	*99.5*	*89 - 112*				

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R358856 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20030892-06MS** Units: **UG/L** Analysis Date: **24-Mar-2020 17:53**
Client ID: Run ID: **VOA6_358856** SeqNo: **5529176** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	20.67	1.0	20	0	103	80 - 119				
1,1-Dichloroethene	19.62	1.0	20	0	98.1	71 - 131				
1,2-Dichloroethane	20.43	1.0	20	0	102	73 - 128				
cis-1,2-Dichloroethene	21.62	1.0	20	0	108	78 - 123				
Methylene chloride	18.26	2.0	20	0	91.3	74 - 124				
Vinyl chloride	19.06	1.0	20	0	95.3	58 - 137				
Surr: 1,2-Dichloroethane-d4	*45.87*	*1.0*	*50*	*0*	*91.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.09*	*1.0*	*50*	*0*	*98.2*	*85 - 114*				
Surr: Dibromofluoromethane	*47.45*	*1.0*	*50*	*0*	*94.9*	*80 - 119*				
Surr: Toluene-d8	*51.18*	*1.0*	*50*	*0*	*102*	*89 - 112*				

MSD Sample ID: **HS20030892-06MSD** Units: **UG/L** Analysis Date: **24-Mar-2020 18:17**
Client ID: Run ID: **VOA6_358856** SeqNo: **5529177** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	20.03	1.0	20	0	100	80 - 119	20.67	3.15	20	
1,1-Dichloroethene	18.16	1.0	20	0	90.8	71 - 131	19.62	7.72	20	
1,2-Dichloroethane	19.14	1.0	20	0	95.7	73 - 128	20.43	6.53	20	
cis-1,2-Dichloroethene	19.12	1.0	20	0	95.6	78 - 123	21.62	12.3	20	
Methylene chloride	17.86	2.0	20	0	89.3	74 - 124	18.26	2.23	20	
Vinyl chloride	17.57	1.0	20	0	87.9	58 - 137	19.06	8.16	20	
Surr: 1,2-Dichloroethane-d4	*44.83*	*1.0*	*50*	*0*	*89.7*	*81 - 118*	*45.87*	*2.29*	*20*	
Surr: 4-Bromofluorobenzene	*48.59*	*1.0*	*50*	*0*	*97.2*	*85 - 114*	*49.09*	*1.03*	*20*	
Surr: Dibromofluoromethane	*47.35*	*1.0*	*50*	*0*	*94.7*	*80 - 119*	*47.45*	*0.218*	*20*	
Surr: Toluene-d8	*52.4*	*1.0*	*50*	*0*	*105*	*89 - 112*	*51.18*	*2.36*	*20*	

The following samples were analyzed in this batch: HS20030888-06 HS20030888-08

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: HS20030888

QC BATCH REPORT

Batch ID: R359369 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK-03.30.20** Units: **mg/L** Analysis Date: **31-Mar-2020 02:41**
Client ID: Run ID: **ICS-Integrion_359369** SeqNo: **5541276** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **31-Mar-2020 02:59**
Client ID: Run ID: **ICS-Integrion_359369** SeqNo: **5541277** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.657	0.100	4	0	91.4	80 - 120				

LCSD Sample ID: **LCSD** Units: **mg/L** Analysis Date: **31-Mar-2020 03:17**
Client ID: Run ID: **ICS-Integrion_359369** SeqNo: **5541278** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.652	0.100	4	0	91.3	80 - 120	3.657	0.137	20	

MS Sample ID: **HS20031096-07MS** Units: **mg/L** Analysis Date: **30-Mar-2020 22:27**
Client ID: Run ID: **ICS-Integrion_359369** SeqNo: **5541271** PrepDate: DF: **500**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	937	50.0	1000	40.65	89.6	80 - 120				

MSD Sample ID: **HS20031096-07MSD** Units: **mg/L** Analysis Date: **30-Mar-2020 22:45**
Client ID: Run ID: **ICS-Integrion_359369** SeqNo: **5541272** PrepDate: DF: **500**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	911	50.0	1000	40.65	87.0	80 - 120	937	2.82	20	

The following samples were analyzed in this batch: HS20030888-10

ALS Houston, US Date: 02-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant - 16
WorkOrder: **HS20030888**

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

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-19-25	30-Apr-2020

ALS Houston, US Date: 02-Apr-20

Sample Receipt Checklist

Client Name: CBI-Houston
Work Order: HS20030888

Date/Time Received: **19-Mar-2020 08:50**
Received by: **AC**

Checklist completed by: *Paresh M. Giga* eSignature — 19-Mar-2020 Date

Reviewed by: *RJ Modashia* eSignature — 20-Mar-2020 Date

Matrices: **GW/Water**

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 ☐	COC IDs:None
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):	1.6c U/c	IR25
Cooler(s)/Kit(s):	43903	
Date/Time sample(s) sent to storage:	3/19/2020 17:10	

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:

APTIM

Page 1 of _____

COC ID: LHAAP16 March 2020__-ALS | TURNAROUND TIME: Normal | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	Longhorn AAP			Lab Name	ALS Laboratories			Email Invoice To	FedInvoices@aptim.com		
Project Number	501032			Lab Contact	RJ Modashia						
	LHAAP-16			Email	RJ.Modashia@alsglobal.com			Email Report To	Susan.Huang@aptim.com		
Address	1203-B East Grand Avenue			Address	10450 Stancliff Rd., Suite 210			Mail Reports To	Susan Huang		
	PMB 202							Address	4005 Port Chicago Highway, Suite 200		
City	Marshall	State	TX	City	Houston	State	TX	City	Concord	State	CA
Postal Code	75670	Country	USA	Postal Code	77099	Country	USA	Postal Code	94520	Country	USA
Phone Number	713.243.7264			Phone Number	281.575.2279 or 281.530.5656						
Project Manager	Praveen Srivastav							Shipping Company			

SAMPLE DETAILS | ANALYSIS REQUESTED

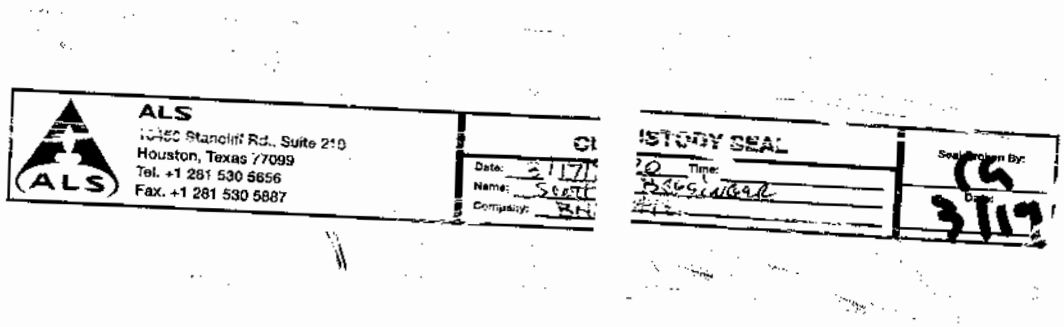
Sample ID	Location	Start Depth	End Depth	Depth Unit	Field Matrix	Date	Time (24hr)	# Of Cont.	Sample Container and Preservatives	3-40 ml VOA/HCL	3-40 ml VOA/HCL	2-40ml Amber/H2SO4	1-250 ml PE/HNO3	1-250ml PE/Ice	1-250ml PE /Ice	1-250ml PE/Ice	1-125ml PE/Ice		
									ANALYSIS	VOCs by SW8260B	MEE by RSK175	TOC by SM5310C	Metals (arsenic, chromium, manganese, nickel, and thallium) by SW6020	Anions (sulfate/nitrate/bromide) by SW9056	Anions (bromide only) by SW9056	Alkalinity by SM2320	Perchlorate by SW6850		
16wW44-200317	LHAAP16				WG	3/17/20	0820	4		X							X		
16wW44-200317-MS	LHAAP16				WG	3/17/20	0820	4		X							X		
16wW44-200317-MSD	LHAAP16				WG	3/17/20	0820	4		X							X		
16wW37-200317	LHAAP16				WG	3/17/20	0915	4		X							X		
16wW38-200317	LHAAP16				WG	3/17/20	1000	4		X							X		
16wW14-200317	LHAAP16				WG	3/17/20	1050	4		X							X		
16RW06-200317	LHAAP16				WG	3/17/20	1140	4		X							X		
16PM03-200317	LHAAP16				WG	3/17/20	1235	4		X							X		
16PM02-200317	LHAAP16				WG	3/17/20	1325	4		X							X		
16RW07-200317	LHAAP16				WG	3/17/20	1415	4		X							X		
16RW11-200317	LHAAP16				WG	3/17/20	1500	4		X							X		
16wW51-200317	LHAAP16				WG	3/17/20	1550	7		X		X			X		X		
TRIP BLANK	LHAAP16				W	3/17/20		2		X									

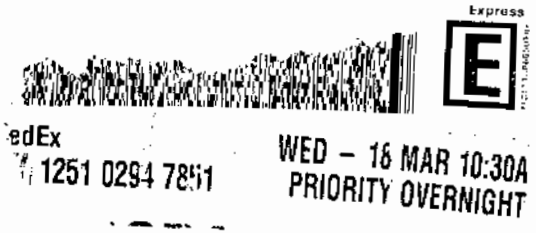
RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
[illegible] Basin / BHATE	3/17/20 1630	A C / ALS	3/19/2020 08:50

HS20030888

Aptim Environmental & Infrastucture, Inc.
Longhorn Army Ammunition Plant - 16

J/C 1.6 IR#25 CF=1.0 43903


ALS
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
Date:
Name:
Company:
STODY SEAL
Time:
Seal Broken By:
Date: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1251 0294 7851
WED – 18 MAR 10:30A
PRIORITY OVERNIGHT

ALS Environmental
ALS Group USA, Corp
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www.alsglobal.com

March 25, 2020

Analytical Report for Service Request No: K2002471

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: HS20030888

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory March 20, 2020
For your reference, these analyses have been assigned our service request number **K2002471.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

RIGHT SOLUTIONS | RIGHT PARTNER

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1317 South 13th Avenue
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www.alsglobal.com

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Acronyms
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Raw Data
    General Chemistry

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
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.
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.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
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1317 South 13th Ave, Kelso, WA 98626 | 1-360-577-7222 | www.alsglobal.com

Client: ALS Environmental - US
Project: HS20030888
Sample Matrix: Ground Water

Service Request: K2002471
Date Received: 03/20/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

One ground water sample was received for analysis at ALS Environmental on 03/20/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 03/25/2020

Chain of Custody

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F: +1 281 530 5887
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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13557**

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

R 3002471

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20030888
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20030888-10**	**16WW51-200317**	**Groundwater**	**17 Mar 2020 15:50**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			02 Apr 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By:	J. Modashia	Date/Time:	3/19/20 18:00
Received By:	RJ Modashia ALS	Date/Time:	3/20/20 0940
Cooler ID(s):		Temperature(s):	

PC KL

Cooler Receipt and Preservation Form

Client ALS-Houston Service Request *K20* 02471

Received: 3/20/20 Opened: 3/20/20 By: [illegible] Unloaded: 3/20/20 By: [illegible]

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 Ea. Side
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample 1	Sample 2	Sample 3	Sample 4	IR GUN	Cooler / COC ID NA	Tracking Number NA	Filed
0.7	—	—	—	—	39800488WS	13557	125102956639	

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

General Chemistry

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2002471
Project:	HS20030888	**Date Collected:**	03/17/20
Sample Matrix:	Ground Water	**Date Received:**	03/20/20
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
16WW51-200317	K2002471-001	**4.43**	0.50	0.20	0.07	1	03/22/20 12:54	
Method Blank	K2002471-MB	ND U	0.50	0.20	0.07	1	03/22/20 05:21	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2002471
Project	HS20030888	**Date Collected:**	03/17/20
Sample Matrix:	Ground Water	**Date Received:**	03/20/20
		Date Analyzed:	03/22/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	16WW51-200317	**Units:**	mg/L
Lab Code:	K2002471-001	**Basis:**	NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K2002471-001DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	4.43	4.30	4.37	3	10

Results flagged with an asterisk (*) indicate values outside control criteria.

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

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2002471
Project:	HS20030888	**Date Analyzed:**	03/22/20
Sample Matrix:	Ground Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	674225

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2002471-LCS	24.6	25.0	98	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2002471
Project: HS20030888

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C **Units:** mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	674225	KQ2004008-17	03/22/20 04:51	25.0	26.5	106	90-110
CCV2	674225	KQ2004008-18	03/22/20 09:35	25.0	25.8	103	90-110
CCV3	674225	KQ2004008-19	03/22/20 14:19	25.0	25.6	102	90-110
CCV4	674225	KQ2004008-20	03/22/20 18:35	25.0	25.3	101	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2002471
Project: HS20030888

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C **Units:**mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	674225	KQ2004008-21	03/22/20 05:06	0.50	0.20	0.07	ND	U
CCB2	674225	KQ2004008-22	03/22/20 09:49	0.50	0.20	0.07	ND	U
CCB3	674225	KQ2004008-23	03/22/20 14:33	0.50	0.20	0.07	ND	U
CCB4	674225	KQ2004008-24	03/22/20 18:50	0.50	0.20	0.07	ND	U

Raw Data

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General Chemistry

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Work Request # Original ( ) K2002276, 2337, 2353, 2365, 2412, 2434, 2416, 2424, 2434, 2462, 2470, 2471, 2489, 2492, 2496, 2432, 2457, 2456, 2422

Tier: IV II IV II IV I IV IV I II IV IV II I II IV I IV III

Date Analyzed: 3/21/20

Analyst: RD

Analysis: TOC/DOC

Run # TOC: 674205, 674225, 674226, DOC: 674227

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1.	Is the method name and number correct and appropriate?	yes/no/NA
2.	Holding times met for all analyses and for all samples?	yes/no/NA
3.	Are calculations correct?	yes/no/NA
4.	Is the reporting basis correct? (Dry Weight)	yes/no/NA
5.	All quality control criteria met?	yes/no
6.	Is the calibration curve correlation coefficient ≥ 0.995?	yes/no/NA
7.	MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency?	yes/no/NA
8.	Are ICVs, CCVs, and CCBs all within acceptance limits?	yes/no/NA
9.	Are results for methods blanks all ND?	yes/no/NA
10.	Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.)	yes/no/NA
11.	Are all exceptions explained?	yes/no/NA
12.	Have all applicable service requests been reviewed?	yes/no/NA
13.	Are all samples labeled correctly?	yes/no/NA
14.	Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V)	yes/no/NA
15.	Are detection limits and units reported correctly?	yes/no/NA
16.	Is the unused space on the benchsheet crossed out?	yes/no/NA
17.	Was analysis turned in by the due date? (n-2) (If not record SR#)	yes/no/NA

COMMENTS: K2002416-3/30, 2412-4/1d, 2412-7d report a high %RSD. However, these samples are less than 5x the MRL

Final Approved by: _____ Date: 3/24/20

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674205 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002276-001	Carbon, Total Organic	N/A		Ground Water	5.85 mg/L	10 mL	58.5 mg/L	10	0.7	5.0			3/22/20 01:06:00	N	IV
K2002337-001	Carbon, Total Organic	N/A		Water	0.92 mg/L	10 mL	0.92 mg/L	1	0.07	0.50			3/21/20 20:51:00	N	II
K2002337-002	Carbon, Total Organic	N/A		Water	0.85 mg/L	10 mL	0.85 mg/L	1	0.07	0.50			3/21/20 21:48:00	N	II
K2002337-003	Carbon, Total Organic	N/A		Water	0.77 mg/L	10 mL	0.77 mg/L	1	0.07	0.50			3/21/20 22:16:00	N	II
K2002337-004	Carbon, Total Organic	N/A		Water	0.68 mg/L	10 mL	0.68 mg/L	1	0.07	0.50			3/21/20 22:44:00	N	II
K2002337-005	Carbon, Total Organic	N/A		Water	0.45 mg/L	10 mL	0.45 mg/L J	1	0.07	0.50			3/21/20 23:12:00	N	II
K2002337-006	Carbon, Total Organic	N/A		Water	1.87 mg/L	10 mL	1.87 mg/L	1	0.07	0.50			3/22/20 00:10:00	N	II
K2002337-007	Carbon, Total Organic	N/A		Water	0.63 mg/L	10 mL	0.63 mg/L	1	0.07	0.50			3/22/20 00:38:00	N	II
K2002353-001	Carbon, Total Organic	N/A		Ground Water	1.25 mg/L	10 mL	500 mg/L	400	30	200			3/22/20 02:03:00	N	IV
K2002365-001	Carbon, Total Organic	N/A		Water	6.75 mg/L	10 mL	6.75 mg/L	1	0.07	0.50			3/22/20 01:34:00	N	II
K2002412-001	Carbon, Total Organic	N/A		Ground Water	10.68 mg/L	10 mL	10.7 mg/L	1	0.07	0.50			3/22/20 02:59:00	N	IV
K2002412-002	Carbon, Total Organic	N/A		Ground Water	2.35 mg/L	10 mL	2.35 mg/L	1	0.07	0.50			3/22/20 03:27:00	N	IV
K2002412-003	Carbon, Total Organic	N/A		Ground Water	44.83 mg/L	10 mL	44.8 mg/L	1	0.07	0.50			3/22/20 03:55:00	N	IV
K2002412-004	Carbon, Total Organic	N/A		Ground Water	1.20 mg/L	10 mL	1.20 mg/L	1	0.07	0.50			3/22/20 04:23:00	N	IV
K2002412-005	Carbon, Total Organic	N/A		Ground Water	4.57 mg/L	10 mL	4.57 mg/L	1	0.07	0.50			3/22/20 05:50:00	N	IV
K2002412-006	Carbon, Total Organic	N/A		Ground Water	31.25 mg/L	10 mL	31.2 mg/L	1	0.07	0.50			3/22/20 06:18:00	N	IV
K2002412-007	Carbon, Total Organic	N/A		Ground Water	0.78 mg/L	10 mL	0.78 mg/L	1	0.07	0.50			3/22/20 06:46:00	N	IV
K2002412-008	Carbon, Total Organic	N/A		Ground Water	5.22 mg/L	10 mL	5.22 mg/L	1	0.07	0.50			3/22/20 07:14:00	N	IV
K2002434-001	Carbon, Total Organic	N/A		Water	0.24 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 07:42:00	N	I
K2002434-002	Carbon, Total Organic	N/A		Water	0.61 mg/L	10 mL	0.61 mg/L	1	0.07	0.50			3/22/20 08:10:00	N	I
KQ2003999-01	Carbon, Total Organic	CCV		Water	26.33 mg/L	10 mL	26.3 mg/L	1					3/21/20 19:52:00	N	II
KQ2003999-02	Carbon, Total Organic	CCV		Water	26.30 mg/L	10 mL	26.3 mg/L	1					3/21/20 23:40:00	N	II
KQ2003999-03	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	II
KQ2003999-04	Carbon, Total Organic	CCB		Water	-0.03 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/21/20 19:37:00	N	II
KQ2003999-05	Carbon, Total Organic	CCB		Water	0.12 mg/L	10 mL	0.12 mg/L J	1	0.07	0.50			3/21/20 23:55:00	N	II
KQ2003999-06	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	II
KQ2003999-07	Carbon, Total Organic	MB		Water	0.29 mg/L	10 mL	0.29 mg/L J	1	0.07	0.50			3/21/20 20:07:00	N	II
KQ2003999-08	Carbon, Total Organic	LCS		Water	24.88 mg/L	10 mL	24.9 mg/L	1	0.07	0.50	100		3/21/20 20:21:00	N	II
KQ2003999-09	Carbon, Total Organic	MS	K2002337-001	Water	29.48 mg/L	10 mL	29.5 mg/L	1	0.07	0.50	114		3/21/20 21:19:00	N	II
KQ2003999-10	Carbon, Total Organic	DUP	K2002276-001	Ground Water	5.92 mg/L	10 mL	59.2 mg/L	10	0.7	5.0		1	3/22/20 01:06:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674205 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2003999-11	Carbon, Total Organic	DUP	K2002337-001	Water	0.91 mg/L	10 mL	0.91 mg/L	1	0.07	0.50		1	3/21/20 20:51:00	N	II
KQ2003999-12	Carbon, Total Organic	DUP	K2002337-002	Water	0.79 mg/L	10 mL	0.79 mg/L	1	0.07	0.50		7	3/21/20 21:48:00	N	II
KQ2003999-13	Carbon, Total Organic	DUP	K2002337-003	Water	0.70 mg/L	10 mL	0.70 mg/L	1	0.07	0.50		10	3/21/20 22:16:00	N	II
KQ2003999-14	Carbon, Total Organic	DUP	K2002337-004	Water	0.67 mg/L	10 mL	0.67 mg/L	1	0.07	0.50		2	3/21/20 22:44:00	N	II
KQ2003999-15	Carbon, Total Organic	DUP	K2002337-005	Water	0.46 mg/L	10 mL	0.46 mg/L J	1	0.07	0.50		3	3/21/20 23:12:00	N	II
KQ2003999-16	Carbon, Total Organic	DUP	K2002337-006	Water	1.85 mg/L	10 mL	1.85 mg/L	1	0.07	0.50		1	3/22/20 00:10:00	N	II
KQ2003999-17	Carbon, Total Organic	DUP	K2002337-007	Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50		9	3/22/20 00:38:00	N	II
KQ2003999-18	Carbon, Total Organic	DUP	K2002353-001	Ground Water	1.19 mg/L	10 mL	480 mg/L	400	30	200		4	3/22/20 02:03:00	N	IV
KQ2003999-19	Carbon, Total Organic	DUP	K2002365-001	Water	6.74 mg/L	10 mL	6.74 mg/L	1	0.07	0.50		<1	3/22/20 01:34:00	N	II
KQ2003999-20	Carbon, Total Organic	DUP	K2002434-001	Water	0.19 mg/L	10 mL	0.19 mg/L J	1	0.07	0.50		NC	3/22/20 07:42:00	N	I
KQ2003999-21	Carbon, Total Organic	DUP	K2002434-002	Water	0.60 mg/L	10 mL	0.60 mg/L	1	0.07	0.50		2	3/22/20 08:10:00	N	I
KQ2003999-22	Carbon, Total Organic	DUP	K2002412-002	Ground Water	2.15 mg/L	10 mL	2.15 mg/L	1	0.07	0.50		9	3/22/20 03:27:00	N	IV
KQ2003999-23	Carbon, Total Organic	DUP	K2002412-001	Ground Water	10.27 mg/L	10 mL	10.3 mg/L	1	0.07	0.50		4	3/22/20 02:59:00	N	IV
KQ2003999-24	Carbon, Total Organic	DUP	K2002412-003	Ground Water	44.51 mg/L	10 mL	44.5 mg/L	1	0.07	0.50		<1	3/22/20 03:55:00	N	IV
KQ2003999-25	Carbon, Total Organic	DUP	K2002412-004	Ground Water	0.91 mg/L	10 mL	0.91 mg/L	1	0.07	0.50		27*	3/22/20 04:23:00	N	IV
KQ2003999-26	Carbon, Total Organic	DUP	K2002412-005	Ground Water	4.41 mg/L	10 mL	4.41 mg/L	1	0.07	0.50		4	3/22/20 05:50:00	N	IV
KQ2003999-27	Carbon, Total Organic	DUP	K2002412-006	Ground Water	30.72 mg/L	10 mL	30.7 mg/L	1	0.07	0.50		2	3/22/20 06:18:00	N	IV
KQ2003999-28	Carbon, Total Organic	DUP	K2002412-007	Ground Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50		30*	3/22/20 06:46:00	N	IV
KQ2003999-29	Carbon, Total Organic	DUP	K2002412-008	Ground Water	5.27 mg/L	10 mL	5.27 mg/L	1	0.07	0.50		<1	3/22/20 07:14:00	N	IV
KQ2003999-30	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	II
KQ2003999-31	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674225 **Method/Testcode:** 415.1/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002416-001	Carbon, Total Organic	N/A		Ground Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:07:00	Y	IV
K2002416-002	Carbon, Total Organic	N/A		Ground Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 10:33:00	N	IV
K2002416-003	Carbon, Total Organic	N/A		Ground Water	0.19 mg/L	10 mL	0.19 mg/L J	1	0.07	0.50			3/22/20 11:01:00	N	IV
K2002416-004	Carbon, Total Organic	N/A		Ground Water	0.54 mg/L	10 mL	0.54 mg/L	1	0.07	0.50			3/22/20 11:29:00	N	IV
K2002421-001	Carbon, Total Organic	N/A		Water	1.53 mg/L	10 mL	1.53 mg/L	1	0.07	0.50			3/22/20 15:45:00	N	IV
K2002421-002	Carbon, Total Organic	N/A		Water	0.79 mg/L	10 mL	0.79 mg/L	1	0.07	0.50			3/22/20 16:14:00	N	IV
K2002421-003	Carbon, Total Organic	N/A		Water	1.69 mg/L	10 mL	1.69 mg/L	1	0.07	0.50			3/22/20 16:42:00	N	IV
K2002421-004	Carbon, Total Organic	N/A		Water	0.82 mg/L	10 mL	0.82 mg/L	1	0.07	0.50			3/22/20 17:10:00	N	IV
K2002434-003	Carbon, Total Organic	N/A		Water	0.11 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 08:39:00	N	I
K2002462-001	Carbon, Total Organic	N/A		Water	2.96 mg/L	10 mL	2.96 mg/L	1	0.07	0.50			3/22/20 11:58:00	N	II
K2002470-001	Carbon, Total Organic	N/A		Water	2.07 mg/L	10 mL	2.07 mg/L	1	0.07	0.50			3/22/20 12:26:00	N	IV
K2002471-001	Carbon, Total Organic	N/A		Ground Water	4.43 mg/L	10 mL	4.43 mg/L	1	0.07	0.50			3/22/20 12:54:00	N	IV
K2002489-001	Carbon, Total Organic	N/A		Water	4.72 mg/L	10 mL	4.72 mg/L	1	0.07	0.50			3/22/20 13:22:00	N	II
K2002492-002	Carbon, Total Organic	N/A		Drinking Water	0.37 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 13:50:00	N	I
K2002496-001	Carbon, Total Organic	N/A		Water	14.38 mg/L	10 mL	14.4 mg/L	1	0.07	0.50			3/22/20 15:17:00	N	II
KQ2004008-01	Carbon, Total Organic	MS	K2002416-001	Ground Water	27.78 mg/L	10 mL	27.8 mg/L	1	0.07	0.50	111		3/22/20 10:04:00	N	IV
KQ2004008-02	Carbon, Total Organic	DUP	K2002416-001	Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 09:07:00	N	IV
KQ2004008-03	Carbon, Total Organic	DUP	K2002416-002	Ground Water	0.01 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 10:33:00	N	IV
KQ2004008-04	Carbon, Total Organic	DUP	K2002416-003	Ground Water	0.16 mg/L	10 mL	0.16 mg/L J	1	0.07	0.50		21*	3/22/20 11:01:00	N	IV
KQ2004008-05	Carbon, Total Organic	DUP	K2002416-004	Ground Water	0.53 mg/L	10 mL	0.53 mg/L	1	0.07	0.50		2	3/22/20 11:29:00	N	IV
KQ2004008-06	Carbon, Total Organic	DUP	K2002421-001	Water	1.47 mg/L	10 mL	1.47 mg/L	1	0.07	0.50		4	3/22/20 15:45:00	N	IV
KQ2004008-07	Carbon, Total Organic	DUP	K2002421-002	Water	0.76 mg/L	10 mL	0.76 mg/L	1	0.07	0.50		3	3/22/20 16:14:00	N	IV
KQ2004008-08	Carbon, Total Organic	DUP	K2002421-003	Water	1.71 mg/L	10 mL	1.71 mg/L	1	0.07	0.50		1	3/22/20 16:42:00	N	IV
KQ2004008-09	Carbon, Total Organic	DUP	K2002421-004	Water	0.78 mg/L	10 mL	0.78 mg/L	1	0.07	0.50		5	3/22/20 17:10:00	N	IV
KQ2004008-10	Carbon, Total Organic	DUP	K2002434-003	Water	0.18 mg/L	10 mL	0.18 mg/L J	1	0.07	0.50		NC	3/22/20 08:39:00	N	I
KQ2004008-11	Carbon, Total Organic	DUP	K2002462-001	Water	2.96 mg/L	10 mL	2.96 mg/L	1	0.07	0.50		<1	3/22/20 11:58:00	N	II
KQ2004008-12	Carbon, Total Organic	DUP	K2002470-001	Water	1.98 mg/L	10 mL	1.98 mg/L	1	0.07	0.50		4	3/22/20 12:26:00	N	IV
KQ2004008-13	Carbon, Total Organic	DUP	K2002471-001	Ground Water	4.30 mg/L	10 mL	4.30 mg/L	1	0.07	0.50		3	3/22/20 12:54:00	N	IV
KQ2004008-14	Carbon, Total Organic	DUP	K2002489-001	Water	4.65 mg/L	10 mL	4.65 mg/L	1	0.07	0.50		2	3/22/20 13:22:00	N	II
KQ2004008-15	Carbon, Total Organic	DUP	K2002492-002	Drinking Water	0.40 mg/L	10 mL	0.40 mg/L J	1	0.07	0.50		NC	3/22/20 13:50:00	N	I

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674225 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2004008-16	Carbon, Total Organic	DUP	K2002496-001	Water	13.50 mg/L	10 mL	13.5 mg/L	1	0.07	0.50		6	3/22/20 15:17:00	N	II
KQ2004008-17	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	I
KQ2004008-17	Carbon, Total Organic	CCV		Water	26.46 mg/L	10 mL	26.5 mg/L	1					3/22/20 04:51:00	N	I
KQ2004008-18	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	I
KQ2004008-18	Carbon, Total Organic	CCV		Water	25.76 mg/L	10 mL	25.8 mg/L	1					3/22/20 09:35:00	N	I
KQ2004008-19	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	I
KQ2004008-19	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	I
KQ2004008-20	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	I
KQ2004008-20	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	I
KQ2004008-21	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	I
KQ2004008-21	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:06:00	N	I
KQ2004008-22	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	I
KQ2004008-22	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:49:00	N	I
KQ2004008-23	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	I
KQ2004008-23	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	I
KQ2004008-24	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	I
KQ2004008-24	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	I
KQ2004008-25	Carbon, Total Organic	MB		Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:21:00	N	I
KQ2004008-25	Carbon, Total Organic	MB		Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 05:21:00	N	I
KQ2004008-26	Carbon, Total Organic	LCS		Water	24.62 mg/L	10 mL	24.6 mg/L	1	0.07	0.50	98		3/22/20 05:35:00	N	I
KQ2004008-26	Carbon, Total Organic	LCS		Water	24.62 mg/L	10 mL	24.6 mg/L	1	0.07	0.50	98		3/22/20 05:35:00	N	I
KQ2004008-27	Carbon, Total Organic	N/A		Water	0.02 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 09:07:00	N	IV
KQ2004008-28	Carbon, Total Organic	MS	KQ2004008-27	Water	27.78 mg/L	10 mL	27.8 mg/L	1	0.07	0.50	111		3/22/20 10:04:00	N	IV
KQ2004008-29	Carbon, Total Organic	DUP	KQ2004008-27	Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 09:07:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674226 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002432-001	Carbon, Total Organic	N/A		Water	0.03 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 17:38:00	N	IV
K2002437-001	Carbon, Total Organic	N/A		Water	1.83 mg/L	10 mL	1.83 mg/L	1	0.07	0.50			3/22/20 19:04:00	N	I
K2002437-002	Carbon, Total Organic	N/A		Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			3/22/20 19:33:00	N	I
K2002437-003	Carbon, Total Organic	N/A		Water	3.10 mg/L	10 mL	3.10 mg/L	1	0.07	0.50			3/22/20 20:00:00	N	I
K2002437-004	Carbon, Total Organic	N/A		Water	0.71 mg/L	10 mL	0.71 mg/L	1	0.07	0.50			3/22/20 20:29:00	N	I
K2002437-005	Carbon, Total Organic	N/A		Water	0.59 mg/L	10 mL	0.59 mg/L	1	0.07	0.50			3/22/20 20:57:00	N	I
K2002456-001	Carbon, Total Organic	N/A		Water	1.07 mg/L	10 mL	1.07 mg/L	1	0.07	0.50			3/22/20 21:25:00	N	IV
K2002456-002	Carbon, Total Organic	N/A		Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			3/22/20 21:53:00	N	IV
K2002456-003	Carbon, Total Organic	N/A		Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50			3/22/20 22:21:00	N	IV
K2002456-004	Carbon, Total Organic	N/A		Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50			3/22/20 22:49:00	N	IV
KQ2004009-01	Carbon, Total Organic	CCV		Water	25.62 mg/L	10 mL	25.6 mg/L	1					3/22/20 14:19:00	N	IV
KQ2004009-02	Carbon, Total Organic	CCV		Water	25.34 mg/L	10 mL	25.3 mg/L	1					3/22/20 18:35:00	N	IV
KQ2004009-03	Carbon, Total Organic	CCV		Water	25.05 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	IV
KQ2004009-04	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:33:00	N	IV
KQ2004009-05	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 18:50:00	N	IV
KQ2004009-06	Carbon, Total Organic	CCB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	IV
KQ2004009-07	Carbon, Total Organic	MB		Water	-0.08 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/22/20 14:48:00	N	IV
KQ2004009-08	Carbon, Total Organic	LCS		Water	24.66 mg/L	10 mL	24.7 mg/L	1	0.07	0.50	99		3/22/20 15:03:00	N	IV
KQ2004009-09	Carbon, Total Organic	MS	K2002432-001	Water	26.30 mg/L	10 mL	26.3 mg/L	1	0.07	0.50	105		3/22/20 18:06:00	N	IV
KQ2004009-10	Carbon, Total Organic	DUP	K2002432-001	Water	0.06 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	3/22/20 17:38:00	N	IV
KQ2004009-11	Carbon, Total Organic	DUP	K2002437-001	Water	1.78 mg/L	10 mL	1.78 mg/L	1	0.07	0.50		3	3/22/20 19:04:00	N	I
KQ2004009-12	Carbon, Total Organic	DUP	K2002437-002	Water	0.71 mg/L	10 mL	0.71 mg/L	1	0.07	0.50		2	3/22/20 19:33:00	N	I
KQ2004009-13	Carbon, Total Organic	DUP	K2002437-003	Water	3.13 mg/L	10 mL	3.13 mg/L	1	0.07	0.50		<1	3/22/20 20:00:00	N	I
KQ2004009-14	Carbon, Total Organic	DUP	K2002437-004	Water	0.64 mg/L	10 mL	0.64 mg/L	1	0.07	0.50		10	3/22/20 20:29:00	N	I
KQ2004009-15	Carbon, Total Organic	DUP	K2002437-005	Water	0.56 mg/L	10 mL	0.56 mg/L	1	0.07	0.50		4	3/22/20 20:57:00	N	I
KQ2004009-16	Carbon, Total Organic	DUP	K2002456-001	Water	1.04 mg/L	10 mL	1.04 mg/L	1	0.07	0.50		2	3/22/20 21:25:00	N	IV
KQ2004009-17	Carbon, Total Organic	DUP	K2002456-002	Water	0.66 mg/L	10 mL	0.66 mg/L	1	0.07	0.50		9	3/22/20 21:53:00	N	IV
KQ2004009-18	Carbon, Total Organic	DUP	K2002456-003	Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50		<1	3/22/20 22:21:00	N	IV
KQ2004009-19	Carbon, Total Organic	DUP	K2002456-004	Water	1.30 mg/L	10 mL	1.30 mg/L	1	0.07	0.50		4	3/22/20 22:49:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 674227 **Method/Testcode:** SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2002422-001	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	9.45 mg/L	10 mL	9.45 mg/L	1	0.07	0.50			3/23/20 02:23:00	N	III
K2002462-002	Carbon, Dissolved Organic	N/A		Water	4.12 mg/L	10 mL	4.12 mg/L	1	0.07	0.50			3/23/20 01:11:00	N	II
KQ2004010-01	Carbon, Dissolved Organic	CCV		Water	25.13 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	II
KQ2004010-01	Carbon, Dissolved Organic (DOC)	CCV		Water	25.13 mg/L	10 mL	25.1 mg/L	1					3/23/20 00:13:00	N	II
KQ2004010-02	Carbon, Dissolved Organic	CCV		Water	25.06 mg/L	10 mL	25.1 mg/L	1					3/23/20 03:20:00	N	II
KQ2004010-02	Carbon, Dissolved Organic (DOC)	CCV		Water	25.06 mg/L	10 mL	25.1 mg/L	1					3/23/20 03:20:00	N	II
KQ2004010-03	Carbon, Dissolved Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	II
KQ2004010-03	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:27:00	N	II
KQ2004010-04	Carbon, Dissolved Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 03:35:00	N	II
KQ2004010-04	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 03:35:00	N	II
KQ2004010-05	Carbon, Dissolved Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:42:00	N	II
KQ2004010-05	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			3/23/20 00:42:00	N	II
KQ2004010-06	Carbon, Dissolved Organic	LCS		Water	24.20 mg/L	10 mL	24.2 mg/L	1	0.07	0.50	97		3/23/20 00:57:00	N	II
KQ2004010-06	Carbon, Dissolved Organic (DOC)	LCS		Water	24.20 mg/L	10 mL	24.2 mg/L	1	0.07	0.50	97		3/23/20 00:57:00	N	II
KQ2004010-07	Carbon, Dissolved Organic	MS	K2002462-002	Water	32.05 mg/L	10 mL	32.0 mg/L	1	0.07	0.50	112		3/23/20 01:40:00	N	II
KQ2004010-08	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	4.12 mg/L	10 mL	4.12 mg/L	1	0.07	0.50			3/23/20 01:11:00	N	III
KQ2004010-09	Carbon, Dissolved Organic (DOC)	MS	KQ2004010-08	Surface Water	32.05 mg/L	10 mL	32.0 mg/L	1	0.07	0.50	112		3/23/20 01:40:00	N	III
KQ2004010-10	Carbon, Dissolved Organic (DOC)	DUP	K2002422-001	Surface Water	9.61 mg/L	10 mL	9.61 mg/L	1	0.07	0.50		2	3/23/20 02:23:00	N	III
KQ2004010-11	Carbon, Dissolved Organic	DUP	K2002462-002	Water	4.07 mg/L	10 mL	4.07 mg/L	1	0.07	0.50		1	3/23/20 01:11:00	N	II
KQ2004010-12	Carbon, Dissolved Organic (DOC)	DUP	KQ2004010-08	Surface Water	4.07 mg/L	10 mL	4.07 mg/L	1	0.07	0.50		1	3/23/20 01:11:00	N	III

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

0.043	0.043			OBSERVATIONS	12	0.0432
0.366				STD Deviation	0.11429	ABOVE
0.200				AVERAGE	0.06658	ABOVE
0.055	0.055	0.055	######	UCL	0.18087	0.0545
0.136	0.136			LCL	-0.04772	0.1357
0.000						0
0.000						0
0.000				OBSERVATIONS	3	0
0.000				STD Deviation	0.02578	0
0.000				AVERAGE	0.07780	0
0.000				UCL	0.10358	0
0.000				LCL	0.05202	0
						0
						0
				OBSERVATIONS	1	0
				STD Deviation	#DIV/0!	0
				AVERAGE	0.05450	0
				UCL	#DIV/0!	0
				LCL	#DIV/0!	0
						0
						0
				OBSERVATIONS	0	0
				STD Deviation	#DIV/0!	0
				AVERAGE	#DIV/0!	0
						0
						0
						0
						0
						0

BLP 3/24/20

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccb	1	0.043	0.0778	-0.0346	-0.0346	<0.5	3/21/2020
3	ccv	1	26.406	0.0778	26.3280	26.328	26.3	3/21/2020
4	mb	1	0.366	0.0778	0.2878	0.2878	<0.5	3/21/2020
5	lcs	1	24.954	0.0778	24.8758	24.8758	24.9	3/21/2020
6	K2002337-001	1	0.994	0.0778	0.9162	0.9162	0.92	3/21/2020
7	K2002337-001	1	0.983	0.0778	0.9055	0.9055	0.9	3/21/2020
8	KQ2003999-09	1	29.561	0.0778	29.4834	29.4834	29	3/21/2020
9	K2002337-002	1	0.927	0.0778	0.8490	0.849	0.85	3/21/2020
10	K2002337-002	1	0.868	0.0778	0.7902	0.7902	0.79	3/21/2020
11	K2002337-003	1	0.851	0.0778	0.7733	0.7733	0.8	3/21/2020
12	K2002337-003	1	0.778	0.0778	0.6997	0.6997	0.70	3/21/2020
13	K2002337-004	1	0.759	0.0778	0.6814	0.6814	0.68	3/21/2020
14	K2002337-004	1	0.748	0.0778	0.6704	0.6704	0.67	3/21/2020
15	K2002337-005	1	0.530	0.0778	0.4518	0.4518	<0.5	3/21/2020
16	K2002337-005	1	0.543	0.0778	0.4649	0.4649	<0.5	3/21/2020
17	ccv	1	26.379	0.0778	26.3014	26.3014	26.30	3/21/2020
18	ccb	1	0.200	0.0778	0.1221	0.1221	<0.5	3/21/2020
19	K2002337-006	1	1.952	0.0778	1.8738	1.8738	1.9	3/22/2020
20	K2002337-006	1	1.929	0.0778	1.8513	1.8513	1.85	3/22/2020
21	K2002337-007	1	0.710	0.0778	0.6317	0.6317	0.63	3/22/2020
22	K2002337-007	1	0.658	0.0778	0.5798	0.5798	0.6	3/22/2020
23	K2002276-001	10	5.931	0.0778	5.8531	58.531	58.5	3/22/2020
24	K2002276-001	10	5.997	0.0778	5.9193	59.193	59.19	3/22/2020
25	K2002365-001	1	6.825	0.0778	6.7471	6.7471	6.75	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

	date	time
Analyzed By: KD	Date Analyzed 3/21/20	
Reviewed By:	Date Reviewed	

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002365-001	1	6.814	0.0778	6.7366	6.7366	6.74	3/22/2020
27	K2002353-001	400	1.325	0.0778	1.2473	498.92	498.92	3/22/2020
28	K2002353-001	400	1.272	0.0778	1.1941	477.64	477.6	3/22/2020
29	K2002412-001	1	10.758	0.0778	10.6798	10.6798	10.7	3/22/2020
30	K2002412-001	1	10.352	0.0778	10.2738	10.2738	10.3	3/22/2020
31	K2002412-002	1	2.431	0.0778	2.3535	2.3535	2.4	3/22/2020
32	K2002412-002	1	2.226	0.0778	2.1484	2.1484	2.1	3/22/2020
33	K2002412-003	1	44.908	0.0778	44.8304	44.8304	44.8	3/22/2020
34	K2002412-003	1	44.589	0.0778	44.5114	44.5114	44.5	3/22/2020
35	K2002412-004	1	1.276	0.0778	1.1981	1.1981	1.2	3/22/2020
36	K2002412-004	1	0.987	0.0778	0.9096	0.9096	0.9	3/22/2020
37	ccv	1	26.538	0.0778	26.4599	26.4599	26.5	3/22/2020
38	ccb	1	0.055	0.0778	-0.0233	-0.0233	<0.5	3/22/2020
39	K2002412-005	1	4.650	0.0778	4.5720	4.572	4.6	3/22/2020
40	K2002412-005	1	4.487	0.0778	4.4096	4.4096	4.4	3/22/2020
41	K2002412-006	1	31.326	0.0778	31.2482	31.2482	31.2	3/22/2020
42	K2002412-006	1	30.802	0.0778	30.7243	30.7243	30.7	3/22/2020
43	K2002412-007	1	0.861	0.0778	0.7828	0.7828	0.8	3/22/2020
44	K2002412-007	1	0.659	0.0778	0.5810	0.581	0.6	3/22/2020
45	K2002412-008	1	5.297	0.0778	5.2192	5.2192	5.2	3/22/2020
46	K2002412-008	1	5.349	0.0778	5.2707	5.2707	5.3	3/22/2020
47	K2002434-001	1	0.318	0.0778	0.2402	0.2402	<0.5	3/22/2020
48	K2002434-001	1	0.271	0.0778	0.1933	0.1933	<0.5	3/22/2020
49	K2002434-002	1	0.689	0.0778	0.6116	0.6116	0.6	3/22/2020
50	K2002434-002	1	0.674	0.0778	0.5965	0.5965	0.6	3/22/2020

Analyzed By: BCD	Date Analyzed 3/24/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
51	ccv	1	25.843	0.0778	25.7647	25.7647	25.76	3/22/2020
52	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
53		1		0.0000	0.0000	0	<0.5	
54		1		0.0000	0.0000	0	<0.5	
55		1		0.0000	0.0000	0	<0.5	
56		1		0.0000	0.0000	0	<0.5	
57		1		0.0000	0.0000	0	<0.5	
58		1		0.0000	0.0000	0	<0.5	
59		1		0.0000	0.0000	0	<0.5	
60		1		0.0000	0.0000	0	<0.5	
61		1		0.0000	0.0000	0	<0.5	
62		1		0.0000	0.0000	0	<0.5	
63		1		0.0000	0.0000	0	<0.5	
64		1		0.0000	0.0000	0	<0.5	
65		1		0.0000	0.0000	0	<0.5	
66		1		0.0000	0.0000	0	<0.5	
67		1		0.0000	0.0000	0	<0.5	
68		1		0.0000	0.0000	0	<0.5	
69		1		0.0000	0.0000	0	<0.5	
70		1		0.0000	0.0000	0	<0.5	
71		1		0.0000	0.0000	0	<0.5	
72		1		0.0000	0.0000	0	<0.5	
73		1		0.0000	0.0000	0	<0.5	
74		1		0.0000	0.0000	0	<0.5	
75		1		0.0000	0.0000	0	<0.5	

Analyzed By: BKP	Date Analyzed 3/24/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	26.538	0.0778	26.4599	26.4599	26.5	3/22/2020
3	ccb	1	0.055	0.0778	-0.0233	-0.0233	<0.5	3/22/2020
4	mb	1	0.136	0.0778	0.0579	0.0579	<0.5	3/22/2020
5	lcs	1	24.698	0.0778	24.6205	24.6205	24.6	3/22/2020
6	K2002434-003	1	0.192	0.0778	0.1139	0.1139	<0.5	3/22/2020
7	K2002434-003	1	0.258	0.0778	0.1797	0.1797	<0.5	3/22/2020
8	K2002416-001	1	0.099	0.0778	0.0207	0.0207	<0.5	3/22/2020
9	K2002416-001	1	0.083	0.0778	0.0048	0.0048	<0.5	3/22/2020
10	ccv	1	25.843	0.0778	25.7647	25.7647	25.76	3/22/2020
11	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
12	KQ2004008-01	1	27.862	0.0778	27.7842	27.7842	27.78	3/22/2020
13	K2002416-002	1	0.099	0.0778	0.0210	0.021	<0.5	3/22/2020
14	K2002416-002	1	0.085	0.0778	0.0067	0.0067	<0.5	3/22/2020
15	K2002416-003	1	0.271	0.0778	0.1932	0.1932	<0.5	3/22/2020
16	K2002416-003	1	0.235	0.0778	0.1572	0.1572	<0.5	3/22/2020
17	K2002416-004	1	1.615	0.0778	1.5370	1.537	1.54	3/22/2020
18	K2002416-004	1	1.605	0.0778	1.5267	1.5267	1.5	3/22/2020
19	K2002462-001	1	3.041	0.0778	2.9627	2.9627	3.0	3/22/2020
20	K2002462-001	1	3.038	0.0778	2.9600	2.96	2.96	3/22/2020
21	K2002470-001	1	2.148	0.0778	2.0704	2.0704	2.07	3/22/2020
22	K2002470-001	1	2.061	0.0778	1.9828	1.9828	2.0	3/22/2020
23	K2002471-001	1	4.509	0.0778	4.4308	4.4308	4.4	3/22/2020
24	K2002471-001	1	4.381	0.0778	4.3030	4.303	4.30	3/22/2020
25	K2002489-001	1	4.801	0.0778	4.7227	4.7227	4.72	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

date time

Analyzed By: [signature]	Date Analyzed 3/22/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002489-001	1	4.724	0.0778	4.6460	4.646	4.65	3/22/2020
27	K2002492-002	1	0.452	0.0778	0.3746	0.3746	<0.5	3/22/2020
28	K2002492-002	1	0.479	0.0778	0.4014	0.4014	<0.5	3/22/2020
29	ccv	1	25.695	0.0778	25.6168	25.6168	25.6	3/22/2020
30	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
31	K2002496-001	1	14.459	0.0778	14.3812	14.3812	14.4	3/22/2020
32	K2002496-001	1	13.578	0.0778	13.5000	13.5	13.5	3/22/2020
33	K2002421-001	1	1.605	0.0778	1.5272	1.5272	1.5	3/22/2020
34	K2002421-001	1	1.548	0.0778	1.4705	1.4705	1.5	3/22/2020
35	K2002421-002	1	0.866	0.0778	0.7878	0.7878	0.8	3/22/2020
36	K2002421-002	1	0.842	0.0778	0.7645	0.7645	0.8	3/22/2020
37	K2002421-003	1	1.766	0.0778	1.6881	1.6881	1.7	3/22/2020
38	K2002421-003	1	1.790	0.0778	1.7125	1.7125	1.7	3/22/2020
39	K2002421-004	1	0.896	0.0778	0.8180	0.818	0.8	3/22/2020
40	K2002421-004	1	0.859	0.0778	0.7812	0.7812	0.8	3/22/2020
41	ccv	1	25.418	0.0778	25.3398	25.3398	25.3	3/22/2020
42	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: KP	Date Analyzed 3/22/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.695	0.0778	25.6168	25.6168	25.6	3/22/2020
3	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
4	mb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
5	lcs	1	24.742	0.0778	24.6645	24.6645	24.7	3/22/2020
6	K2002432-001	1	0.108	0.0778	0.0305	0.0305	<0.5	3/22/2020
7	K2002432-001	1	0.143	0.0778	0.0649	0.0649	<0.5	3/22/2020
8	KQ2004009-09	1	26.380	0.0778	26.3020	26.302	26	3/22/2020
9	ccv	1	25.418	0.0778	25.3398	25.3398	25.34	3/22/2020
10	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/22/2020
11	K2002437-001	1	1.911	0.0778	1.8331	1.8331	1.8	3/22/2020
12	K2002437-001	1	1.853	0.0778	1.7754	1.7754	1.78	3/22/2020
13	K2002437-002	1	0.802	0.0778	0.7246	0.7246	0.72	3/22/2020
14	K2002437-002	1	0.788	0.0778	0.7099	0.7099	0.71	3/22/2020
15	K2002437-003	1	3.181	0.0778	3.1028	3.1028	3.1	3/22/2020
16	K2002437-003	1	3.208	0.0778	3.1306	3.1306	3.1	3/22/2020
17	K2002437-004	1	0.783	0.0778	0.7056	0.7056	0.71	3/22/2020
18	K2002437-004	1	0.715	0.0778	0.6372	0.6372	0.6	3/22/2020
19	K2002437-005	1	0.665	0.0778	0.5874	0.5874	0.6	3/22/2020
20	K2002437-005	1	0.641	0.0778	0.5633	0.5633	0.56	3/22/2020
21	K2002456-001	1	1.145	0.0778	1.0675	1.0675	1.07	3/22/2020
22	K2002456-001	1	1.122	0.0778	1.0438	1.0438	1.0	3/22/2020
23	K2002456-002	1	0.794	0.0778	0.7165	0.7165	0.7	3/22/2020
24	K2002456-002	1	0.735	0.0778	0.6568	0.6568	0.66	3/22/2020
25	K2002456-003	1	1.431	0.0778	1.3528	1.3528	1.35	3/22/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

date time

Analyzed By: BDP	Date Analyzed 3/12/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2002456-003	1	1.431	0.0778	1.3528	1.3528	1.35	3/22/2020
27	K2002456-004	1	1.433	0.0778	1.3548	1.3548	1.35	3/22/2020
28	K2002456-004	1	1.375	0.0778	1.2971	1.2971	1.3	3/22/2020
29	ccv	1	25.130	0.0778	25.0525	25.0525	25.1	3/23/2020
30	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
31		1		0.0000	0.0000	0	<0.5	
32		1		0.0000	0.0000	0	<0.5	
33		1		0.0000	0.0000	0	<0.5	
34		1		0.0000	0.0000	0	<0.5	
35		1		0.0000	0.0000	0	<0.5	
36		1		0.0000	0.0000	0	<0.5	
37		1		0.0000	0.0000	0	<0.5	
38		1		0.0000	0.0000	0	<0.5	
39		1		0.0000	0.0000	0	<0.5	
40		1		0.0000	0.0000	0	<0.5	
41		1		0.0000	0.0000	0	<0.5	
42		1		0.0000	0.0000	0	<0.5	
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: BCP	Date Analyzed 3/21/20
Reviewed By:	Date Reviewed

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.130	0.0778	25.0525	25.0525	25.1	3/23/2020
3	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
4	mb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
5	lcs	1	24.199	0.0778	24.1209	24.1209	24.1	3/23/2020
6	K2002462-002	1	4.117	0.0778	4.0393	4.0393	4.04	3/23/2020
7	K2002462-002	1	4.067	0.0778	3.9892	3.9892	4.0	3/23/2020
8	KQ2004010-07	1	32.047	0.0778	31.9695	31.9695	32	3/23/2020
9	K2002422-001	1	9.445	0.0778	9.3675	9.3675	9.37	3/23/2020
10	K2002422-001	1	9.612	0.0778	9.5338	9.5338	9.53	3/23/2020
11	ccv	1	25.060	0.0778	24.9820	24.982	25.0	3/23/2020
12	ccb	1	0.000	0.0778	-0.0778	-0.0778	<0.5	3/23/2020
13		1		0.0000	0.0000	0	<0.5	
14		1		0.0000	0.0000	0	<0.5	
15		1		0.0000	0.0000	0	<0.5	
16		1		0.0000	0.0000	0	<0.5	
17		1		0.0000	0.0000	0	<0.5	
18		1		0.0000	0.0000	0	<0.5	
19		1		0.0000	0.0000	0	<0.5	
20		1		0.0000	0.0000	0	<0.5	
21		1		0.0000	0.0000	0	<0.5	
22		1		0.0000	0.0000	0	<0.5	
23		1		0.0000	0.0000	0	<0.5	
24		1		0.0000	0.0000	0	<0.5	
25		1		0.0000	0.0000	0	<0.5	

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

	date	time
Analyzed By: BCP	Date Analyzed 3/21/20	
Reviewed By:	Date Reviewed	

TOC: 674205, 674225, 674226
DOC: 674227

Schedule: 03212020

Version: 4
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2020/03/21 21:07 - Saturday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
74	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K2002337-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
4	Sample	K2002337-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
5	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
6	Sample	K2002337-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
7	Sample	K2002337-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
8	Sample	K2002337-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
9	Sample	K2002337-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
10	Sample	K2002337-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	K2002337-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	K2002276-001.01 10x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	K2002365-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
14	Sample	K2002353-001.01 400x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
15	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
16	Sample	K2002412-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
17	Sample	K2002412-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
18	Sample	K2002412-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
19	Sample	K2002412-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
21	Sample	K2002412-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K2002412-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
23	Sample	K2002412-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
24	Sample	K2002412-008.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
25	Sample	K2002434-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K2002434-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K2002434-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K2002416-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
29	Sample	K2002416-001.02 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
30	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
31	Sample	K2002416-002.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
32	Sample	K2002416-003.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
33	Sample	K2002416-004.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
34	Sample	K2002462-001.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
35	Sample	K2002470-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
36	Sample	K2002471-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
37	Sample	K2002489-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
38	Sample	K2002492-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready

Schedule: 03212020

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
39	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
40	Sample	K2002496-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
41	Sample	K2002421-001.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
42	Sample	K2002421-002.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
43	Sample	K2002421-003.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
44	Sample	K2002421-004.12	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
45	Sample	K2002432-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
46	Sample	K2002432-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
47	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
48	Sample	K2002437-001.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
49	Sample	K2002437-002.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
50	Sample	K2002437-003.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
51	Sample	K2002437-004.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
52	Sample	K2002437-005.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
53	Sample	K2002456-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
54	Sample	K2002456-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
55	Sample	K2002456-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
56	Sample	K2002456-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
57	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
58	Sample	MB4	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
59	Sample	K2002462-002.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
60	Sample	K2002462-002.04 ms doc	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
61	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
62	Sample	FB 3/19/20 1619	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
63	Sample	K2002422-001.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
64	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
					False	

Fusion Report - 03212020
Saturday, March 21, 2020 04:44 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/03/24 09:26 - Tuesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	03212020	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v2) Fusion1 (Fusion1) (v3) Fusion1 (Fusion1) (v4)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/03/21 16:44

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	12.01	16.15	4.14	49.81	08:01
2	TC Clean	18.09	21.86	3.77	49.56	07:17
3	TC Clean	6.93	10.79	3.86	49.61	07:02
4	TC Clean	5.02	8.90	3.88	49.63	07:01

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	74	TOC	RB	0.4528 ppm	0.0533 ppm	11.7700%	2020/03/21 17:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4804	4.8037	10.62	14.37	3.75	49.71	10:29
2	TOC	0.4973	4.9732	10.74	14.56	3.82	49.67	10:29
3	TOC	0.4567	4.5672	10.46	14.14	3.68	49.67	10:27
4	TOC	0.3769	3.7687	9.93	13.76	3.83	49.65	10:29

Dilution **Blank Contribution** **Method** **Calibration**

1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/03/21 18:14

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	9.17	13.91	4.74	49.79	07:59
2	TC Clean	6.79	10.62	3.83	49.55	07:20
3	TC Clean	4.32	8.23	3.91	49.61	07:00
4	TC Clean	3.54	7.40	3.86	49.60	07:01

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/03/21 18:48

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.92	4.73	3.81	49.82	07:59
2	TC Clean	8.57	12.40	3.83	49.62	07:17
3	TC Clean	4.30	8.10	3.80	49.63	07:00
4	TC Clean	3.55	7.36	3.81	49.65	07:03

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	D	TOC	RB	0.2621 ppm	0.0000 ppm	0.0000%	2020/03/21 19:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2621	2.6207	9.15	12.95	3.80	49.69	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCB — From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time

◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0432 ppm (PASS)	0.0000 ppm	0%	2020/03/21 19:37

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0432	0.4318	8.11	11.92	3.82	49.72	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.4058 ppm (PASS)	0.0000 ppm	0%	2020/03/21 19:52

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.4058	264.0582	185.40	189.22	3.82	49.75	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Sample From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	1	TOC	MB1	0.3656 ppm	0.0000 ppm	0.0000%	2020/03/21 20:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3656	3.6557	9.85	13.62	3.77	49.76	10:35

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	24.9536 ppm (PASS)	0.0000 ppm	0%	2020/03/21 20:21

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.9536	249.5362	175.63	179.68	4.05	49.79	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample — From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	2	TOC	ICS	2.0813 ppm	0.0000 ppm	0.0000%	2020/03/21 20:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.0813	20.8126	21.39	25.32	3.93	49.83	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	3	TOC	K2002337-001.01	0.9886 ppm	0.0076 ppm	0.7700%	2020/03/21 20:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9940	9.9397	14.08	17.85	3.78	49.85	10:28
2	TOC	0.9833	9.8327	14.00	17.80	3.80	49.88	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Sample — From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	4	TOC	K2002337-001.01 ms	29.5612 ppm	0.0000 ppm	0.0000%	2020/03/21 21:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	29.5612	295.6123	206.19	209.98	3.79	49.90	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	5	TOC	RB	0.2728 ppm	0.0000 ppm	0.0000%	2020/03/21 21:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2728	2.7278	9.23	12.95	3.72	49.94	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	6	TOC	K2002337-002.01	0.8974 ppm	0.0415 ppm	4.6300%	2020/03/21 21:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9268	9.2676	13.62	17.26	3.63	49.95	10:26
2	TOC	0.8680	8.6802	13.23	17.12	3.89	49.98	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	7	TOC	K2002337-003.01	0.8143 ppm	0.0520 ppm	6.3900%	2020/03/21 22:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8511	8.5107	13.12	16.70	3.59	49.97	10:27
2	TOC	0.7775	7.7747	12.62	16.55	3.93	50.00	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	8	TOC	K2002337-004.01	0.7537 ppm	0.0078 ppm	1.0300%	2020/03/21 22:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7592	7.5918	12.50	16.55	4.05	50.01	10:30
2	TOC	0.7482	7.4817	12.42	16.32	3.90	50.00	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	9	TOC	K2002337-005.01	0.5361 ppm	0.0093 ppm	1.7300%	2020/03/21 23:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5296	5.2958	10.95	14.68	3.72	49.98	10:30
2	TOC	0.5427	5.4267	11.04	14.79	3.75	49.99	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.3792 ppm	0.0000 ppm	0%	2020/03/21 23:40

							(PASS)			

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.3792	263.7921	185.22	188.92	3.71	50.01	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.1999 ppm (PASS)	0.0000 ppm	0%	2020/03/21 23:55

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.1999	1.9991	9.16	12.96	3.80	50.00	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	10	TOC	K2002337-006.01	1.9404 ppm	0.0159 ppm	0.8200%	2020/03/22 00:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9516	19.5160	20.52	24.28	3.76	50.01	10:33
2	TOC	1.9291	19.2914	20.37	24.25	3.89	49.98	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	11	TOC	K2002337-007.01	0.6836 ppm	0.0367 ppm	5.3700%	2020/03/22 00:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7095	7.0951	12.16	15.91	3.75	49.97	10:25
2	TOC	0.6576	6.5762	11.81	15.68	3.87	49.95	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis	Sample ID	Result (ppmC)	Std. Dev.	RSD	Start Time

		Type			(ppmC)		
◈	12	TOC	K2002276-001.01 10x	5.9640 ppm	0.0468 ppm	0.7800%	2020/03/22 01:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.9309	59.3095	47.28	51.18	3.91	49.95	10:27
2	TOC	5.9971	59.9712	47.72	51.51	3.79	49.96	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	13	TOC	K2002365-001.01	6.8196 ppm	0.0075 ppm	0.1100%	2020/03/22 01:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.8249	68.2493	53.29	57.25	3.96	49.94	10:26
2	TOC	6.8144	68.1437	53.22	57.13	3.91	49.94	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	14	TOC	K2002353-001.01 400x	1.2985 ppm	0.0376 ppm	2.9000%	2020/03/22 02:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3251	13.2513	16.30	20.20	3.90	49.93	10:28
2	TOC	1.2719	12.7189	15.94	19.92	3.97	49.90	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	15	TOC	RB	0.0981 ppm	0.0036 ppm	3.6500%	2020/03/22 02:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1006	1.0059	8.07	11.84	3.77	49.88	10:26
2	TOC	0.0955	0.9553	8.03	12.08	4.05	49.88	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	16	TOC	K2002412-001.01	10.5546 ppm	0.2870 ppm	2.7200%	2020/03/22 02:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	10.7576	107.5758	79.74	83.68	3.95	49.85	10:29
2	TOC	10.3516	103.5163	77.01	80.95	3.94	49.85	10:26

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	17	TOC	K2002412-002.01	2.3288 ppm	0.1450 ppm	6.2300%	2020/03/22 03:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4313	24.3130	23.74	27.73	3.98	49.85	10:28
2	TOC	2.2262	22.2625	22.36	26.60	4.24	49.85	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	18	TOC	K2002412-003.01	44.7487 ppm	0.2255 ppm	0.5000%	2020/03/22 03:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	44.9082	449.0821	309.40	313.24	3.84	49.85	10:30
2	TOC	44.5892	445.8925	307.25	311.28	4.03	49.85	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	19	TOC	K2002412-004.01	1.1317 ppm	0.2040 ppm	18.0300%	2020/03/22 04:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2759	12.7591	15.97	20.08	4.10	49.87	10:27
2	TOC	0.9874	9.8743	14.03	18.07	4.04	49.92	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.5377 ppm (PASS)	0.0000 ppm	0%	2020/03/22 04:51

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.5377	265.3772	186.28	190.22	3.94	49.88	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	50 ppmC

met.	(v4)	(v32)

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0545 ppm (PASS)	0.0000 ppm	0%	2020/03/22 05:06

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0545	0.5449	8.18	12.24	4.06	49.92	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	20	TOC	MB2	0.1357 ppm	0.0000 ppm	0.0000%	2020/03/22 05:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1357	1.3568	8.30	12.27	3.97	49.92	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	24.6983 ppm (PASS)	0.0000 ppm	0%	2020/03/22 05:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.6983	246.9831	173.91	177.85	3.94	49.91	10:35

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

◆	21	TOC	K2002412-005.01	4.5686 ppm	0.1148 ppm	2.5100%	2020/03/22 05:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.6498	46.4975	38.66	42.58	3.92	49.92	10:28
2	TOC	4.4874	44.8737	37.57	41.59	4.02	49.93	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	22	TOC	K2002412-006.01	31.0641 ppm	0.3704 ppm	1.1900%	2020/03/22 06:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	31.3260	313.2600	218.06	222.06	4.00	49.92	10:27
2	TOC	30.8021	308.0213	214.54	218.63	4.09	49.93	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	23	TOC	K2002412-007.01	0.7597 ppm	0.1427 ppm	18.7800%	2020/03/22 06:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8606	8.6059	13.18	17.31	4.14	49.93	10:28
2	TOC	0.6588	6.5880	11.82	15.93	4.11	49.94	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	24	TOC	K2002412-008.01	5.3228 ppm	0.0364 ppm	0.6800%	2020/03/22 07:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.2970	52.9704	43.01	47.07	4.06	49.93	10:27
2	TOC	5.3485	53.4849	43.36	47.40	4.04	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	25	TOC	K2002434-001.01	0.2946 ppm	0.0331 ppm	11.2400%	2020/03/22 07:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3180	3.1799	9.53	13.49	3.96	49.96	10:27
2	TOC	0.2711	2.7115	9.22	13.14	3.93	49.95	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	26	TOC	K2002434-002.01	0.6819 ppm	0.0107 ppm	1.5700%	2020/03/22 08:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6894	6.8944	12.03	15.93	3.91	49.95	10:31
2	TOC	0.6743	6.7427	11.93	15.87	3.94	49.94	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	27	TOC	K2002434-003.01	0.2246 ppm	0.0465 ppm	20.6900%	2020/03/22 08:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1917	1.9174	8.68	12.65	3.97	49.94	10:25
2	TOC	0.2575	2.5746	9.12	13.14	4.02	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	28	TOC	K2002416-001.02	0.0905 ppm	0.0113 ppm	12.4200%	2020/03/22 09:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0985	0.9850	8.05	11.97	3.92	49.94	10:26
2	TOC	0.0826	0.8259	7.95	11.91	3.97	49.95	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8425 ppm (PASS)	0.0000 ppm	0%	2020/03/22 09:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8425	258.4255	181.61	185.65	4.04	49.95	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	50 ppmC

met.	(v4)	(v32)

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 09:49

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.06	10.95	3.89	49.94	10:28

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	29	TOC	K2002416-001.02 ms	27.8620 ppm	0.0000 ppm	0.0000%	2020/03/22 10:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.8620	278.6204	194.76	198.67	3.91	49.95	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	30	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 10:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.09	11.09	4.00	49.95	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	31	TOC	K2002416-002.02	0.0917 ppm	0.0101 ppm	11.0100%	2020/03/22 10:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0988	0.9880	8.06	12.13	4.08	49.96	10:26
2	TOC	0.0845	0.8453	7.96	12.11	4.15	49.97	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	32	TOC	K2002416-003.02	0.2530 ppm	0.0254 ppm	10.0600%	2020/03/22 11:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2710	2.7100	9.21	13.27	4.06	49.93	10:29
2	TOC	0.2350	2.3501	8.97	12.92	3.95	49.92	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	33	TOC	K2002416-004.02	1.6097 ppm	0.0073 ppm	0.4500%	2020/03/22 11:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6148	16.1479	18.25	22.09	3.84	49.94	10:26
2	TOC	1.6045	16.0453	18.18	22.08	3.90	49.92	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	34	TOC	K2002462-001.06	3.0392 ppm	0.0019 ppm	0.0600%	2020/03/22 11:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.0405	30.4052	27.84	31.73	3.89	49.91	10:31
2	TOC	3.0378	30.3785	27.82	31.60	3.78	49.91	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	35	TOC	K2002470-001.01	2.1044 ppm	0.0619 ppm	2.9400%	2020/03/22 12:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1482	21.4818	21.84	25.60	3.76	49.92	10:27
2	TOC	2.0606	20.6059	21.25	25.19	3.94	49.92	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	36	TOC	K2002471-001.01	4.4447 ppm	0.0904 ppm	2.0300%	2020/03/22 12:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.5086	45.0863	37.71	41.74	4.03	49.90	10:29

2	TOC	4.3808	43.8075	36.85	40.81	3.96	49.89	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	37	TOC	K2002489-001.01	4.7622 ppm	0.0543 ppm	1.1400%	2020/03/22 13:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.8005	48.0053	39.67	43.66	3.99	49.91	10:29
2	TOC	4.7238	47.2380	39.16	43.00	3.84	49.91	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	38	TOC	K2002492-002.01	0.4658 ppm	0.0189 ppm	4.0600%	2020/03/22 13:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4524	4.5241	10.43	14.40	3.97	49.90	10:27
2	TOC	0.4792	4.7918	10.61	14.28	3.66	49.89	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.6946 ppm (PASS)	0.0000 ppm	0%	2020/03/22 14:19

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.6946	256.9459	180.61	184.49	3.88	49.89	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 14:33

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.32	10.16	3.85	49.87	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	39	TOC	MB3	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 14:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.92	9.75	3.83	49.87	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.7423 ppm (PASS)	0.0000 ppm	0%	2020/03/22 15:03

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.7423	247.4232	174.21	178.06	3.85	49.87	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	40	TOC	K2002496-001.01	14.0184 ppm	0.6231 ppm	4.4400%	2020/03/22 15:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.4590	144.5901	104.63	108.44	3.81	49.85	10:28
2	TOC	13.5778	135.7782	98.70	102.54	3.83	49.84	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	41	TOC	K2002421-001.12	1.5767 ppm	0.0401 ppm	2.5400%	2020/03/22 15:45

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6050	16.0498	18.18	22.01	3.83	49.82	10:28
2	TOC	1.5483	15.4833	17.80	21.76	3.95	49.80	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	42	TOC	K2002421-002.12	0.8540 ppm	0.0165 ppm	1.9300%	2020/03/22 16:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8656	8.6565	13.21	17.17	3.96	49.80	10:29
2	TOC	0.8423	8.4230	13.06	16.87	3.81	49.81	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	43	TOC	K2002421-003.12	1.7781 ppm	0.0172 ppm	0.9700%	2020/03/22 16:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.7659	17.6587	19.27	23.22	3.95	49.79	10:29
2	TOC	1.7903	17.9026	19.43	23.24	3.81	49.77	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	44	TOC	K2002421-004.12	0.8774 ppm	0.0261 ppm	2.9700%	2020/03/22 17:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8958	8.9583	13.42	17.18	3.76	49.77	10:27
2	TOC	0.8590	8.5895	13.17	16.92	3.75	49.78	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	45	TOC	K2002432-001.01	0.1255 ppm	0.0243 ppm	19.3500%	2020/03/22 17:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1083	1.0832	8.12	11.94	3.82	49.80	10:28

2	TOC	0.1427	1.4267	8.35	12.16	3.81	49.84	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	46	TOC	K2002432-001.01 ms	26.3798 ppm	0.0000 ppm	0.0000%	2020/03/22 18:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	26.3798	263.7980	184.80	188.75	3.96	49.85	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	47	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 18:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.97	9.86	3.88	49.86	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.4176 ppm (PASS)	0.0000 ppm	0%	2020/03/22 18:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.4176	254.1757	178.75	182.64	3.89	49.88	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/22 18:50

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time

D	TOC	0 ppm	1	0.0000	0.0000	6.08	9.82	3.74	49.92	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	48	TOC	K2002437-001.03	1.8820 ppm	0.0408 ppm	2.1700%	2020/03/22 19:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9109	19.1085	20.24	24.02	3.78	49.93	10:29
2	TOC	1.8532	18.5316	19.85	23.57	3.71	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	49	TOC	K2002437-002.03	0.7951 ppm	0.0104 ppm	1.3100%	2020/03/22 19:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8024	8.0245	12.79	16.50	3.71	50.00	10:24
2	TOC	0.7877	7.8773	12.69	16.46	3.77	49.99	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	50	TOC	K2002437-003.03	3.1945 ppm	0.0197 ppm	0.6200%	2020/03/22 20:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.1806	31.8060	28.78	32.47	3.69	50.00	10:30
2	TOC	3.2084	32.0841	28.97	32.65	3.68	50.00	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	51	TOC	K2002437-004.03	0.7492 ppm	0.0484 ppm	6.4600%	2020/03/22 20:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7834	7.8341	12.66	16.42	3.76	50.00	10:32
2	TOC	0.7150	7.1501	12.20	15.91	3.71	50.03	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC)	CAS_salt_010711	CAS_salt_010711

(v1364) (v4) (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	52	TOC	K2002437-005.03	0.6532 ppm	0.0170 ppm	2.6100%	2020/03/22 20:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6652	6.6520	11.86	15.62	3.76	50.00	10:25
2	TOC	0.6411	6.4111	11.70	15.67	3.96	50.03	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	53	TOC	K2002456-001.01	1.1335 ppm	0.0168 ppm	1.4800%	2020/03/22 21:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1453	11.4535	15.09	18.93	3.84	50.00	10:25
2	TOC	1.1216	11.2156	14.93	18.88	3.94	50.02	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	54	TOC	K2002456-002.01	0.7645 ppm	0.0422 ppm	5.5200%	2020/03/22 21:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7943	7.9427	12.73	16.72	3.99	50.05	10:29
2	TOC	0.7346	7.3464	12.33	16.17	3.83	50.01	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	55	TOC	K2002456-003.01	1.4306 ppm	0.0000 ppm	0.0000%	2020/03/22 22:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4306	14.3056	17.01	21.07	4.05	50.03	10:28
2	TOC	1.4306	14.3056	17.01	20.90	3.89	50.04	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	56	TOC	K2002456-004.01	1.4038 ppm	0.0408 ppm	2.9100%	2020/03/22 22:49

Rep	Base	ppm	µg	Adjusted	NDIR (Abs)	Baseline	Pressure	Run

#	Analysis Type			(Abs)		(Abs)	(psig)	Time
1	TOC	1.4326	14.3264	17.03	21.09	4.07	50.03	10:26
2	TOC	1.3749	13.7494	16.64	20.59	3.96	50.03	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	57	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/22 23:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.12	9.08	3.96	50.08	10:29
2	TOC	0.0000	0.0000	5.08	8.91	3.83	50.03	10:26
3	TOC	0.0000	0.0000	4.92	8.74	3.82	50.02	10:27
4	TOC	0.0000	0.0000	4.82	8.59	3.76	50.04	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.1303 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:13

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.1303	251.3028	176.82	180.56	3.74	50.04	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:27

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.42	9.22	3.80	50.03	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	58	TOC	MB4	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 00:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.04	8.76	3.72	50.03	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.1987 ppm (PASS)	0.0000 ppm	0%	2020/03/23 00:57

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.1987	241.9868	170.55	174.42	3.87	50.01	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	25 ppmC

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	59	TOC	K2002462-002.04 doc	4.0921 ppm	0.0354 ppm	0.8700%	2020/03/23 01:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.1171	41.1711	35.08	38.88	3.80	50.00	10:29
2	TOC	4.0670	40.6700	34.74	38.61	3.87	50.04	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	60	TOC	K2002462-002.04 ms doc	32.0473 ppm	0.0000 ppm	0.0000%	2020/03/23 01:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	32.0473	320.4734	222.91	226.80	3.89	50.01	10:31

Dilution	Blank Contribution	Method	Calibration

1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	61	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 01:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.10	10.11	4.00	50.00	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	62	TOC	FB 3/19/20 1619	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 02:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.24	9.23	4.00	49.99	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	63	TOC	K2002422-001.04 doc	9.5284 ppm	0.1176 ppm	1.2300%	2020/03/23 02:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.4453	94.4531	70.91	74.94	4.03	50.01	10:29
2	TOC	9.6116	96.1156	72.03	75.73	3.70	49.98	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	64	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/03/23 02:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.59	9.48	3.89	49.99	10:29
2	TOC	0.0000	0.0000	5.25	9.15	3.90	49.99	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3916 (IC) (v1364)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25	0 / infinity	25.0598	0.0000	0%	2020/03/23 03:20

					ppm [25 ppm]	(NA / NA)	ppm (PASS)	ppm		

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.0598	250.5980	176.34	180.27	3.92	49.97	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 4

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/03/23 03:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.46	9.42	3.96	50.00	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)	0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1364	1.7787	1.3950	0.0000	0.0000	0.0000	2020/03/19 15:10	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v32	Calibration curve formula:	TOC: y = 6.725x + 7.818
Ver Creation:	2020/03/11 15:55	r^2 value:	TOC: r^2 = 0.99921
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	5.8640	0.0000		2020/03/11 14:28
0.500 ppm	9.5210	0.5000		2020/03/11 14:42
1.0 ppm	12.5930	1.0000		2020/03/11 14:56
5.0 ppm	40.5270	5.0000		2020/03/11 15:10
10 ppm	79.5310	10.0000		2020/03/11 15:25
25 ppm	181.4610	25.0000		2020/03/11 15:39
50 ppm	340.5610	50.0000		2020/03/11 15:53

Methods

Name: CAS_salt_010711 (TOC)

Version: v4 Operator: Fusion1 (Fusion1)

Ver Creation: 2019/02/21 17:57

Comment:

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/03/23 03:50

ALS Environmental

StarLIMS Run:	674205, 674225, 674226, 674227
Analysis:	DOC/TOC
Method:	SM 5310 C, 9060A, 415.1, 9060

CCV: 11-GEN-05-82C 50 ppm LCS: 11-GEN-05-79J 25.0 ppm

ICAL Date: 3/11/2020

ICAL ID: 19-GEN-8-7-E->J

ICS ID: 11-GEN-05-78M

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 11-GEN-05-82C 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 19-GEN-08-9-H

21 % H3PO4: 19-GEN-08-8-K

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

21 BKD 3/24/20

Analyzed By: BKD	Date Analyzed: 3/24/20
Reviewed By: QC	Date Reviewed: 3/24/20

Case Narrative

Method: 6850
Analysis: Perchlorate
Analysis SOP: LC-MS-CLO4
ALS WO ID(s): 2008062; 2008310

Client: ALS Laboratories (Houston, TX)
Matrix: Water
ELMS Batch (HBN): 2362 (259687)

General Set Information: There were twenty field samples in these Work Orders. The samples were analyzed for perchlorate.

Method Summary: Each sample was prepared as noted below and analyzed using an Agilent 1100 LC/MSD system in select ion monitoring (SIM) mode at m/z 83 and 85, which corresponds to the loss of one oxygen atom from the perchlorate molecule. ChemStation software was used for instrument control and data analysis. The ion ratio of m/z 83 to 85 was used to positively identify the response peak as perchlorate. Quantitation was performed using the m/z 83 peak area. An internal standard (ISTD) of ^{18}O labeled perchlorate was added to each sample to establish the perchlorate peak retention time and used in quantitation.

Sample Preparation: A 10.0mL aliquot of each sample was transferred into a 15-mL centrifuge tube. 50µL of an ^{18}O labeled perchlorate solution was added to each sample as an internal standard. The samples were then capped, vortexed, and filtered into autosampler vial using Phenex PES membrane 0.45µm Syringe filters.

Holding Times: Holding times were met for all analyses.

Dilutions: NA

Method QC data: The method blank (LMB 701041) was less than 1/2 the CRDL. The recovery for the LCS (701038) was within acceptable parameters.

MS/MSD Analysis: MS/MSD was performed on samples 2008310002/03 (Client ID: 16WW44-200317). 3.0µL of Working Standard Solution Horizon ID 49947 was added to 10.0mL of sample preparation. The spike target was 3.µg/L. The MS/MSD percent recoveries and relative percent difference (RPD) were within the performance limits.

Instrument QC: Instrument initial and continuing calibrations were performed in accordance with published procedures.

NC/CAR(s): NA

Sample Calculation: Samples were reported in µg/L. Results were calculated in µg/L by the equation (A)x(B),

where: A = Analyte concentration from the standard curve (µg/L)
B = Dilution performed at time of analysis

Miscellaneous Comments: These samples were analyzed in accordance with the requirements found in the DOD QSM Version 5.1.1. Field sample 2008062001 had a positive result for perchlorate. However, because the 83/85 ion ratio failed, the result was not reported. The Reporting Limit Verification Standard (RLVS – 701039) is reported from the analysis of the Laboratory Control Sample (LCS – 701038) at a level of 3.0µg/L. Due to limitations of the Chemstation Software, some of the chromatographic peaks may require manual integrations. A manual integration was performed for one of the Initial Calibration analyses (datafile: 20SEPI03) along with datafiles 26MARD07.

Thomas Bosch — Analyst
March 29, 2020 — Date

ANALYTICAL REPORT

Report Date: March 31, 2020

RJ Modashia
ALS Environmental (Houston)
10450 Stancliff Road
Suite 210
Houston, TX 77099

Phone: 281 530-5656

E-mail: RJ.Modashia@ALSGlobal.com

Workorder: **34-2008310**
Project ID: HS20030888
Purchase Order: HS20030888
Project Manager Kevin W. Griffiths

Client Sample ID	Lab ID	Collect Date	Receive Date	Sampling Site
16WW44-200317	2008310001	03/17/20	03/20/20	
16WW37-200317	2008310004	03/17/20	03/20/20	
16WW38-200317	2008310005	03/17/20	03/20/20	
16WW14-200317	2008310006	03/17/20	03/20/20	
16RW06-200317	2008310007	03/17/20	03/20/20	
16PM03-200317	2008310008	03/17/20	03/20/20	
16PM02-200317	2008310009	03/17/20	03/20/20	
16RW07-200317	2008310010	03/17/20	03/20/20	
16RW11-200317	2008310011	03/17/20	03/20/20	
16WW51-200317	2008310012	03/17/20	03/20/20	

Client QC ID *	Lab ID	Collect Date	Receive Date	Sampling Site
16WW44-200317MS	2008310002	03/17/20	03/20/20	
16WW44-200317MSD	2008310003	03/17/20	03/20/20	

***Client QC is reported as part of the Quality Control results report, if requested.**

ANALYTICAL REPORT

Workorder: 34-2008310
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **16WW44-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310001 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 11:08 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW37-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310004 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 12:04 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW38-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310005 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 12:18 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW14-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310006 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 12:32 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

ANALYTICAL REPORT

Workorder: 34-2008310
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **16RW06-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310007 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 12:46 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16PM03-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310008 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 13:00 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	**400**	10	20	40	10	

Sample ID: **16PM02-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310009 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 13:14 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16RW07-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310010 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 13:28 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	**4.9**	1.0	2.0	4.0	1	

ANALYTICAL REPORT

Workorder: 34-2008310
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **16RW11-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310011 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 13:42 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Sample ID: **16WW51-200317** | Sampling Site: NA | Collected: 03/17/2020
Lab ID: 2008310012 | Media: 125 mL Nalgene | Received: 03/20/2020
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable
Analysis: EPA 6850, DoD QSM Water | **Instrument ID:** LCMS04
Batch: ELMS/2362 (HBN: 259687) | **%Solids:** NA
Analyzed: 03/26/2020 13:56 | **Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	1.0	2.0	4.0	1	U

Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method	Analyst	Peer Review
EPA 6850, DoD QSM	/S/ Thomas Bosch 03/27/2020 11:27	/S/ Stephen Brose 03/31/2020 15:31

Laboratory Contact Information

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Email: alslt.lab@ALSGlobal.com
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ANALYTICAL REPORT

Workorder: 34-2008310
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
The following was provided by the client: Sample ID, Collection Date, Sampling Location, Media Type, Sampling Parameter.
Collection Date, Media Type, and Sampling Parameter can potentially affect the validity of the results.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	PJLA (DoD ELAP)	L17-506	http://www.pjlabs.com
	PJLA (ISO 17025)	L17-507-R1	http://www.pjlabs.com
	Utah (TNI)	UT00953	http://lams.nelac-institute.org/search
	Iowa (TNI)	IA# 376	http://www.shl.uiowa.edu/labcert/idnr/
	Kansas	E-10416	http://www.kdheks.gov/envlab/disclaimer.html
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP)	101574	http://www.aihaaccreditedlabs.org
	DOECAP-AP	L18-606	http://www.pjlabs.com
	Washington	C596	https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Laboratory-Accreditation
Dietary Supplements	PJLA (ISO 17025)	L17-507-R1	http://www.pjlabs.com

Result Symbol Definitions

MDL = Method Detection Limit, a statistical estimate of method/media/instrument sensitivity.
RL = Reporting Limit, a verified value of method/media/instrument sensitivity.
CRDL = Contract Required Detection Limit
Reg. Limit = Regulatory Limit.
ND = Not Detected, testing result not detected above the MDL or RL.
< Means this testing result is less than the numerical value.
** No result could be reported, see sample comments for details.

Qualifier Symbol Definitions

U = Qualifier indicates that the analyte was not detected above the MDL.
J = Qualifier Indicates that the analyte value is between the MDL and the RL. It is also used to indicate an estimated value for tentatively identified compounds in mass spectrometry where a 1:1 response is assumed.
B = Qualifier indicates that the analyte was detected in the blank.
E = Qualifier indicates that the analyte result exceeds calibration range.
P = Qualifier indicates that the RPD between the two columns is greater than 40%.

Quality Control Sample Batch Report

Analysis Information

Workorder: 2008310

Limits:	Client SOW/Contract Specified	**Preparation:**	NA	**Analysis:**	EPA 6850, DoD QSM
Basis:	DoD QSM	**Batch:**	NA	**Batch:**	ELMS/2362 (HBN: 259687)
		Prepared By:	NA	**Analyzed By:**	Thomas Bosch

Blank

LMB: 701041
Analyzed: 03/26/2020 09:02
Units: ug/L

Analyte	Result	MDL	RL
Perchlorate	ND	1	2.00

Laboratory Control Sample

LCS: 701038
Analyzed: 03/26/2020 08:34
Dilution: 1
Units: ug/L

Analyte	Result	Target	% Rec	QC Limits	
Perchlorate	3.07	3.00	102	78.8	123.8

Matrix Spike - Matrix Spike Duplicate

Sample:	2008310001	**MS:**	2008310002	**MSD:**	2008310003
Analyzed:	03/26/2020 11:08	**Analyzed:**	03/26/2020 11:22	**Analyzed:**	03/26/2020 11:50
Dilution:	1	**Dilution:**	1	**Dilution:**	1
Units:	ug/L	**Units:**	ug/L	**Units:**	ug/L

Analyte	Result	Result	Target	% Rec	QC Limits		Result	% Rec	RPD	QC Limits	
Perchlorate	ND	3.03	3	101	78.8	123.8	3	100	0.991	0.0	20.0

QC Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Analyst	Peer Review
/S/ Thomas Bosch	/S/ Stephen Brose
03/29/2020 11:11	03/31/2020 15:31

Symbols and Definitions

- * - Analyte above reporting limit or outside of control limits
- ▲ - Sample result is greater than 4 times the spike added
- ◆ - Sample and Matrix Duplicate less than 5 times the reporting limit
- ● - Result is above the calibration range
- # - The Matrix Spike, Matrix Spike duplicate or Matrix Duplicate is reported for your information only. The sample matrix may be inappropriate for the method selected.

RPD - Relative % Difference (Spike / Spike Duplicate)
ND - Not Detected (U - Qualifier also flags analyte as not detected)
NA - Not Applicable
QC results are not adjusted for moisture correction, where applicable

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18698 / #2

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID: 13558**

2008310

SUBCONTRACT TO:

ALS Laboratory Group
960 LeVoy Dr
Salt Lake City, UT 84123

Phone: +1 801 266 7700

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
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Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20030888
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20030888-01**	**16WW44-200317**	**Groundwater**	**17 Mar 2020 08:20**
	SUB_Perch-6850			02 Apr 2020
2.	**HS20030888-02**	**16WW37-200317**	**Groundwater**	**17 Mar 2020 09:15**
	SUB_Perch-6850			02 Apr 2020
3.	**HS20030888-03**	**16WW38-200317**	**Groundwater**	**17 Mar 2020 10:00**
	SUB_Perch-6850			02 Apr 2020
4.	**HS20030888-04**	**16WW14-200317**	**Groundwater**	**17 Mar 2020 10:50**
	SUB_Perch-6850			02 Apr 2020
5.	**HS20030888-05**	**16RW06-200317**	**Groundwater**	**17 Mar 2020 11:40**
	SUB_Perch-6850			02 Apr 2020
6.	**HS20030888-06**	**16PM03-200317**	**Groundwater**	**17 Mar 2020 12:35**
	SUB_Perch-6850			02 Apr 2020
7.	**HS20030888-07**	**16PM02-200317**	**Groundwater**	**17 Mar 2020 13:25**
	SUB_Perch-6850			02 Apr 2020
8.	**HS20030888-08**	**16RW07-200317**	**Groundwater**	**17 Mar 2020 14:15**
	SUB_Perch-6850			02 Apr 2020
9.	**HS20030888-09**	**16RW11-200317**	**Groundwater**	**17 Mar 2020 15:00**

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13558**

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
		SUB_Perch-6850		02 Apr 2020
10.	**HS20030888-10**	**16WW51-200317**	**Groundwater**	**17 Mar 2020 15:50**
		SUB_Perch-6850		02 Apr 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
HS20030888-01 = MS/MSD

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 3/19/2020 1800.

Received By: Lauri Van Jessel Date/Time: 03-19-20 2:56

Cooler ID(s): _____ Temperature(s): _____

ALS Environmental

CHAIN-OF-CUSTODY

Project / Job / Task: HS20030888	***Split:***	**Workorder ID:** 2008310	**Level:** ENV_LVL4	**Requested Analysis**	
Client: ALS Environmental (Houston)		**Account:** 8101	**Type:** 125Poly		
Comments:			**Preservatives**		
			COOL		
			Containers		

Item	Collect Date/Time	Sample ID	Lab ID	QC	Matrix	Containers ID(s)	Containers Count	Requested Analysis: EPA 6850, DoD QSM
1	03/17/2020 08:20	16WW44-200317	2008310001		Water	A	1	A
2	03/17/2020 08:20	16WW44-200317MS	2008310002	MS	Water	A	1	A
3	03/17/2020 08:20	16WW44-200317MSD	2008310003	MSD	Water	A	1	A
4	03/17/2020 09:15	16WW37-200317	2008310004		Water	A	1	A
5	03/17/2020 10:00	16WW38-200317	2008310005		Water	A	1	A
6	03/17/2020 10:50	16WW14-200317	2008310006		Water	A	1	A
7	03/17/2020 11:40	16RW06-200317	2008310007		Water	A	1	A
8	03/17/2020 12:35	16PM03-200317	2008310008		Water	A	1	A
9	03/17/2020 13:25	16PM02-200317	2008310009		Water	A	1	A
10	03/17/2020 14:15	16RW07-200317	2008310010		Water	A	1	A

ORIGINAL FIELD SAMPLE CHAIN-OF-CUSTODY

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location
Warath, Julie	03/20/2020 08:56	ALS Sample Receiving	Sample Login
[signature] 3/20/20 1600		ISC	storage
R.33.1	03.25.20/10:45	T. Bosch	cool analysis

SAMPLE PREPARATION / ANALYSIS CHAIN-OF-CUSTODY

Sample Prep / Analysis for: _____ Lab Notebook No.: _____

Prepared / Analyzed by: _____ Date / Time: _____

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location

ALS Environmental

CHAIN-OF-CUSTODY

Project / Job / Task: HS20030888	Split:	Workorder ID: 2008310	Level: ENV_LVL4	Requested Analysis
Client: ALS Environmental (Houston)		Account: 8101	Type: 125Poly	
Comments:			Preservatives: COOL	

Item	Collect Date/Time	Sample ID	Lab ID	QC	Matrix	Containers ID(s)	Containers Count	EPA 6850, DoD QSM
11	03/17/2020 15:00	16RW11-200317	2008310011		Water	A	1	A
12	03/17/2020 15:50	16WW51-200317	2008310012		Water	A	1	A

ORIGINAL FIELD SAMPLE CHAIN-OF-CUSTODY

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location
Warath, Julie	03/20/2020 08:56	ALS Sample Receiving	Sample Login
[signature] 3/20/20 1600		15C	Storage
R-33.1 03/25/20/10:45		T. Bosch	cl04 analysis

SAMPLE PREPARATION / ANALYSIS CHAIN-OF-CUSTODY

Sample Prep / Analysis for: _____ Lab Notebook No.: _____

Prepared / Analyzed by: _____ Date / Time: _____

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location

ALS-Salt Lake City-Related Information Report (CRIR)

Cooler or Container Information Checklist (Fill In or Circle)

Client Name: ALS Houston

Project/Task/Site: HS00030888 2006310

Date/Time of Receipt: 03-20-20 8:56

Number of Coolers Received: 1

Condition of Coolers:	Acceptable/Unacceptable	Temperature Control:	Present/Not Included
Cooler Custody Seals:	Present/Absent/NA Intact/Broken/NA	Location Temp Taken:	Control/Between Samples
Container Custody Seals:	Present/Absent/NA Intact/Broken/NA	Are all temperatures within project specific guidelines?	Yes/No/NA
Ice Present:	Yes/No/NA Frozen/Melted/NA	VOA Headspace Present?	Yes/No/NA

pH Check Performed:							
	Metals	Yes/No/NA	Total Phenolics	Yes/No/NA	NO3/NO2	Yes/No/NA
	Cyanide	Yes/No/NA	TPH – 418.1	Yes/No/NA	Oil & Grease	Yes/No/NA
	Sulfide	Yes/No/NA	COD	Yes/No/NA	Total Phosphorous	Yes/No/NA
	Ammonia	Yes/No/NA	TKN	Yes/No/NA	Gross A,B, Gamma Spec	Yes/No/NA

Cooler Received	Cooler Condition	Temp.	Cooler Received	Cooler Condition	Temp.	Cooler Received	Cooler Condition	Temp.
1	good	1 °C	4		°C	7		°C
2		°C	5		°C	8		°C
3		°C	6		°C	9		°C

Taken By: Jennifer Jarrell (Signature) T Naitassell (Printed Name) 03-20-20 (Date)

Client-Related Information

☐ Missing Cooler	☐ Missing Samples/Bottles	☐ Incorrect Preservation	☐ Insufficient Sample Volume
☐ Cooler Conditions	☐ Broken/Leaking Samples	☐ pH Criteria Not Met	☐ Chain of Custody Problems
☐ Missing Paperwork	☐ Incorrect Bottle Type	☐ Residual Chlorine Present	☐ Other:
☐ Missing/Incorrect Bottle Labels	☐ Cooler Temperatures Out of Range	☐ Head Space in Bottles	

Briefly Describe the Problem and the Action Taken:

Client Notified? Yes ☐ No ☐

Response Required Within 24 Hours

Project Management

Project Manager Comments:

ALS Project Manager: _____ (Printed Name) Returned to Sample Receipt by: _____ (Signature) Date: _____

Must Deliver Next Business Day
Time and Tempature Sensitive!

Part # 159469-434 RIT2 EXP 12/20 #

ORIGIN ID:SGRA (281) 530-5656
SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD
SUITE 210
HOUSTON, TX 77099
UNITED STATES US

SHIP DATE: 19MAR20
ACTWGT: 18.05 LB
CAD: 300130/CAFE3211
DIMS: 14x11x10 IN

BILL THIRD PARTY

5S1C2/64E0/104C

TO SAMPLE RECEIVING
ALS ENVIRONMENTAL
960 W. LEVOY DRIVE

SALT LAKE CITY UT 84123
(801) 266-7700
REF: HS20030888 - RJ

FedEx Express

J151119060501uv

TRK# 0201 1251 0295 6628

FRI - 20 MAR 3:00P
STANDARD OVERNIGHT

AX BTFA

84123
UT-US SLC

Batch Worklist

Batch: ELMS/ 2362
Rule: EPA 6850, DoD QSM Water

Created: 3/26/2020 08:10
Analyst: T. Bosch

Instrument:
Status: WP

HBN: 259687

Workorder: 2008062 [ENV_LVL4]
Workorder: 2008310 [ENV_LVL4]

Pos	Lab ID	Sample ID	Prep Initial	Prep Final	Dust Weight	Type	Mx	Container	Procedure	Mgr	Expire Date	Due Date	Run Date
1	701037	CCV for HBN 259687 [ELMS/2362]				CCV	3		E685041C3Q	5311		4/1/2020	
2	701038	LCS for HBN 259687 [ELMS/2362]				LCS	3		E6850Q413Q	5311		4/1/2020	
3	701039	RLVS for HBN 259687 [ELMS/2362				RLVS	3		E685041C3Q	5311		4/1/2020	
4	701040	ICS for HBN 259687 [ELMS/2362]				ICS	3		E6850..D3Q	5311		4/1/2020	
5	701041	LMB for HBN 259687 [ELMS/2362]				LMB	3		E6850Q413Q	5311		4/1/2020	
6	2008062001	16WW56-200316				SAMPLE	3	2008062001-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
7	2008062002	16WW22-200316				SAMPLE	3	2008062002-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
8	2008062003	16WW41-200316				SAMPLE	3	2008062003-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
9	2008062004	16WW21-200316				SAMPLE	3	2008062004-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
10	2008062005	16WW39-200316				SAMPLE	3	2008062005-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
11	2008062006	16WW25-200316				SAMPLE	3	2008062006-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
12	2008062007	16WW21-200316-FD				FLDDUP	3	2008062007-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
13	2008062008	16WW49-200316				SAMPLE	3	2008062008-A	E6850Q41.3	5480	4/13/2020	4/1/2020	
14	2008310001	16WW44-200317				SAMPLE	3	2008310001-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
15	2008310002	16WW44-200317MS				MS	3	2008310002-A	E6850Q413Q	5480		4/1/2020	
16	701042	CCV for HBN 259687 [ELMS/2362]				CCV	3		E685041C3Q	5311		4/1/2020	
17	2008310003	16WW44-200317MSD				MSD	3	2008310003-A	E6850Q413Q	5480		4/1/2020	
18	2008310004	16WW37-200317				SAMPLE	3	2008310004-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
19	2008310005	16WW38-200317				SAMPLE	3	2008310005-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
20	2008310006	16WW14-200317				SAMPLE	3	2008310006-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
21	2008310007	16RW06-200317				SAMPLE	3	2008310007-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
22	2008310008	16PM03-200317				SAMPLE	3	2008310008-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
23	2008310009	16PM02-200317				SAMPLE	3	2008310009-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
24	2008310010	16RW07-200317				SAMPLE	3	2008310010-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
25	2008310011	16RW11-200317				SAMPLE	3	2008310011-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
26	2008310012	16WW51-200317				SAMPLE	3	2008310012-A	E6850Q41.3	5480	4/14/2020	4/2/2020	
27	701043	CCV for HBN 259687 [ELMS/2362]				CCV	3		E685041C3Q	5311		4/1/2020	
28	701102	CCV for HBN 259687 [ELMS/2362]				CCV	3		E685041C3Q	5311		4/1/2020	

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Analytical Documentation

Analyst Write-up

ALS Work Order #'s & Sample #( )'s: 2008062 (001-08); 2008310 (001-12)
ELMS Batch/HBN ID: 2362 (259687)
Prep Date: 03/24,25/2020 Analysis Date: 03/26/2020 Analyst: Tom Bosch
Analyte: **Perchlorate** Matrix: **Water** Method: **6850**
Sequence: \\HPCHEM\1\SEQUENCE\CLO4\2020\MAR\26MAR0D.s
Reported DL: **1.0µg/L** Reported LOD: **2.0µg/L** Reported LOQ: **4.0µg/L**

SAMPLE PREPARATION/ANALYSIS:

Water: Samples were prepared by Tom Bosch. 10.0mL of each sample was pipetted into a 15-mL centrifuge tube, and 50µL of an oxygen-18 labeled perchlorate solution was added as an internal standard. The samples were capped, vortexed, and filtered with Phenex PES membrane 0.45µm Syringe filters prior to analysis.

REAGENTS: Eluent A1: 95% ASTM Type II water (ALS)/5%ACN (B&J Lot DU461-US)/0.1% glacial acetic acid (JT-Baker Lot 122550).
Eluent B1: 95% ACN (B&J Lot DU461-US)/5% ASTM Type II water (ALS)/0.1% glacial acetic acid (JT-Baker Lot 122550).

STANDARDS: Internal Standard Spiking Solution Horizon# 47863. Dilutions of Working Standards (Horizon: 49947/48) used for ICAL, CCV's, RLVS and ICS.

CALIBRATION CURVE: Used curve from 09/20/2019, sequence 20SEP19D.s Offline Quantitation Method: CLO4-DP3.M

INSTRUMENT CONDITIONS: Samples were analyzed with an Agilent 1100 LC/MSD system, in negative SIM mode, monitoring m/z 83, 85, and 89.
Instrument ID: LCMS04 Online Acquisition Method: CLO4-AQN.M Fragmentor: 160 Output Gain: 10 Injection Volume: 40µL
Column: KP-RPPX C8 separator, 250mm Mobile Phase: 70% Eluent A1; 30% Eluent B1 Run time: 12.0min.

FLOW GRADIENT:

Time (min.)	Flow (mL/min)
0	0.65
5.8	0.65
5.9	0.25
10.3	0.25
10.5	0.65
12.0	0.65

QC DATA: 3.0µL of QC Solution Horizon ID 47516 was used for LCS 701038; Target = 3.0µg/L. ASTM type II water was used for LMB 701041.

MS/MSD: The Matrix Spike and duplicate (MS/MSD) was performed on samples 2008310002/03 (Client ID: 16WW44-200317). 3.0µl of Working Standard Solution Horizon ID 49947 was added to 10.0mL of sample preparation. Spike target = 3.0µg/L.

COMMENTS:

1) Results reported in µg/L.
2) All QC, Blank, CCV, and MS/MSD results were within method parameters. Field sample 2008062001 had a positive result for perchlorate. However, because the 83/85 ion ratio failed, the result was not reported.
3) Sample data can be viewed at two directories within the ALS system: \\ALSLTWS013\LCMS\LCMS04\2020\MAR\HBN# or through NuGenesis\Tree\PrintData\LCMS\DefaultView.
4) Notebook: \\alsltws013\ORGANIC\BOSCH\LCMS\Perchlorates\Waters\2020\DOD\259687-DoD-ALS-Hstn LCMS4 or through \\ALSLTWS013\DATAREVIEW\HBN#
5) The Reporting Limit Verification Standard (RLVS – 701039) is reported from the analysis of the Laboratory Control Sample (LCS – 701038) at a level of 3.0µg/L.
6) Due to limitations of the Chemstation Software, some of the chromatographic peaks require manual integration. Manual Integrations were performed for one of the Initial Calibration analyses (datafile: 20SEP103) along with datafile 26MARD07.

5.5 Chromatography (GC, HPLC and LC/MS) Technical Review

Note: It is the peer reviewer's responsibility to ensure that appropriate criteria are used as defined in the HORIZON PROFILE. The evaluation criteria are prioritized as per Section 2.2 of this SOP. These items must be checked for all projects. The following checklist will be completed by both the analyst and the peer reviewer and scanned into the HBN folder with the raw data.

Chromatography (GC, HPLC, LC/MS) Technical Review Criteria **Batch(es)/SDG:** ELMS: 2362 HBN: 259687 **Sample Set IDs if Applicable:** 2008062 / 2008310	**Analyst Initials**	**Reviewer Initials**
Sample positions on autosampler verified against instrument sequence	TB	NA
Calibration standards analyzed and meets criteria	TB	SB
Standards traceability checked and meets criteria	TB	SB
Standard curve coefficients evaluated and meet criteria	TB	SB
ICVs analyzed and meet acceptance criteria	TB	SB
CCVs analyzed and meet acceptance criteria	TB	SB
Retention Time Windows checked	TB	SB
For method 8081A, Endrin/DDT Breakdown is checked for compliance	—	—
Surrogate recoveries checked and appropriately addressed	—	—
Method Preparation Blanks analyzed and meet acceptance criteria	TB	SB
MSs, MSDs, and/or MDs analyzed and calculations checked; applicable	TB	SB
RLVS analyzed	TB	SB
Preparation and analysis hold times met	TB	SB
Preparation deviations and re-preparations noted when performed	TB	SB
Analysis deviations and re-analyses noted when performed	TB	SB
Sample dilution factors noted on reports	TB	SB
Electronic records in HBN transcription accuracy and completeness	TB	SB
Preparation and analysis calculations checked	TB	SB
NCRs are completed as necessary NC/CAR#_____	TB	SB
Report forms are complete and accurate	TB	SB
Manual integrations checked	TB	SB

STANDARD REPORT

Working Standard - CLO4ISTDWRK

CLO4ISTDWRK		Description - Perchlorate ISTD Wrk 1,000ug/L
Standard: 49946	**Created By:** Thomas Bosch	**Amount:** 25 mL
MFG: ALS/SLC	**Create Date:** 09/23/2019 03:09PM	**Expires:** 09/19/2020
MFG Lot: TNB: 09/20/2019	**Verified By:** Thomas Bosch	**Usable:** Yes
Pipette ID: Not Provided	**Verify Date:**	**Lab Lot:** CLO4ISTDWRK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	1000 ug/L
2	14797-73-0-89	Perchlorate 89	1000 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
47863	CLO4ISTDSTK	Perchlorate ISTD Stock	CLO4ISTDSTK	0.25 mL	12/05/2028

STANDARD REPORT

Constituent

Stock Standard - CLO4ISTDSTK

CLO4ISTDSTK		Description - Perchlorate ISTD Stock
Standard: 47863	**Created By:** Thomas Bosch	**Amount:** 1 mL
MFG: Cambridge Isotope	**Create Date:** 05/23/2019 10:05AM	**Expires:** 12/05/2028
MFG Lot: SDIH-016	**Verified By:** Thomas Bosch	**Usable:** Yes
Part ID: OLM-7310-S	**Verify Date:**	**Lab Lot:** CLO4ISTDSTK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	100 ug/mL
2	14797-73-0-89	Perchlorate 89	100 ug/mL

STANDARD REPORT

Working Standard - CLO4 WRK

CLO4 WRK — **Description - 6850 WKG Std 100.ug/L**

Standard: 49948
MFG: ALS/SLC
MFG Lot: TNB: 09/20/2019
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 09/20/2019 03:09PM

Amount: 10 mL
Expires: 07/25/2020
Usable: Yes
Lab Lot: CLO4 WRK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	0.1 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	0.1 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
49947	CLO4 INT	6850 Intermdt AccStd 10.ug/mL	CLO4 INT	0.1 mL	07/25/2020

STANDARD REPORT

Constituent

Stock Standard - CLO4 STOCK

CLO4 STOCK	Description - 6850 Stock AccStd 1,000ug/mL

Standard: 43659
MFG: AccuStandard
MFG Lot: 218065075
Part ID: IC-PER-10X-1

Created By: Thomas Bosch
Create Date: 09/17/2018 09:09AM

Amount: 100 mL
Expires: 07/25/2020
Usable: Yes
Lab Lot: CLO4 STOCK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	1000 ug/mL

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O		Description - ASTM Type II Water
Standard: 109	**Created By:** ALS Support (Lims)	**Amount:** 1000 L
MFG: DCL In House	**Create Date:** 10/06/2005 09:10AM	**Expires:** 11/07/2025
MFG Lot: Not Provided		**Usable:** Yes
Part ID: Not Provided		**Lab Lot:** LAB 109

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Working Standard - CLO4 INT

CLO4 INT	Description - 6850 Intermdt AccStd 10.ug/mL

Standard: 49947
MFG: ALS/SLC
MFG Lot: TNB: 09/20/2019
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 09/23/2019 03:09PM

Amount: 10 mL
Expires: 07/25/2020
Usable: Yes
Lab Lot: CLO4 INT

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL
2	14797-73-0-8385	Perchlorate 83:85 Ratio	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
43659	CLO4 STOCK	6850 Stock AccStd 1,000ug/mL	CLO4 STOCK	0.1 mL	07/25/2020

STANDARD REPORT

Working Standard - CLO4 QC WRK

CLO4 QC WRK — **Description - 6850 QC WKG STD 100ug/L**

Standard: 47516
MFG: ALS/SLC
MFG Lot: TNB: 05/06/2019
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 05/06/2019 03:05PM

Amount: 10 mL
Expires: 03/31/2020
Usable: Yes
Lab Lot: CLO4 QC WRK 100.ug/L

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	100 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
47515	CLO4 QC INT	6850 QC Intrmdt Std-QC 10ug/mL	CLO4 QC INT 10.ug/mL	0.1 mL	03/31/2020

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O			Description - ASTM Type II Water
Standard: 109	**Created By:** ALS Support (Lims)	**Amount:** 1000 L	
MFG: DCL In House	**Create Date:** 10/06/2005 09:10AM	**Expires:** 11/07/2025	
MFG Lot: Not Provided		**Usable:** Yes	
Part ID: Not Provided		**Lab Lot:** LAB 109	

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Stock Standard - CLO4 QCSTOCK

CLO4 QCSTOCK	Description - 6850 QC Stock STD 1,000ug/mL

Standard:	36748	**Created By:**	Thomas Bosch	**Amount:**	100 mL
MFG:	Ultra Scientific	**Create Date:**	05/11/2017 01:05PM	**Expires:**	03/31/2020
MFG Lot:	CP-0860			**Usable:**	Yes
Part ID:	ICC-013			**Lab Lot:**	CLO4 QC STOCK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL

STANDARD REPORT

Constituent

Working Standard - CLO4 QC INT

CLO4 QC INT	Description - 6850 QC Intrmdt Std-QC 10ug/mL

Standard:	**47515**	**Created By:**	Thomas Bosch	**Amount:**	10 mL
MFG:	ALS/SLC	**Create Date:**	05/06/2019 03:05PM	**Expires:**	03/31/2020
MFG Lot:	TNB: 05/06/2019			**Usable:**	Yes
Pipette ID:	Not Provided			**Lab Lot:**	CLO4 QC INT 10.ug/mL

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
36748	CLO4 QCSTOCK	6850 QC Stock STD 1,000ug/mL	CLO4 QC STOCK	0.1 mL	03/31/2020

125 Market Street
New Haven, CT 06513
USA

AccuStandard®

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

S 43659

AccuTrace™ Reference Standard

Catalog No: IC-PER-10X-1
Description: Perchlorate Standard
Element: Perchlorate (ClO_4)
SRM: Ind. Std.
Lot: 218065075
Matrix: Water
Hazards: *Refer to SDS for complete safety information*

Signal Word: None

Date Certified: Jun 25, 2018
Expiration: Jul 25, 2020
Sample Size: 100 mL
Components: 1
Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO 17034 Scope of Accreditation: Yes

Component		SRM #	Prepared Concentration (µg/mL)
ClO_4	Perchlorate	Ind. Std.	1000

The gravimetric uncertainty for this product is ±0.24%.

The final solution was checked against an independent standard to verify its concentration.

We use the highest purity raw materials available to minimize impurity levels in the final solution. Typically 99.999%+ pure starting materials are used as well as ASTM Type I 18 megohm deionized water.

All solutions are filtered through a 0.2 µm filter prior to being bottled.

All glassware used in preparation is Class A and calibrated regularly.

All weights are traceable through NIST, Test No. 822-275872-11

All bottles are triple rinsed with deionized water prior to use.

Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware.

We certify the accuracy of this standard to be ±0.5% of the stated value until its expiration date provided it is kept tightly capped and stored under the conditions stated above.

Certified By: Meigan O'Leary

Meigan O'Leary, Inorganic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO 17034, ISO/IEC 17025 and certified to ISO 9001:2015

AccuStandard

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: ICC-013
Lot Number: CP-0860

S 36748

Lot Issue Date: 29-Feb 2016
Expiration Date: 31-Mar 2020

Product Name: Perchlorate IC Standard

Description:
This Reference Material (RM) was gravimetrically prepared in accordance with ISO Guide 34 and under ULTRA Scientific's ISO 9001 registered quality system. The neat materials used for this product have been verified by ULTRA's ISO 17025 laboratory and under ULTRA's ISO Guide 34 accreditation. The analyte concentrations were verified by ULTRA's ISO 17025 accredited laboratory. For each analyte, the true value, with its uncertainty value calculated at the 95% confidence level, is reported below.

Analyte	Starting Material	Lot Number	Purity (%)	Calculated Value	True Value	Traceability & Method
perchlorate	potassium perchlorate	RM07987	100	1001 ± 5 µg/mL	976 ± 6 µg/mL	NIST SRM 3141A; ICP-OES

Solvent: water (low TOC, < 50 ppb)

Storage: Store at Room Temperature (15° to 30°C).

Traceability:
Traceability has been established through an unbroken chain of comparisons, each having stated uncertainties. Comparisons are based on appropriate physical or chemical measurements, including gravimetric or volumetric dilution, where the mass or volume of a solution before and after dilution is measured. The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1, ISO 9001, ISO 17025, and ISO Guide 34. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 819.

Estimation of Uncertainties:
The true value is reported, with its uncertainty value calculated at the 95% confidence level.

Homogeneity:
This RM was formulated and unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening and should be processed without delay for the true value to be valid within the stated uncertainties. Do not pipet from the bottle. Do not return any material removed for pipetting to the bottle. Tightly cap the bottle after removing any material and store according to the instructions noted above.

Hazards:
Refer to the Safety Data Sheet for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid, within the measurement uncertainty specified, until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER
ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 9001 Registered Quality System – TUV USA

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

TRIPLE ISO CERTIFICATION ULTRA ISO 9001 ISO GUIDE 34 ISO 17025

ISO Guide 34 Reference Material

Product Number: ICC-013
Lot Number: CP-0860

Lot Issue Date: 29-Feb 2016
Expiration Date: 31-Mar 2020

Maintenance of Certification:
The real-time, long term stability of the RM may be monitored over the lifetime of the certification. If substantive changes occur that affect the certification before the expiration of this certificate, ULTRA Scientific will notify the purchaser.

Peter A. King, Ph.D.
VP, Technical Operations

Daniel J. Lamendola
Director of QA/RA

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

Cambridge Isotope Laboratories, Inc.

Certificate of Analysis

S 47863

Product Name: PERCHLORIC ACID, SODIUM SALT
(Isotopic Label & Enrichment Specification) (18O4, 90%+) 100 UG/ML IN WATER

Lot Number: SDIH-016

Catalog Number: OLM-7310-S

Product Information

Chemical Purity Specification: ≥ 98%

MW*: 130.44
* For isotopically labeled compounds, MW listed is for the fully enriched product.

Labeled CAS Number: NA

$NaCl^{18}O_4$

Unlabeled CAS Number: 7601-89-0

Chemical Formula: NaCl*O4

Storage: Store at room temperature away from light and moisture.
Stability: See storage and expiration date.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number . Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Sashi Sivendran-Basak

Sashi Sivendran-Basak, Ph.D., Quality Review

Quality Control Tests and Results

QC Release Date	12/05/2018
Expiration Date	12/05/2028
Concentration Based on Gravimetry	100.0 ± 1.0 µg/mL (k=2)
Chemical Purity of Neat Material(s)	98%
LC/MS for Concentration	105.4 ± 1.1 µg/mL (k=2)

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

Batch Report: C:\HPCHEM\1\DATA\26MAR20D\26MAR20S.B

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DP3.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorat RT	Perchlorate Amount
*	701037 CCV@25	Vial 71	1	Control	1	1.31519e6	7.596	24.50269
*	701038 LCS@3.	Vial 72	1	Control	2	1.66008e5	7.469	3.07012
*	701040 ICS@3.0	Vial 73	1	Control	3	9.99850e4	7.425	2.96673
*	701041 LMB	Vial 74	1	Control	4	0.00000	0.000	0.00000
*	2008062001	Vial 75	1	Sample	5	1.09960e5	6.921	2.23127
*	2008062002	Vial 76	1	Sample	6	0.00000	0.000	0.00000
*	2008062003	Vial 77	1	Sample	7	1.17976e7	6.021	147.31769 Dil
*	2008062004	Vial 78	1	Sample	8	0.00000	0.000	0.00000
*	2008062005	Vial 79	1	Sample	9	3.68639e6	7.063	61.54884
*	2008062006	Vial 80	1	Sample	10	0.00000	0.000	0.00000
*	2008062007	Vial 81	1	Sample	11	0.00000	0.000	0.00000
*	2008062008	Vial 82	1	Sample	12	0.00000	0.000	0.00000
*	2008310001	Vial 83	1	Sample	13	0.00000	0.000	0.00000
*	2008310002 MS	Vial 84	1	Sample	14	1.61579e5	7.624	3.03065
*	701042 CCV@25	Vial 71	1	Control	15	1.25770e6	7.542	25.04210
*	2008310003 MSD	Vial 85	1	Sample	16	1.56764e5	7.529	3.00067
*	2008310004	Vial 86	1	Sample	17	0.00000	0.000	0.00000
*	2008310005	Vial 87	1	Sample	18	0.00000	0.000	0.00000
*	2008310006	Vial 88	1	Sample	19	0.00000	0.000	0.00000
*	2008310007	Vial 89	1	Sample	20	0.00000	0.000	0.00000
*	2008310008 10X	Vial 90	1	Sample	21	2.26474e6	7.461	396.52335
*	2008310009	Vial 91	1	Sample	22	0.00000	0.000	0.00000
*	2008310010	Vial 92	1	Sample	23	2.13687e5	7.243	4.87047
*	2008310011	Vial 93	1	Sample	24	0.00000	0.000	0.00000
*	2008310012	Vial 94	1	Sample	25	0.00000	0.000	0.00000
*	701043 CCV@25	Vial 71	1	Control	26	1.23305e6	7.642	25.29232
*	2008062003 10X	Vial 95	1	Sample	27	1.66187e6	7.172	308.79978
*	701102 CCV@25	Vial 71	1	Control	28	1.21579e6	7.568	25.02152

#	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-IS RT	CLO4-89-ISTD Amount
*	701037 CCV@25	Vial 71	1	Control	1	1.83781e5	7.637	5.00000
*	701038 LCS@3.	Vial 72	1	Control	2	1.99015e5	7.478	5.00000
*	701040 ICS@3.0	Vial 73	1	Control	3	1.23987e5	7.431	5.00000
*	701041 LMB	Vial 74	1	Control	4	1.77630e5	7.646	5.00000
*	2008062001	Vial 75	1	Sample	5	1.80290e5	6.911	5.00000
*	2008062002	Vial 76	1	Sample	6	2.21066e5	7.204	5.00000
*	2008062003	Vial 77	1	Sample	7	1.80433e5	5.955	5.00000
*	2008062004	Vial 78	1	Sample	8	2.38862e5	7.519	5.00000
*	2008062005	Vial 79	1	Sample	9	1.77448e5	7.086	5.00000
*	2008062006	Vial 80	1	Sample	10	1.94128e5	8.130	5.00000
*	2008062007	Vial 81	1	Sample	11	1.72495e5	7.483	5.00000
*	2008062008	Vial 82	1	Sample	12	2.20984e5	7.241	5.00000
*	2008310001	Vial 83	1	Sample	13	2.23497e5	7.586	5.00000
*	2008310002 MS	Vial 84	1	Sample	14	1.96195e5	7.631	5.00000
*	701042 CCV@25	Vial 71	1	Control	15	1.71580e5	7.576	5.00000
*	2008310003 MSD	Vial 85	1	Sample	16	1.92226e5	7.553	5.00000
*	2008310004	Vial 86	1	Sample	17	1.66041e5	7.125	5.00000
*	2008310005	Vial 87	1	Sample	18	1.63139e5	7.338	5.00000
*	2008310006	Vial 88	1	Sample	19	1.67930e5	7.299	5.00000
*	2008310007	Vial 89	1	Sample	20	1.37320e5	7.249	5.00000
*	2008310008 10X	Vial 90	1	Sample	21	1.83925e5	7.486	50.00000
*	2008310009	Vial 91	1	Sample	22	2.26093e5	7.401	5.00000
*	2008310010	Vial 92	1	Sample	23	1.61722e5	7.250	5.00000
*	2008310011	Vial 93	1	Sample	24	1.41774e5	7.091	5.00000
*	2008310012	Vial 94	1	Sample	25	1.86602e5	7.252	5.00000

Batch Report: C:\HPCHEM\1\DATA\26MAR20D\26MAR20S.B

#	*	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-IS RT	CLO4-89-ISTD Amount
	*	701043 CCV@25	Vial 71	1	Control	26	1.66381e5	7.665	5.00000
	*	2008062003 10X	Vial 95	1	Sample	27	1.79512e5	7.187	50.00000
	*	701102 CCV@25	Vial 71	1	Control	28	1.66012e5	7.575	5.00000

#	*	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
	*	701037 CCV@25	Vial 71	1	Control	1	4.23244e5	7.613	25.73518
	*	701038 LCS@3.	Vial 72	1	Control	2	5.75315e4	7.501	3.40153
	*	701040 ICS@3.0	Vial 73	1	Control	3	3.96560e4	7.435	3.77484
	*	701041 LMB	Vial 74	1	Control	4	0.00000	0.000	0.00000
	*	2008062001	Vial 75	1	Sample	5	1.31311e4	6.920	7.42428e-1
	*	2008062002	Vial 76	1	Sample	6	0.00000	0.000	0.00000
	*	2008062003	Vial 77	1	Sample	7	3.62321e6	6.035	150.65418
	*	2008062004	Vial 78	1	Sample	8	0.00000	0.000	0.00000
	*	2008062005	Vial 79	1	Sample	9	1.09785e6	7.077	60.87616
	*	2008062006	Vial 80	1	Sample	10	0.00000	0.000	0.00000
	*	2008062007	Vial 81	1	Sample	11	0.00000	0.000	0.00000
	*	2008062008	Vial 82	1	Sample	12	0.00000	0.000	0.00000
	*	2008310001	Vial 83	1	Sample	13	0.00000	0.000	0.00000
	*	2008310002 MS	Vial 84	1	Sample	14	5.55387e4	7.622	3.32853
	*	701042 CCV@25	Vial 71	1	Control	15	4.03497e5	7.547	26.23064
	*	2008310003 MSD	Vial 85	1	Sample	16	5.07657e4	7.527	3.09739
	*	2008310004	Vial 86	1	Sample	17	0.00000	0.000	0.00000
	*	2008310005	Vial 87	1	Sample	18	0.00000	0.000	0.00000
	*	2008310006	Vial 88	1	Sample	19	0.00000	0.000	0.00000
	*	2008310007	Vial 89	1	Sample	20	0.00000	0.000	0.00000
	*	2008310008 10X	Vial 90	1	Sample	21	7.08209e5	7.477	407.04413
	*	2008310009	Vial 91	1	Sample	22	0.00000	0.000	0.00000
	*	2008310010	Vial 92	1	Sample	23	6.45639e4	7.251	4.73281
	*	2008310011	Vial 93	1	Sample	24	0.00000	0.000	0.00000
	*	2008310012	Vial 94	1	Sample	25	0.00000	0.000	0.00000
	*	701043 CCV@25	Vial 71	1	Control	26	3.91623e5	7.660	26.25206
	*	2008062003 10X	Vial 95	1	Sample	27	4.89002e5	7.190	299.63811
	*	701102 CCV@25	Vial 71	1	Control	28	3.97063e5	7.579	26.63751

*** End of Report ***

Sequence: C:\HPCHEM\1\SEQUENCE\CLO4\2020\MAR\26MAR20D.S

Sequence Table:

Method and Injection Info Part:

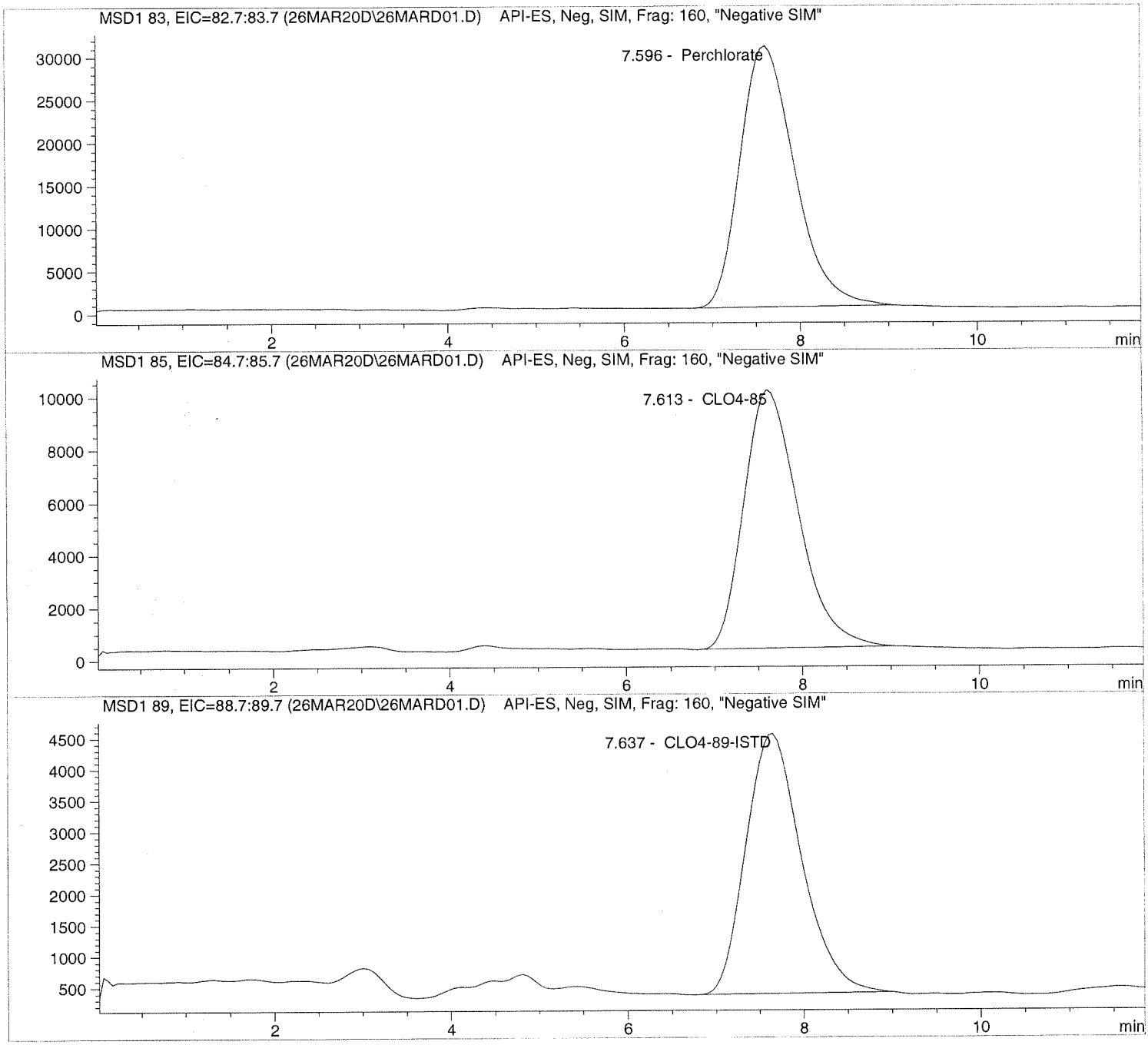
Line	Location	SampleName		Method	Inj	SampleType	InjVolume	DataFile
1	Vial 71	701037	CCV@25	CLO4-AQN	1	Ctrl Samp		
2	Vial 72	701038	LCS@3.	CLO4-AQN	1	Ctrl Samp		
3	Vial 73	701040	ICS@3.0	CLO4-AQN	1	Ctrl Samp		
4	Vial 74	701041	LMB	CLO4-AQN	1	Ctrl Samp		
5	Vial 75	2008062001		CLO4-AQN	1	Sample		
6	Vial 76	2008062002		CLO4-AQN	1	Sample		
7	Vial 77	2008062003		CLO4-AQN	1	Sample		
8	Vial 78	2008062004		CLO4-AQN	1	Sample		
9	Vial 79	2008062005		CLO4-AQN	1	Sample		
10	Vial 80	2008062006		CLO4-AQN	1	Sample		
11	Vial 81	2008062007		CLO4-AQN	1	Sample		
12	Vial 82	2008062008		CLO4-AQN	1	Sample		
13	Vial 83	2008310001		CLO4-AQN	1	Sample		
14	Vial 84	2008310002	MS	CLO4-AQN	1	Sample		
15	Vial 71	701042	CCV@25	CLO4-AQN	1	Ctrl Samp		
16	Vial 85	2008310003	MSD	CLO4-AQN	1	Sample		
17	Vial 86	2008310004		CLO4-AQN	1	Sample		
18	Vial 87	2008310005		CLO4-AQN	1	Sample		
19	Vial 88	2008310006		CLO4-AQN	1	Sample		
20	Vial 89	2008310007		CLO4-AQN	1	Sample		
21	Vial 90	2008310008	10X	CLO4-AQN	1	Sample		
22	Vial 91	2008310009		CLO4-AQN	1	Sample		
23	Vial 92	2008310010		CLO4-AQN	1	Sample		
24	Vial 93	2008310011		CLO4-AQN	1	Sample		
25	Vial 94	2008310012		CLO4-AQN	1	Sample		
26	Vial 71	701043	CCV@25	CLO4-AQN	1	Ctrl Samp		
27	Vial 95	2008062003	10X	CLO4-AQN	1	Sample		
28	Vial 71	701102	CCV@25	CLO4-AQN	1	Ctrl Samp		

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD01.D Sample Name: 701037 CCV@25

Injection Date:	3/26/2020 08:19:01	Seq Line:	1
Sample Name:	701037 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD01.D Sample Name: 701037 CCV@25

Injection Date:	3/26/2020 08:19:01	Seq Line:	1
Sample Name:	701037 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.596	PBA	1315193.4	24.5027	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.613	PBA	423244.0	25.7352	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.637	PBA	183780.9	5.0000	CLO4-89-ISTD

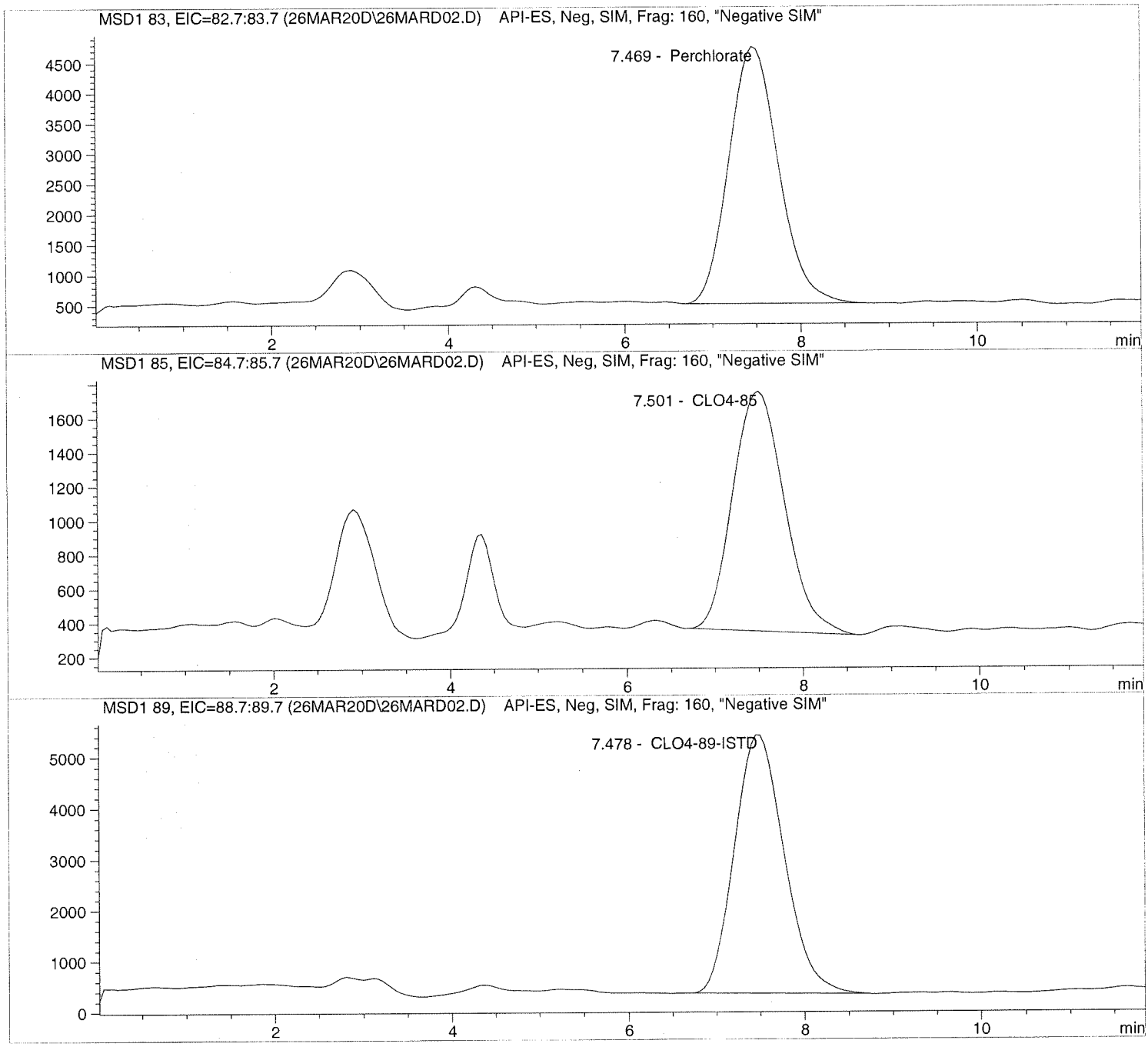
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD02.D Sample Name: 701038 LCS@3.

Injection Date:	3/26/2020 08:34:46	Seq Line:	2
Sample Name:	701038 LCS@3.	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD02.D Sample Name: 701038 LCS@3.

Injection Date:	3/26/2020 08:34:46	Seq Line:	2
Sample Name:	701038 LCS@3.	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	3.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.469	PBA	166008.5	3.0701	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.501	PBA	57531.5	3.4015	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.478	PBA	199014.8	5.0000	CLO4-89-ISTD

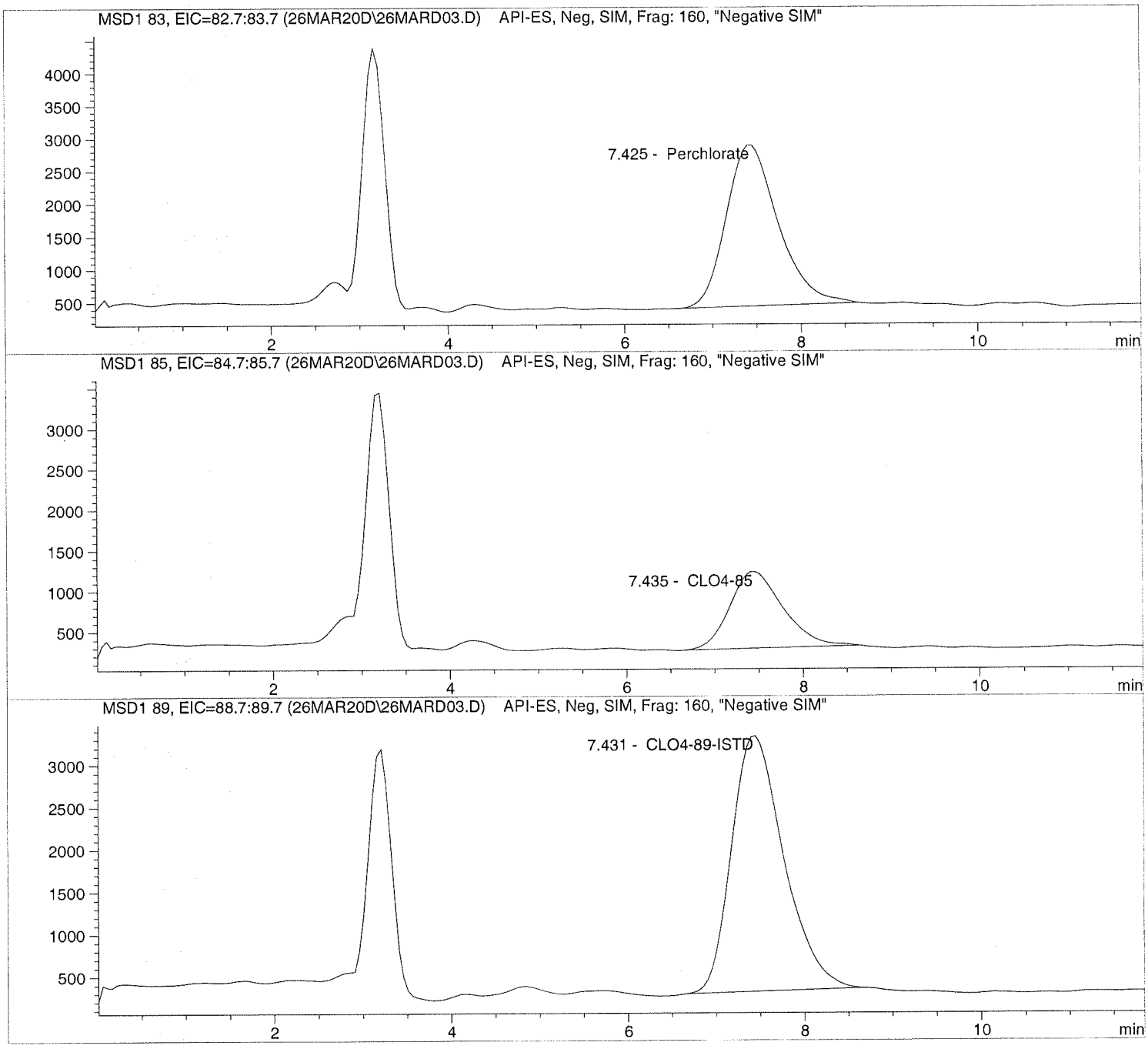
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD03.D Sample Name: 701040 ICS@3.0

Injection Date:	3/26/2020 08:48:42	Seq Line:	3
Sample Name:	701040 ICS@3.0	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD03.D Sample Name: 701040 ICS@3.0

Injection Date:	3/26/2020 08:48:42	Seq Line:	3
Sample Name:	701040 ICS@3.0	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	3.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.425	PBA	99985.0	2.9667	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.435	PBA	39656.0	3.7748	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.431	PBA	123986.5	5.0000	CLO4-89-ISTD

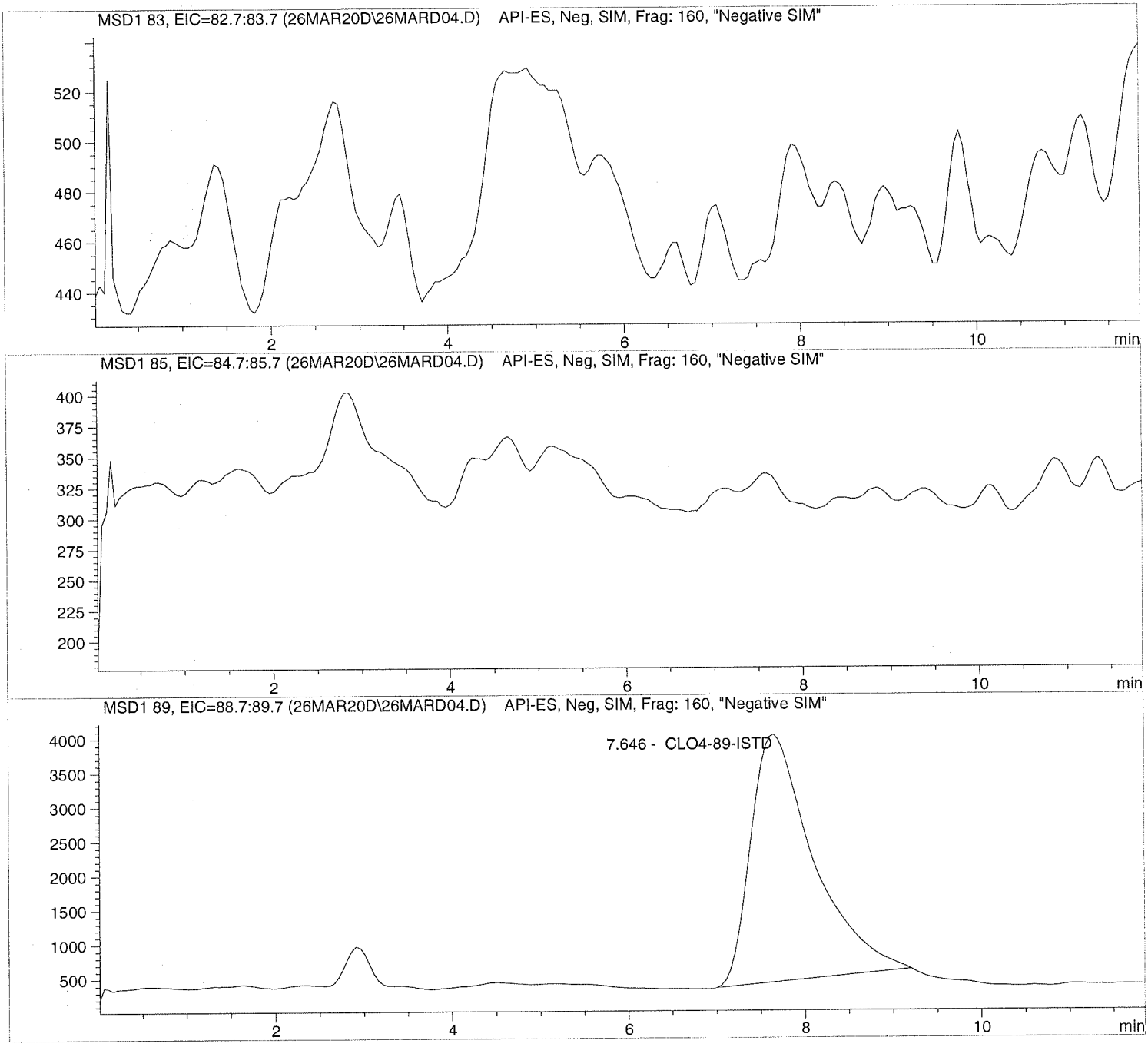
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD04.D Sample Name: 701041 LMB

Injection Date:	3/26/2020 09:02:43	Seq Line:	4
Sample Name:	701041 LMB	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD04.D Sample Name: 701041 LMB

Injection Date:	3/26/2020 09:02:43	Seq Line:	4
Sample Name:	701041 LMB	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.646	PBA	177629.6	5.0000	CLO4-89-ISTD

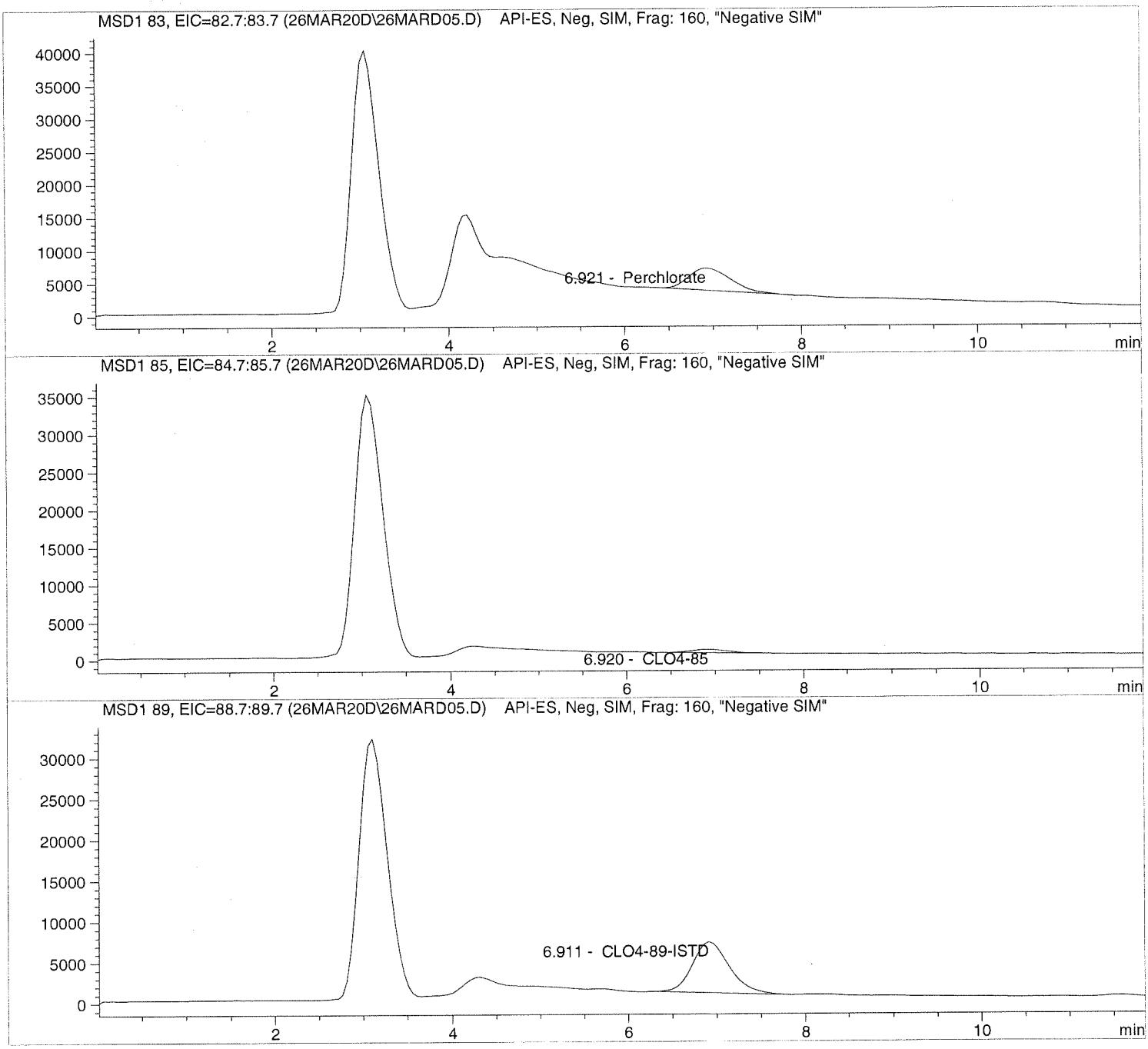
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD05.D Sample Name: 2008062001

Injection Date:	3/26/2020 09:16:42	Seq Line:	5
Sample Name:	2008062001	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD05.D Sample Name: 2008062001

Injection Date:	3/26/2020 09:16:42	Seq Line:	5
Sample Name:	2008062001	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.921	PBA	109960.3	2.2313	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.920	PBA	13131.1	0.7424	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.911	PBA	180290.0	5.0000	CLO4-89-ISTD

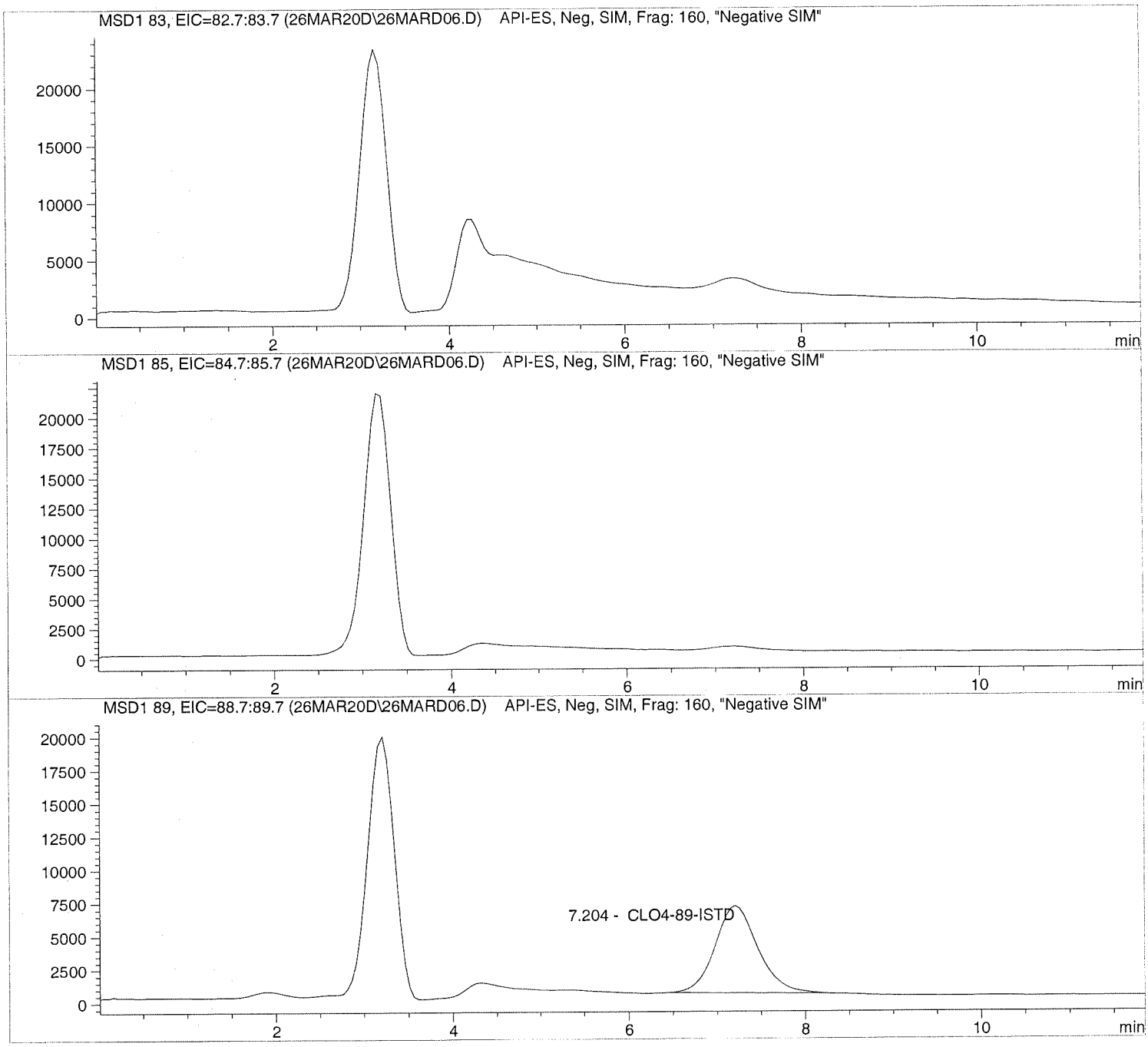
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD06.D Sample Name: 2008062002

Injection Date:	3/26/2020 09:30:41	Seq Line:	6
Sample Name:	2008062002	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD06.D Sample Name: 2008062002

Injection Date:	3/26/2020 09:30:41	Seq Line:	6
Sample Name:	2008062002	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.204	PBA	221065.7	5.0000	CLO4-89-ISTD

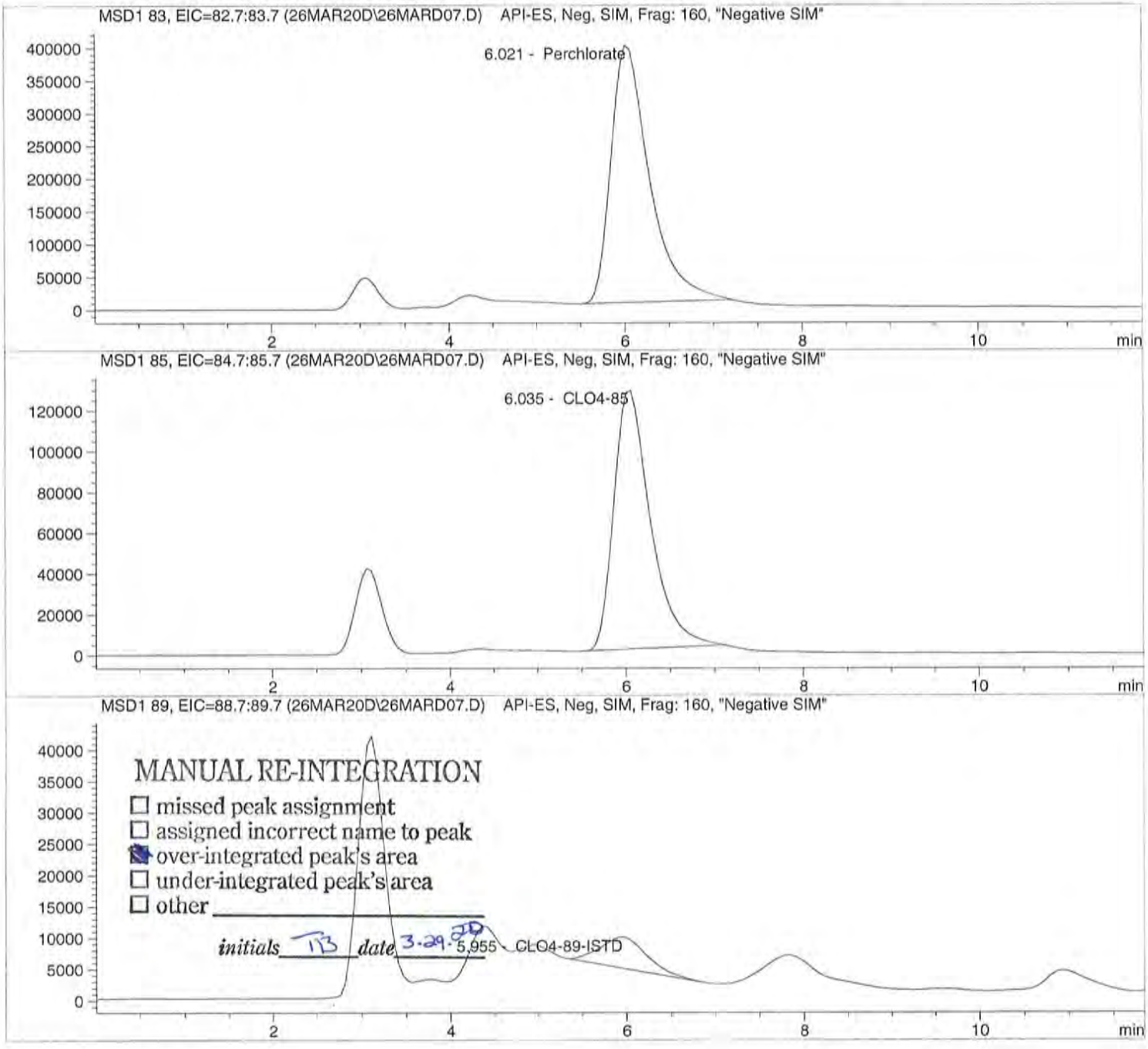
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD07.D Sample Name: 2008062003

Injection Date:	3/26/2020 09:44:40	Seq Line:	7
Sample Name:	2008062003	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD07.D Sample Name: 2008062003

Injection Date:	3/26/2020 09:44:40	Seq Line:	7
Sample Name:	2008062003	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.021	PBA	11797552.0	147.3177	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.035	PBA	3623208.0	150.6542	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
5.955	MM	180433.5	5.0000	CLO4-89-ISTD

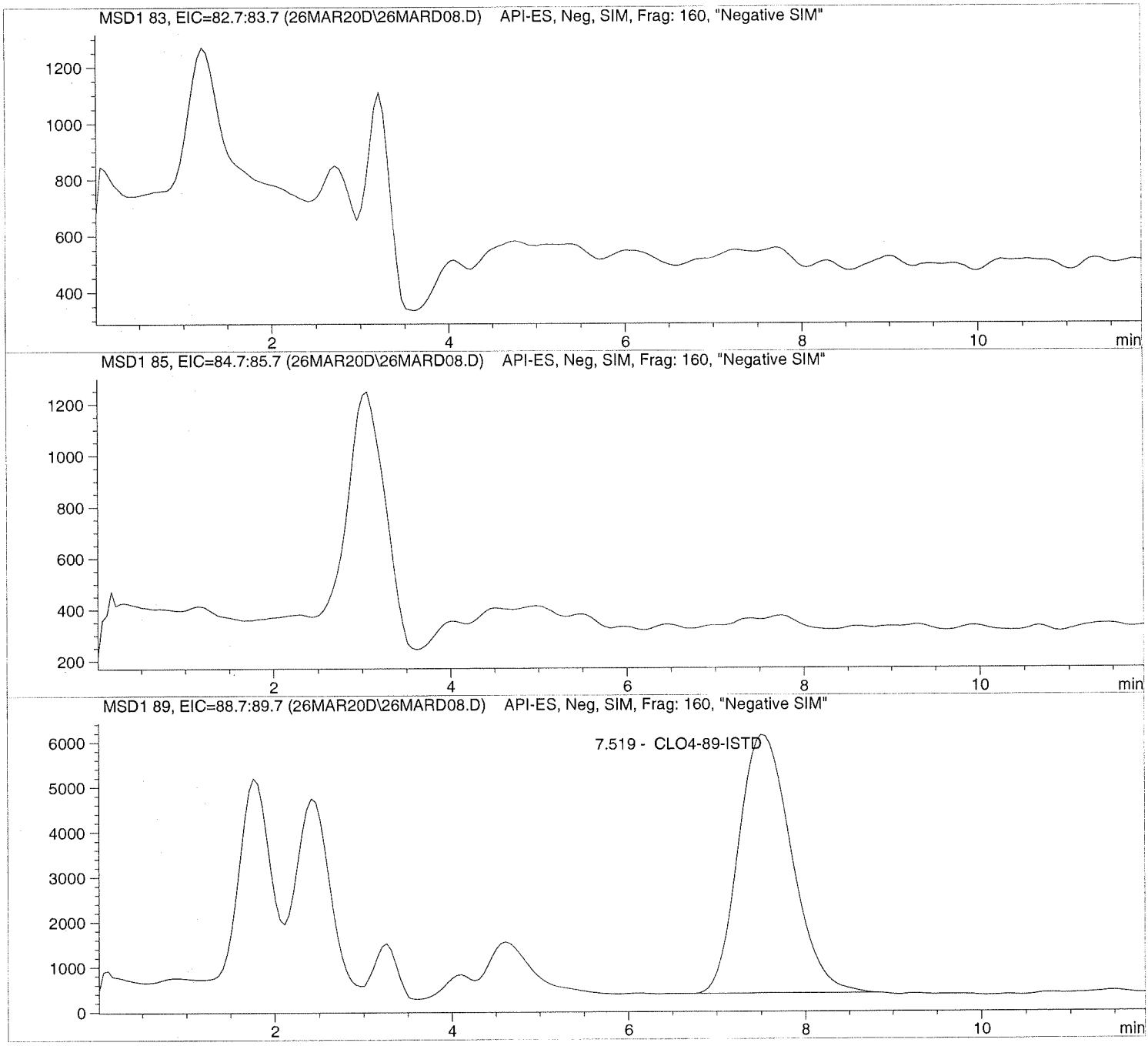
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD08.D Sample Name: 2008062004

Injection Date:	3/26/2020 09:58:39	Seq Line:	8
Sample Name:	2008062004	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD08.D Sample Name: 2008062004

Injection Date:	3/26/2020 09:58:39	Seq Line:	8
Sample Name:	2008062004	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.519	PBA	238862.2	5.0000	CLO4-89-ISTD

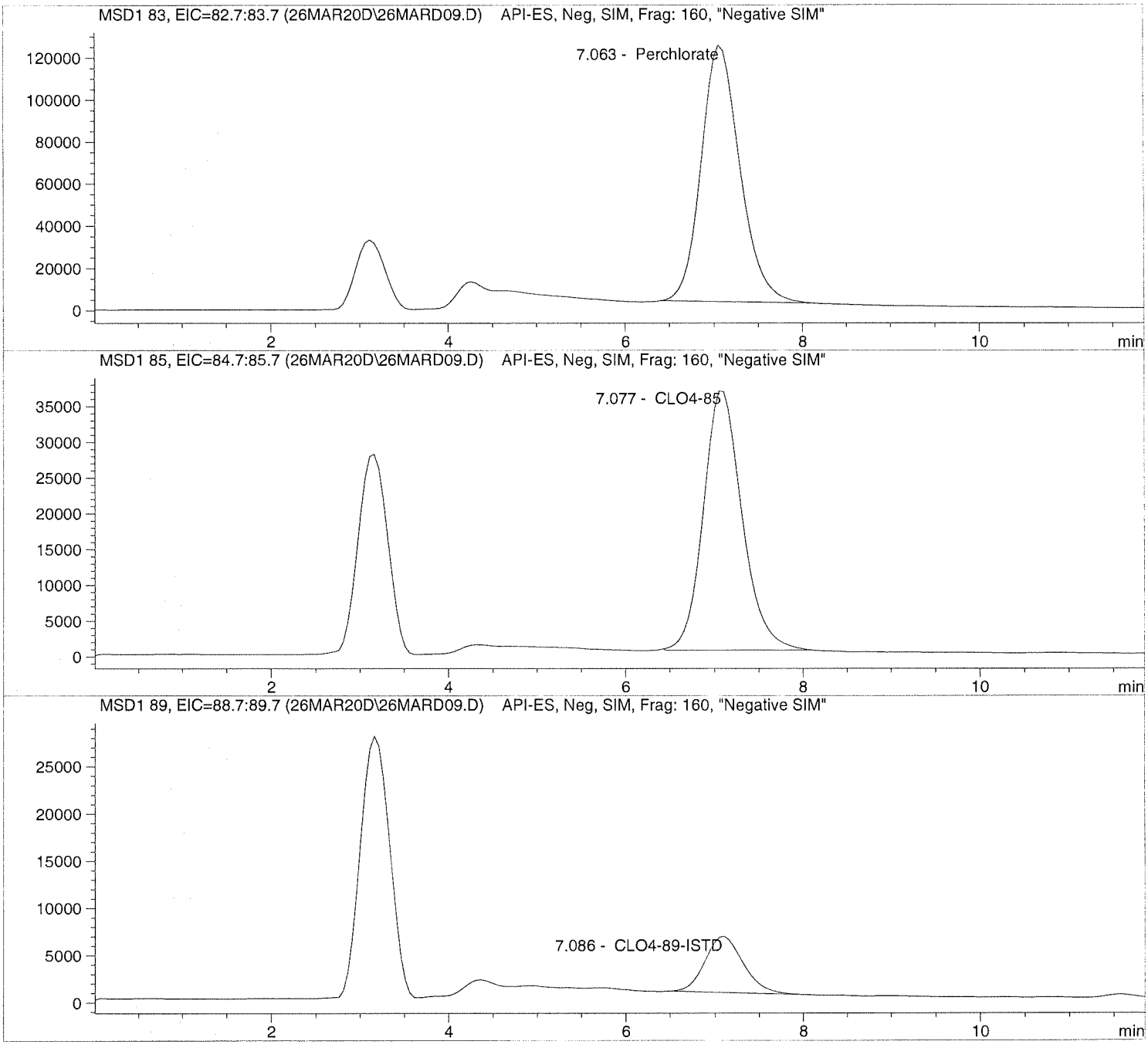
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD09.D Sample Name: 2008062005

Injection Date:	3/26/2020 10:12:38	Seq Line:	9
Sample Name:	2008062005	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD09.D Sample Name: 2008062005

Injection Date:	3/26/2020 10:12:38	Seq Line:	9
Sample Name:	2008062005	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.063	BBA	3686393.8	61.5488	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.077	BBA	1097853.7	60.8762	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.086	PBA	177447.9	5.0000	CLO4-89-ISTD

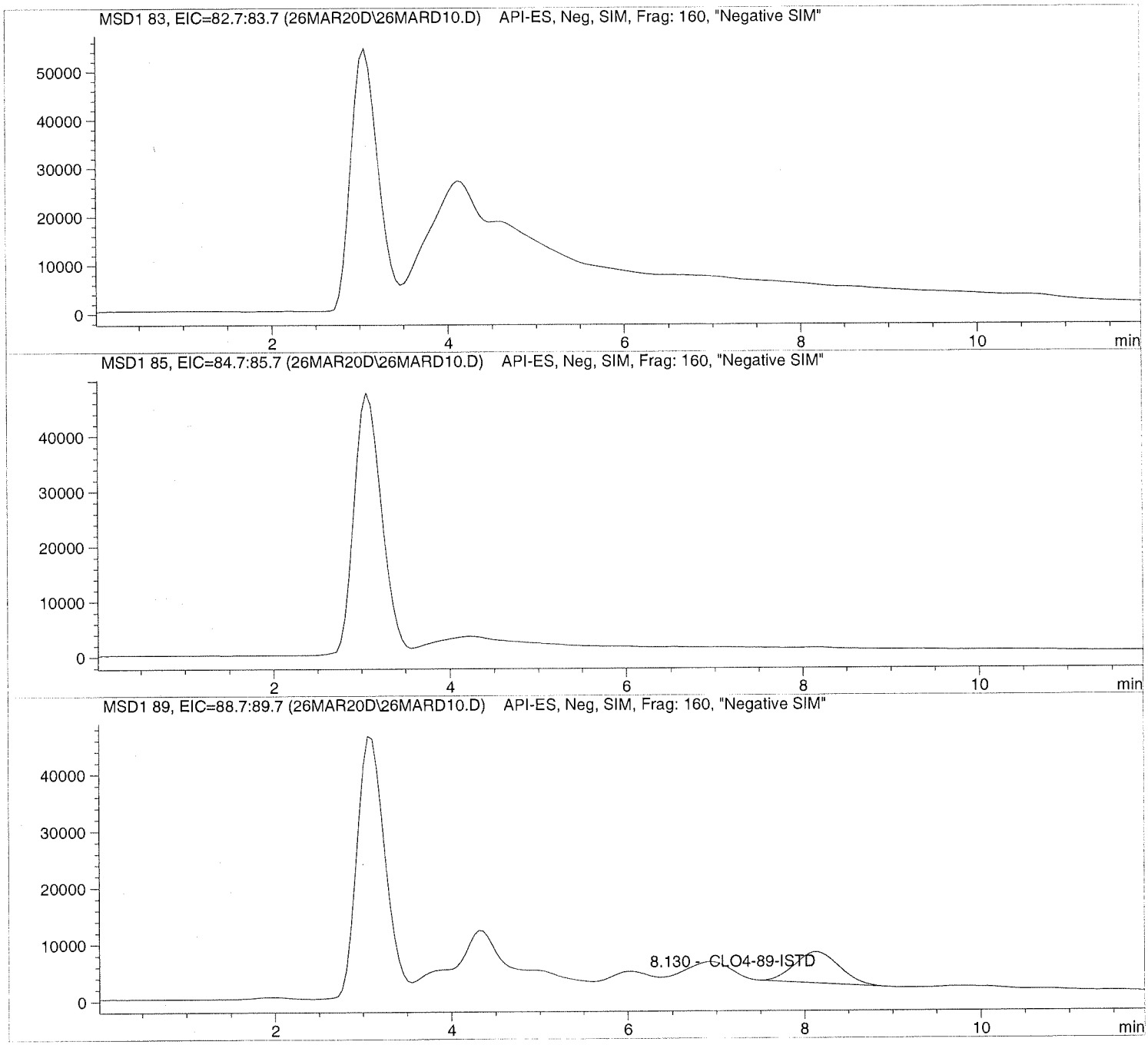
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD10.D Sample Name: 2008062006

Injection Date:	3/26/2020 10:26:37	Seq Line:	10
Sample Name:	2008062006	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD10.D Sample Name: 2008062006

Injection Date:	3/26/2020 10:26:37	Seq Line:	10
Sample Name:	2008062006	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.130	VBA	194127.8	5.0000	CLO4-89-ISTD

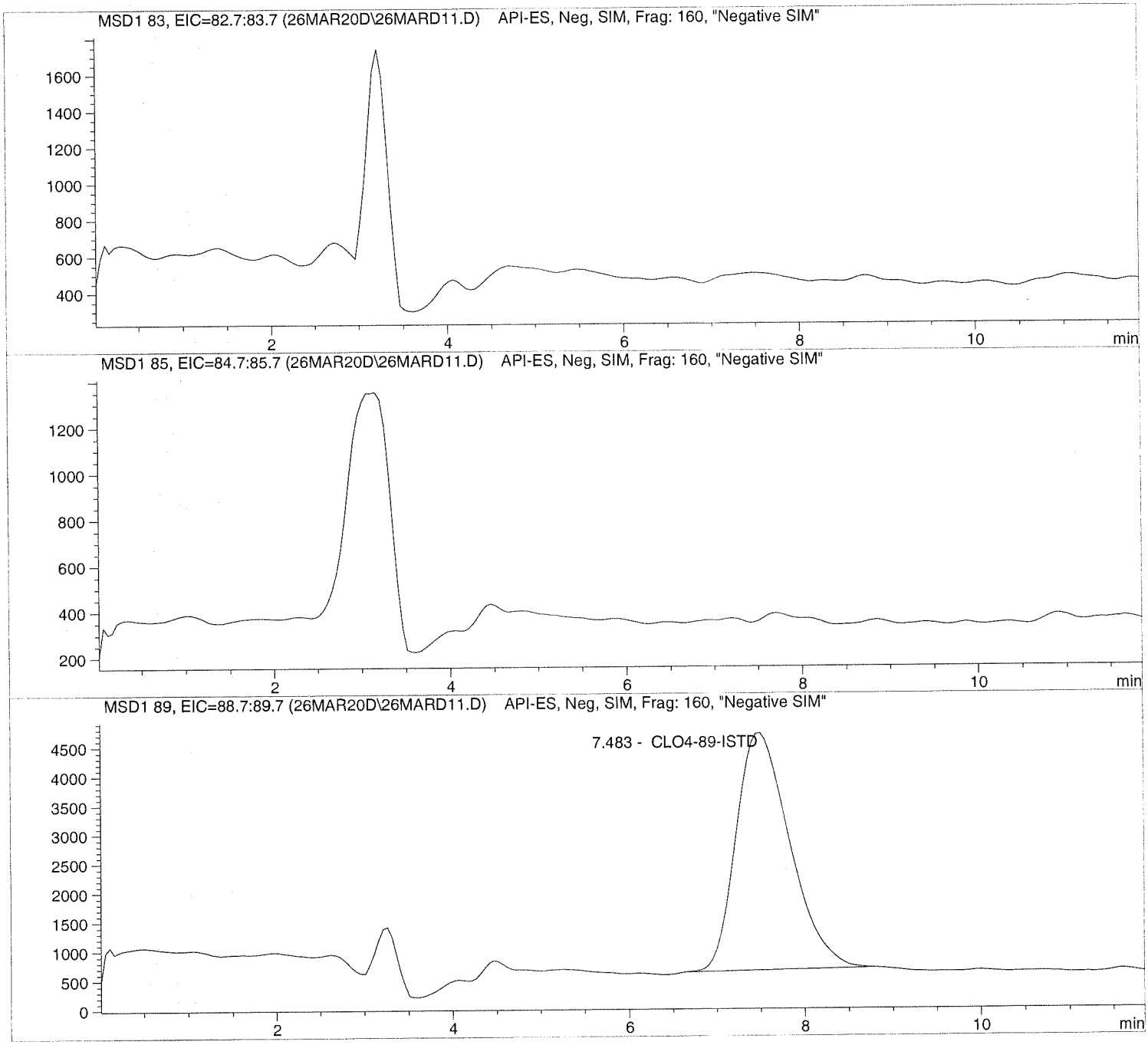
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD11.D Sample Name: 2008062007

Injection Date:	3/26/2020 10:40:42	Seq Line:	11
Sample Name:	2008062007	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD11.D Sample Name: 2008062007

Injection Date:	3/26/2020 10:40:42	Seq Line:	11
Sample Name:	2008062007	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.483	BBA	172495.2	5.0000	CLO4-89-ISTD

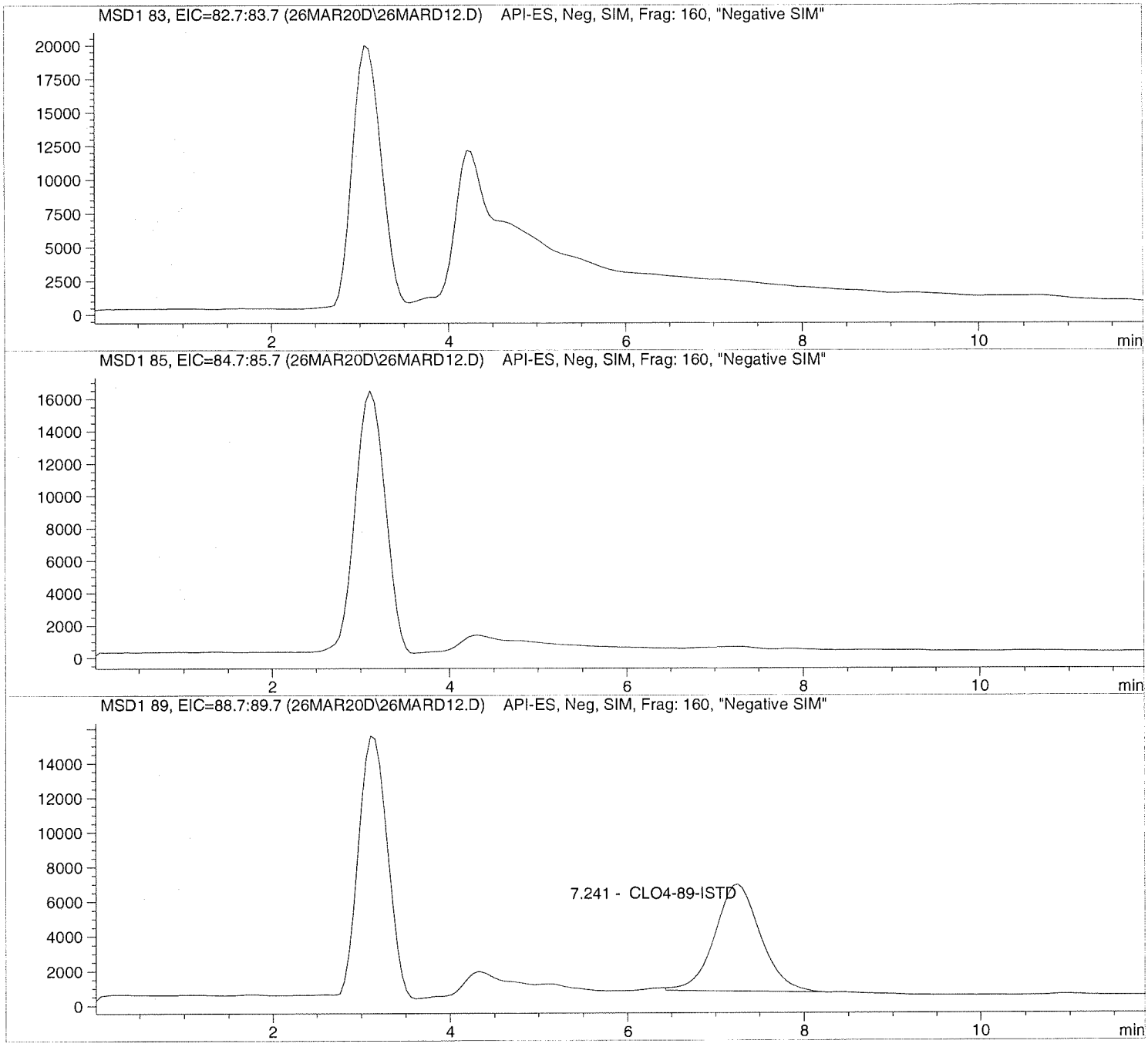
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD12.D Sample Name: 2008062008

Injection Date:	3/26/2020 10:54:39	Seq Line:	12
Sample Name:	2008062008	Location:	Vial 82
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD12.D Sample Name: 2008062008

Injection Date:	3/26/2020 10:54:39	Seq Line:	12
Sample Name:	2008062008	Location:	Vial 82
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.241	BBA	220984.2	5.0000	CLO4-89-ISTD

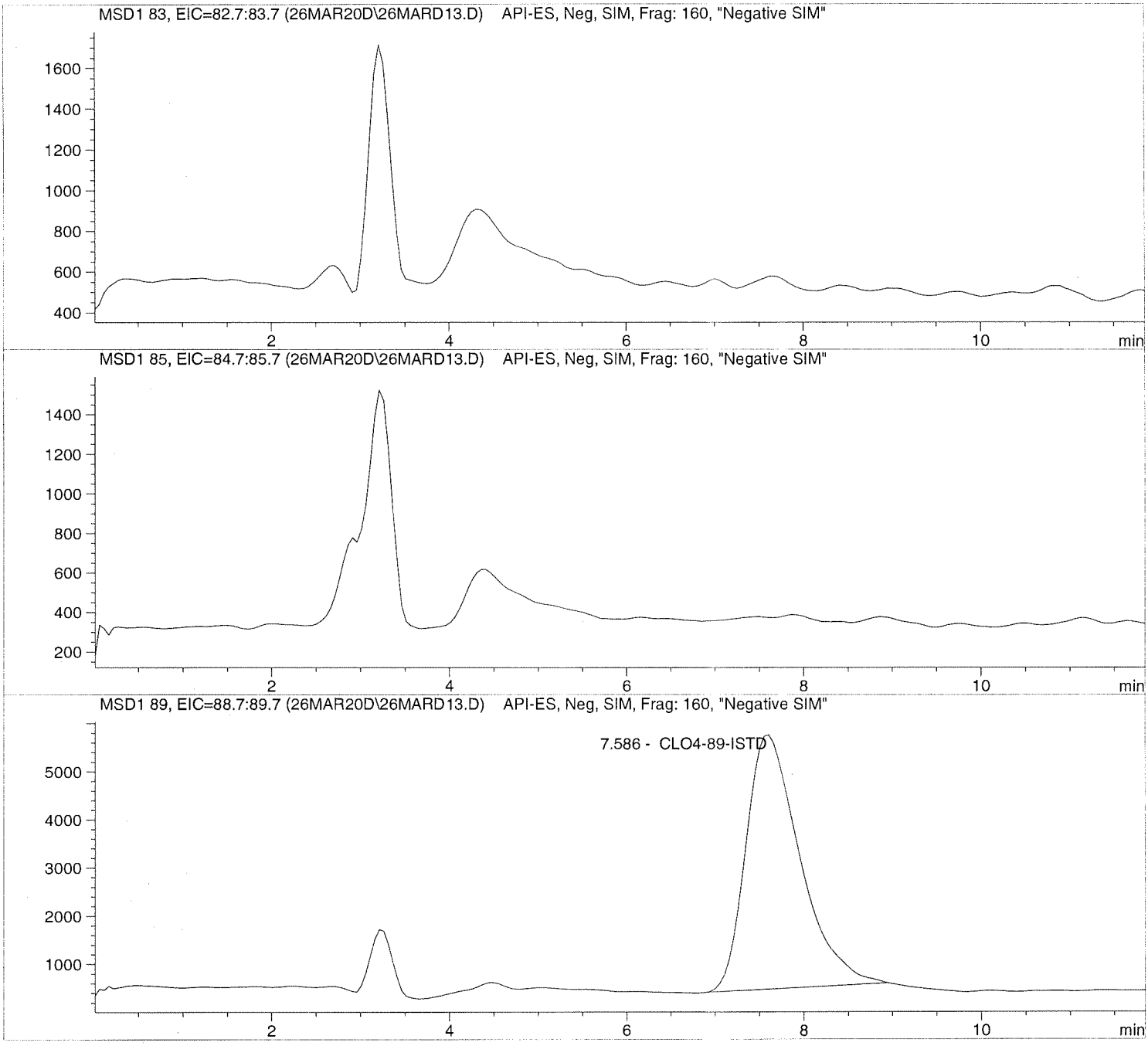
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD13.D Sample Name: 2008310001

Injection Date:	3/26/2020 11:08:35	Seq Line:	13
Sample Name:	2008310001	Location:	Vial 83
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD13.D Sample Name: 2008310001

Injection Date:	3/26/2020 11:08:35	Seq Line:	13
Sample Name:	2008310001	Location:	Vial 83
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.586	PBA	223497.3	5.0000	CLO4-89-ISTD

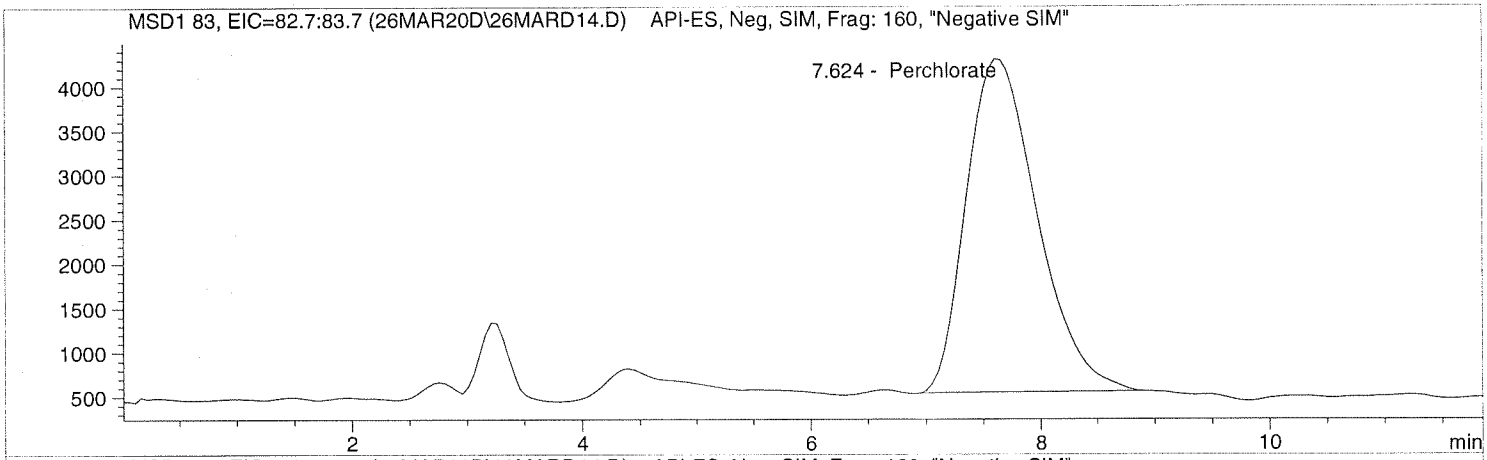
*** End of Report ***

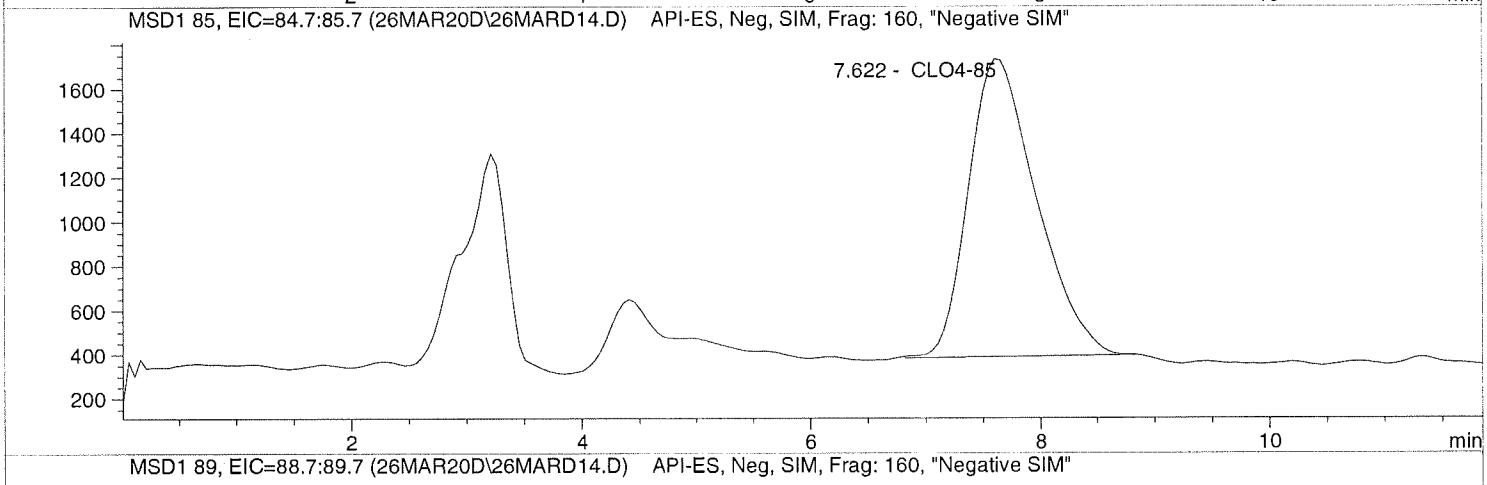
Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD14.D Sample Name: 2008310002 MS

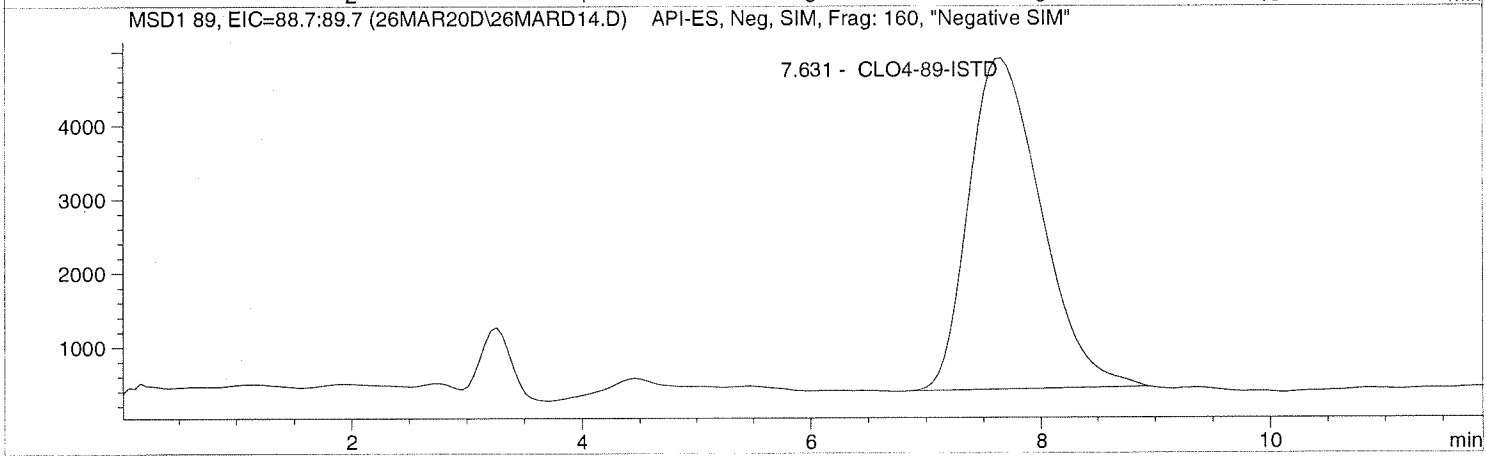
Injection Date:	3/26/2020 11:22:32	Seq Line:	14
Sample Name:	2008310002 MS	Location:	Vial 84
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD14.D Sample Name: 2008310002 MS

Injection Date:	3/26/2020 11:22:32	Seq Line:	14
Sample Name:	2008310002 MS	Location:	Vial 84
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.624	PBA	161578.6	3.0306	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.622	BBA	55538.7	3.3285	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.631	PBA	196195.3	5.0000	CLO4-89-ISTD

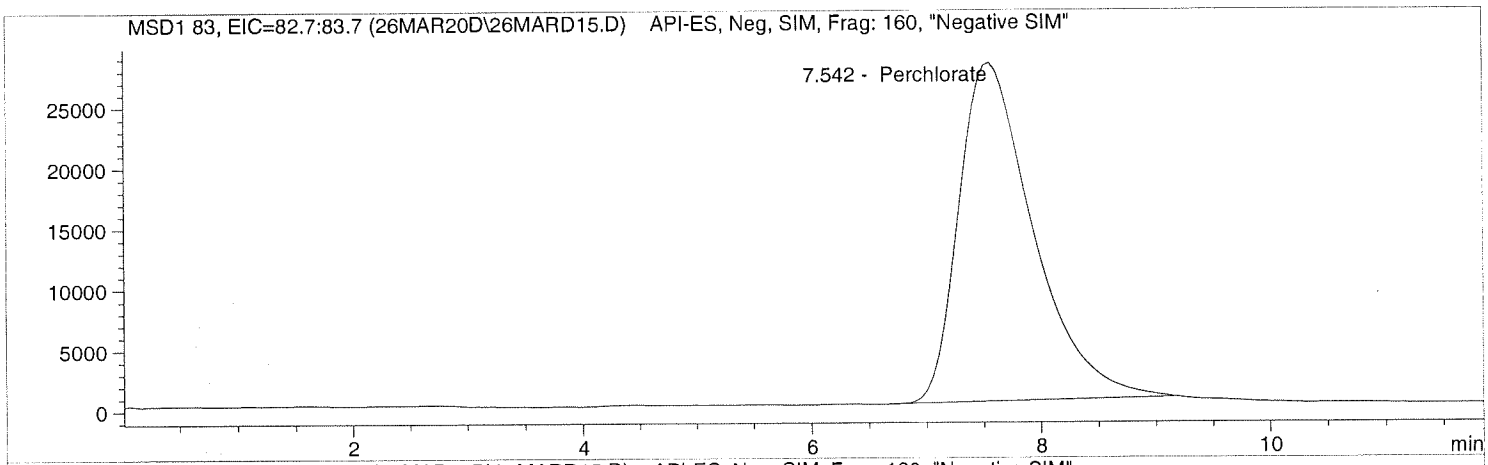
*** End of Report ***

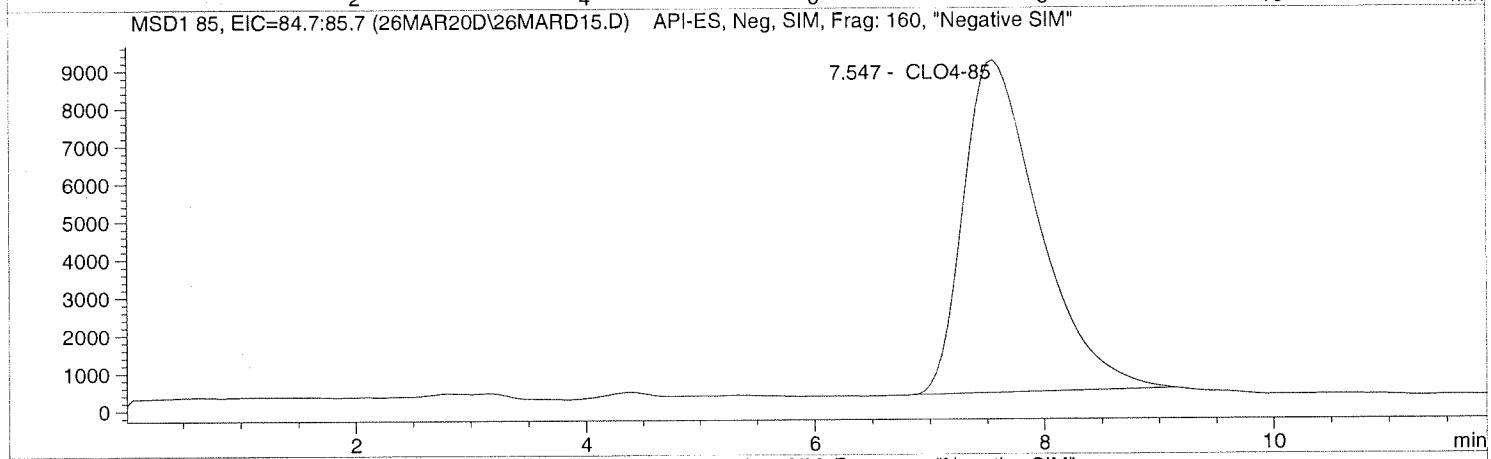
Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD15.D Sample Name: 701042 CCV@25

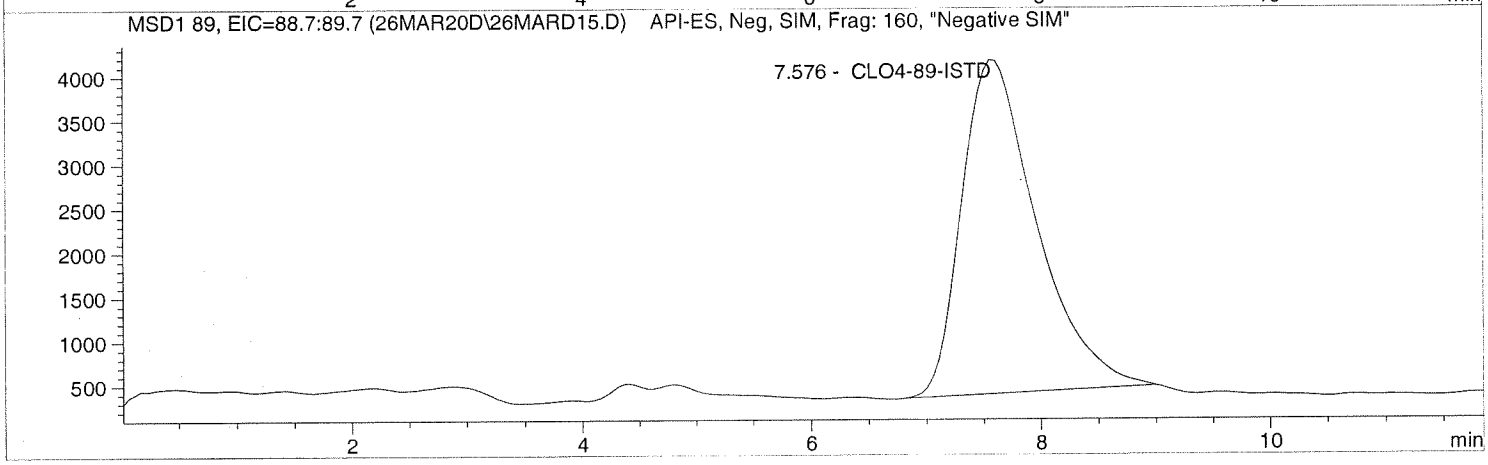
Injection Date:	3/26/2020 11:36:32	Seq Line:	15
Sample Name:	701042 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD15.D Sample Name: 701042 CCV@25

Injection Date:	3/26/2020 11:36:32	Seq Line:	15
Sample Name:	701042 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.542	PBA	1257703.0	25.0421	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.547	PBA	403497.3	26.2306	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.576	PBA	171579.5	5.0000	CLO4-89-ISTD

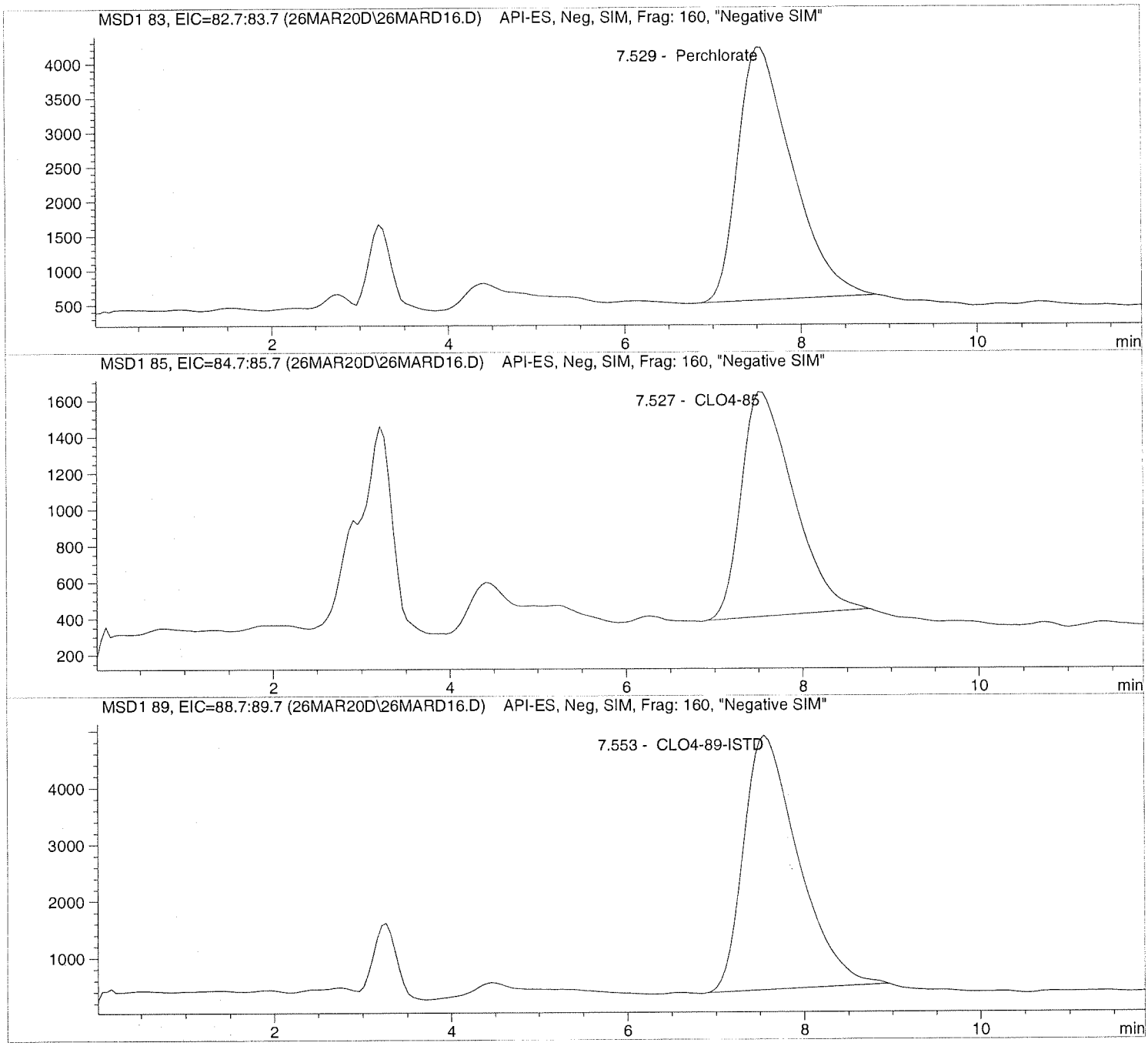
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD16.D Sample Name: 2008310003 MSD

Injection Date:	3/26/2020 11:50:32	Seq Line:	16
Sample Name:	2008310003 MSD	Location:	Vial 85
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD16.D Sample Name: 2008310003 MSD

Injection Date:	3/26/2020 11:50:32	Seq Line:	16
Sample Name:	2008310003 MSD	Location:	Vial 85
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.529	PBA	156764.3	3.0007	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.527	PBA	50765.7	3.0974	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.553	PBA	192226.0	5.0000	CLO4-89-ISTD

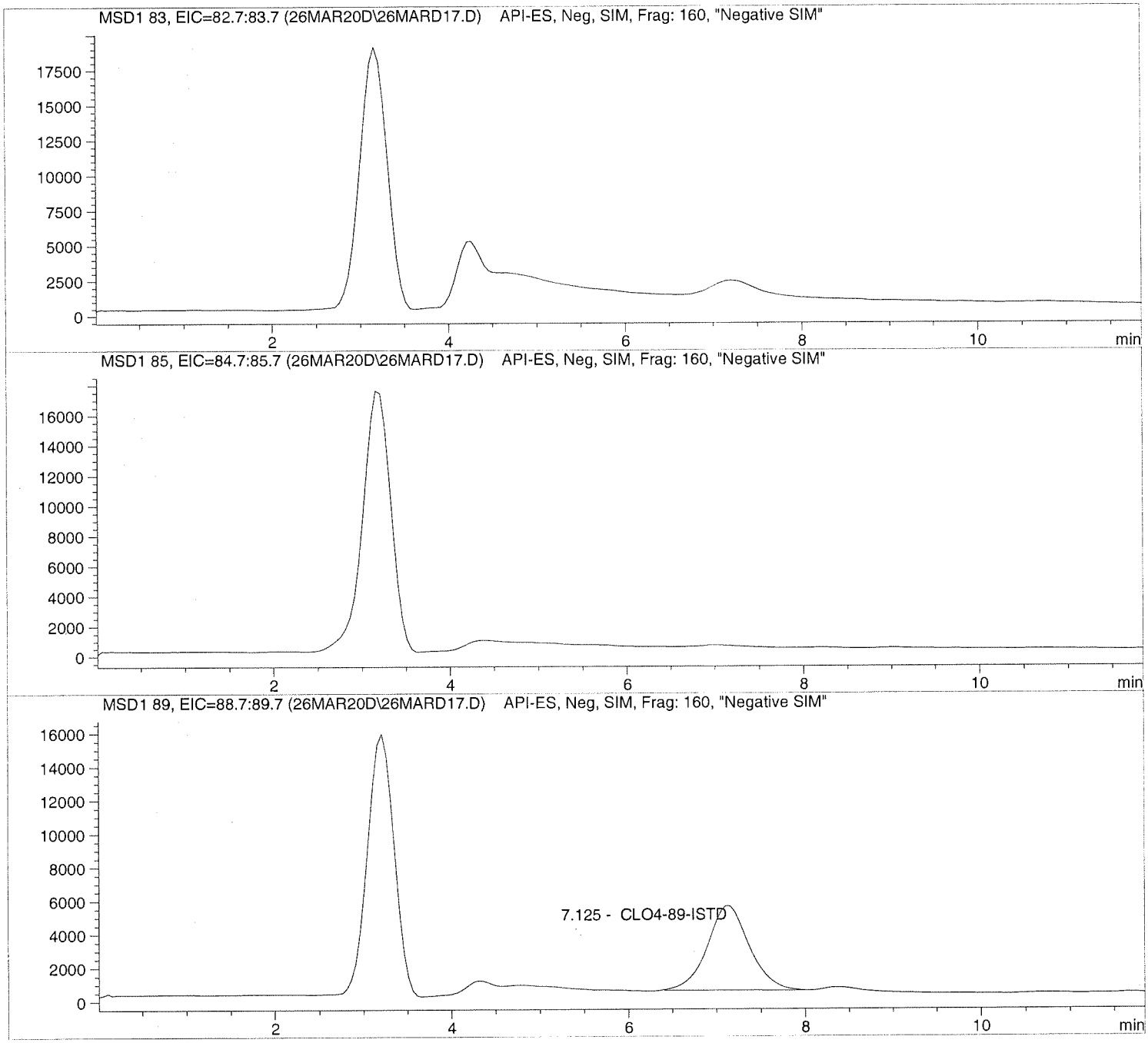
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD17.D Sample Name: 2008310004

Injection Date:	3/26/2020 12:04:29	Seq Line:	17
Sample Name:	2008310004	Location:	Vial 86
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD17.D Sample Name: 2008310004

Injection Date:	3/26/2020 12:04:29	Seq Line:	17
Sample Name:	2008310004	Location:	Vial 86
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.125	PBA	166041.3	5.0000	CLO4-89-ISTD

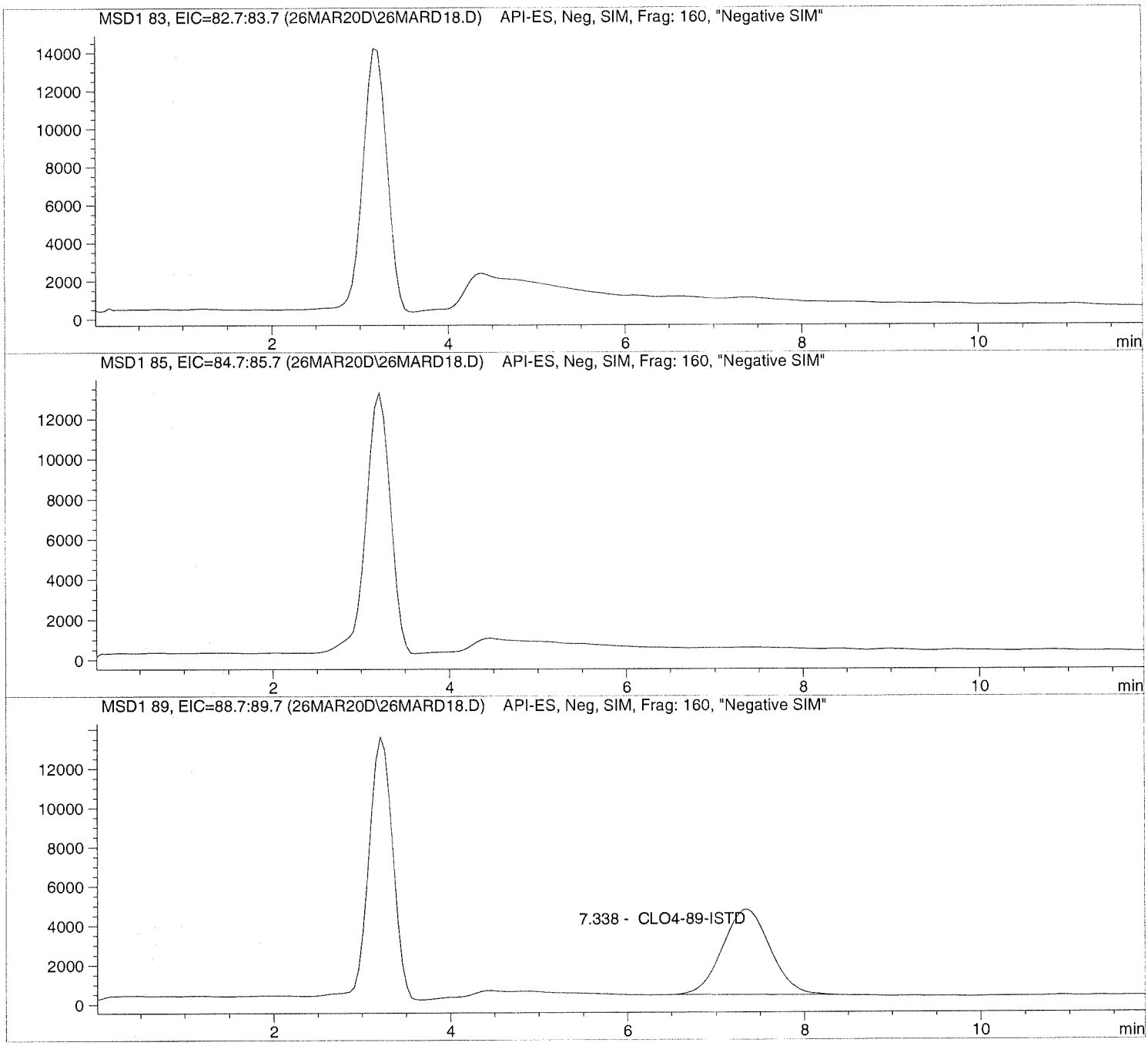
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD18.D Sample Name: 2008310005

Injection Date:	3/26/2020 12:18:26	Seq Line:	18
Sample Name:	2008310005	Location:	Vial 87
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD18.D Sample Name: 2008310005

Injection Date:	3/26/2020 12:18:26	Seq Line:	18
Sample Name:	2008310005	Location:	Vial 87
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.338	PBA	163139.4	5.0000	CLO4-89-ISTD

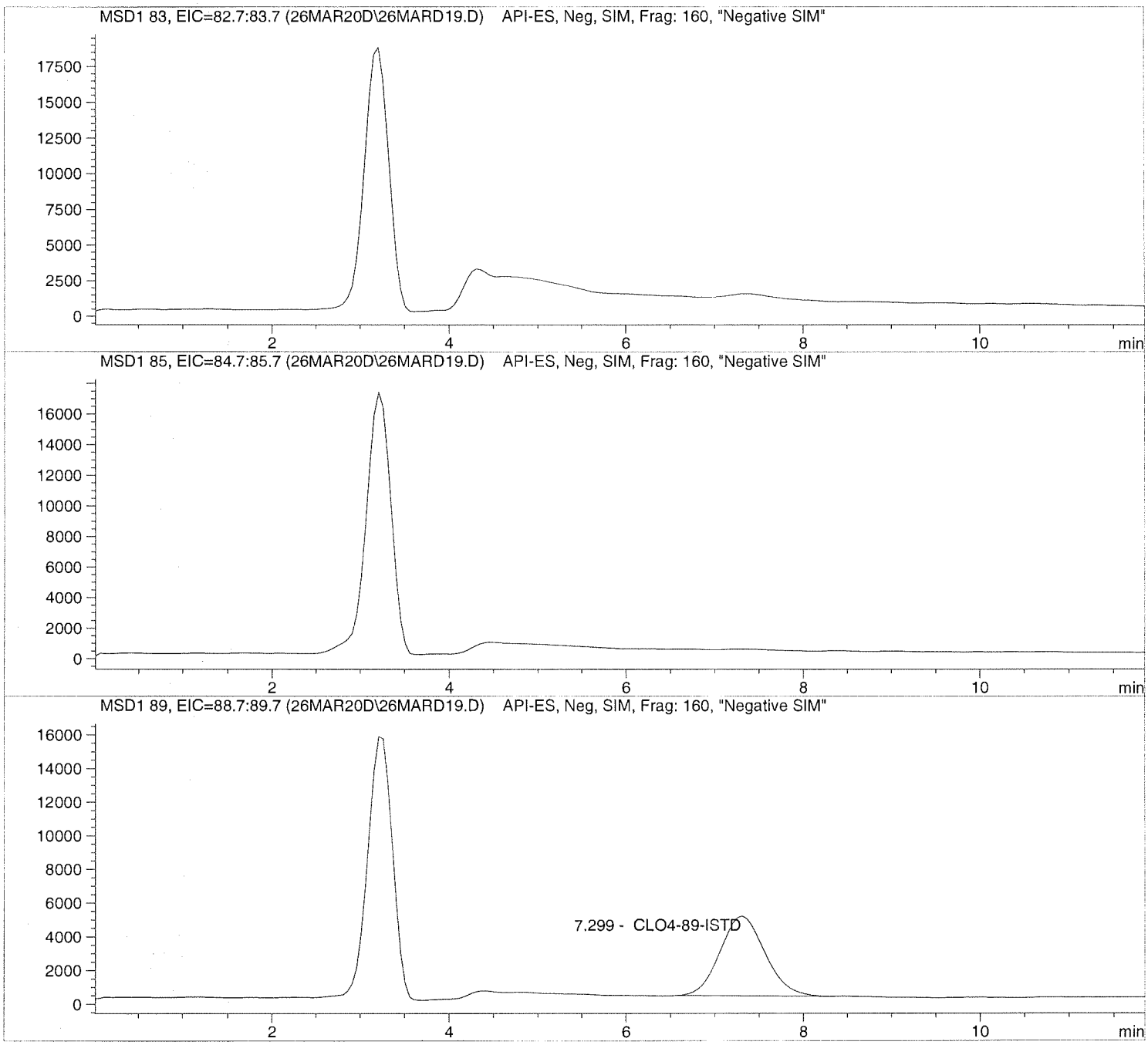
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD19.D Sample Name: 2008310006

Injection Date:	3/26/2020 12:32:24	Seq Line:	19
Sample Name:	2008310006	Location:	Vial 88
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD19.D Sample Name: 2008310006

Injection Date:	3/26/2020 12:32:24	Seq Line:	19
Sample Name:	2008310006	Location:	Vial 88
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.299	PBA	167930.1	5.0000	CLO4-89-ISTD

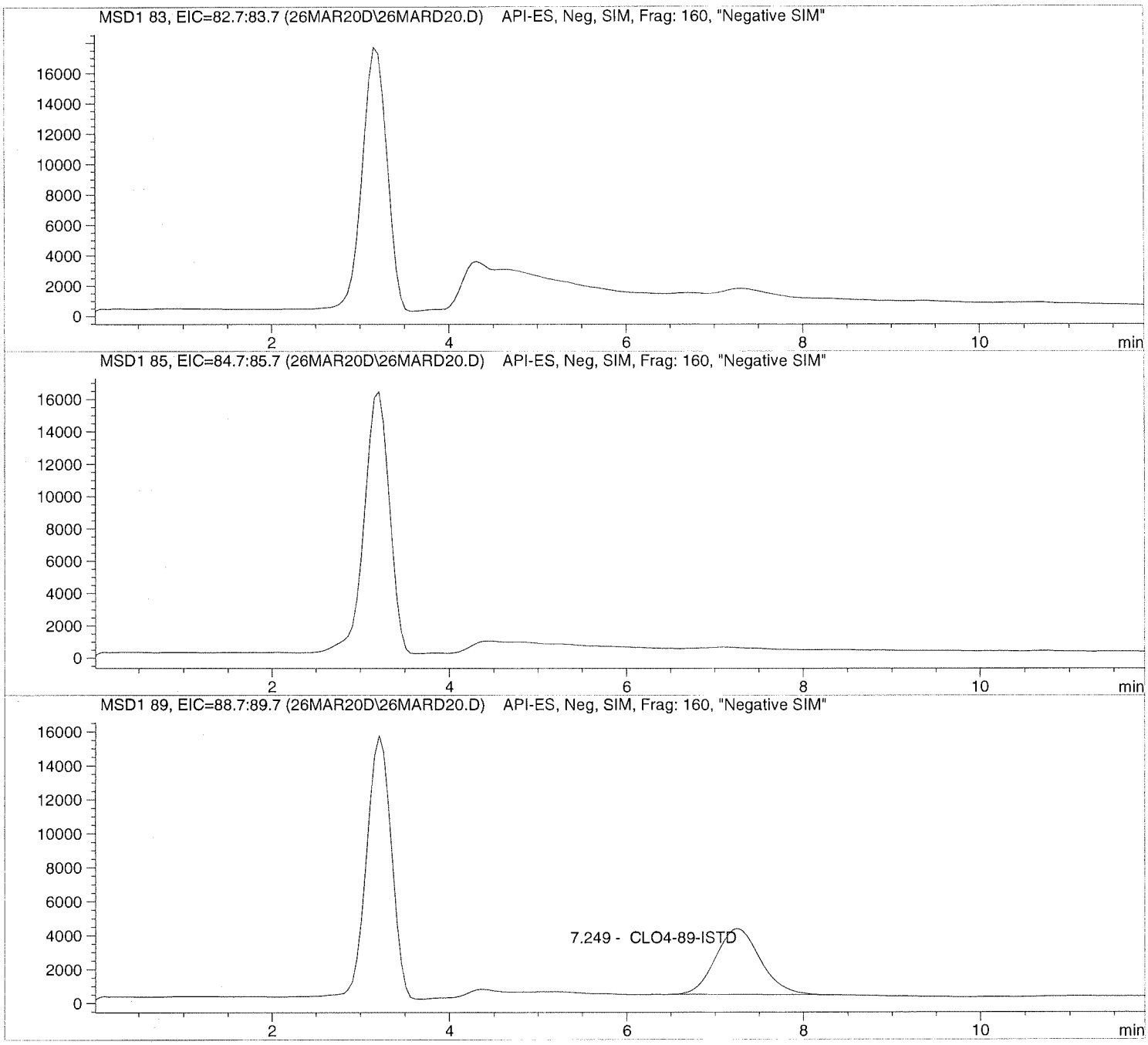
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD20.D Sample Name: 2008310007

Injection Date:	3/26/2020 12:46:26	Seq Line:	20
Sample Name:	2008310007	Location:	Vial 89
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD20.D Sample Name: 2008310007

Injection Date:	3/26/2020 12:46:26	Seq Line:	20
Sample Name:	2008310007	Location:	Vial 89
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By: Signal
Calib. Data Modified: Mon, 23. Sep. 2019,00:20:59 pm
Multiplier: 1.000000
Dilution: 1.000000
Sample Amount: 0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.249	PBA	137319.5	5.0000	CLO4-89-ISTD

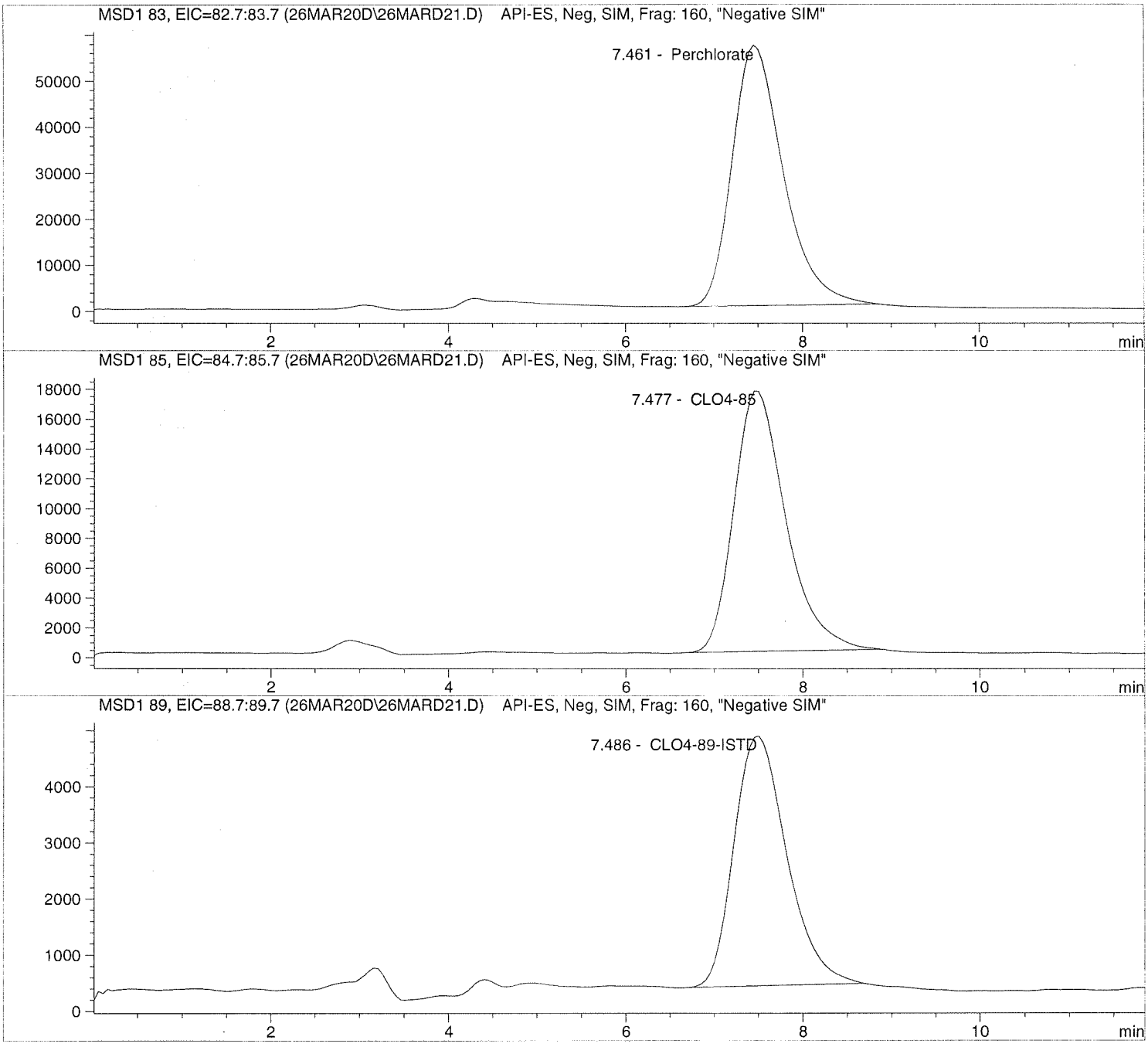
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD21.D Sample Name: 2008310008 10X

Injection Date:	3/26/2020 13:00:24	Seq Line:	21
Sample Name:	2008310008 10X	Location:	Vial 90
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD21.D Sample Name: 2008310008 10X

Injection Date:	3/26/2020 13:00:24	Seq Line:	21
Sample Name:	2008310008 10X	Location:	Vial 90
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	10.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.461	PBA	2264742.3	396.5233	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.477	PBA	708208.9	407.0441	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.486	PBA	183925.3	50.0000	CLO4-89-ISTD

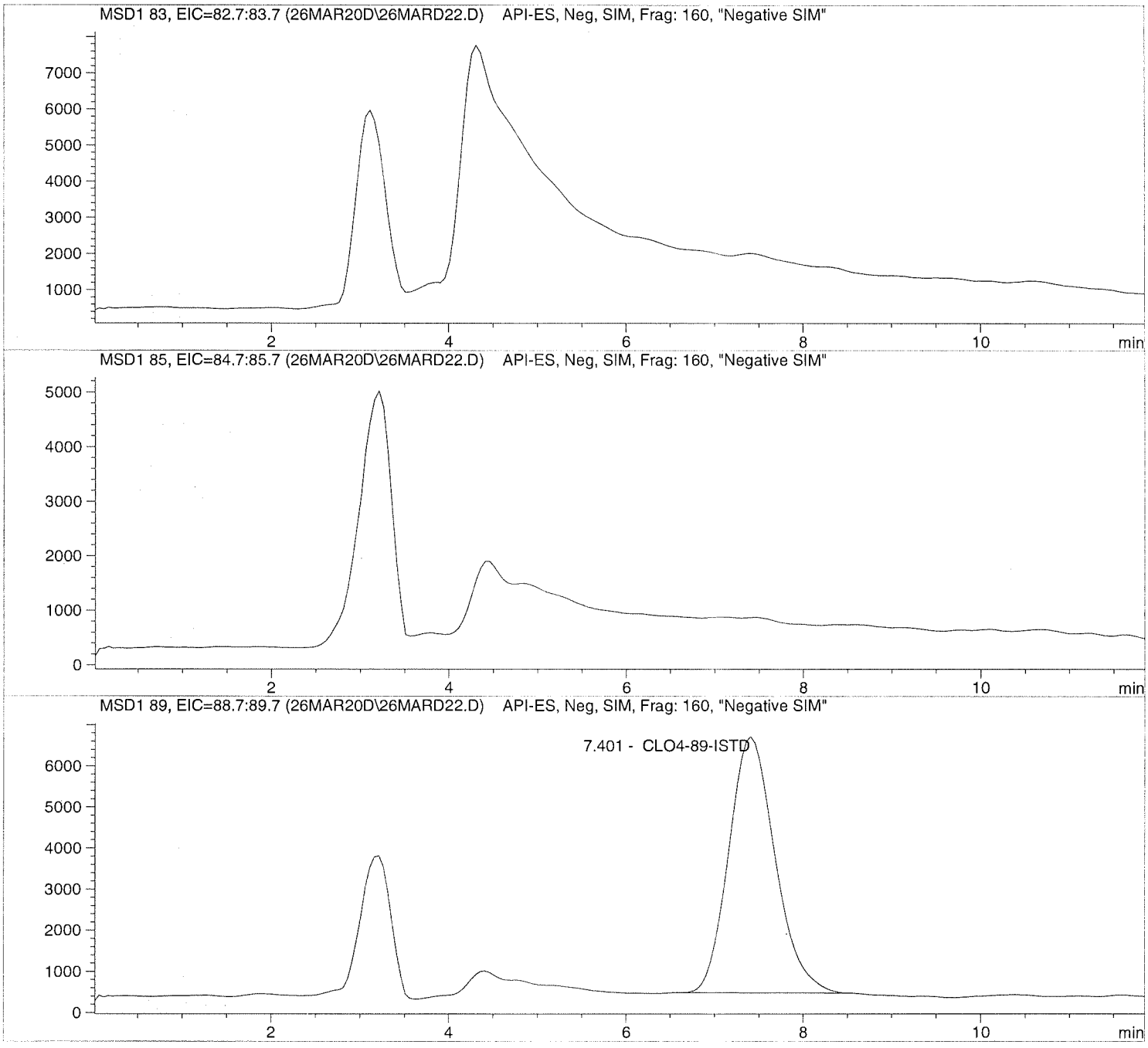
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD22.D Sample Name: 2008310009

Injection Date:	3/26/2020 13:14:36	Seq Line:	22
Sample Name:	2008310009	Location:	Vial 91
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD22.D Sample Name: 2008310009

Injection Date:	3/26/2020 13:14:36	Seq Line:	22
Sample Name:	2008310009	Location:	Vial 91
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.401	PBA	226092.7	5.0000	CLO4-89-ISTD

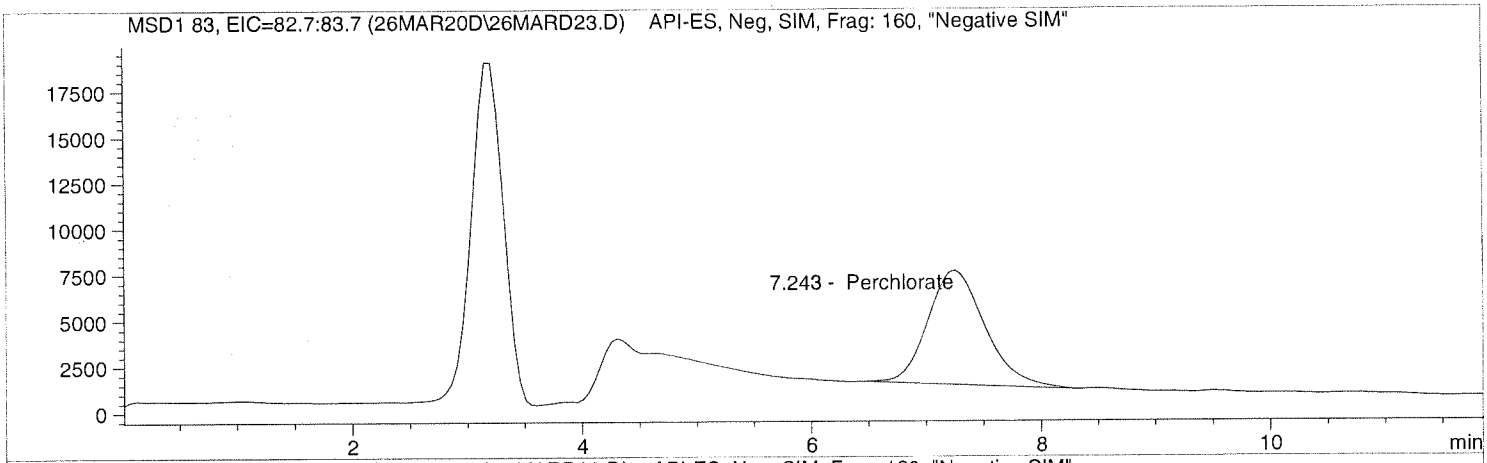
*** End of Report ***

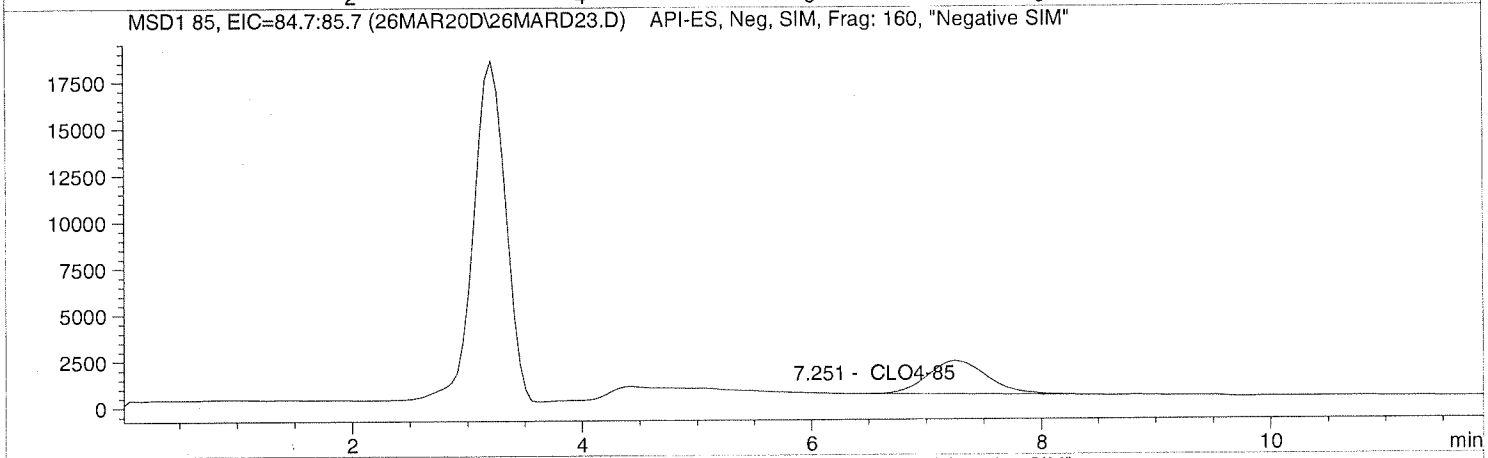
Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD23.D Sample Name: 2008310010

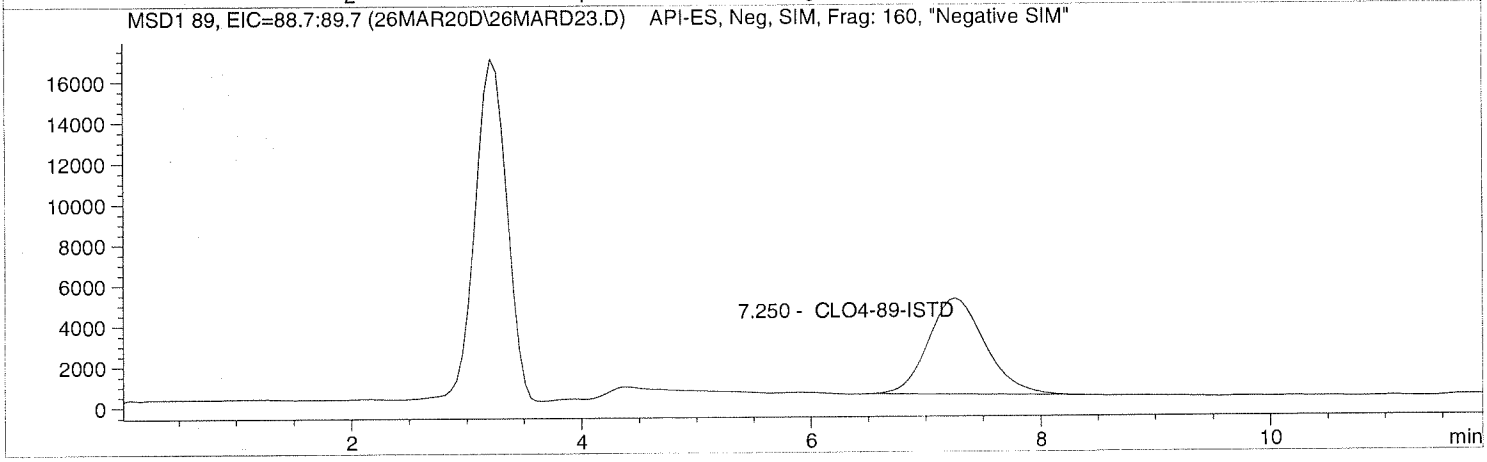
Injection Date:	3/26/2020 13:28:31	Seq Line:	23
Sample Name:	2008310010	Location:	Vial 92
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD23.D Sample Name: 2008310010

Injection Date:	3/26/2020 13:28:31	Seq Line:	23
Sample Name:	2008310010	Location:	Vial 92
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.243	BBA	213687.0	4.8705	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.251	PBA	64563.9	4.7328	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.250	PBA	161722.0	5.0000	CLO4-89-ISTD

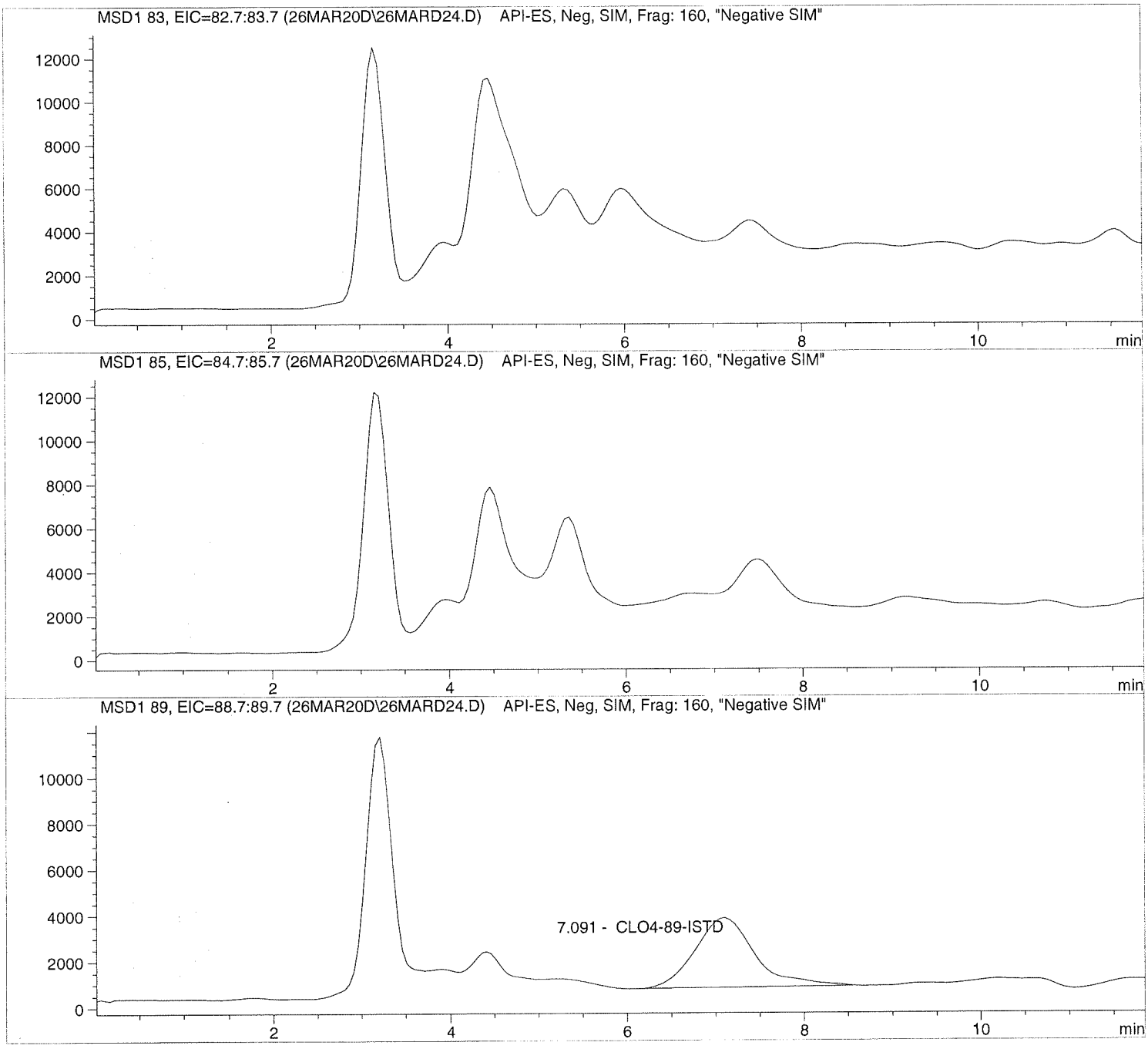
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD24.D Sample Name: 2008310011

Injection Date:	3/26/2020 13:42:47	Seq Line:	24
Sample Name:	2008310011	Location:	Vial 93
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD24.D Sample Name: 2008310011

Injection Date:	3/26/2020 13:42:47	Seq Line:	24
Sample Name:	2008310011	Location:	Vial 93
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.091	PBA	141774.2	5.0000	CLO4-89-ISTD

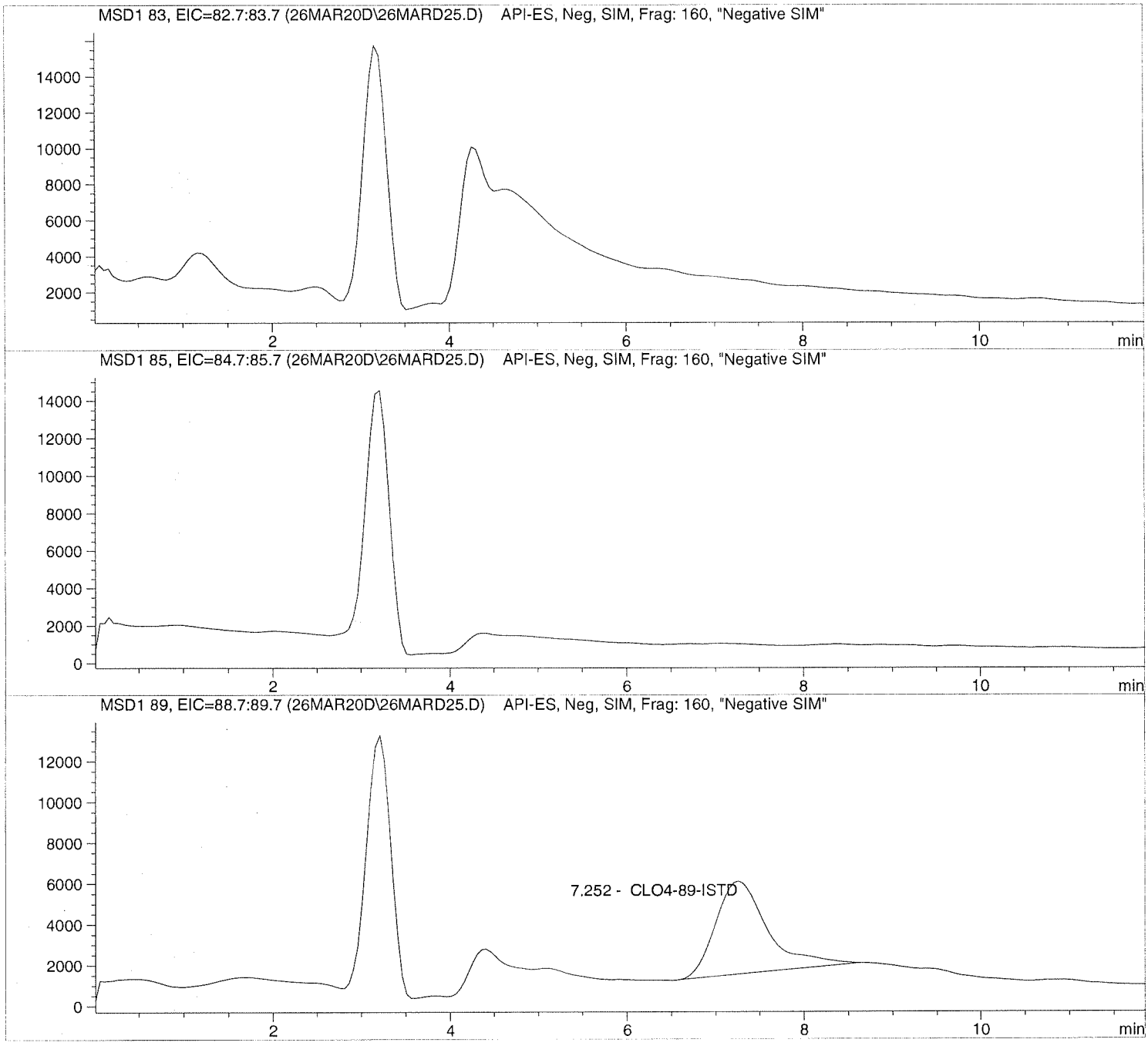
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD25.D Sample Name: 2008310012

Injection Date:	3/26/2020 13:56:46	Seq Line:	25
Sample Name:	2008310012	Location:	Vial 94
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD25.D Sample Name: 2008310012

Injection Date:	3/26/2020 13:56:46	Seq Line:	25
Sample Name:	2008310012	Location:	Vial 94
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.252	PBA	186601.9	5.0000	CLO4-89-ISTD

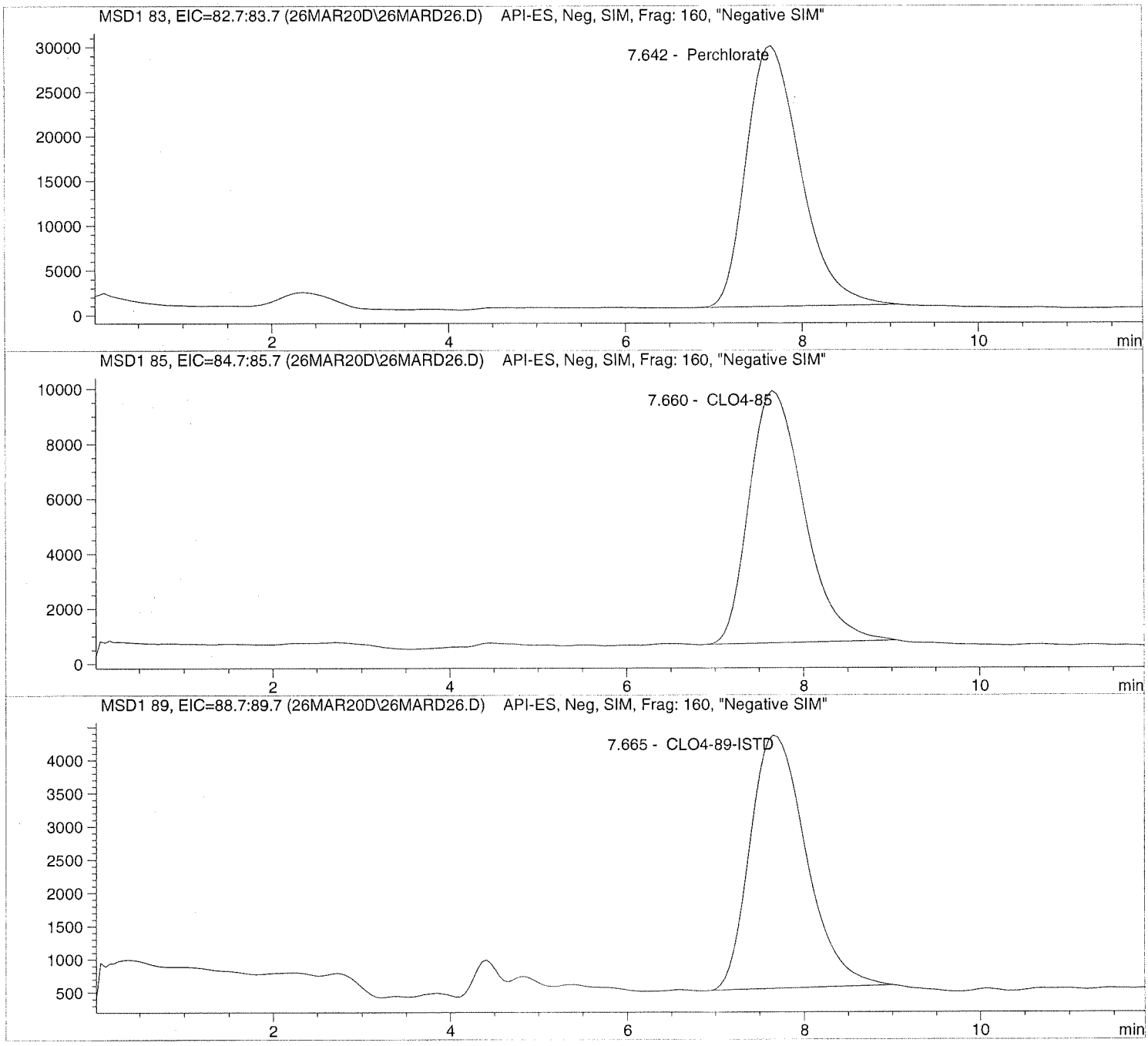
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD26.D Sample Name: 701043 CCV@25

Injection Date:	3/26/2020 14:10:42	Seq Line:	26
Sample Name:	701043 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD26.D Sample Name: 701043 CCV@25

Injection Date:	3/26/2020 14:10:42	Seq Line:	26
Sample Name:	701043 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.642	PBA	1233054.6	25.2923	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.660	PBA	391623.1	26.2521	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.665	PBA	166381.0	5.0000	CLO4-89-ISTD

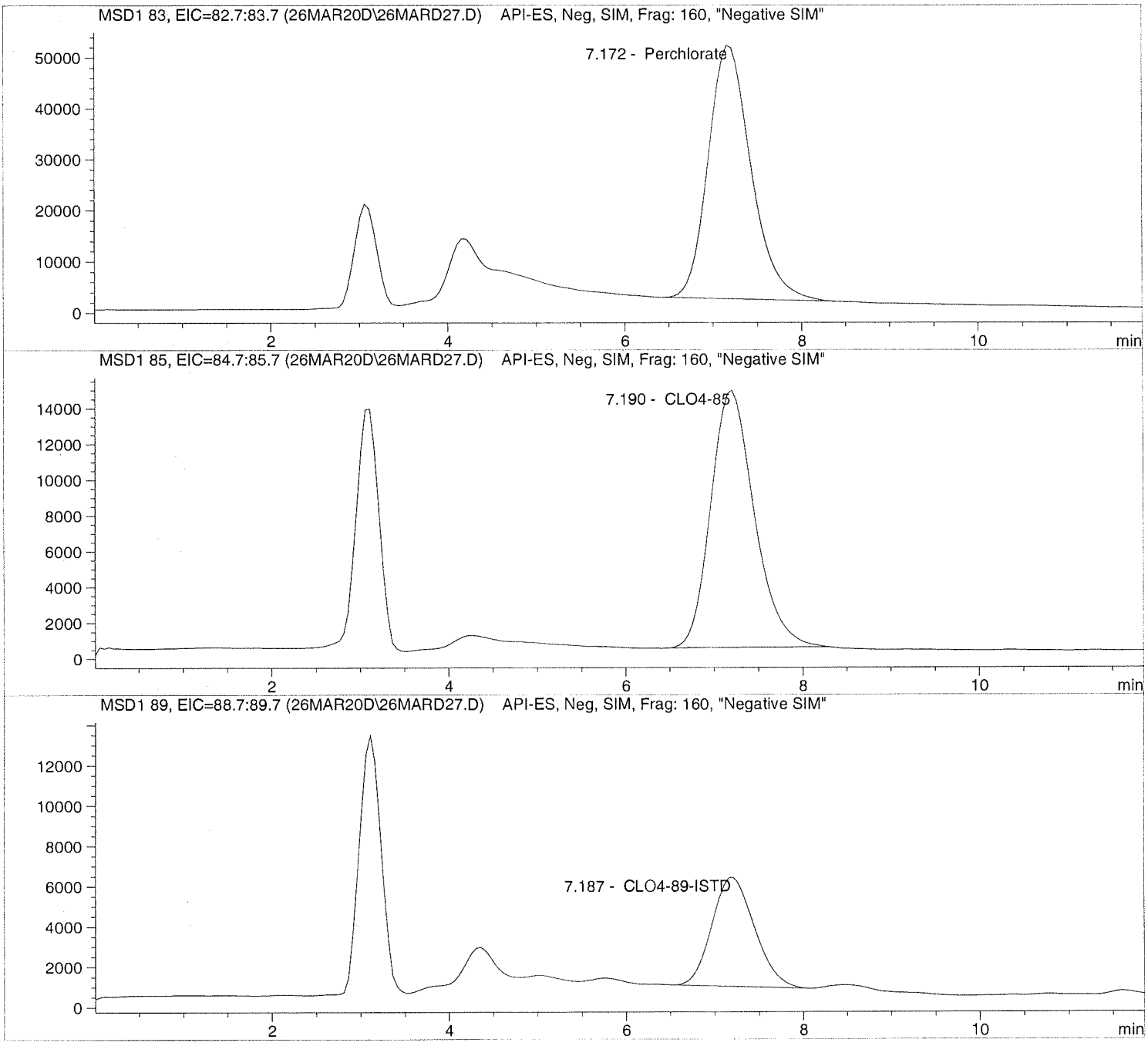
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD27.D Sample Name: 2008062003 10X

Injection Date:	3/26/2020 14:24:42	Seq Line:	27
Sample Name:	2008062003 10X	Location:	Vial 95
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD27.D Sample Name: 2008062003 10X

Injection Date:	3/26/2020 14:24:42	Seq Line:	27
Sample Name:	2008062003 10X	Location:	Vial 95
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	10.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.172	BBA	1661872.5	308.7998	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.190	PBA	489002.0	299.6381	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.187	PBA	179512.0	50.0000	CLO4-89-ISTD

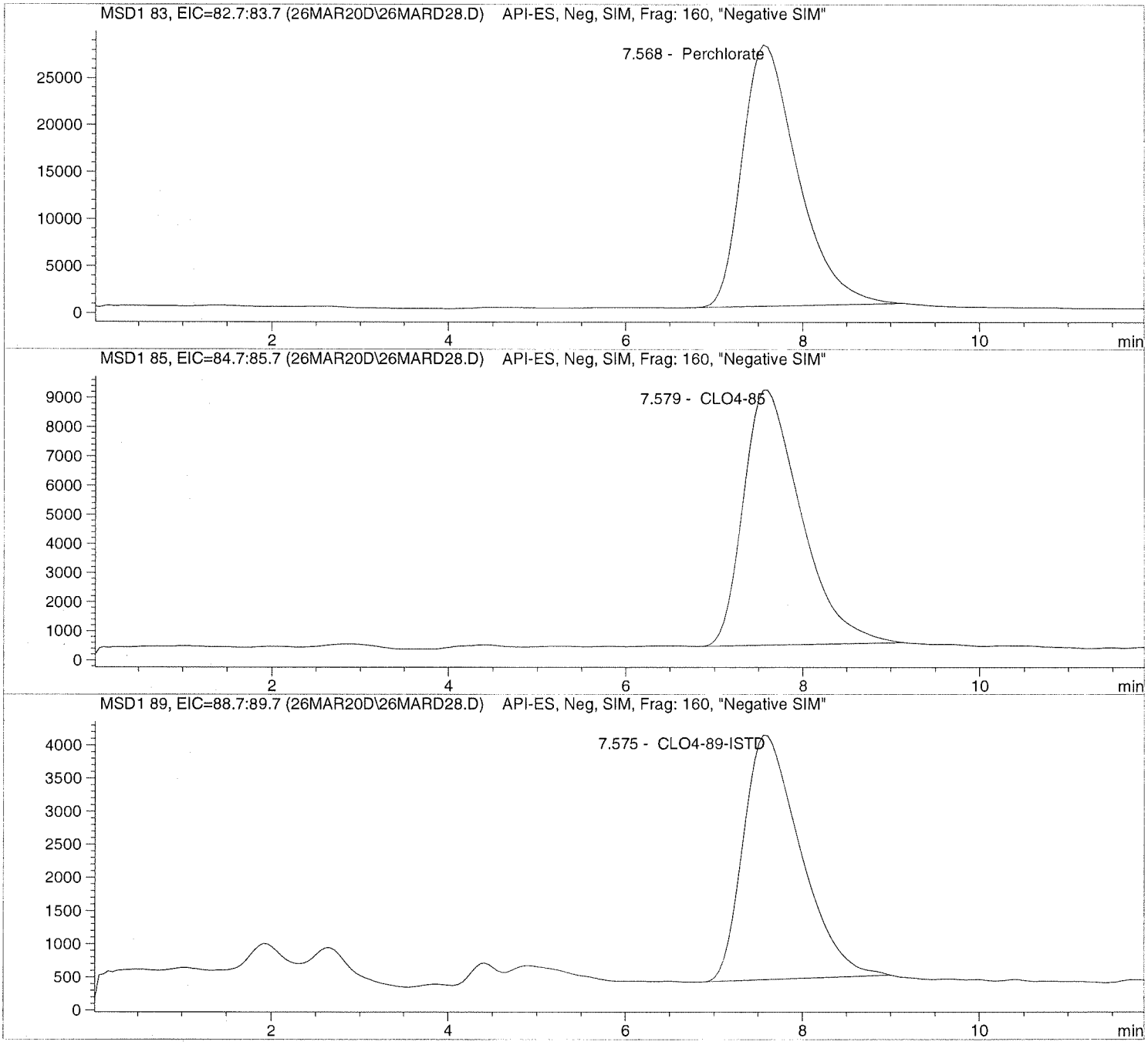
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD28.D Sample Name: 701102 CCV@25

Injection Date:	3/26/2020 14:38:44	Seq Line:	28
Sample Name:	701102 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD28.D Sample Name: 701102 CCV@25

Injection Date:	3/26/2020 14:38:44	Seq Line:	28
Sample Name:	701102 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.568	PBA	1215789.9	25.0215	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.579	PBA	397063.1	26.6375	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.575	PBA	166012.1	5.0000	CLO4-89-ISTD

*** End of Report ***

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

Initial Calibration

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

Calibration Table

Perchlorate

Calib. Data Modified : 9/23/2019 12:20:59 PM

Calculate : Internal Standard
Based on : Peak Area

Rel. Reference Window : 20.000 %
Abs. Reference Window : 0.000 min
Rel. Non-ref. Window : 20.000 %
Abs. Non-ref. Window : 0.000 min
Use Multiplier & Dilution Factor with ISTDs
Uncalibrated Peaks : not reported
Partial Calibration : No recalibration if peaks missing

Curve Type : Quadratic (some peaks differ, see below)
Origin : Ignored (some peaks differ, see below)
Weight : Linear (Amnt) (some peaks differ, see below)

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Default Sample ISTD Information (if not set in sample table):

ISTD #	ISTD Amount	Name
1	5.00000	CLO4-89-ISTD

Signal 1: MSD1 83, EIC=82.7:83.7
Signal 2: MSD1 85, EIC=84.7:85.7
Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Sig	Lvl	Amount	Area	Amt/Area	Ref	Grp	Name
7.750	1	3	1.00000	5.39218e4	1.85454e-5	1		Perchlorate
		4	2.00000	1.32825e5	1.50574e-5			
		5	5.00000	2.76271e5	1.80982e-5			
		6	10.00000	5.61298e5	1.78159e-5			
		7	25.00000	1.51820e6	1.64669e-5			
		8	50.00000	3.31156e6	1.50986e-5			
		9	75.00000	5.23914e6	1.43153e-5			
7.767	3	3	5.00000	2.14568e5	2.33026e-5	+I1		CLO4-89-ISTD
		4	5.00000	2.04758e5	2.44190e-5			
		5	5.00000	2.13407e5	2.34294e-5			
		6	5.00000	2.09246e5	2.38953e-5			
		7	5.00000	2.07403e5	2.41077e-5			
		8	5.00000	2.02929e5	2.46391e-5			
		9	5.00000	1.97933e5	2.52611e-5			
7.778	2	3	1.00000	1.70436e4	5.86732e-5	1		CLO4-85
		4	2.00000	4.20754e4	4.75337e-5			
		5	5.00000	9.24707e4	5.40712e-5			
		6	10.00000	1.68622e5	5.93041e-5			
		7	25.00000	4.63724e5	5.39114e-5			
		8	50.00000	9.95933e5	5.02042e-5			

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

RetTime [min]	Sig	Lvl	Amount	Area	Amt/Area	Ref	Grp	Name
		9	75.00000	1.58066e6	4.74484e-5			

More compound-specific settings:

Compound: Perchlorate
- Time Window : From 3.581 min To 11.899 min
- Curve Type : Quadratic
- Origin : Ignored
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 0.5
  - Level 5 : 0.2
  - Level 6 : 0.1
  - Level 7 : 0.04
  - Level 8 : 0.02
  - Level 9 : 0.013333

Compound: CLO4-89-ISTD
- Time Window : From 3.581 min To 11.896 min
- Curve Type : Linear
- Origin : Included
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 1
  - Level 5 : 1
  - Level 6 : 1
  - Level 7 : 1
  - Level 8 : 1
  - Level 9 : 1

Compound: CLO4-85
- Time Window : From 3.601 min To 11.913 min
- Curve Type : Quadratic
- Origin : Ignored
- Calibration Level Weights:/
  - Level 3 : 1
  - Level 4 : 0.5
  - Level 5 : 0.2
  - Level 6 : 0.1
  - Level 7 : 0.04
  - Level 8 : 0.02
  - Level 9 : 0.013333

Peak Sum Table

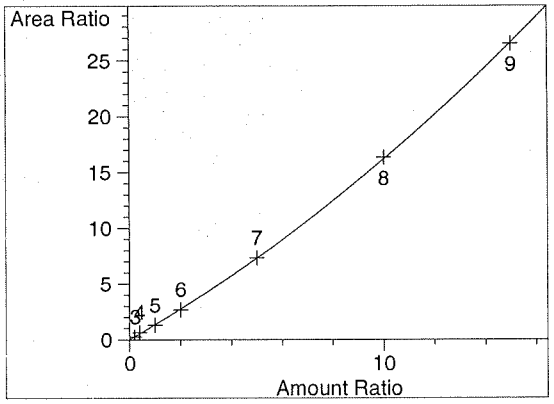
No Entries in table

Method C:\HPCHEM\1\METHODS\CLO4-DP3.M

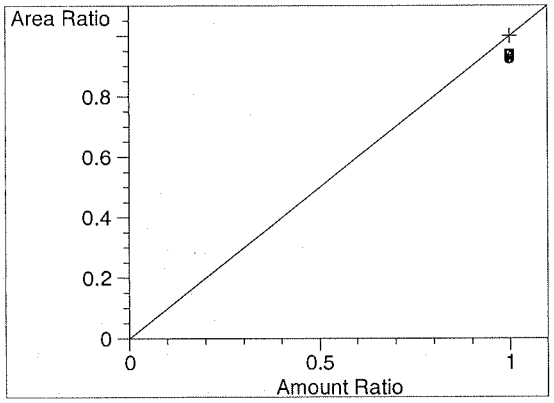
==========

Calibration Curves

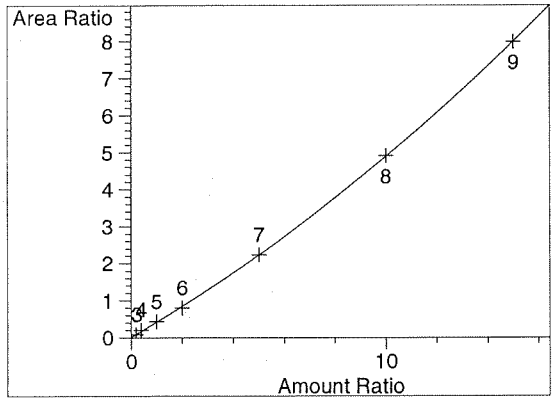
==========



Perchlorate at exp. RT: 7.750
MSD1 83, EIC=82.7:83.7
Correlation: 0.99975
Residual Std. Dev.: 0.10284
Formula: $y = ax^2 + bx + c$
a: 3.10463e-2
b: 1.30369
c: 2.19496e-2
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 0.5
Level 5 : 0.2
Level 6 : 0.1
Level 7 : 0.04
Level 8 : 0.02
Level 9 : 0.013333



CLO4-89-ISTD at exp. RT: 7.767
MSD1 89, EIC=88.7:89.7
Correlation: 1.00000
Residual Std. Dev.: 0.00000
Formula: $y = mx + b$
m: 1.00000
b: 0.00000
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 1
Level 5 : 1
Level 6 : 1
Level 7 : 1
Level 8 : 1
Level 9 : 1



CLO4-85 at exp. RT: 7.778
MSD1 85, EIC=84.7:85.7
Correlation: 0.99969
Residual Std. Dev.: 0.02601
Formula: $y = ax^2 + bx + c$
a: 8.85207e-3
b: 3.99283e-1
c: 1.33505e-2
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 3 : 1
Level 4 : 0.5
Level 5 : 0.2
Level 6 : 0.1
Level 7 : 0.04
Level 8 : 0.02
Level 9 : 0.013333

==========

Batch Report: C:\HPCHEM\1\DATA\20SEP19I\20SEP19D.B

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DP3.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#	*	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorat RT	Perchlorate Amount
#	*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	5.39218e4	7.750	8.75982e-1
#	*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	1.32825e5	7.797	2.37682
#	*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	2.76271e5	7.770	4.77237
#	*	CLO4@ 10.ug/L	Vial 76	1	Control	6	5.61298e5	7.785	9.75097
#	*	CLO4@ 25.ug/L	Vial 77	1	Control	7	1.51820e6	7.741	25.01082
#	*	CLO4@ 50.ug/L	Vial 78	1	Control	8	3.31156e6	7.775	50.40300
#	*	CLO4@ 75.ug/L	Vial 79	1	Control	9	5.23914e6	7.736	74.79107
#	*	ICAL Verf@10ug/L	Vial 80	1	Control	11	5.74879e5	7.756	10.11855

#	*	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-IS RT	CLO4-89-ISTD Amount
#	*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	2.14568e5	7.767	5.00000
#	*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	2.04758e5	7.816	5.00000
#	*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	2.13407e5	7.793	5.00000
#	*	CLO4@ 10.ug/L	Vial 76	1	Control	6	2.09246e5	7.798	5.00000
#	*	CLO4@ 25.ug/L	Vial 77	1	Control	7	2.07403e5	7.763	5.00000
#	*	CLO4@ 50.ug/L	Vial 78	1	Control	8	2.02929e5	7.800	5.00000
#	*	CLO4@ 75.ug/L	Vial 79	1	Control	9	1.97933e5	7.765	5.00000
#	*	ICAL Verf@10ug/L	Vial 80	1	Control	11	2.06243e5	7.776	5.00000

#	*	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
#	*	CLO4@ 1.0ug/L	Vial 73	1	Control	3	1.70436e4	7.778	8.24488e-1
#	*	CLO4@ 2.0ug/L	Vial 74	1	Control	4	4.20754e4	7.805	2.38090
#	*	CLO4@ 5.0ug/L	Vial 75	1	Control	5	9.24707e4	7.787	5.14166
#	*	CLO4@ 10.ug/L	Vial 76	1	Control	6	1.68622e5	7.781	9.52209
#	*	CLO4@ 25.ug/L	Vial 77	1	Control	7	4.63724e5	7.760	25.04916
#	*	CLO4@ 50.ug/L	Vial 78	1	Control	8	9.95933e5	7.793	50.14223
#	*	CLO4@ 75.ug/L	Vial 79	1	Control	9	1.58066e6	7.758	74.93659
#	*	ICAL Verf@10ug/L	Vial 80	1	Control	11	1.71000e5	7.760	9.79043

*** End of Report ***

Sequence: C:\HPCHEM\1\SEQUENCE\CLO4\2019\SEP\20SEP19I.S

Sequence Table:

Method and Injection Info Part:

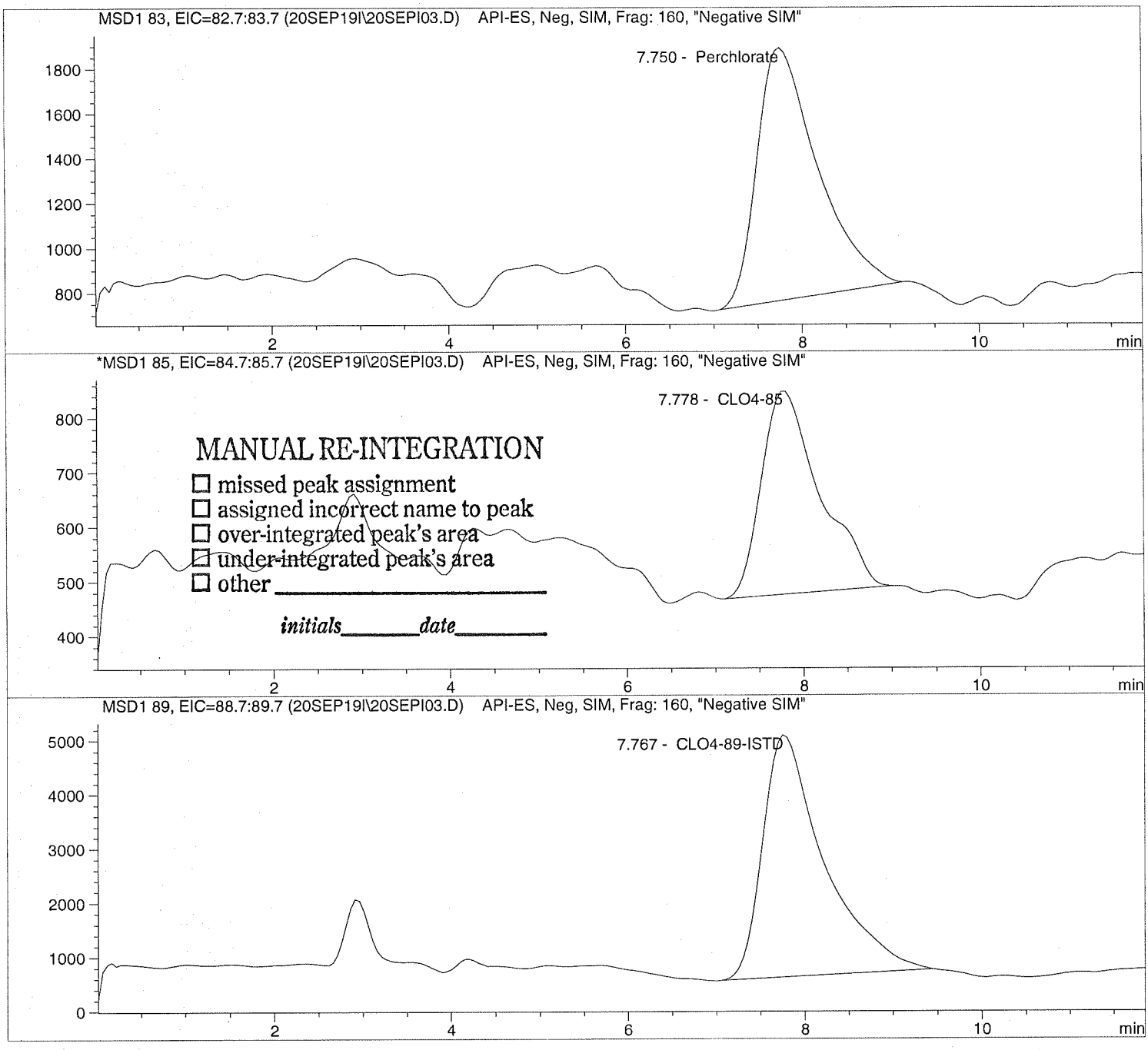
Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 71	CLO4@ 0.2ug/L	CLO4-AQN	1	Ctrl Samp		
2	Vial 72	CLO4@ 0.5ug/L	CLO4-AQN	1	Ctrl Samp		
3	Vial 73	CLO4@ 1.0ug/L	CLO4-AQN	1	Ctrl Samp		
4	Vial 74	CLO4@ 2.0ug/L	CLO4-AQN	1	Ctrl Samp		
5	Vial 75	CLO4@ 5.0ug/L	CLO4-AQN	1	Ctrl Samp		
6	Vial 76	CLO4@ 10.ug/L	CLO4-AQN	1	Ctrl Samp		
7	Vial 77	CLO4@ 25.ug/L	CLO4-AQN	1	Ctrl Samp		
8	Vial 78	CLO4@ 50.ug/L	CLO4-AQN	1	Ctrl Samp		
9	Vial 79	CLO4@ 75.ug/L	CLO4-AQN	1	Ctrl Samp		
10	Vial 71	CLO4@ 0.2ug/L	CLO4-AQN	1	Ctrl Samp		
11	Vial 80	ICAL Verf@10ug/L	CLO4-AQN	1	Ctrl Samp		

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.750	PBA	53921.8	0.8760	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.778	MM	17043.6	0.8245	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.767	PBA	214568.1	5.0000	CLO4-89-ISTD

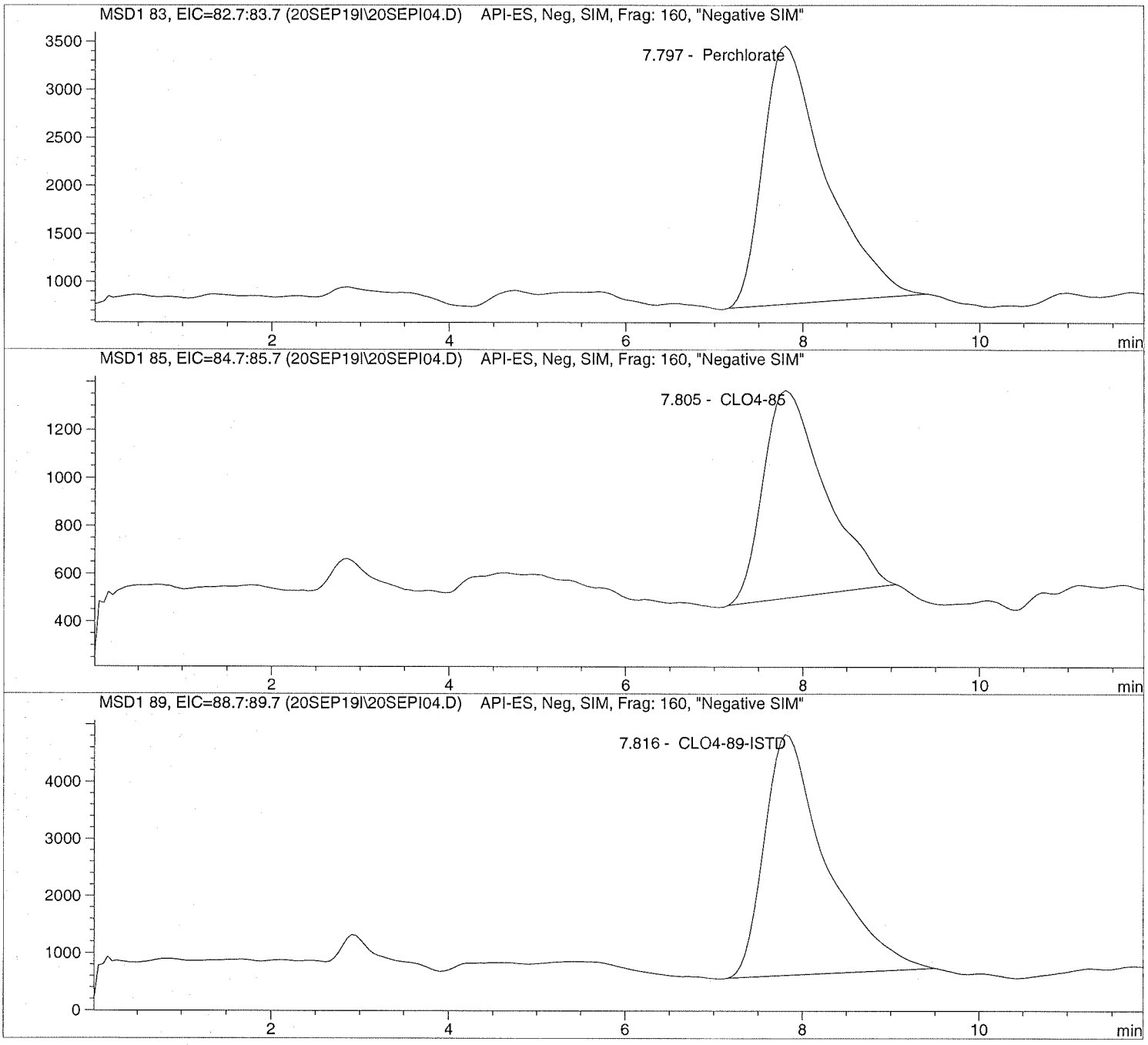
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI04.D Sample Name: CLO4@ 2.0ug/L

Injection Date:	9/20/2019 09:37:58	Seq Line:	4
Sample Name:	CLO4@ 2.0ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI04.D Sample Name: CLO4@ 2.0ug/L

Injection Date:	9/20/2019 09:37:58	Seq Line:	4
Sample Name:	CLO4@ 2.0ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	2.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.797	PBA	132825.2	2.3768	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.805	PBA	42075.4	2.3809	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.816	PBA	204758.3	5.0000	CLO4-89-ISTD

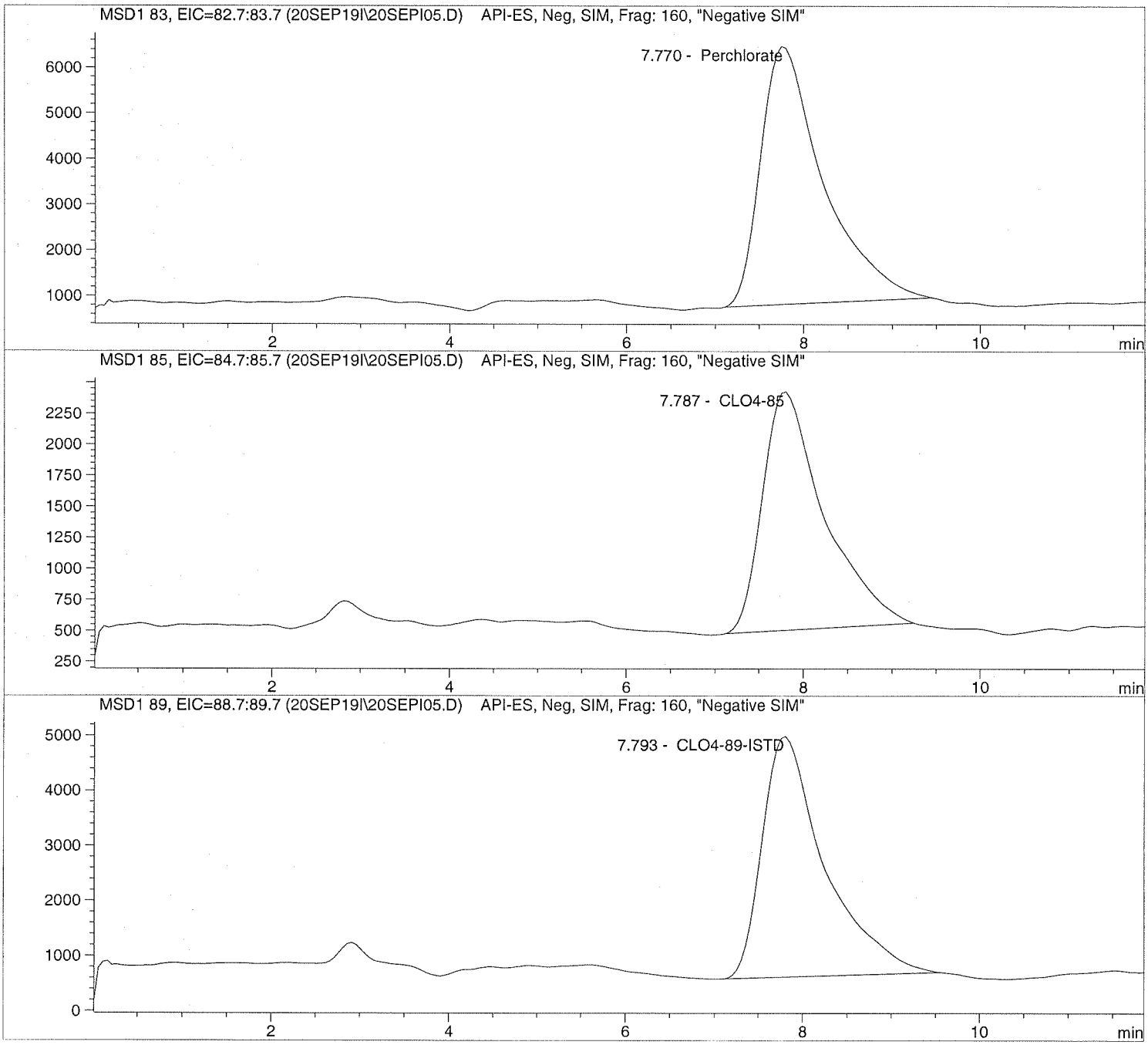
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI05.D Sample Name: CLO4@ 5.0ug/L

Injection Date:	9/20/2019 09:51:49	Seq Line:	5
Sample Name:	CLO4@ 5.0ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI05.D Sample Name: CLO4@ 5.0ug/L

Injection Date:	9/20/2019 09:51:49	Seq Line:	5
Sample Name:	CLO4@ 5.0ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	5.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.770	PBA	276270.7	4.7724	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.787	PBA	92470.7	5.1417	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.793	PBA	213407.0	5.0000	CLO4-89-ISTD

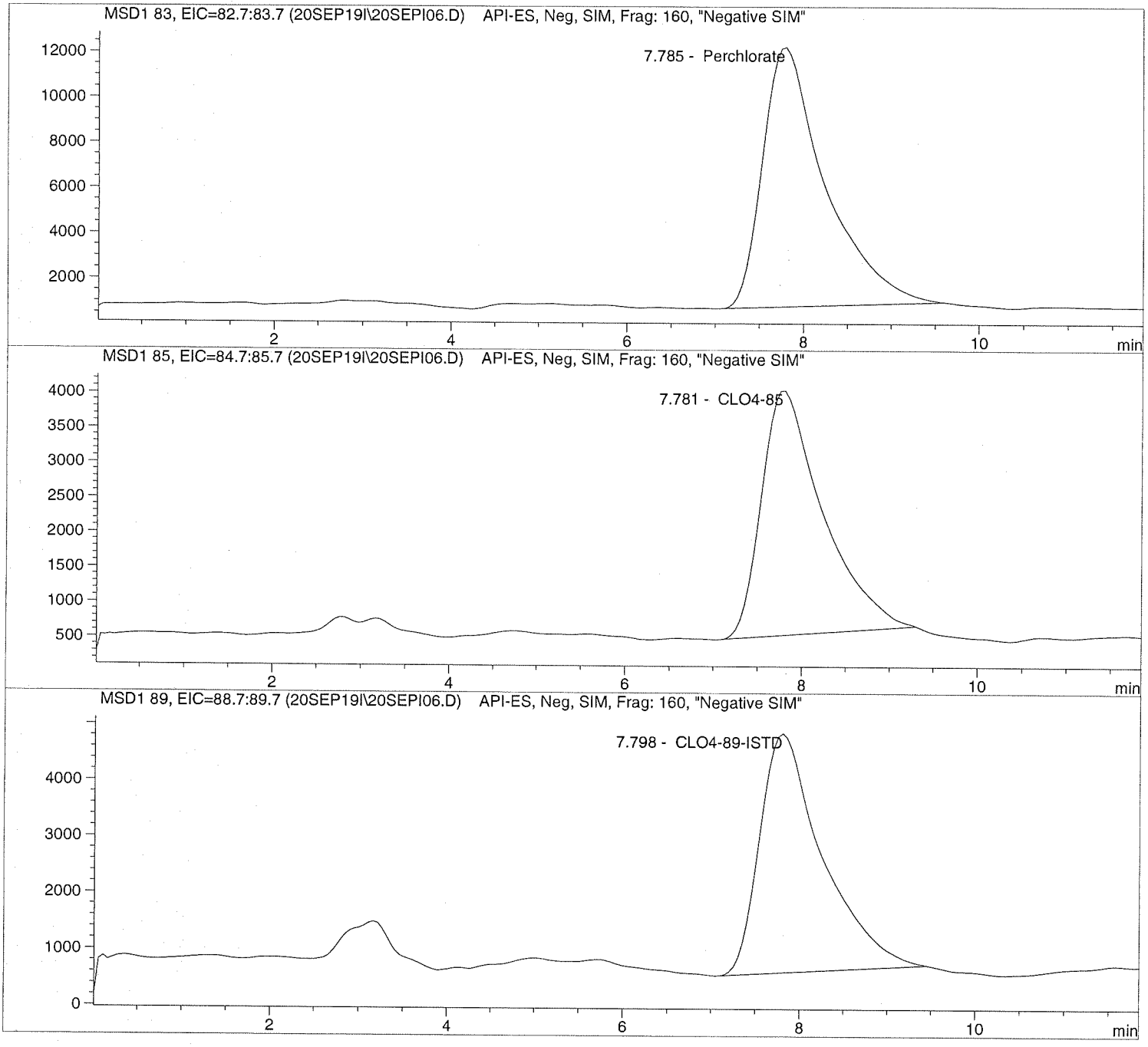
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI06.D Sample Name: CLO4@ 10.ug/L

Injection Date:	9/20/2019 10:05:36	Seq Line:	6
Sample Name:	CLO4@ 10.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI06.D Sample Name: CLO4@ 10.ug/L

Injection Date:	9/20/2019 10:05:36	Seq Line:	6
Sample Name:	CLO4@ 10.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.785	PBA	561297.7	9.7510	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.781	PBA	168622.4	9.5221	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.798	PBA	209246.3	5.0000	CLO4-89-ISTD

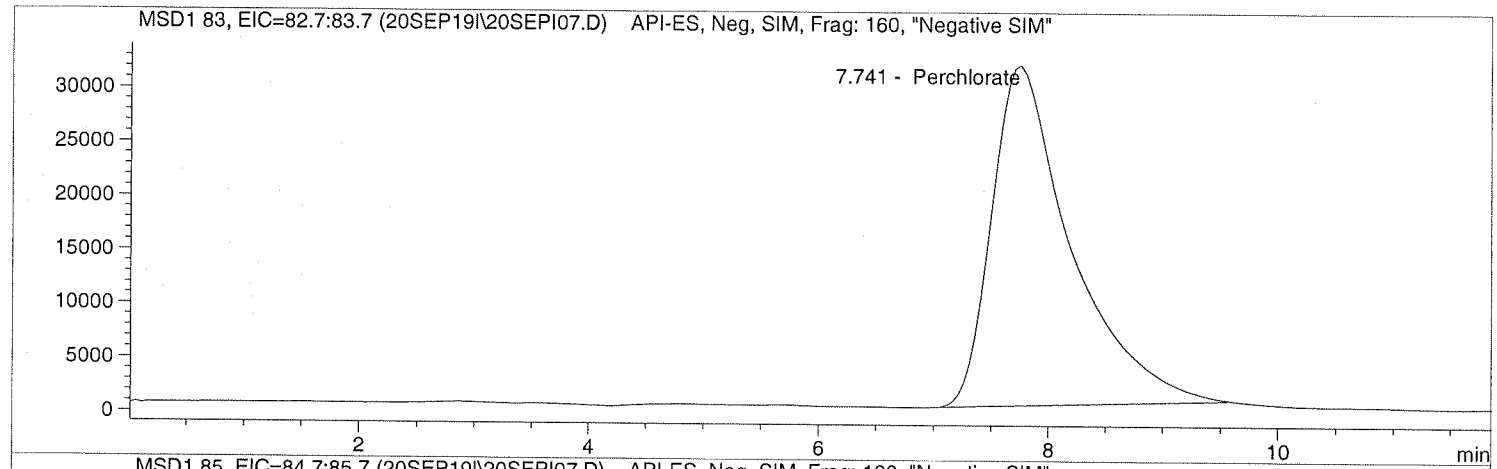
*** End of Report ***

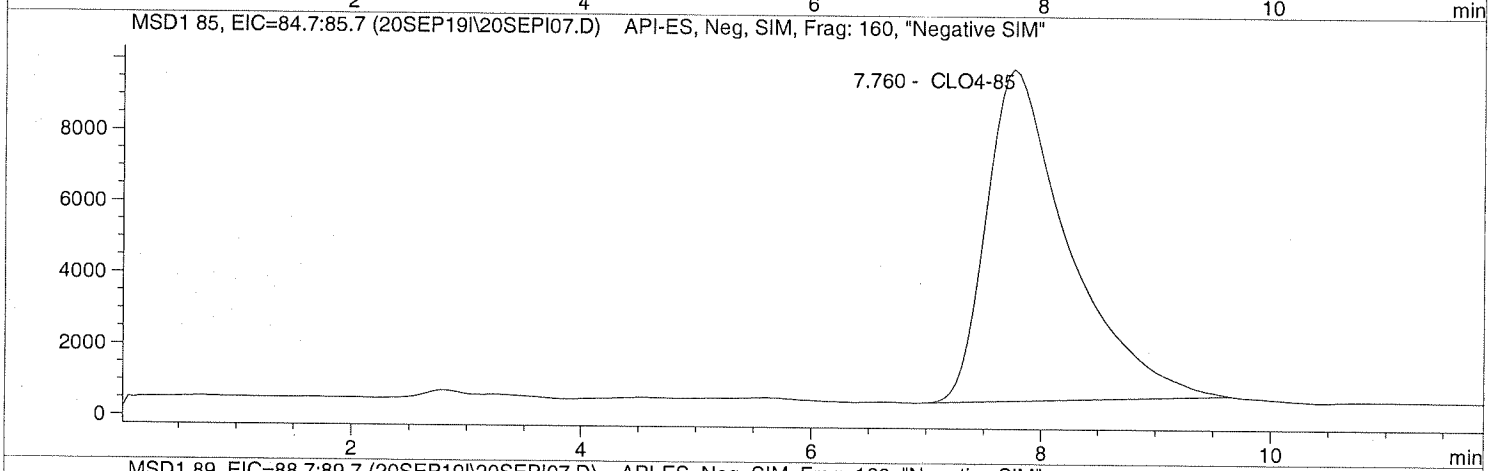
Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI07.D Sample Name: CLO4@ 25.ug/L

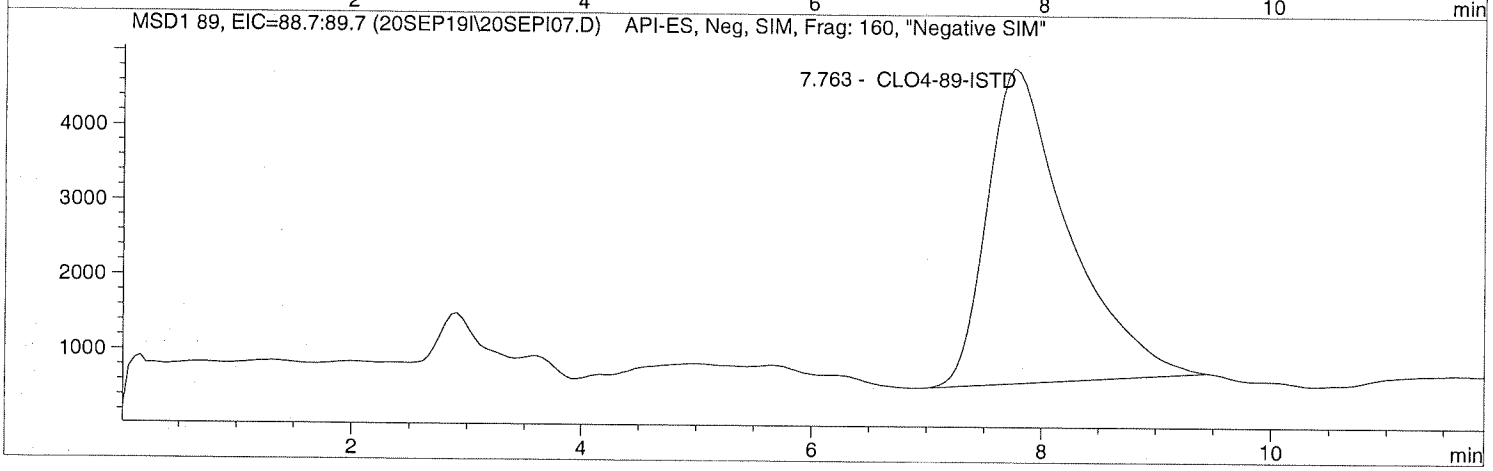
Injection Date:	9/20/2019 10:19:23	Seq Line:	7
Sample Name:	CLO4@ 25.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI07.D Sample Name: CLO4@ 25.ug/L

Injection Date:	9/20/2019 10:19:23	Seq Line:	7
Sample Name:	CLO4@ 25.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.741	PBA	1518197.9	25.0108	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.760	PBA	463724.0	25.0492	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.763	PBA	207402.8	5.0000	CLO4-89-ISTD

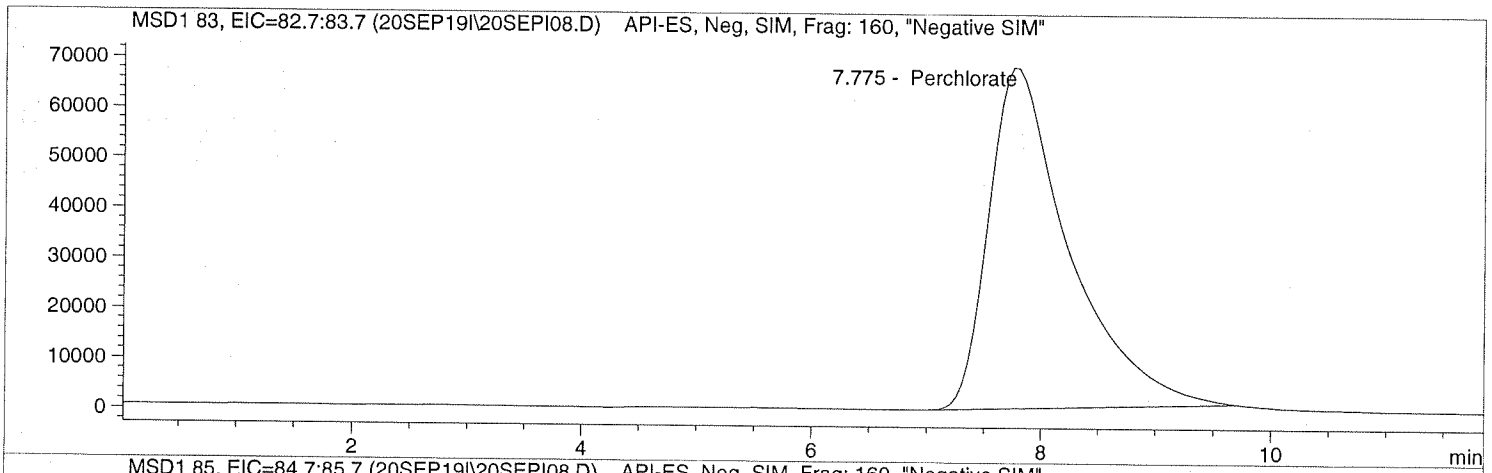
*** End of Report ***

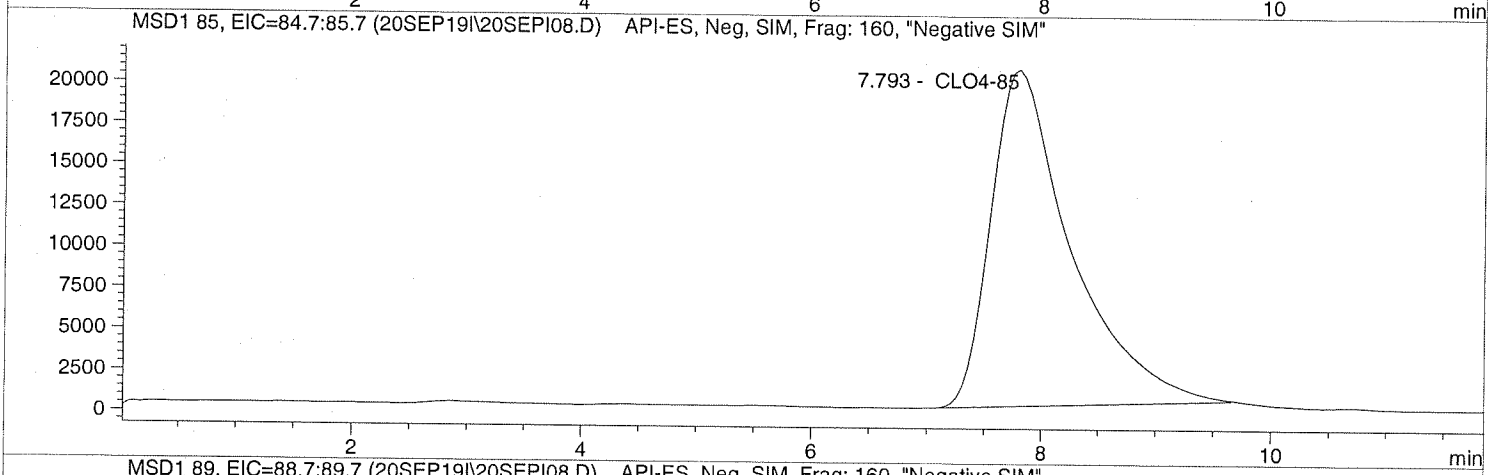
Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI08.D Sample Name: CLO4@ 50.ug/L

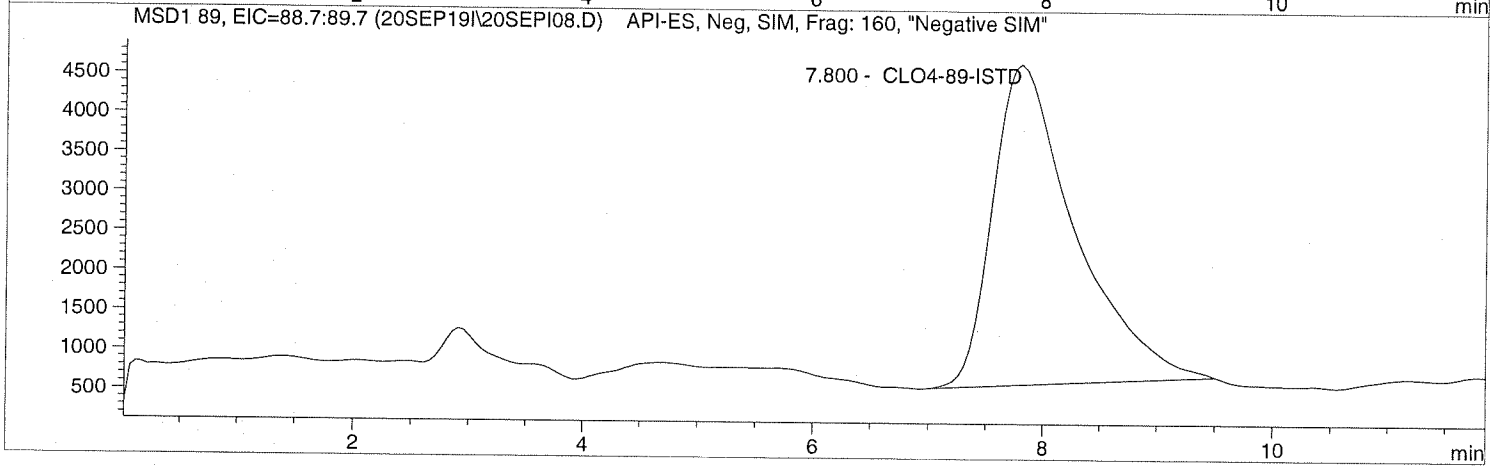
Injection Date:	9/20/2019 10:33:18	Seq Line:	8
Sample Name:	CLO4@ 50.ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI08.D Sample Name: CLO4@ 50.ug/L

Injection Date:	9/20/2019 10:33:18	Seq Line:	8
Sample Name:	CLO4@ 50.ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	50.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.775	PBA	3311559.2	50.4030	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.793	PBA	995933.0	50.1422	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.800	PBA	202929.2	5.0000	CLO4-89-ISTD

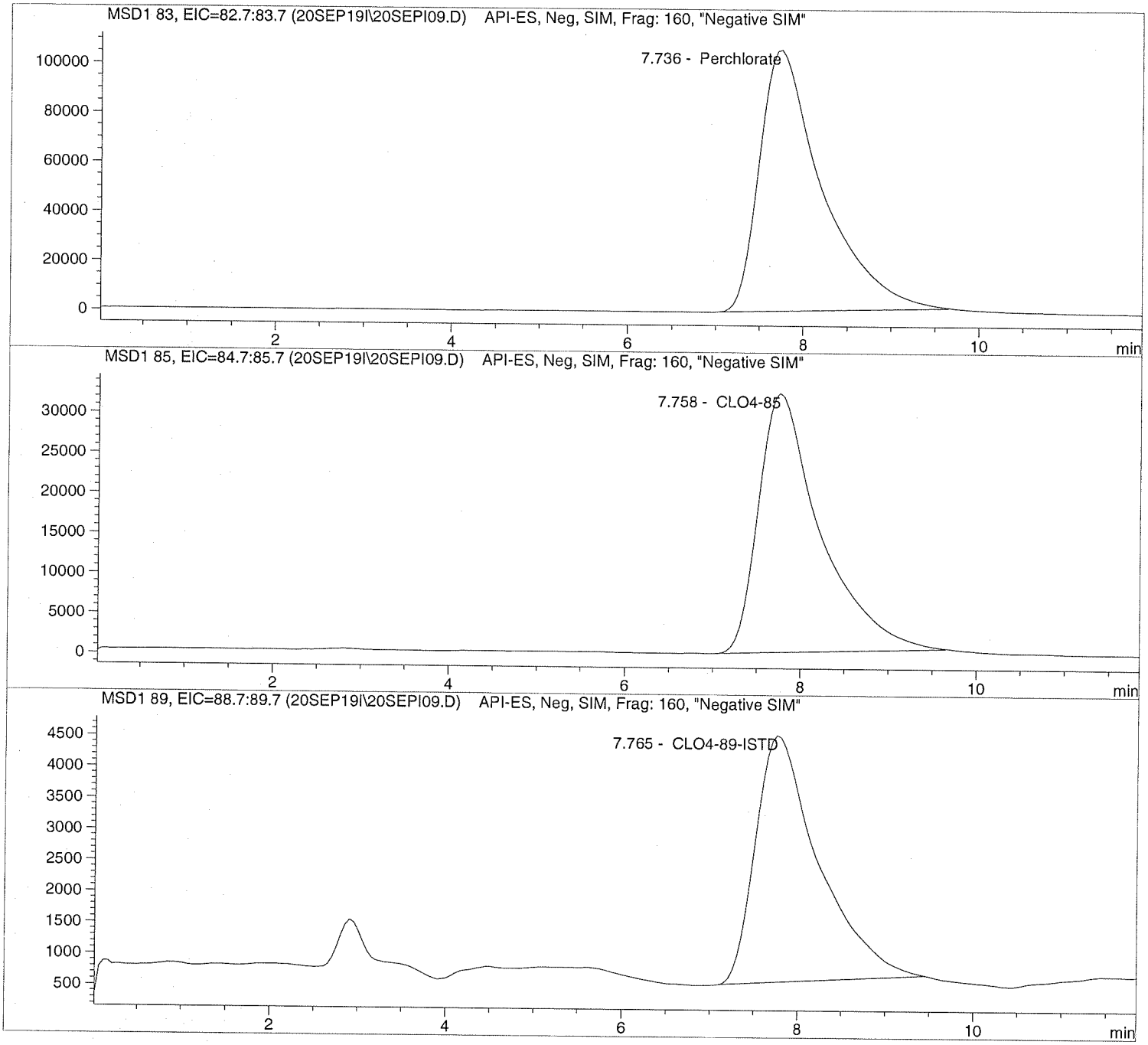
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI09.D Sample Name: CLO4@ 75.ug/L

Injection Date:	9/20/2019 10:47:05	Seq Line:	9
Sample Name:	CLO4@ 75.ug/L	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI09.D Sample Name: CLO4@ 75.ug/L

Injection Date:	9/20/2019 10:47:05	Seq Line:	9
Sample Name:	CLO4@ 75.ug/L	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	75.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.736	PBA	5239145.0	74.7911	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.758	PBA	1580664.2	74.9366	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.765	PBA	197932.5	5.0000	CLO4-89-ISTD

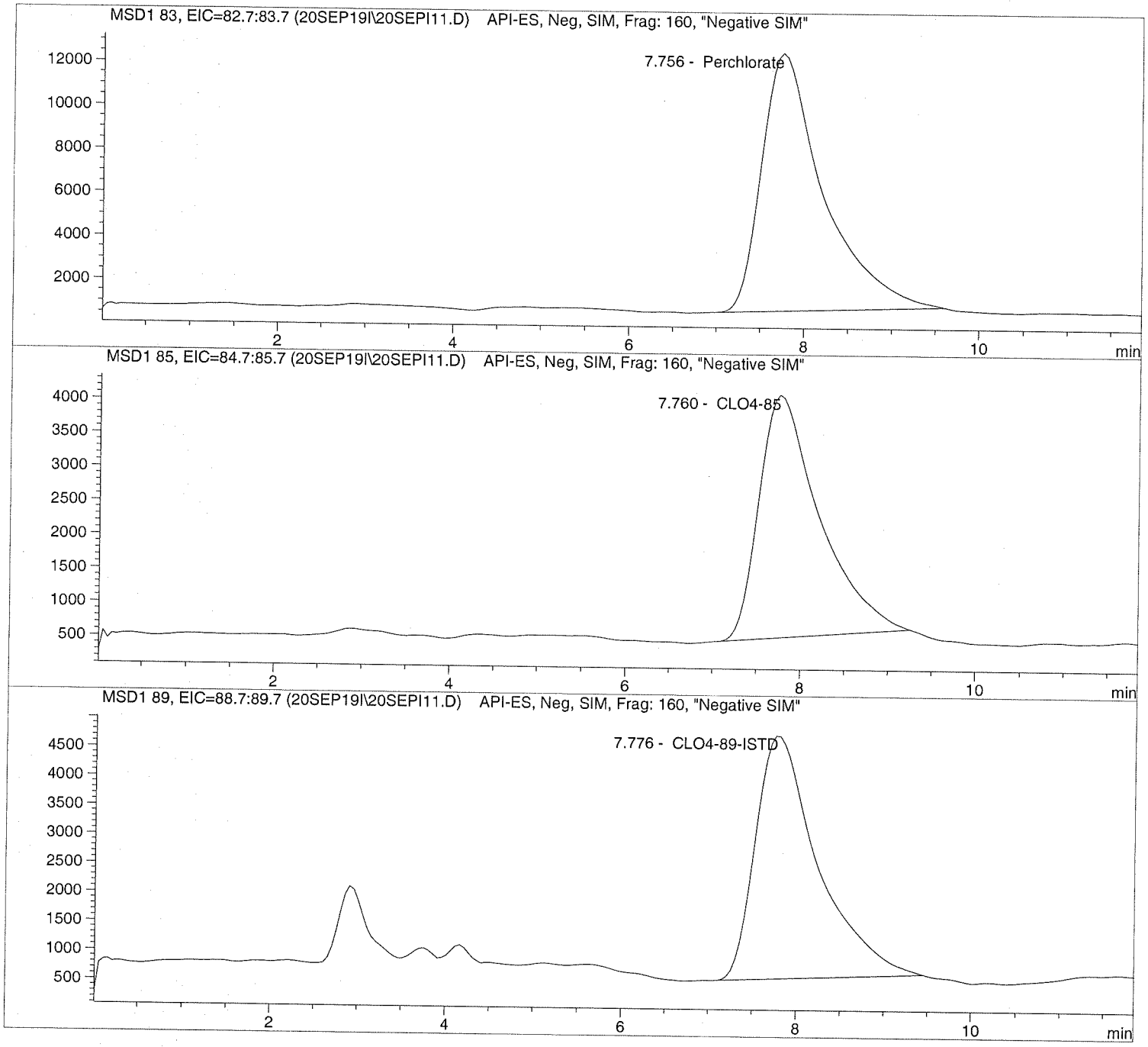
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI11.D Sample Name: ICAL Verf@10ug/L

Injection Date:	9/20/2019 11:14:45	Seq Line:	11
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI11.D Sample Name: ICAL Verf@10ug/L

Injection Date:	9/20/2019 11:14:45	Seq Line:	11
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 80
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:21:47

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.756	PBA	574879.4	10.1185	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.760	PBA	171000.4	9.7904	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.776	PBA	206243.3	5.0000	CLO4-89-ISTD

*** End of Report ***

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

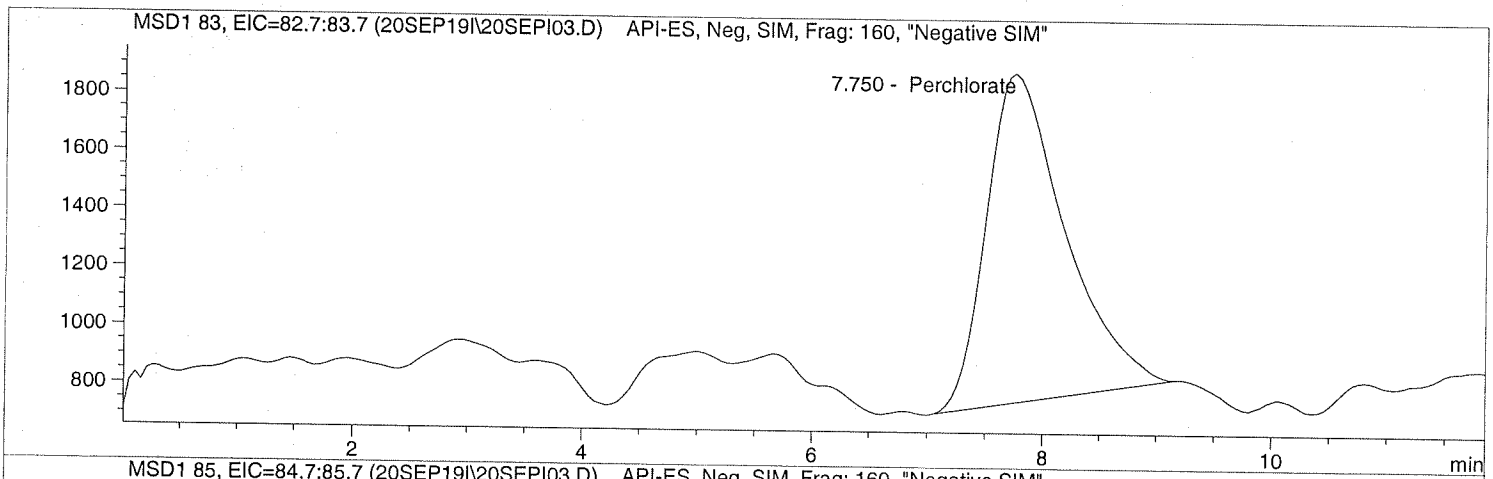
Unmodified

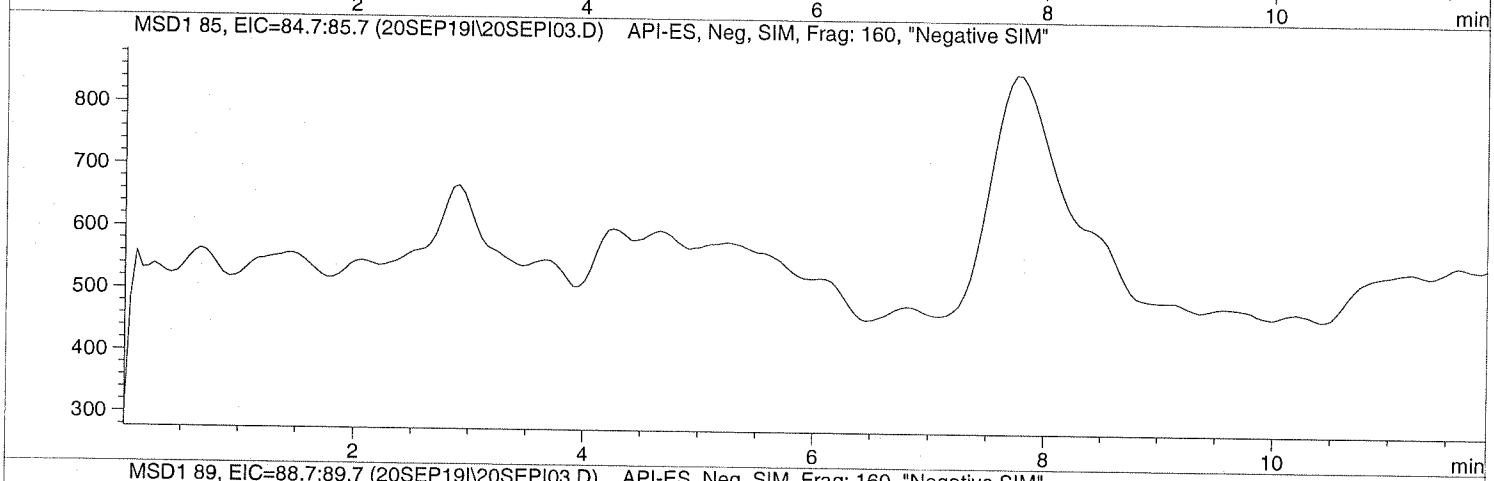
Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

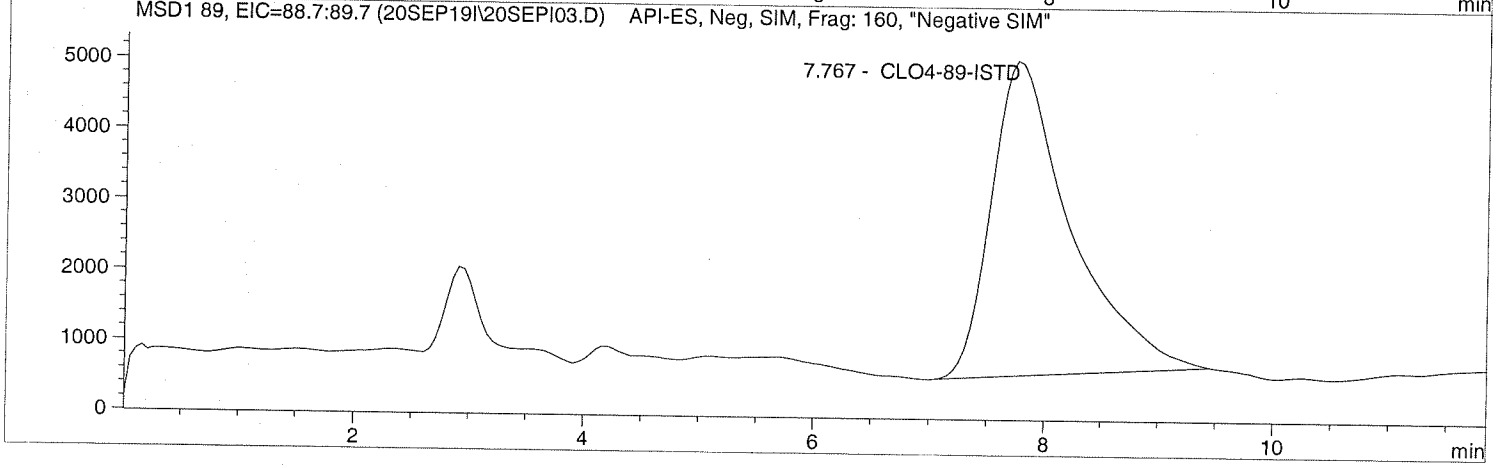
Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:27:11

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\20SEP19I\20SEPI03.D Sample Name: CLO4@ 1.0ug/L

Injection Date:	9/20/2019 09:24:05	Seq Line:	3
Sample Name:	CLO4@ 1.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 9/23/2019 12:27:11

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.750	PBA	53921.8	0.8760	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
7.767	PBA	214568.1	5.0000	CLO4-89-ISTD

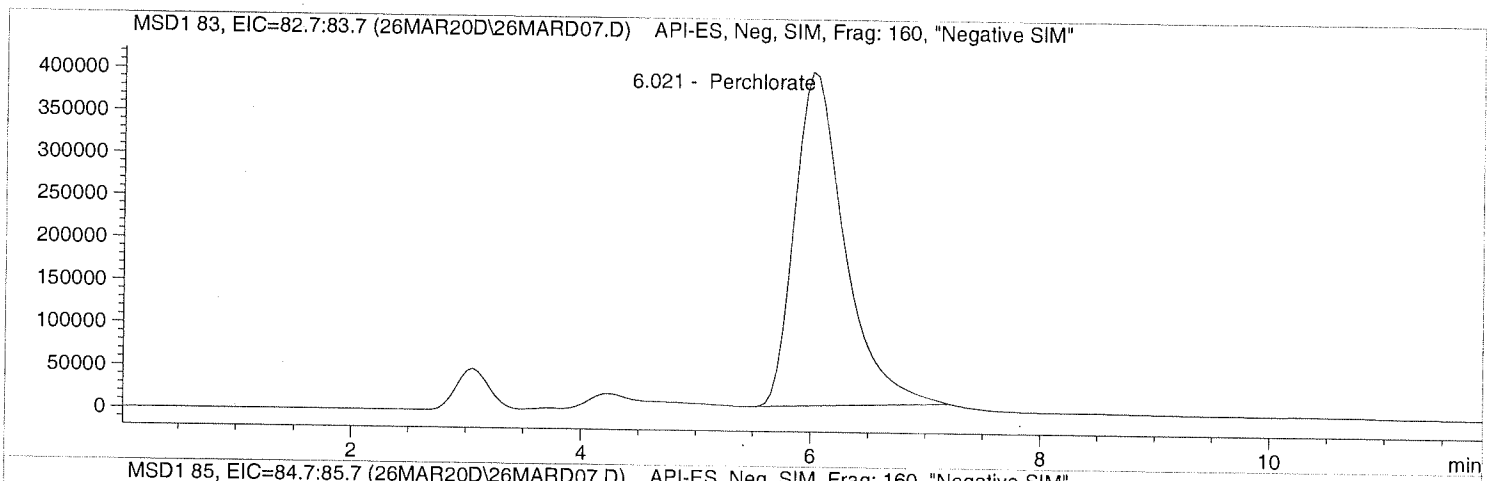
*** End of Report ***

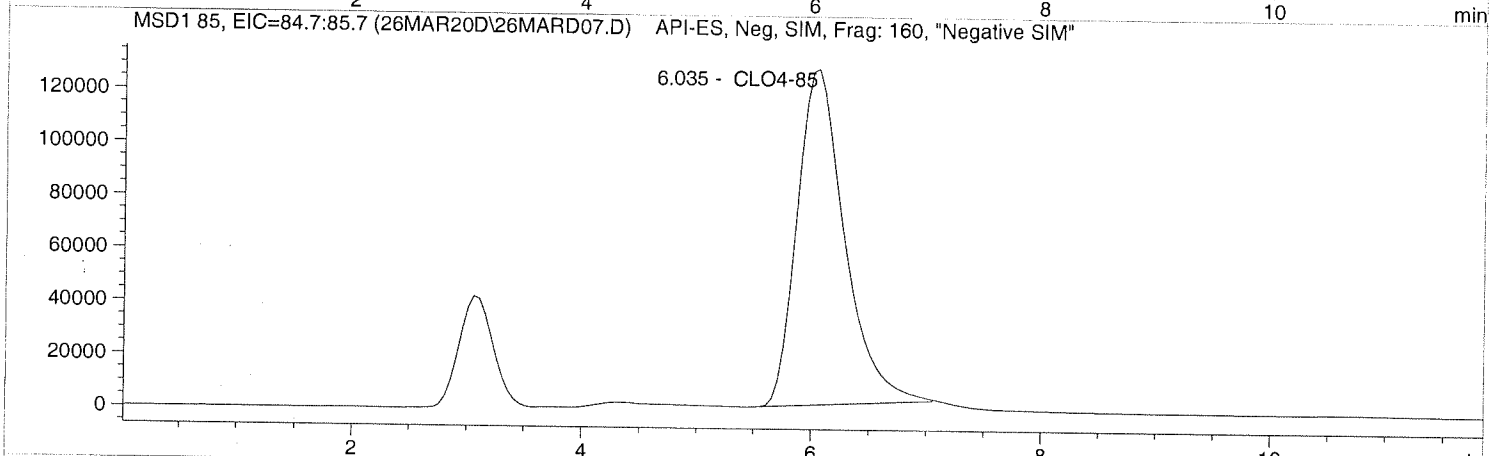
Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD07.D Sample Name: 2008062003

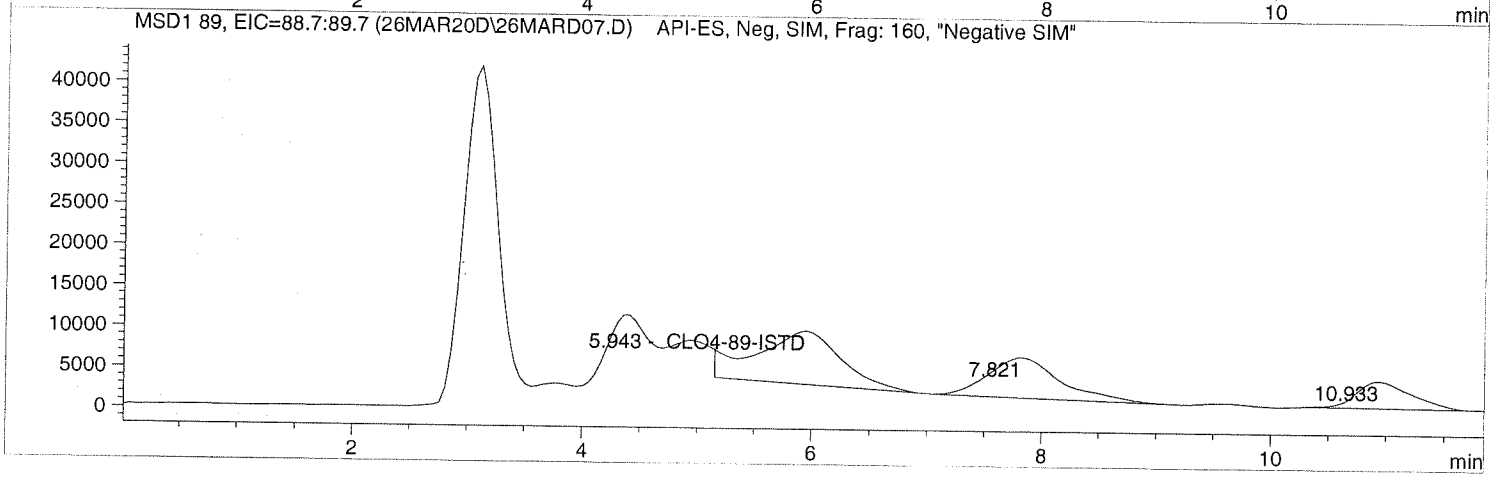
Injection Date:	3/26/2020 09:44:40	Seq Line:	7
Sample Name:	2008062003	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method: CLO4-AQN.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed: 2/17/2020 15:42:52

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\26MAR20D\26MARD07.D Sample Name: 2008062003

Injection Date:	3/26/2020 09:44:40	Seq Line:	7
Sample Name:	2008062003	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	40 µl

Acq. Method:	CLO4-AQN.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DP3.M
Last Changed:	2/17/2020 15:42:52

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 23. Sep. 2019,00:20:59 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.021	PBA	11797552.0	94.0331	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
6.035	PBA	3623208.0	95.7707	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
5.943	BB	332132.3	5.0000	CLO4-89-ISTD
7.821	VBA	216345.0	0.0000	
10.933	PPA	109265.2	0.0000	

*** End of Report ***

HS20030888 8260 Raw Data

ALS WO# HS20030888

MSVOA06 -Logbook

Batch: 40066
Date: 03-19-2020
Method: 8260_W
Comments:

Analyst: Devak Giga
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	03-19-2020 11:10 am	1.00	0.00 mL	0.00 mL	X031901.D	Liquid	Y	NA
	Auto find/ purged									
2	VSTD000.25	ICAL1	03-19-2020 11:34 am	1.00	5.00 mL	0.00 mL	X031902.D	Liquid	Y	NA
3	VSTD000.5	ICAL2	03-19-2020 11:58 am	1.00	5.00 mL	0.00 mL	X031903.D	Liquid	Y	NA
4	VSTD001	ICAL3	03-19-2020 12:46 pm	1.00	5.00 mL	0.00 mL	X031904.D	Liquid	Y	NA
5	VSTD002	ICAL4	03-19-2020 01:10 pm	1.00	5.00 mL	0.00 mL	X031905.D	Liquid	Y	NA
6	VSTD005	ICAL5	03-19-2020 01:34 pm	1.00	5.00 mL	0.00 mL	X031906.D	Liquid	Y	NA
7	VSTD020	ICAL6	03-19-2020 01:58 pm	1.00	5.00 mL	0.00 mL	X031907.D	Liquid	Y	NA
8	VSTD050	ICAL7	03-19-2020 02:22 pm	1.00	5.00 mL	0.00 mL	X031908.D	Liquid	Y	NA
9	VSTD100	ICAL8	03-19-2020 02:46 pm	1.00	5.00 mL	0.00 mL	X031909.D	Liquid	Y	NA
10	VSTD150	ICAL9	03-19-2020 03:10 pm	1.00	5.00 mL	0.00 mL	X031910.D	Liquid	Y	NA
11	VSTD200	ICAL	03-19-2020 03:33 pm	1.00	5.00 mL	0.00 mL	X031911.D	Liquid	Y	NA
12	BLANK	SAMP	03-19-2020 03:58 pm	1.00	5.00 mL	0.00 mL	X031912.D	Liquid	Y	NA
13	BLANK	SAMP	03-19-2020 04:22 pm	1.00	5.00 mL	0.00 mL	X031913.D	Liquid	Y	NA
14	BLANK	SAMP	03-19-2020 04:46 pm	1.00	5.00 mL	0.00 mL	X031914.D	Liquid	Y	NA
15	ICV	ICV	03-19-2020 05:09 pm	1.00	5.00 mL	0.00 mL	X031915.D	Liquid	Y	NA
16	BLANK	SAMP	03-19-2020 05:33 pm	1.00	5.00 mL	0.00 mL	X031916.D	Liquid	Y	NA
17	VLCSW-200319	LCS	03-19-2020 05:57 pm	1.00	5.00 mL	0.00 mL	X031917.D	Liquid	Y	NA
18	VLCSDW-200319	LCSD	03-19-2020 06:21 pm	1.00	5.00 mL	0.00 mL	X031918.D	Liquid	Y	NA
19	BLANK	SAMP	03-19-2020 06:45 pm	1.00	5.00 mL	0.00 mL	X031919.D	Liquid	Y	NA
20	BLANK	SAMP	03-19-2020 07:10 pm	1.00	5.00 mL	0.00 mL	X031920.D	Liquid	Y	NA
21	VBLKW1-200319	MBLK	03-19-2020 07:34 pm	1.00	5.00 mL	0.00 mL	X031921.D	Liquid	Y	NA
22	VBLKW2-200319	MBLK	03-19-2020 07:58 pm	1.00	5.00 mL	0.00 mL	X031922.D	Liquid	Y	NA
23	VBLKW3-200319	MBLK	03-19-2020 08:22 pm	1.00	5.00 mL	0.00 mL	X031923.D	Liquid	Y	NA
24	HS20021070-01	SAMP	03-19-2020 08:46 pm	1.00	5.00 mL	0.00 mL	X031924.D	Liquid	Y	NA
25	HS20021070-02	SAMP	03-19-2020 09:10 pm	1.00	5.00 mL	0.00 mL	X031925.D	Liquid	Y	NA
26	HS20021070-03	SAMP	03-19-2020 09:33 pm	1.00	5.00 mL	0.00 mL	X031926.D	Liquid	Y	NA
27	BFB	TUNE	03-19-2020 09:57 pm	1.00	0.00 mL	0.00 mL	Y031901.D	Liquid	Y	NA
	Auto find/ purged									
28	CCV	CCV	03-19-2020 10:21 pm	1.00	5.00 mL	0.00 mL	Y031902a.D	Liquid	Y	NA
29	CCV	CCV	03-19-2020 10:45 pm	1.00	5.00 mL	0.00 mL	Y031903.D	Liquid	Y	NA
30	CCB	SAMP	03-19-2020 11:09 pm	1.00	5.00 mL	0.00 mL	Y031904.D	Liquid	Y	NA
31	VLCSW-200319	LCS	03-19-2020 11:33 pm	1.00	5.00 mL	0.00 mL	Y031905.D	Liquid	Y	NA
32	BLANK	SAMP	03-19-2020 11:57 pm	1.00	5.00 mL	0.00 mL	Y031906.D	Liquid	Y	NA
33	VBLKW1-200319	MBLK	03-20-2020 12:21 am	1.00	5.00 mL	0.00 mL	Y031907.D	Liquid	Y	NA
34	HS20030474-07	SAMP	03-20-2020 12:45 am	1.00	5.00 mL	0.00 mL	Y031908.D	Liquid	Y	NA
35	HS20030498-08	SAMP	03-20-2020 01:09 am	1.00	5.00 mL	0.00 mL	Y031909.D	Liquid	Y	NA
36	HS20030838-02	SAMP	03-20-2020 01:34 am	1.00	5.00 mL	0.00 mL	Y031910.D	Liquid	Y	NA
37	HS20030838-01	SAMP	03-20-2020 01:58 am	1.00	5.00 mL	0.00 mL	Y031911.D	Liquid	Y	NA
38	HS20030474-04	SAMP	03-20-2020 02:22 am	1.00	5.00 mL	0.00 mL	Y031912.D	Liquid	Y	NA
39	HS20030474-05	SAMP	03-20-2020 02:46 am	1.00	5.00 mL	0.00 mL	Y031913.D	Liquid	Y	NA
40	HS20030498-03	SAMP	03-20-2020 03:10 am	1.00	5.00 mL	0.00 mL	Y031914.D	Liquid	Y	NA

MSVOA06 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
41	HS20030498-03MS	MS	03-20-2020 03:34 am	1.00	5.00 mL	0.00 mL	Y031915.D	Liquid	Y	NA
42	HS20030498-03MSD	MSD	03-20-2020 03:58 am	1.00	5.00 mL	0.00 mL	Y031916.D	Liquid	Y	NA
43	HS20030498-03	SAMP	03-20-2020 04:22 am	25.00	5.00 mL	0.00 mL	Y031917.D	Liquid	Y	NA
44	HS20030474-03	SAMP	03-20-2020 04:46 am	1.00	5.00 mL	0.00 mL	Y031918.D	Liquid	Y	NA
45	HS20030474-03	SAMP	03-20-2020 05:10 am	10.00	5.00 mL	0.00 mL	Y031919.D	Liquid	Y	NA
46	HS20030474-06	SAMP	03-20-2020 05:34 am	1.00	5.00 mL	0.00 mL	Y031920.D	Liquid	Y	NA
47	HS20030474-06	SAMP	03-20-2020 05:58 am	25.00	5.00 mL	0.00 mL	Y031921.D	Liquid	Y	NA
48	HS20030498-01	SAMP	03-20-2020 06:22 am	5.00	5.00 mL	0.00 mL	Y031922.D	Liquid	Y	NA
49	HS20030498-01	SAMP	03-20-2020 06:46 am	25.00	5.00 mL	0.00 mL	Y031923.D	Liquid	Y	NA
50	HS20030498-02	SAMP	03-20-2020 07:10 am	5.00	5.00 mL	0.00 mL	Y031924.D	Liquid	Y	NA
51	HS20030498-02	SAMP	03-20-2020 07:34 am	50.00	5.00 mL	0.00 mL	Y031925.D	Liquid	Y	NA
52	HS20030474-01	SAMP	03-20-2020 07:58 am	10.00	5.00 mL	0.00 mL	Y031926.D	Liquid	Y	NA
53	HS20030474-01	SAMP	03-20-2020 08:23 am	100.0(	5.00 mL	0.00 mL	Y031927.D	Liquid	Y	NA
54	HS20030474-02	SAMP	03-20-2020 08:47 am	25.00	5.00 mL	0.00 mL	Y031928.D	Liquid	Y	NA
55	HS20030474-02	SAMP	03-20-2020 09:11 am	250.0(	5.00 mL	0.00 mL	Y031929.D	Liquid	Y	NA
56	CCV-END	CCV	03-20-2020 09:35 am	1.00	5.00 mL	0.00 mL	Y031930.D	Liquid	Y	NA

Chemical	Value
SURR SPK ID	31106-16-03
IS ID	31106-16-04
LCS/MS ID	31105-08-01
CAL STD ID	31106-20-01/02
BFB ID	31106-16-03
pH Paper	634-64-11

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
Vinyl Chloride	50.00	47.84	96	80-120
1,1-Dichloroethene	50.00	49.14	98	80-120
Methylene Chloride	50.00	51.62	103	80-120
cis-1,2-Dichloroethene	50.00	49.99	100	80-120
1,2-Dichloroethane	50.00	51.76	104	80-120
Trichloroethene	50.00	50.47	101	80-120
1,1,2-Trichloroethane	50.00	49.65	99	80-120
Dibromofluoromethane	50.00	52.34	105	80-120
1,2-Dichloroethane-d4	50.00	52.45	105	80-120
Toluene-d8	50.00	49.94	100	80-120
4-Bromofluorobenzene	50.00	50.83	102	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM III VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

Lab File ID: X031901 BFB Injection Date: 03/19/20

Instrument ID: VOA6 BFB Injection Time: 1110

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.4
75	30.0 - 60.0% of mass 95	46.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	79.4
175	5.0 - 9.0% of mass 174	6.2 (7.8)1
176	95.0 - 101.0% of mass 174	77.1 (97.2)1
177	5.0 - 9.0% of mass 176	4.8 (6.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	ICV	ICV	X031915	03/19/20	1709
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

Instrument ID: VOA6 Calibration Date(s): 03/19/20 03/19/20

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1134 1533

LAB FILE ID: RF0.25: X031902 RF0.5: X031903 RF1: X031904
RF2: X031905 RF5: X031906 RF20: X031907

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF5	RF20
Vinyl Chloride		0.886	0.813	0.712	0.728	0.737
1,1-Dichloroethene		0.484	0.400	0.446	0.430	0.416
Methylene Chloride		5642	5960	9972	22460	70573
cis-1,2-Dichloroethene		0.482	0.574	0.608	0.642	0.582
1,2-Dichloroethane		0.487	0.510	0.514	0.548	0.517
Trichloroethene		0.291	0.342	0.344	0.368	0.337
1,1,2-Trichloroethane		0.296	0.308	0.293	0.307	0.281
Dibromofluoromethane		1595	3028	5989	17420	61899
1,2-Dichloroethane-d4		2909	4838	8567	20720	80050
Toluene-d8		6812	12359	23746	62955	225397
4-Bromofluorobenzene		3499	8202	12385	22920	85378

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS2003088

Instrument ID: VOA6 Calibration Date(s): 03/19/20 03/19/20

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1134 1533

LAB FILE ID: RF50: X031908 RF100: X031909 RF150: X031910
RF200: X031911

COMPOUND	RF50	RF100	RF150	RF200
Vinyl Chloride	0.708	0.760	0.743	0.769
1,1-Dichloroethene	0.399	0.419	0.406	0.413
Methylene Chloride	162281	310528	437081	572059
cis-1,2-Dichloroethene	0.544	0.578	0.547	0.567
1,2-Dichloroethane	0.538	0.548	0.536	0.556
Trichloroethene	0.345	0.364	0.357	0.370
1,1,2-Trichloroethane	0.276	0.280	0.273	0.277
Dibromofluoromethane	149393	290125	416931	545685
1,2-Dichloroethane-d4	185105	366265	529642	688377
Toluene-d8	537213	1054666	1518049	1981187
4-Bromofluorobenzene	199673	397823	566125	739220

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS2003088

Instrument ID: VOA6 Calibration Date(s): 03/19/20 03/19/20

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1134 1533

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
Vinyl Chloride	AVRG		0.76175324	7.441	15.000
1,1-Dichloroethene	AVRG		0.42368132	6.348	15.000
Methylene Chloride	LINR	-3.11e-002	1.93449850	0.9993787	0.9900000
cis-1,2-Dichloroethene	AVRG		0.56940459	7.826	15.000
1,2-Dichloroethane	AVRG		0.52824438	4.254	15.000
Trichloroethene	AVRG		0.34655559	6.956	15.000
1,1,2-Trichloroethane	AVRG		0.28806737	4.628	15.000
Dibromofluoromethane	LINR	-2.15e-003	2.01723959	0.9996206	0.9900000
1,2-Dichloroethane-d4	LINR	-3.16e-003	1.59695811	0.9996477	0.9900000
Toluene-d8	LINR	-1.51e-003	0.78192287	0.9999532	0.9900000
4-Bromofluorobenzene	LINR	-9.86e-003	2.09903025	0.9999140	0.9900000

FORM VI VOA

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031901.D

Date : 19-MAR-2020 11:10

Client ID: BFB

Instrument: voa6.i

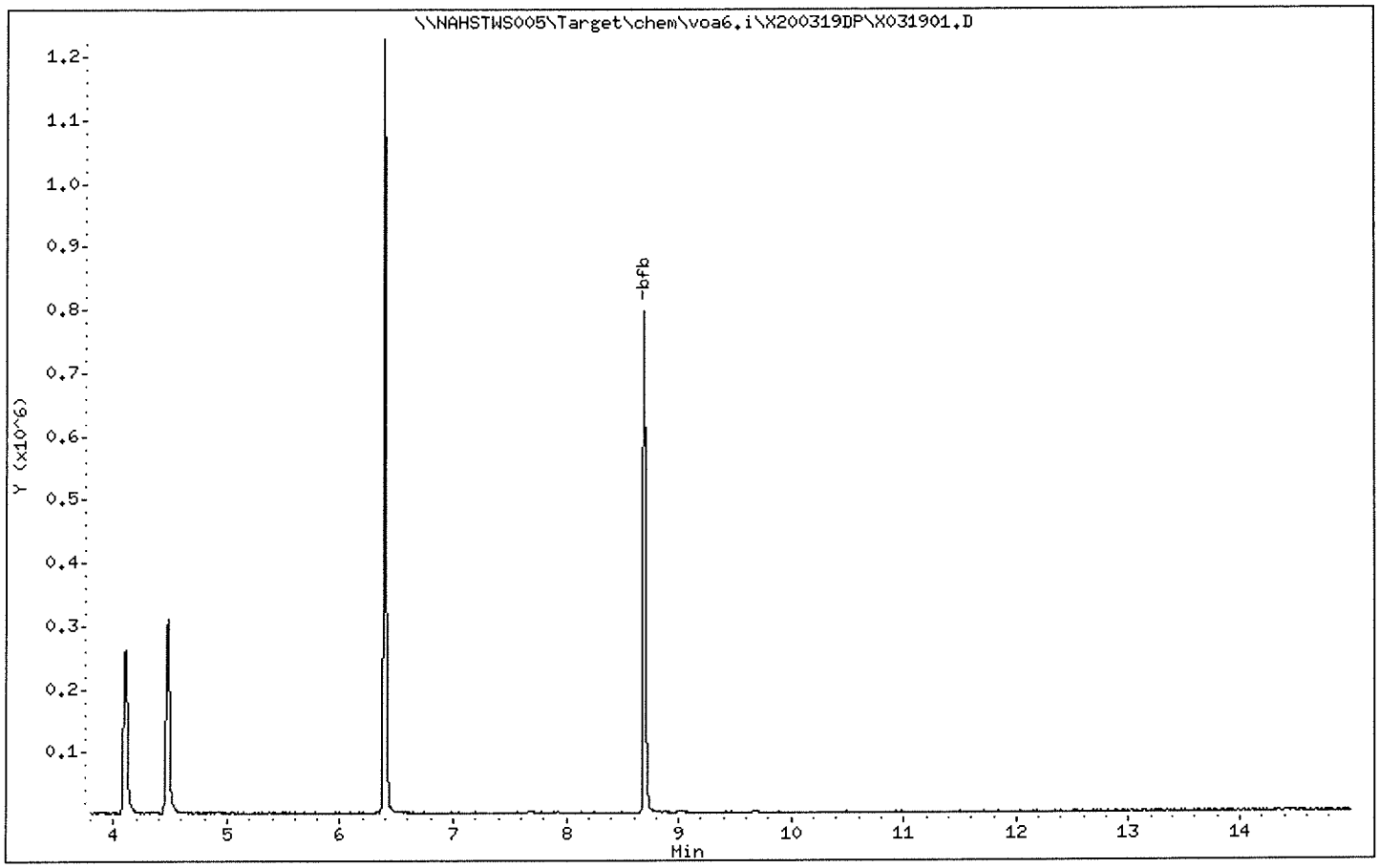
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031901.D

Date : 19-MAR-2020 11:10

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

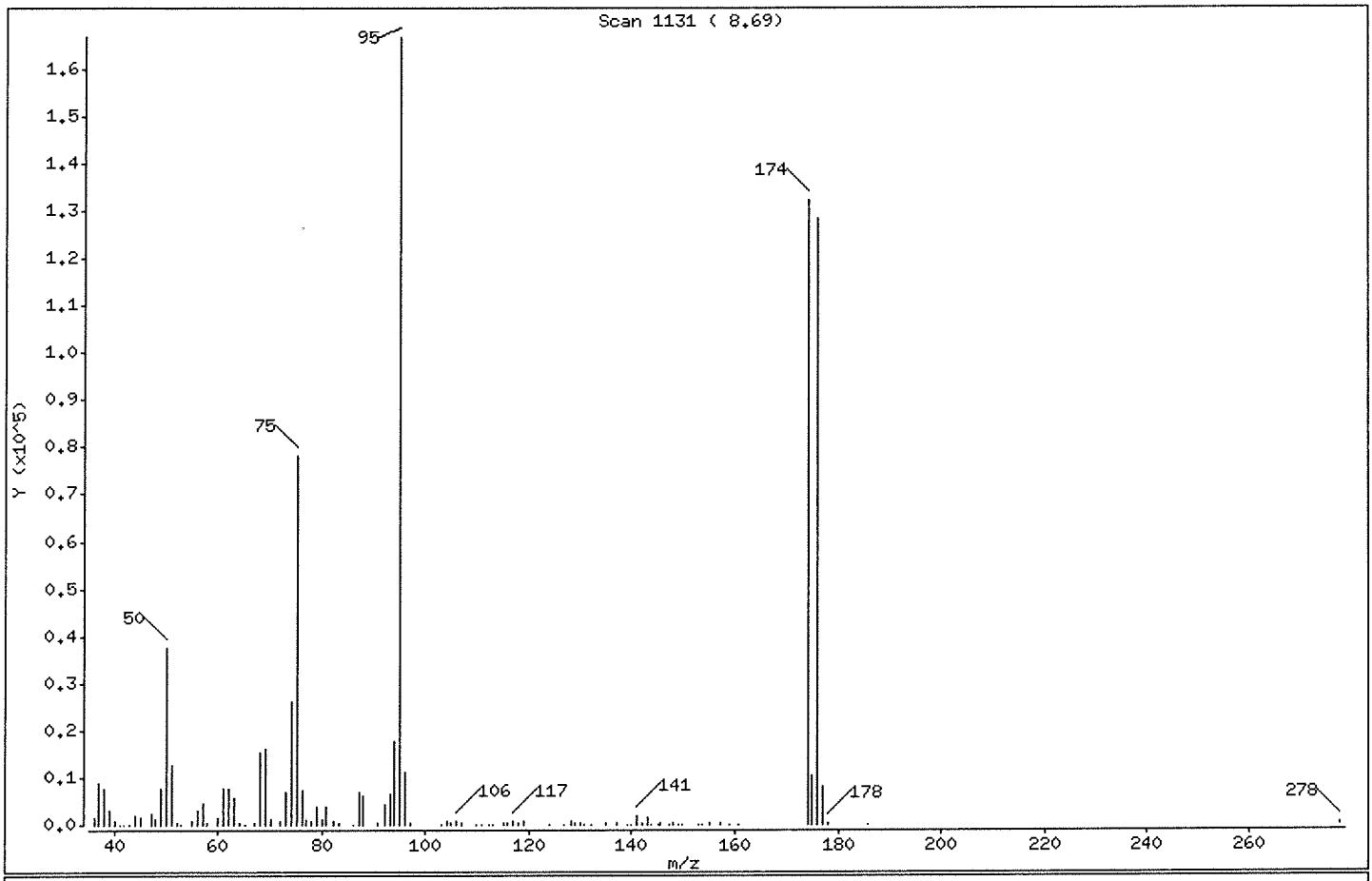
Volume Injected (uL): 2.0

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	22.44
75	30.00 - 60.00% of mass 95	46.84
96	5.00 - 9.00% of mass 95	6.71
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	79.36
175	5.00 - 9.00% of mass 174	6.21 (7.83)
176	95.00 - 101.00% of mass 174	77.12 (97.18)
177	5.00 - 9.00% of mass 176	4.84 (6.28)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031901.D

Date : 19-MAR-2020 11:10

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: X031901.D
Spectrum: Scan 1131 (8.69)
Location of Maximum: 95.00
Number of points: 101

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.10	1360	65.00	163	97.10	263	140.90	1836
37.00	8769	67.10	353	103.20	89	142.00	192
38.00	7670	68.00	15485	104.00	727	142.90	1435
39.10	2999	69.00	16031	104.80	202	143.90	95
40.00	952	70.00	1269	105.80	737	145.10	117
41.20	93	72.00	762	106.90	217	145.60	258
41.90	78	73.00	6729	109.90	88	147.10	75
43.00	168	74.00	26176	110.90	73	148.00	387
44.00	1824	75.00	78128	112.20	62	149.10	83
45.00	1552	76.10	7370	112.80	75	149.80	76
47.00	2478	77.00	1071	115.00	259	153.00	135
47.90	1254	78.00	826	115.90	438	153.80	67
49.00	7676	79.00	3833	117.00	918	155.10	401
50.00	37424	80.00	1180	117.90	502	157.10	297
51.00	12563	80.90	3942	118.90	858	158.90	162
52.00	570	82.00	745	123.90	50	160.80	187
52.90	73	83.10	195	126.90	85	174.00	132352
55.00	621	85.90	140	128.00	809	175.00	10363
56.10	2880	87.00	6928	129.00	384	176.00	128616
57.00	4661	87.90	6204	130.00	465	177.00	8074
57.90	288	90.70	380	130.70	179	178.00	201
60.00	1638	92.00	4234	132.10	55	186.00	57
61.00	7723	93.00	6369	134.80	234	277.90	192
62.00	7841	94.00	17568	136.90	228		
63.00	5744	95.00	166784	139.00	69		
64.00	482	96.10	11193	139.90	141		

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031902.D
Lab Smp Id: VSTD000.25 Client Smp ID: VSTD000.25
Inj Date : 19-MAR-2020 11:34
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.25;VSTD000.25;1;1;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 21-Apr-2020 14:14 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 11:58 Cal File: X031903.D
Als bottle: 2 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474.dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

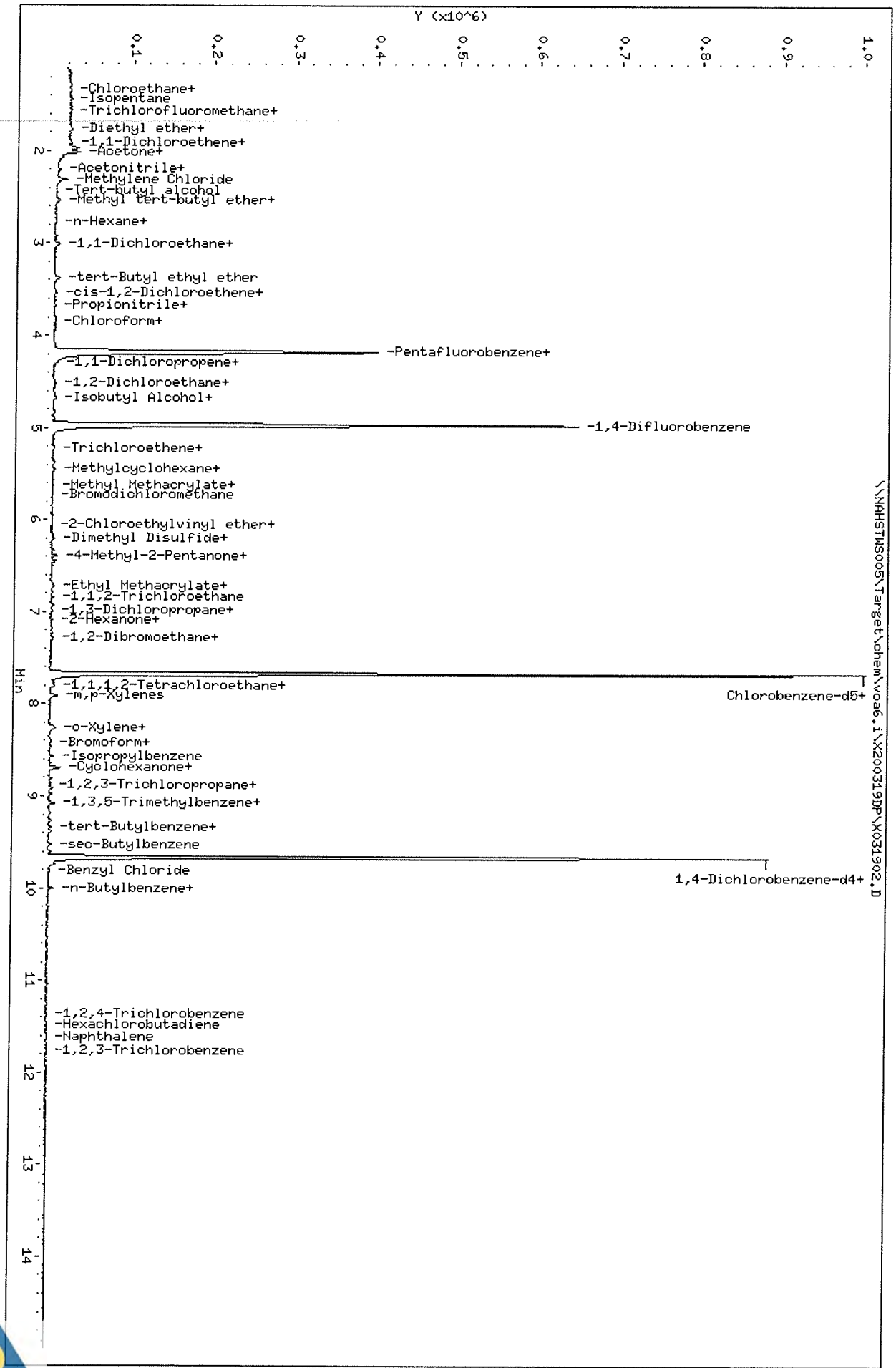
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	334865	50.0000	
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.983)	908	0.25000	0.16 (a)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	1143	0.25000	0.11 (Ta)
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	508670	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	452074	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	4217	0.25000	0.28 (Ta)
5 Vinyl Chloride	62	1.145	1.145	(0.274)	1481	0.25000	0.29 (aM)
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	743	0.25000	0.26 (a)
17 Methylene Chloride	84	2.298	2.298	(0.550)	1457	0.25000	(aM)
27 cis-1,2-Dichloroethene	96	3.545	3.545	(0.848)	704	0.25000	0.18 (a)
33 1,2-Dichloroethane	62	4.569	4.569	(0.919)	1181	0.25000	0.21 (a)
38 Trichloroethene	130	5.221	5.221	(1.050)	835	0.25000	0.23 (aM)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	677	0.25000	0.25 (a)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	4979	0.25000	0.66 (aM)
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	214709	50.0000	

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.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031902.D
Date : 19-MAR-2020 11:34
Client ID: VSTD000.25
Sample Info: VSTD000.25;VSTD000.25;1;1;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031903.D
Lab Smp Id: VSTD000.5 Client Smp ID: VSTD000.5
Inj Date : 19-MAR-2020 11:58
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.5;VSTD000.5;1;2;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 21-Apr-2020 14:16 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 11:34 Cal File: X031902.D
Als bottle: 3 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474.dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

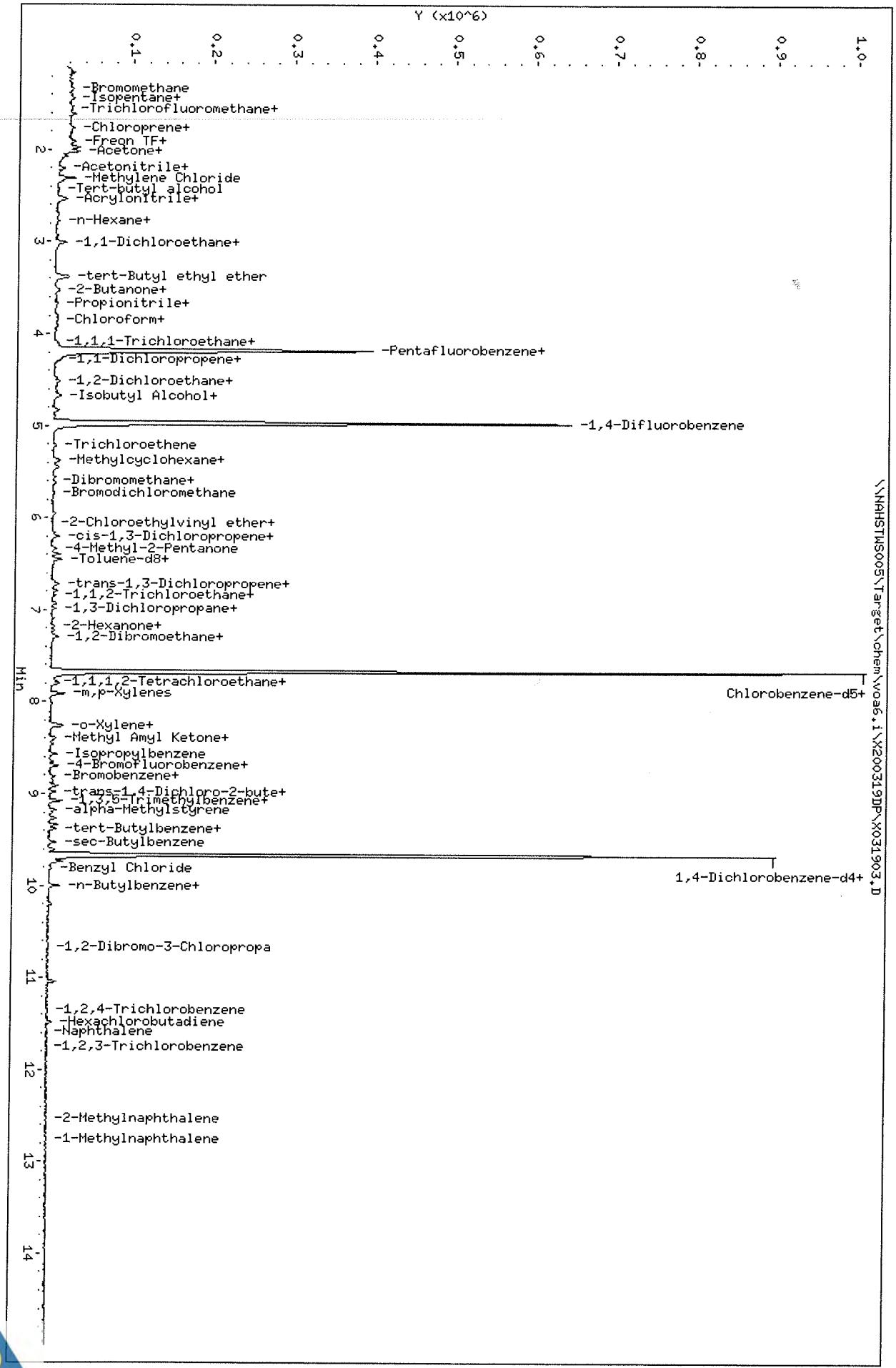
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	332459	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	1595	0.50000	0.37(a)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	2909	0.50000	0.54(TaM)
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	503603	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	451366	50.0000	
$ 48 Toluene-d8	98	6.396	6.396	(0.834)	6812	0.50000	0.51(a)
5 Vinyl Chloride	62	1.138	1.138	(0.272)	2946	0.50000	0.58(aM)
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	1608	0.50000	0.57(aM)
17 Methylene Chloride	84	2.305	2.305	(0.551)	5642	0.50000	0.08(aM)
27 cis-1,2-Dichloroethene	96	3.538	3.538	(0.846)	1603	0.50000	0.42(a)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	2454	0.50000	0.46(a)
38 Trichloroethene	130	5.214	5.214	(1.049)	1466	0.50000	0.41(a)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	1337	0.50000	0.51(a)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	3499	0.50000	0.32(a)
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	220941	50.0000	

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.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031903.D
Date : 19-MAR-2020 11:58
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\X200319DP\X031904.D Page 1
Report Date: 21-Apr-2020 14:16

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031904.D
Lab Smp Id: VSTD001 Client Smp ID: VSTD001
Inj Date : 19-MAR-2020 12:46
Operator : PC Inst ID: voa6.i
Smp Info : VSTD001;VSTD001;1;3;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 21-Apr-2020 14:16 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 11:58 Cal File: X031903.D
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474.dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

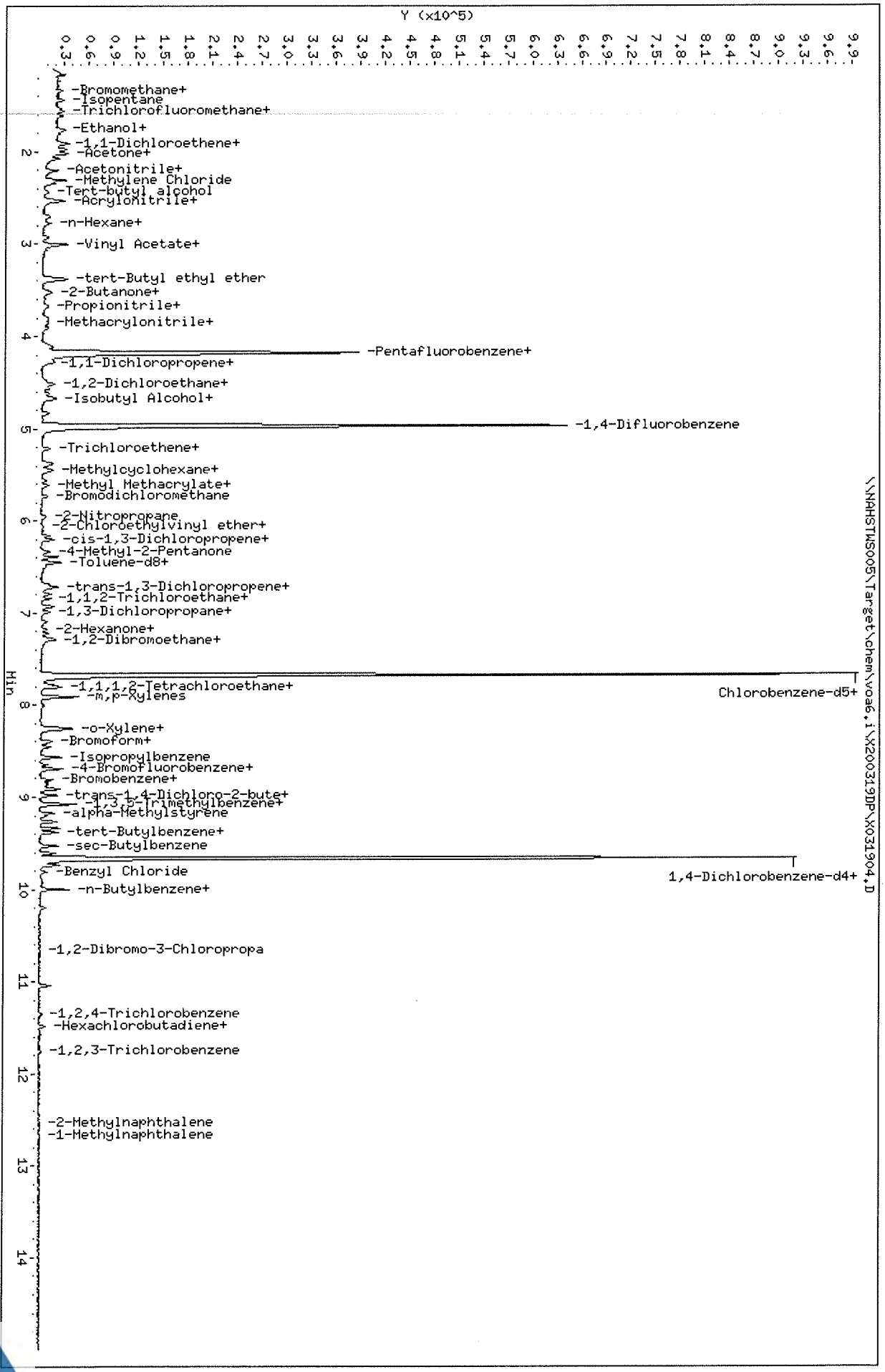
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	323740	50.0000	
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	3028	1.00000	0.83(a)
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	4838	1.00000	1.03(a)
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	494081	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	442403	50.0000	
$	48 Toluene-d8	98	6.396	6.396	(0.834)	12359	1.00000	1.01(a)
	5 Vinyl Chloride	62	1.138	1.138	(0.272)	5267	1.00000	1.06(a)
	11 1,1-Dichloroethene	96	1.919	1.919	(0.459)	2593	1.00000	0.94(a)
	17 Methylene Chloride	84	2.305	2.305	(0.551)	5960	1.00000	0.22(aM)
	27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	3714	1.00000	1.00(a)
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	5041	1.00000	0.96(a)
	38 Trichloroethene	130	5.206	5.206	(1.048)	3378	1.00000	0.98(a)
	53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	2724	1.00000	1.06(a)
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	8202	1.00000	1.45(a)
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	218790	50.0000	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6,i\X200319DP\X031904,D
Date : 19-MAR-2020 12:46
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\X200319DP\X031905.D Page 1
Report Date: 21-Apr-2020 14:16

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031905.D
Lab Smp Id: VSTD002 Client Smp ID: VSTD002
Inj Date : 19-MAR-2020 13:10
Operator : PC Inst ID: voa6.i
Smp Info : VSTD002;VSTD002;1;4;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 21-Apr-2020 14:16 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 12:46 Cal File: X031904.D
Als bottle: 6 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474.dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

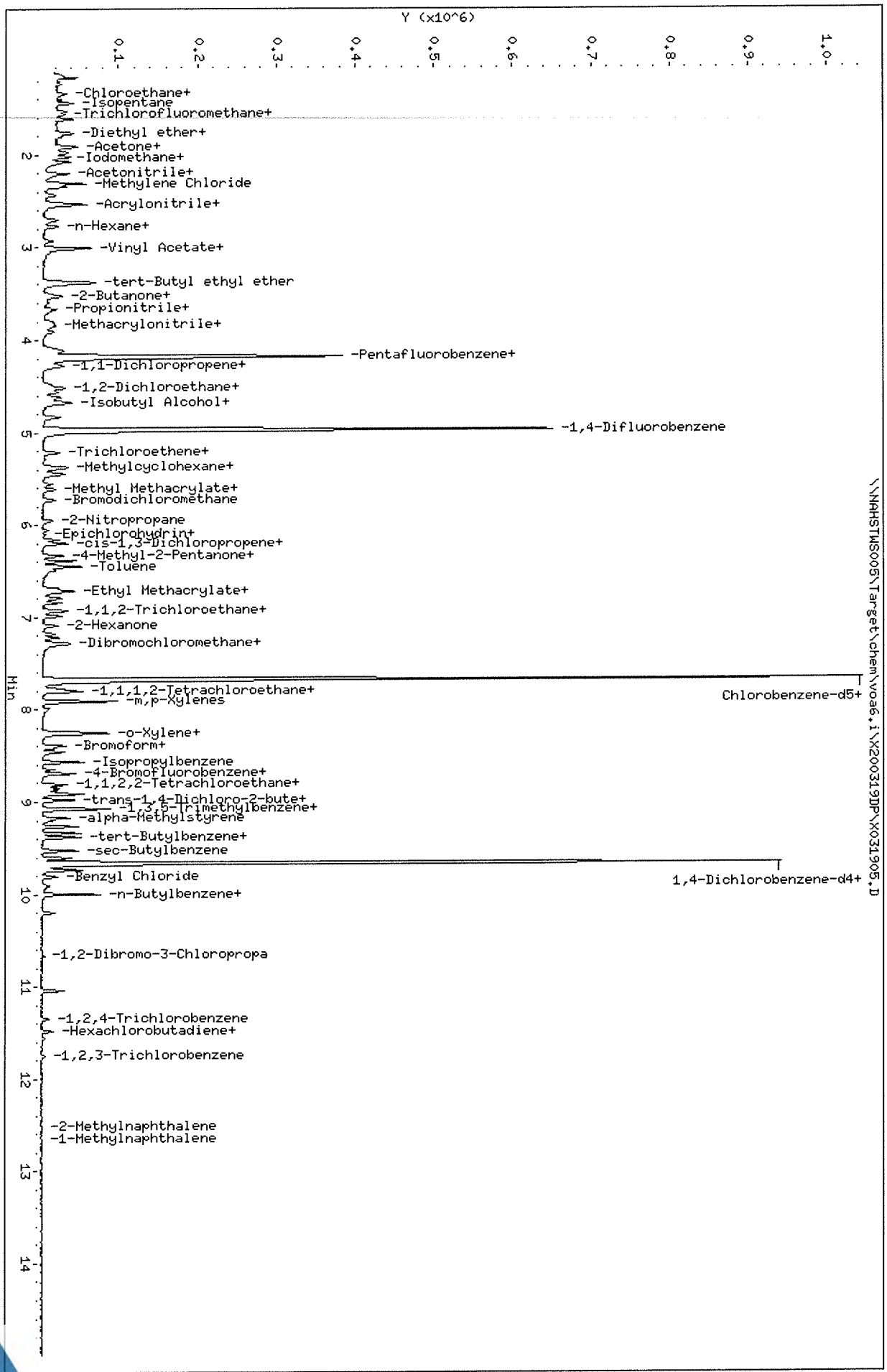
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	317561	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	5989	2.00000	1.79(a)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	8567	2.00000	1.99(aM)
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	498211	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	449226	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	23746	2.00000	1.99(a)
5 Vinyl Chloride	62	1.138	1.138	(0.272)	9040	2.00000	1.86(a)
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	5662	2.00000	2.10(a)
17 Methylene Chloride	84	2.305	2.305	(0.551)	9972	2.00000	1.48(aM)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	7730	2.00000	2.13(a)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	10240	2.00000	1.94(a)
38 Trichloroethene	130	5.214	5.214	(1.049)	6853	2.00000	1.98(a)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	5273	2.00000	2.03(a)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	12385	2.00000	2.40(a)
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	221564	50.0000	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031905.D
Date : 19-MAR-2020 13:10
Client ID: VSTD002
Sample Info: VSTD002;VSTD002;1;4;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031906.D
Lab Smp Id: VSTD005 Client Smp ID: VSTD005
Inj Date : 19-MAR-2020 13:34
Operator : PC Inst ID: voa6.i
Smp Info : VSTD005;VSTD005;1;5;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 21-Apr-2020 14:16 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 13:10 Cal File: X031905.D
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474.dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

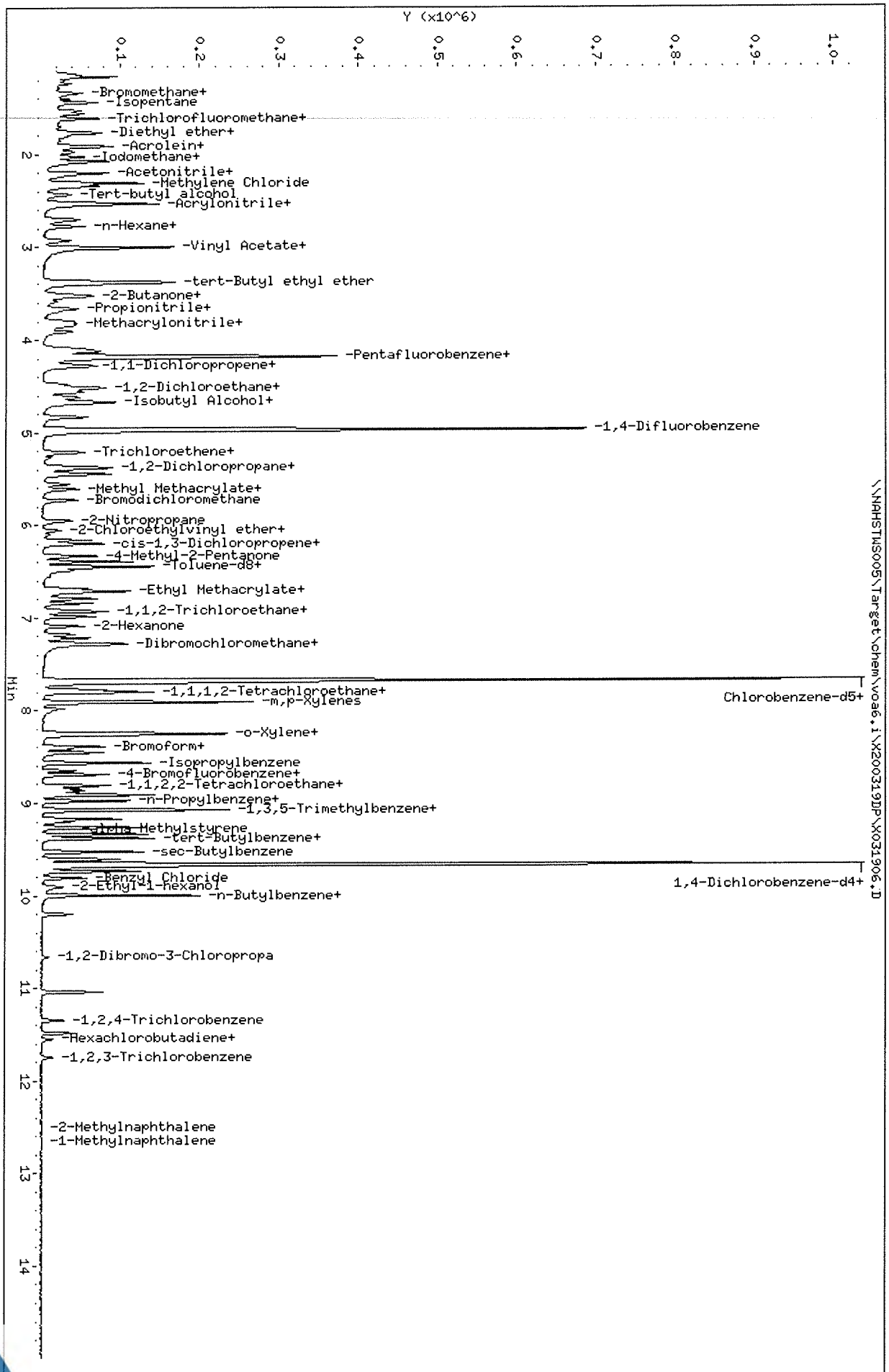
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	309553	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	17420	5.00000	5.56
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	20720	5.00000	5.18
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	486956	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	441541	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	62955	5.00000	5.49
5 Vinyl Chloride	62	1.138	1.138	(0.272)	22527	5.00000	4.77(a)
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	13314	5.00000	5.07
17 Methylene Chloride	84	2.306	2.306	(0.551)	22460	5.00000	5.46(M)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	19888	5.00000	5.64
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	26678	5.00000	5.18
38 Trichloroethene	130	5.214	5.214	(1.049)	17942	5.00000	5.31
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	13550	5.00000	5.32
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	22920	5.00000	4.95(a)
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	225770	50.0000	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031906.D
Date : 19-MAR-2020 13:34
Client ID: VSTD005
Sample Info: VSTD005;VSTD005;1;5;;
Purge Volume: 5.0
Column phase: DB624

\\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031906.D

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031907.D Page 1
Report Date: 21-Apr-2020 14:16

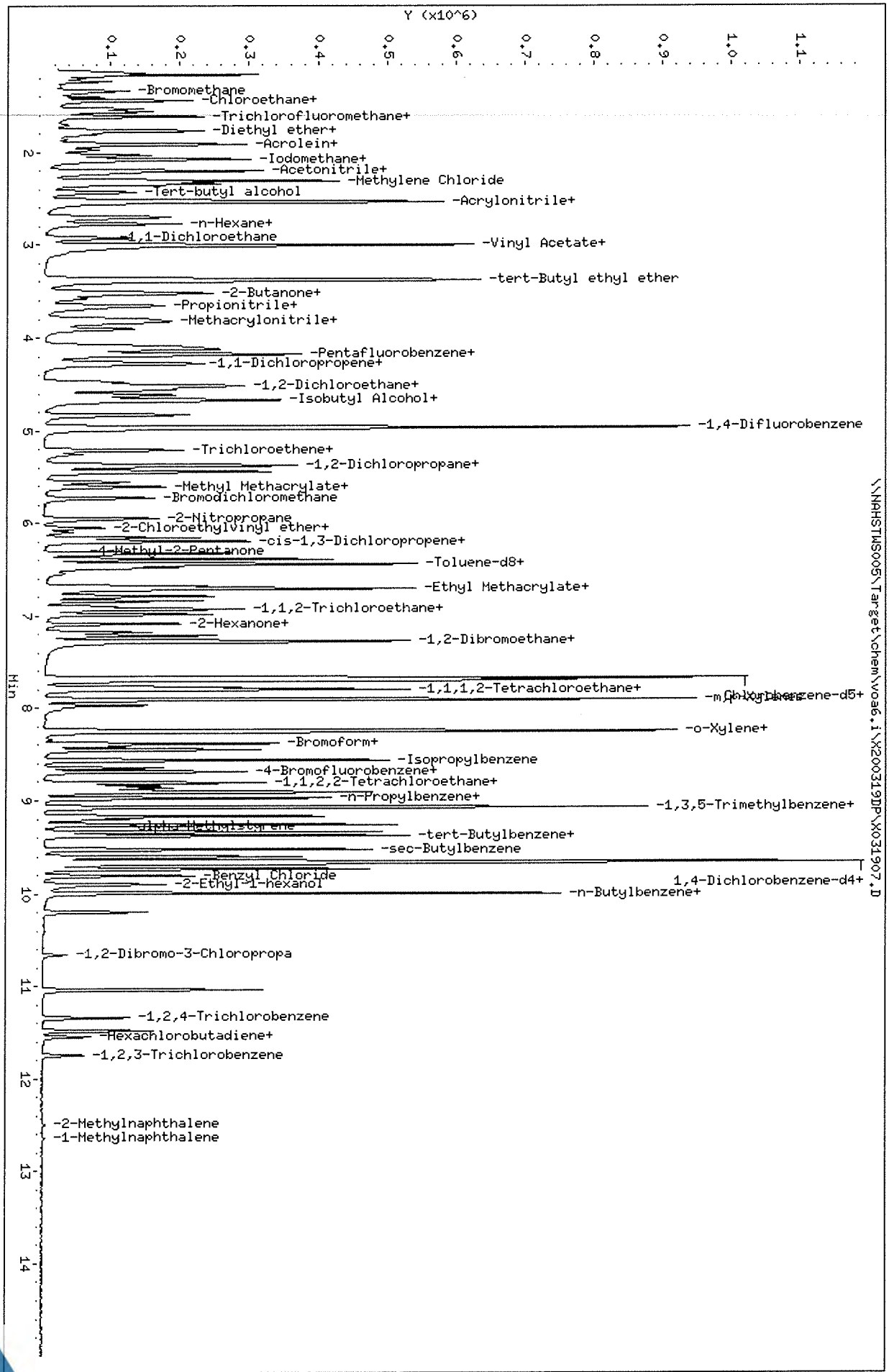
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031907.D
Lab Smp Id: VSTD020 Client Smp ID: VSTD020
Inj Date : 19-MAR-2020 13:58
Operator : PC Inst ID: voa6.i
Smp Info : VSTD020;VSTD020;1;6;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 21-Apr-2020 14:16 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 13:34 Cal File: X031906.D
Als bottle: 8 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474.dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	299061	50.0000	
$	30 Dibromofluoromethane	113	4.104	4.104	(0.981)	61899	20.0000	20.76
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	80050	20.0000	21.21
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	480908	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	433129	50.0000	
$	48 Toluene-d8	98	6.389	6.389	(0.833)	225397	20.0000	20.27
	5 Vinyl Chloride	62	1.138	1.138	(0.272)	88179	20.0000	19.35
	11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	49791	20.0000	19.64
	17 Methylene Chloride	84	2.306	2.306	(0.551)	70573	20.0000	21.27
	27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	69663	20.0000	20.45
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	99484	20.0000	19.58
	38 Trichloroethene	130	5.207	5.207	(1.048)	64841	20.0000	19.45
	53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	48758	20.0000	19.53
$	69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	85378	20.0000	20.19
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	213879	50.0000	



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031907.D
Date : 19-MAR-2020 13:58
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;1;6;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

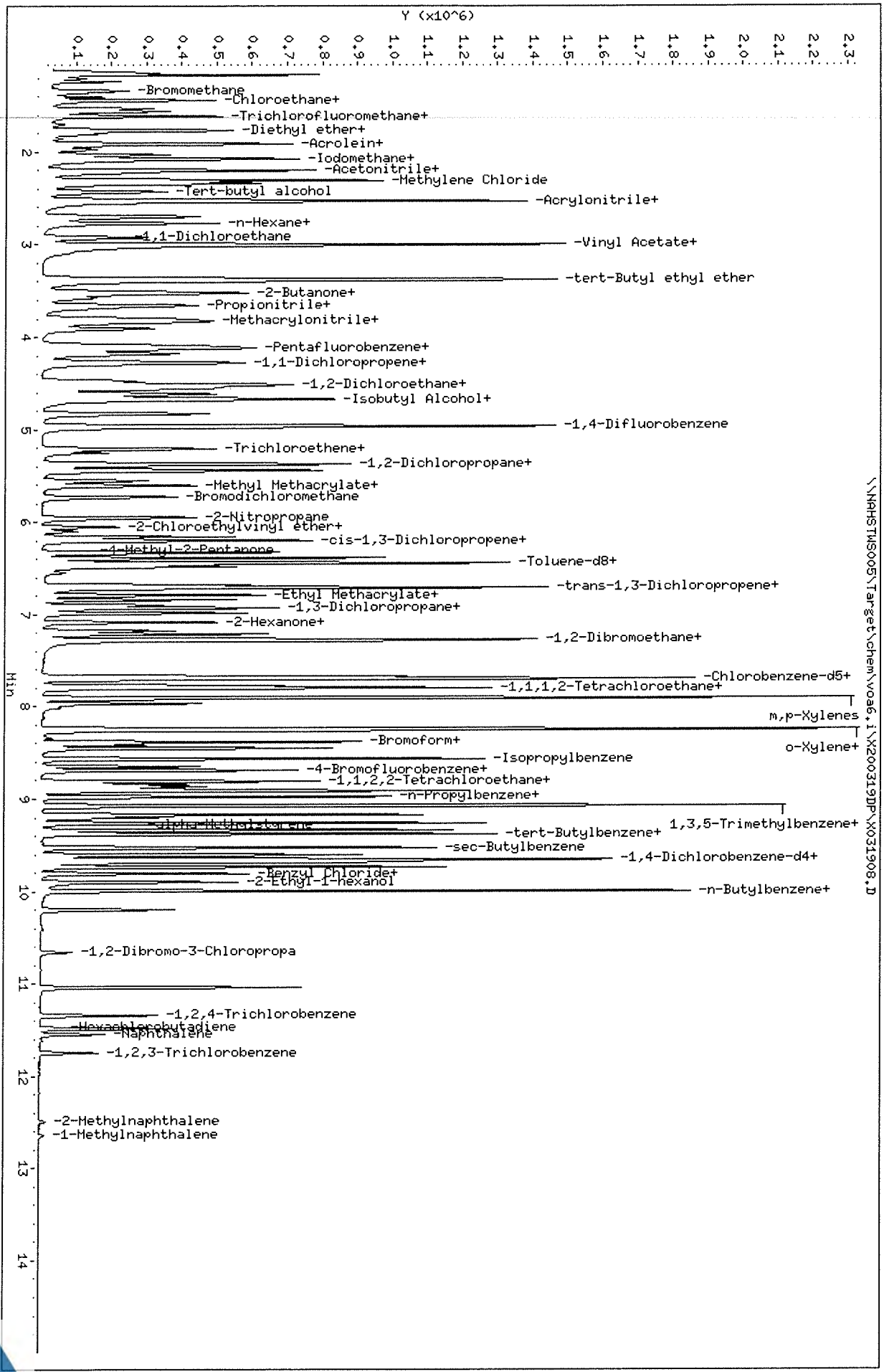
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031908.D
Lab Smp Id: VSTD050 Client Smp ID: VSTD050
Inj Date : 19-MAR-2020 14:22
Operator : PC Inst ID: voa6.i
Smp Info : VSTD050;VSTD050;1;7;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 21-Apr-2020 14:16 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 13:58 Cal File: X031907.D
Als bottle: 9 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474.dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	308394	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	149393	50.0000	48.75
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	185105	50.0000	47.76
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	463946	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	424365	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	537213	50.0000	49.41
5 Vinyl Chloride	62	1.138	1.138	(0.272)	218403	50.0000	46.48
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	123020	50.0000	47.07
17 Methylene Chloride	84	2.305	2.305	(0.551)	162281	50.0000	49.34
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	167789	50.0000	47.77
33 1,2-Dichloroethane	62	4.555	4.555	(0.916)	249570	50.0000	50.91
38 Trichloroethene	130	5.206	5.206	(1.048)	160161	50.0000	49.80
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	117355	50.0000	47.99
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	199673	50.0000	48.88
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	211624	50.0000	



Data File: \\NAHSTWS005\Target\chem\voa6,i\X200319DP\X031908.D
Date : 19-MAR-2020 14:22
Client ID: VSTD050
Sample Info: VSTD050;VSTD050;1;7;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

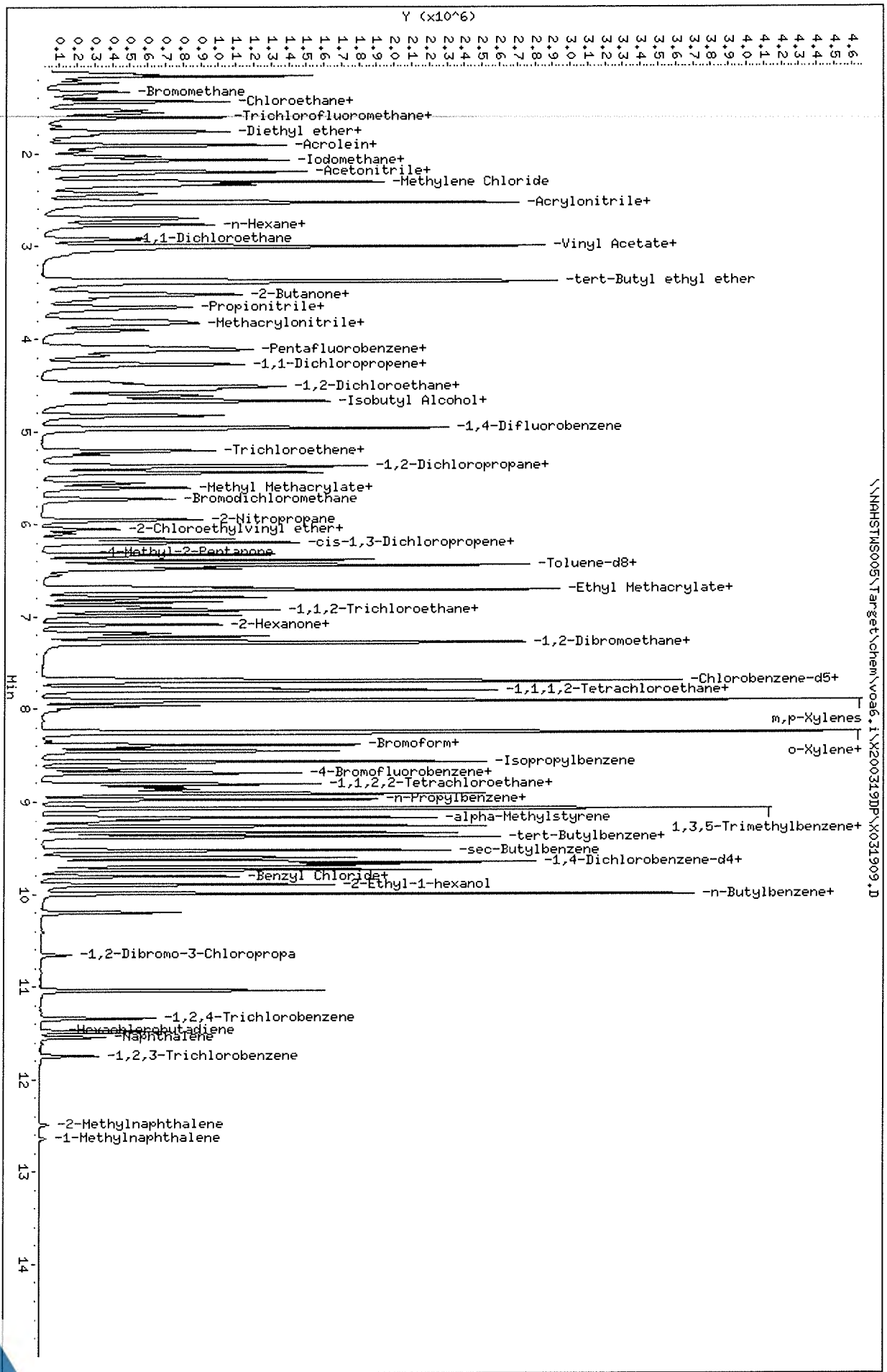
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031909.D
Lab Smp Id: VSTD100 Client Smp ID: VSTD100
Inj Date : 19-MAR-2020 14:46
Operator : PC Inst ID: voa6.i
Smp Info : VSTD100;VSTD100;1;8;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 21-Apr-2020 14:16 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 10 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474.dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	286614	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	290125	100.000	101.98
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	366265	100.000	101.87
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	439703	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	412807	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1054666	100.000	99.81
5 Vinyl Chloride	62	1.138	1.138	(0.272)	435381	100.000	99.70
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	240131	100.000	98.87
17 Methylene Chloride	84	2.305	2.305	(0.551)	310528	100.000	103.24
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	331114	100.000	101.44
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	481696	100.000	103.69
38 Trichloroethene	130	5.206	5.206	(1.048)	320532	100.000	105.17
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	230846	100.000	97.06
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	397823	100.000	100.64
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	202255	50.0000	



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031909.D
Date : 19-MAR-2020 14:46
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;1;8;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

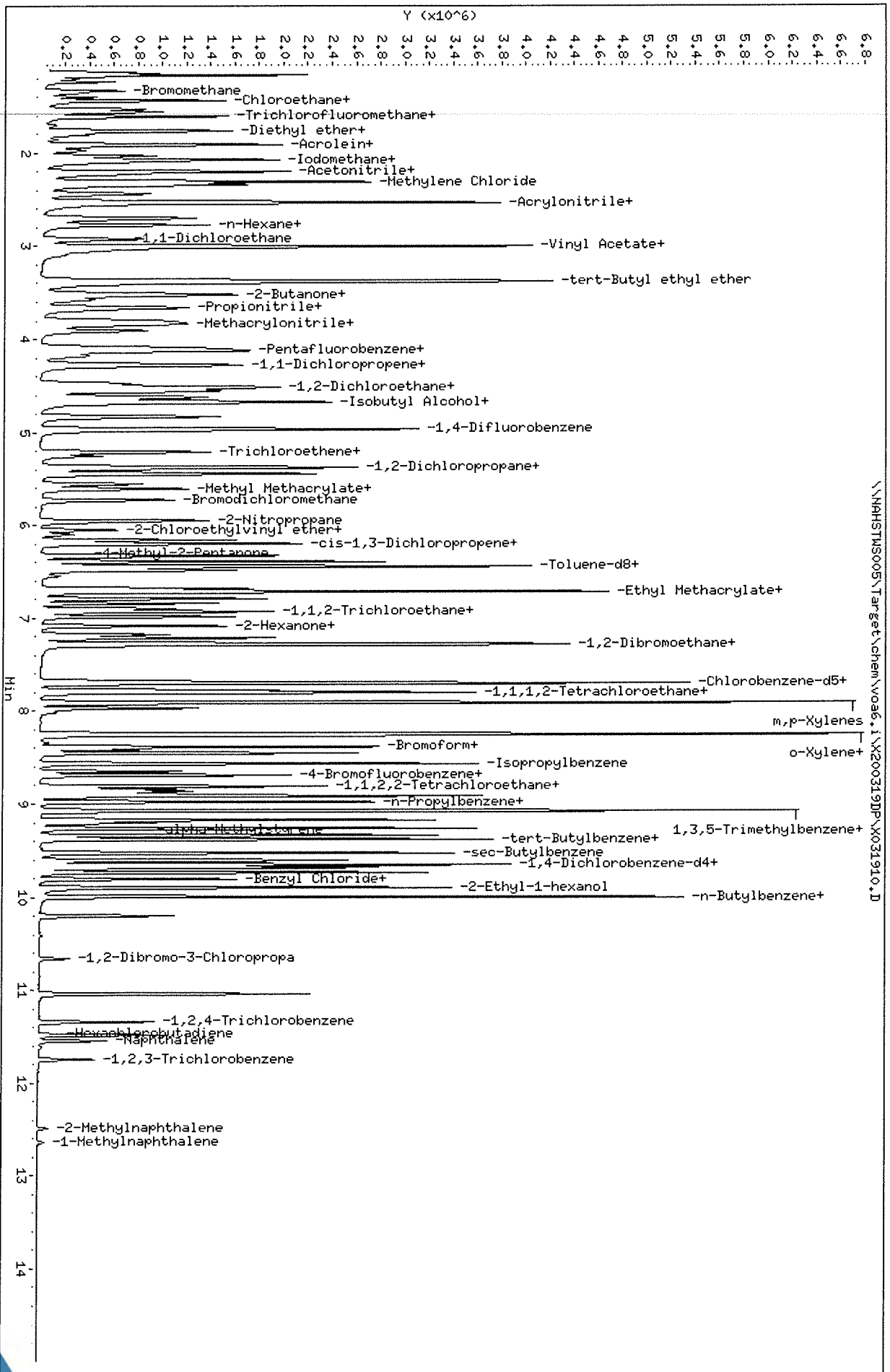
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031910.D
Lab Smp Id: VSTD150 Client Smp ID: VSTD150
Inj Date : 19-MAR-2020 15:10
Operator : PC Inst ID: voa6.i
Smp Info : VSTD150;VSTD150;1;9;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 21-Apr-2020 14:16 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:46 Cal File: X031909.D
Als bottle: 11 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474.dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	285712	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	416931	150.000	147.07
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	529642	150.000	147.86
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	430514	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	397694	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1518049	150.000	149.15
5 Vinyl Chloride	62	1.138	1.138	(0.272)	636695	150.000	146.27
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	347727	150.000	143.62
17 Methylene Chloride	84	2.306	2.306	(0.551)	437081	150.000	146.41
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	468820	150.000	144.08
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	692218	150.000	152.19
38 Trichloroethene	130	5.207	5.207	(1.048)	461294	150.000	154.59
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	326278	150.000	142.40
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	566125	150.000	148.90
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	198118	50.0000	



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031910.D
Date : 19-MAR-2020 15:10
Client ID: VSTD150
Sample Info: VSTD150;VSTD150;1;9;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031911.D
Lab Smp Id: VSTD200 Client Smp ID: VSTD200
Inj Date : 19-MAR-2020 15:33
Operator : PC Inst ID: voa6.i
Smp Info : VSTD200;VSTD200;1;10;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 21-Apr-2020 14:16 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 15:10 Cal File: X031910.D
Als bottle: 12 Calibration Sample, Level: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474.dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

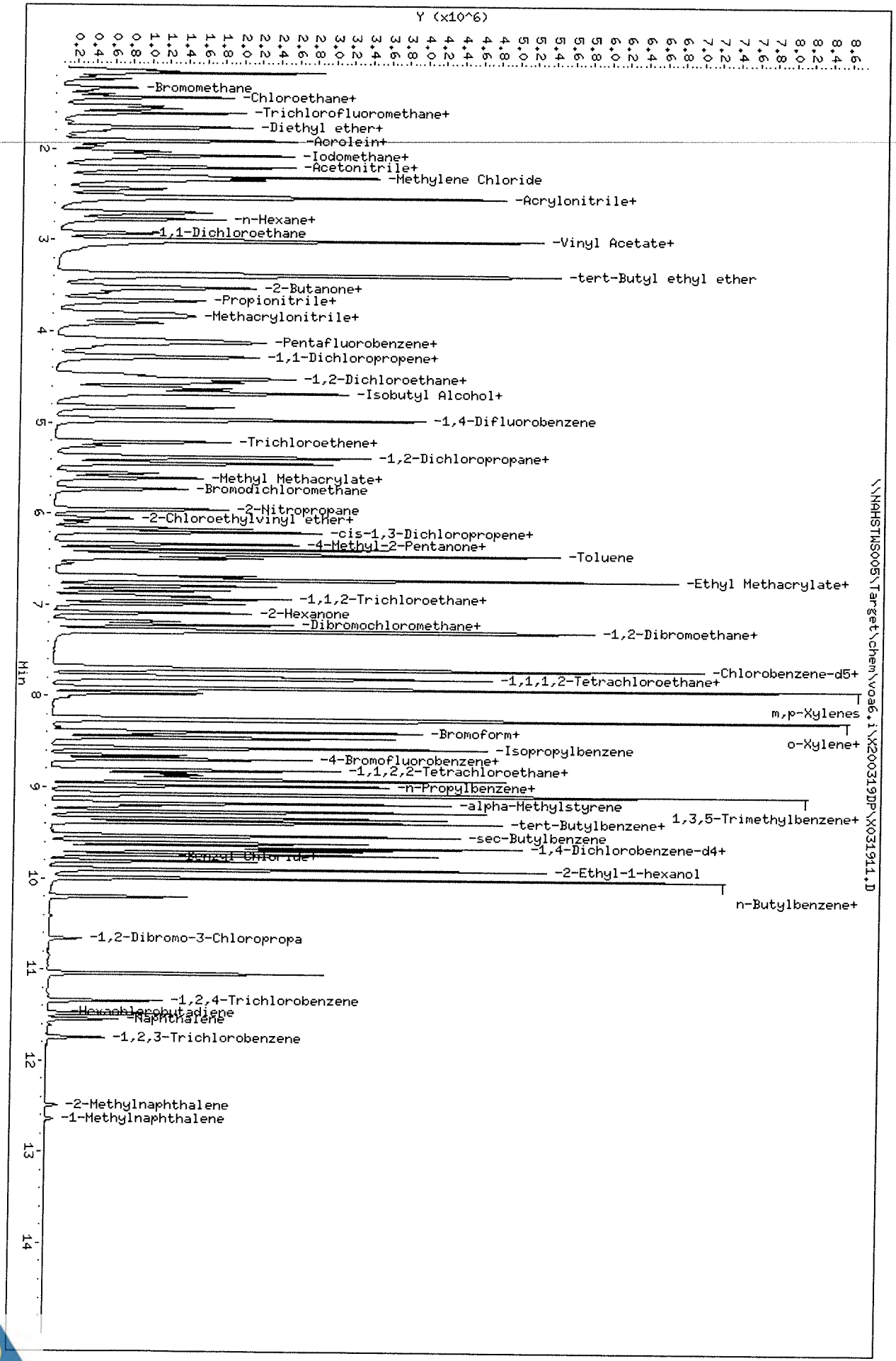
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	273221	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	545685	200.000	201.33(A)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	688377	200.000	201.01(A)
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	408332	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	385556	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1981187	200.000	200.82(A)
5 Vinyl Chloride	62	1.138	1.138	(0.272)	840563	200.000	201.93(A)
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	451814	200.000	195.15
17 Methylene Chloride	84	2.305	2.305	(0.551)	572059	200.000	200.96(A)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	619486	200.000	199.09
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	908572	200.000	210.61(A)
38 Trichloroethene	130	5.207	5.207	(1.048)	603965	200.000	213.40(A)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	427427	200.000	192.42
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	739220	200.000	200.72(A)
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	190770	50.0000	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031911.D
Date : 19-MAR-2020 15:33
Client ID: VSTD200
Sample Info: VSTD200;VSTD200;1;10;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

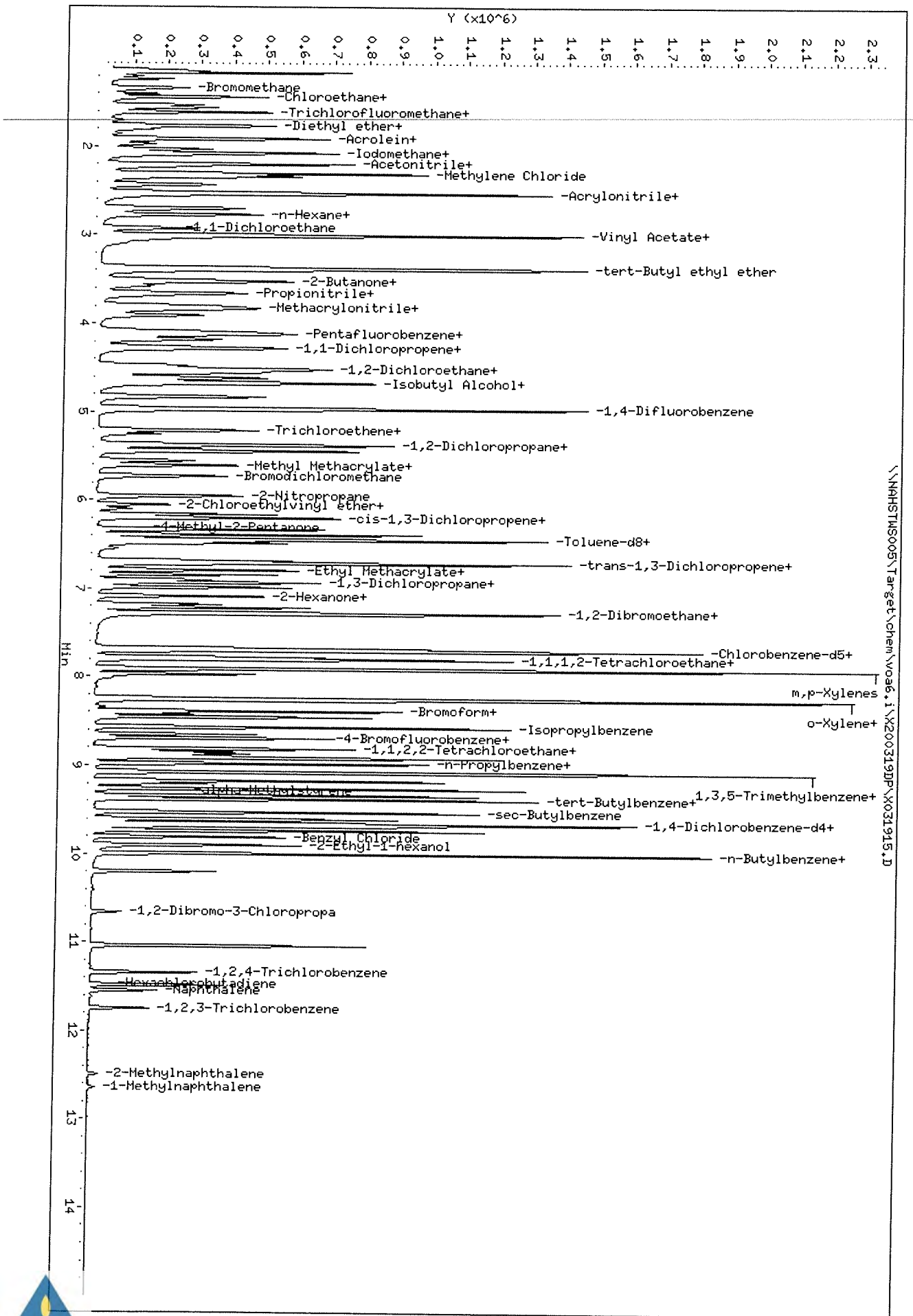
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031915.D
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 19-MAR-2020 17:09
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;;ICV
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200319DP\8260W.m
Meth Date : 21-Apr-2020 14:16 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 15:33 Cal File: X031911.D
Als bottle: 16 QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474.dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	286433	50.0000	
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	148947	52.3413	52.34
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	188752	52.4596	52.45
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	444859	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	412876	50.0000	
$	48 Toluene-d8	98	6.388	6.388	(0.833)	528266	49.9474	49.94
	5 Vinyl Chloride	62	1.138	1.138	(0.272)	208794	47.8466	47.84
	11 1,1-Dichloroethene	96	1.911	1.912	(0.457)	119289	49.1482	49.14
	17 Methylene Chloride	84	2.305	2.305	(0.551)	157492	51.6293	51.62
	27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	163069	49.9916	49.99
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	243287	51.7645	51.76
	38 Trichloroethene	130	5.206	5.207	(1.048)	155631	50.4744	50.47
	53 1,1,2-Trichloroethane	83	6.840	6.847	(0.892)	118115	49.6548	49.65
$	69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	201904	50.8305	50.83
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	209059	50.0000	



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200319DP\X031915.D
Date : 19-MAR-2020 17:09
Client ID: ICV
Sample Info: CCV;CCV;2;;;ICV
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

MSVOA06 -Logbook

Batch: 40074 **Analyst:** Presenta Cabascango

Date: 03-22-2020 **Reviewer:**

Method: 8260 **Laboratory:** Houston

Comments:

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	03-22-2020 11:32 am	1.00	50 mL	50 mL	X032201.D	Liquid	Y	NA
	Auto find/ purged									
2	CCV	CCV	03-22-2020 11:55 am	1.00	50 mL	50 mL	X032202a.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
3	CCV	CCV	03-22-2020 12:19 pm	1.00	50 mL	50 mL	X032203.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
4	CCB	SAMP	03-22-2020 12:43 pm	1.00	50 mL	50 mL	X032204.D	Liquid	Y	NA
5	VLCSW-200322	LCS	03-22-2020 01:07 pm	1.00	50 mL	50 mL	X032205.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
6	BLANK	SAMP	03-22-2020 01:31 pm	1.00	50 mL	50 mL	X032206.D	Liquid	Y	NA
7	VBLKW1-200322	MBLK	03-22-2020 01:55 pm	1.00	50 mL	50 mL	X032207.D	Liquid	Y	NA
8	HS20030888-11	SAMP	03-22-2020 02:20 pm	1.00	50 mL	50 mL	X032208.D	Liquid	Y	<2
9	HS20030888-01	SAMP	03-22-2020 02:44 pm	1.00	50 mL	50 mL	X032209.D	Liquid	Y	<2
10	HS20030733-08	SAMP	03-22-2020 03:08 pm	1.00	50 mL	50 mL	X032210.D	Liquid	Y	<2
11	HS20030733-01	SAMP	03-22-2020 03:32 pm	1.00	50 mL	50 mL	X032211.D	Liquid	Y	<2
12	HS20030888-01MS	MS	03-22-2020 03:56 pm	1.00	50 mL	50 mL	X032212.D	Liquid	Y	<2
	3.5 uL cal std/40 mL samp									
13	HS20030888-01MSD	MSD	03-22-2020 04:20 pm	1.00	50 mL	50 mL	X032213.D	Liquid	Y	<2
	3.5 uL cal std/40 mL samp									
14	HS20030733-01	SAMP	03-22-2020 04:44 pm	10.00	5 mL	50 mL	X032214.D	Liquid	Y	<2
15	HS20030733-05	SAMP	03-22-2020 05:08 pm	1.00	50 mL	50 mL	X032215.D	Liquid	Y	<2
16	HS20030733-05	SAMP	03-22-2020 05:32 pm	25.00	2 mL	50 mL	X032216.D	Liquid	Y	<2
17	HS20030733-03	SAMP	03-22-2020 05:56 pm	5.00	10 mL	50 mL	X032217.D	Liquid	Y	<2
18	HS20030733-03	SAMP	03-22-2020 06:20 pm	50.00	1 mL	50 mL	X032218.D	Liquid	Y	<2
19	HS20030731-01	SAMP	03-22-2020 06:44 pm	1.00	50 mL	50 mL	X032219.D	Liquid	Y	<2
20	HS20030731-07	SAMP	03-22-2020 07:08 pm	1.00	50 mL	50 mL	X032220.D	Liquid	Y	<2
21	HS20030731-06	SAMP	03-22-2020 07:32 pm	1.00	50 mL	50 mL	X032221.D	Liquid	Y	<2
22	HS20030731-02	SAMP	03-22-2020 07:56 pm	1.00	50 mL	50 mL	X032222.D	Liquid	Y	<2
23	HS20030731-03	SAMP	03-22-2020 08:20 pm	5.00	10 mL	50 mL	X032223.D	Liquid	Y	<2
24	HS20030731-04	SAMP	03-22-2020 08:44 pm	10.00	5 mL	50 mL	X032224.D	Liquid	Y	<2
25	HS20030731-05	SAMP	03-22-2020 09:08 pm	10.00	5 mL	50 mL	X032225.D	Liquid	Y	<2
26	HS20030733-08	SAMP	03-22-2020 09:32 pm	5.00	10 mL	50 mL	X032226.D	Liquid	Y	<2
27	HS20030888-02	SAMP	03-22-2020 09:56 pm	1.00	50 mL	50 mL	X032227.D	Liquid	Y	<2
28	HS20030888-04	SAMP	03-22-2020 10:21 pm	1.00	50 mL	50 mL	X032228.D	Liquid	Y	<2
29	HS20030888-05	SAMP	03-22-2020 10:45 pm	1.00	50 mL	50 mL	X032229.D	Liquid	Y	<2
30	CCV-END	CCV	03-22-2020 11:09 pm	1.00	50 mL	50 mL	X032230.D	Liquid	Y	na
	10 uL cal std/50 mL DI									

MSVOA06 -Logbook

Chemical	Value
SURR SPK ID	31106-21-06
IS ID	31106-21-06
CAL STD ID	311006-21-01/02
BFB ID	31106-21-06
pH Paper	634-64-11

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

	CLIENT SAMPLE NO.	SMC1 #	SMC2 (DCE)#	SMC3 (TOL)#	OTHER #	TOT OUT
01	CCB	94	89	107	97	0
02	VLCSW-200322	104	104	100	99	0
03	VBLKW1-20032	94	91	104	97	0
04	HS20030888-1	95	89	106	97	0
05	HS20030888-0	96	89	106	98	0
06	HS20030888-0	95	91	103	98	0
07	HS20030888-0	96	90	105	97	0
08	HS20030888-0	94	90	105	96	0
09	HS20030888-0	95	91	104	98	0
10	HS20030888-0	95	91	106	98	0
11						
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23						
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27						
28						

		QC LIMITS
SMC1	= Dibromofluoromethane	(70-130)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(70-130)
SMC3 (TOL)	= Toluene-d8	(70-130)
OTHER	= 4-Bromofluorobenzene	(70-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.
VBLKW1-200322

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

Lab File ID: X032207 Lab Sample ID: VBLKW1-200322

Date Analyzed: 03/22/20 Time Analyzed: 1355

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	CCB	CCB	X032204	1243
02	VLCSW-200322	VLCSW-200322	X032205	1307
03	HS20030888-1	HS20030888-11	X032208	1420
04	HS20030888-0	HS20030888-01	X032209	1444
05	HS20030888-0	HS20030888-01M	X032212	1556
06	HS20030888-0	HS20030888-01M	X032213	1620
07	HS20030888-0	HS20030888-02	X032227	2156
08	HS20030888-0	HS20030888-04	X032228	2221
09	HS20030888-0	HS20030888-05	X032229	2245
10				
11				
12				
13				
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29				
30				

COMMENTS:

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

Lab File ID: X032201 BFB Injection Date: 03/22/20

Instrument ID: VOA6 BFB Injection Time: 1132

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	23.4
75	30.0 - 60.0% of mass 95	47.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.7 (0.9)1
174	Greater than 50.0% of mass 95	80.4
175	5.0 - 9.0% of mass 174	6.1 (7.6)1
176	95.0 - 101.0% of mass 174	78.5 (97.6)1
177	5.0 - 9.0% of mass 176	5.1 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	X032203	03/22/20	1219
02	CCB	CCB	X032204	03/22/20	1243
03	VLCSW-200322	VLCSW-200322	X032205	03/22/20	1307
04	VBLKW1-20032	VBLKW1-200322	X032207	03/22/20	1355
05	HS20030888-1	HS20030888-11	X032208	03/22/20	1420
06	HS20030888-0	HS20030888-01	X032209	03/22/20	1444
07	HS20030888-0	HS20030888-01M	X032212	03/22/20	1556
08	HS20030888-0	HS20030888-01M	X032213	03/22/20	1620
09	HS20030888-0	HS20030888-02	X032227	03/22/20	2156
10	HS20030888-0	HS20030888-04	X032228	03/22/20	2221
11	HS20030888-0	HS20030888-05	X032229	03/22/20	2245
12	CCV-END	CCV-END	X032230	03/22/20	2309
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

Instrument ID: VOA6 Calibration Date: 03/22/20 Time: 1219

Lab File ID: X032203 Init. Calib. Date(s): 03/19/20 03/19/20

Init. Calib. Times: 1134 1533

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Vinyl Chloride	0.7620000	0.7328594	0.7328594	0.1	3.82	20.00	AVRG
Methylene Chloride	51.154929	50.000000	0.5440248	0.1	-2.31	20.00	LINR
1,1-Dichloroethene	0.4240000	0.4155646	0.4155646	0.1	1.99	20.00	AVRG
1,2-Dichloroethane	0.5280000	0.5379620	0.5379620	0.1	-1.89	20.00	AVRG
Trichloroethene	0.3460000	0.3662592	0.3662592	0.2	-5.86	20.00	AVRG
cis-1,2-Dichloroethene	0.5690000	0.5856302	0.5856302	0.1	-2.92	20.00	AVRG
1,1,2-Trichloroethane	0.2880000	0.2847948	0.2847948	0.1	1.11	20.00	AVRG
Dibromofluoromethane	51.536482	50.000000	0.5120272	0.1	-3.07	20.00	LINR
1,2-Dichloroethane-d4	50.370911	50.000000	0.6328157	0.1	-0.74	20.00	LINR
Toluene-d8	50.841357	50.000000	1.3023451	0.1	-1.68	20.00	LINR
4-Bromofluorobenzene	50.739672	50.000000	0.4881534	0.1	-1.48	20.00	LINR

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

Instrument ID: VOA6 Calibration Date: 03/22/20 Time: 2309

Lab File ID: X032230 Init. Calib. Date(s): 03/19/20 03/19/20

Init. Calib. Times: 1134 1533

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Vinyl Chloride	0.7620000	0.7727914	0.7727914	0.1	-1.42	20.00	AVRG
Methylene Chloride	53.430392	50.000000	0.5675728	0.1	-6.86	20.00	LINR
1,1-Dichloroethene	0.4240000	0.4300865	0.4300865	0.1	-1.44	20.00	AVRG
1,2-Dichloroethane	0.5280000	0.5354540	0.5354540	0.1	-1.41	20.00	AVRG
Trichloroethene	0.3460000	0.3472861	0.3472861	0.2	-0.37	20.00	AVRG
cis-1,2-Dichloroethene	0.5690000	0.5886128	0.5886128	0.1	-3.45	20.00	AVRG
1,1,2-Trichloroethane	0.2880000	0.2777666	0.2777666	0.1	3.55	20.00	AVRG
Dibromofluoromethane	52.445692	50.000000	0.5210416	0.1	-4.89	20.00	LINR
1,2-Dichloroethane-d4	51.303105	50.000000	0.6444903	0.1	-2.61	20.00	LINR
Toluene-d8	48.648101	50.000000	1.2462461	0.1	2.70	20.00	LINR
4-Bromofluorobenzene	47.915075	50.000000	0.4612401	0.1	4.17	20.00	LINR

FORM VII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

outputFile debug: C:\tp\envision\results\HS20030888/08a.01 Lab Code: AL

Lab File ID (Standard): X032203 Date Analyzed: 03/22/20

Instrument ID: VOA6 Time Analyzed: 1219

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	302148	4.18	465176	4.97	429281	7.67
	UPPER LIMIT	604296	4.68	930352	5.47	858562	8.17
	LOWER LIMIT	151074	3.68	232588	4.47	214641	7.17
	CLIENT SAMPLE NO.						
01	CCB	379259	4.18	565653	4.97	483508	7.67
02	VLCSW-200322	317077	4.18	496346	4.97	453575	7.67
03	VBLKW1-20032	400963	4.18	593699	4.97	522348	7.67
04	HS20030888-1	398892	4.18	591818	4.97	513953	7.67
05	HS20030888-0	404759	4.18	594560	4.97	517239	7.67
06	HS20030888-0	378224	4.18	559922	4.97	497970	7.67
07	HS20030888-0	374451	4.18	561455	4.97	486849	7.67
08	HS20030888-0	404505	4.18	598078	4.97	518651	7.67
09	HS20030888-0	407476	4.18	607894	4.97	526826	7.67
10	HS20030888-0	401860	4.18	600678	4.97	517820	7.67
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

outputFile debug: C:\tp\envision\results\HS20030888/08a.01 Lab Code: AL

Lab File ID (Standard): X032203 Date Analyzed: 03/22/20

Instrument ID: VOA6 Time Analyzed: 1219

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS4 (DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	207792	9.67				
	UPPER LIMIT	415584	10.17				
	LOWER LIMIT	103896	9.17				
	CLIENT SAMPLE NO.						
01	CCB	218394	9.67				
02	VLCSW-200322	217359	9.67				
03	VBLKW1-20032	241942	9.67				
04	HS20030888-1	232093	9.67				
05	HS20030888-0	243526	9.67				
06	HS20030888-0	231705	9.66				
07	HS20030888-0	226002	9.67				
08	HS20030888-0	235687	9.67				
09	HS20030888-0	245839	9.67				
10	HS20030888-0	245317	9.67				
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032201.D

Date : 22-MAR-2020 11:32

Client ID: BFB

Instrument: voa6.i

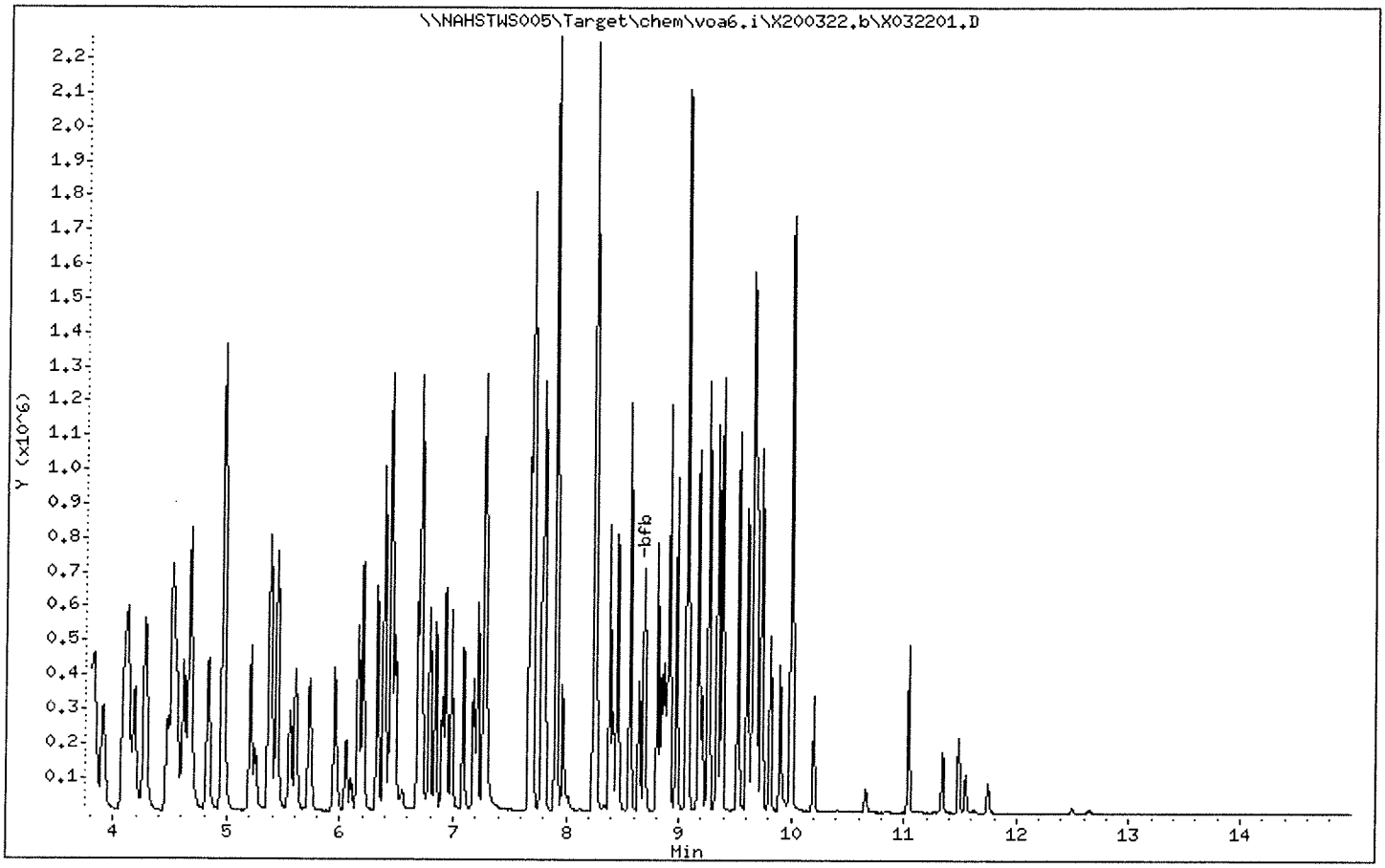
Sample Info: BFB:BFB:3::BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032201.D

Date : 22-MAR-2020 11:32

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

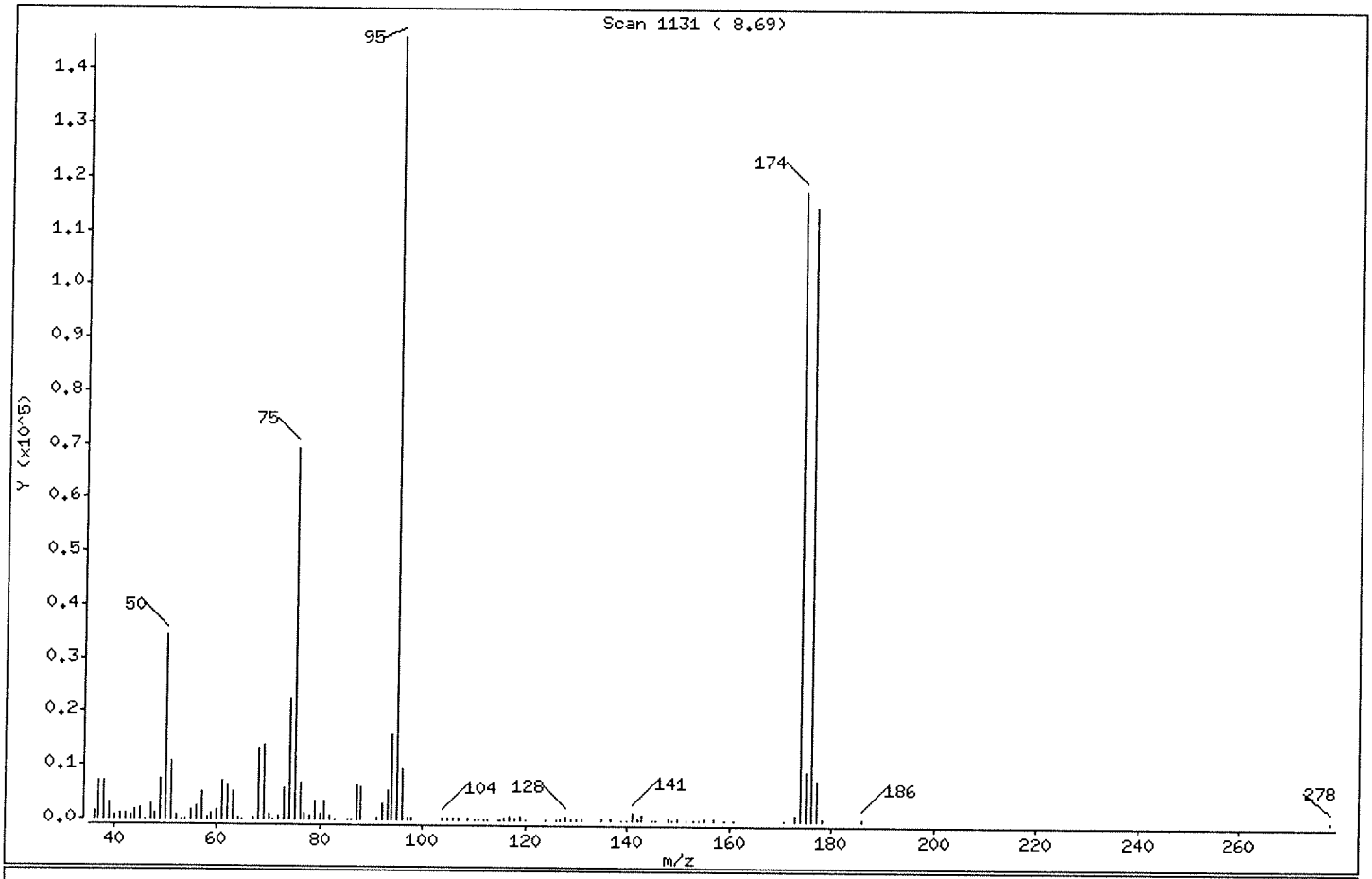
Volume Injected (uL): 2.0

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	23.43
75	30.00 - 60.00% of mass 95	47.32
96	5.00 - 9.00% of mass 95	6.48
173	Less than 2.00% of mass 174	0.74 (0.93)
174	Greater than 50.00% of mass 95	80.40
175	5.00 - 9.00% of mass 174	6.14 (7.64)
176	95.00 - 101.00% of mass 174	78.47 (97.60)
177	5.00 - 9.00% of mass 176	5.07 (6.46)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032201.D

Date : 22-MAR-2020 11:32

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: X032201.D
Spectrum: Scan 1131 (8.69)
Location of Maximum: 95.00
Number of points: 110

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.10	1250	64.10	403	96.00	9475	138.90	112
37.00	7173	65.00	131	97.00	355	139.90	160
38.10	6998	67.10	328	97.90	311	140.90	1469
39.10	2974	68.00	13240	103.90	490	141.90	242
39.90	829	69.00	13628	105.00	421	142.80	1085
41.00	1031	70.00	956	105.80	474	144.90	82
42.10	994	71.00	113	107.00	433	145.70	97
43.10	752	71.90	686	108.80	280	147.90	319
44.00	1587	73.00	5843	110.00	86	148.80	96
45.00	2022	74.00	22528	110.90	64	149.70	189
46.10	135	75.00	69168	111.90	66	151.60	70
47.00	2589	76.00	6685	112.70	79	153.00	118
48.00	953	77.00	1128	114.70	144	153.90	68
49.00	7259	77.90	696	115.20	155	155.00	445
50.00	34256	78.90	3415	115.80	451	156.90	286
51.00	10626	80.00	909	116.90	643	158.90	168
52.00	570	80.90	3501	118.00	447	160.80	149
53.10	111	82.00	737	118.90	582	170.80	131
54.00	101	83.00	99	120.10	75	172.90	1088
55.10	1569	85.20	115	123.90	85	174.00	117520
56.00	2436	86.10	127	125.90	91	175.00	8976
57.00	5065	87.00	6525	126.90	277	176.00	114704
58.10	268	88.00	6177	127.80	727	177.00	7410
58.90	842	90.90	455	128.90	251	178.00	244
60.00	1613	92.00	3178	129.90	380	185.90	277
61.00	7074	93.00	5350	131.00	221	278.00	272
62.00	6506	94.00	15835	134.90	207		
63.00	5088	95.00	146176	136.70	195		

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032203.D Page 1
Report Date: 21-Apr-2020 14:41

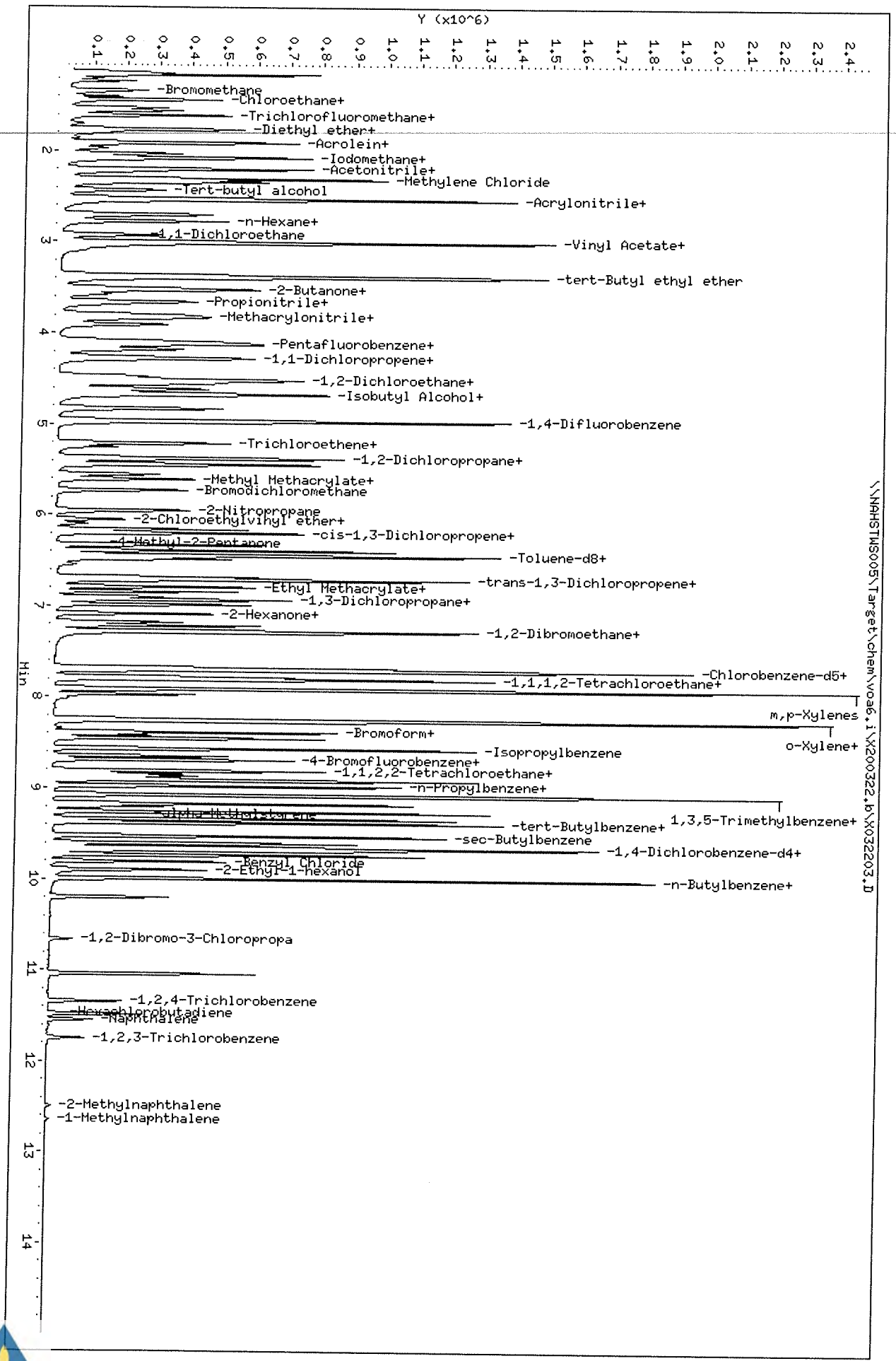
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032203.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 22-MAR-2020 12:19
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 21-Apr-2020 14:41 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	302148	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	154708	50.0000	51.53
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	191204	50.0000	50.37
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	465176	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	429281	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	559072	50.0000	50.84
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	209555	50.0000	50.73
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	207792	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	221432	50.0000	48.10
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	125562	50.0000	49.04
17 Methylene Chloride	84	2.306	2.306	(0.551)	164376	50.0000	51.15
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	176947	50.0000	51.42
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	250247	50.0000	50.91
38 Trichloroethene	130	5.207	5.207	(1.048)	170375	50.0000	52.84
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	122257	50.0000	49.43



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032203.D
Date : 22-MAR-2020 12:19
Client ID: CCV
Sample Info: CCV;CCV;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032204.D Page 1
Report Date: 21-Apr-2020 14:41

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032204.D
Lab Smp Id: CCB Client Smp ID: CCB
Inj Date : 22-MAR-2020 12:43
Operator : PC Inst ID: voa6.i
Smp Info : CCB;CCB;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 21-Apr-2020 14:41 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

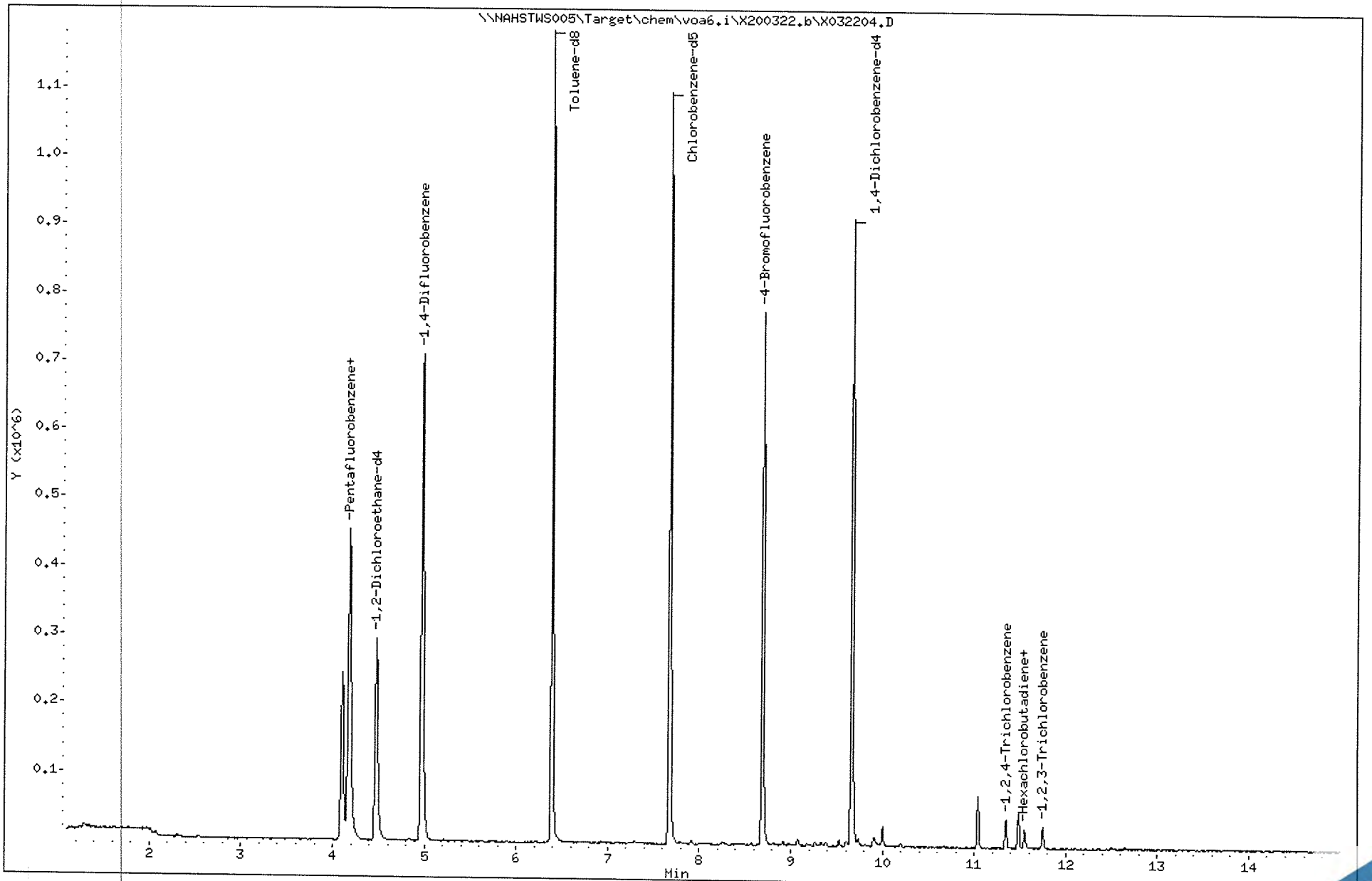
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	379259	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	176818	46.9162	46.91
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	213256	44.7401	44.74
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	565653	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	483508	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	660552	53.3365	53.33
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	225752	48.5095	48.50
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	218394	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032204.D
Date : 22-MAR-2020 12:43
Client ID: CCB
Sample Info: CCB;CCB;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i

Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032205.D Page 1
Report Date: 21-Apr-2020 14:41

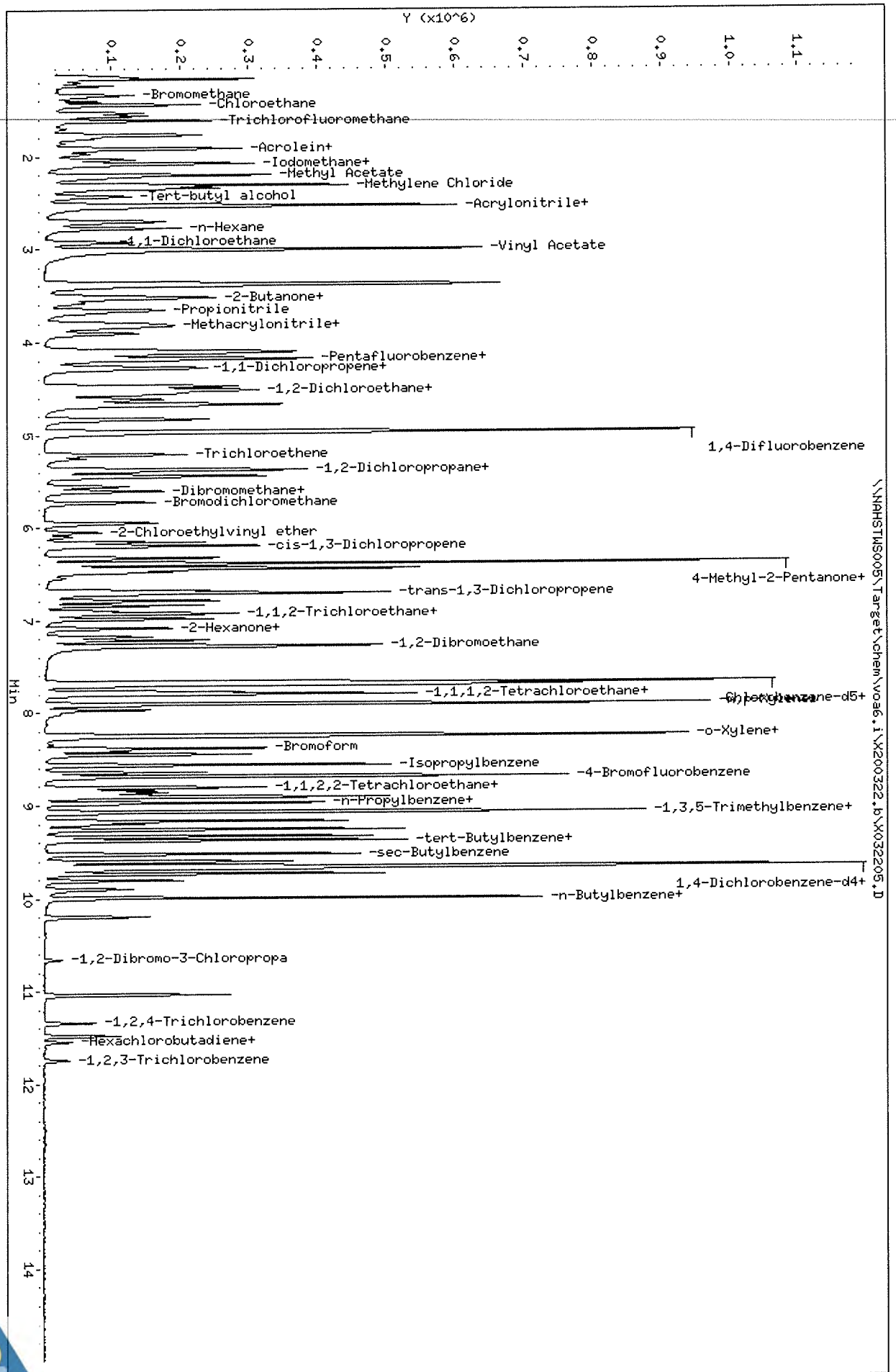
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032205.D
Lab Smp Id: VLCSW-200322 Client Smp ID: VLCSW-200322
Inj Date : 22-MAR-2020 13:07
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-200322;VLCSW-200322;3;;LCS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 21-Apr-2020 14:41 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 5 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	317077	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	163437	51.8816	51.88
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	208259	52.2867	52.28
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	496346	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	453575	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	584005	50.2633	50.26
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	216683	49.6449	49.64
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	217359	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	87326	18.0773	18.07
11 1,1-Dichloroethene	96	1.911	1.912	(0.457)	49998	18.6088	18.60
17 Methylene Chloride	84	2.305	2.306	(0.551)	68763	19.5413	19.54
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	72784	20.1567	20.15
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	102923	19.6274	19.62
38 Trichloroethene	130	5.206	5.207	(1.048)	68209	19.8269	19.82
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	49311	18.8699	18.86



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032205.D
Date : 22-MAR-2020 13:07
Client ID: VLCSW-200322
Sample Info: VLCSW-200322;VLCSW-200322;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032207.D Page 1
Report Date: 21-Apr-2020 14:41

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032207.D
Lab Smp Id: VBLKW1-200322 Client Smp ID: VBLKW1-200322
Inj Date : 22-MAR-2020 13:55
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW1-200322;VBLKW1-200322;3;;BLANK
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 21-Apr-2020 14:41 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 7 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

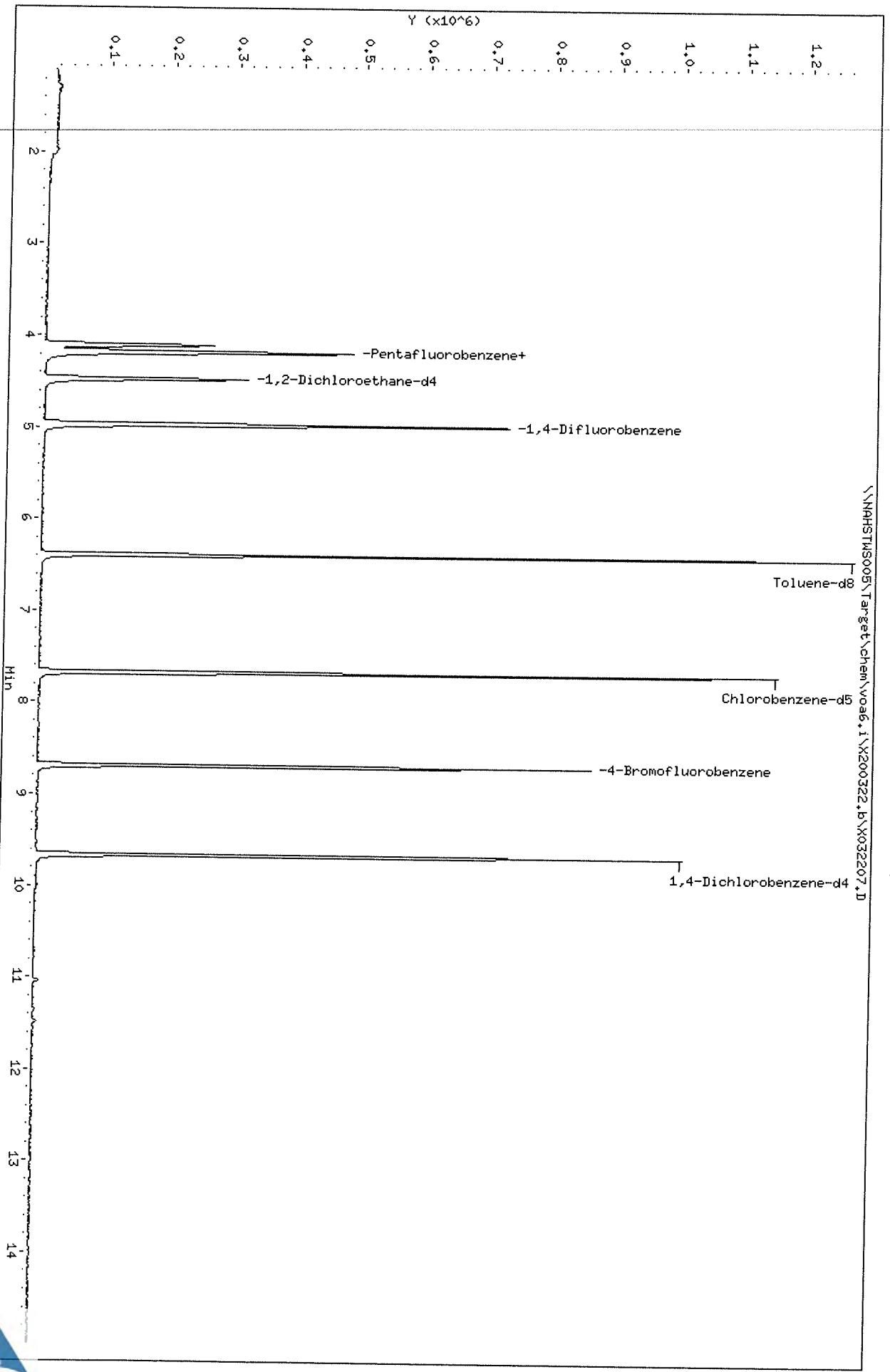
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	400963	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	187860	47.1485	47.14
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	228329	45.3114	45.31
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	593699	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	522348	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	698000	52.1678	52.16
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	243172	48.3660	48.36
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	241942	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032207.D
Date : 22-MAR-2020 13:55
Client ID: VBLKW1-200322
Sample Info: VBLKW1-200322;VBLKW1-200322;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032208.D Page 1
Report Date: 21-Apr-2020 14:41

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032208.D
Lab Smp Id: HS20030888-11 Client Smp ID: HS20030888-11
Inj Date : 22-MAR-2020 14:20
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-11;HS20030888-11;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 21-Apr-2020 14:41 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	398892	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	188540	47.5658	47.56
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	224146	44.7102	44.71
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	591818	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	513953	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	698771	53.0798	53.07
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	239835	48.4826	48.48
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	232093	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032208.D

Date : 22-MAR-2020 14:20

Client ID: HS20030888-11

Instrument: voa6.i

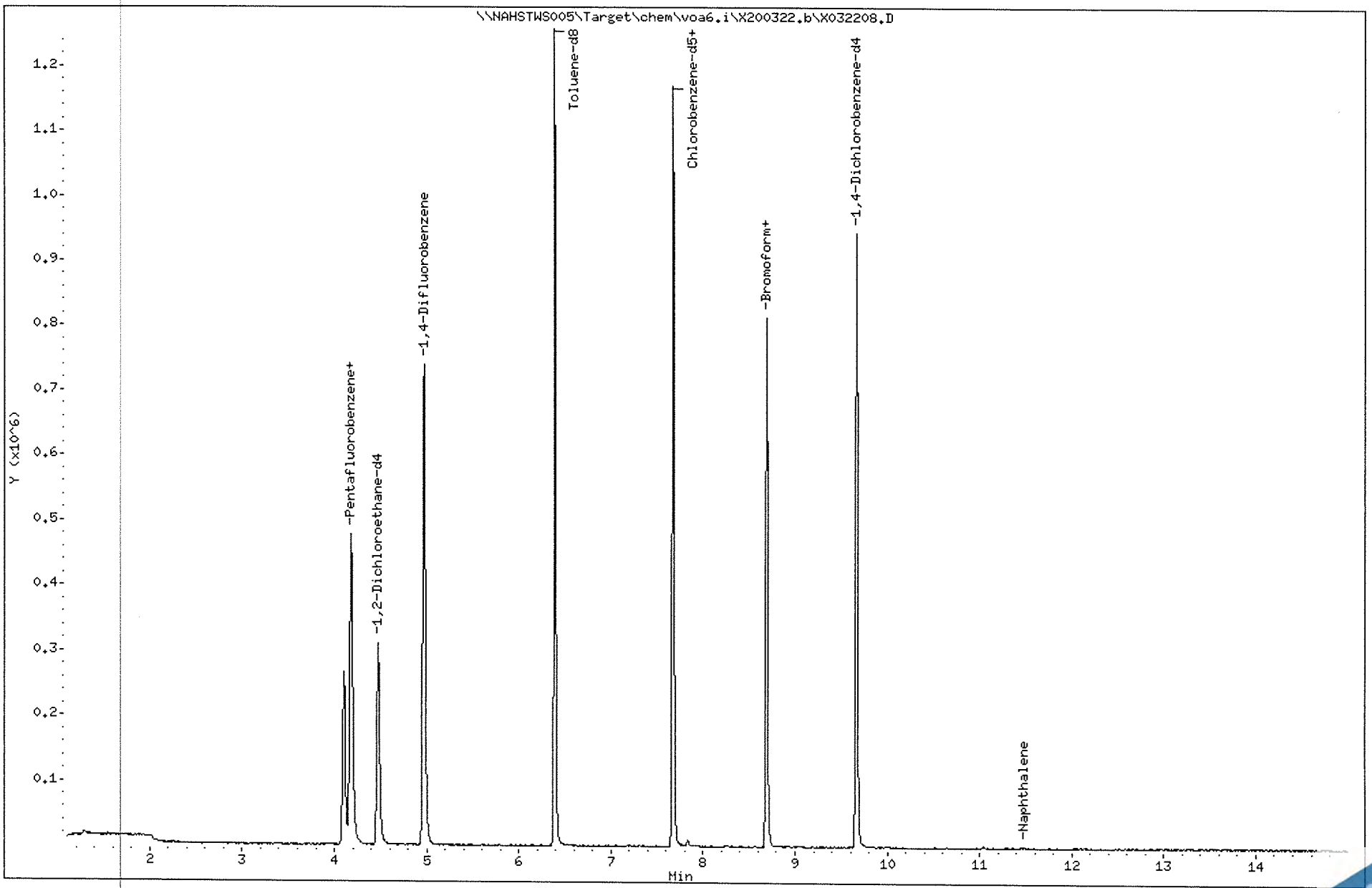
Sample Info: HS20030888-11;HS20030888-11;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032209.D Page 1
Report Date: 21-Apr-2020 14:41

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Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032209.D
Lab Smp Id: HS20030888-01 Client Smp ID: HS20030888-01
Inj Date : 22-MAR-2020 14:44
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-01;HS20030888-01;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 21-Apr-2020 14:41 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

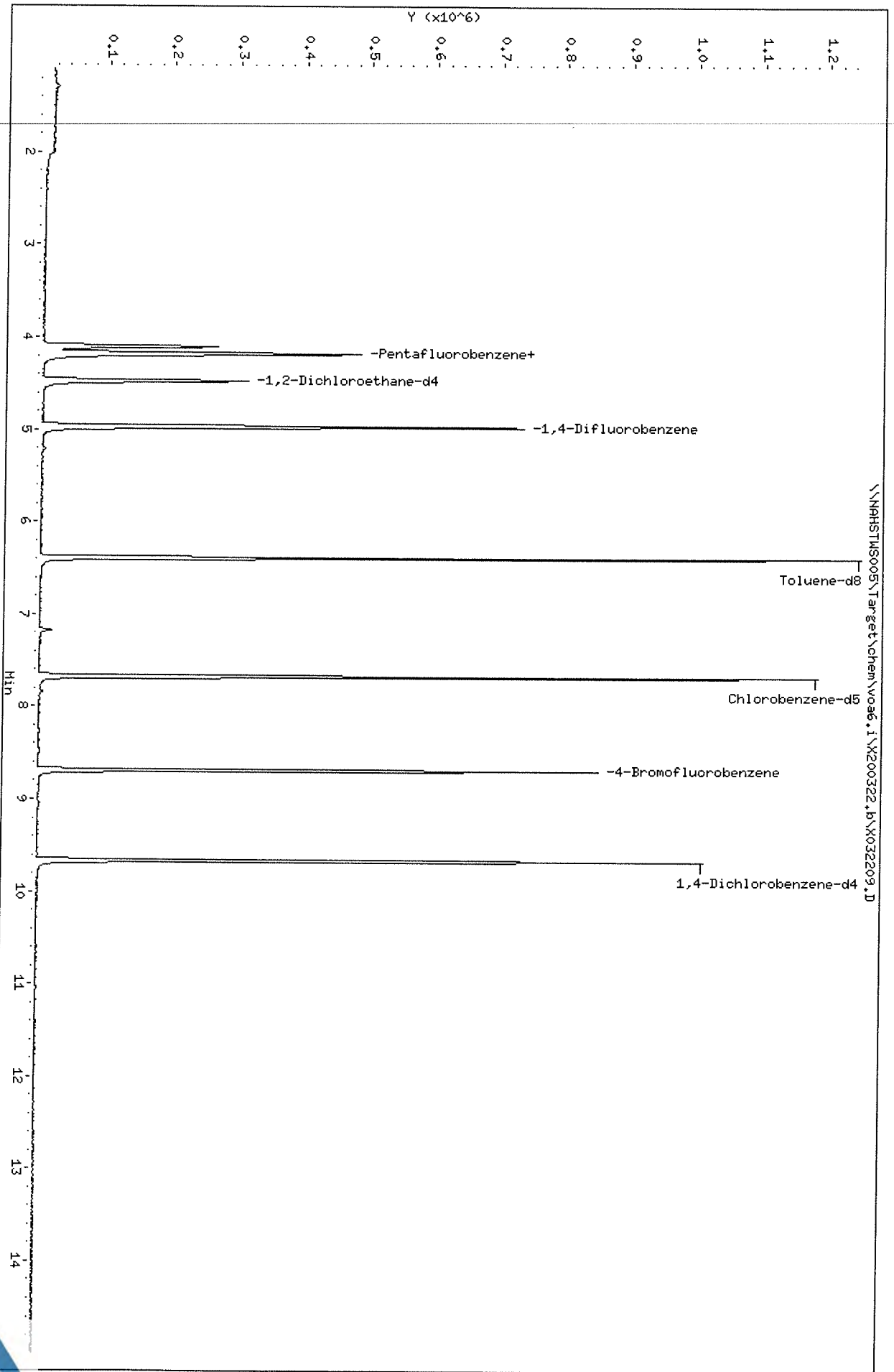
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	404759	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	192843	47.9470	47.94
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	227582	44.7376	44.73
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	594560	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	517239	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	700557	52.8771	52.87
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	243991	49.0148	49.01
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	243526	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032209.D
Date : 22-MAR-2020 14:44
Client ID: HS20030888-01
Sample Info: HS20030888-01;HS20030888-01;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032212.D Page 1
Report Date: 21-Apr-2020 14:41

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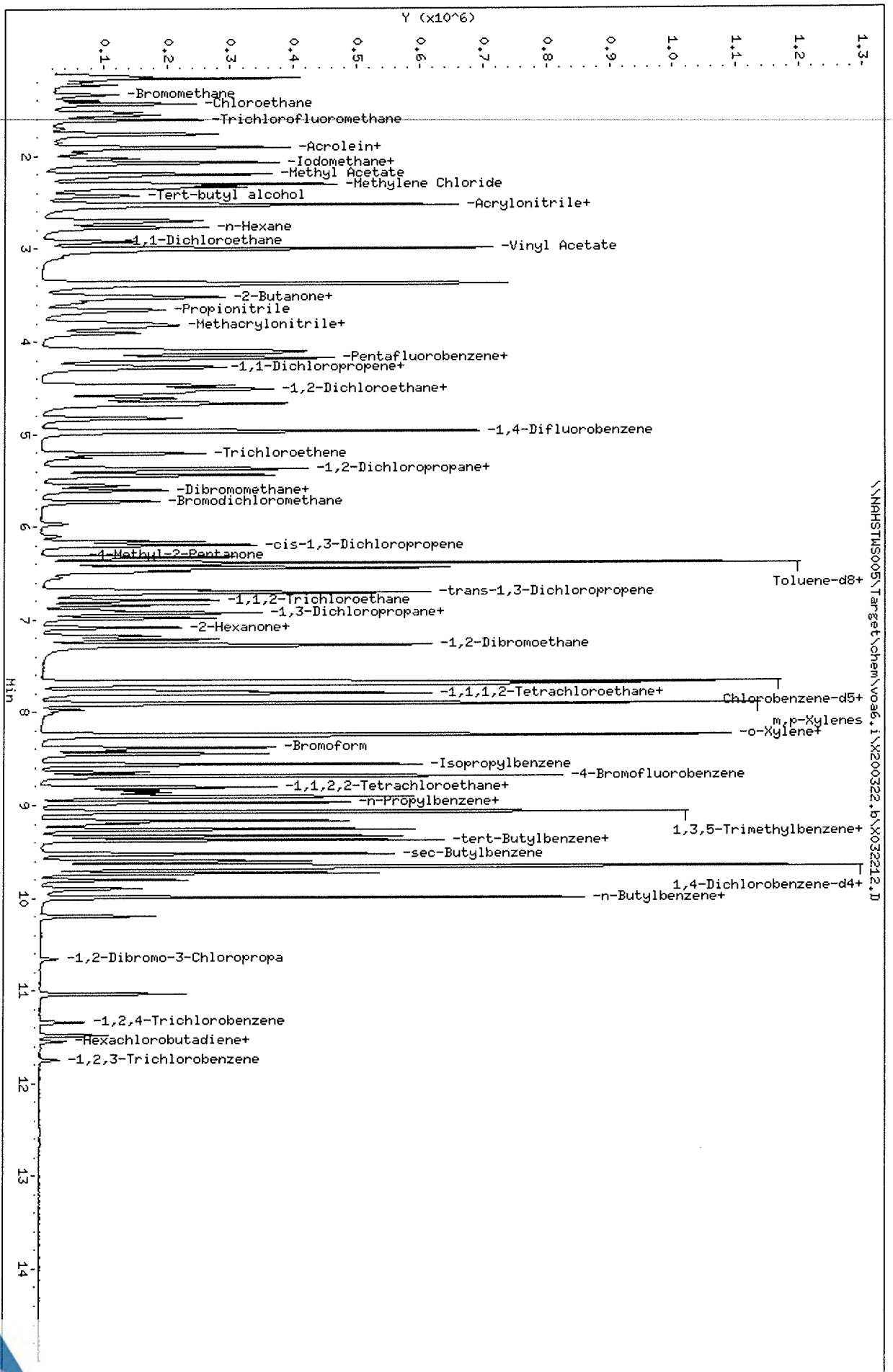
Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032212.D
Lab Smp Id: HS20030888-01MS Client Smp ID: HS20030888-01MS
Inj Date : 22-MAR-2020 15:56
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-01MS;HS20030888-01MS;3;;MS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 21-Apr-2020 14:41 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 12 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	378224	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	179379	47.7279	47.72
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	215355	45.3061	45.30
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	559922	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	497970	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	658841	51.6510	51.65
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	234764	48.9858	48.98
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	231705	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	110995	19.2624	19.26
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	62198	19.4070	19.40
17 Methylene Chloride	84	2.306	2.306	(0.551)	76695	18.1799	18.17
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	83498	19.3855	19.38
33 1,2-Dichloroethane	62	4.555	4.562	(0.916)	116614	19.7133	19.71
38 Trichloroethene	130	5.207	5.207	(1.048)	85045	21.9138	21.91
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	56529	19.7035	19.70



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032212.D
Date : 22-MAR-2020 15:56
Client ID: HS20030888-01MS
Sample Info: HS20030888-01MS;HS20030888-01MS;3;;MS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032213.D Page 1
Report Date: 21-Apr-2020 14:41

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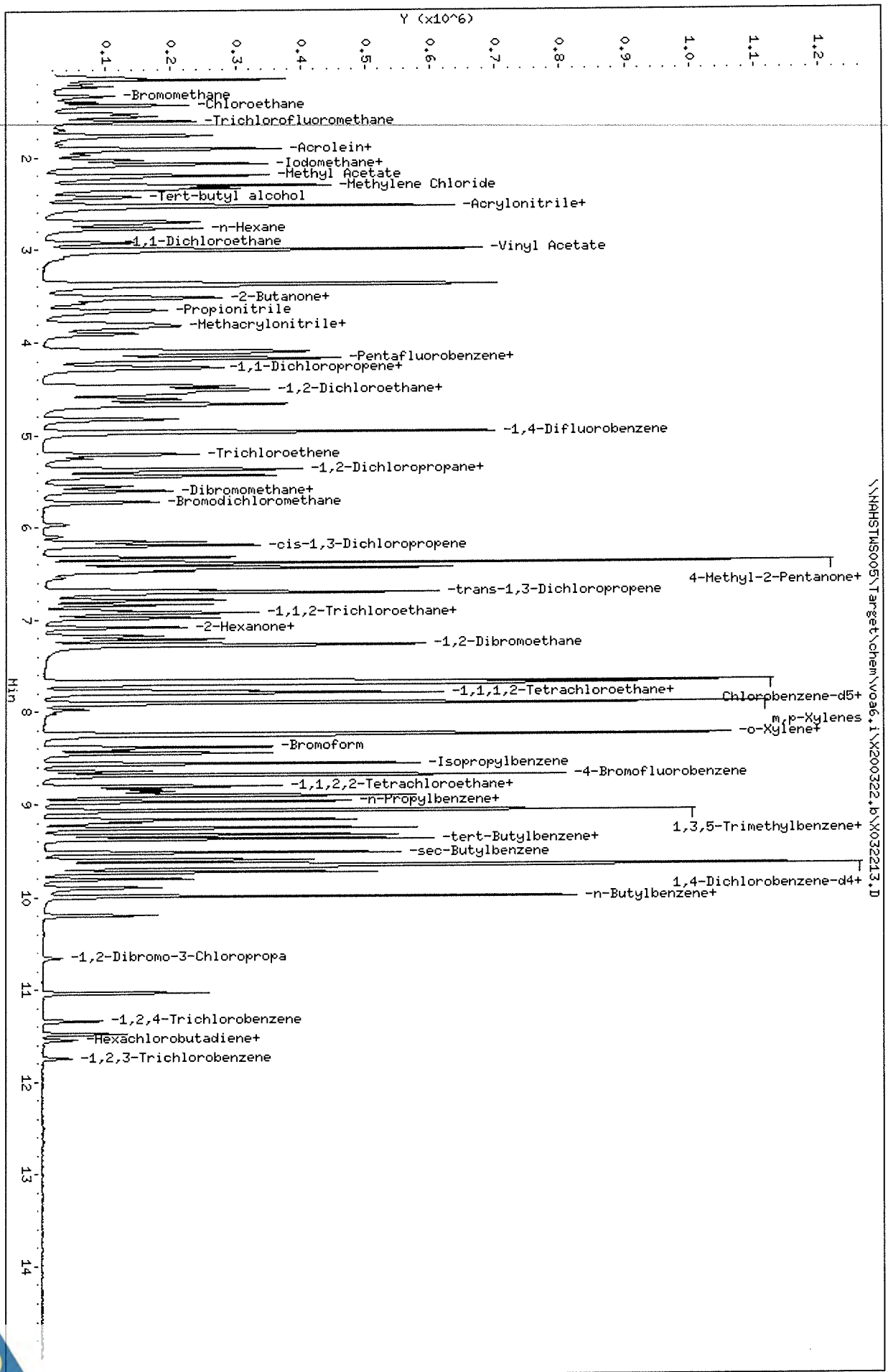
Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032213.D
Lab Smp Id: HS20030888-01MSD Client Smp ID: HS20030888-01MSD
Inj Date : 22-MAR-2020 16:20
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-01MSD;HS20030888-01MSD;3;;MSD
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 21-Apr-2020 14:41 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 12 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	374451	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	178445	47.9583	47.95
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	212422	45.1388	45.13
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	561455	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	486849	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	652458	52.3200	52.31
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	228035	48.6654	48.66
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	226002	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	103176	18.0859	18.08
11 1,1-Dichloroethene	96	1.911	1.912	(0.457)	57944	18.2618	18.26
17 Methylene Chloride	84	2.305	2.306	(0.551)	72924	17.4042	17.40
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	79618	18.6709	18.67
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	115961	19.5493	19.54
38 Trichloroethene	130	5.206	5.207	(1.048)	78525	20.1786	20.17
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	55613	19.8270	19.82



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Date : 22-MAR-2020 16:20
Client ID: HS20030888-01MSD
Sample Info: HS20030888-01MSD;HS20030888-01MSD;3;;MSD
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032227.D
Lab Smp Id: HS20030888-02 Client Smp ID: HS20030888-02
Inj Date : 22-MAR-2020 21:56
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-02;HS20030888-02;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 21-Apr-2020 14:48 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 26
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

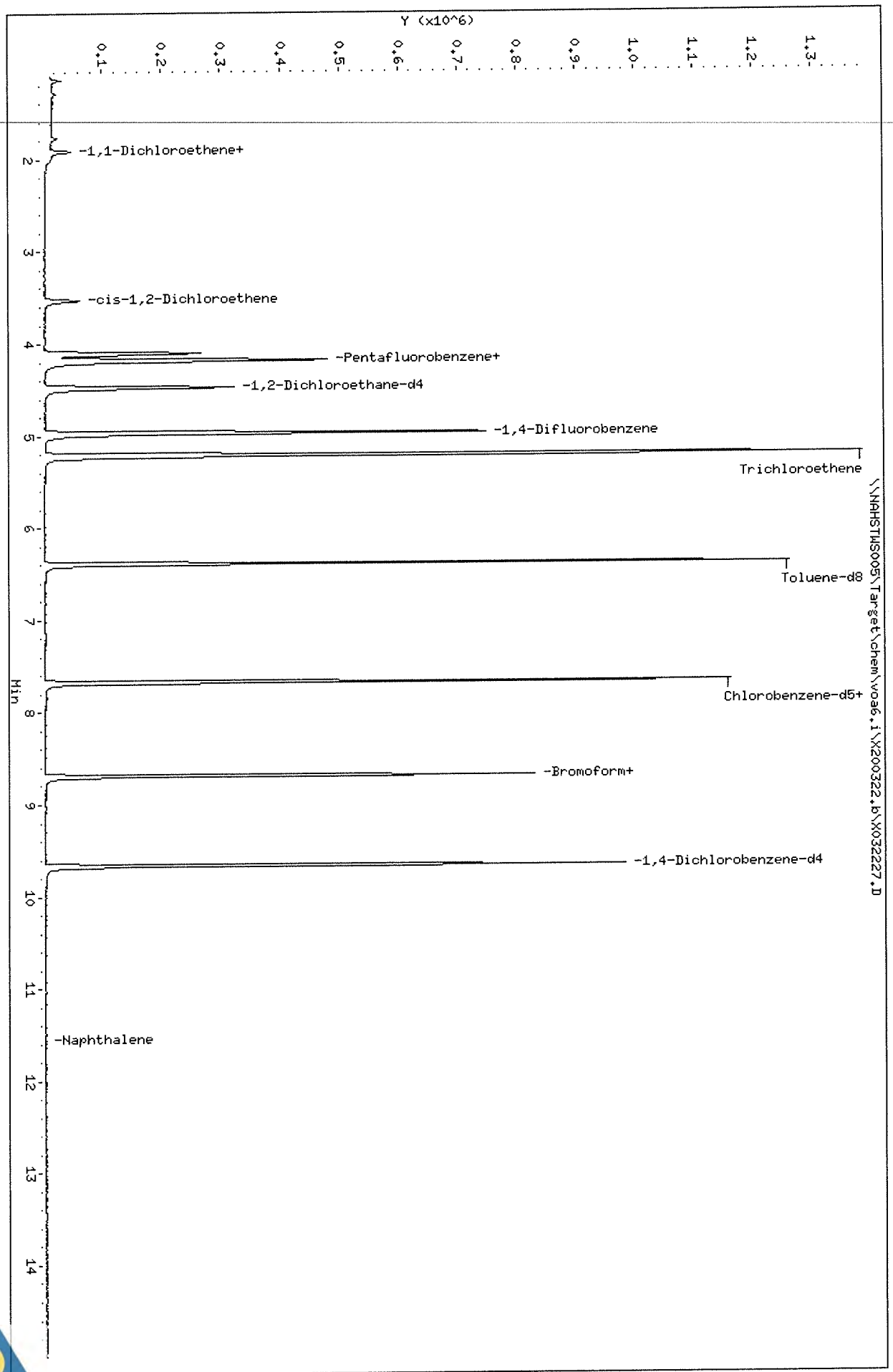
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	404505	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	190106	47.2947	47.29
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	229972	45.2376	45.23
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	598078	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	518651	50.0000	
$ 48 Toluene-d8	98	6.389	6.388	(0.833)	697427	52.4970	52.49
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	241091	48.2931	48.29
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	235687	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	13150	2.13382	2.13(a)
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	2804	0.81806	0.81(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	28285	6.14018	6.14
38 Trichloroethene	130	5.207	5.207	(1.048)	450008	108.557	108.55

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032227.D
Date : 22-MAR-2020 21:56
Client ID: HS20030888-02
Sample Info: HS20030888-02;HS20030888-02;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032227.D

Date : 22-MAR-2020 21:56

Client ID: HS20030888-02

Instrument: voa6.i

Sample Info: HS20030888-02;HS20030888-02;;;

Purge Volume: 5.0

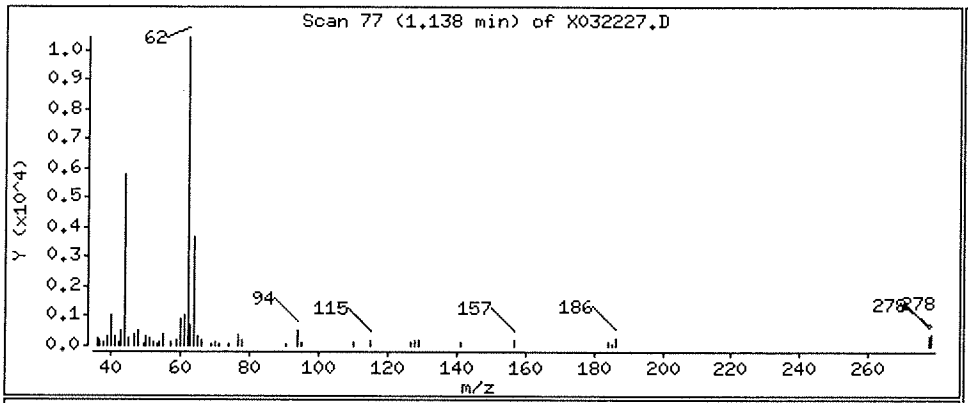
Operator: PC

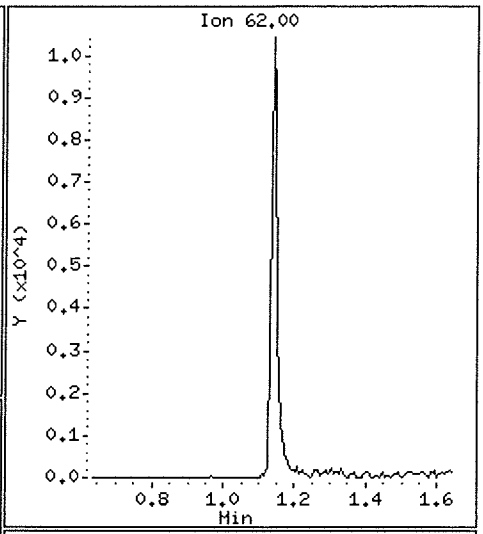
Column phase: DB624

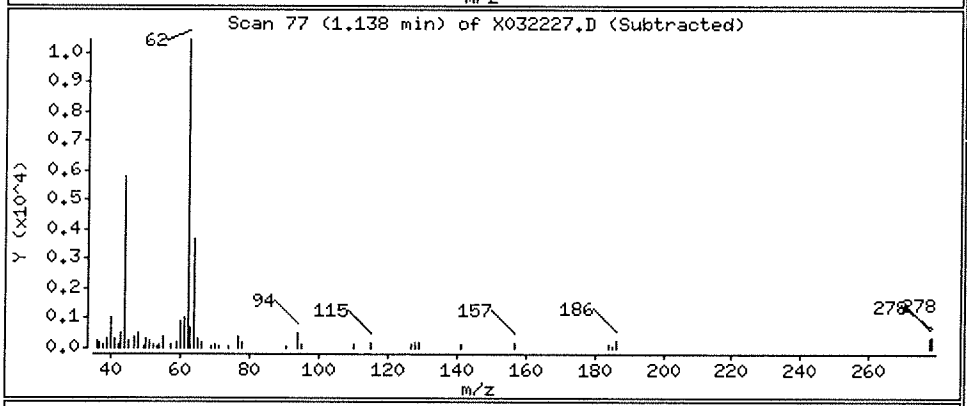
Column diameter: 0.18

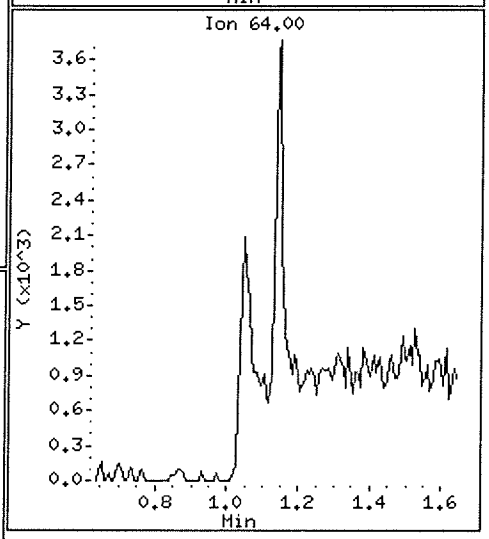
5 Vinyl Chloride

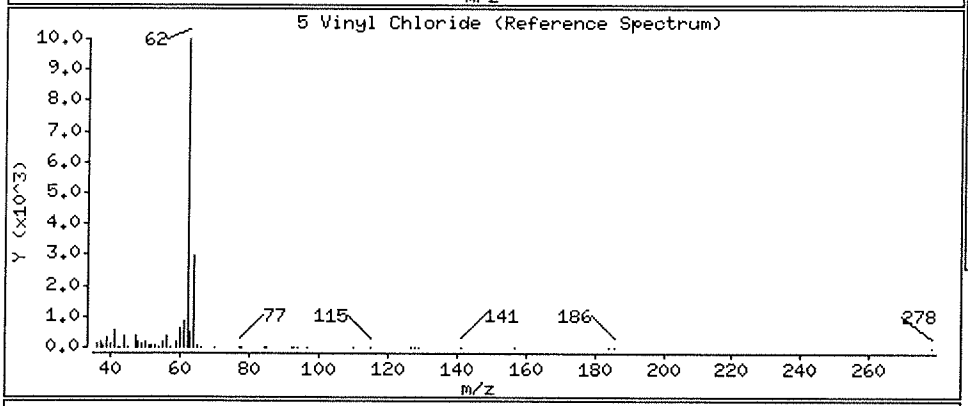
Concentration: 2.13 ug/l

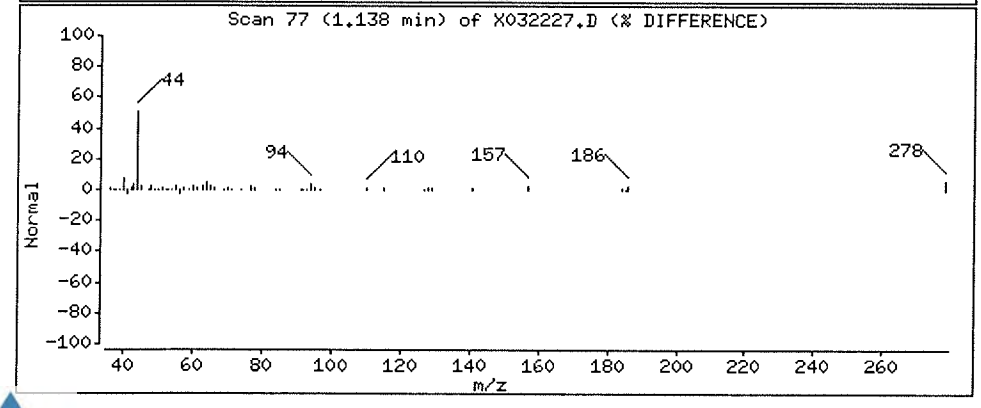












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032227.D

Date : 22-MAR-2020 21:56

Client ID: HS20030888-02

Instrument: voa6.i

Sample Info: HS20030888-02;HS20030888-02;;;

Purge Volume: 5.0

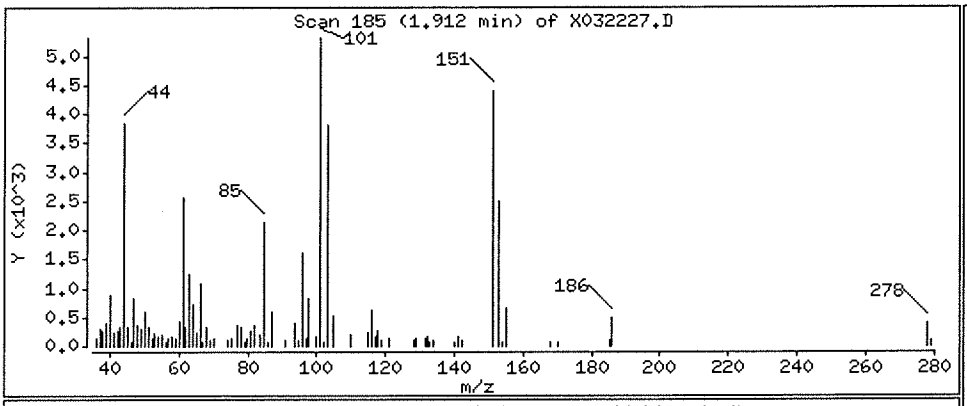
Operator: PC

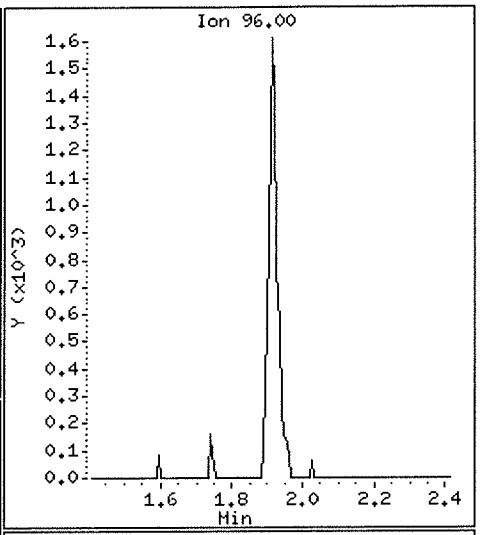
Column phase: DB624

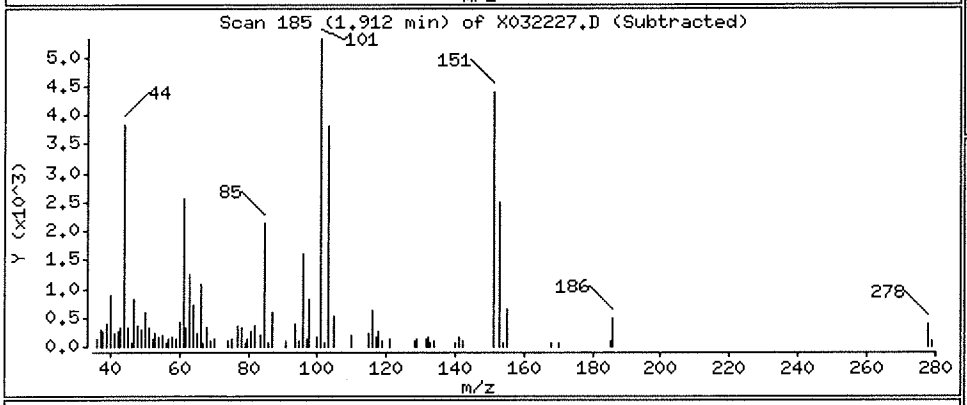
Column diameter: 0.18

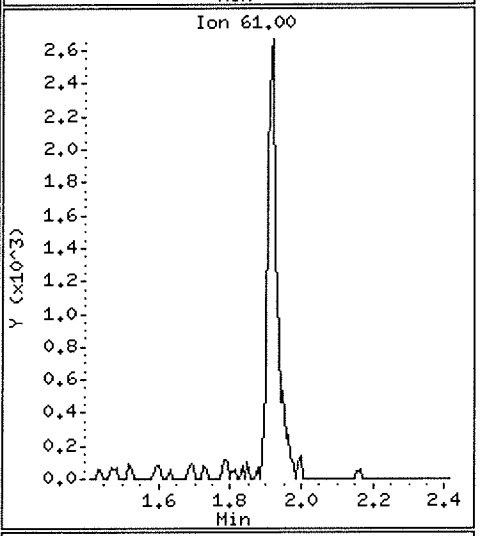
11 1,1-Dichloroethene

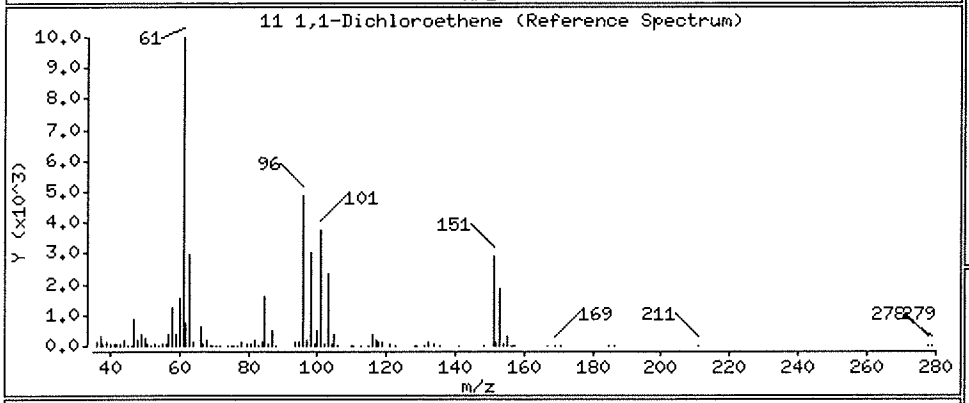
Concentration: 0.81 ug/l

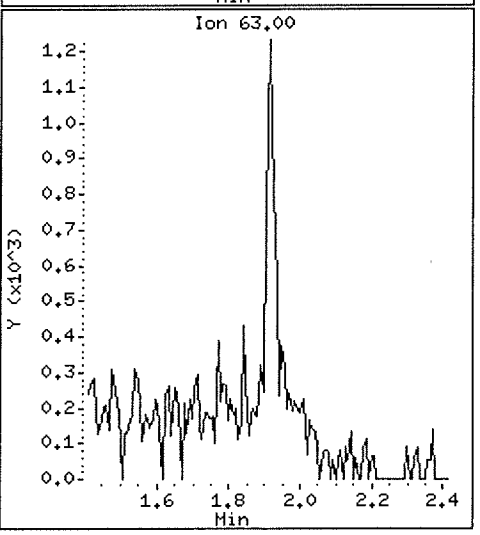


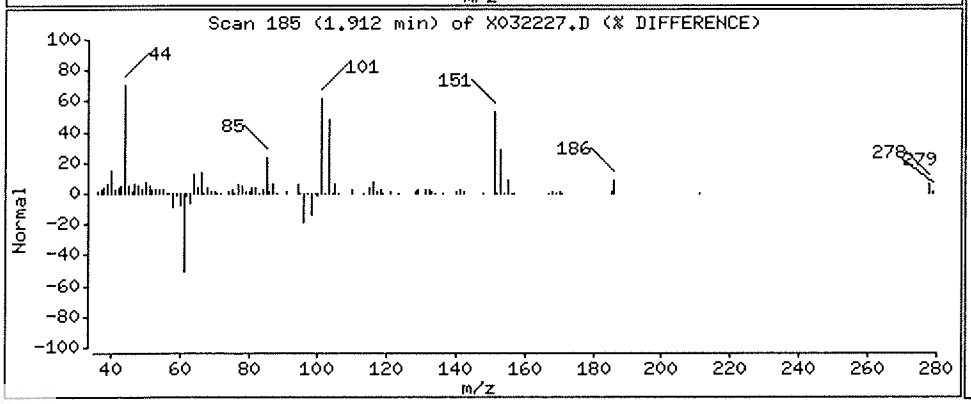












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032227.D

Date : 22-MAR-2020 21:56

Client ID: HS20030888-02

Instrument: voa6.i

Sample Info: HS20030888-02;HS20030888-02;;;

Purge Volume: 5.0

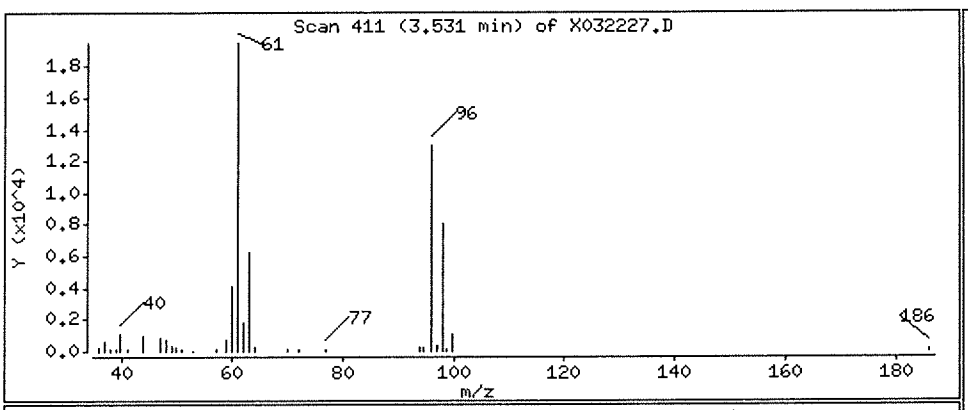
Operator: PC

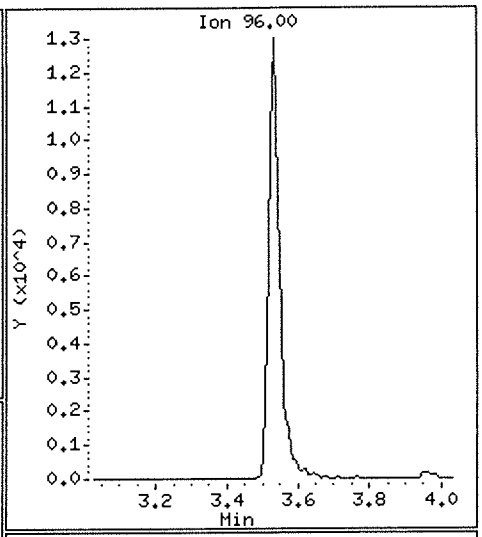
Column phase: DB624

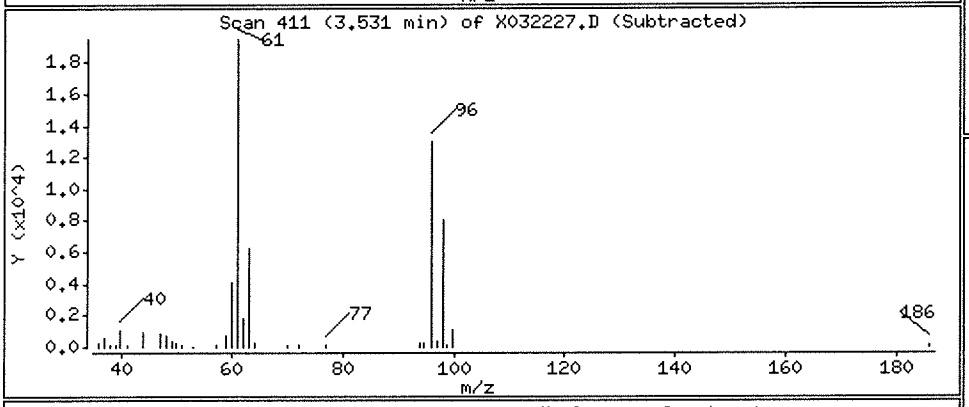
Column diameter: 0.18

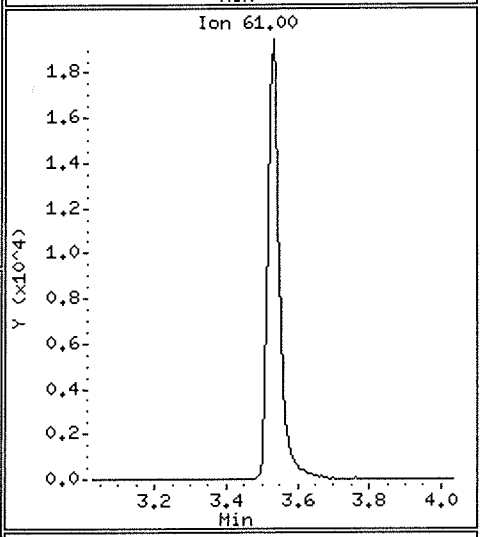
27 cis-1,2-Dichloroethene

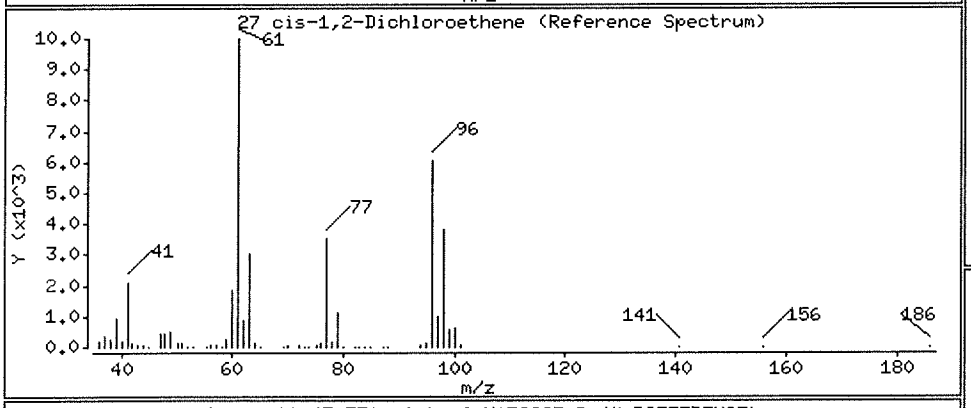
Concentration: 6.14 ug/l

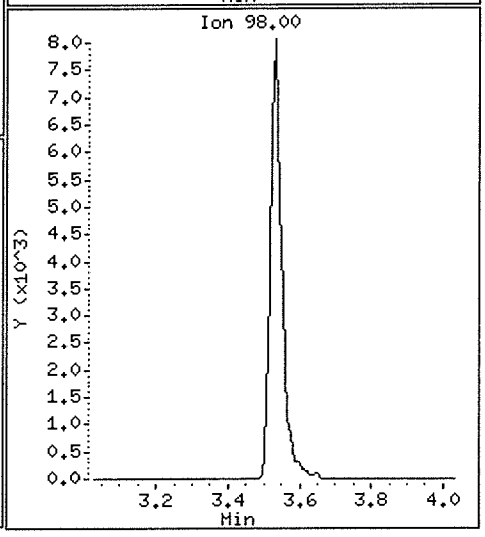


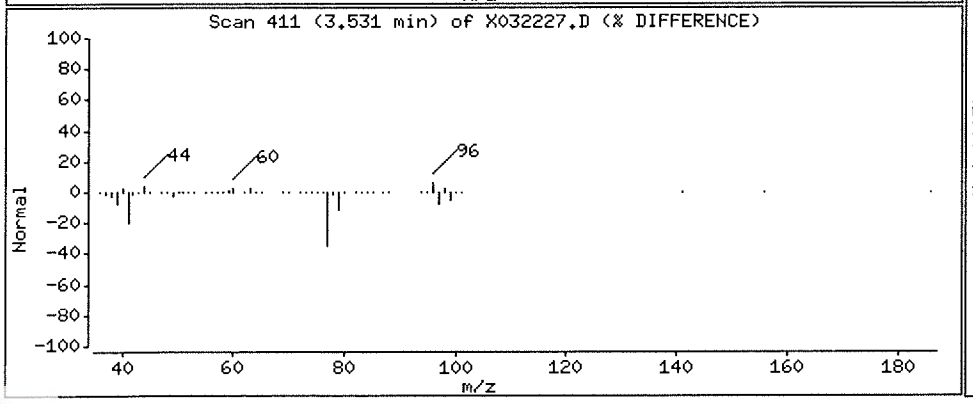












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032227.D

Date : 22-MAR-2020 21:56

Client ID: HS20030888-02

Instrument: voa6.i

Sample Info: HS20030888-02;HS20030888-02;;;

Purge Volume: 5.0

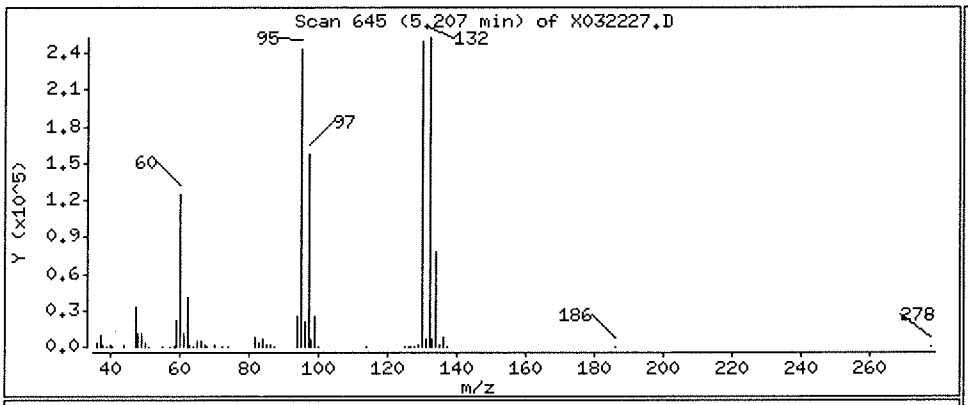
Operator: PC

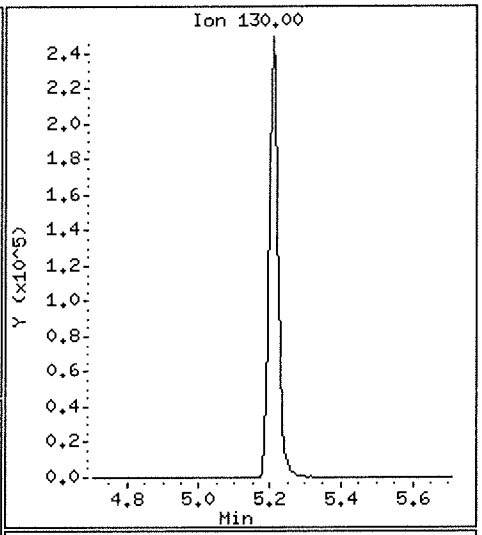
Column phase: DB624

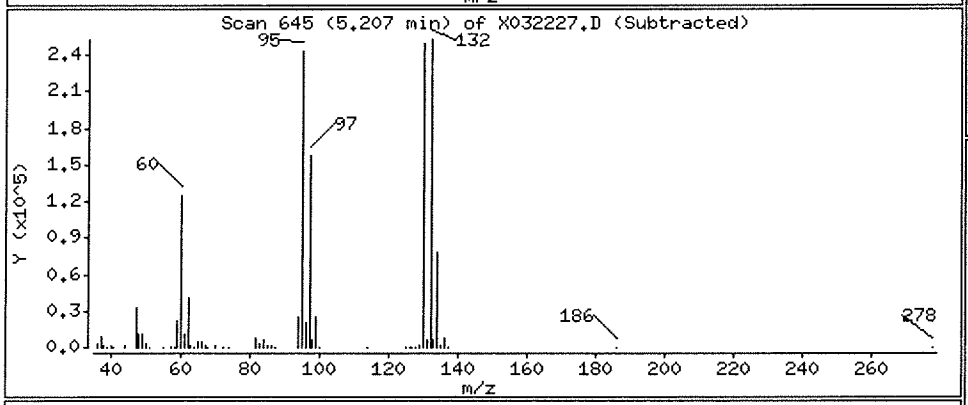
Column diameter: 0.18

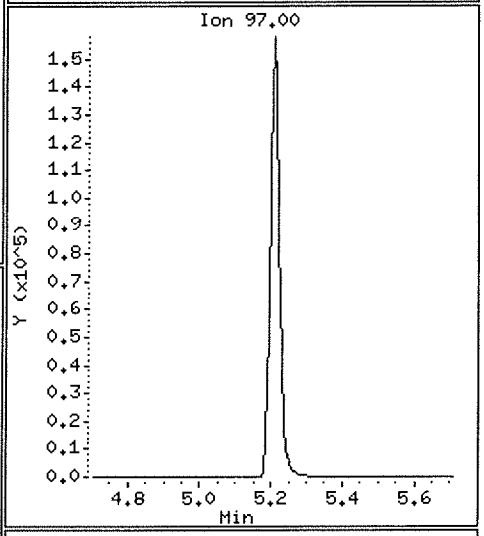
38 Trichloroethene

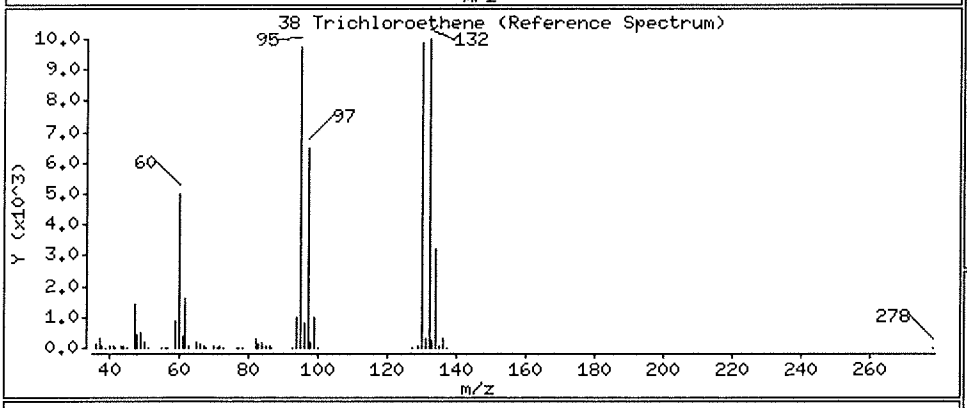
Concentration: 108.55 ug/l

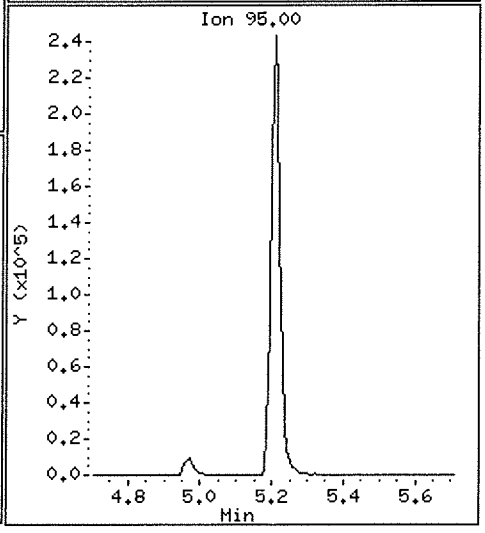


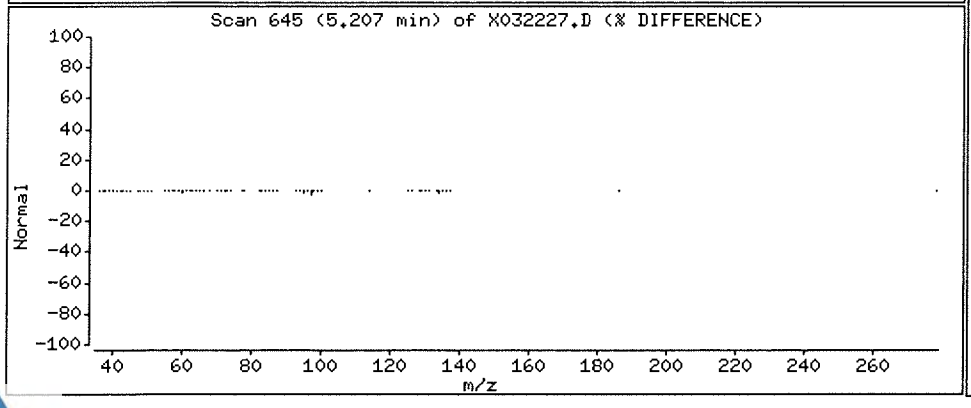












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032228.D Page 1
Report Date: 21-Apr-2020 14:49

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032228.D
Lab Smp Id: HS20030888-04 Client Smp ID: HS20030888-04
Inj Date : 22-MAR-2020 22:21
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-04;HS20030888-04;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 21-Apr-2020 14:48 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 27
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	407476	50.0000	
$ 30 Dibromofluoromethane	113	4.104	4.103	(0.981)	191790	47.3659	47.36
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	234079	45.7114	45.71
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	607894	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	526826	50.0000	
$ 48 Toluene-d8	98	6.389	6.388	(0.833)	705756	52.2994	52.29
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	247275	48.7681	48.76
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	245839	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	2504	0.40336	0.40(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	5630	1.21326	1.21(a)
38 Trichloroethene	130	5.207	5.207	(1.048)	138569	32.8878	32.88

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032228.D

Date : 22-MAR-2020 22:21

Client ID: HS20030888-04

Instrument: voa6.i

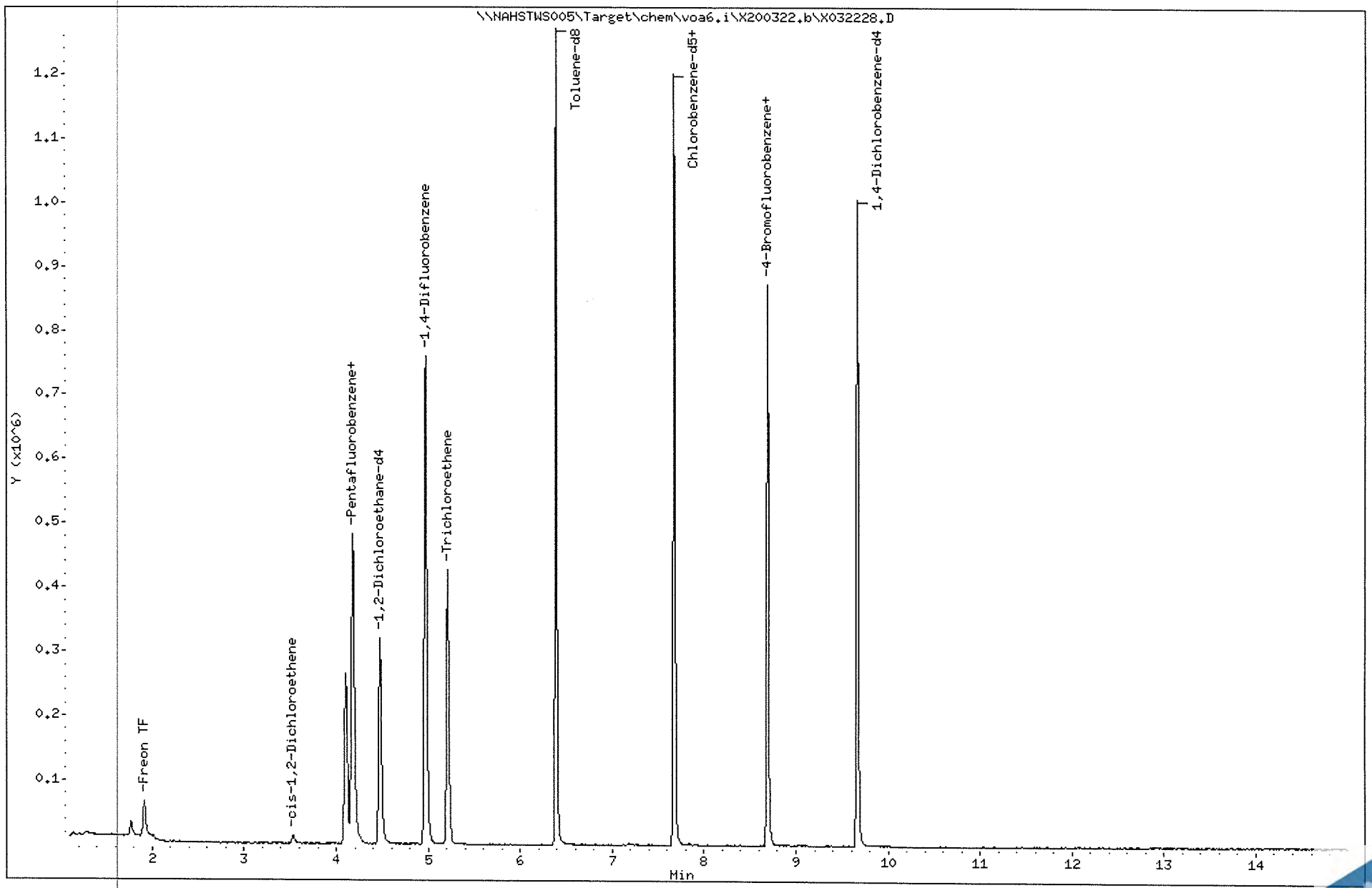
Sample Info: HS20030888-04;HS20030888-04;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032228.D

Date : 22-MAR-2020 22:21

Client ID: HS20030888-04

Instrument: voa6.i

Sample Info: HS20030888-04;HS20030888-04;;;

Purge Volume: 5.0

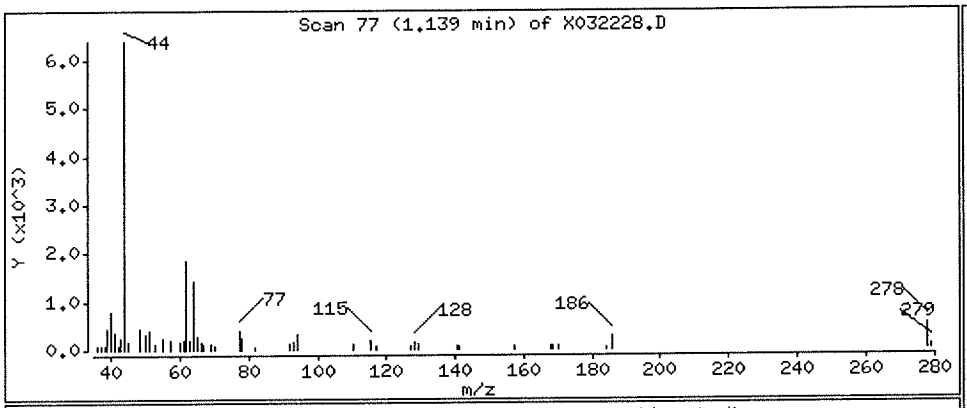
Operator: PC

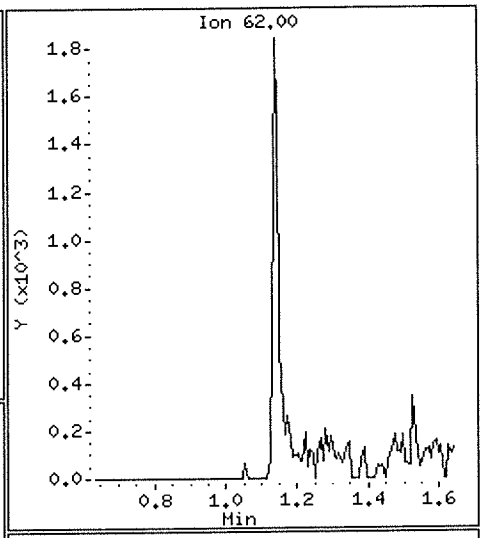
Column phase: DB624

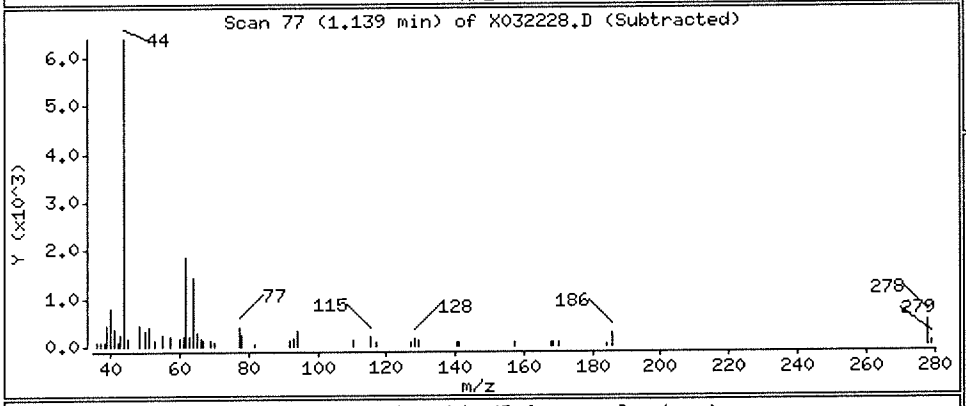
Column diameter: 0.18

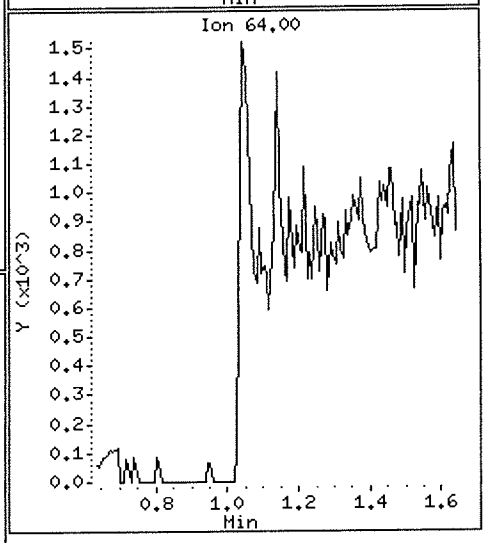
5 Vinyl Chloride

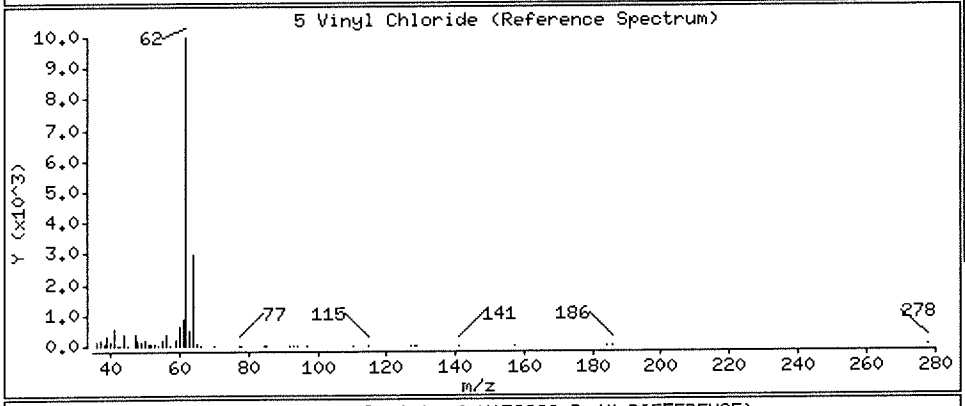
Concentration: 0.40 ug/l

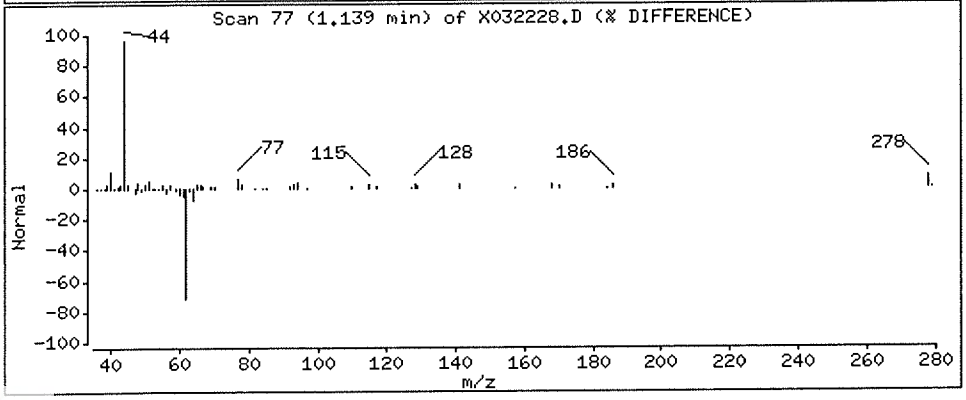












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032228.D

Date : 22-MAR-2020 22:21

Client ID: HS20030888-04

Instrument: voa6.i

Sample Info: HS20030888-04;HS20030888-04;;;

Purge Volume: 5.0

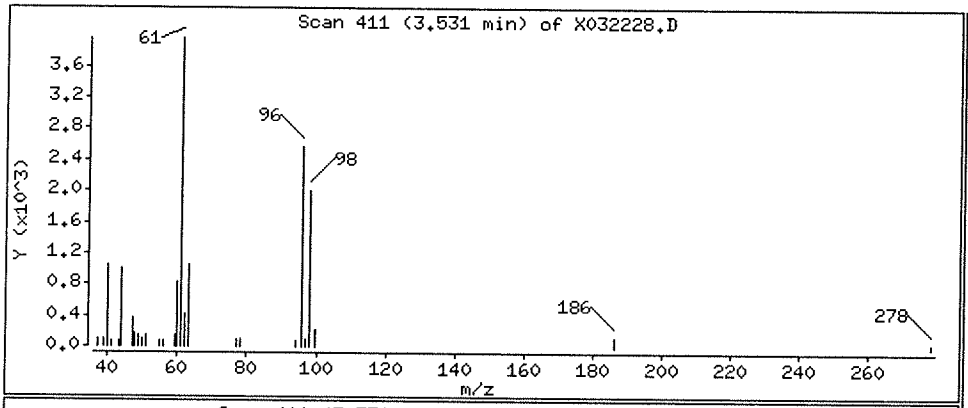
Operator: PC

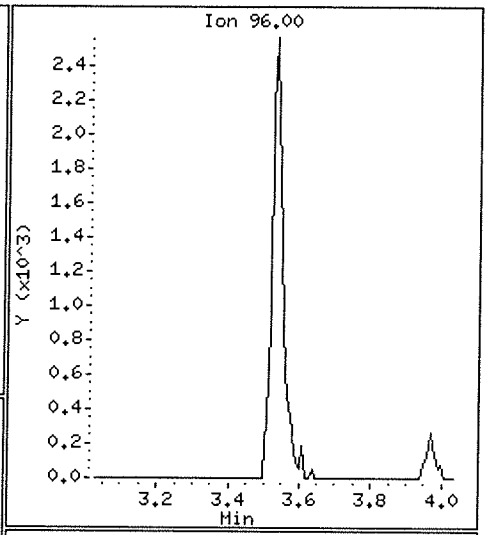
Column phase: DB624

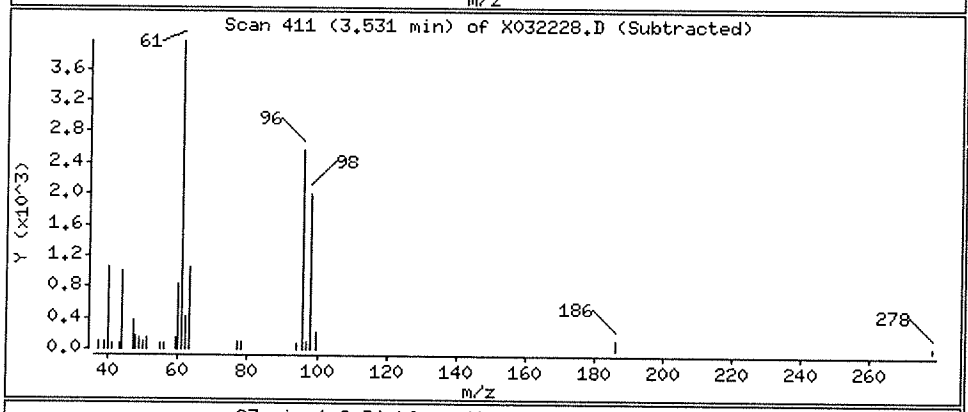
Column diameter: 0.18

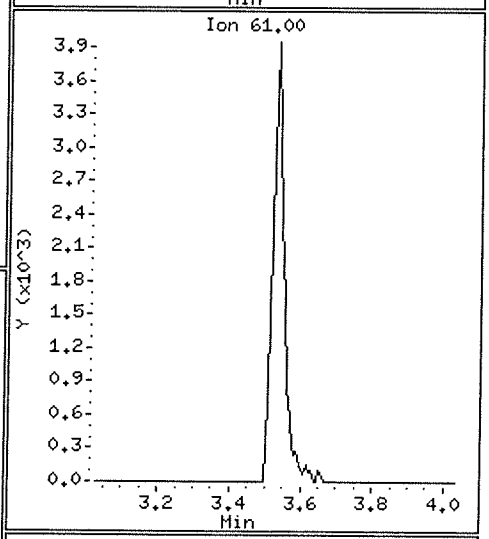
27 cis-1,2-Dichloroethene

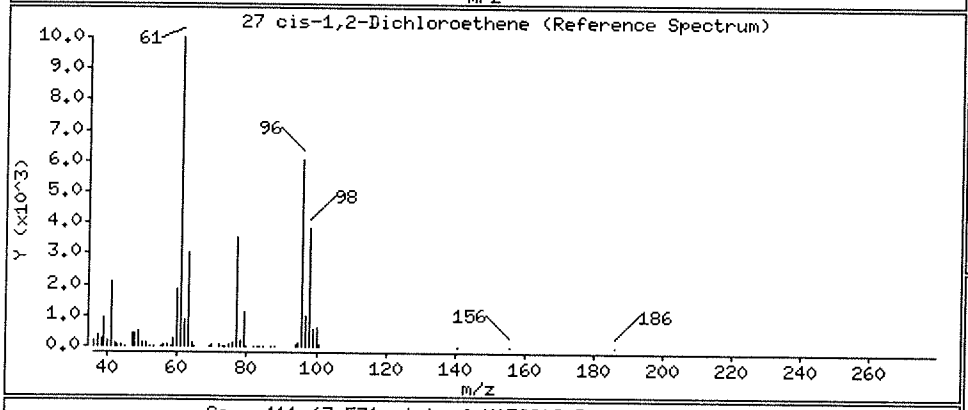
Concentration: 1.21 ug/l

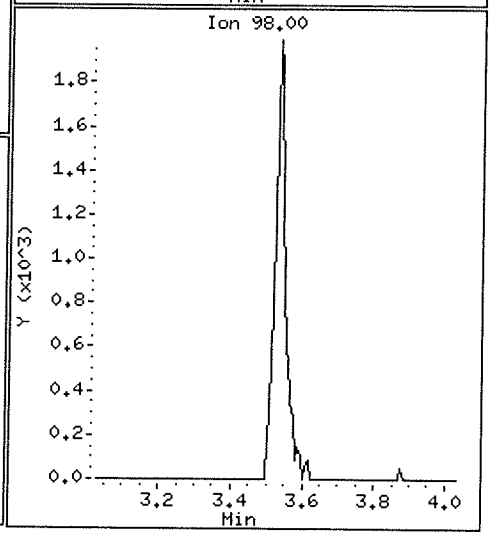


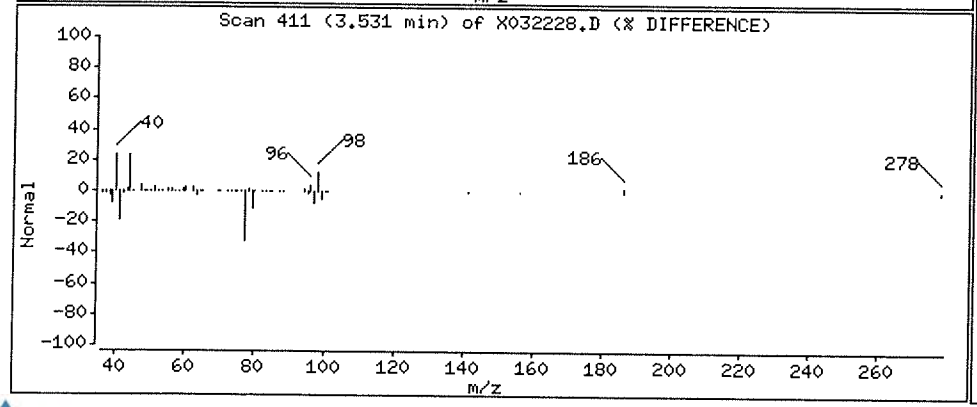












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032228.D

Date : 22-MAR-2020 22:21

Client ID: HS20030888-04

Instrument: voa6.i

Sample Info: HS20030888-04;HS20030888-04;;;

Purge Volume: 5.0

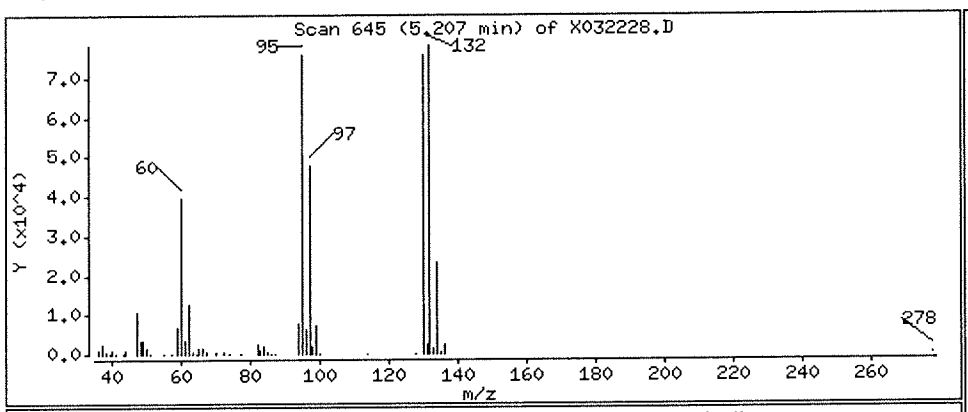
Operator: PC

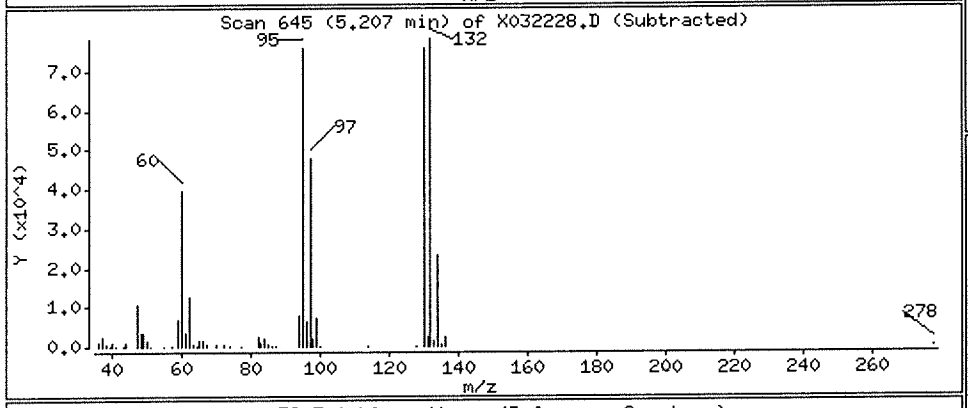
Column phase: DB624

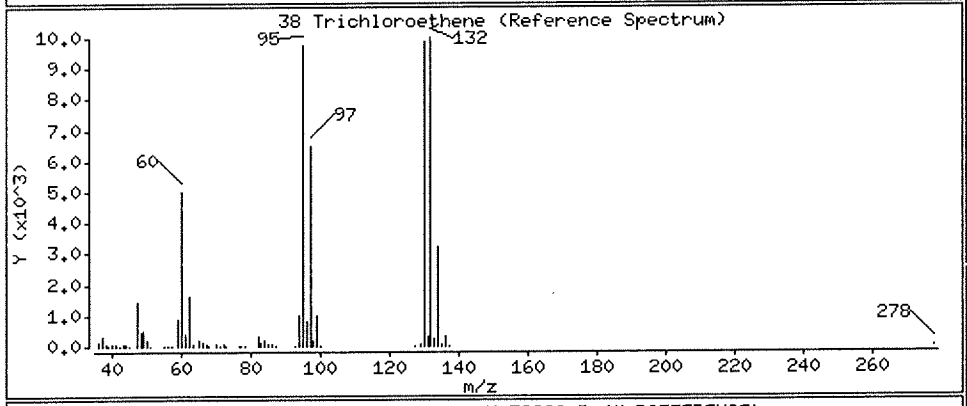
Column diameter: 0.18

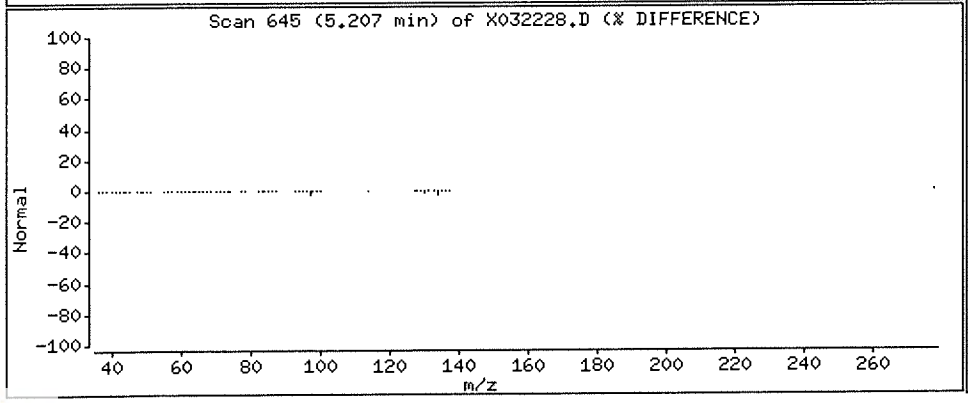
38 Trichloroethene

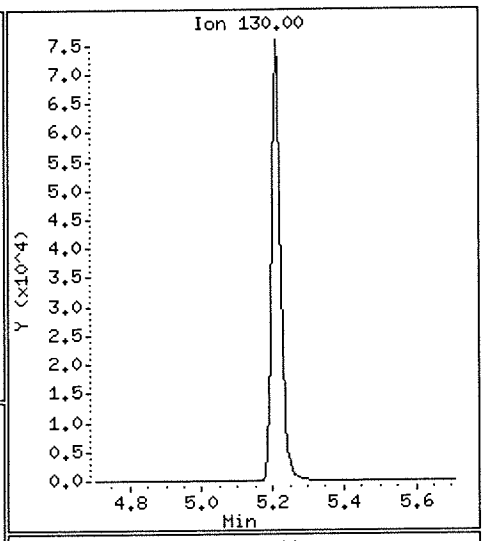
Concentration: 32.88 ug/l

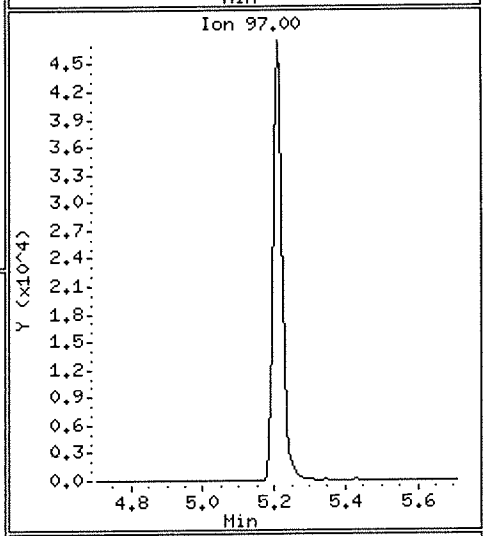


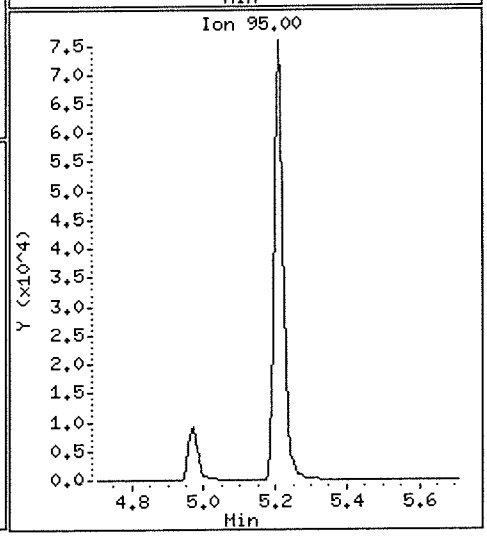












ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032229.D
Lab Smp Id: HS20030888-05 Client Smp ID: HS20030888-05
Inj Date : 22-MAR-2020 22:45
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-05;HS20030888-05;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 21-Apr-2020 14:48 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 28
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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

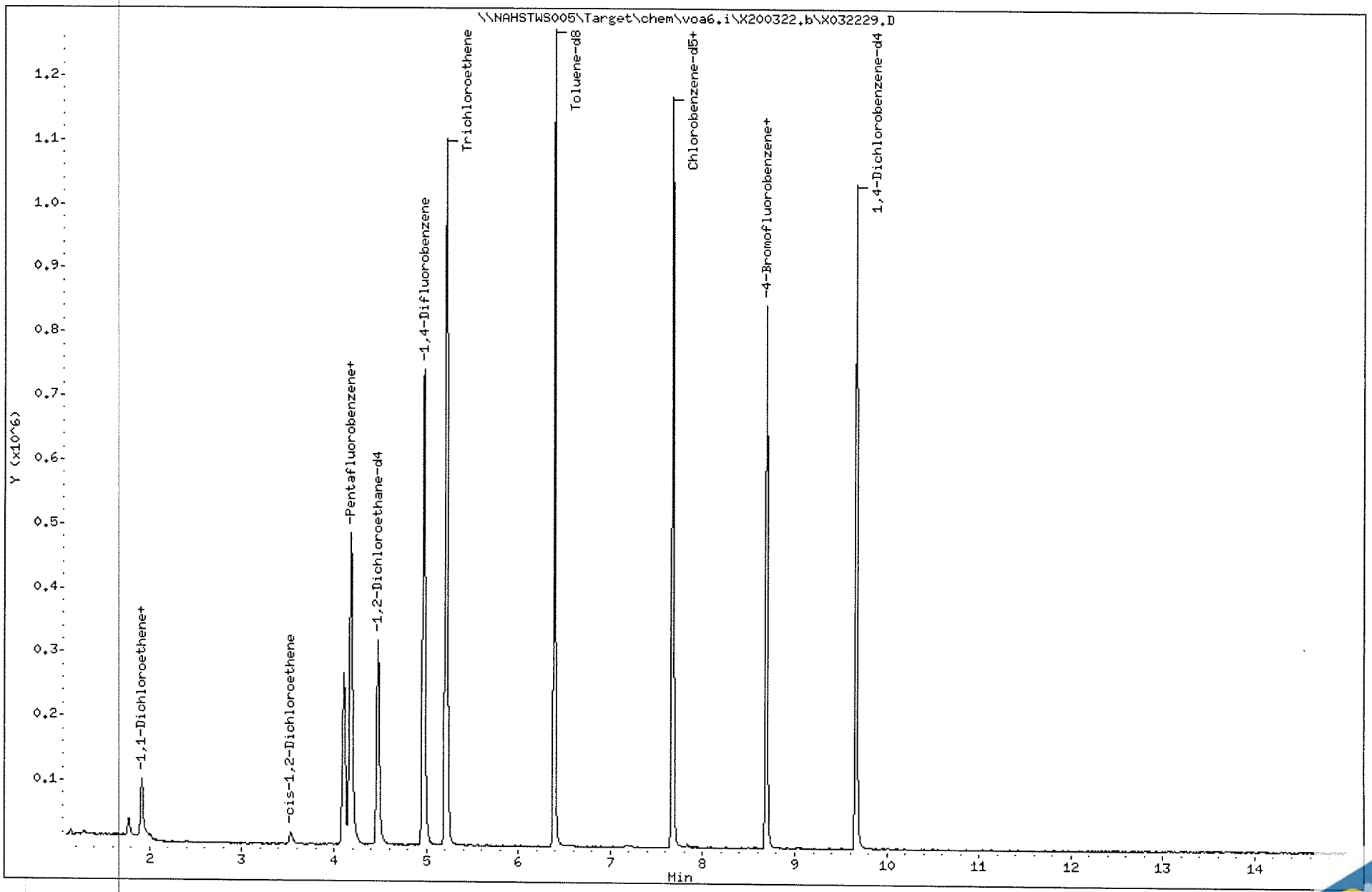
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	401860	50.0000	
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	189670	47.4973	47.49
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	231032	45.7470	45.74
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	600678	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	517820	50.0000	
$	48 Toluene-d8	98	6.388	6.388	(0.833)	701192	52.8657	52.86
$	69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	245561	49.2774	49.27
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	245317	50.0000	
	5 Vinyl Chloride	62	1.138	1.138	(0.272)	5115	0.83546	0.83(a)
	11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	3061	0.89892	0.89(a)
	27 cis-1,2-Dichloroethene	96	3.538	3.530	(0.846)	8711	1.90345	1.90(a)
	38 Trichloroethene	130	5.207	5.207	(1.048)	356739	85.6852	85.68

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032229.D
Date : 22-MAR-2020 22:45
Client ID: HS20030888-05
Sample Info: HS20030888-05;HS20030888-05;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032229.D

Date : 22-MAR-2020 22:45

Client ID: HS20030888-05

Instrument: voa6.i

Sample Info: HS20030888-05;HS20030888-05;;;

Purge Volume: 5.0

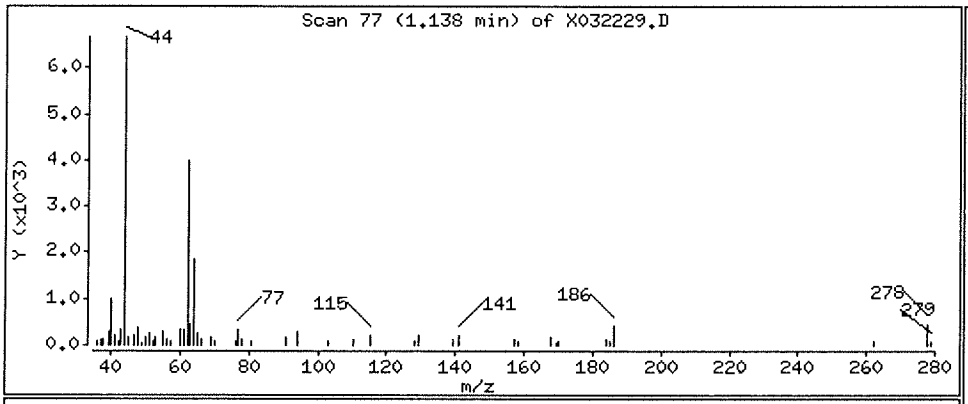
Operator: PC

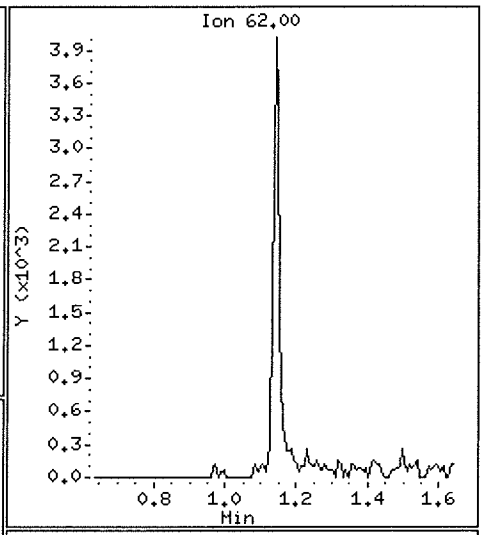
Column phase: DB624

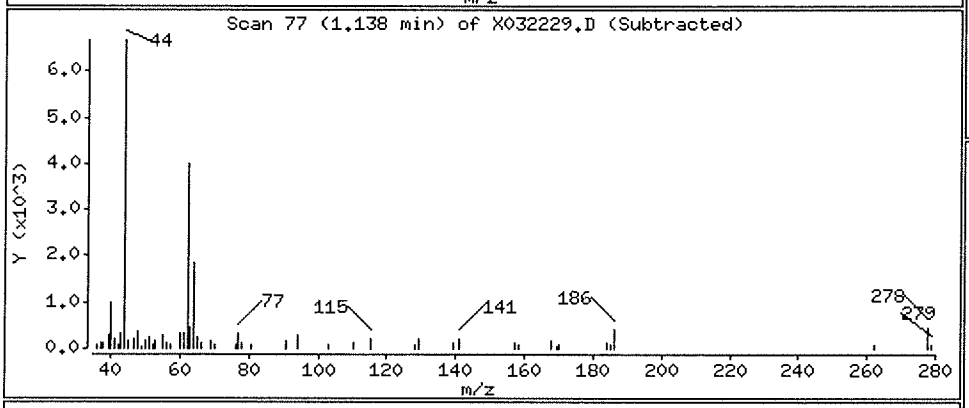
Column diameter: 0.18

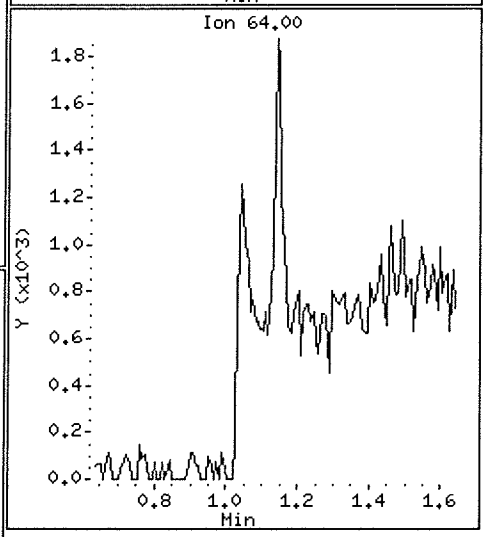
5 Vinyl Chloride

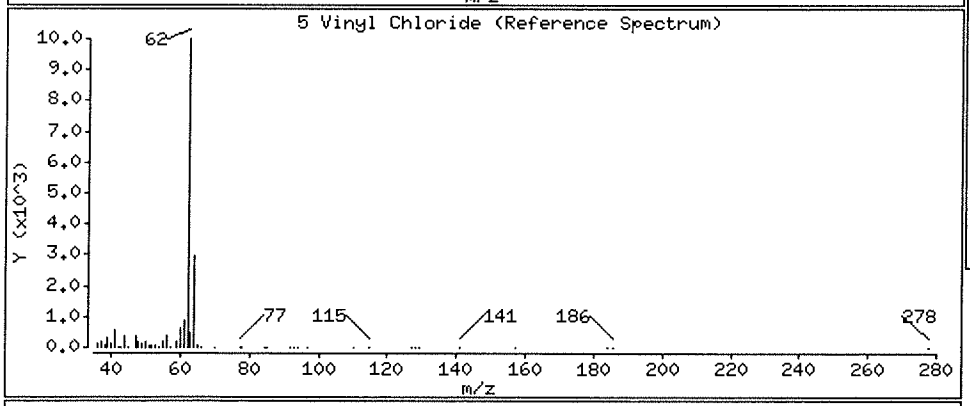
Concentration: 0.83 ug/l

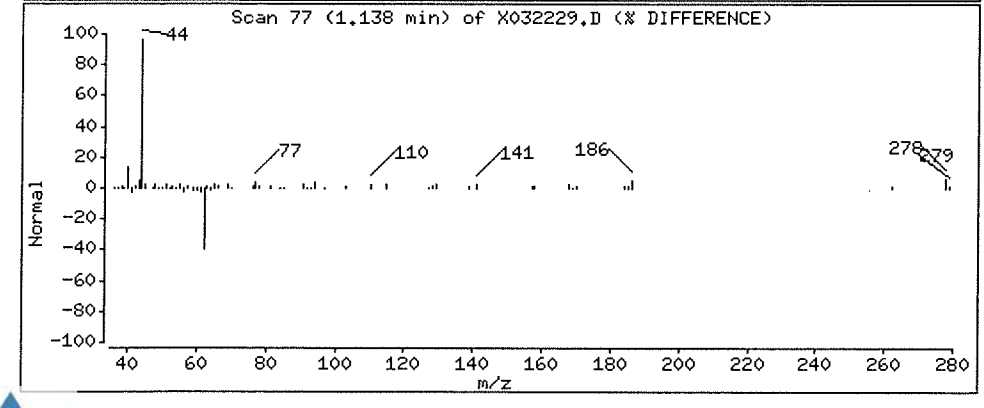












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032229.D

Date : 22-MAR-2020 22:45

Client ID: HS20030888-05

Instrument: voa6.i

Sample Info: HS20030888-05;HS20030888-05;;;

Purge Volume: 5.0

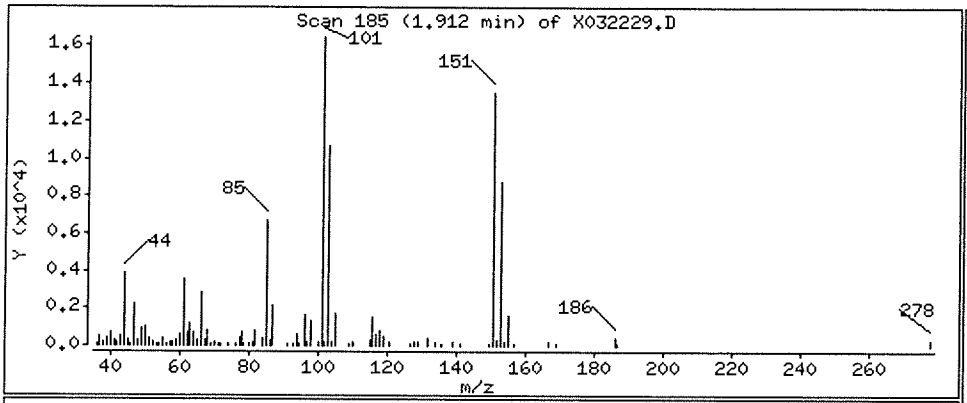
Operator: PC

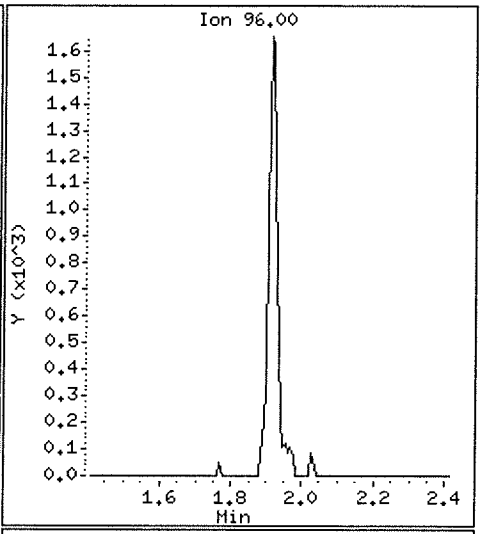
Column phase: DB624

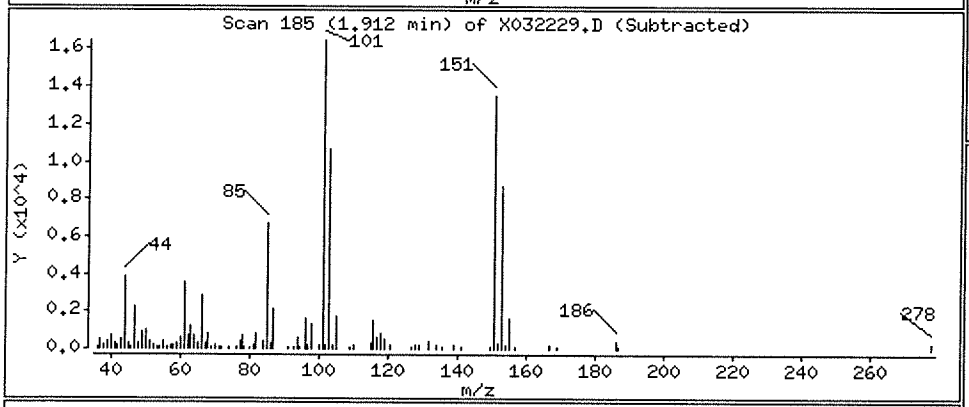
Column diameter: 0.18

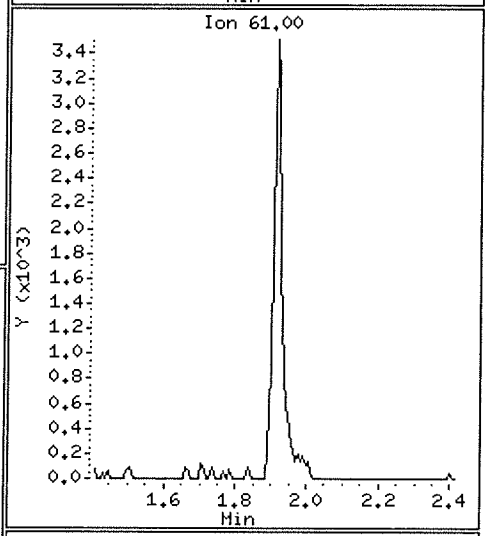
11 1,1-Dichloroethene

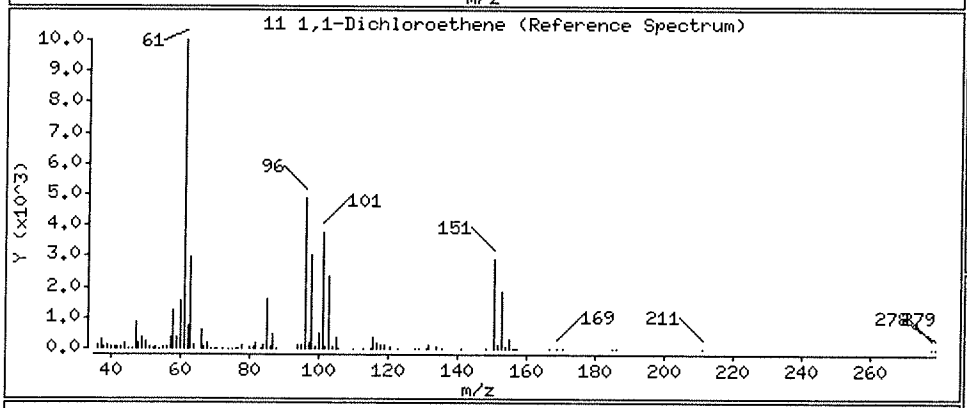
Concentration: 0.89 ug/l

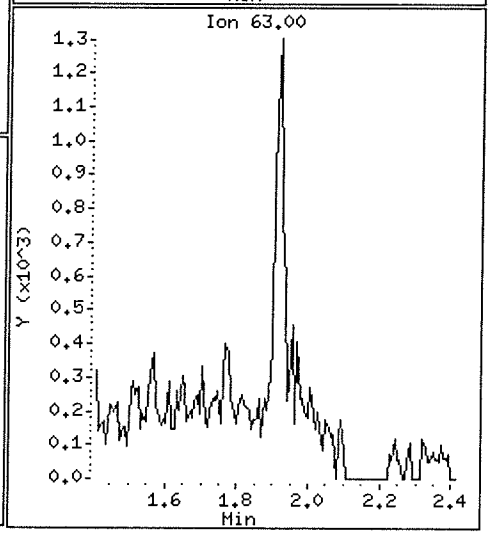


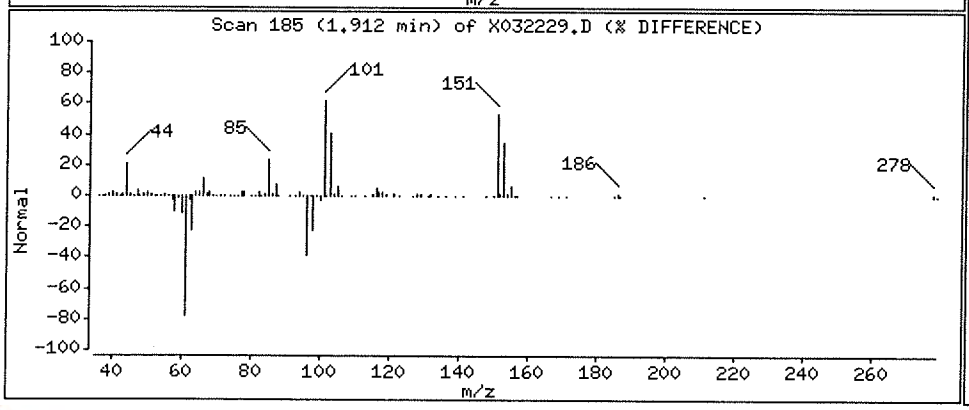












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032229.D

Date : 22-MAR-2020 22:45

Client ID: HS20030888-05

Instrument: voa6.i

Sample Info: HS20030888-05;HS20030888-05;;;

Purge Volume: 5.0

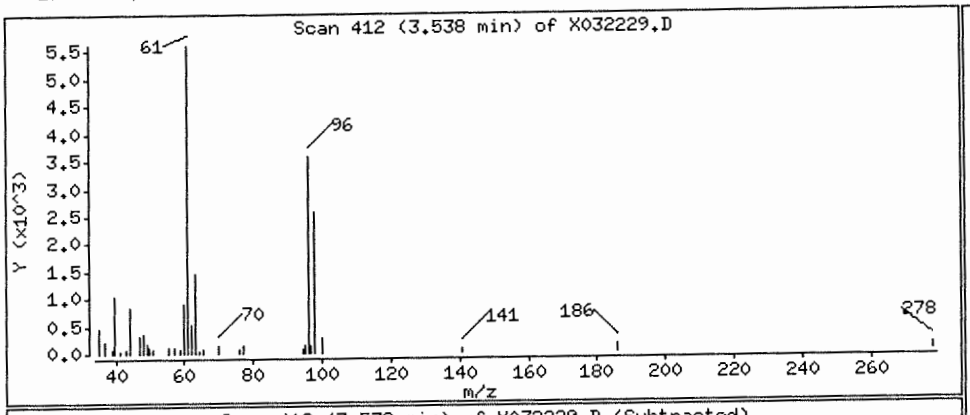
Operator: PC

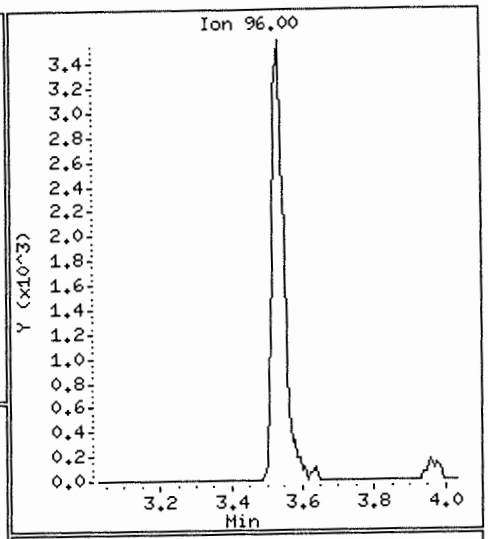
Column phase: DB624

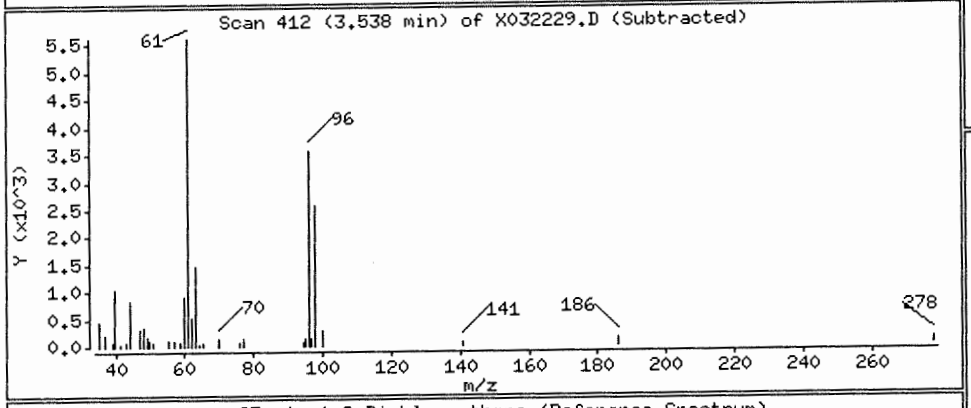
Column diameter: 0.18

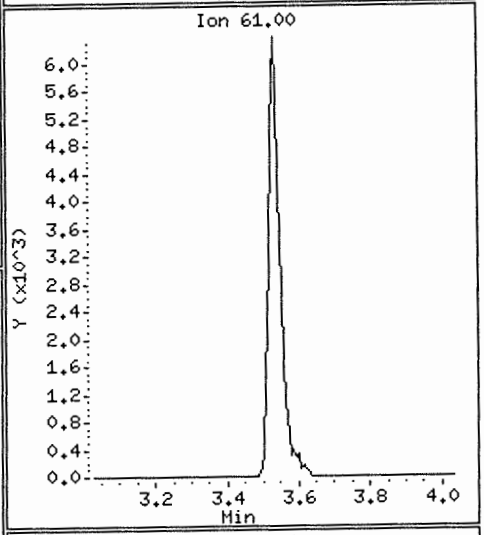
27 cis-1,2-Dichloroethene

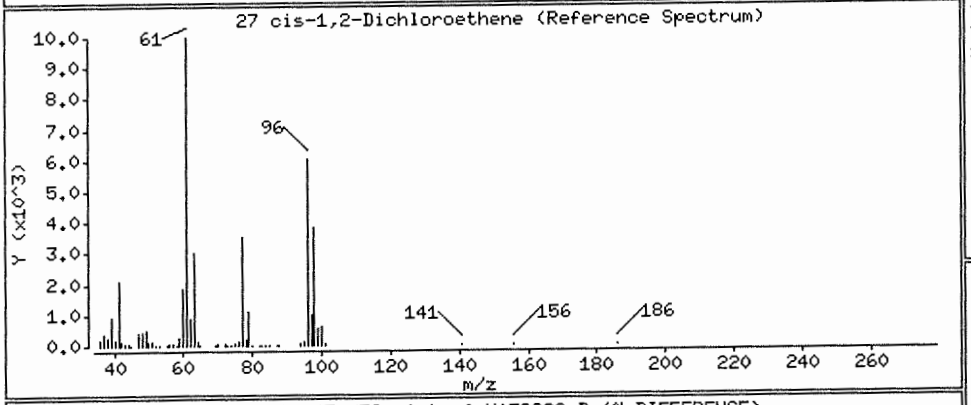
Concentration: 1.90 ug/l

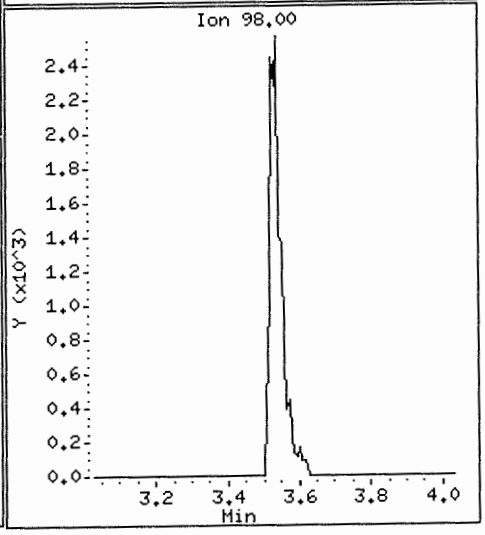


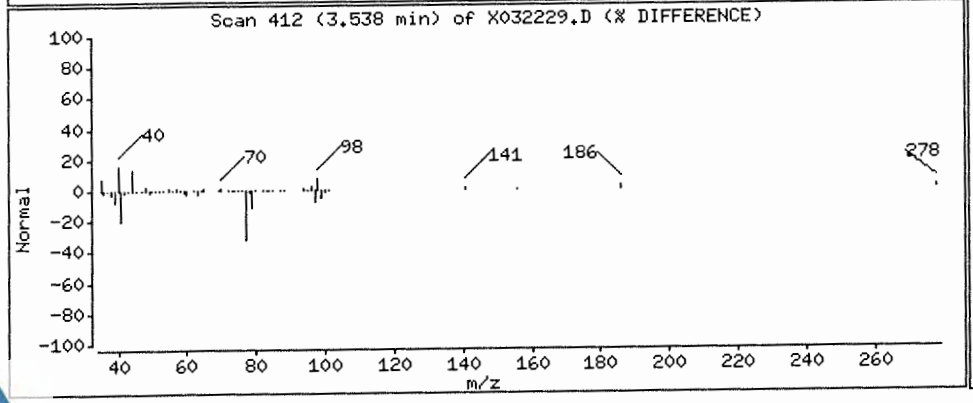












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032229.D

Date : 22-MAR-2020 22:45

Client ID: HS20030888-05

Instrument: voa6.i

Sample Info: HS20030888-05:HS20030888-05:::

Purge Volume: 5.0

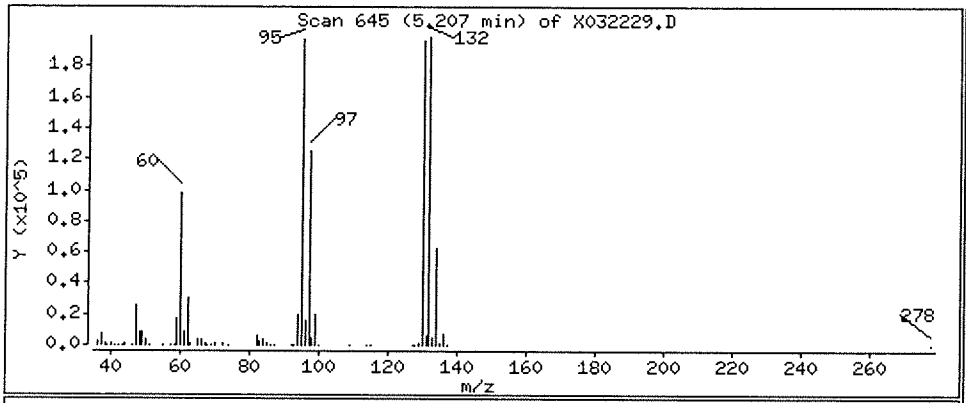
Operator: PC

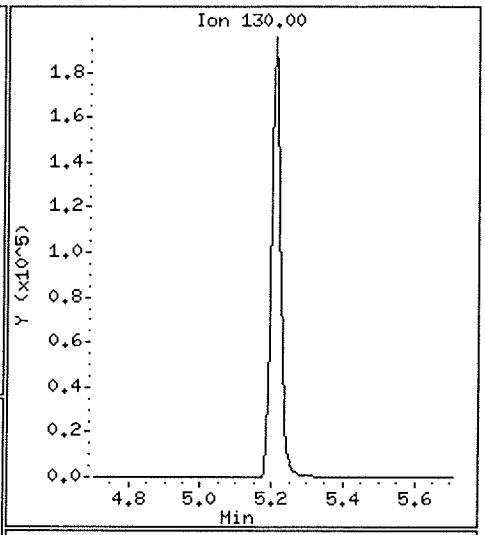
Column phase: DB624

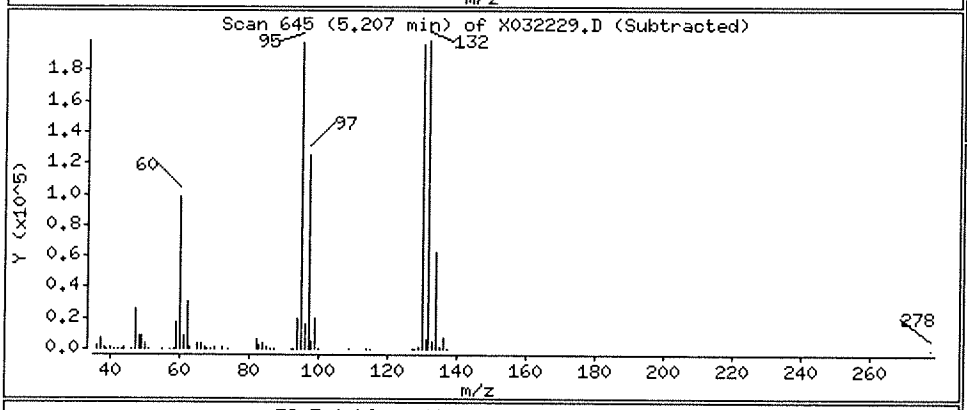
Column diameter: 0.18

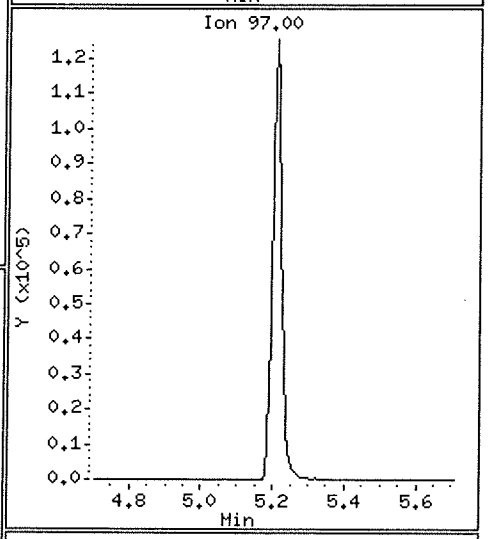
38 Trichloroethene

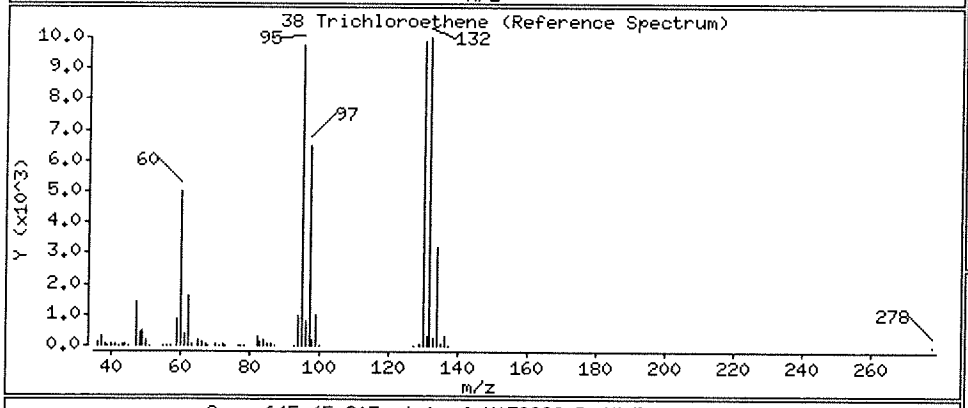
Concentration: 85.68 ug/l

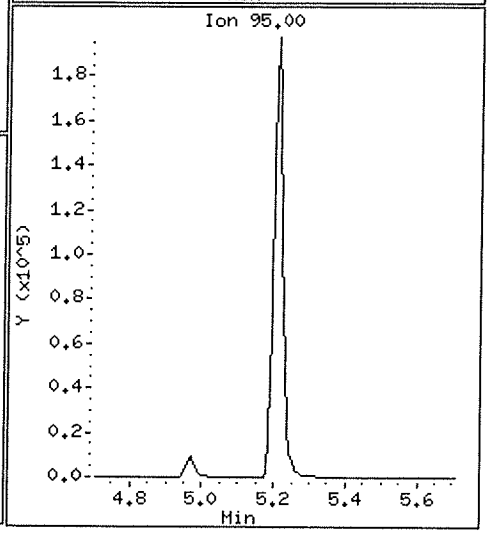


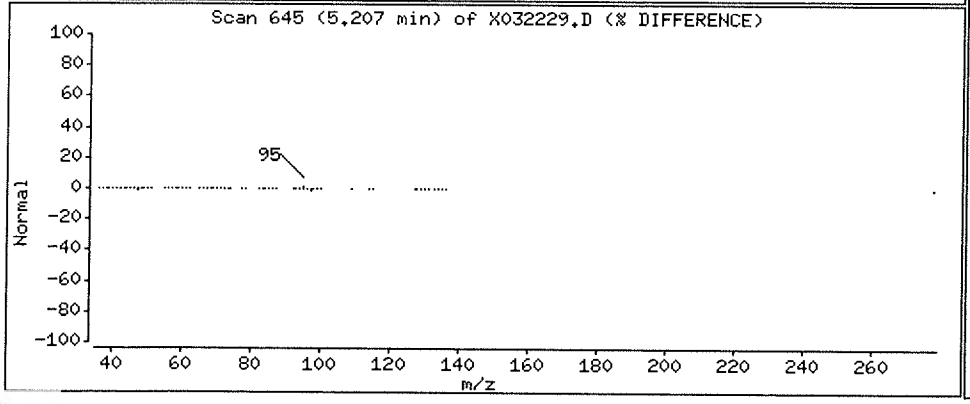












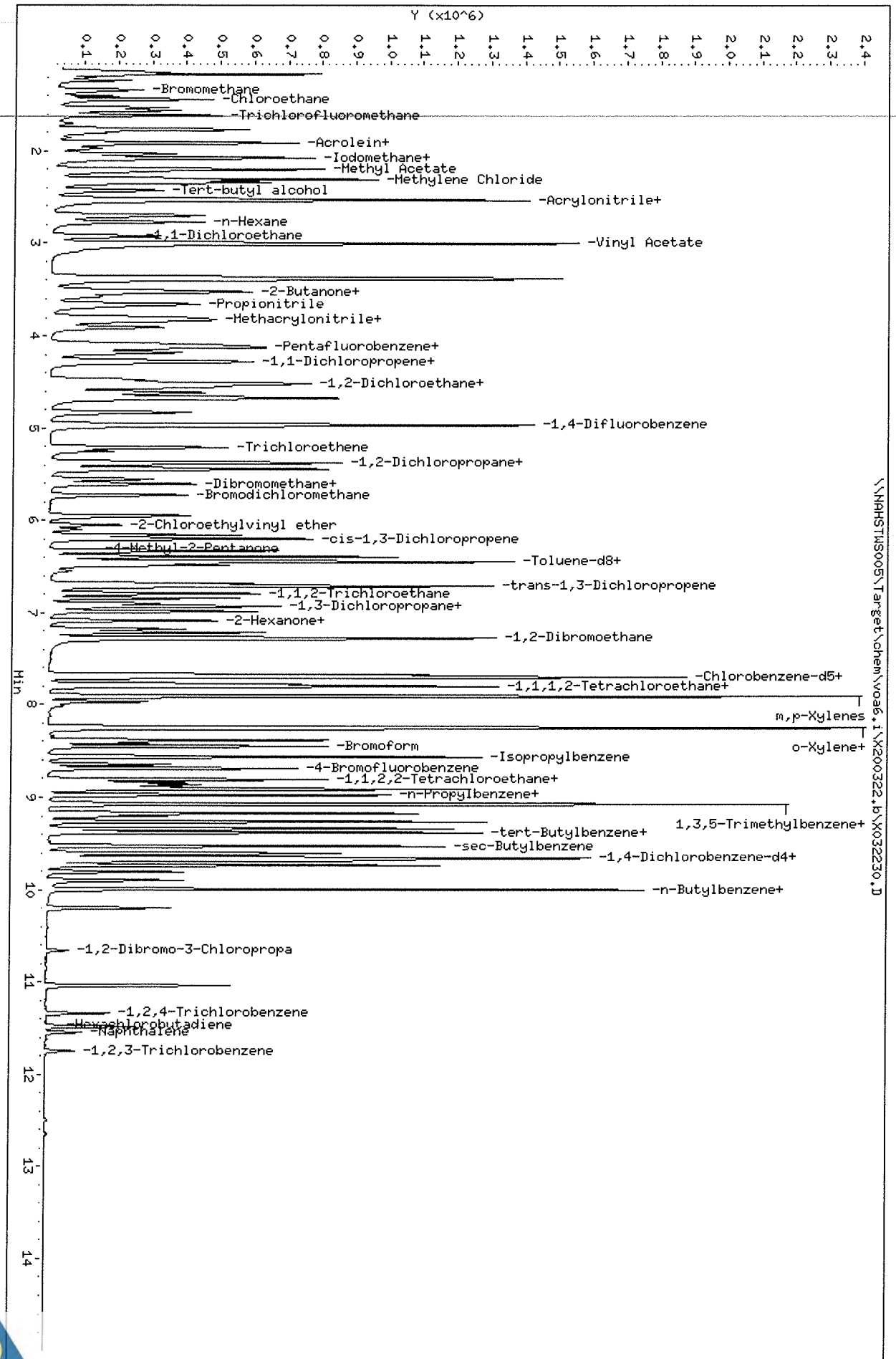
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032230.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 22-MAR-2020 23:09
Operator : PC Inst ID: voa6.i
Smp Info : CCV-END;CCV-END;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200322.b\8260W.m
Meth Date : 21-Apr-2020 14:41 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 29 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	304183	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	158492	50.0000	52.44
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	196043	50.0000	51.30
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	488266	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	450659	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	561632	50.0000	48.64
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	207862	50.0000	47.91
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	210964	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	235070	50.0000	50.72
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	130825	50.0000	50.75
17 Methylene Chloride	84	2.306	2.306	(0.551)	172646	50.0000	53.43
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	179046	50.0000	51.68
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	261444	50.0000	50.68
38 Trichloroethene	130	5.207	5.207	(1.048)	169568	50.0000	50.10
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	125178	50.0000	48.21



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200322.b\X032230.D
Date : 22-MAR-2020 23:09
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

MSVOA06 -Logbook

Batch: 40075
Date: 03-23-2020
Method: 8260
Comments:

Analyst: Presenta Cabascango
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	03-23-2020 11:43 am	1.00	0.00 mL	0.00 mL	X032301.D	Liquid	Y	NA
	Auto find/ purged									
2	CCV	CCV	03-23-2020 12:07 pm	1.00	5.00 mL	0.00 mL	X032302.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
3	CCV	CCV	03-23-2020 12:31 pm	1.00	5.00 mL	0.00 mL	X032303a.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
4	VLCSW-200323	LCS	03-23-2020 12:55 pm	1.00	5.00 mL	0.00 mL	X032304.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
5	VBLKW1-200323	MBLK	03-23-2020 01:43 pm	1.00	5.00 mL	0.00 mL	X032305.D	Liquid	Y	NA
6	VBLKW-200323	MBLK	03-23-2020 02:07 pm	1.00	5.00 mL	0.00 mL	X032306.D	Liquid	Y	NA
7	HS20030586-03	SAMP	03-23-2020 02:31 pm	1.00	5.00 mL	0.00 mL	X032307.D	Liquid	Y	<2
8	HS20030586-05n/r	SAMP	03-23-2020 02:55 pm	1.00	5.00 mL	0.00 mL	X032308.D	Liquid	Y	<2
9	HS20030586-02	SAMP	03-23-2020 03:19 pm	10.00	5.00 mL	0.00 mL	X032309.D	Liquid	Y	<2
10	HS20030521-01	SAMP	03-23-2020 04:08 pm	5.00	5.00 mL	0.00 mL	X032310.D	Liquid	Y	<2
11	HS20030521-02	SAMP	03-23-2020 04:32 pm	5.00	5.00 mL	0.00 mL	X032311.D	Liquid	Y	<2
12	HS20030586-02MS	MS	03-23-2020 04:56 pm	100.0(	5.00 mL	0.00 mL	X032312.D	Liquid	Y	<2
	3.5 uL cal std/40 mL samp									
13	HS20030586-02MSD	MSD	03-23-2020 05:20 pm	100.0(	5.00 mL	0.00 mL	X032313.D	Liquid	Y	<2
	3.5 uL cal std/40 mL samp									
14	HS20030521-01	SAMP	03-23-2020 05:44 pm	50.00	5.00 mL	0.00 mL	X032314.D	Liquid	Y	<2
15	HS20030521-02	SAMP	03-23-2020 06:08 pm	50.00	5.00 mL	0.00 mL	X032315.D	Liquid	Y	<2
16	HS20030586-02	SAMP	03-23-2020 06:32 pm	100.0(	5.00 mL	0.00 mL	X032316.D	Liquid	Y	<2
17	HS20030521-04	SAMP	03-23-2020 06:56 pm	5.00	5.00 mL	0.00 mL	X032317.D	Liquid	Y	<2
18	HS20030521-04	SAMP	03-23-2020 07:20 pm	50.00	5.00 mL	0.00 mL	X032318.D	Liquid	Y	<2
19	HS20030521-05	SAMP	03-23-2020 07:44 pm	10.00	5.00 mL	0.00 mL	X032319.D	Liquid	Y	<2
20	HS20030521-05	SAMP	03-23-2020 08:08 pm	100.0(	5.00 mL	0.00 mL	X032320.D	Liquid	Y	<2
21	HS20030586-01	SAMP	03-23-2020 08:32 pm	5.00	5.00 mL	0.00 mL	X032321.D	Liquid	Y	<2
22	HS20030586-01	SAMP	03-23-2020 08:56 pm	50.00	5.00 mL	0.00 mL	X032322.D	Liquid	Y	<2
23	HS20030586-04	SAMP	03-23-2020 09:20 pm	5.00	5.00 mL	0.00 mL	X032323.D	Liquid	Y	<2
24	HS20030586-04n/r	SAMP	03-23-2020 09:44 pm	50.00	5.00 mL	0.00 mL	X032324.D	Liquid	Y	<2
25	HS20030586-03	SAMP	03-23-2020 10:08 pm	5.00	5.00 mL	0.00 mL	X032325.D	Liquid	Y	<2
26	HS20030586-05	SAMP	03-23-2020 10:32 pm	1.00	5.00 mL	0.00 mL	X032326.D	Liquid	Y	<2
27	HS20030888-09	SAMP	03-23-2020 10:56 pm	1.00	5.00 mL	0.00 mL	X032327.D	Liquid	Y	<2
28	CCV-END	CCV	03-23-2020 11:20 pm	1.00	5.00 mL	0.00 mL	X032328.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
29	BFB	TUNE	03-23-2020 11:44 pm	1.00	0.00 mL	0.00 mL	Y032301.D	Liquid	Y	NA
	Auto fund/ purged									
30	CCV	CCV	03-24-2020 12:08 am	1.00	5.00 mL	0.00 mL	Y032302a.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
31	CCV	CCV	03-24-2020 12:32 am	1.00	5.00 mL	0.00 mL	Y032303.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
32	CCB	SAMP	03-24-2020 12:56 am	1.00	5.00 mL	0.00 mL	Y032304.D	Liquid	Y	NA
33	VLCSW-200323	LCS	03-24-2020 01:20 am	1.00	5.00 mL	0.00 mL	Y032305.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
34	BLANK	SAMP	03-24-2020 01:44 am	1.00	5.00 mL	0.00 mL	Y032306.D	Liquid	Y	NA
35	VBLKW1-200323	MBLK	03-24-2020 02:08 am	1.00	5.00 mL	0.00 mL	Y032307.D	Liquid	Y	NA

MSVOA06 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
36	HS20030770-01	SAMP	03-24-2020 02:32 am	1.00	5.00 mL	0.00 mL	Y032308.D	Liquid	Y	<2
37	HS20030771-01	SAMP	03-24-2020 02:56 am	1.00	5.00 mL	0.00 mL	Y032309.D	Liquid	Y	<2
38	HS20030771-04	SAMP	03-24-2020 03:20 am	1.00	5.00 mL	0.00 mL	Y032310.D	Liquid	Y	<2
39	HS20030888-03	SAMP	03-24-2020 03:44 am	5.00	5.00 mL	0.00 mL	Y032311.D	Liquid	Y	<2
40	HS20030771-04MS	MS	03-24-2020 04:08 am	1.00	5.00 mL	0.00 mL	Y032312.D	Liquid	Y	<2
	3.5 uL cal std/40 mL samp									
41	HS20030771-04MSD	MSD	03-24-2020 04:32 am	1.00	5.00 mL	0.00 mL	Y032313.D	Liquid	Y	<2
	3.5 uL cal std/40 mL samp									
42	HS20030888-03	SAMP	03-24-2020 04:57 am	50.00	5.00 mL	0.00 mL	Y032314.D	Liquid	Y	<2
43	HS20030888-10	SAMP	03-24-2020 05:21 am	5.00	5.00 mL	0.00 mL	Y032315.D	Liquid	Y	<2
44	HS20030888-10n/r	SAMP	03-24-2020 05:45 am	25.00	5.00 mL	0.00 mL	Y032316.D	Liquid	Y	<2
45	HS20030888-08	SAMP	03-24-2020 06:09 am	10.00	5.00 mL	0.00 mL	Y032317.D	Liquid	Y	<2
46	HS20030888-08n/r	SAMP	03-24-2020 06:33 am	100.0(	5.00 mL	0.00 mL	Y032318.D	Liquid	Y	<2
47	HS20030888-06	SAMP	03-24-2020 06:57 am	50.00	5.00 mL	0.00 mL	Y032319.D	Liquid	Y	<2
48	HS20030888-06n/r	SAMP	03-24-2020 07:21 am	500.0(	5.00 mL	0.00 mL	Y032320.D	Liquid	Y	<2
49	HS20030888-07	SAMP	03-24-2020 07:45 am	50.00	5.00 mL	0.00 mL	Y032321.D	Liquid	Y	<2
50	HS20030888-07	SAMP	03-24-2020 08:09 am	500.0(	5.00 mL	0.00 mL	Y032322.D	Liquid	Y	<2
51	HS20030771-02	SAMP	03-24-2020 08:33 am	1.00	5.00 mL	0.00 mL	Y032323.D	Liquid	Y	<2
52	HS20030771-03	SAMP	03-24-2020 08:57 am	1.00	5.00 mL	0.00 mL	Y032324.D	Liquid	Y	<2
53	HS20030771-05	SAMP	03-24-2020 09:21 am	1.00	5.00 mL	0.00 mL	Y032325.D	Liquid	Y	<2
54	HS20030770-02	SAMP	03-24-2020 09:45 am	1.00	5.00 mL	0.00 mL	Y032326.D	Liquid	Y	<2
55	HS20030888-10	SAMP	03-24-2020 10:09 am	1.00	5.00 mL	0.00 mL	Y032327.D	Liquid	Y	<2
56	HS20030770-03	SAMP	03-24-2020 10:33 am	1.00	5.00 mL	0.00 mL	Y032328.D	Liquid	Y	<2
57	HS20030770-04	SAMP	03-24-2020 10:58 am	1.00	5.00 mL	0.00 mL	Y032329.D	Liquid	Y	NA
58	CCV-END	CCV	03-24-2020 11:21 am	1.00	5.00 mL	0.00 mL	Y032330.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									

Chemical	Value
SURR SPK ID	31106-21-06
IS ID	31106-21-06
CAL STD ID	31106-22-01/02
BFB ID	31106-21-06
pH Paper	634-64-11

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

	CLIENT SAMPLE NO.	SMC1 #	SMC2 (DCE)#	SMC3 (TOL)#	OTHER #	TOT OUT
01	VLCSW-200323	104	102	102	101	0
02	VBLKW-200323	96	90	105	97	0
03	HS20030586-0	96	90	105	98	0
04	HS20030586-0	96	90	105	97	0
05	HS20030888-0	94	90	105	99	0
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						

		QC LIMITS
SMC1	= Dibromofluoromethane	(70-130)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(70-130)
SMC3 (TOL)	= Toluene-d8	(70-130)
OTHER	= 4-Bromofluorobenzene	(70-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKW-200323

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

Lab File ID: X032306 Lab Sample ID: VBLKW-200323

Date Analyzed: 03/23/20 Time Analyzed: 1407

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VLCSW-200323	VLCSW-200323	X032304	1255
02	HS20030586-0	HS20030586-02M	X032312	1656
03	HS20030586-0	HS20030586-02M	X032313	1720
04	HS20030888-0	HS20030888-09	X032327	2256
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
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26				
27				
28				
29				
30				

COMMENTS:

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

Lab File ID: X032301 BFB Injection Date: 03/23/20

Instrument ID: VOA6 BFB Injection Time: 1143

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	27.6
75	30.0 - 60.0% of mass 95	50.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.3
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	64.1
175	5.0 - 9.0% of mass 174	4.2 (6.5)1
176	95.0 - 101.0% of mass 174	61.0 (95.1)1
177	5.0 - 9.0% of mass 176	4.6 (7.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	X032302	03/23/20	1207
02	VLCSW-200323	VLCSW-200323	X032304	03/23/20	1255
03	VBLKW-200323	VBLKW-200323	X032306	03/23/20	1407
04	HS20030586-0	HS20030586-02M	X032312	03/23/20	1656
05	HS20030586-0	HS20030586-02M	X032313	03/23/20	1720
06	HS20030888-0	HS20030888-09	X032327	03/23/20	2256
07	CCV-END	CCV-END	X032328	03/23/20	2320
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

Instrument ID: VOA6 Calibration Date: 03/23/20 Time: 1207

Lab File ID: X032302 Init. Calib. Date(s): 03/19/20 03/19/20

Init. Calib. Times: 1134 1533

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Vinyl Chloride	0.7620000	0.7397971	0.7397971	0.1	2.91	20.00	AVRG
Methylene Chloride	51.867268	50.000000	0.5513965	0.1	-3.73	20.00	LINR
1,1-Dichloroethene	0.4240000	0.4204713	0.4204713	0.1	0.83	20.00	AVRG
1,2-Dichloroethane	0.5280000	0.5532098	0.5532098	0.1	-4.77	20.00	AVRG
Trichloroethene	0.3460000	0.3646174	0.3646174	0.2	-5.38	20.00	AVRG
cis-1,2-Dichloroethene	0.5690000	0.5952646	0.5952646	0.1	-4.62	20.00	AVRG
1,1,2-Trichloroethane	0.2880000	0.2942635	0.2942635	0.1	-2.17	20.00	AVRG
Dibromofluoromethane	52.132462	50.000000	0.5179361	0.1	-4.26	20.00	LINR
1,2-Dichloroethane-d4	50.726584	50.000000	0.6372701	0.1	-1.45	20.00	LINR
Toluene-d8	51.603009	50.000000	1.3218266	0.1	-3.21	20.00	LINR
4-Bromofluorobenzene	50.631053	50.000000	0.4871185	0.1	-1.26	20.00	LINR

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

Instrument ID: VOA6 Calibration Date: 03/23/20 Time: 2320

Lab File ID: X032328 Init. Calib. Date(s): 03/19/20 03/19/20

Init. Calib. Times: 1134 1533

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Vinyl Chloride	0.7620000	0.7622585	0.7622585	0.1	-0.03	20.00	AVRG
Methylene Chloride	52.935398	50.000000	0.5624503	0.1	-5.87	20.00	LINR
1,1-Dichloroethene	0.4240000	0.4271561	0.4271561	0.1	-0.74	20.00	AVRG
1,2-Dichloroethane	0.5280000	0.5337786	0.5337786	0.1	-1.09	20.00	AVRG
Trichloroethene	0.3460000	0.3525027	0.3525027	0.2	-1.88	20.00	AVRG
cis-1,2-Dichloroethene	0.5690000	0.5920910	0.5920910	0.1	-4.06	20.00	AVRG
1,1,2-Trichloroethane	0.2880000	0.2837069	0.2837069	0.1	1.49	20.00	AVRG
Dibromofluoromethane	53.441616	50.000000	0.5309157	0.1	-6.88	20.00	LINR
1,2-Dichloroethane-d4	51.176926	50.000000	0.6429101	0.1	-2.35	20.00	LINR
Toluene-d8	51.388854	50.000000	1.3163489	0.1	-2.78	20.00	LINR
4-Bromofluorobenzene	49.965036	50.000000	0.4807726	0.1	0.07	20.00	LINR

FORM VII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

outputFile debug: C:\tp\envision\results\HS20030888/08a.01 Lab Code: AL

Lab File ID (Standard): X032302 Date Analyzed: 03/23/20

Instrument ID: VOA6 Time Analyzed: 1207

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	293152	4.18	452680	4.97	414975	7.67
	UPPER LIMIT	586304	4.68	905360	5.47	829950	8.17
	LOWER LIMIT	146576	3.68	226340	4.47	207488	7.17
	CLIENT SAMPLE NO.						
01	VLCSW-200323	306363	4.18	481893	4.97	442313	7.67
02	VBLKW-200323	399376	4.18	595091	4.97	519151	7.67
03	HS20030586-0	365130	4.18	543656	4.97	473079	7.67
04	HS20030586-0	371324	4.18	556450	4.97	481603	7.67
05	HS20030888-0	378023	4.18	565867	4.97	479514	7.67
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

outputFile debug: C:\tp\envision\results\HS20030888/08a.01 Lab Code: AL

Lab File ID (Standard): X032302 Date Analyzed: 03/23/20

Instrument ID: VOA6 Time Analyzed: 1207

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS4 (DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	203468	9.67				
	UPPER LIMIT	406936	10.17				
	LOWER LIMIT	101734	9.17				
	CLIENT SAMPLE NO.						
01	VLCSW-200323	213353	9.66				
02	VBLKW-200323	244650	9.67				
03	HS20030586-0	228976	9.67				
04	HS20030586-0	230428	9.67				
05	HS20030888-0	237835	9.66				
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032301.D

Date : 23-MAR-2020 11:43

Client ID: BFB

Instrument: voa6.i

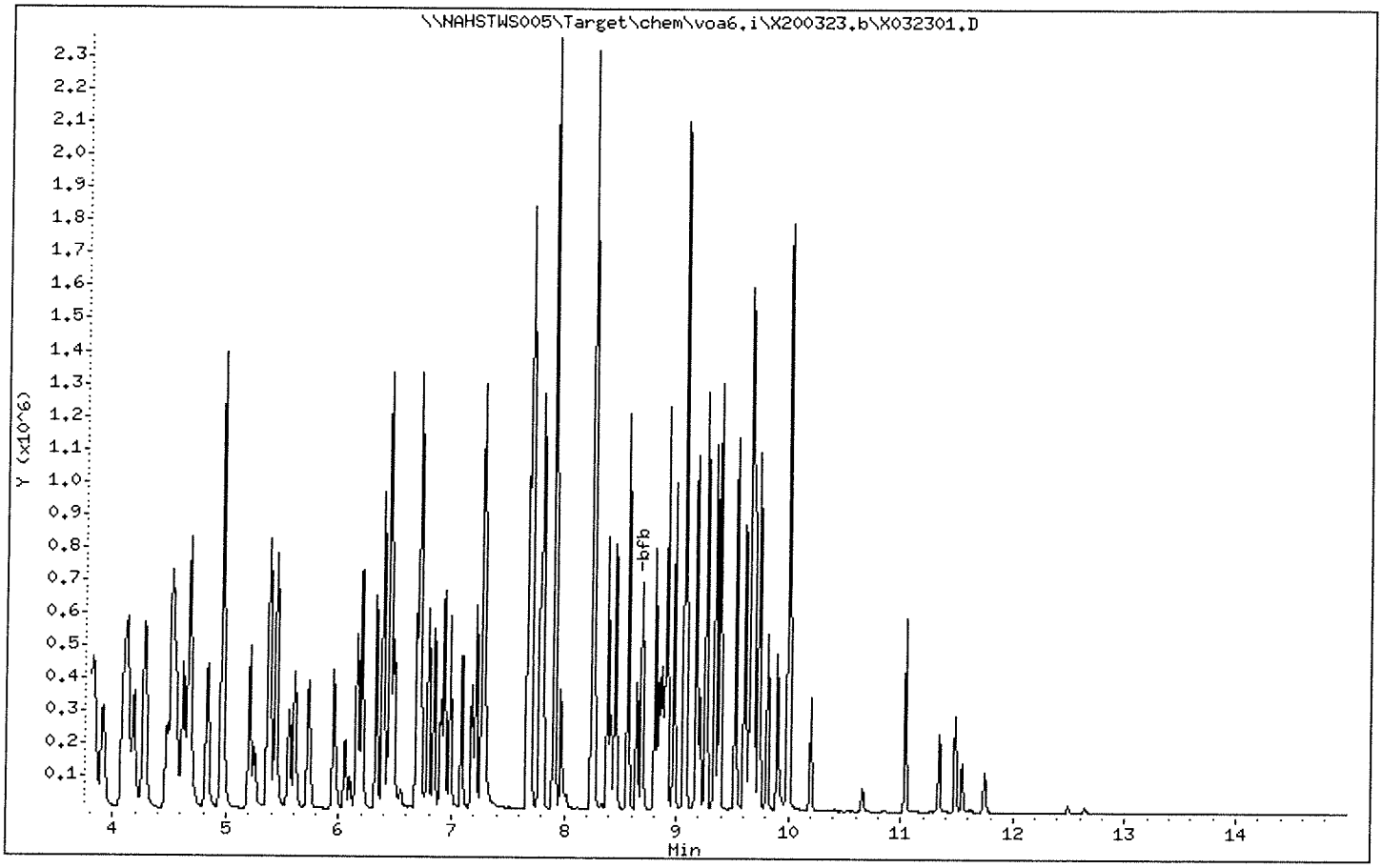
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032301.D

Date : 23-MAR-2020 11:43

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB:BFB:3::BFB

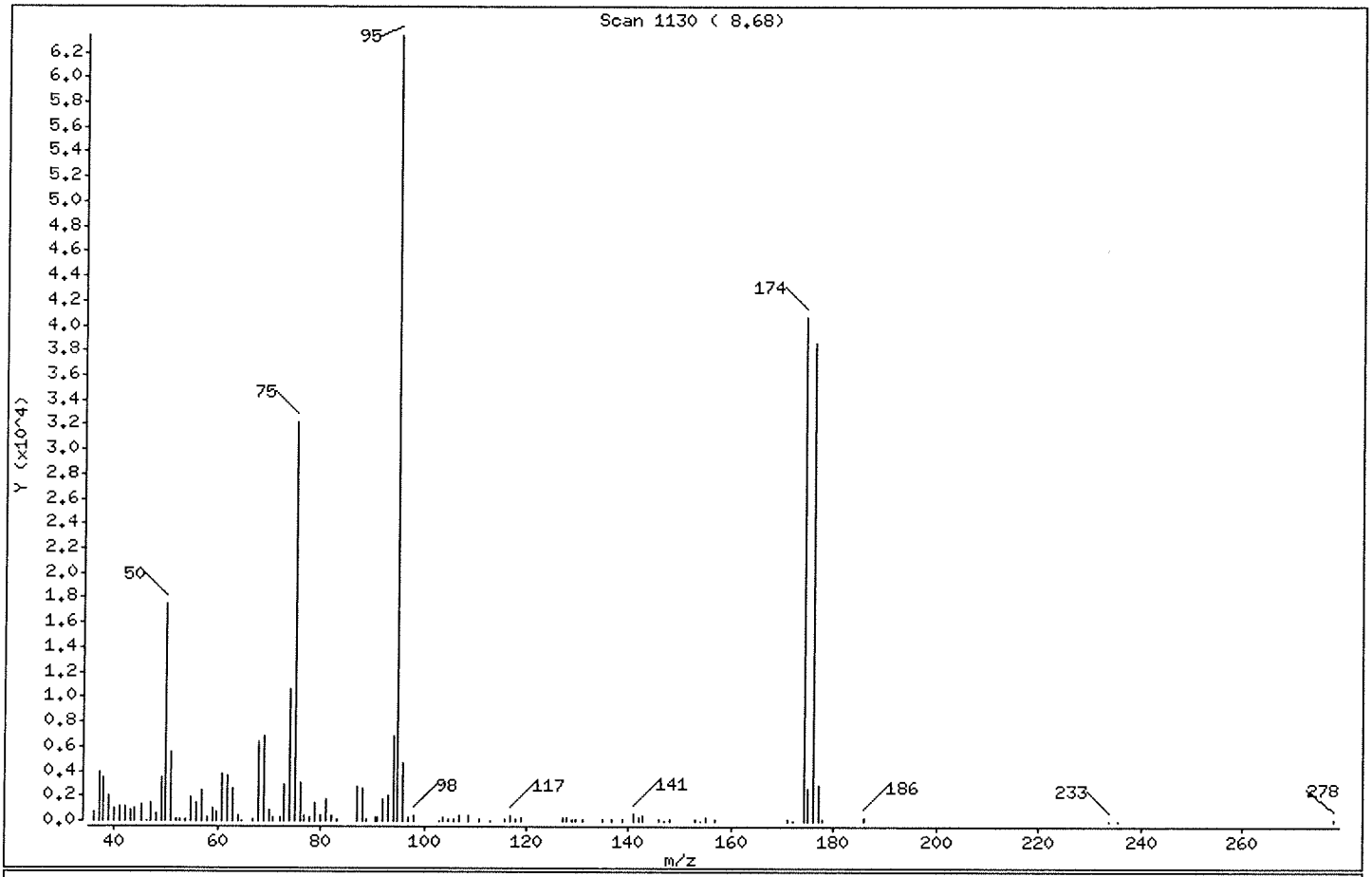
Volume Injected (uL): 2.0

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	27.60
75	30.00 - 60.00% of mass 95	50.76
96	5.00 - 9.00% of mass 95	7.29
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	64.12
175	5.00 - 9.00% of mass 174	4.15 (6.48)
176	95.00 - 101.00% of mass 174	61.00 (95.14)
177	5.00 - 9.00% of mass 176	4.63 (7.59)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032301.D

Date : 23-MAR-2020 11:43

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: X032301.D
Spectrum: Scan 1130 (8.68)
Location of Maximum: 95.00
Number of points: 100

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	752	62.00	3649	92.00	1722	138.80	106
37.00	3875	63.00	2558	93.00	2099	141.00	515
38.00	3525	64.00	416	94.00	6780	141.90	294
39.00	2103	64.90	67	95.00	63392	142.80	507
39.90	992	67.00	130	96.00	4624	145.70	85
41.00	1187	68.00	6383	97.00	228	147.00	66
42.00	1098	69.00	6789	98.10	489	148.00	141
43.00	873	70.00	857	103.00	64	152.90	99
44.00	1070	70.90	226	103.80	321	154.00	62
45.10	1283	72.10	355	104.90	171	155.00	258
46.20	71	73.00	2947	105.80	155	156.90	159
47.00	1399	74.10	10648	106.90	463	170.90	77
48.00	566	75.00	32176	108.80	375	172.10	70
49.00	3540	76.00	3027	110.90	96	174.00	40648
50.00	17496	76.90	370	113.00	64	175.00	2633
51.00	5594	77.80	362	115.90	177	175.90	38672
51.90	173	79.00	1515	116.90	442	177.00	2934
52.80	122	80.00	507	117.80	200	177.80	75
53.90	129	80.90	1716	118.90	334	185.80	271
55.00	1875	82.00	412	127.00	291	233.60	64
56.00	1452	83.10	165	127.90	261	235.60	56
57.00	2524	87.00	2758	129.00	122	278.00	130
58.10	251	88.00	2637	129.70	218		
59.00	964	88.80	98	130.90	134		
59.90	718	90.60	219	134.90	96		
61.00	3803	91.00	241	136.70	75		

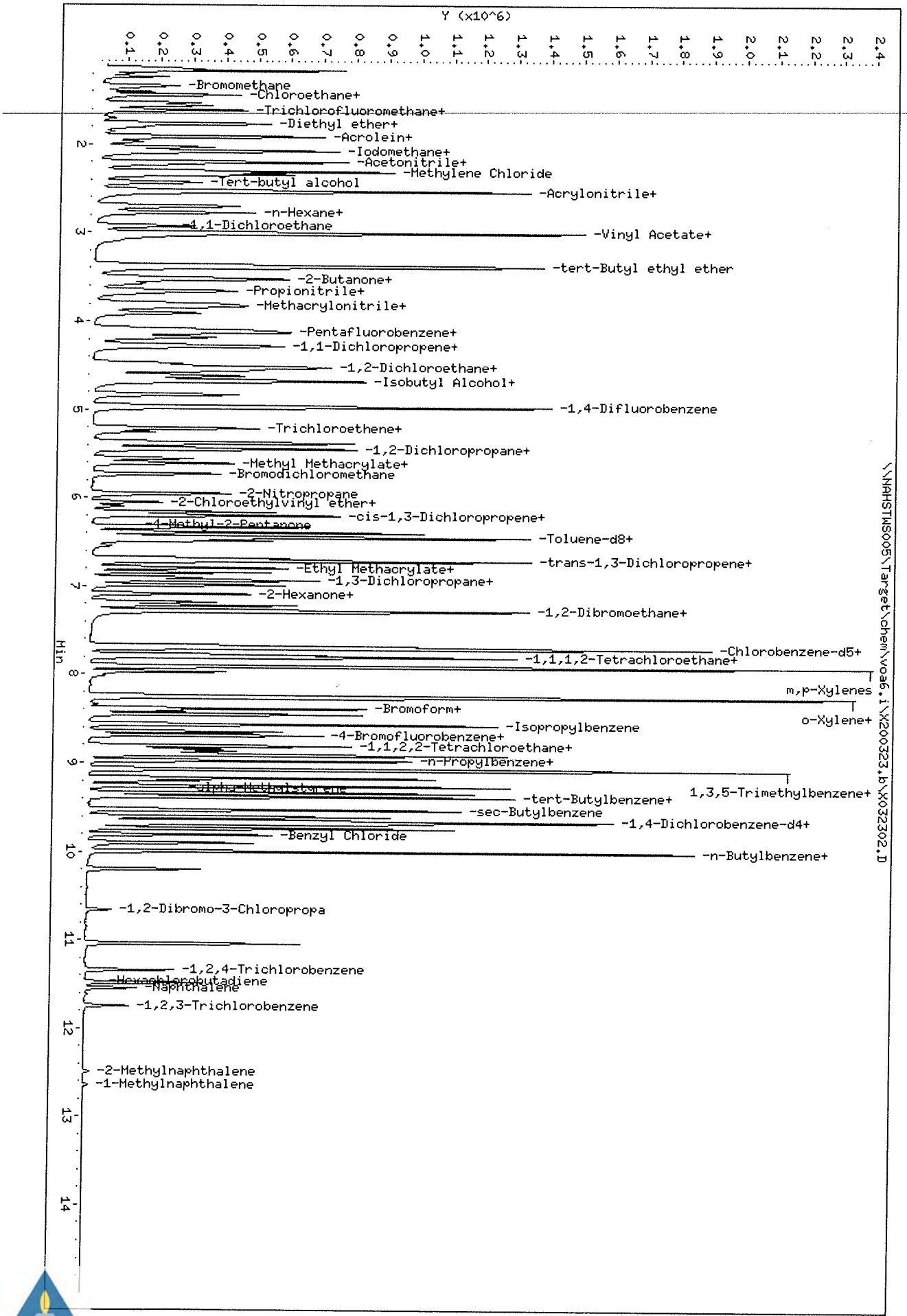
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032302.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 23-MAR-2020 12:07
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 21-Apr-2020 14:55 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	293152	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	151834	50.0000	52.13
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	186817	50.0000	50.72
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	452680	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	414975	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	548525	50.0000	51.60
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	202142	50.0000	50.63
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	203468	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	216873	50.0000	48.55
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	123262	50.0000	49.62
17 Methylene Chloride	84	2.306	2.306	(0.551)	161643	50.0000	51.86
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	174503	50.0000	52.27
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	250427	50.0000	52.36
38 Trichloroethene	130	5.207	5.207	(1.048)	165055	50.0000	52.60
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	122112	50.0000	51.07



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032302.D
Date : 23-MAR-2020 12:07
Client ID: CCV
Sample Info: CCV;CCV;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032304.D Page 1
Report Date: 21-Apr-2020 14:55

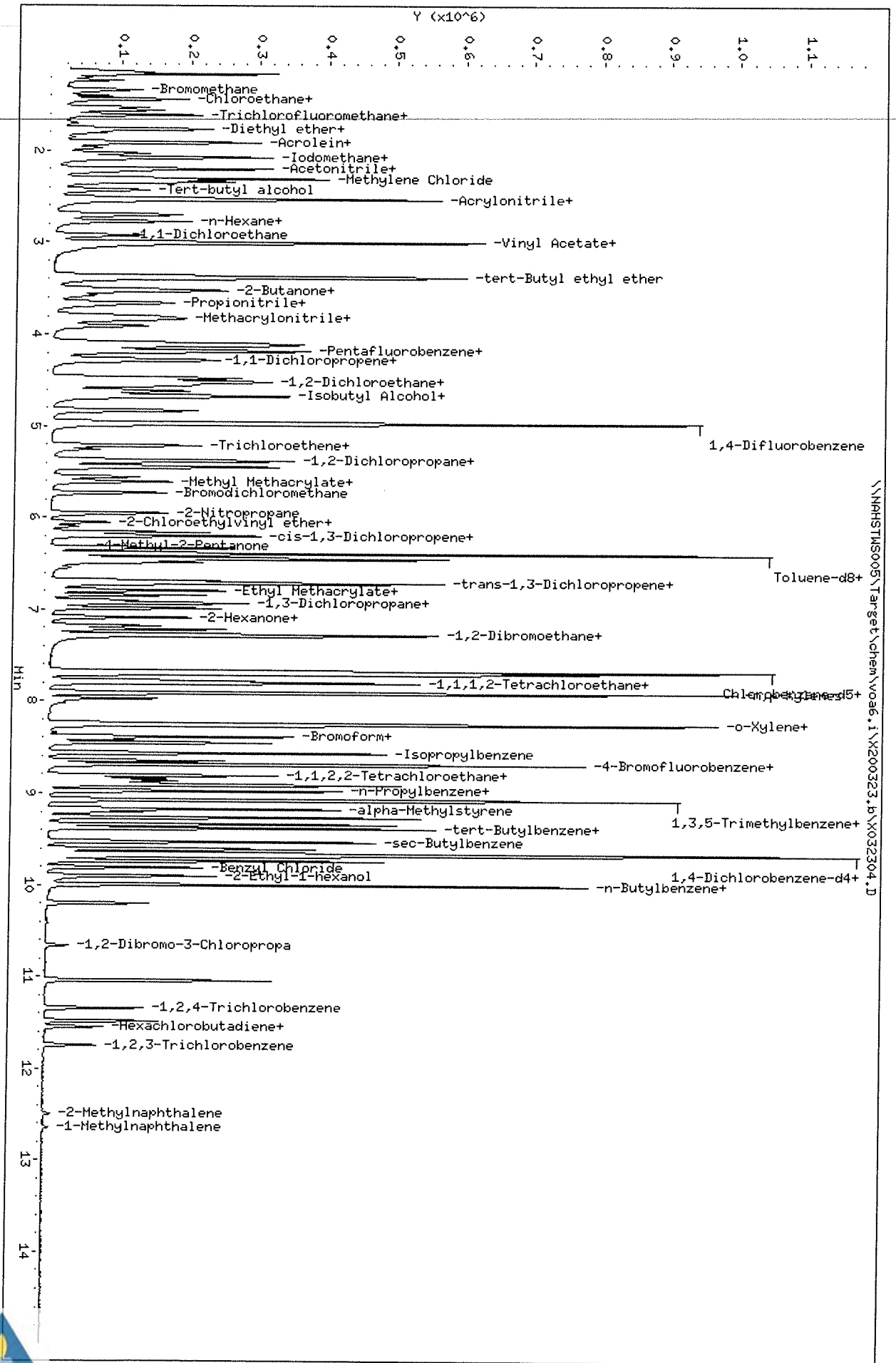
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032304.D
Lab Smp Id: VLCSW-200323 Client Smp ID: VLCSW-200323
Inj Date : 23-MAR-2020 12:55
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-200323;VLCSW-200323;3;;LCS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 21-Apr-2020 14:55 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 4 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	306363	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	158868	52.1955	52.19
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	197353	51.2783	51.27
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	481893	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	442313	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	575026	50.7514	50.75
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	215636	50.6731	50.67
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	213353	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	88400	18.9396	18.93
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	51115	19.6899	19.68
17 Methylene Chloride	84	2.306	2.306	(0.551)	69033	20.3593	20.35
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	73654	21.1110	21.11
33 1,2-Dichloroethane	62	4.555	4.562	(0.916)	102886	20.2088	20.20
38 Trichloroethene	130	5.207	5.207	(1.048)	70971	21.2485	21.24
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	50852	19.9551	19.95



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032304.D
Date : 23-MAR-2020 12:55
Client ID: VLCSW-200323
Sample Info: VLCSW-200323;VLCSW-200323;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032306.D
Lab Smp Id: VBLKW-200323 Client Smp ID: VBLKW-200323
Inj Date : 23-MAR-2020 14:07
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW-200323;VBLKW-200323;3;;BLANK
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 21-Apr-2020 14:55 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 7 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

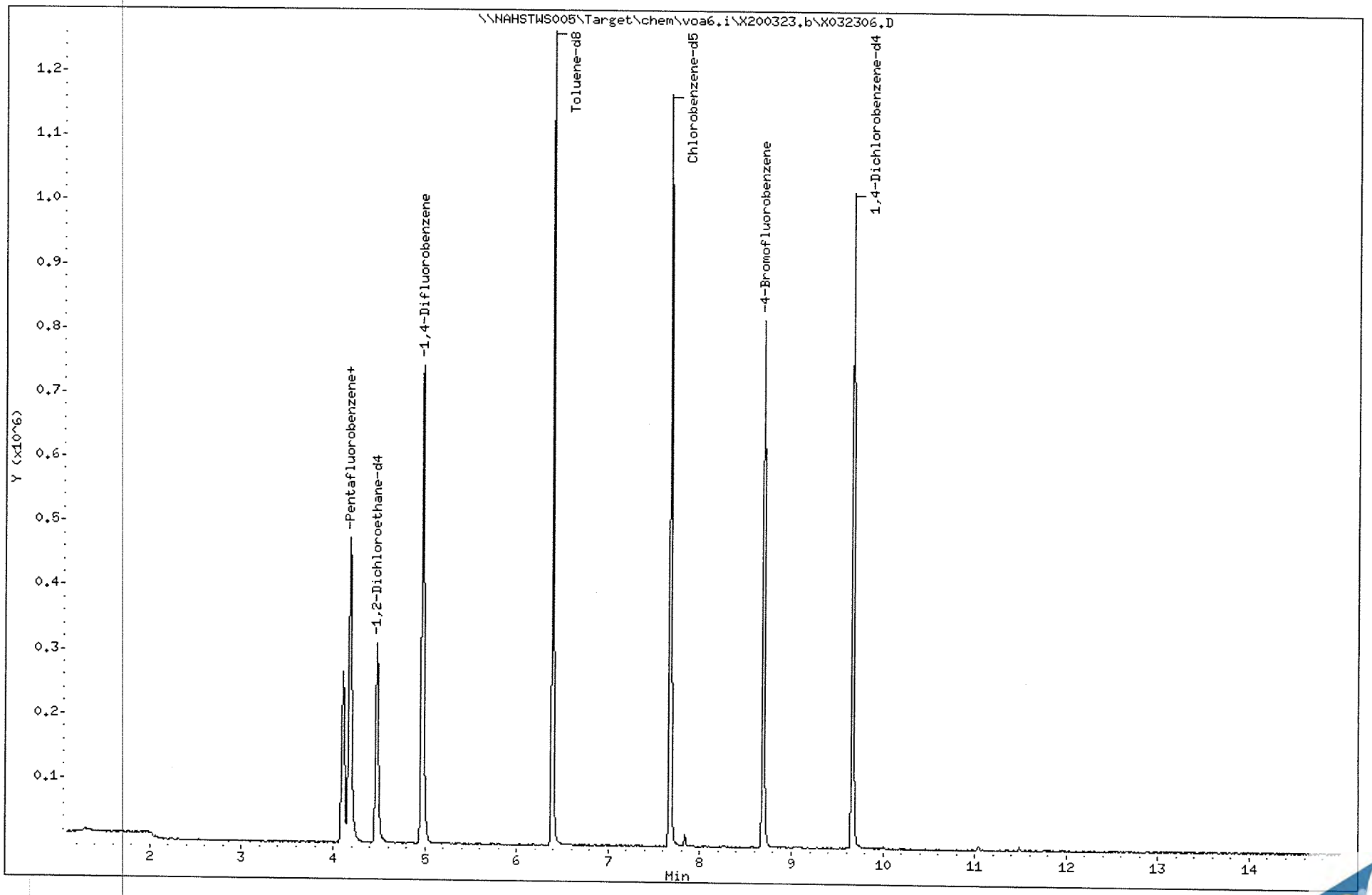
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	399376	50.0000	
$ 30 Dibromofluoromethane	113	4.104	4.103	(0.981)	190722	48.0590	48.05
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	226372	45.1008	45.10
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	595091	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	519151	50.0000	
$ 48 Toluene-d8	98	6.389	6.388	(0.833)	698989	52.5640	52.56
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	242681	48.5676	48.56
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	244650	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032306.D
Date : 23-MAR-2020 14:07
Client ID: VBLKW-200323
Sample Info: VBLKW-200323;VBLKW-200323;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



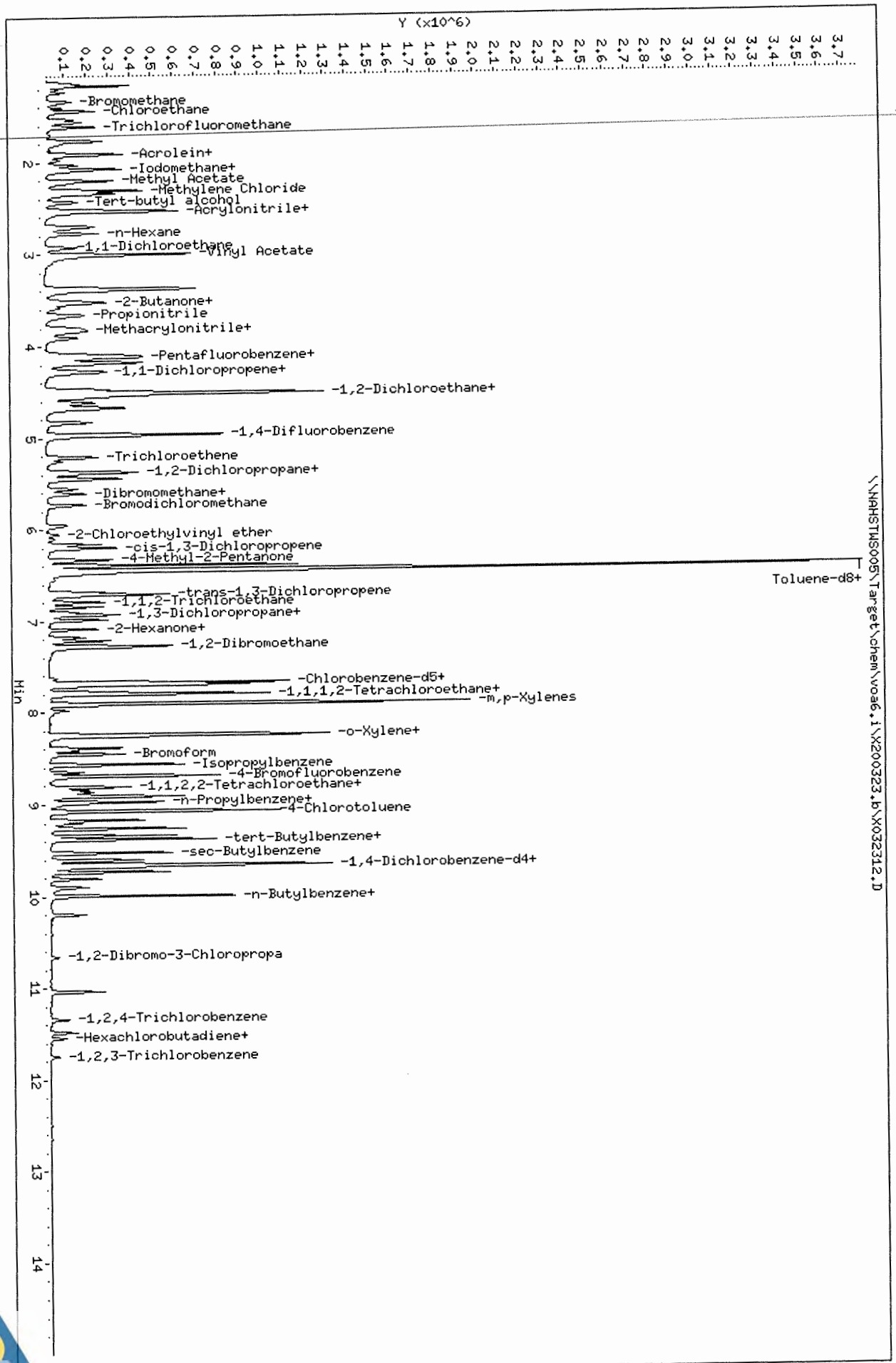
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032312.D
Lab Smp Id: HS20030586-02MS Client Smp ID: HS20030586-02MS
Inj Date : 23-MAR-2020 16:56
Operator : PC Inst ID: voa6.i
Smp Info : HS20030586-02MS;HS20030586-02MS;3;;MS
Misc Info : HS18090001;WATER;0;100;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 21-Apr-2020 14:55 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 14 QC Sample: MS
Dil Factor: 100.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	100.000	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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	365130	50.0000	
$	30 Dibromofluoromethane	113	4.104	4.103	(0.981)	173531	47.8279	47.82
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	207484	45.2152	45.21
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	543656	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	473079	50.0000	
$	48 Toluene-d8	98	6.389	6.388	(0.833)	636703	52.5430	52.54
$	69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	223574	49.1066	49.10
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	228976	50.0000	
	5 Vinyl Chloride	62	1.138	1.138	(0.272)	106688	19.1789	1917.89
	11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	58460	18.8948	1889.47
	17 Methylene Chloride	84	2.306	2.306	(0.551)	77261	19.0323	1903.23
	27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	82549	19.8524	1985.24
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	116532	20.2888	2028.87
	38 Trichloroethene	130	5.207	5.207	(1.048)	79479	21.0924	2109.23
	53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	56387	20.6881	2068.81



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032312.D
Date : 23-MAR-2020 16:56
Client ID: HS20030586-02MS
Sample Info: HS20030586-02MS;HS20030586-02MS;3;;MS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

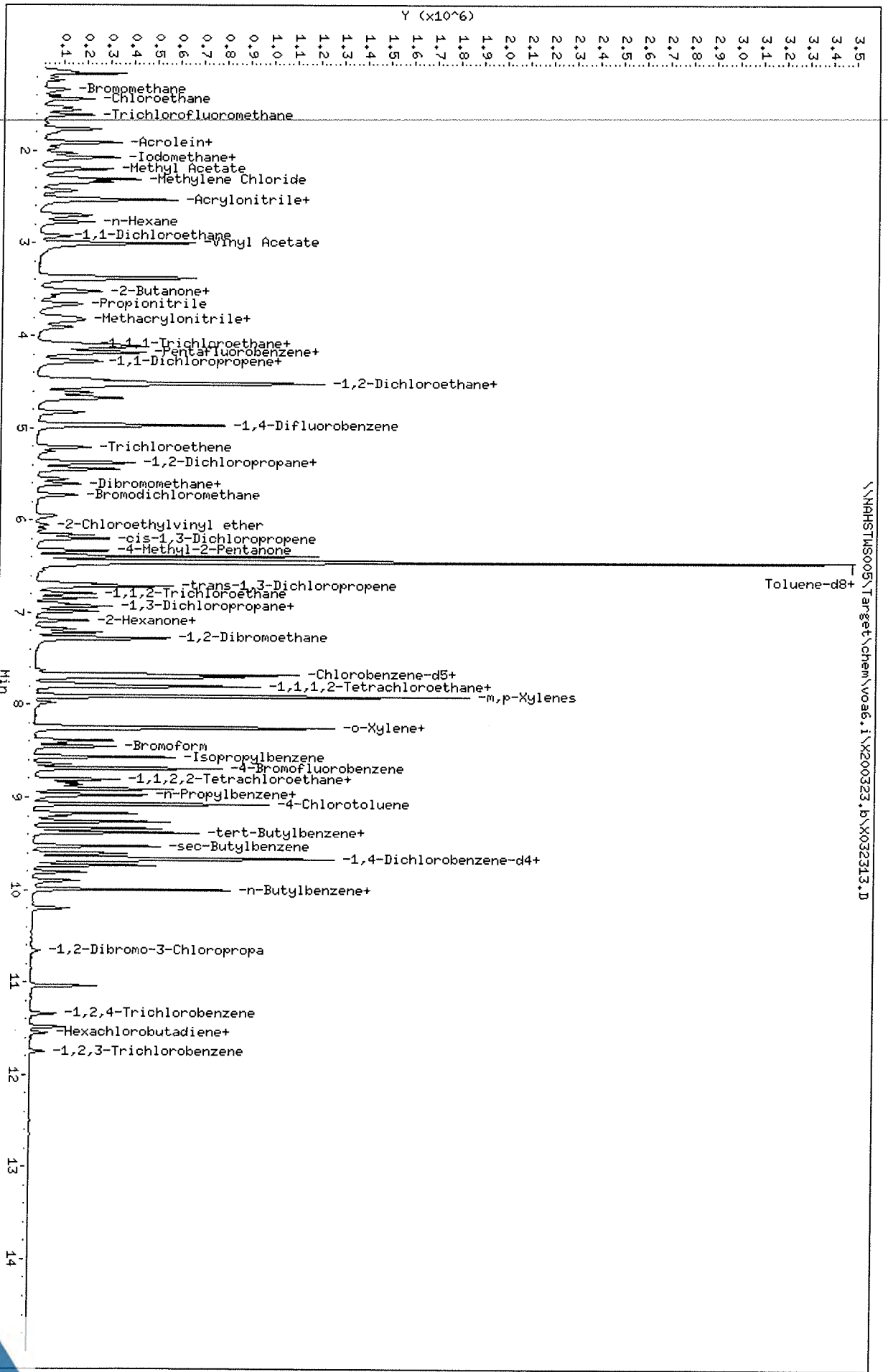
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032313.D
Lab Smp Id: HS20030586-02MSD Client Smp ID: HS20030586-02MSD
Inj Date : 23-MAR-2020 17:20
Operator : PC Inst ID: voa6.i
Smp Info : HS20030586-02MSD;HS20030586-02MSD;3;;MSD
Misc Info : HS18090001;WATER;0;100;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 21-Apr-2020 14:55 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 14 QC Sample: MSD
Dil Factor: 100.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	100.000	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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	371324	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	178020	48.2476	48.24
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	210596	45.1276	45.12
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	556450	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	481603	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	647095	52.4553	52.45
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	225659	48.6831	48.68
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	230428	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	99263	17.5465	1754.64
11 1,1-Dichloroethene	96	1.911	1.912	(0.457)	57329	18.2202	1822.01
17 Methylene Chloride	84	2.305	2.306	(0.551)	73041	17.5931	1759.30
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	80258	18.9795	1897.94
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	116545	19.8245	1982.45
38 Trichloroethene	130	5.206	5.207	(1.048)	74880	19.4150	1941.49
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	54550	19.6599	1965.99



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032313.D
Date : 23-MAR-2020 17:20
Client ID: HS20030586-02HSD
Sample Info: HS20030586-02MSD;HS20030586-02HSD;3;;HSD
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032327.D
Lab Smp Id: HS20030888-09 Client Smp ID: HS20030888-09
Inj Date : 23-MAR-2020 22:56
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-09;HS20030888-09;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 21-Apr-2020 15:01 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 28
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

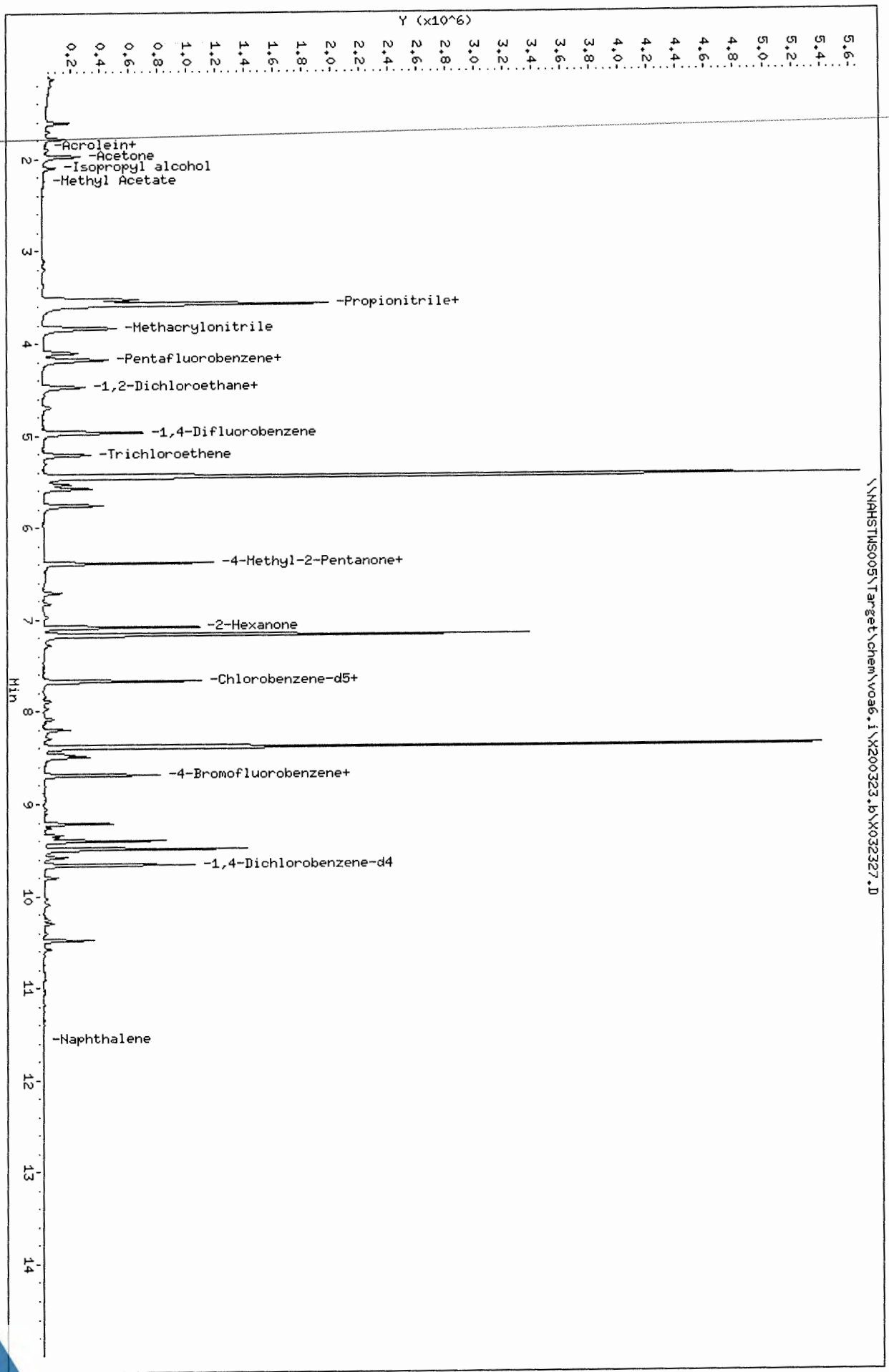
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	378023	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	177468	47.2434	47.24
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	214119	45.0692	45.06
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	565867	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	479514	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	643581	52.3977	52.39
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	228989	49.6262	49.62
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	237835	50.0000	
11 1,1-Dichloroethene	96	1.911	1.912	(0.457)	1805	0.56349	0.56(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	314258	72.9990	72.99
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	9358	1.56532	1.56(a)
38 Trichloroethene	130	5.206	5.207	(1.048)	78458	20.0041	20.00

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032327.D
Date : 23-MAR-2020 22:56
Client ID: HS20030888-09
Sample Info: HS20030888-09;HS20030888-09;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032327.D

Date : 23-MAR-2020 22:56

Client ID: HS20030888-09

Instrument: voa6.i

Sample Info: HS20030888-09;HS20030888-09;;;

Purge Volume: 5.0

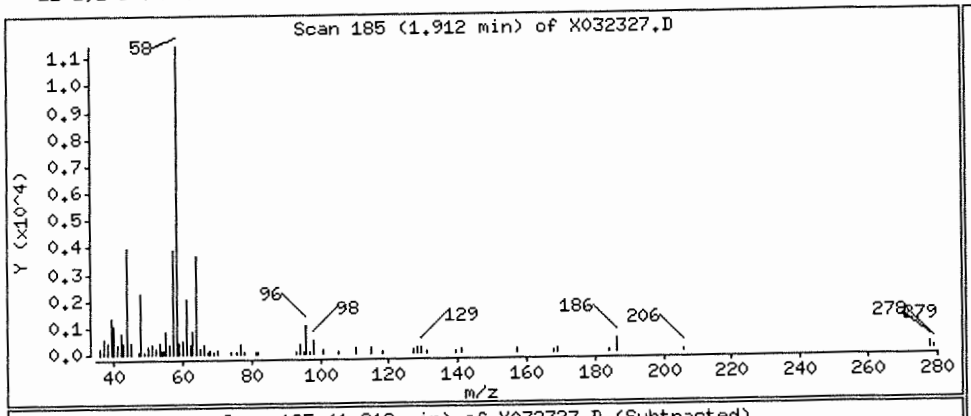
Operator: PC

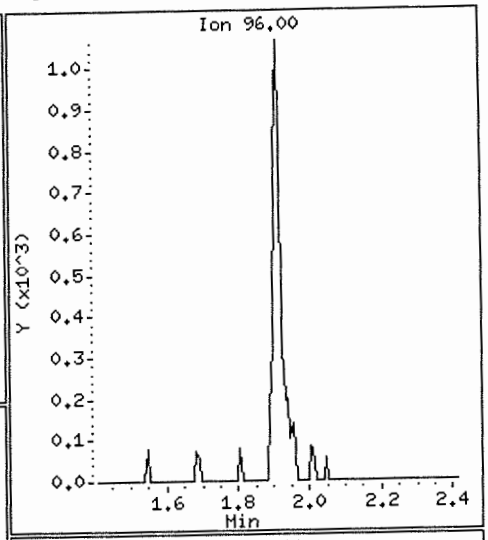
Column phase: DB624

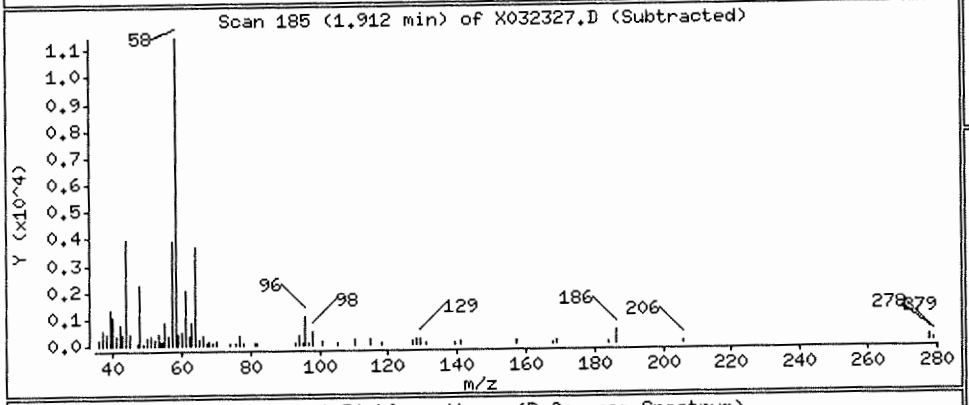
Column diameter: 0.18

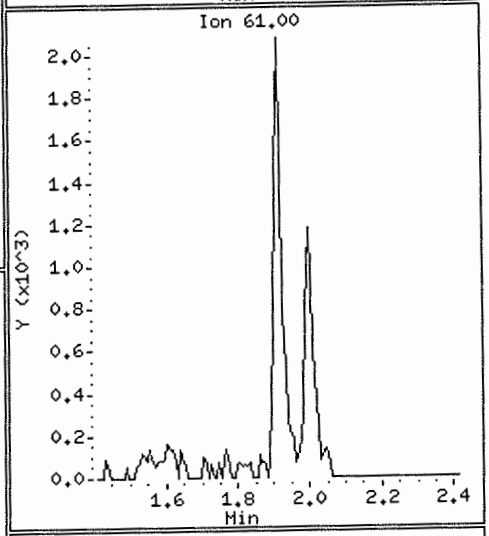
11 1,1-Dichloroethene

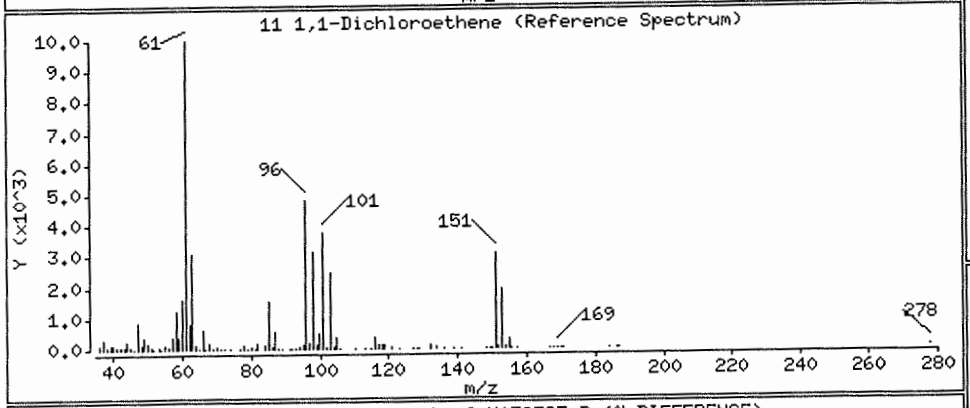
Concentration: 0.56 ug/l

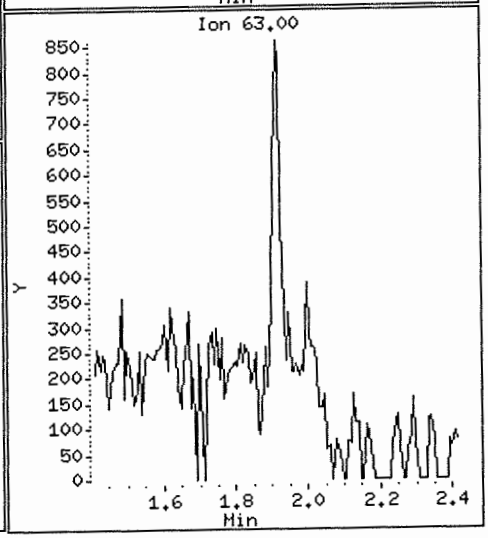


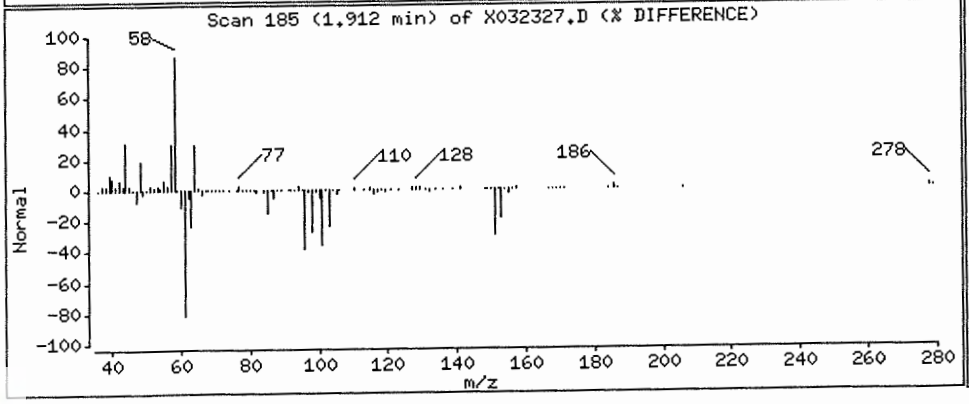












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032327.D

Date : 23-MAR-2020 22:56

Client ID: HS20030888-09

Instrument: voa6.i

Sample Info: HS20030888-09;HS20030888-09;;;

Purge Volume: 5.0

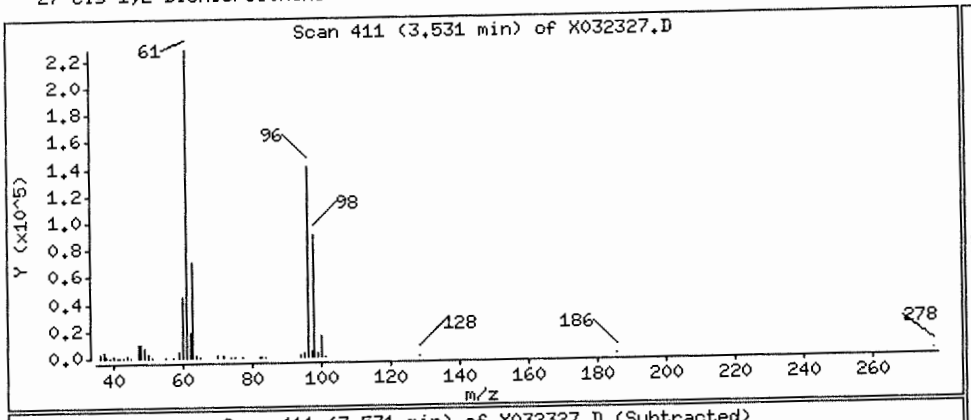
Operator: PC

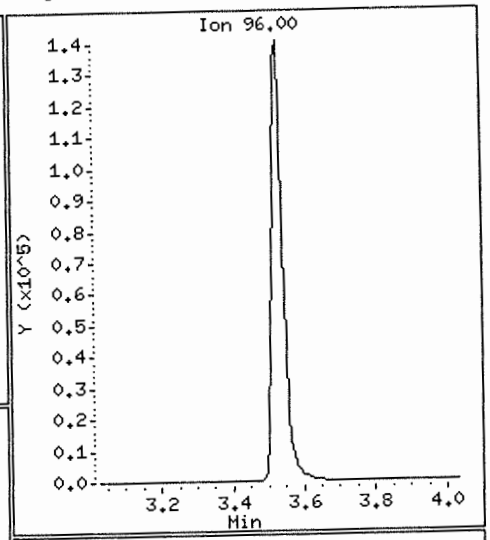
Column phase: DB624

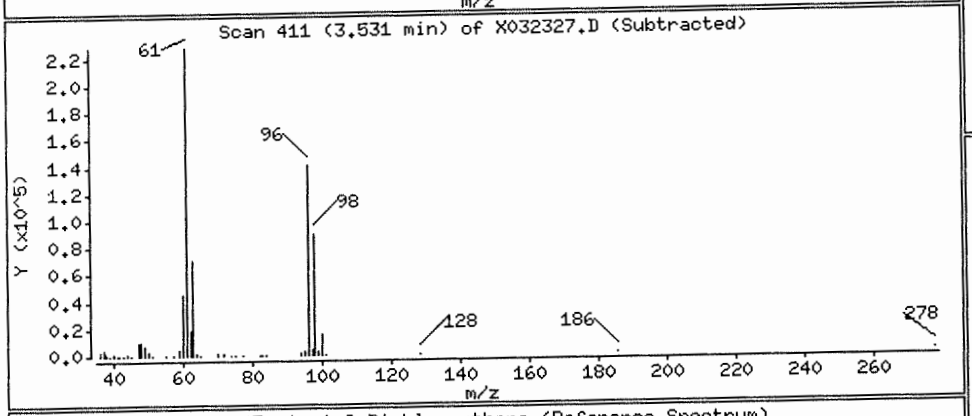
Column diameter: 0.18

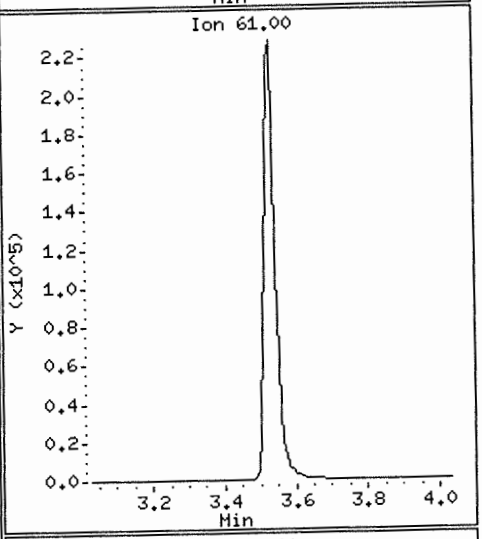
27 cis-1,2-Dichloroethene

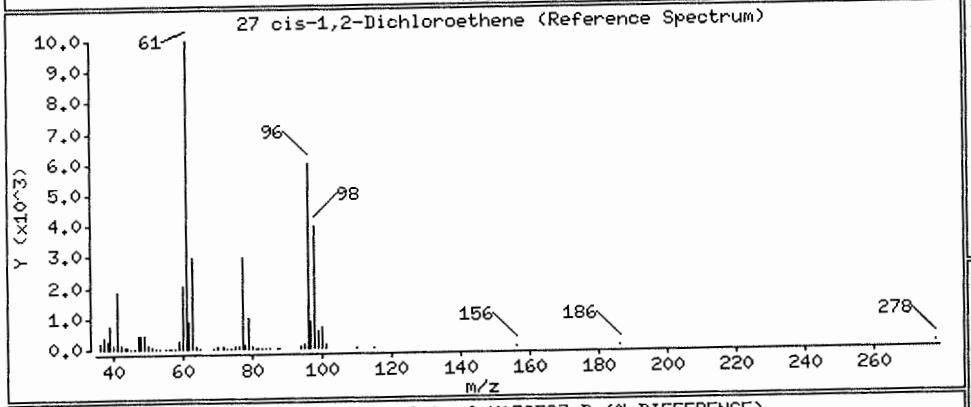
Concentration: 72.99 ug/l

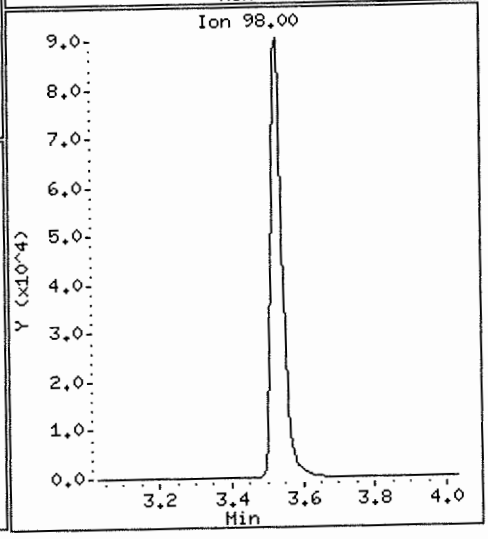


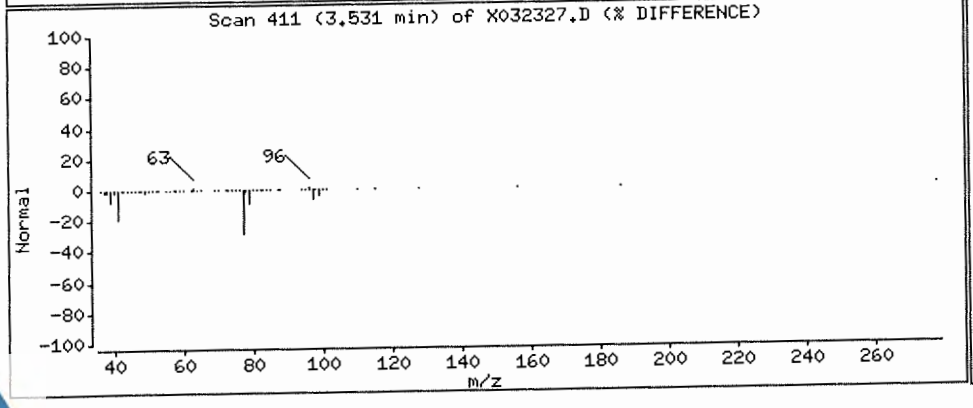












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032327.D

Date : 23-MAR-2020 22:56

Client ID: HS20030888-09

Instrument: voa6.i

Sample Info: HS20030888-09;HS20030888-09;;;

Purge Volume: 5.0

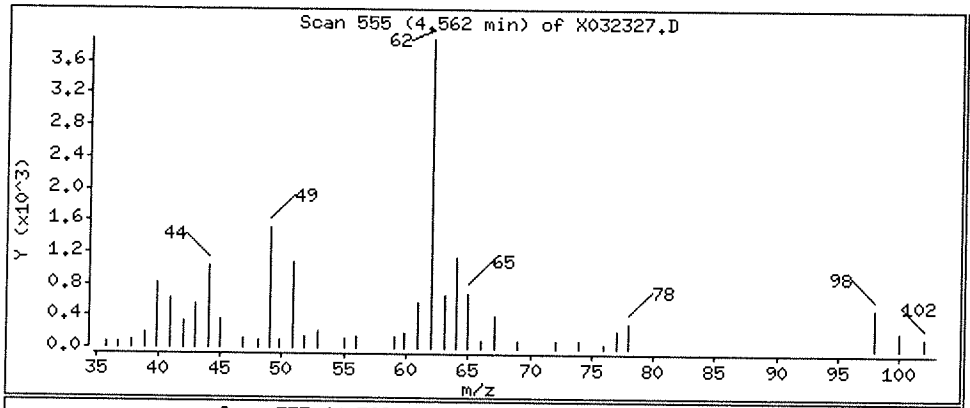
Operator: PC

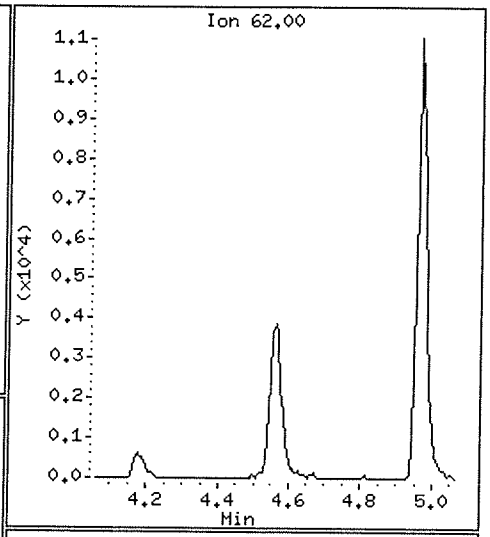
Column phase: DB624

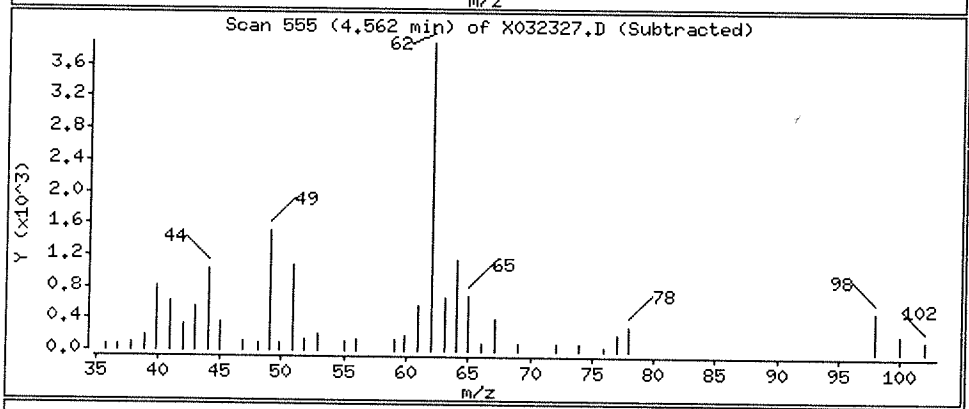
Column diameter: 0.18

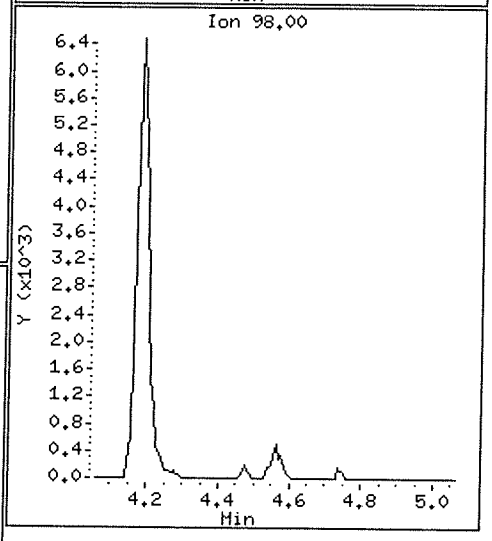
33 1,2-Dichloroethane

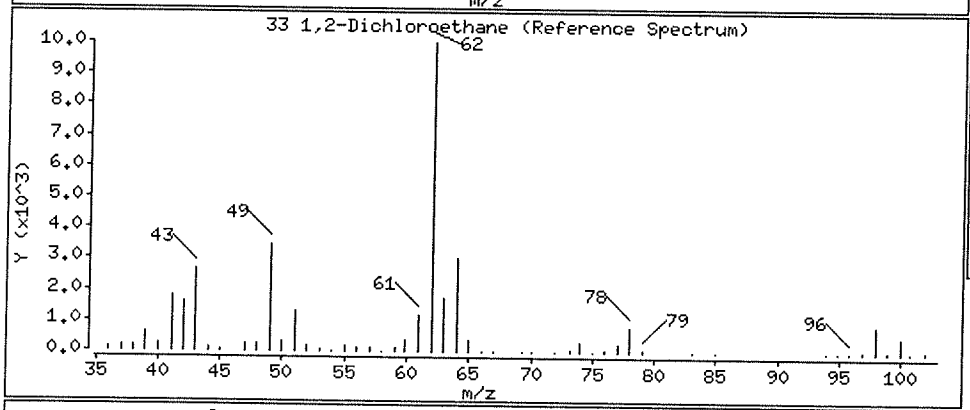
Concentration: 1.56 ug/l

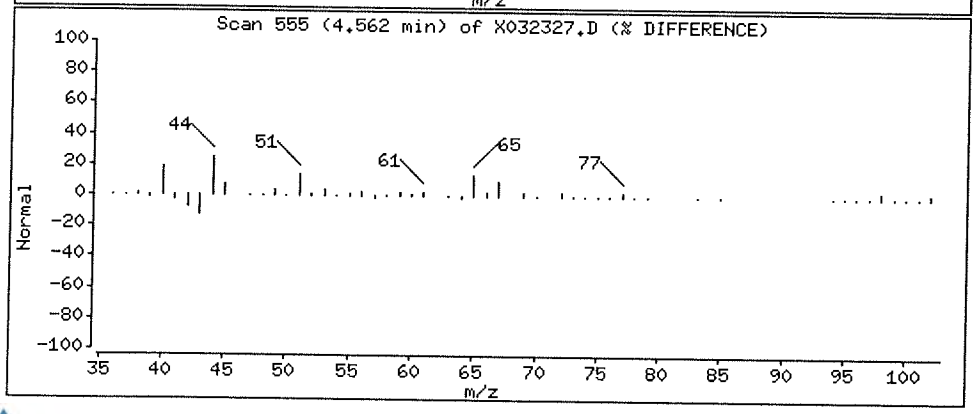












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032327.D

Date : 23-MAR-2020 22:56

Client ID: HS20030888-09

Instrument: voa6.i

Sample Info: HS20030888-09;HS20030888-09;;;

Purge Volume: 5.0

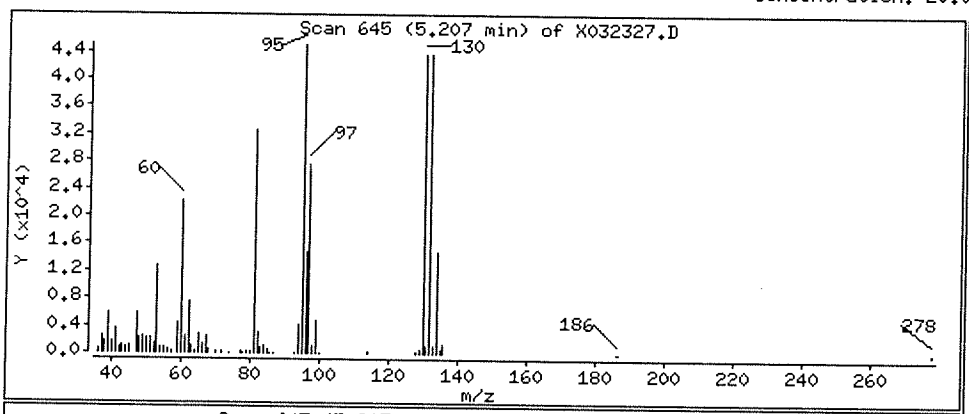
Operator: PC

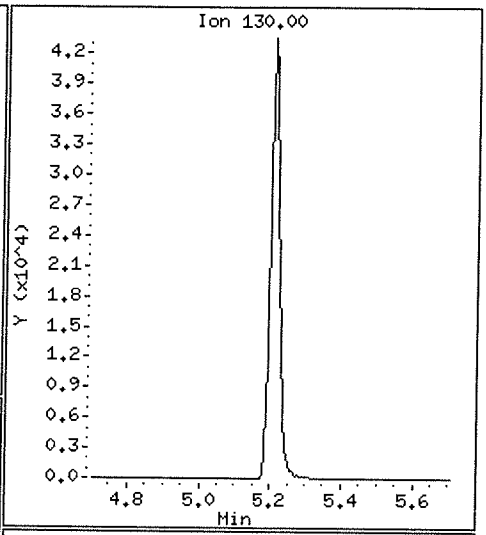
Column phase: DB624

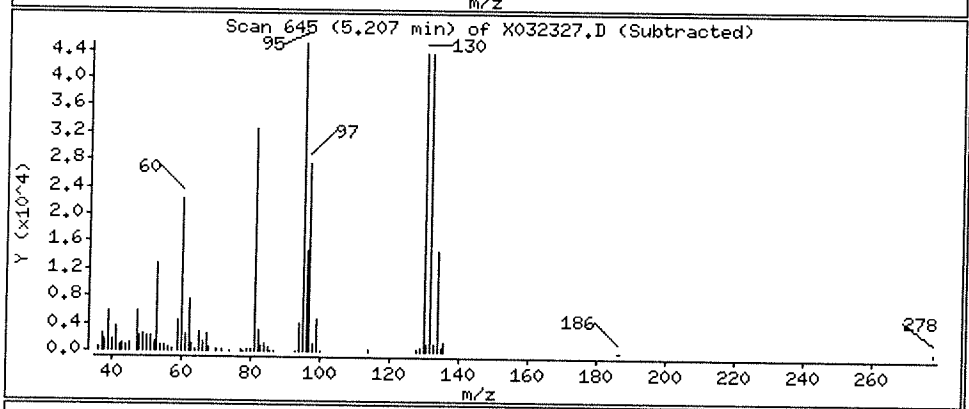
Column diameter: 0.18

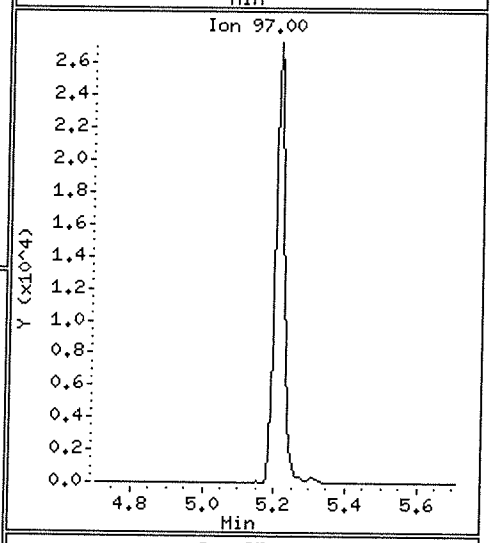
38 Trichloroethene

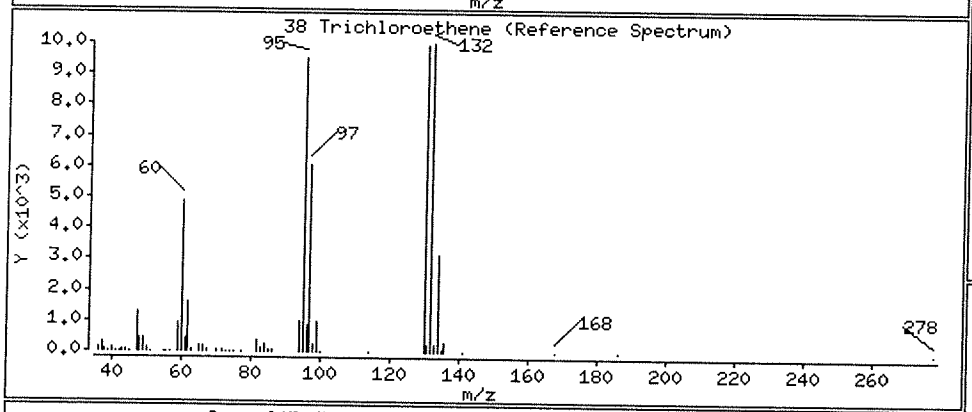
Concentration: 20.00 ug/l

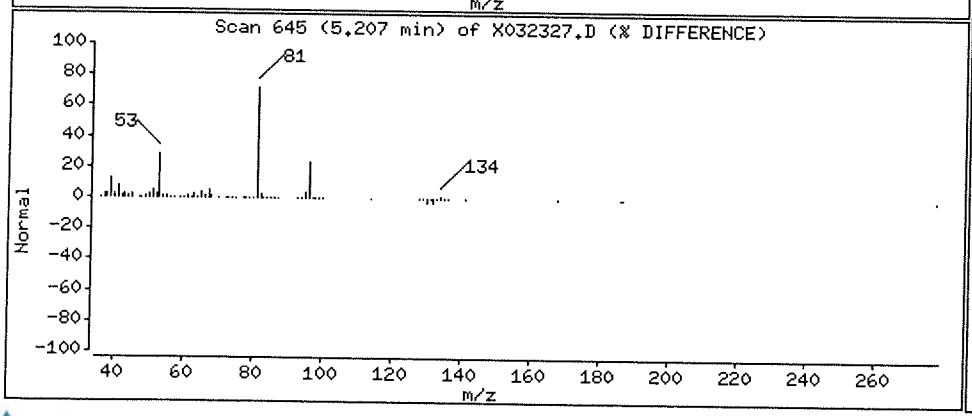


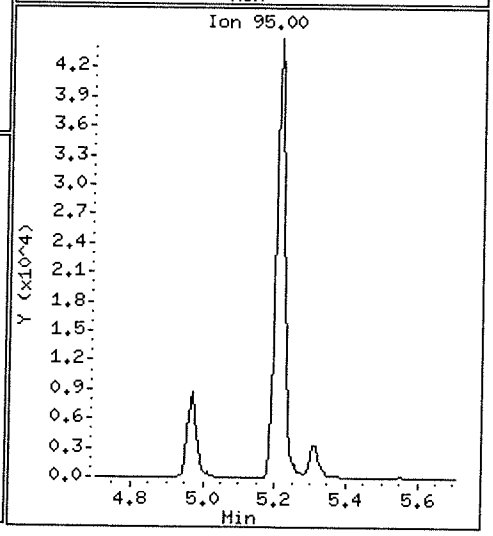












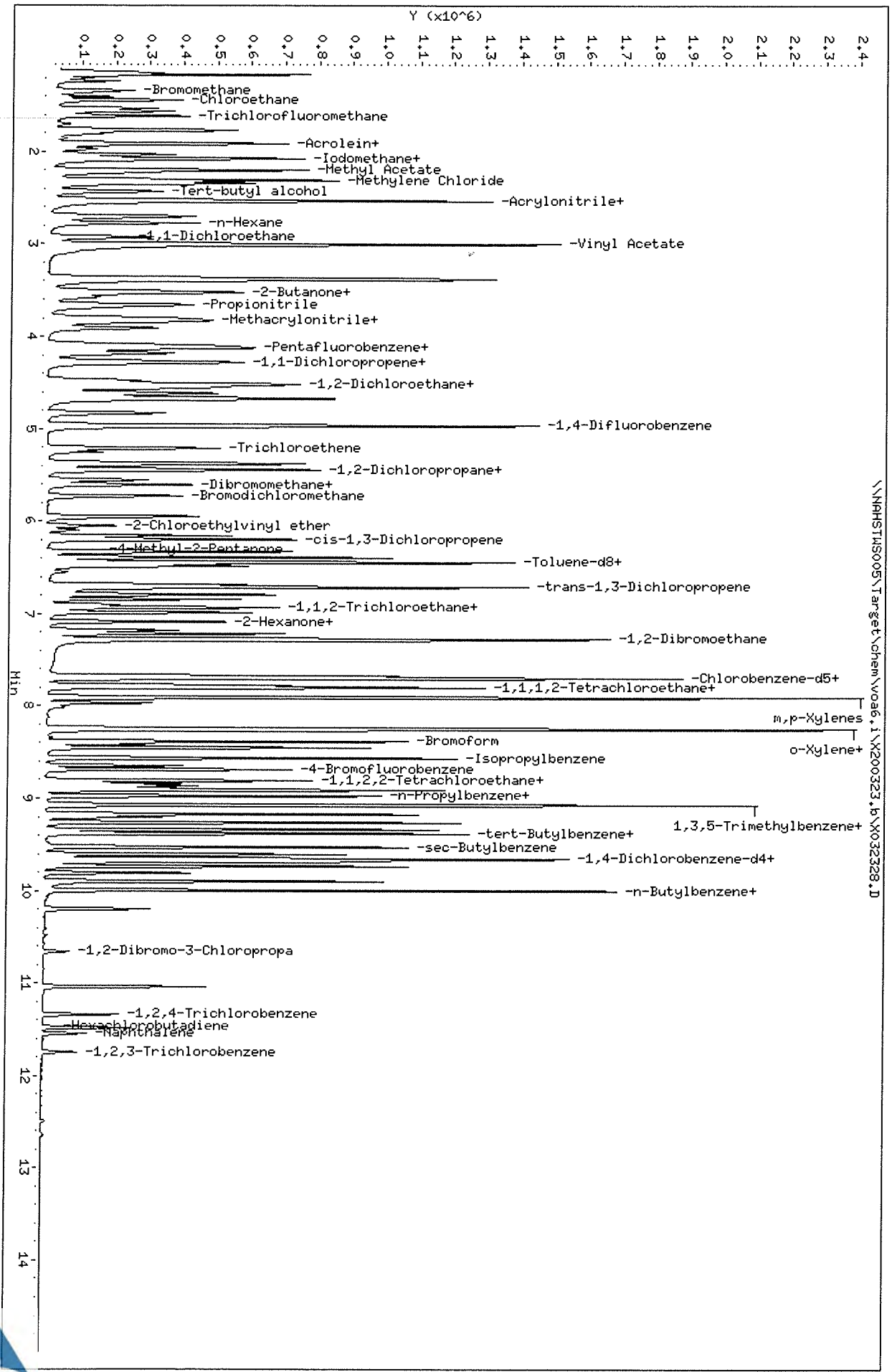
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032328.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 23-MAR-2020 23:20
Operator : PC Inst ID: voa6.i
Smp Info : CCV-END;CCV-END;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 21-Apr-2020 14:55 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 29 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	294122	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	156154	50.0000	53.44
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	189094	50.0000	51.17
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	465517	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	422859	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	556630	50.0000	51.38
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	203299	50.0000	49.96
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	201607	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	224197	50.0000	50.03
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	125636	50.0000	50.41
17 Methylene Chloride	84	2.306	2.306	(0.551)	165429	50.0000	52.93
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	174147	50.0000	51.99
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	248483	50.0000	50.52
38 Trichloroethene	130	5.207	5.207	(1.048)	164096	50.0000	50.85
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	119968	50.0000	49.24



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\X032328.D
Date : 23-MAR-2020 23:20
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

MSVOA06 -Logbook

Batch: 40075
Date: 03-23-2020
Method: 8260
Comments:

Analyst: Presenta Cabascango
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	03-23-2020 11:43 am	1.00	0.00 mL	0.00 mL	X032301.D	Liquid	Y	NA
2	*Auto find/ purged* CCV	CCV	03-23-2020 12:07 pm	1.00	5.00 mL	0.00 mL	X032302.D	Liquid	Y	NA
3	*10 uL cal std/50 mL DI* CCV	CCV	03-23-2020 12:31 pm	1.00	5.00 mL	0.00 mL	X032303a.D	Liquid	Y	NA
4	*10 uL cal std/50 mL DI* VLCSW-200323	LCS	03-23-2020 12:55 pm	1.00	5.00 mL	0.00 mL	X032304.D	Liquid	Y	NA
5	*4.0 uL cal std/50 mL DI* VBLKW1-200323	MBLK	03-23-2020 01:43 pm	1.00	5.00 mL	0.00 mL	X032305.D	Liquid	Y	NA
6	VBLKW-200323	MBLK	03-23-2020 02:07 pm	1.00	5.00 mL	0.00 mL	X032306.D	Liquid	Y	NA
7	HS20030586-03	SAMP	03-23-2020 02:31 pm	1.00	5.00 mL	0.00 mL	X032307.D	Liquid	Y	<2
8	HS20030586-05n/r	SAMP	03-23-2020 02:55 pm	1.00	5.00 mL	0.00 mL	X032308.D	Liquid	Y	<2
9	HS20030586-02	SAMP	03-23-2020 03:19 pm	10.00	5.00 mL	0.00 mL	X032309.D	Liquid	Y	<2
10	HS20030521-01	SAMP	03-23-2020 04:08 pm	5.00	5.00 mL	0.00 mL	X032310.D	Liquid	Y	<2
11	HS20030521-02	SAMP	03-23-2020 04:32 pm	5.00	5.00 mL	0.00 mL	X032311.D	Liquid	Y	<2
12	HS20030586-02MS	MS	03-23-2020 04:56 pm	100.0(	5.00 mL	0.00 mL	X032312.D	Liquid	Y	<2
13	*3.5 uL cal std/40 mL samp* HS20030586-02MSD	MSD	03-23-2020 05:20 pm	100.0(	5.00 mL	0.00 mL	X032313.D	Liquid	Y	<2
14	*3.5 uL cal std/40 mL samp* HS20030521-01	SAMP	03-23-2020 05:44 pm	50.00	5.00 mL	0.00 mL	X032314.D	Liquid	Y	<2
15	HS20030521-02	SAMP	03-23-2020 06:08 pm	50.00	5.00 mL	0.00 mL	X032315.D	Liquid	Y	<2
16	HS20030586-02	SAMP	03-23-2020 06:32 pm	100.0(	5.00 mL	0.00 mL	X032316.D	Liquid	Y	<2
17	HS20030521-04	SAMP	03-23-2020 06:56 pm	5.00	5.00 mL	0.00 mL	X032317.D	Liquid	Y	<2
18	HS20030521-04	SAMP	03-23-2020 07:20 pm	50.00	5.00 mL	0.00 mL	X032318.D	Liquid	Y	<2
19	HS20030521-05	SAMP	03-23-2020 07:44 pm	10.00	5.00 mL	0.00 mL	X032319.D	Liquid	Y	<2
20	HS20030521-05	SAMP	03-23-2020 08:08 pm	100.0(	5.00 mL	0.00 mL	X032320.D	Liquid	Y	<2
21	HS20030586-01	SAMP	03-23-2020 08:32 pm	5.00	5.00 mL	0.00 mL	X032321.D	Liquid	Y	<2
22	HS20030586-01	SAMP	03-23-2020 08:56 pm	50.00	5.00 mL	0.00 mL	X032322.D	Liquid	Y	<2
23	HS20030586-04	SAMP	03-23-2020 09:20 pm	5.00	5.00 mL	0.00 mL	X032323.D	Liquid	Y	<2
24	HS20030586-04n/r	SAMP	03-23-2020 09:44 pm	50.00	5.00 mL	0.00 mL	X032324.D	Liquid	Y	<2
25	HS20030586-03	SAMP	03-23-2020 10:08 pm	5.00	5.00 mL	0.00 mL	X032325.D	Liquid	Y	<2
26	HS20030586-05	SAMP	03-23-2020 10:32 pm	1.00	5.00 mL	0.00 mL	X032326.D	Liquid	Y	<2
27	HS20030888-09	SAMP	03-23-2020 10:56 pm	1.00	5.00 mL	0.00 mL	X032327.D	Liquid	Y	<2
28	CCV-END	CCV	03-23-2020 11:20 pm	1.00	5.00 mL	0.00 mL	X032328.D	Liquid	Y	NA
29	*10 uL cal std/50 mL DI* BFB	TUNE	03-23-2020 11:44 pm	1.00	0.00 mL	0.00 mL	Y032301.D	Liquid	Y	NA
30	*Auto fund/ purged* CCV	CCV	03-24-2020 12:08 am	1.00	5.00 mL	0.00 mL	Y032302a.D	Liquid	Y	NA
31	*10 uL cal std/50 mL DI* CCV	CCV	03-24-2020 12:32 am	1.00	5.00 mL	0.00 mL	Y032303.D	Liquid	Y	NA
32	*10 uL cal std/50 mL DI* CCB	SAMP	03-24-2020 12:56 am	1.00	5.00 mL	0.00 mL	Y032304.D	Liquid	Y	NA
33	VLCSW-200323	LCS	03-24-2020 01:20 am	1.00	5.00 mL	0.00 mL	Y032305.D	Liquid	Y	NA
34	*4.0 uL cal std/50 mL DI* BLANK	SAMP	03-24-2020 01:44 am	1.00	5.00 mL	0.00 mL	Y032306.D	Liquid	Y	NA
35	VBLKW1-200323	MBLK	03-24-2020 02:08 am	1.00	5.00 mL	0.00 mL	Y032307.D	Liquid	Y	NA

MSVOA06 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
36	HS20030770-01	SAMP	03-24-2020 02:32 am	1.00	5.00 mL	0.00 mL	Y032308.D	Liquid	Y	<2
37	HS20030771-01	SAMP	03-24-2020 02:56 am	1.00	5.00 mL	0.00 mL	Y032309.D	Liquid	Y	<2
38	HS20030771-04	SAMP	03-24-2020 03:20 am	1.00	5.00 mL	0.00 mL	Y032310.D	Liquid	Y	<2
39	HS20030888-03	SAMP	03-24-2020 03:44 am	5.00	5.00 mL	0.00 mL	Y032311.D	Liquid	Y	<2
40	HS20030771-04MS	MS	03-24-2020 04:08 am	1.00	5.00 mL	0.00 mL	Y032312.D	Liquid	Y	<2
	3.5 uL cal std/40 mL samp									
41	HS20030771-04MSD	MSD	03-24-2020 04:32 am	1.00	5.00 mL	0.00 mL	Y032313.D	Liquid	Y	<2
	3.5 uL cal std/40 mL samp									
42	HS20030888-03	SAMP	03-24-2020 04:57 am	50.00	5.00 mL	0.00 mL	Y032314.D	Liquid	Y	<2
43	HS20030888-10	SAMP	03-24-2020 05:21 am	5.00	5.00 mL	0.00 mL	Y032315.D	Liquid	Y	<2
44	HS20030888-10n/r	SAMP	03-24-2020 05:45 am	25.00	5.00 mL	0.00 mL	Y032316.D	Liquid	Y	<2
45	HS20030888-08	SAMP	03-24-2020 06:09 am	10.00	5.00 mL	0.00 mL	Y032317.D	Liquid	Y	<2
46	HS20030888-08n/r	SAMP	03-24-2020 06:33 am	100.0(	5.00 mL	0.00 mL	Y032318.D	Liquid	Y	<2
47	HS20030888-06	SAMP	03-24-2020 06:57 am	50.00	5.00 mL	0.00 mL	Y032319.D	Liquid	Y	<2
48	HS20030888-06n/r	SAMP	03-24-2020 07:21 am	500.0(	5.00 mL	0.00 mL	Y032320.D	Liquid	Y	<2
49	HS20030888-07	SAMP	03-24-2020 07:45 am	50.00	5.00 mL	0.00 mL	Y032321.D	Liquid	Y	<2
50	HS20030888-07	SAMP	03-24-2020 08:09 am	500.0(	5.00 mL	0.00 mL	Y032322.D	Liquid	Y	<2
51	HS20030771-02	SAMP	03-24-2020 08:33 am	1.00	5.00 mL	0.00 mL	Y032323.D	Liquid	Y	<2
52	HS20030771-03	SAMP	03-24-2020 08:57 am	1.00	5.00 mL	0.00 mL	Y032324.D	Liquid	Y	<2
53	HS20030771-05	SAMP	03-24-2020 09:21 am	1.00	5.00 mL	0.00 mL	Y032325.D	Liquid	Y	<2
54	HS20030770-02	SAMP	03-24-2020 09:45 am	1.00	5.00 mL	0.00 mL	Y032326.D	Liquid	Y	<2
55	HS20030888-10	SAMP	03-24-2020 10:09 am	1.00	5.00 mL	0.00 mL	Y032327.D	Liquid	Y	<2
56	HS20030770-03	SAMP	03-24-2020 10:33 am	1.00	5.00 mL	0.00 mL	Y032328.D	Liquid	Y	<2
57	HS20030770-04	SAMP	03-24-2020 10:58 am	1.00	5.00 mL	0.00 mL	Y032329.D	Liquid	Y	NA
58	CCV-END	CCV	03-24-2020 11:21 am	1.00	5.00 mL	0.00 mL	Y032330.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									

Chemical	Value
SURR SPK ID	31106-21-06
IS ID	31106-21-06
CAL STD ID	31106-22-01/02
BFB ID	31106-21-06
pH Paper	634-64-11

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032301.D

Date : 23-MAR-2020 23:44

Client ID: BFB

Instrument: voa6.i

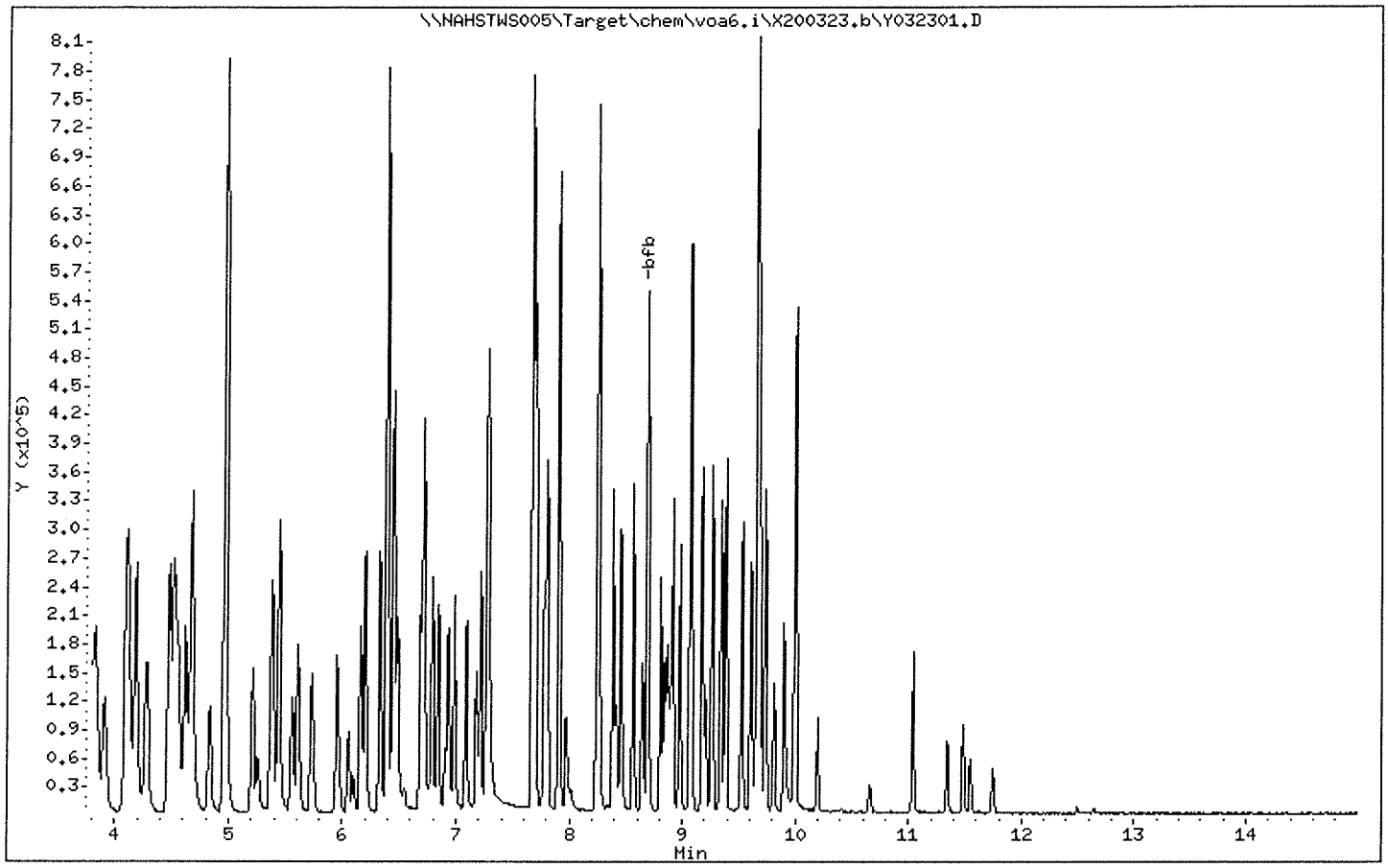
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

	CLIENT SAMPLE NO.	SMC1 #	SMC2 (DCE)#	SMC3 (TOL)#	OTHER #	TOT OUT
01	CCB	95	90	105	96	0
02	VLCSW-200323	108	107	101	102	0
03	VBLKW1-20032	95	91	104	97	0
04	HS20030888-0	94	90	104	98	0
05	HS20030771-0	96	92	103	97	0
06	HS20030771-0	94	93	105	97	0
07	HS20030888-0	95	90	106	96	0
08	HS20030888-1	94	90	104	96	0
09	HS20030888-0	95	91	104	97	0
10	HS20030888-0	94	92	105	96	0
11	HS20030888-0	94	90	105	97	0
12	HS20030888-0	93	90	105	96	0
13	HS20030888-1	95	89	104	97	0
14						
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		QC LIMITS
SMC1	= Dibromofluoromethane	(70-130)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(70-130)
SMC3 (TOL)	= Toluene-d8	(70-130)
OTHER	= 4-Bromofluorobenzene	(70-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKW1-200323

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS120030888

Lab File ID: Y032307 Lab Sample ID: VBLKW1-200323

Date Analyzed: 03/24/20 Time Analyzed: 0208

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	CCB	CCB	Y032304	0056
02	VLCSW-200323	VLCSW-200323	Y032305	0120
03	HS20030888-0	HS20030888-03	Y032311	0344
04	HS20030771-0	HS20030771-04M	Y032312	0408
05	HS20030771-0	HS20030771-04M	Y032313	0432
06	HS20030888-0	HS20030888-03	Y032314	0457
07	HS20030888-1	HS20030888-10	Y032315	0521
08	HS20030888-0	HS20030888-08	Y032317	0609
09	HS20030888-0	HS20030888-06	Y032319	0657
10	HS20030888-0	HS20030888-07	Y032321	0745
11	HS20030888-0	HS20030888-07	Y032322	0809
12	HS20030888-1	HS20030888-10	Y032327	1009
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COMMENTS:

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS120030888

Lab File ID: Y032301 BFB Injection Date: 03/23/20

Instrument ID: VOA6 BFB Injection Time: 2344

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	23.6
75	30.0 - 60.0% of mass 95	47.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.5 (0.7)1
174	Greater than 50.0% of mass 95	78.4
175	5.0 - 9.0% of mass 174	5.5 (7.1)1
176	95.0 - 101.0% of mass 174	77.2 (98.4)1
177	5.0 - 9.0% of mass 176	5.5 (7.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	Y032303	03/24/20	0032
02	CCB	CCB	Y032304	03/24/20	0056
03	VLCSW-200323	VLCSW-200323	Y032305	03/24/20	0120
04	VBLKW1-20032	VBLKW1-200323	Y032307	03/24/20	0208
05	HS20030888-0	HS20030888-03	Y032311	03/24/20	0344
06	HS20030771-0	HS20030771-04M	Y032312	03/24/20	0408
07	HS20030771-0	HS20030771-04M	Y032313	03/24/20	0432
08	HS20030888-0	HS20030888-03	Y032314	03/24/20	0457
09	HS20030888-1	HS20030888-10	Y032315	03/24/20	0521
10	HS20030888-0	HS20030888-08	Y032317	03/24/20	0609
11	HS20030888-0	HS20030888-06	Y032319	03/24/20	0657
12	HS20030888-0	HS20030888-07	Y032321	03/24/20	0745
13	HS20030888-0	HS20030888-07	Y032322	03/24/20	0809
14	HS20030888-1	HS20030888-10	Y032327	03/24/20	1009
15	CCV-END	CCV-END	Y032330	03/24/20	1121
16					
17					
18					
19					
20					
21					
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS120030888

Instrument ID: VOA6 Calibration Date: 03/24/20 Time: 0032

Lab File ID: Y032303 Init. Calib. Date(s): 03/19/20 03/19/20

Init. Calib. Times: 1134 1533

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Vinyl Chloride	0.7620000	0.7953871	0.7953871	0.1	-4.38	20.00	AVRG
Methylene Chloride	53.231253	50.000000	0.5969229	0.1	-6.46	20.00	LINR
1,1-Dichloroethene	0.4240000	0.4430989	0.4430989	0.1	-4.50	20.00	AVRG
1,2-Dichloroethane	0.5280000	0.5522067	0.5522067	0.1	-4.58	20.00	AVRG
Trichloroethene	0.3460000	0.3628835	0.3628835	0.2	-4.88	20.00	AVRG
cis-1,2-Dichloroethene	0.5690000	0.6134456	0.6134456	0.1	-7.81	20.00	AVRG
1,1,2-Trichloroethane	0.2880000	0.2905508	0.2905508	0.1	-0.88	20.00	AVRG
Dibromofluoromethane	53.425975	50.000000	0.5398879	0.1	-6.85	20.00	LINR
1,2-Dichloroethane-d4	52.858553	50.000000	0.6613411	0.1	-5.72	20.00	LINR
Toluene-d8	49.367290	50.000000	1.3042703	0.1	1.26	20.00	LINR
4-Bromofluorobenzene	49.227602	50.000000	0.4905726	0.1	1.54	20.00	LINR

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS120030888

Instrument ID: VOA6 Calibration Date: 03/24/20 Time: 1121

Lab File ID: Y032330 Init. Calib. Date(s): 03/19/20 03/19/20

Init. Calib. Times: 1134 1533

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Vinyl Chloride	0.7620000	0.7953871	0.7953871	0.1	-4.38	20.00	AVRG
Methylene Chloride	56.266512	50.000000	0.5969229	0.1	-12.53	20.00	LINR
1,1-Dichloroethene	0.4240000	0.4430989	0.4430989	0.1	-4.50	20.00	AVRG
1,2-Dichloroethane	0.5280000	0.5522067	0.5522067	0.1	-4.58	20.00	AVRG
Trichloroethene	0.3460000	0.3628835	0.3628835	0.2	-4.88	20.00	AVRG
cis-1,2-Dichloroethene	0.5690000	0.6134456	0.6134456	0.1	-7.81	20.00	AVRG
1,1,2-Trichloroethane	0.2880000	0.2905508	0.2905508	0.1	-0.88	20.00	AVRG
Dibromofluoromethane	54.346570	50.000000	0.5398879	0.1	-8.69	20.00	LINR
1,2-Dichloroethane-d4	52.648603	50.000000	0.6613411	0.1	-5.30	20.00	LINR
Toluene-d8	50.916624	50.000000	1.3042703	0.1	-1.83	20.00	LINR
4-Bromofluorobenzene	50.993567	50.000000	0.4905726	0.1	-1.99	20.00	LINR

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

outputFile debug: C:\tp\envision\results\HS120030888/08a.01 Lab Code: AL

Lab File ID (Standard): Y032303 Date Analyzed: 03/24/20

Instrument ID: VOA6 Time Analyzed: 0032

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	IS1 RT #	IS2(DFB) AREA #	IS2(DFB) RT #	IS3(CBZ) AREA #	IS3(CBZ) RT #
	12 HOUR STD	279529	4.18	454770	4.97	419938	7.67
	UPPER LIMIT	559058	4.68	909540	5.47	839876	8.17
	LOWER LIMIT	139765	3.68	227385	4.47	209969	7.17
	CLIENT SAMPLE NO.						
01	CCB	379857	4.18	562839	4.97	489252	7.67
02	VLCSW-200323	292665	4.18	469010	4.97	427841	7.67
03	VBLKW1-20032	393269	4.18	588801	4.97	513073	7.67
04	HS20030888-0	407934	4.18	601489	4.97	509703	7.67
05	HS20030771-0	383691	4.18	575567	4.97	506851	7.67
06	HS20030771-0	377650	4.18	563865	4.97	487059	7.67
07	HS20030888-0	383983	4.18	573396	4.97	488016	7.67
08	HS20030888-1	401626	4.18	605162	4.97	515748	7.67
09	HS20030888-0	400616	4.18	600019	4.97	518829	7.67
10	HS20030888-0	400329	4.18	603087	4.97	514702	7.67
11	HS20030888-0	401929	4.18	595252	4.97	498502	7.67
12	HS20030888-0	407963	4.18	604221	4.97	518102	7.67
13	HS20030888-1	409269	4.18	614261	4.97	507419	7.67
14							
15							
16							
17							
18							
19							
20							

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

outputFile debug: C:\tp\envision\results\HS120030888/08a.01 Lab Code: AL

Lab File ID (Standard): Y032303 Date Analyzed: 03/24/20

Instrument ID: VOA6 Time Analyzed: 0032

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS4 (DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	206067	9.67				
	UPPER LIMIT	412134	10.17				
	LOWER LIMIT	103034	9.17				
	CLIENT SAMPLE NO.						
01	CCB	213279	9.67				
02	VLCSW-200323	208131	9.67				
03	VBLKW1-20032	240191	9.67				
04	HS20030888-0	245803	9.67				
05	HS20030771-0	241321	9.67				
06	HS20030771-0	229871	9.67				
07	HS20030888-0	222281	9.67				
08	HS20030888-1	241234	9.67				
09	HS20030888-0	249031	9.67				
10	HS20030888-0	236154	9.67				
11	HS20030888-0	233438	9.67				
12	HS20030888-0	242069	9.67				
13	HS20030888-1	236891	9.67				
14							
15							
16							
17							
18							
19							
20							

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032301.D

Date : 23-MAR-2020 23:44

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

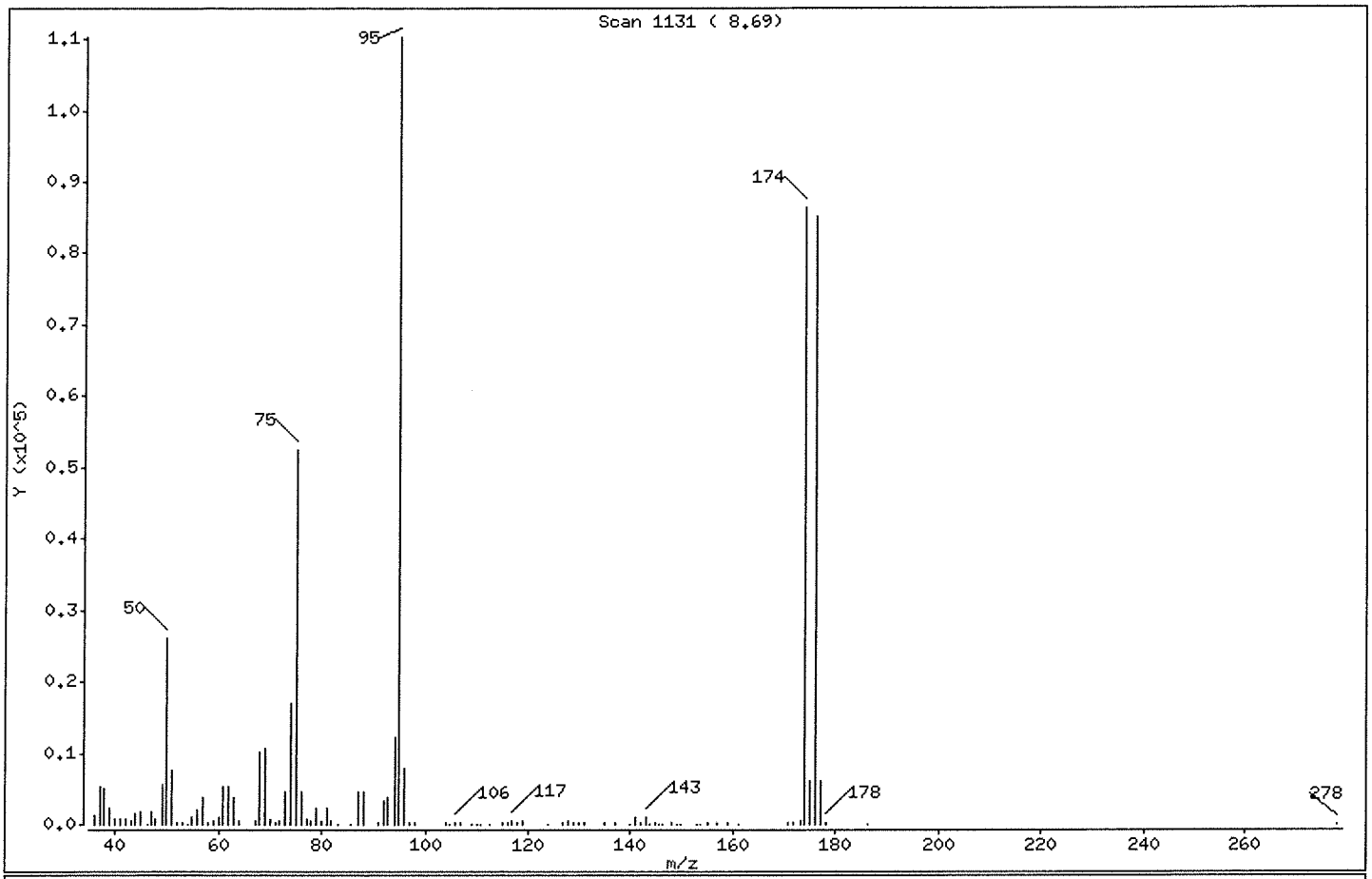
Volume Injected (uL): 2.0

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	23.61
75	30.00 - 60.00% of mass 95	47.64
96	5.00 - 9.00% of mass 95	7.03
173	Less than 2.00% of mass 174	0.54 (0.68)
174	Greater than 50.00% of mass 95	78.45
175	5.00 - 9.00% of mass 174	5.54 (7.06)
176	95.00 - 101.00% of mass 174	77.19 (98.40)
177	5.00 - 9.00% of mass 176	5.50 (7.13)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032301.D

Date : 23-MAR-2020 23:44

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: Y032301.D
Spectrum: Scan 1131 (8.69)
Location of Maximum: 95.00
Number of points: 105

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1208	63.00	3720	96.00	7758	142.90	1087
37.00	5218	63.90	454	96.90	162	143.80	51
38.00	5106	67.10	403	98.20	245	144.70	142
39.00	2318	68.00	10180	103.90	335	145.60	126
40.00	813	69.00	10713	104.70	117	146.10	79
40.90	654	70.00	874	105.80	368	147.90	282
42.00	755	71.00	191	107.00	169	148.90	68
43.00	580	72.00	630	108.90	64	149.70	123
43.90	1471	73.00	4487	110.00	86	153.00	69
44.90	1825	74.00	16888	110.70	116	153.70	70
46.20	90	75.00	52536	112.70	55	155.00	365
47.10	1865	76.00	4634	115.10	139	156.90	254
47.90	660	77.10	724	116.00	333	158.80	136
49.00	5509	77.90	523	116.90	630	160.90	106
50.00	26032	78.90	2365	117.80	282	170.80	127
51.00	7629	79.80	601	118.80	597	171.80	134
52.00	338	80.90	2275	124.00	53	173.00	590
53.00	128	81.90	387	126.70	142	173.90	86512
54.00	74	83.00	120	127.90	465	174.90	6108
55.00	1139	85.70	102	128.90	154	176.00	85128
55.90	2049	87.00	4596	130.00	376	176.90	6067
57.00	3683	88.00	4499	131.00	132	178.10	156
58.10	222	91.00	316	134.90	162	186.10	94
59.00	396	92.00	3323	137.00	181	278.00	107
60.00	949	92.90	3908	139.70	95		
61.00	5396	94.00	12215	140.80	898		
62.00	5210	95.00	110280	142.00	266		

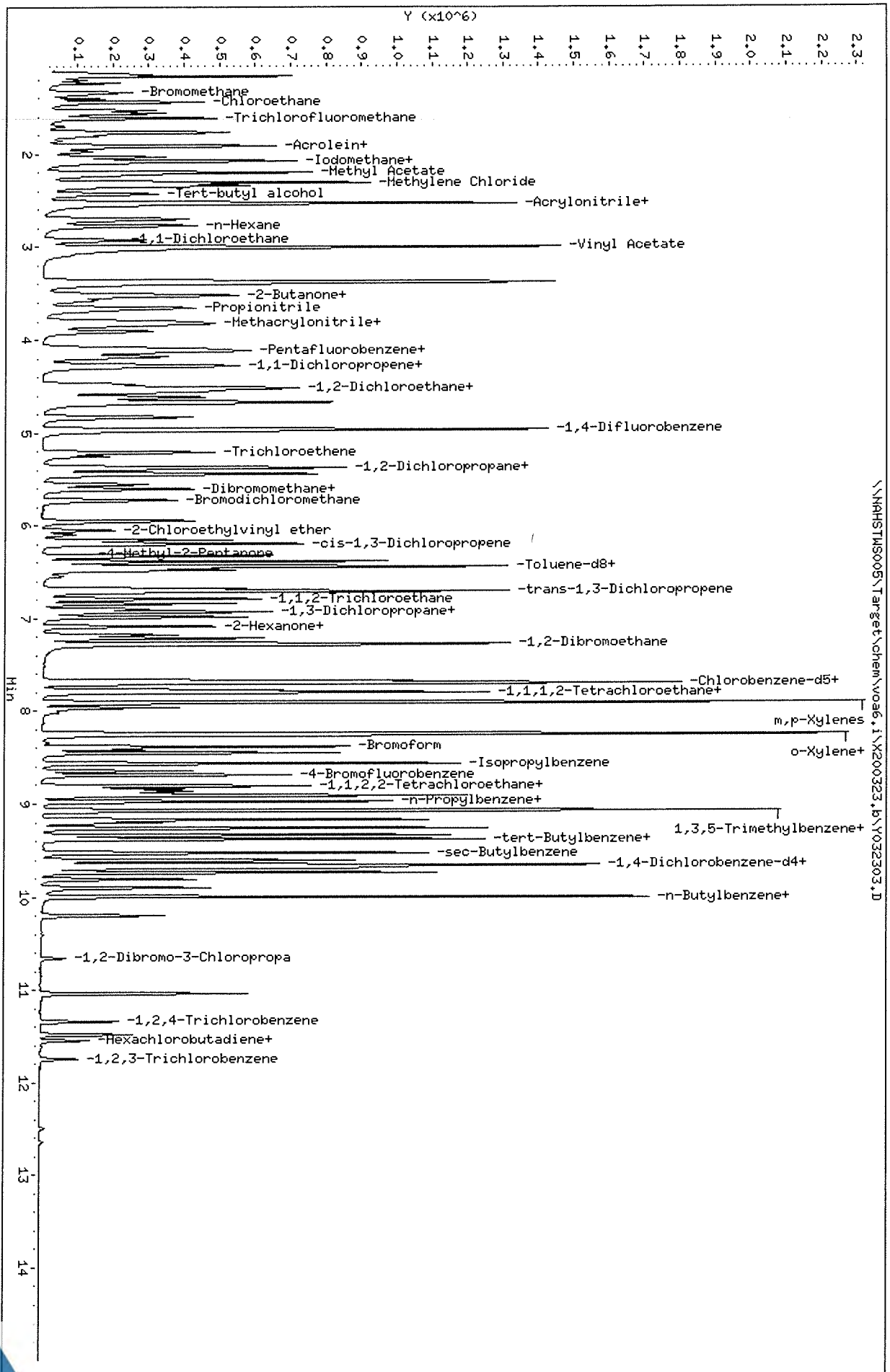
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032303.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 24-MAR-2020 00:32
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 21-Apr-2020 15:32 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 32 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	279529	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	148363	50.0000	53.42
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	185599	50.0000	52.85
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	454770	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	419938	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	531071	50.0000	49.36
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	198944	50.0000	49.22
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	206067	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	208584	50.0000	48.97
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	118525	50.0000	50.03
17 Methylene Chloride	84	2.305	2.305	(0.551)	158077	50.0000	53.23
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	165813	50.0000	52.08
33 1,2-Dichloroethane	62	4.555	4.555	(0.916)	243706	50.0000	50.72
38 Trichloroethene	130	5.206	5.206	(1.048)	158018	50.0000	50.13
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	119151	50.0000	49.24



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032303.D
Date : 24-MAR-2020 00:32
Client ID: CCV
Sample Info: CCV;CCV;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032304.D
Lab Smp Id: CCB Client Smp ID: CCB
Inj Date : 24-MAR-2020 00:56
Operator : PC Inst ID: voa6.i
Smp Info : CCB;CCB;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 21-Apr-2020 15:32 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 33
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

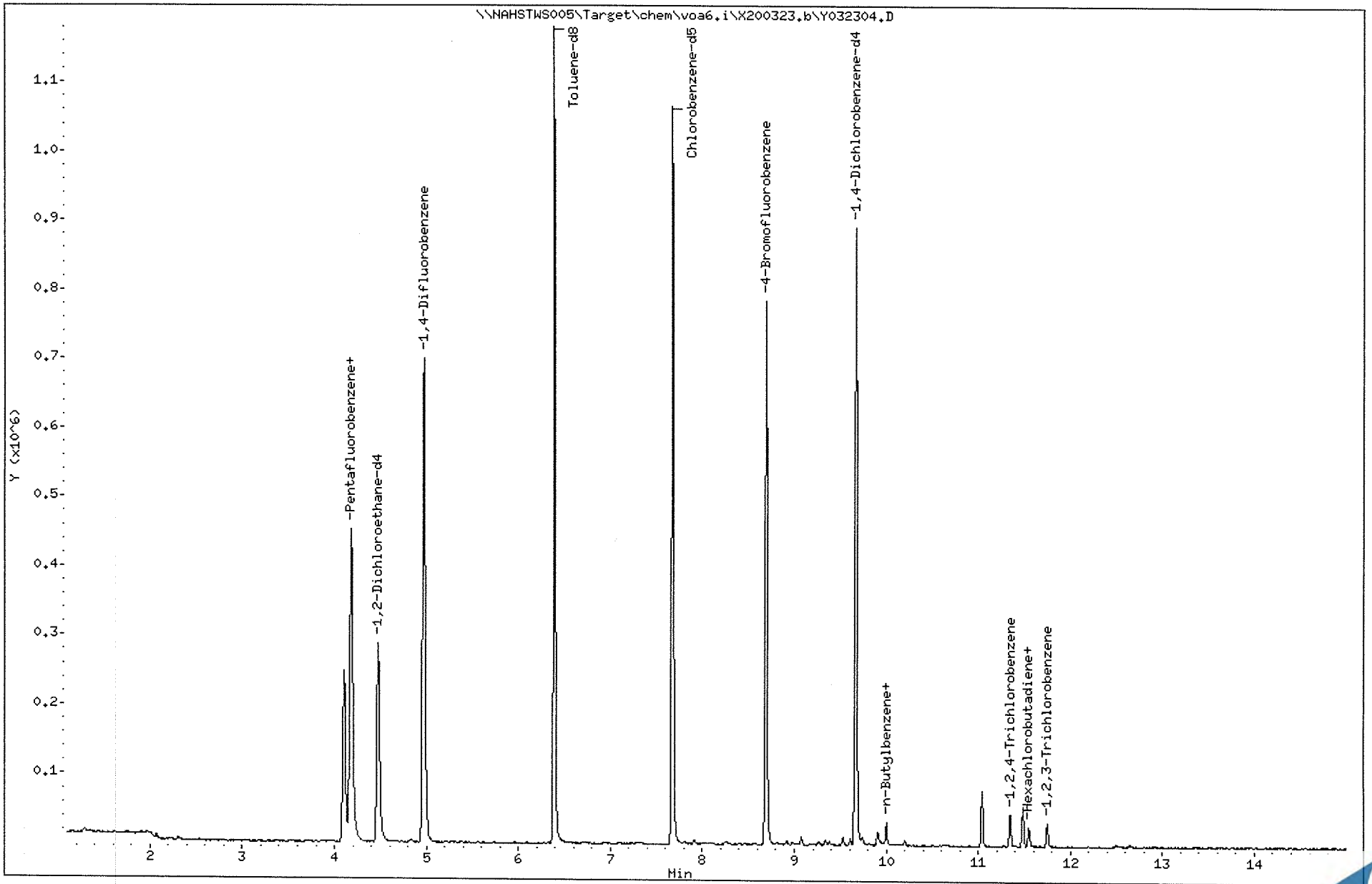
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	379857	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	179143	47.4596	47.45
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	215133	45.0640	45.06
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	562839	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	489252	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	659406	52.6178	52.61
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	225885	47.9628	47.96
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	213279	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032304.D
Date : 24-MAR-2020 00:56
Client ID: CCB
Sample Info: CCB;CCB;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i

Operator: PC
Column diameter: 0.18



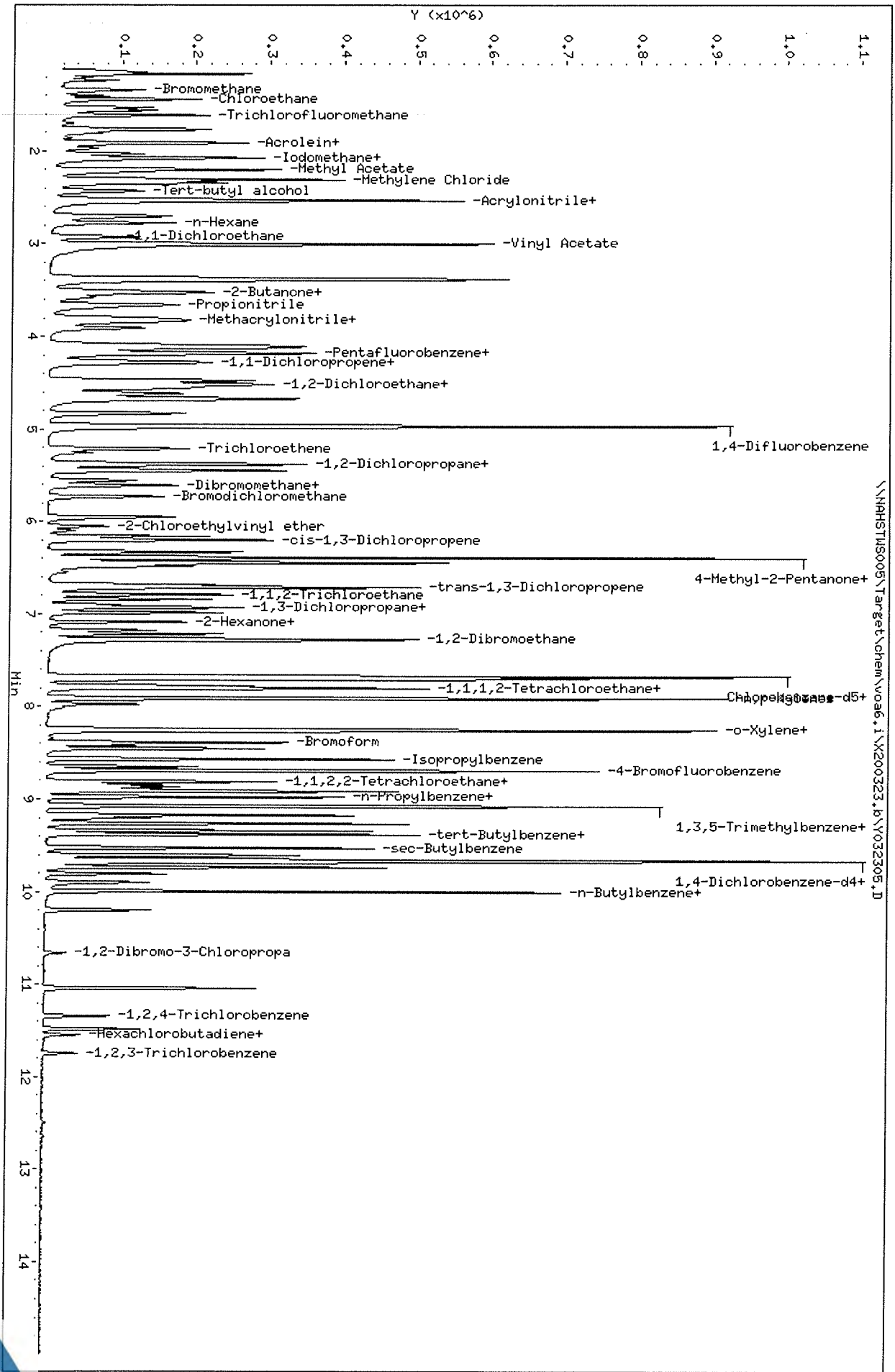
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032305.D
Lab Smp Id: VLCSW-200323 Client Smp ID: VLCSW-200323
Inj Date : 24-MAR-2020 01:20
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-200323;VLCSW-200323;3;;LCS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 21-Apr-2020 15:32 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 34 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	292665	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	157454	54.1562	54.15
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	196457	53.4413	53.44
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	469010	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	427841	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	555690	50.7037	50.70
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	211123	51.2967	51.29
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	208131	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	83351	18.6937	18.69
11 1,1-Dichloroethene	96	1.912	1.911	(0.457)	46577	18.7815	18.78
17 Methylene Chloride	84	2.306	2.305	(0.551)	65135	20.0914	20.09
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	70081	21.0271	21.02
33 1,2-Dichloroethane	62	4.562	4.555	(0.918)	97788	19.7351	19.73
38 Trichloroethene	130	5.207	5.206	(1.048)	64062	19.7068	19.70
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	48443	19.6528	19.65



Data File: \\NAHSTWS005\Target\chem\voa6,i\X200323,b\Y032305,D
Date : 24-MAR-2020 01:20
Client ID: VLCSW-200323
Sample Info: VLCSW-200323;VLCSW-200323;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032307.D
Lab Smp Id: VBLKW1-200323 Client Smp ID: VBLKW1-200323
Inj Date : 24-MAR-2020 02:08
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW1-200323;VBLKW1-200323;3;;BLANK
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 21-Apr-2020 15:32 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 36 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

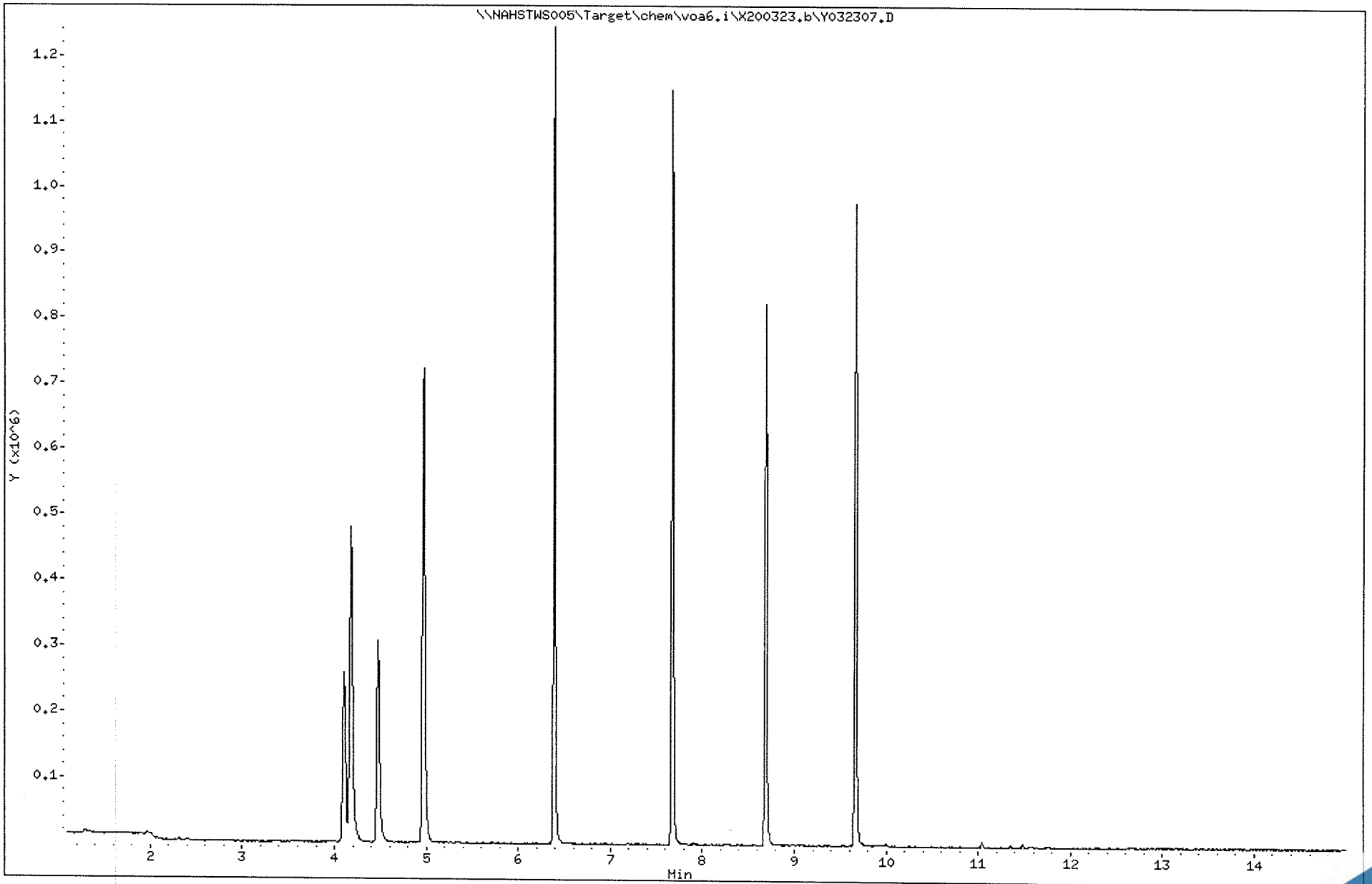
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	393269	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	186483	47.7198	47.71
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	225021	45.5293	45.52
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	588801	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	513073	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	684860	52.1110	52.11
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	239814	48.5623	48.56
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	240191	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032307.D
Date : 24-MAR-2020 02:08
Client ID: VBLKW1-200323
Sample Info: VBLKW1-200323;VBLKW1-200323;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i

Operator: PC
Column diameter: 0.18



ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032311.D
Lab Smp Id: HS20030888-03 Client Smp ID: HS20030888-03
Inj Date : 24-MAR-2020 03:44
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-03;HS20030888-03;;;
Misc Info : HS18090001;WATER;0;5;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 23-Apr-2020 11:41 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 40
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	5.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

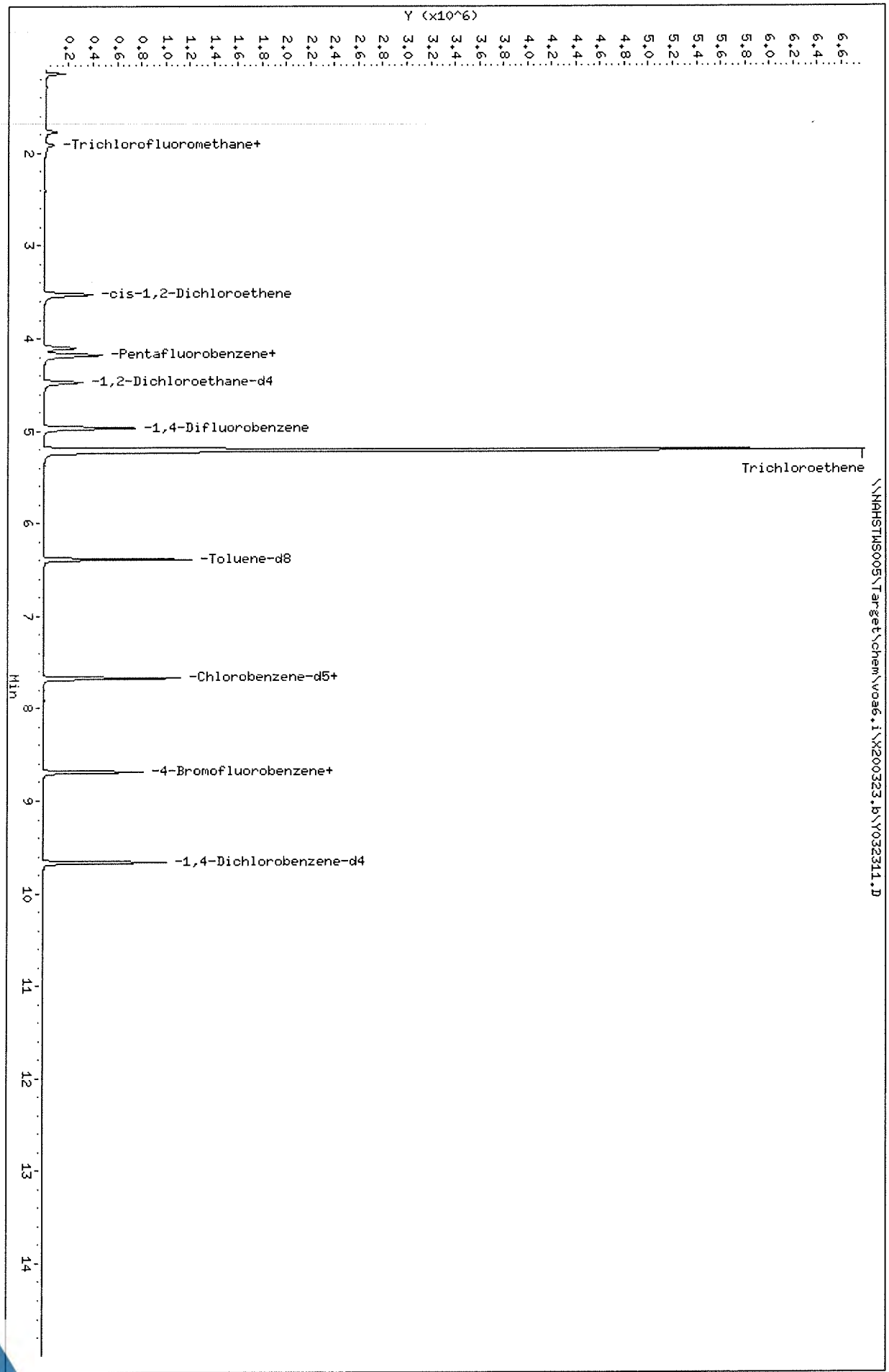
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	407934	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	190346	46.9556	46.95
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	231113	45.0793	45.07
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	601489	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	509703	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	676931	51.8478	51.84
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	239348	48.7907	48.79
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	245803	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	117866	18.9651	94.82
11 1,1-Dichloroethene	96	1.919	1.911	(0.459)	9086	2.62853	13.14(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	186861	40.2233	201.11
38 Trichloroethene	130	5.207	5.206	(1.048)	2221418	532.844	2664.21(A)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\NAHSTWS005\Target\chem\voa6,i\X200323,b\Y032311,D
Date : 24-MAR-2020 03:44
Client ID: HS20030888-03
Sample Info: HS20030888-03;HS20030888-03;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032311.D

Date : 24-MAR-2020 03:44

Client ID: HS20030888-03

Instrument: voa6.i

Sample Info: HS20030888-03;HS20030888-03;;;

Purge Volume: 5.0

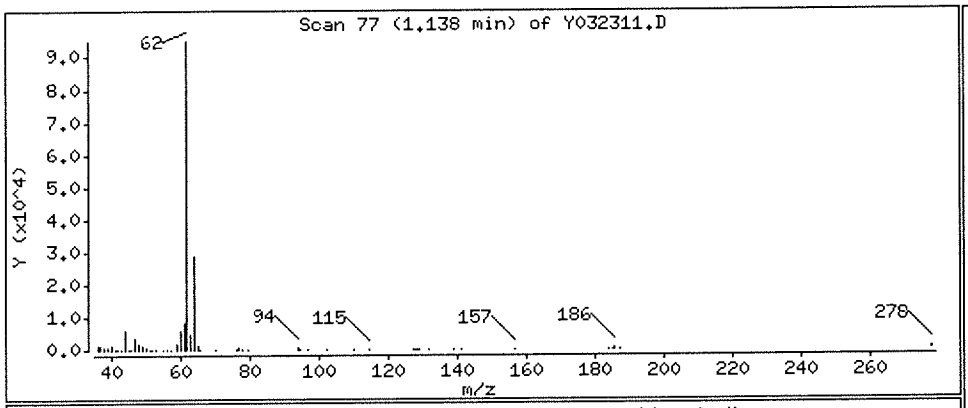
Operator: PC

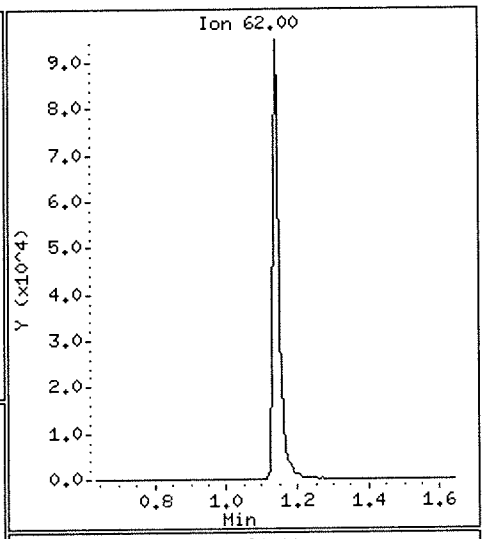
Column phase: DB624

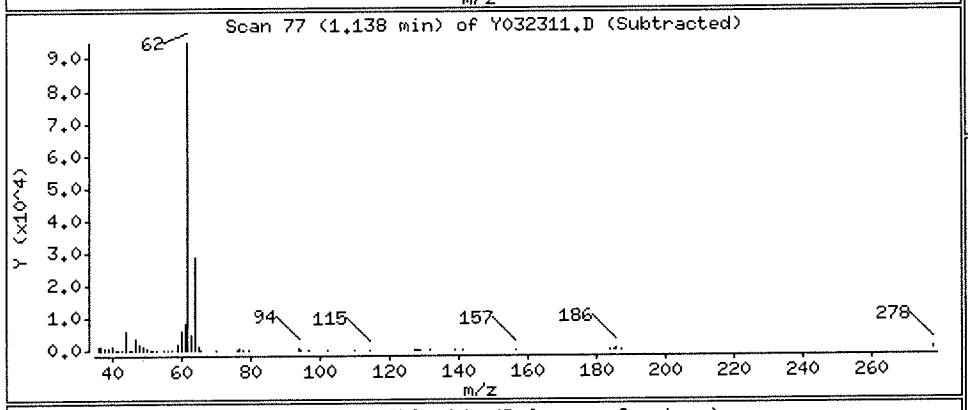
Column diameter: 0.18

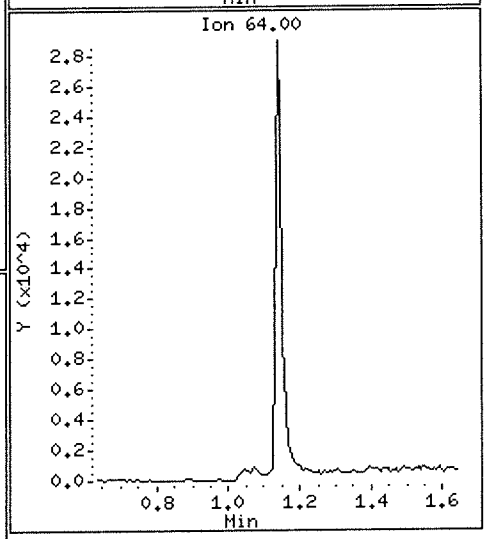
5 Vinyl Chloride

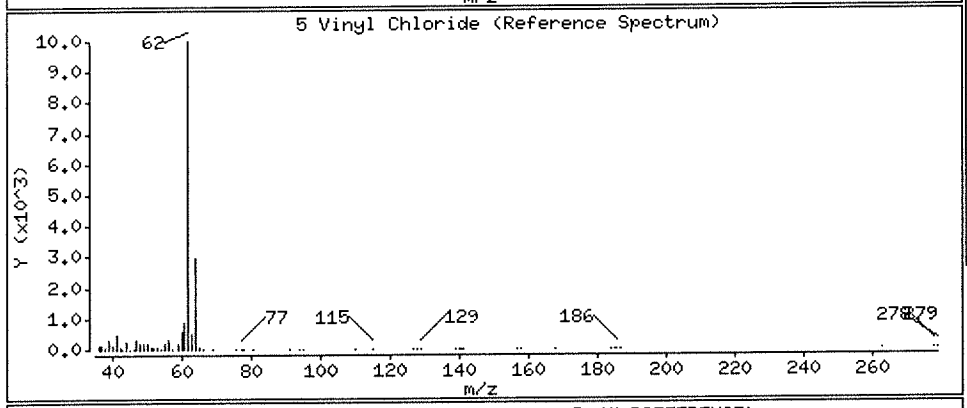
Concentration: 94.82 ug/l

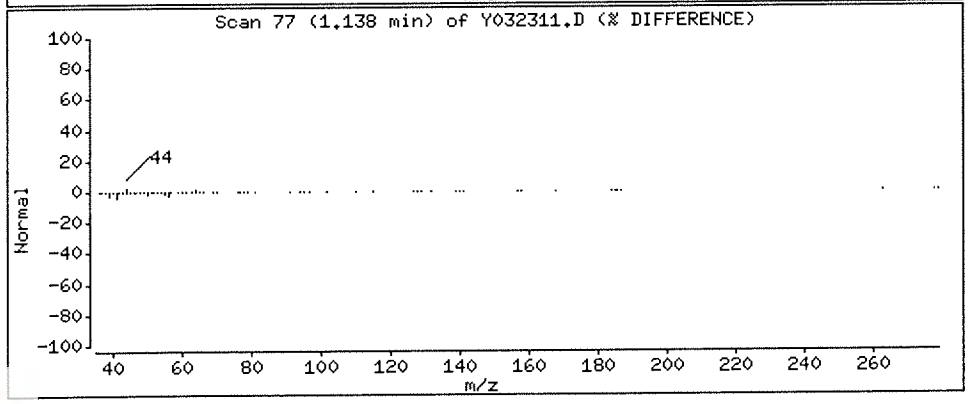












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032311.D

Date : 24-MAR-2020 03:44

Client ID: HS20030888-03

Instrument: voa6.i

Sample Info: HS20030888-03;HS20030888-03;;;

Purge Volume: 5.0

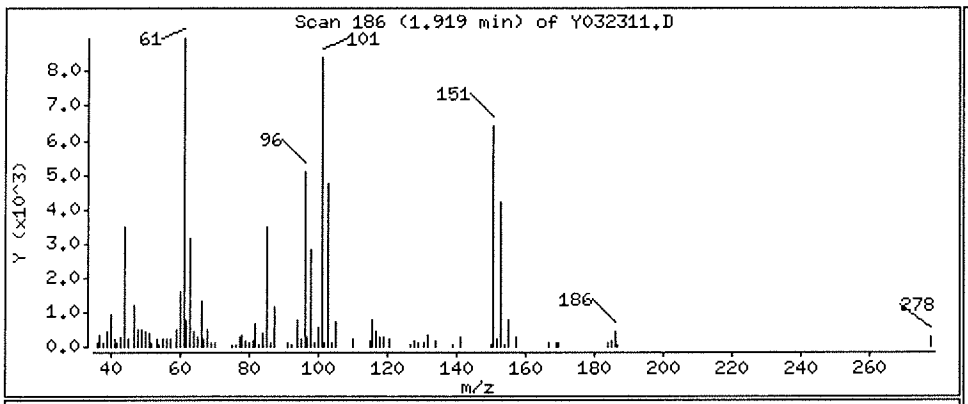
Operator: PC

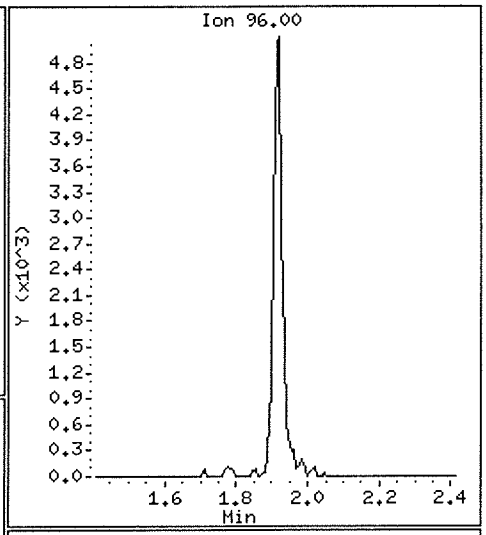
Column phase: DB624

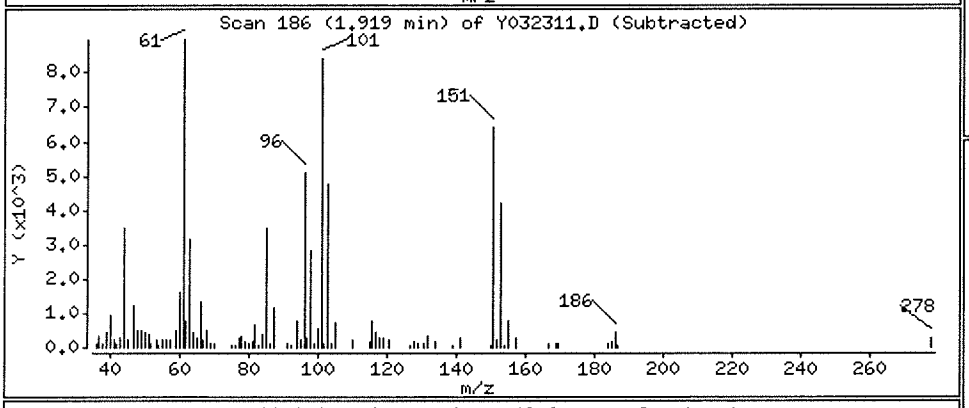
Column diameter: 0.18

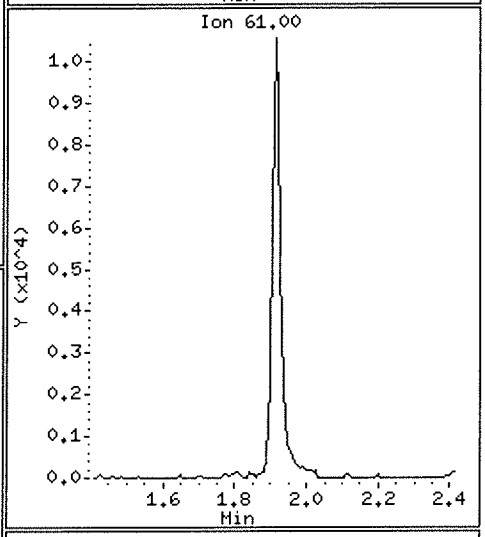
11 1,1-Dichloroethene

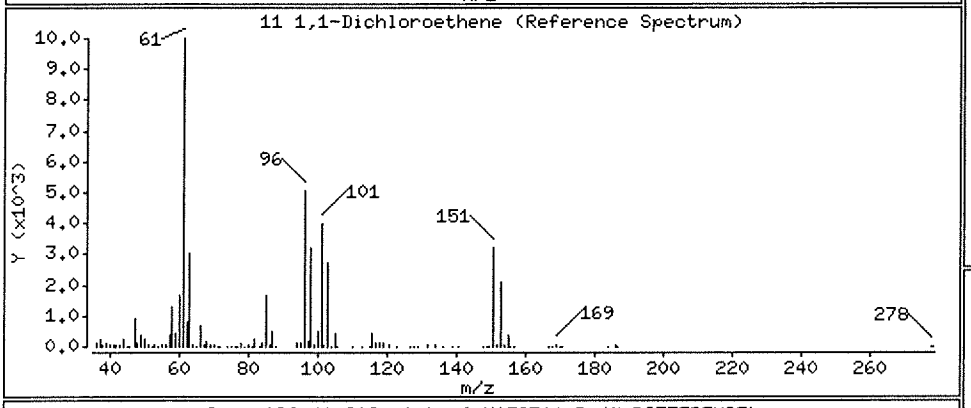
Concentration: 13.14 ug/l

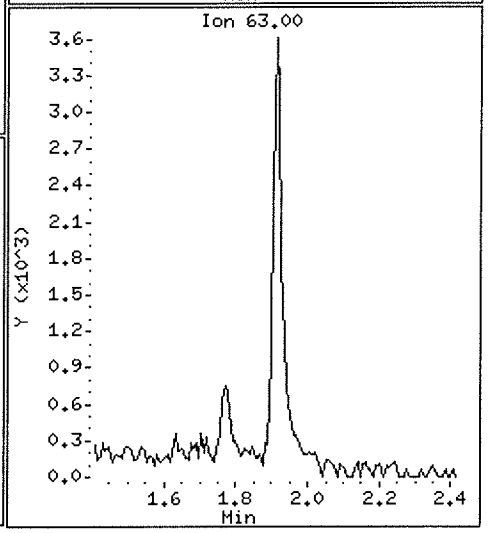


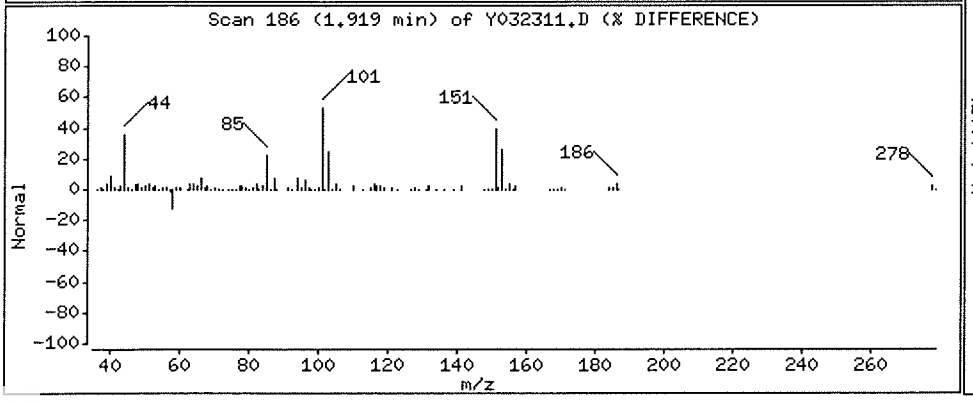












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032311.D Page 5

Date : 24-MAR-2020 03:44

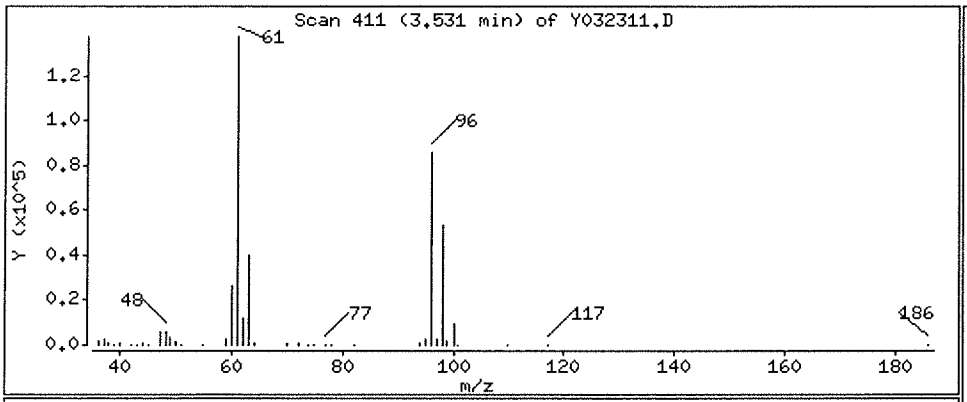
Client ID: HS20030888-03 Instrument: voa6.i

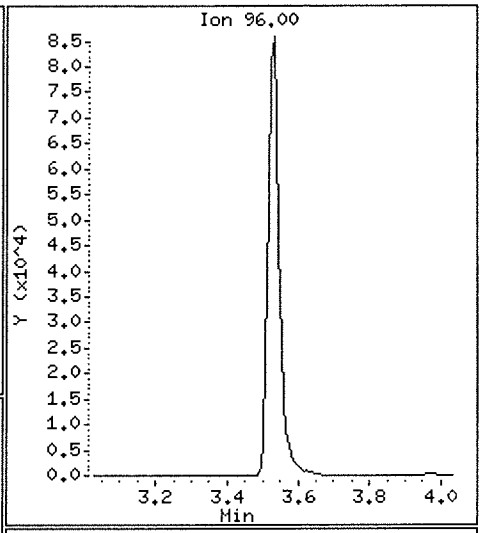
Sample Info: HS20030888-03;HS20030888-03;;;

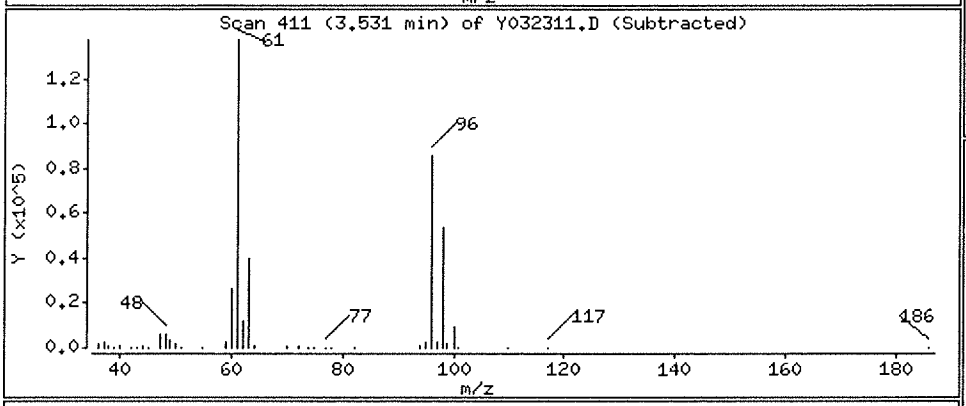
Purge Volume: 5.0 Operator: PC

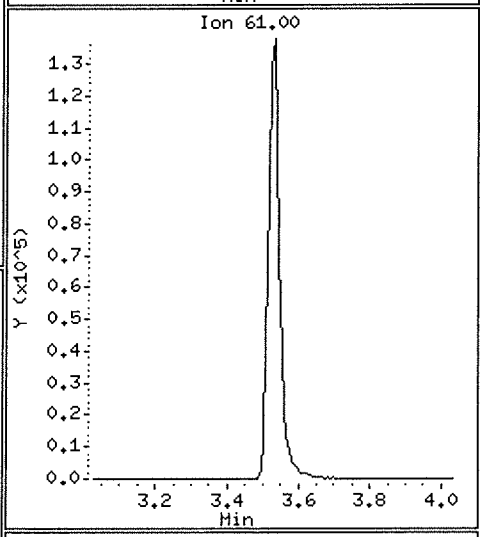
Column phase: DB624 Column diameter: 0.18

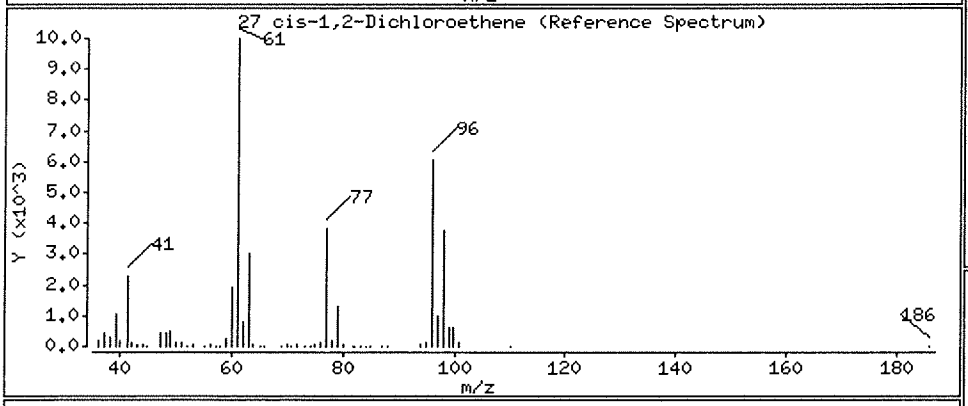
27 cis-1,2-Dichloroethene Concentration: 201.11 ug/l

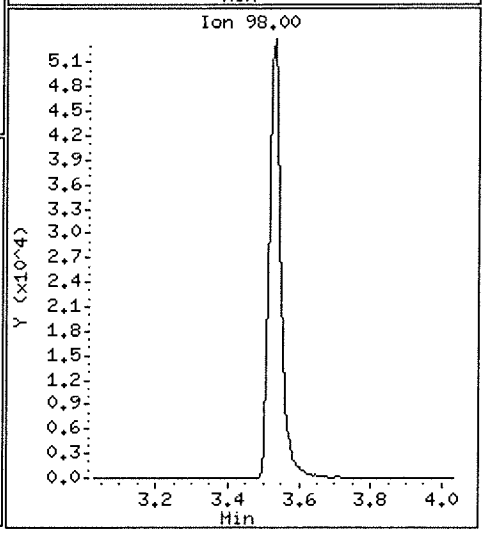


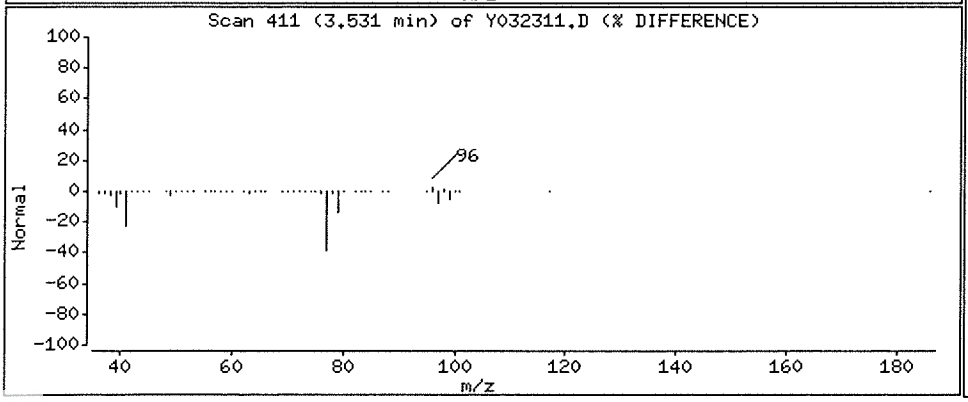












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032311.D

Date : 24-MAR-2020 03:44

Client ID: HS20030888-03

Instrument: voa6.i

Sample Info: HS20030888-03;HS20030888-03;;;

Purge Volume: 5.0

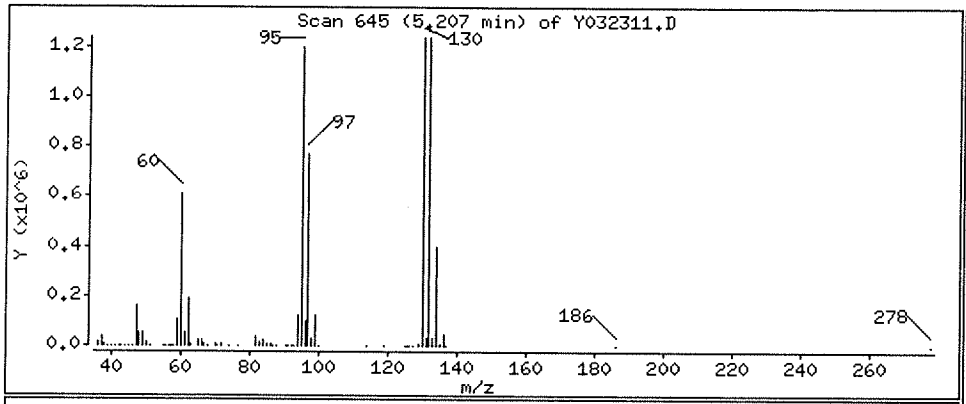
Operator: PC

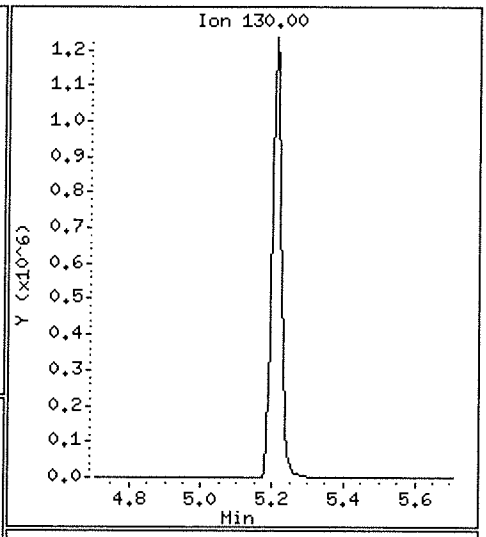
Column phase: DB624

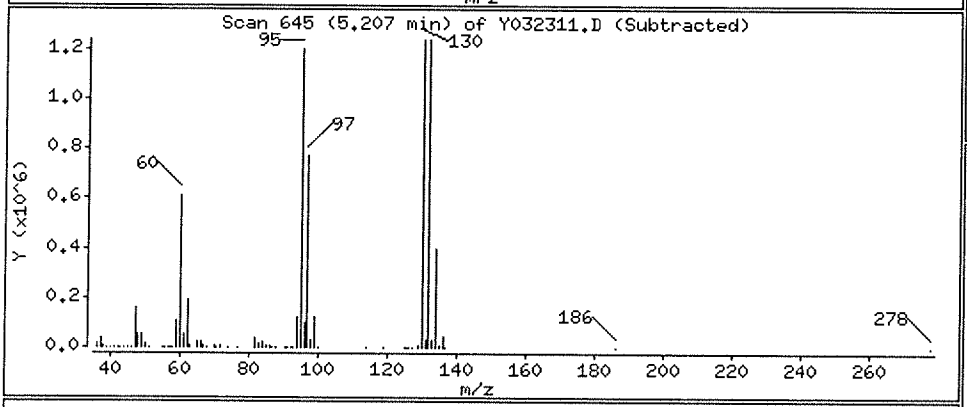
Column diameter: 0.18

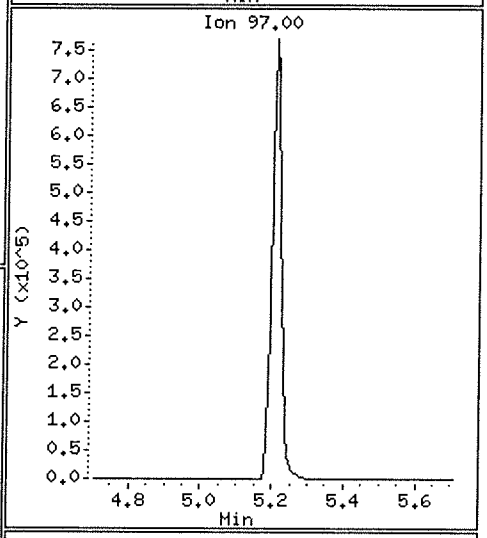
38 Trichloroethene

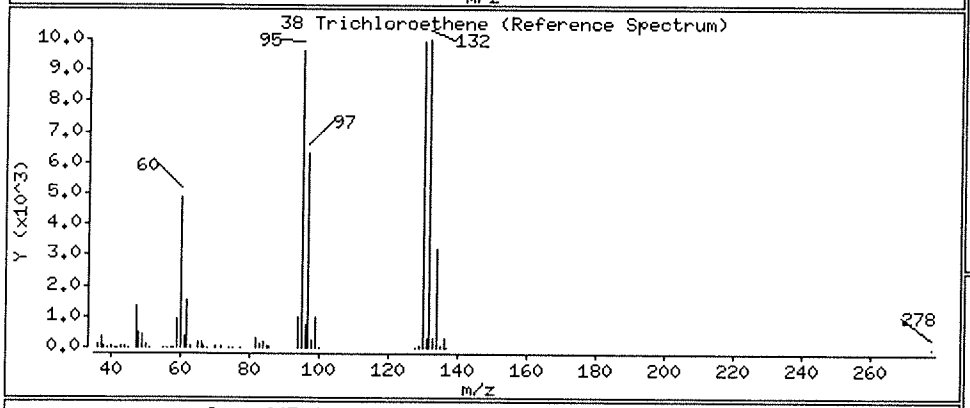
Concentration: 2664.21 ug/l

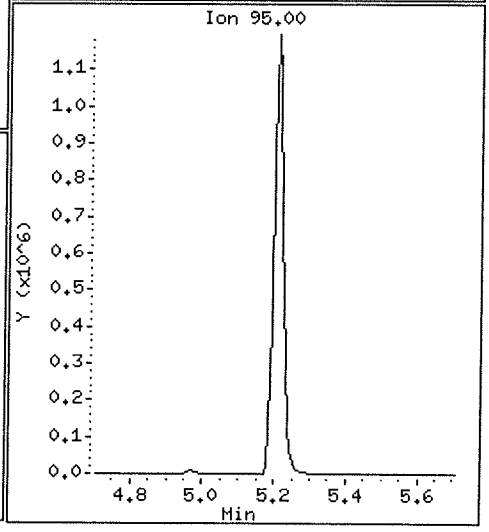


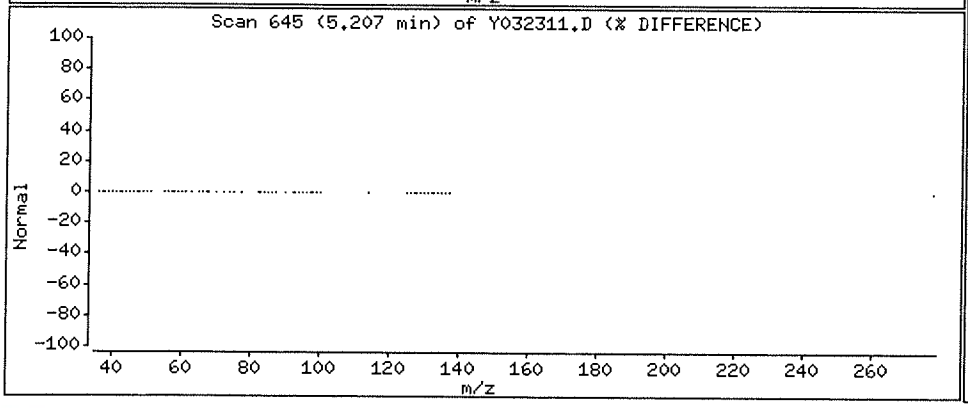












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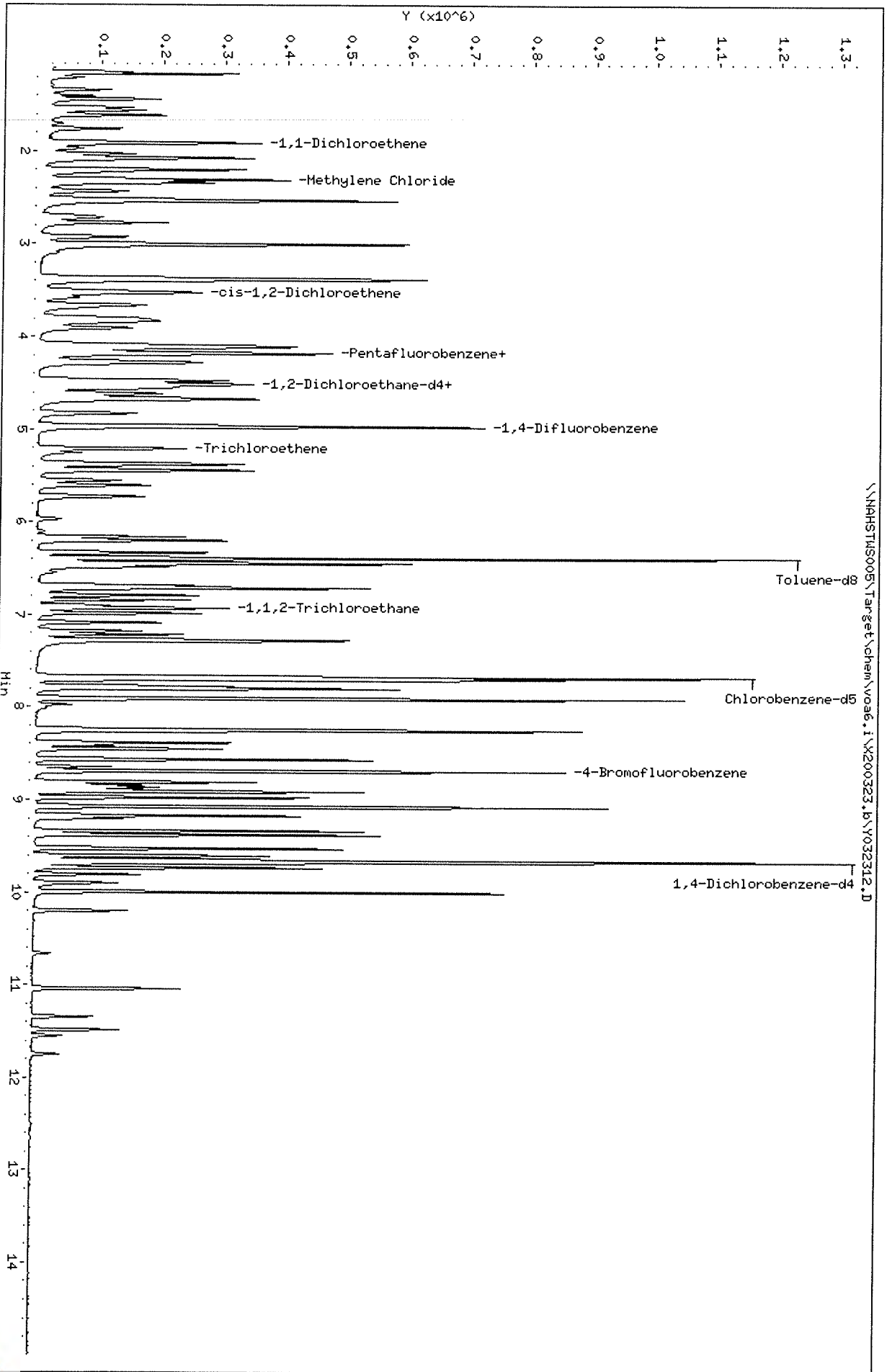
Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032312.D
Lab Smp Id: HS20030771-04MS Client Smp ID: HS20030771-04MS
Inj Date : 24-MAR-2020 04:08
Operator : PC Inst ID: voa6.i
Smp Info : HS20030771-04MS;HS20030771-04MS;3;;MS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 23-Apr-2020 11:41 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 41 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	383691	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	182521	47.8722	47.87
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	222874	46.2230	46.22
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	575567	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	506851	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	667140	51.3848	51.38
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	237122	48.6071	48.60
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	241322	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	102351	17.5092	17.50
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	57422	17.6615	17.66
17 Methylene Chloride	84	2.305	2.305	(0.551)	75833	17.6836	17.68
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	80211	18.3570	18.35
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	112768	18.5449	18.54
38 Trichloroethene	130	5.206	5.206	(1.048)	78641	19.7129	19.71
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	54121	18.5337	18.53



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032312.D
Date : 24-MAR-2020 04:08
Client ID: HS20030771-04MS
Sample Info: HS20030771-04MS;HS20030771-04MS;3;;HS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032313.D Page 1
Report Date: 23-Apr-2020 11:44

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Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032313.D
Lab Smp Id: HS20030771-04MSD Client Smp ID: HS20030771-04MSD
Inj Date : 24-MAR-2020 04:32
Operator : PC Inst ID: voa6.i
Smp Info : HS20030771-04MSD;HS20030771-04MSD;3;;MSD
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 23-Apr-2020 11:44 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 41 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

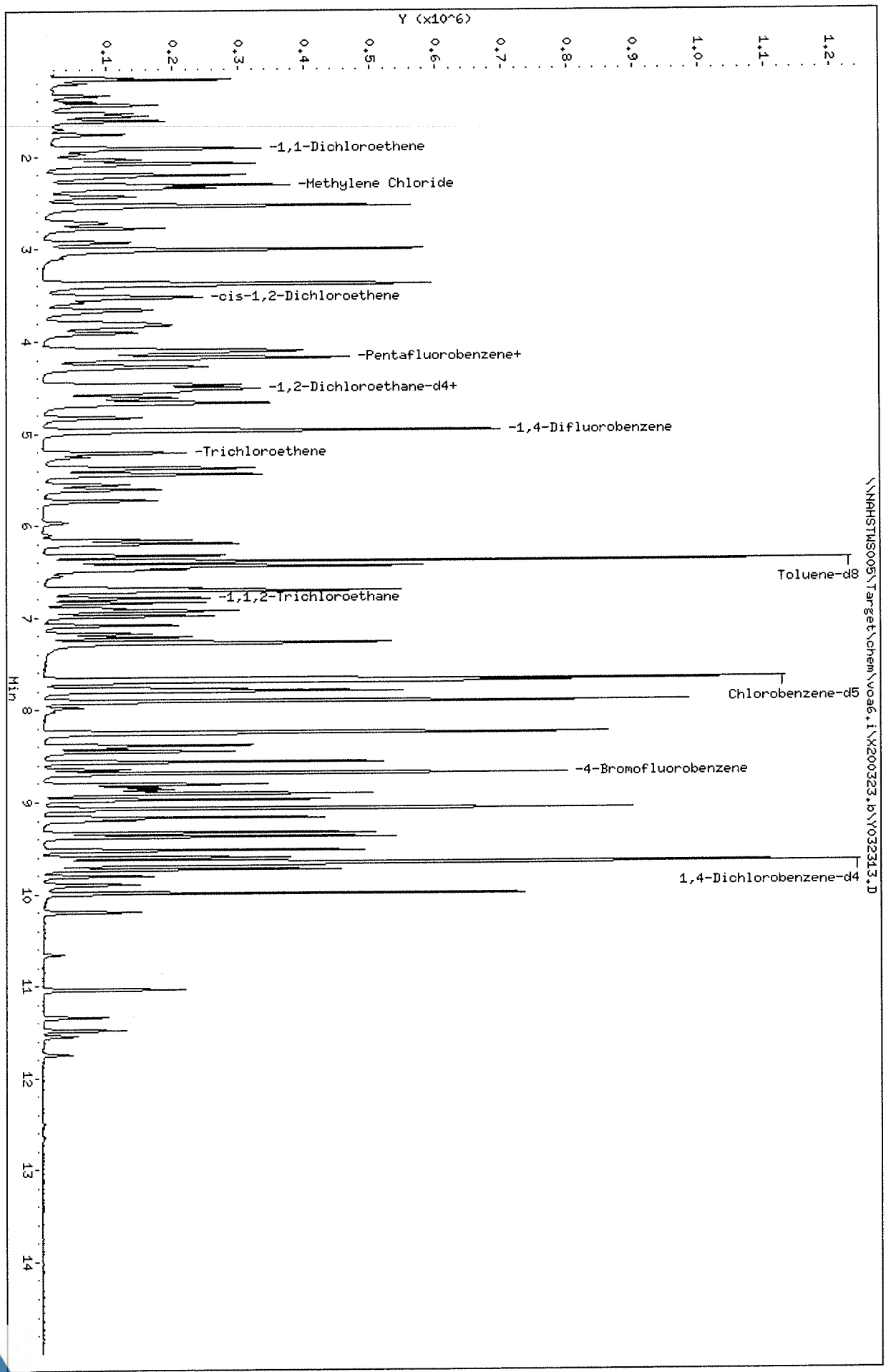
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	377650	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	177302	47.2459	47.24
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	221761	46.7296	46.72
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	563865	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	487059	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	656387	52.6128	52.61
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	227996	48.6358	48.63
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	229871	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	98013	17.0353	17.03
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	54713	17.0975	17.09
17 Methylene Chloride	84	2.305	2.305	(0.551)	71455	16.8689	16.86
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	75123	17.4676	17.46
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	105987	17.7915	17.79
38 Trichloroethene	130	5.206	5.206	(1.048)	71977	18.4169	18.41
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	52533	18.7209	18.72

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032313.D
Date : 24-MAR-2020 04:32
Client ID: HS20030771-04HSD
Sample Info: HS20030771-04HSD;HS20030771-04HSD;3;;MSD
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032314.D
Lab Smp Id: HS20030888-03 Client Smp ID: HS20030888-03
Inj Date : 24-MAR-2020 04:57
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-03;HS20030888-03;;;
Misc Info : HS18090001;WATER;0;50;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 23-Apr-2020 11:45 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 42
Dil Factor: 50.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	50.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

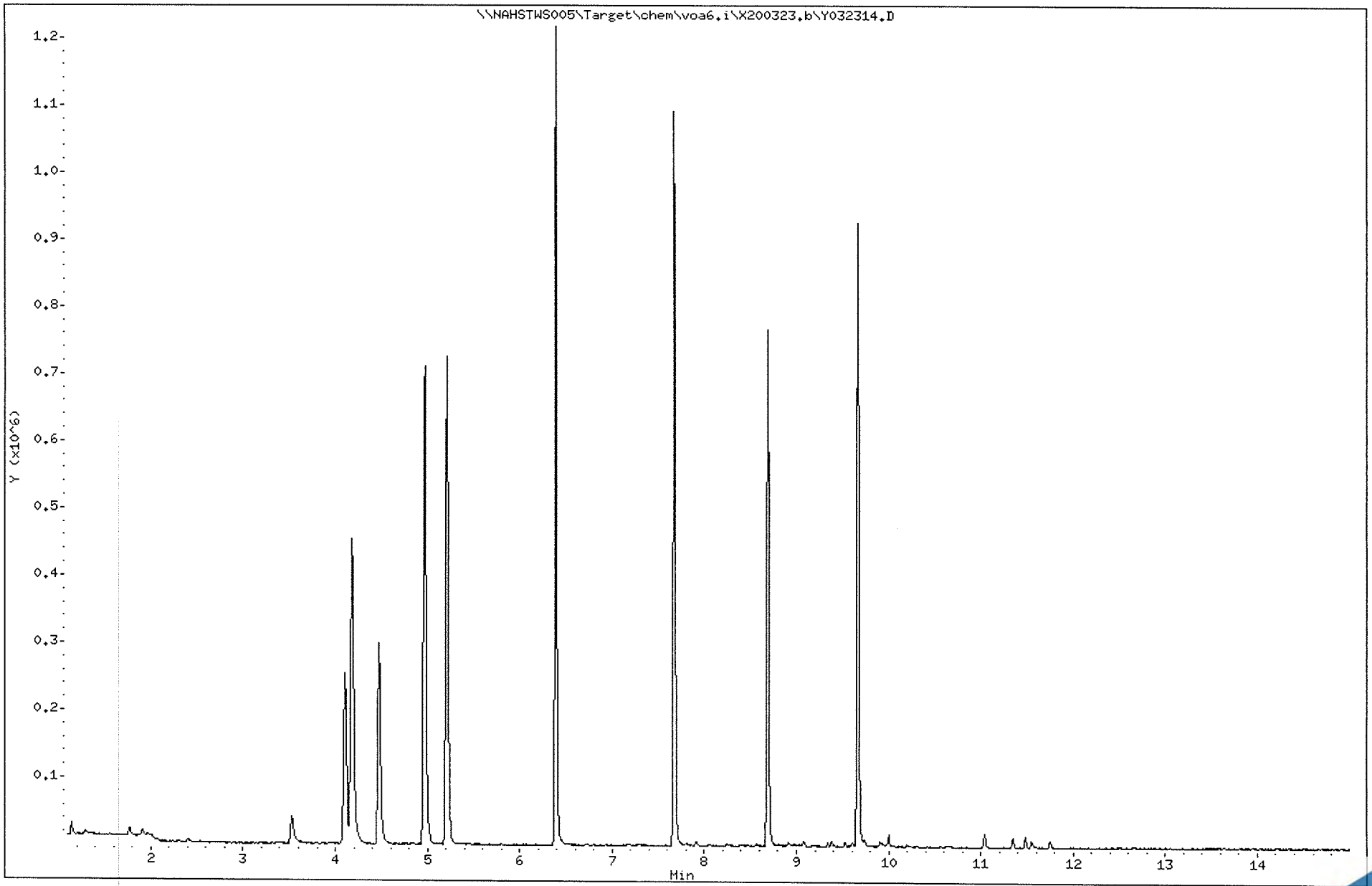
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	383983	50.0000	
$ 30 Dibromofluoromethane	113	4.104	4.103	(0.981)	180706	47.3590	47.35
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	218234	45.2229	45.22
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	573396	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	488016	50.0000	
$ 48 Toluene-d8	98	6.389	6.388	(0.833)	661198	52.8949	52.89
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	226400	48.1963	48.19
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	222281	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	12815	2.19060	109.52(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	19371	4.42985	221.49(a)
38 Trichloroethene	130	5.207	5.206	(1.048)	239043	60.1476	3007.38

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032314.D
Date : 24-MAR-2020 04:57
Client ID: HS20030888-03
Sample Info: HS20030888-03;HS20030888-03;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032314.D

Date : 24-MAR-2020 04:57

Client ID: HS20030888-03

Instrument: voa6.i

Sample Info: HS20030888-03;HS20030888-03;;;

Purge Volume: 5.0

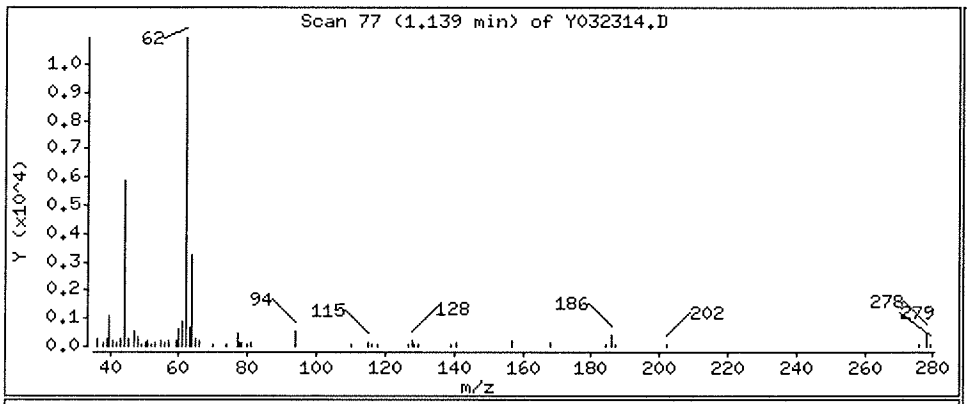
Operator: PC

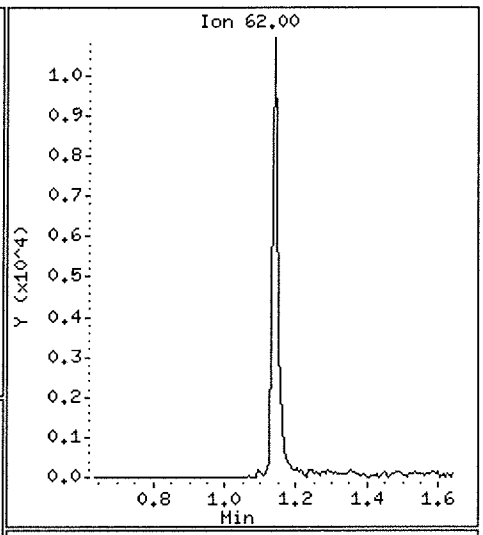
Column phase: DB624

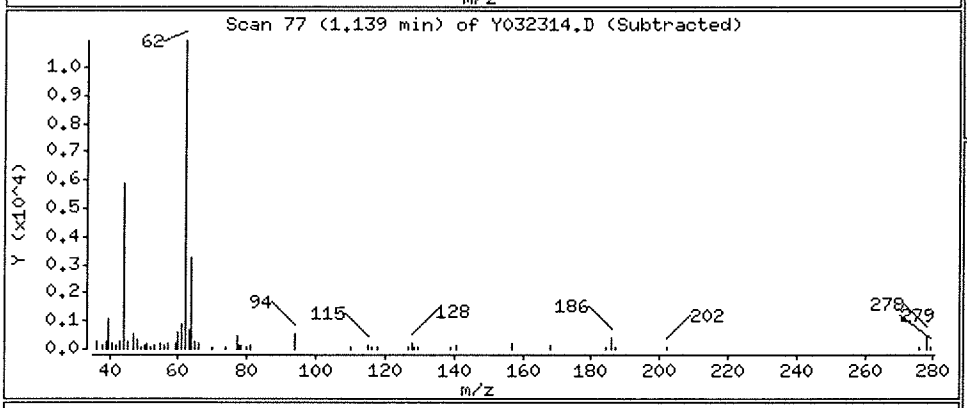
Column diameter: 0.18

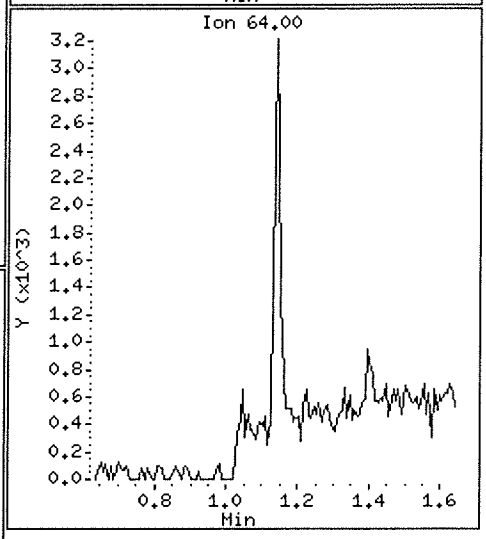
5 Vinyl Chloride

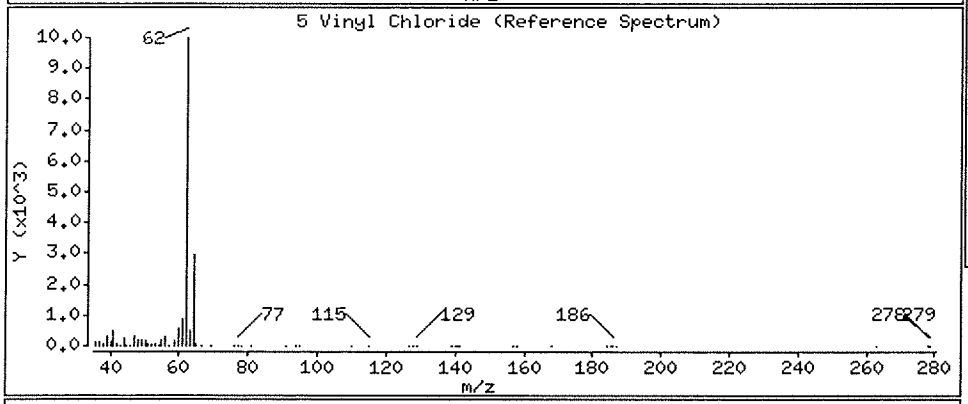
Concentration: 109.52 ug/l

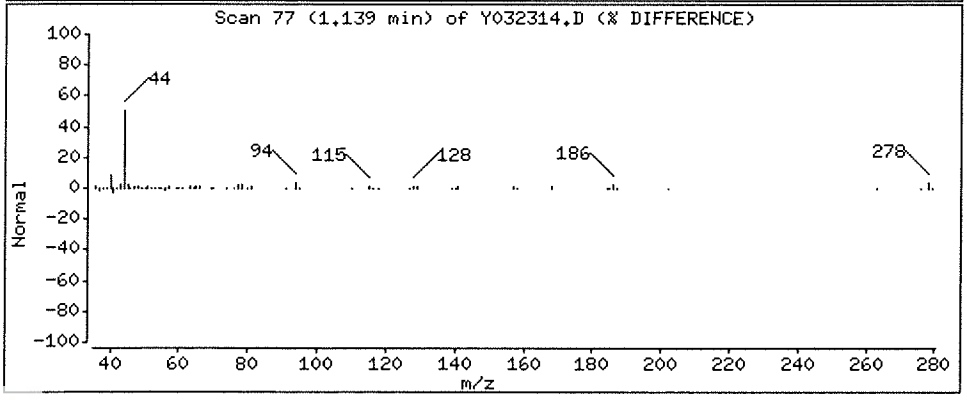












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032314.D Page 4

Date : 24-MAR-2020 04:57

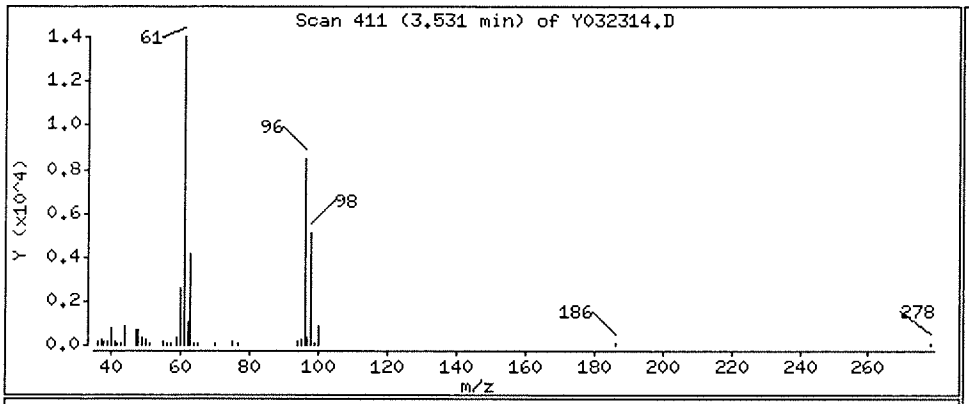
Client ID: HS20030888-03 Instrument: voa6.i

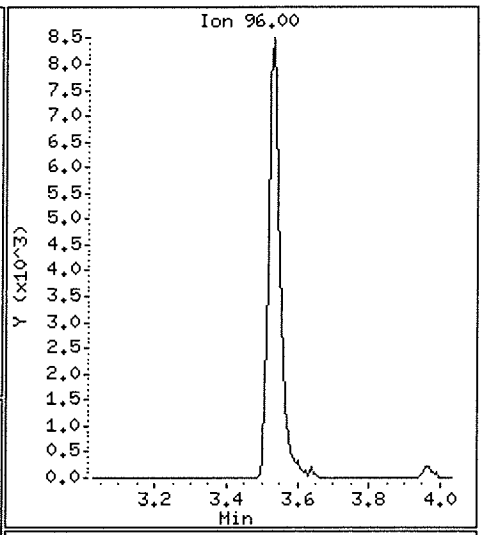
Sample Info: HS20030888-03;HS20030888-03;;;

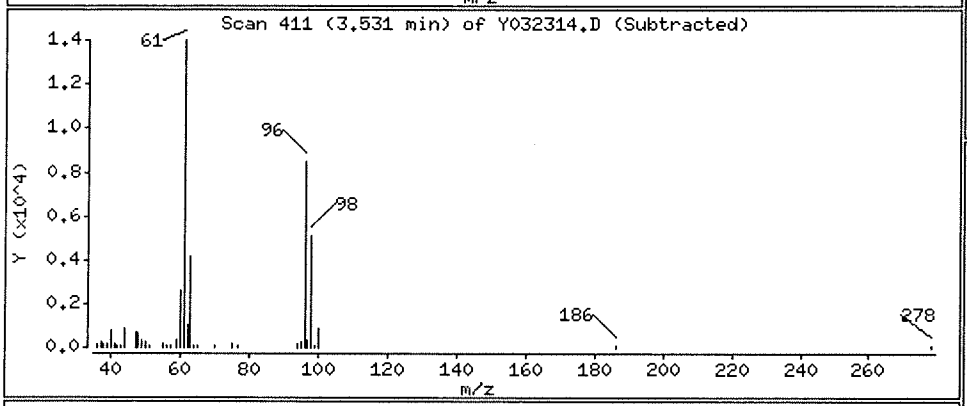
Purge Volume: 5.0 Operator: PC

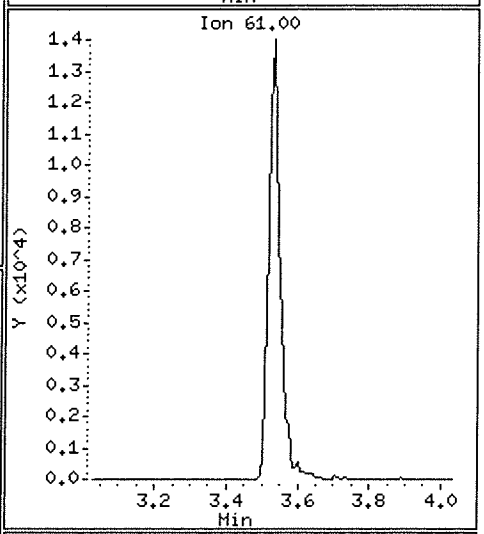
Column phase: DB624 Column diameter: 0.18

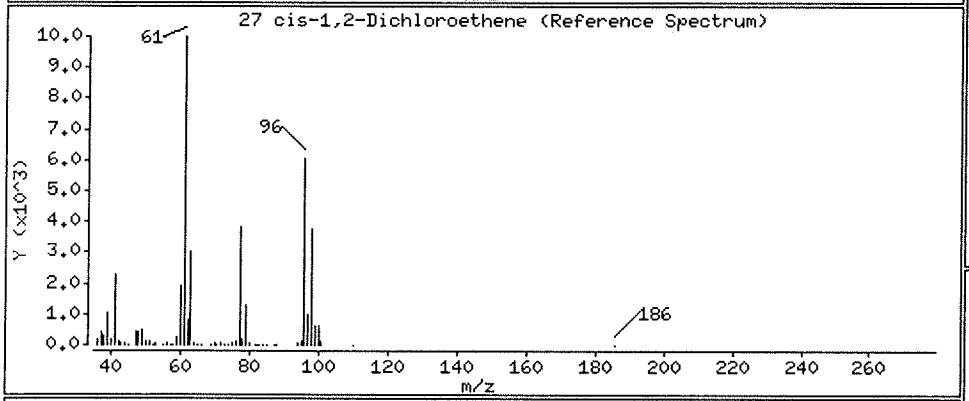
27 cis-1,2-Dichloroethene Concentration: 221.49 ug/l

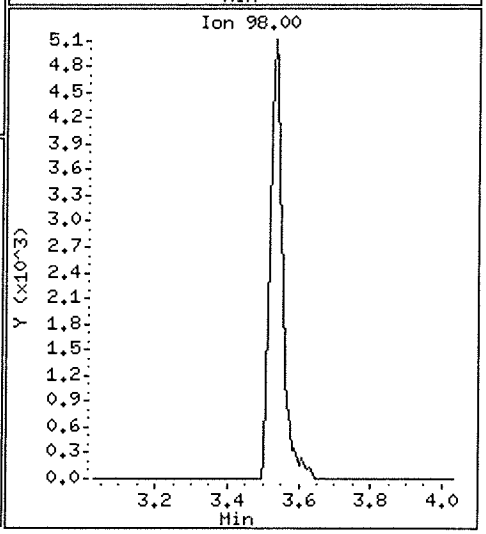


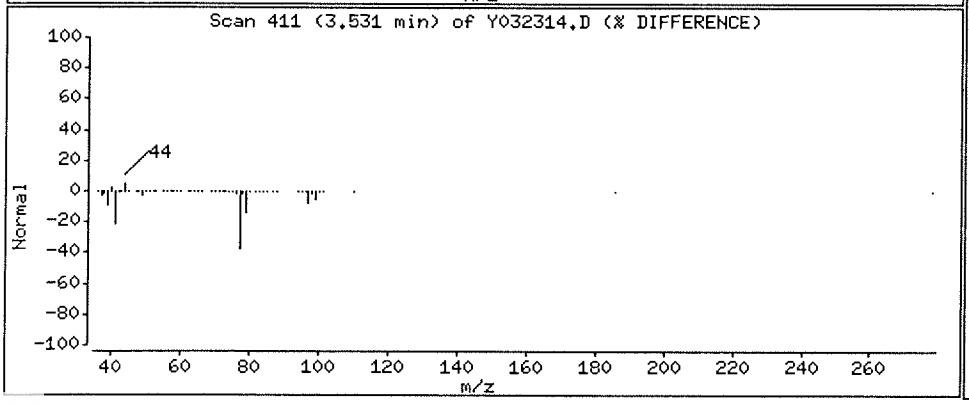












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032314.D

Date : 24-MAR-2020 04:57

Client ID: HS20030888-03

Instrument: voa6.i

Sample Info: HS20030888-03;HS20030888-03;;;

Purge Volume: 5.0

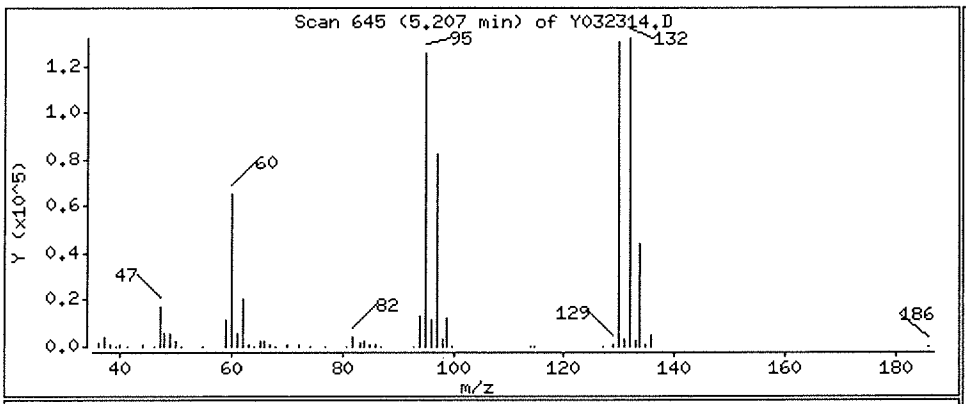
Operator: PC

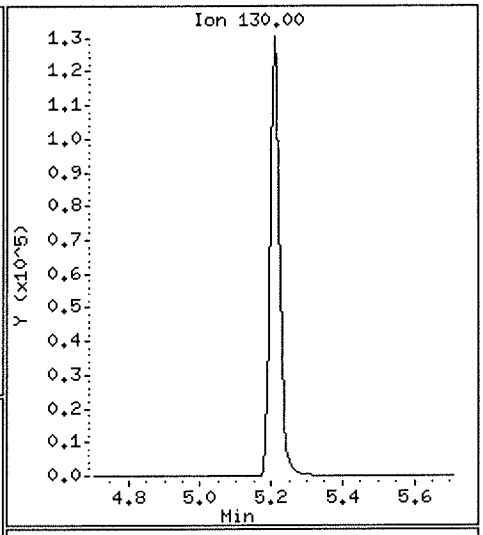
Column phase: DB624

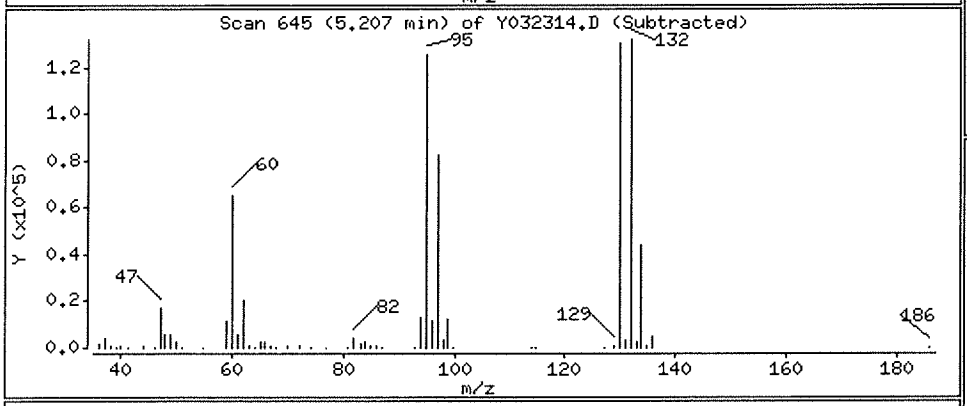
Column diameter: 0.18

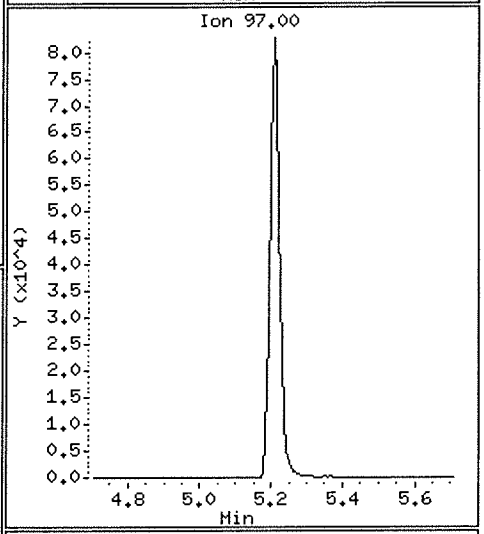
38 Trichloroethene

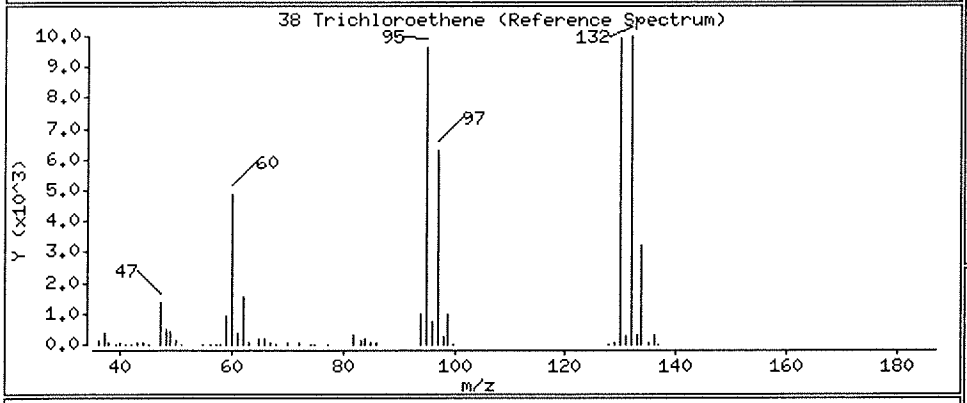
Concentration: 3007.38 ug/l

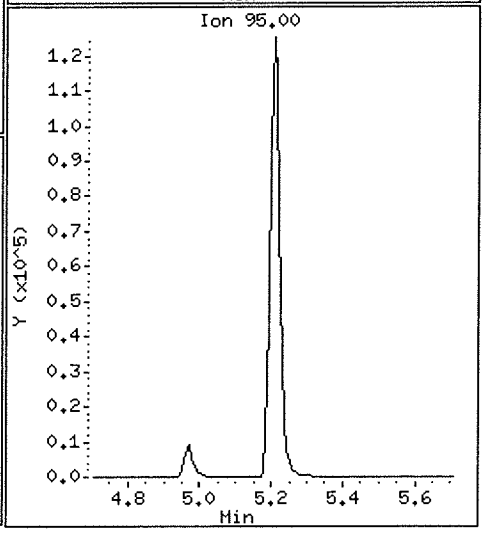


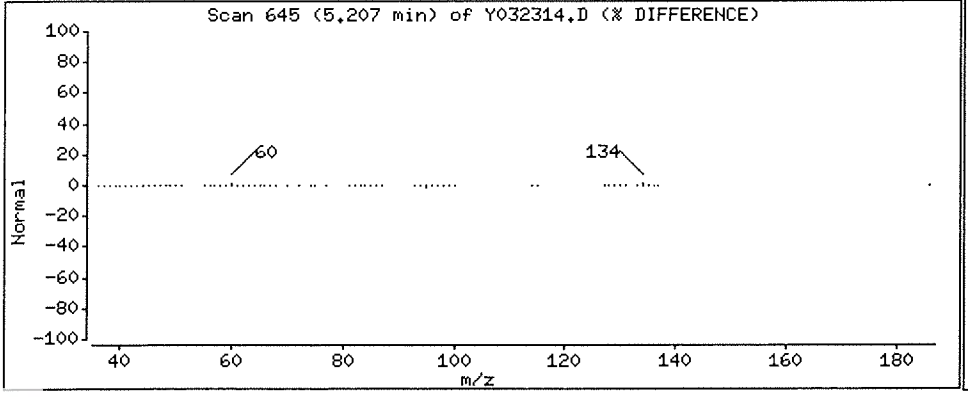












ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032315.D
Lab Smp Id: HS20030888-10 Client Smp ID: HS20030888-10
Inj Date : 24-MAR-2020 05:21
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-10;HS20030888-10;;;
Misc Info : HS18090001;WATER;0;5;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 23-Apr-2020 11:45 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 43
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	5.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

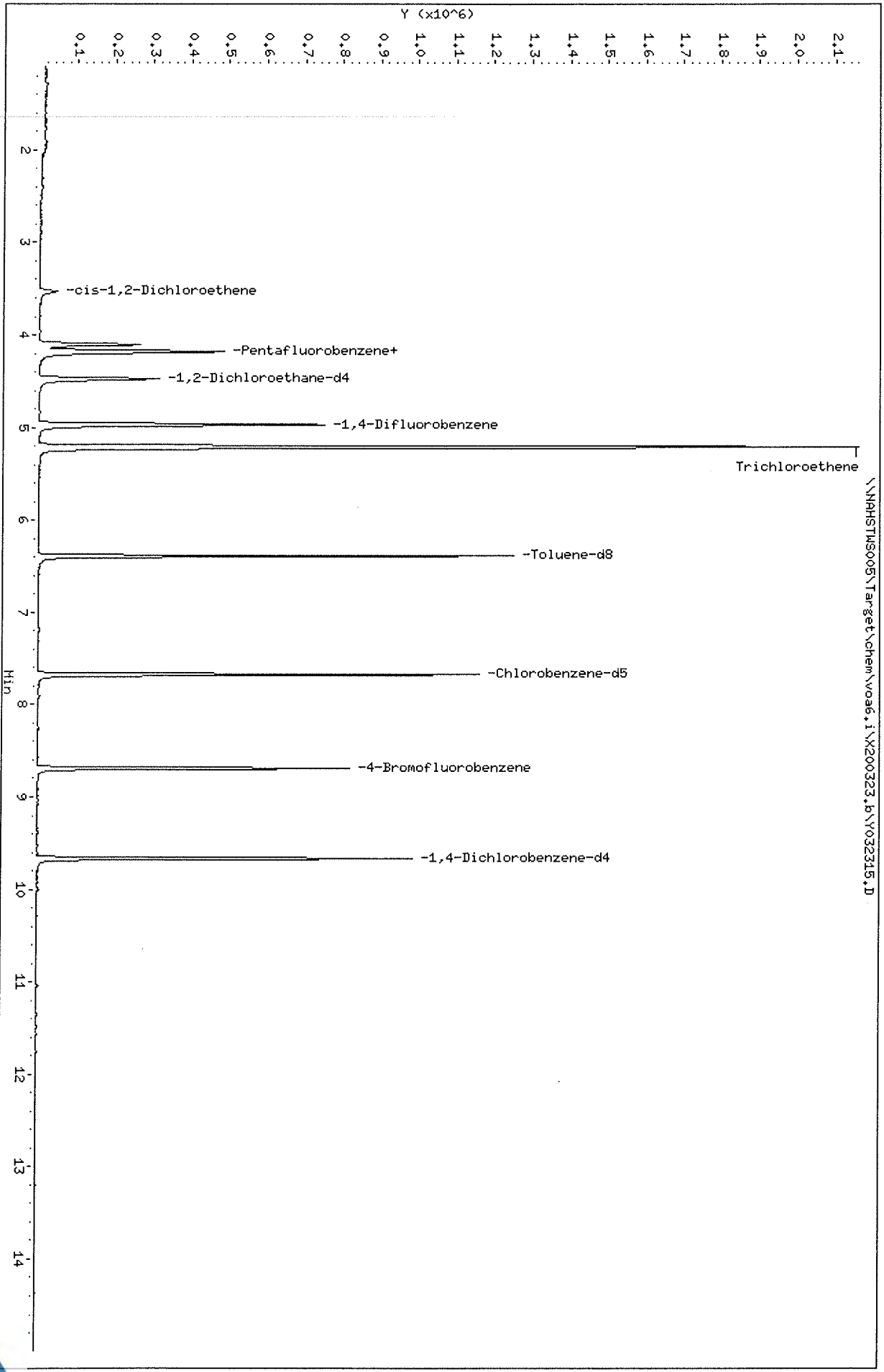
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	401626	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	187682	47.0258	47.02
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	227990	45.1690	45.16
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	605162	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	515748	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	688557	52.1206	52.12
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	237610	47.8594	47.85
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	241234	50.0000	
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	21201	4.63536	23.17(a)
38 Trichloroethene	130	5.206	5.206	(1.048)	698904	166.626	833.13

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032315.D
Date : 24-MAR-2020 05:21
Client ID: HS200330888-10
Sample Info: HS200330888-10;HS200330888-10;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032315.D

Date : 24-MAR-2020 05:21

Client ID: HS20030888-10

Instrument: voa6.i

Sample Info: HS20030888-10;HS20030888-10;;;

Purge Volume: 5.0

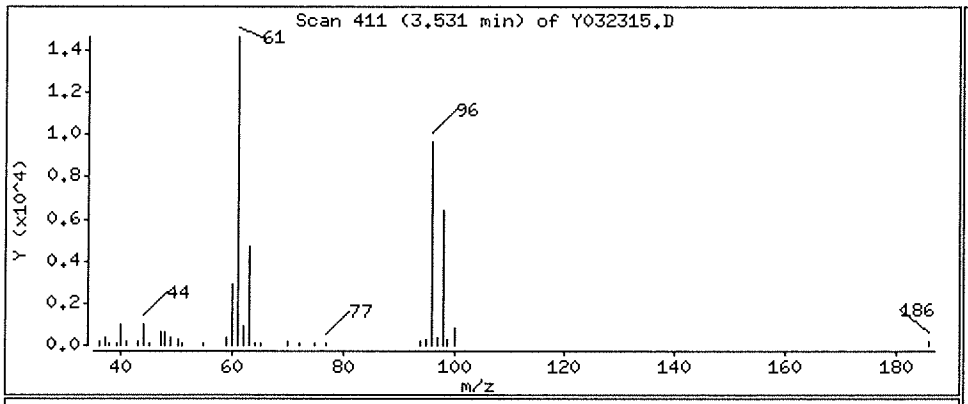
Operator: PC

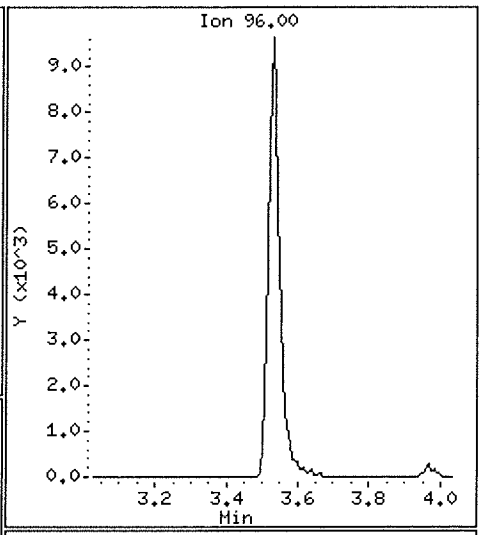
Column phase: DB624

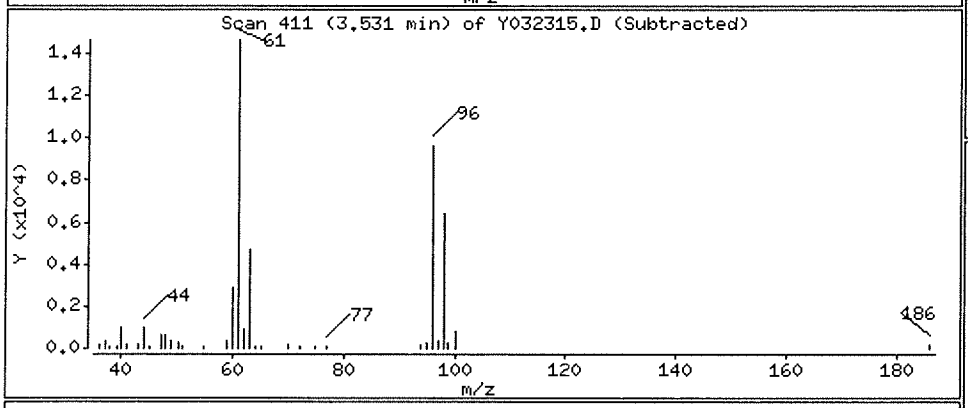
Column diameter: 0.18

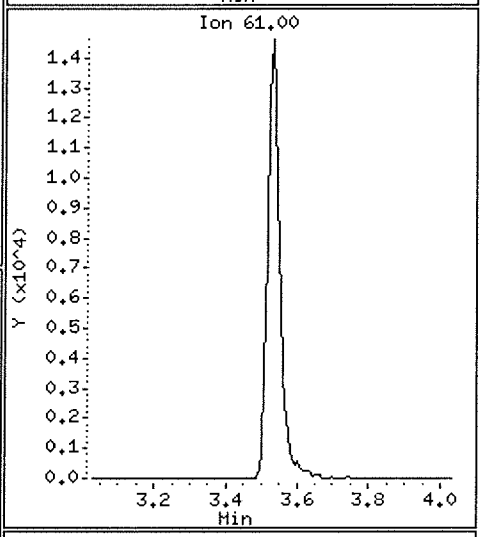
27 cis-1,2-Dichloroethene

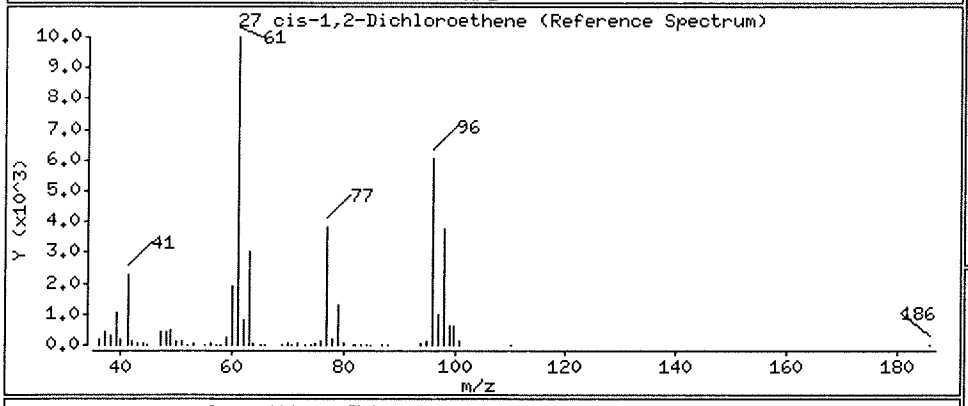
Concentration: 23.17 ug/l

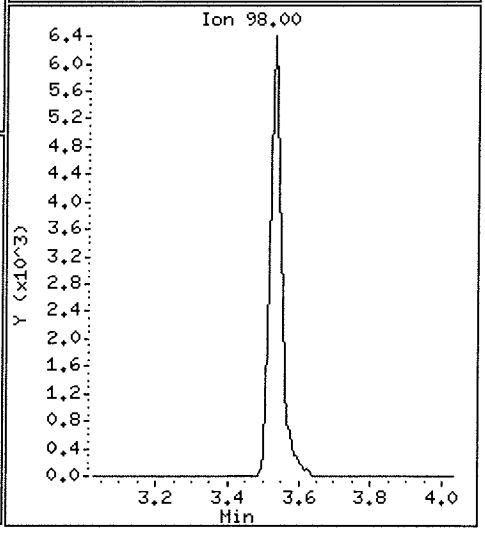


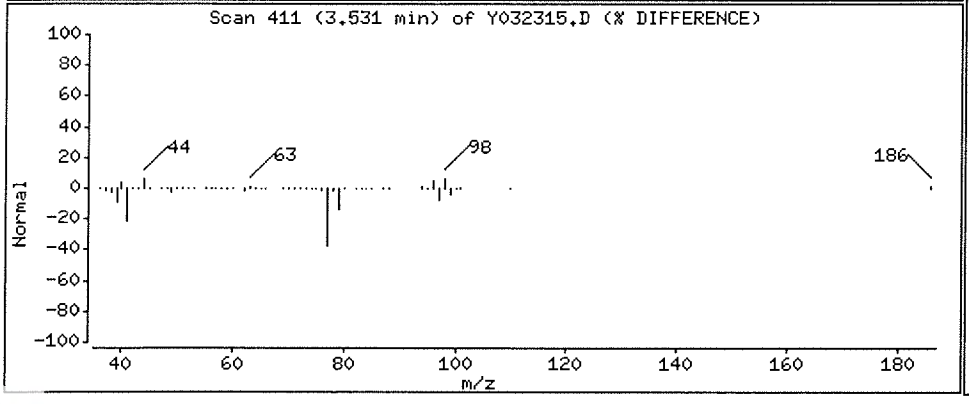












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032315.D

Date : 24-MAR-2020 05:21

Client ID: HS20030888-10

Instrument: voa6.i

Sample Info: HS20030888-10;HS20030888-10;;;

Purge Volume: 5.0

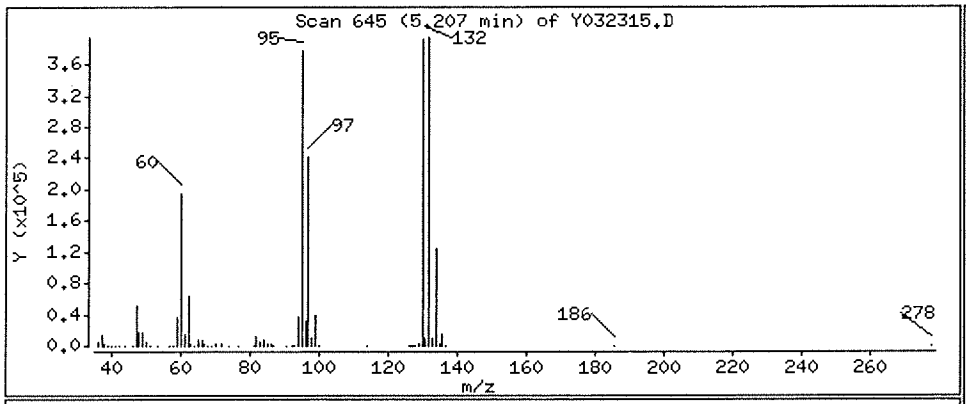
Operator: PC

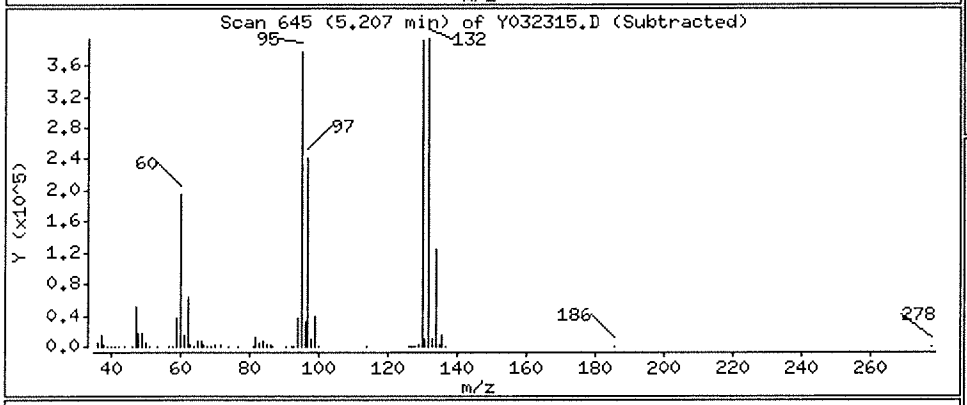
Column phase: DB624

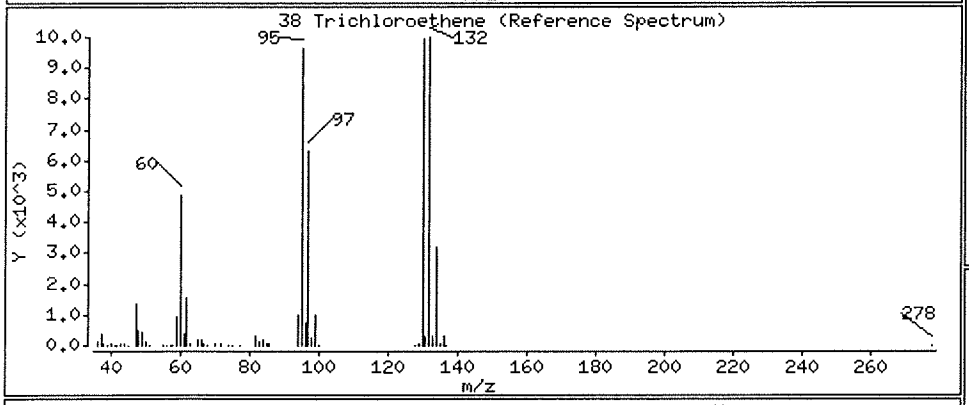
Column diameter: 0.18

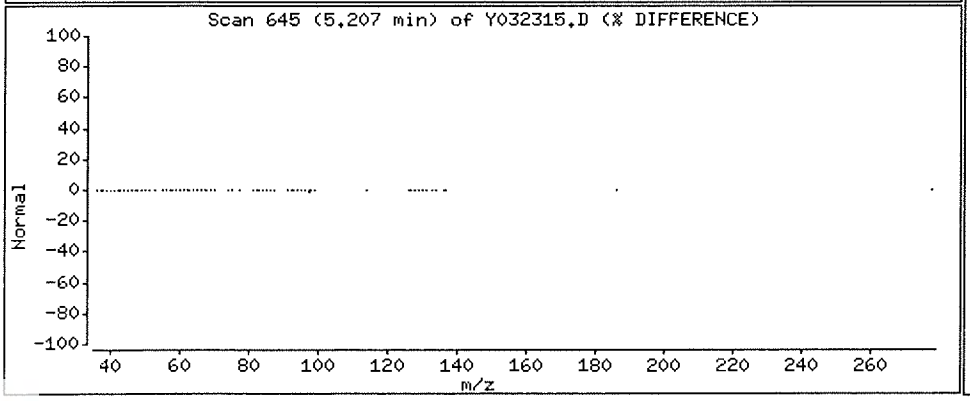
38 Trichloroethene

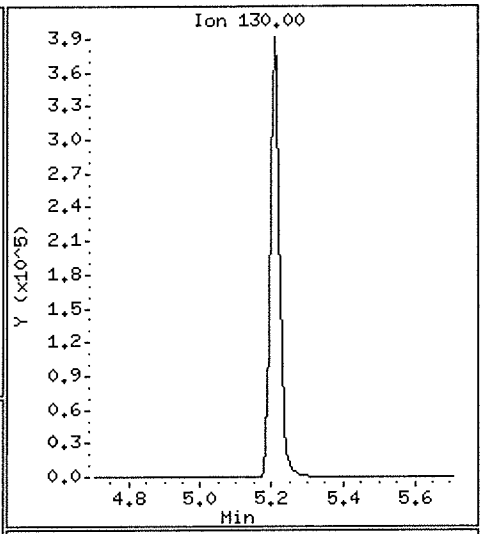
Concentration: 833.13 ug/l

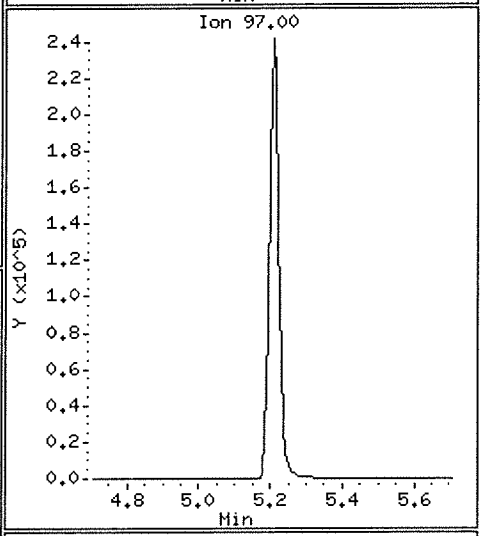


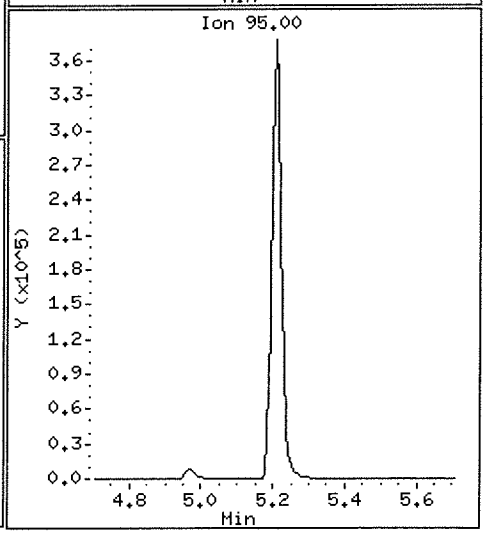












ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032317.D
Lab Smp Id: HS20030888-08 Client Smp ID: HS20030888-08
Inj Date : 24-MAR-2020 06:09
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-08;HS20030888-08;;;
Misc Info : HS18090001;WATER;0;10;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 23-Apr-2020 11:45 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 45
Dil Factor: 10.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	10.000	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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	400616	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	189568	47.6194	47.61
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	228487	45.3823	45.38
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	600019	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	518829	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	688760	51.8259	51.82
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	242108	48.4821	48.48
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	249031	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	46786	7.66555	76.65
11 1,1-Dichloroethene	96	1.912	1.911	(0.457)	4539	1.33710	13.37(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	57022	12.4987	124.98
38 Trichloroethene	130	5.206	5.206	(1.048)	804868	193.534	1935.33

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032317.D

Date : 24-MAR-2020 06:09

Client ID: HS20030888-08

Instrument: voa6.i

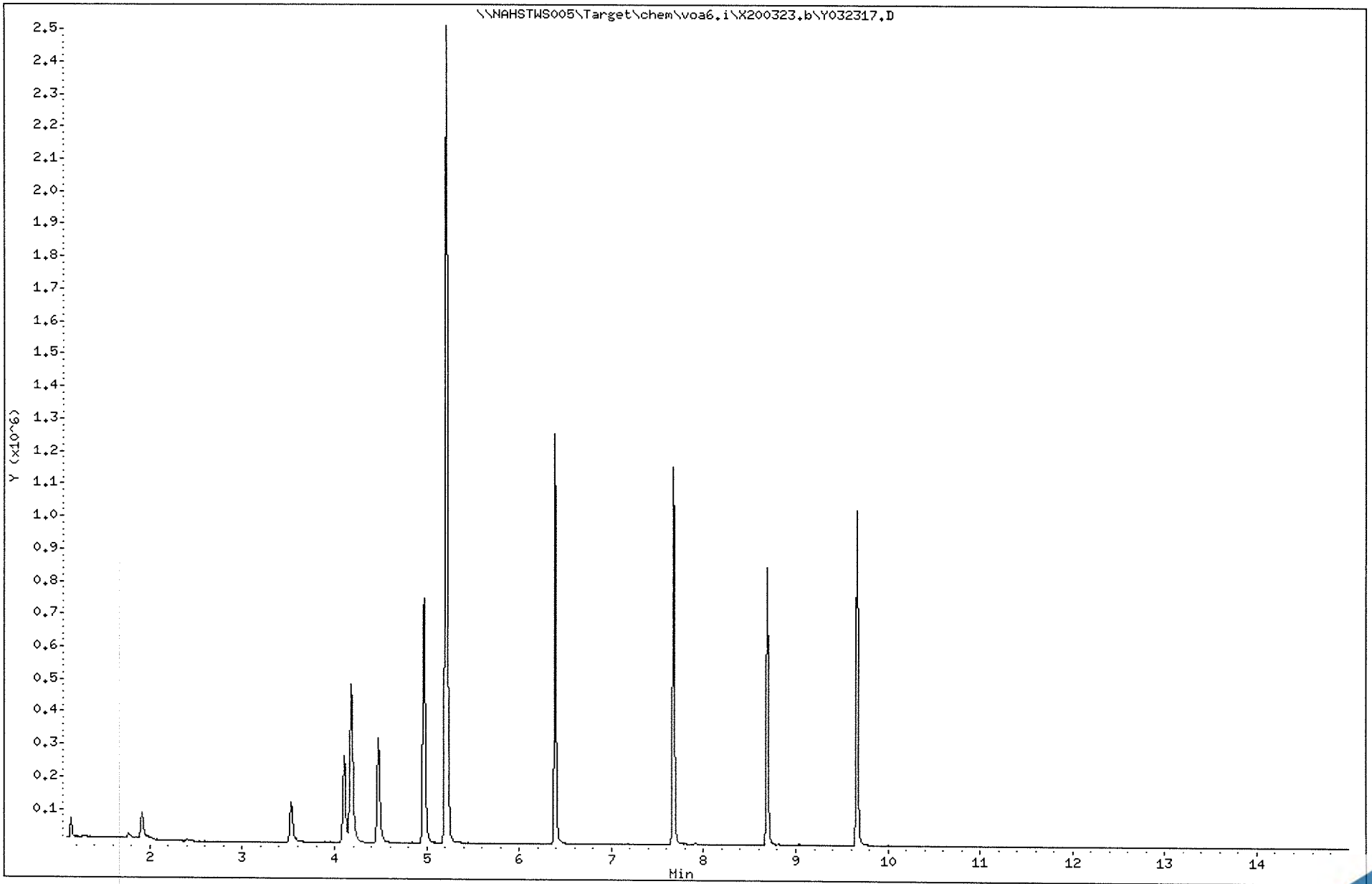
Sample Info: HS20030888-08;HS20030888-08;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032317.D

Date : 24-MAR-2020 06:09

Client ID: HS20030888-08

Instrument: voa6.i

Sample Info: HS20030888-08;HS20030888-08;;;

Purge Volume: 5.0

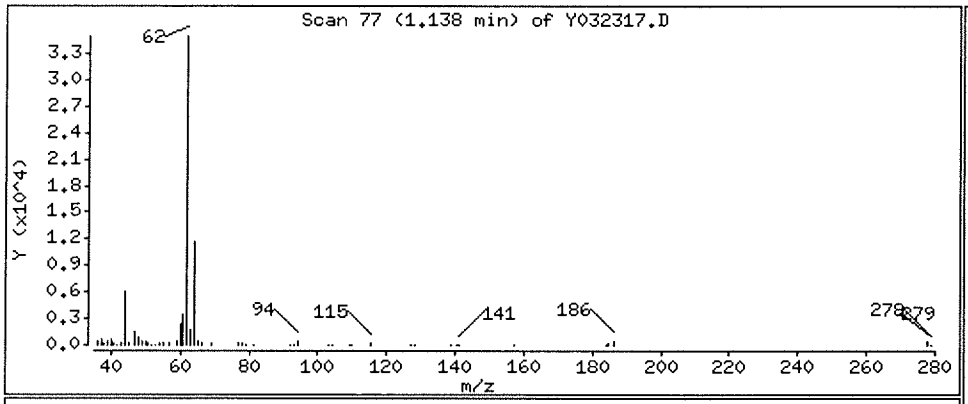
Operator: PC

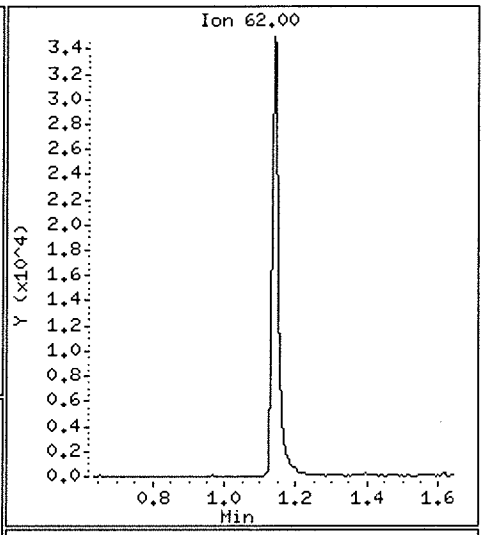
Column phase: DB624

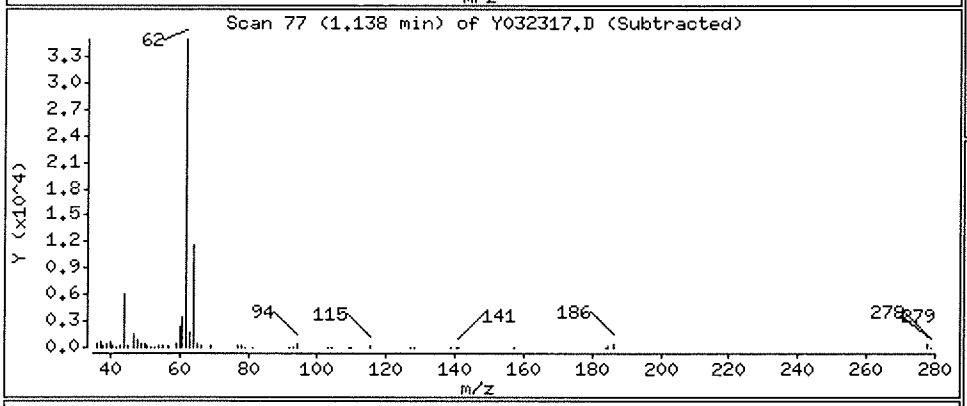
Column diameter: 0.18

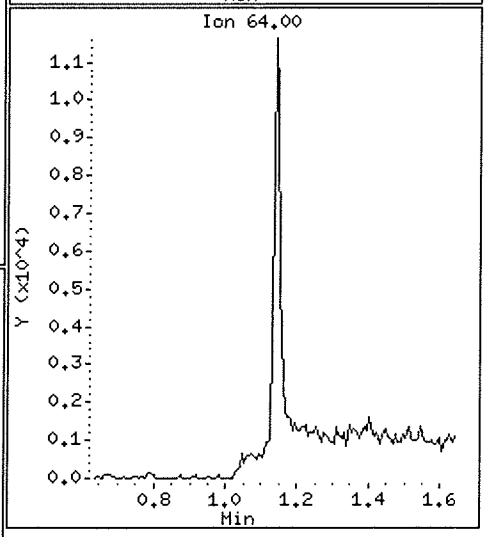
5 Vinyl Chloride

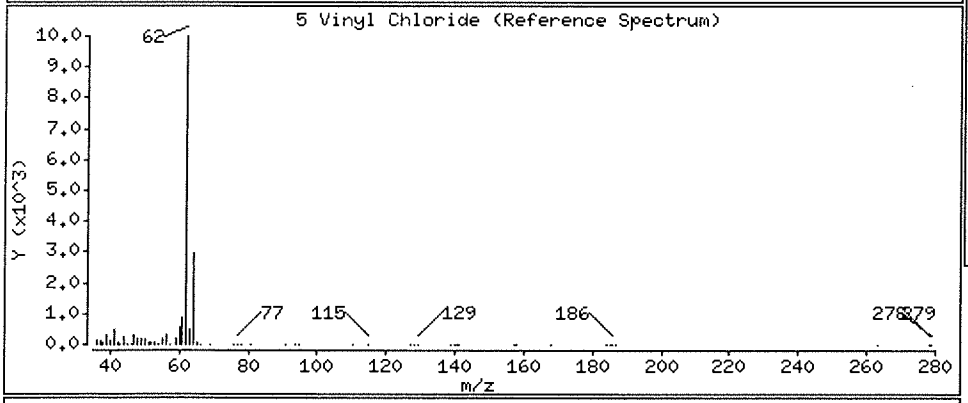
Concentration: 76.65 ug/l

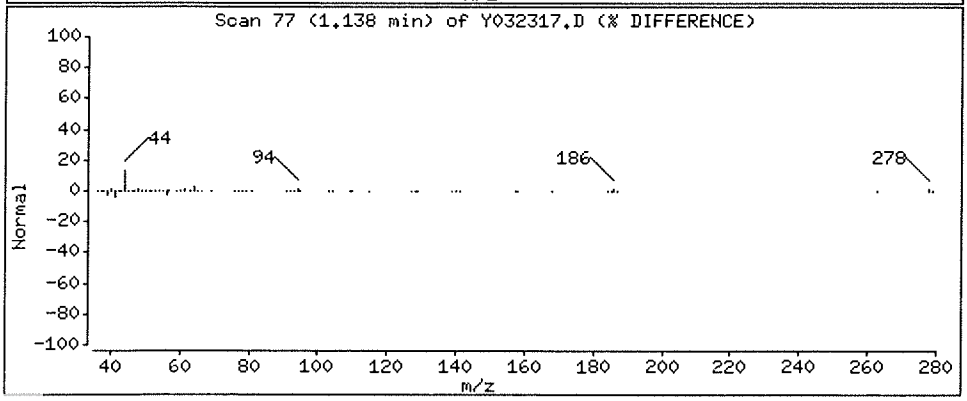












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032317.D

Date : 24-MAR-2020 06:09

Client ID: HS20030888-08

Instrument: voa6.i

Sample Info: HS20030888-08;HS20030888-08;;;

Purge Volume: 5.0

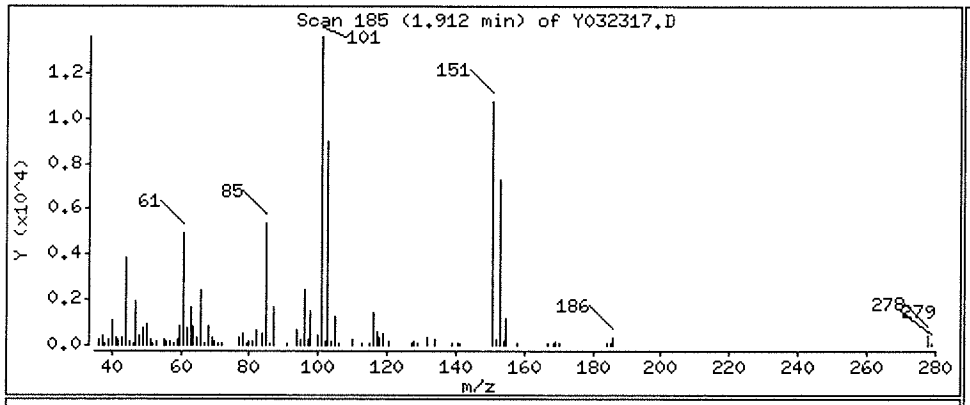
Operator: PC

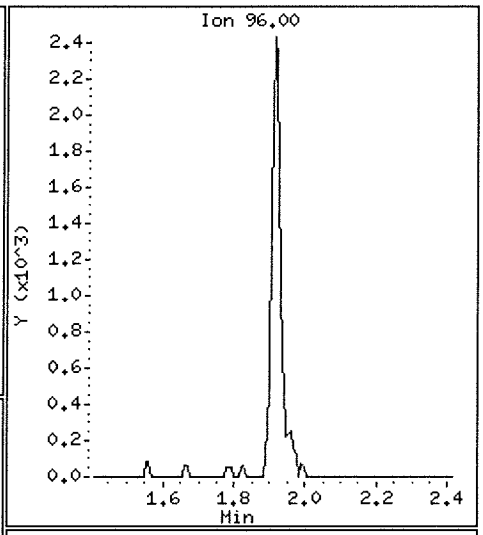
Column phase: DB624

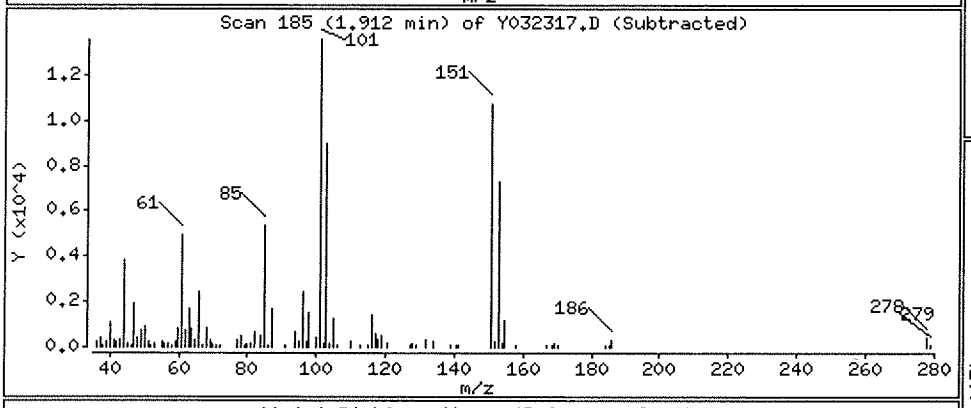
Column diameter: 0.18

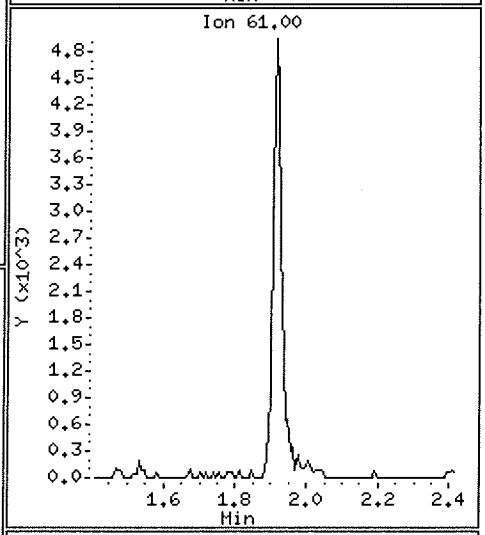
11 1,1-Dichloroethene

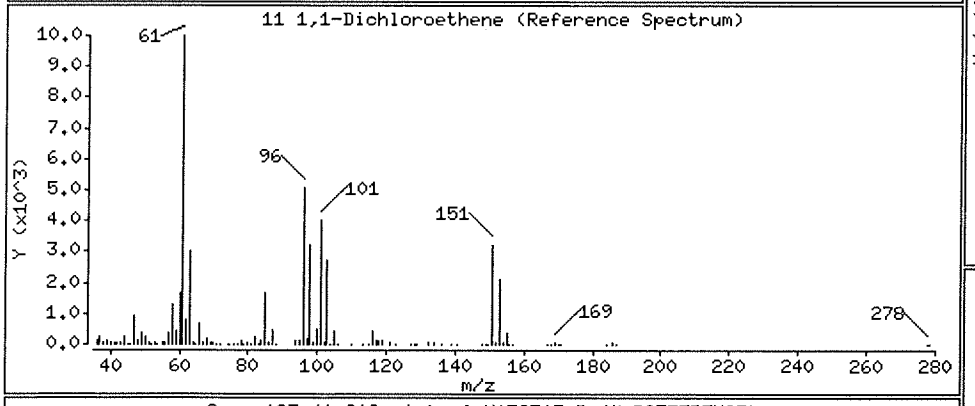
Concentration: 13.37 ug/l

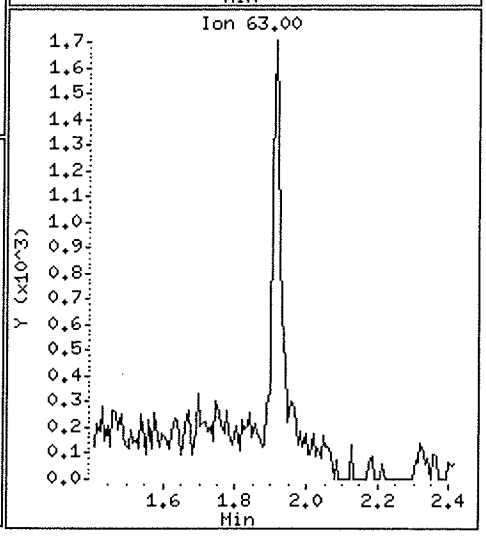


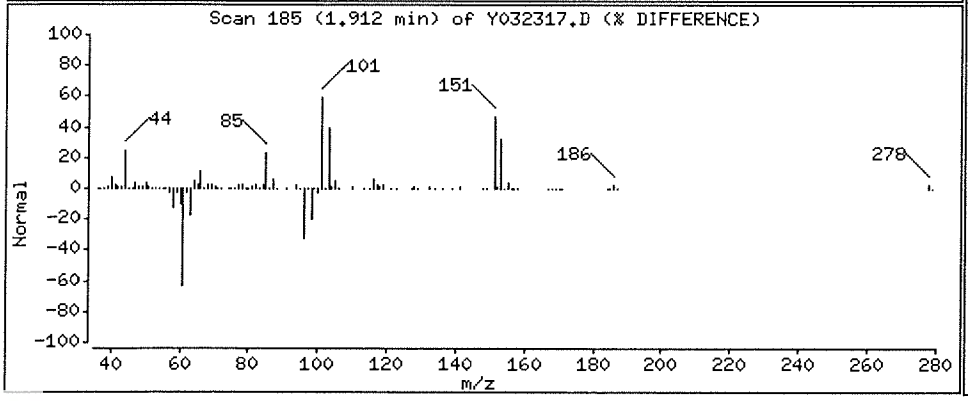












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032317.D Page 5

Date : 24-MAR-2020 06:09

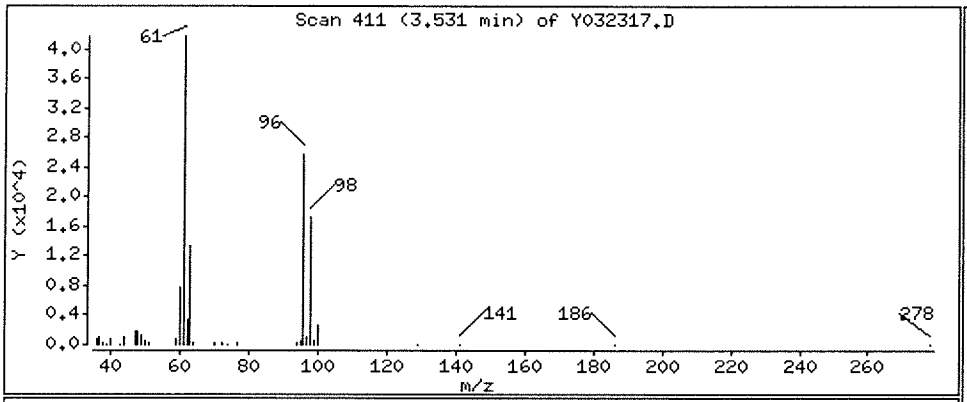
Client ID: HS20030888-08 Instrument: voa6.i

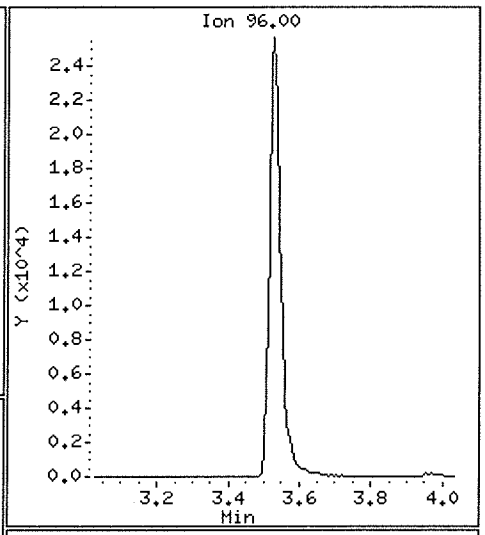
Sample Info: HS20030888-08;HS20030888-08;;;

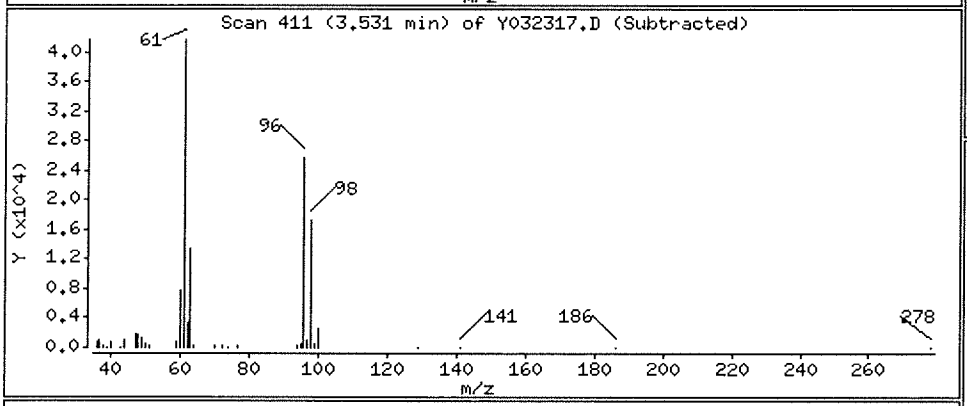
Purge Volume: 5.0 Operator: PC

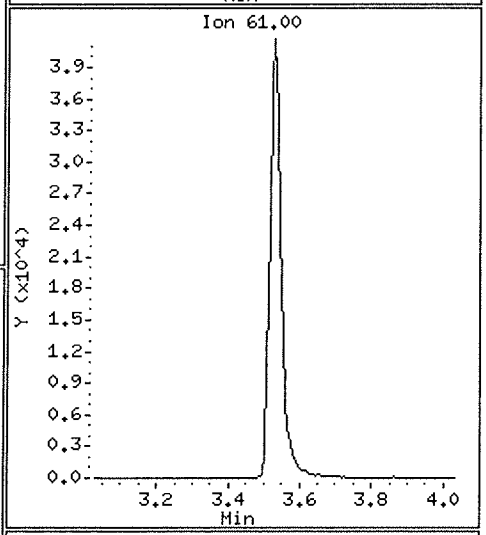
Column phase: DB624 Column diameter: 0.18

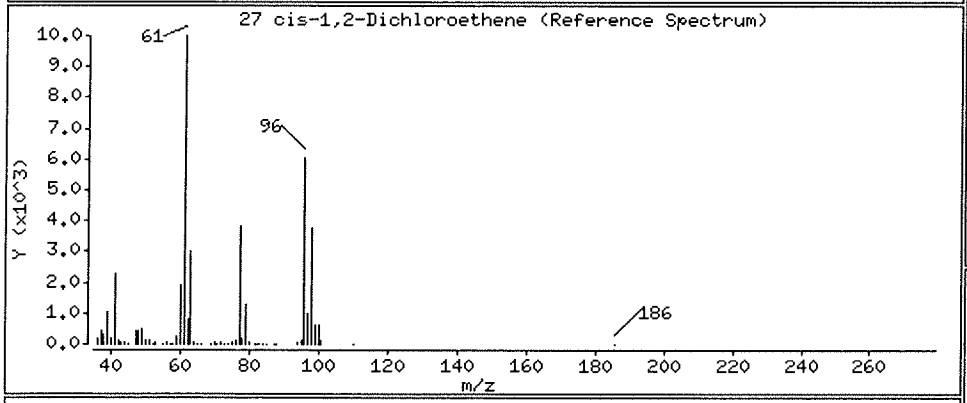
27 cis-1,2-Dichloroethene Concentration: 124.98 ug/l

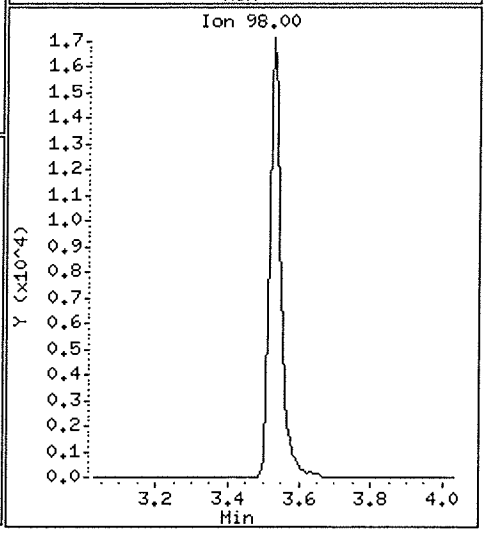


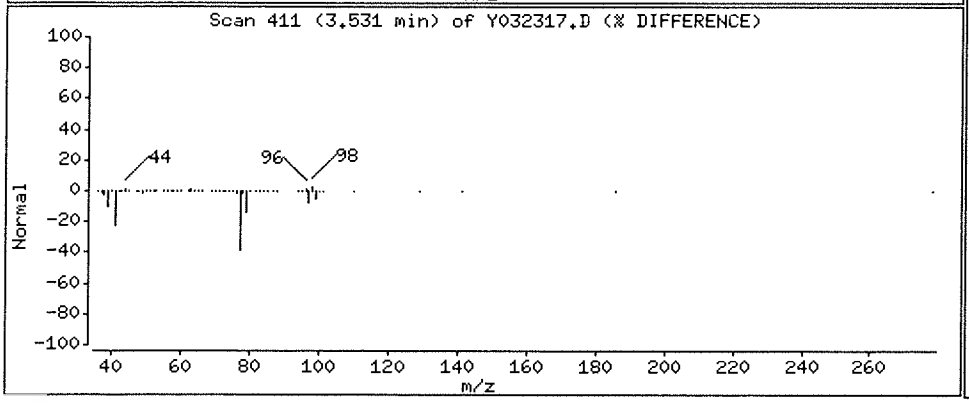












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032317.D

Date : 24-MAR-2020 06:09

Client ID: HS20030888-08

Instrument: voa6.i

Sample Info: HS20030888-08;HS20030888-08;;;

Purge Volume: 5.0

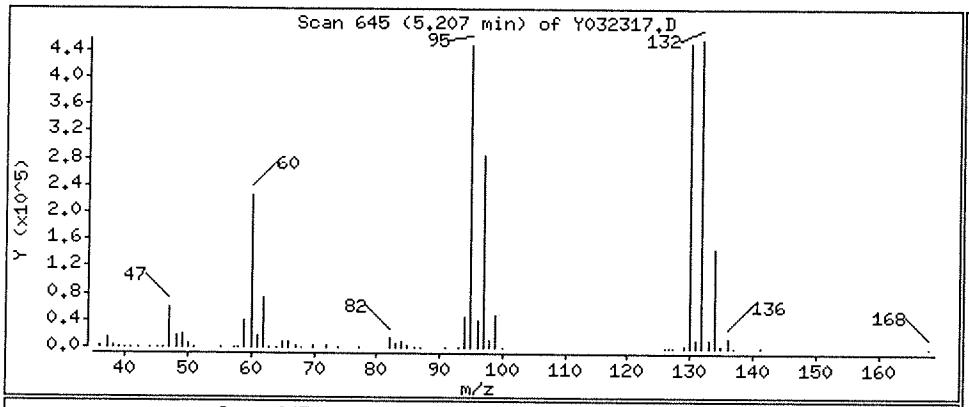
Operator: PC

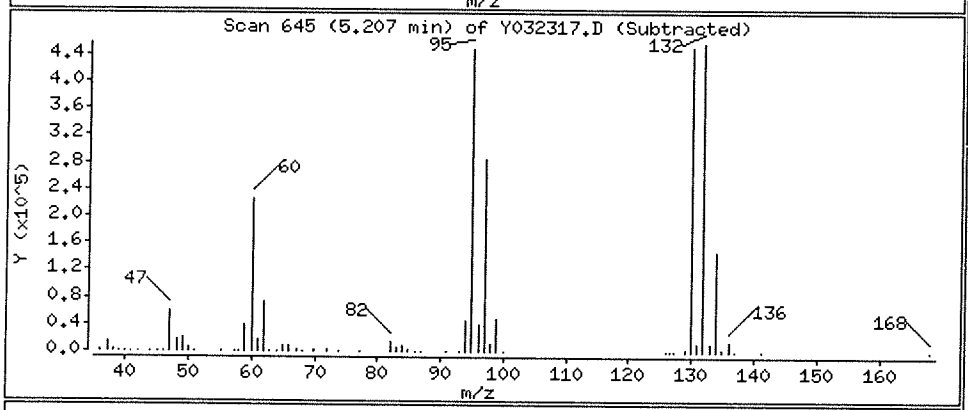
Column phase: DB624

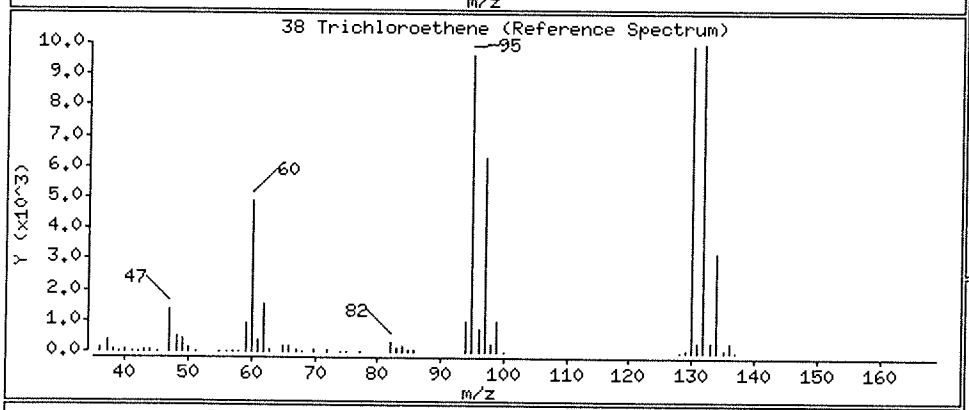
Column diameter: 0.18

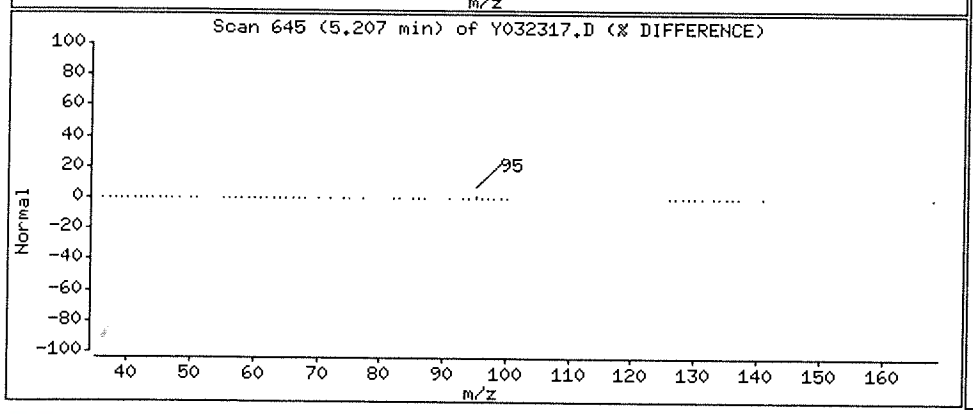
38 Trichloroethene

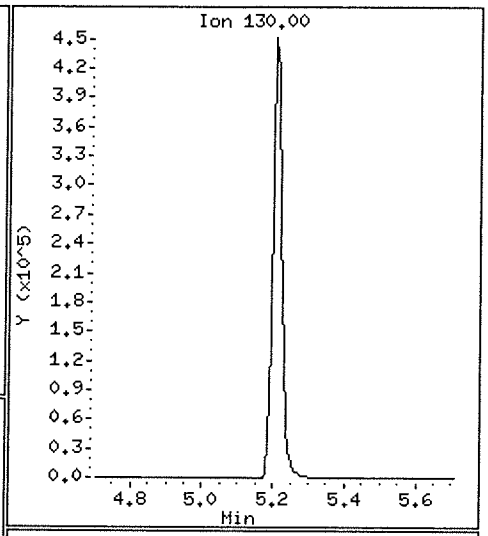
Concentration: 1935.33 ug/l

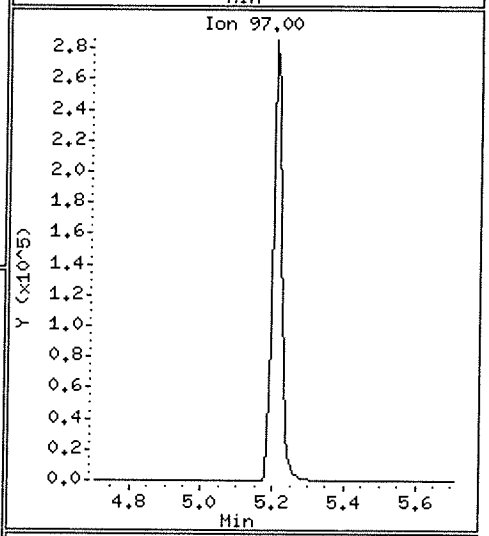


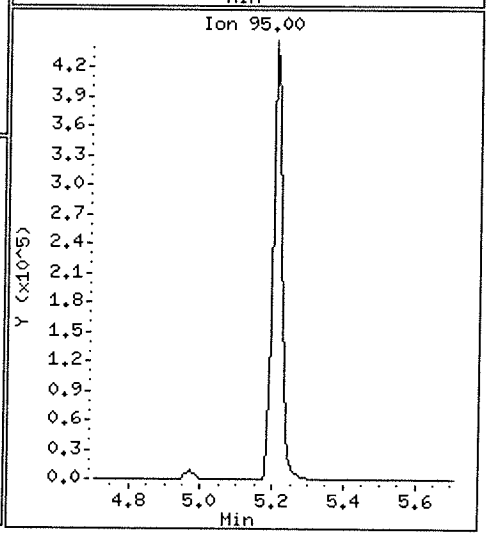












ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032319.D
Lab Smp Id: HS20030888-06 Client Smp ID: HS20030888-06
Inj Date : 24-MAR-2020 06:57
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-06;HS20030888-06;;;
Misc Info : HS18090001;WATER;0;50;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 23-Apr-2020 11:45 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 47
Dil Factor: 50.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	50.000	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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	400329	50.0000	
$ 30 Dibromofluoromethane	113	4.104	4.103	(0.981)	187975	47.2523	47.25
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	231033	45.9228	45.92
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	603087	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	514702	50.0000	
$ 48 Toluene-d8	98	6.389	6.388	(0.833)	690637	52.3846	52.38
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	237768	47.9899	47.98
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	236154	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	46370	7.60284	380.14
11 1,1-Dichloroethene	96	1.912	1.911	(0.457)	5046	1.48751	74.37(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	599421	131.481	6574.06
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	3358	0.52703	26.35(a)
38 Trichloroethene	130	5.207	5.206	(1.048)	813325	194.572	9728.62

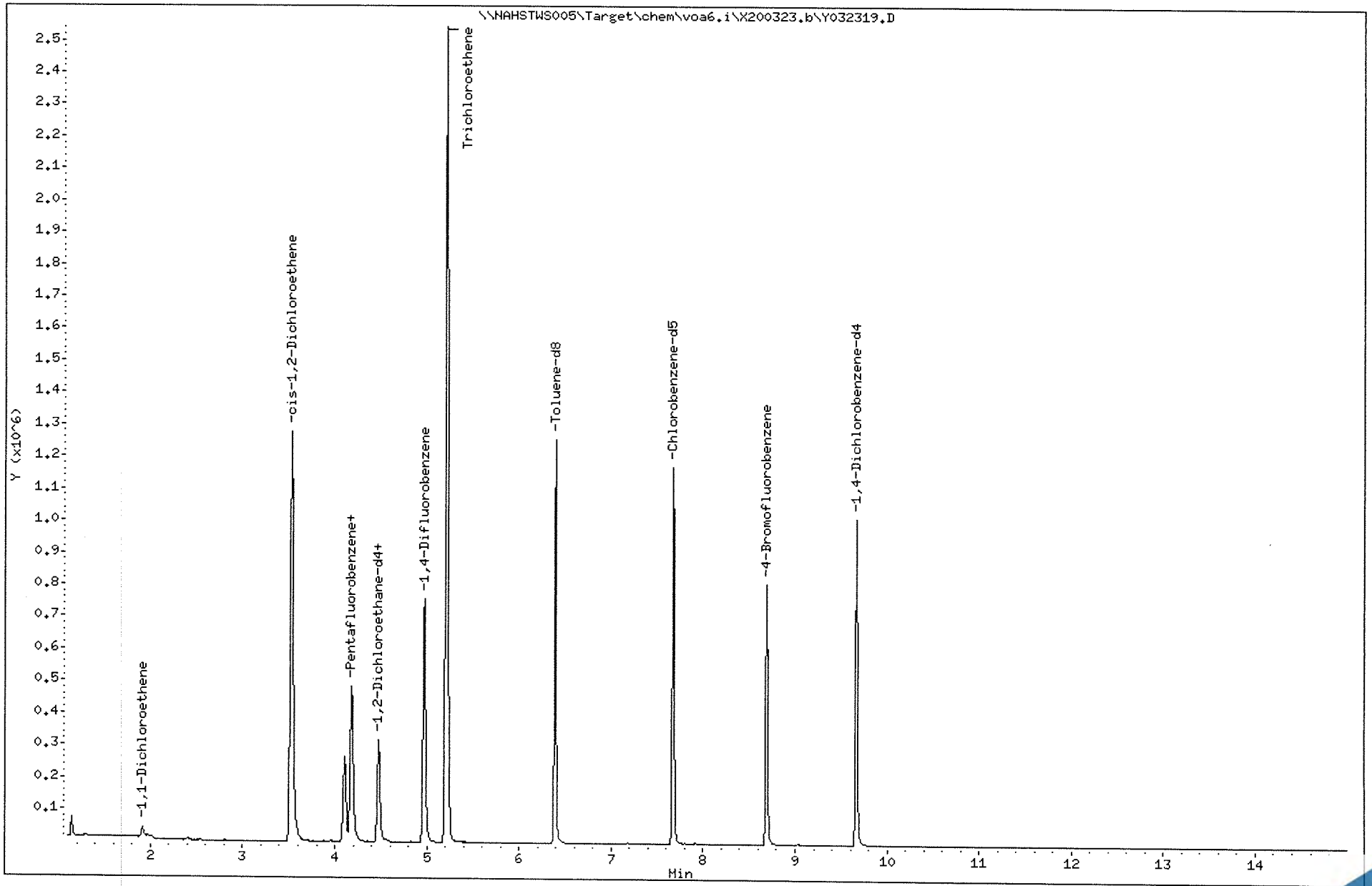
QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032319.D
Date : 24-MAR-2020 06:57
Client ID: HS20030888-06
Sample Info: HS20030888-06;HS20030888-06;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i

Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032319.D

Date : 24-MAR-2020 06:57

Client ID: HS20030888-06

Instrument: voa6.i

Sample Info: HS20030888-06;HS20030888-06;;;

Purge Volume: 5.0

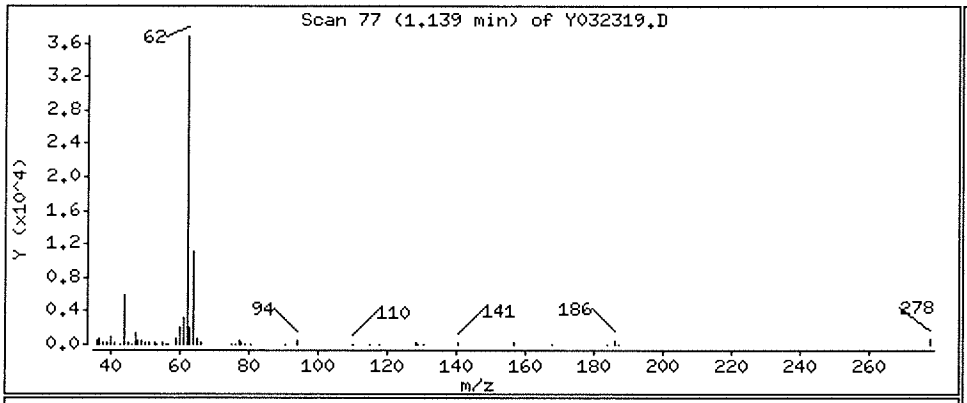
Operator: PC

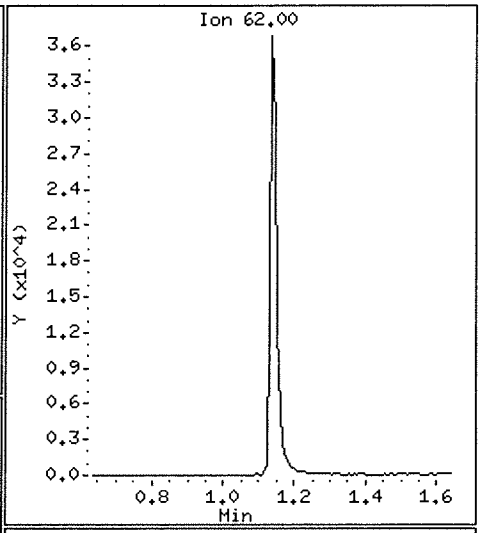
Column phase: DB624

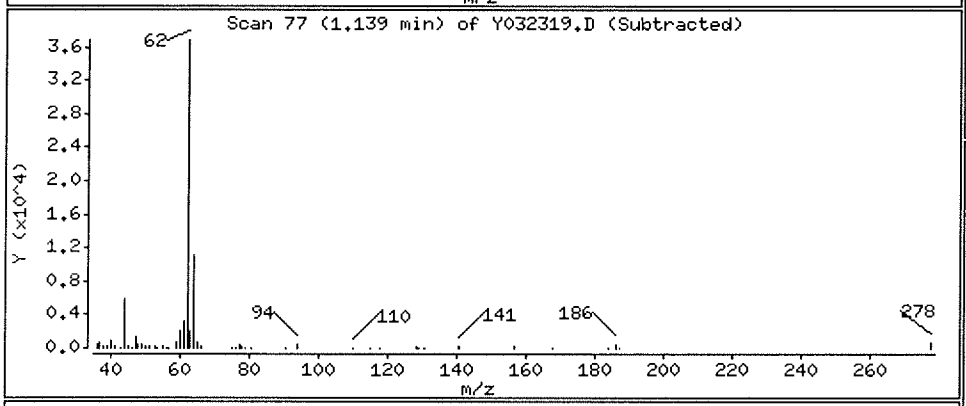
Column diameter: 0.18

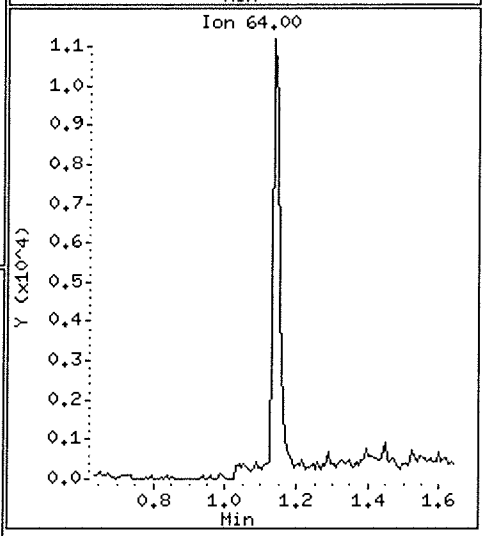
5 Vinyl Chloride

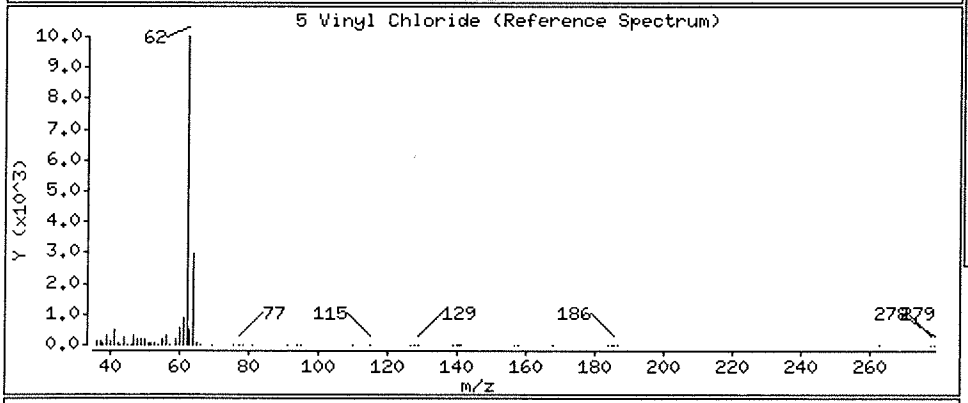
Concentration: 380.14 ug/l

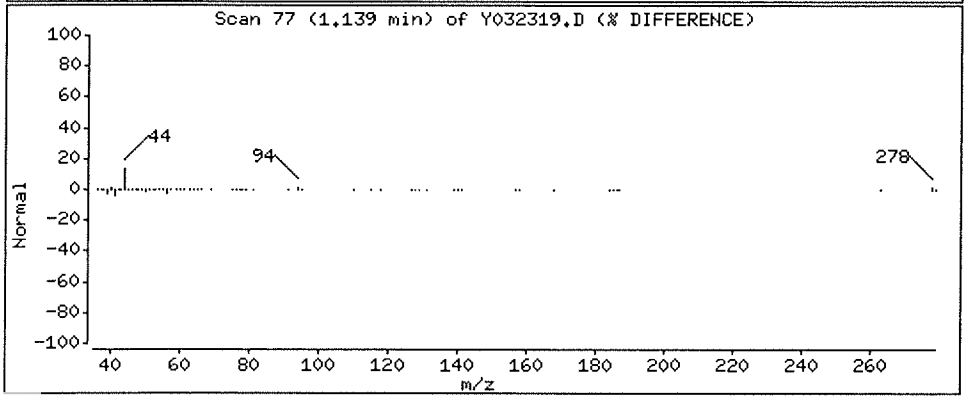












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032319.D Page 4

Date : 24-MAR-2020 06:57

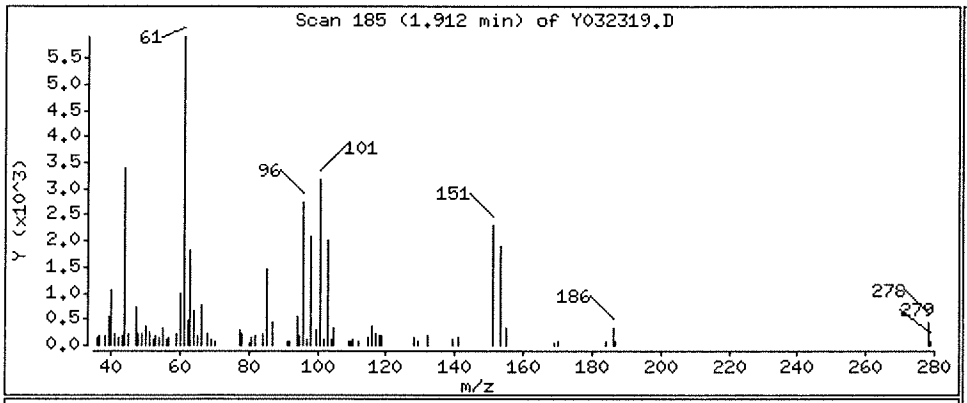
Client ID: HS20030888-06 Instrument: voa6.i

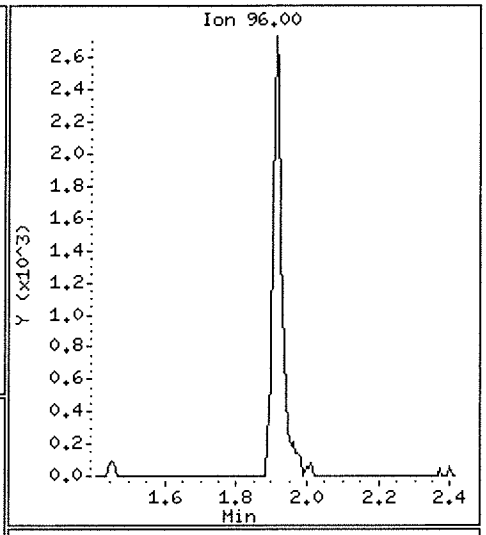
Sample Info: HS20030888-06;HS20030888-06;;;

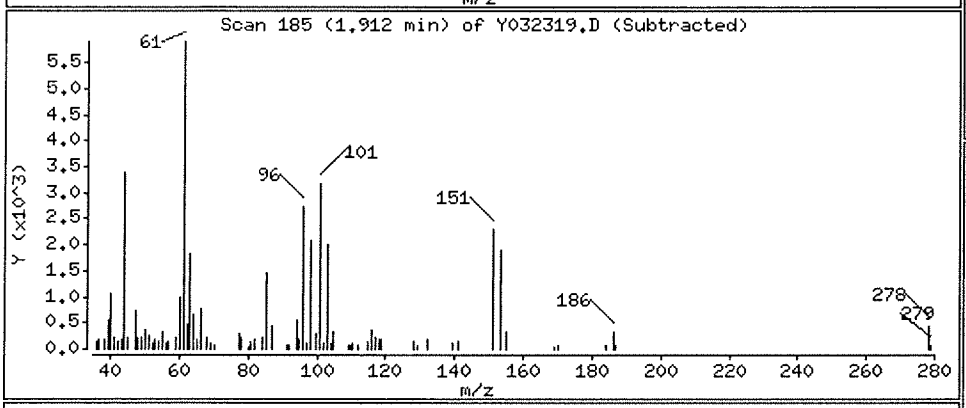
Purge Volume: 5.0 Operator: PC

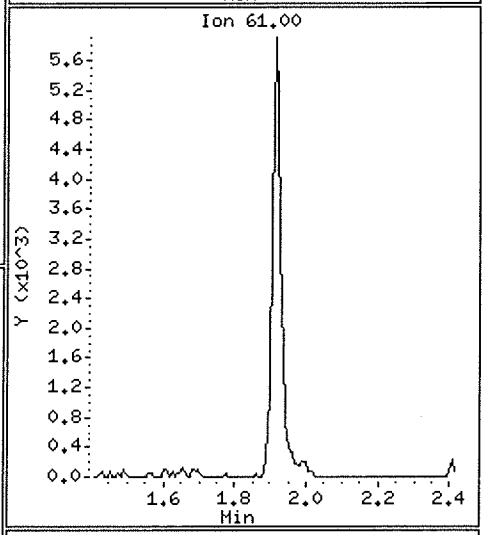
Column phase: DB624 Column diameter: 0.18

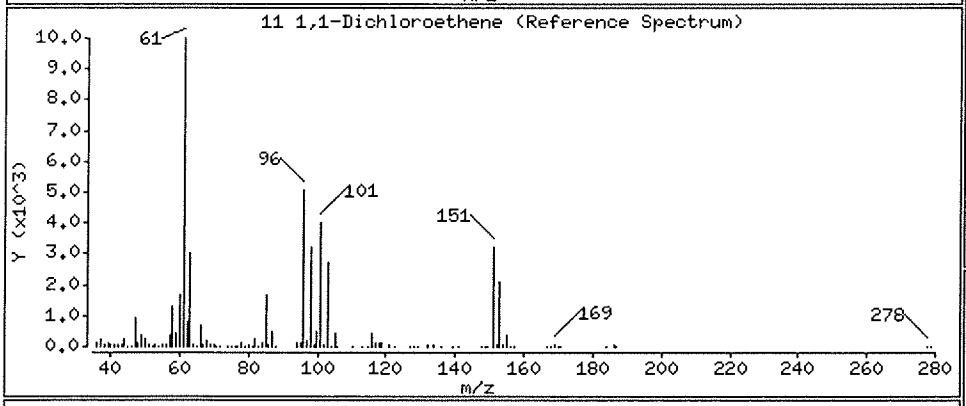
11 1,1-Dichloroethene Concentration: 74.37 ug/l

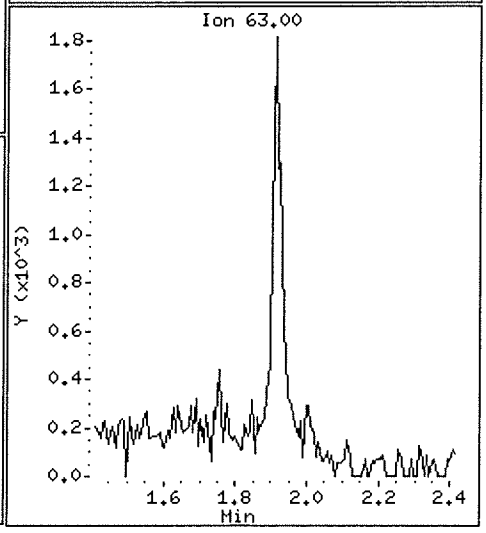


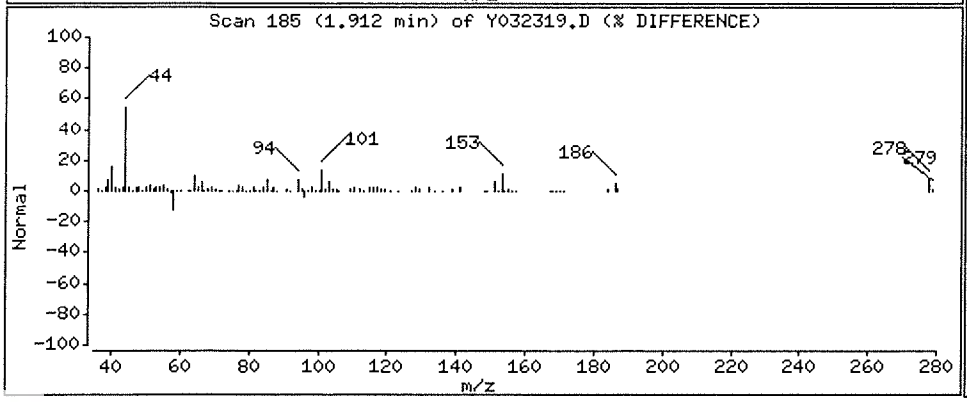












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032319.D

Date : 24-MAR-2020 06:57

Client ID: HS20030888-06

Instrument: voa6.i

Sample Info: HS20030888-06;HS20030888-06;;;

Purge Volume: 5.0

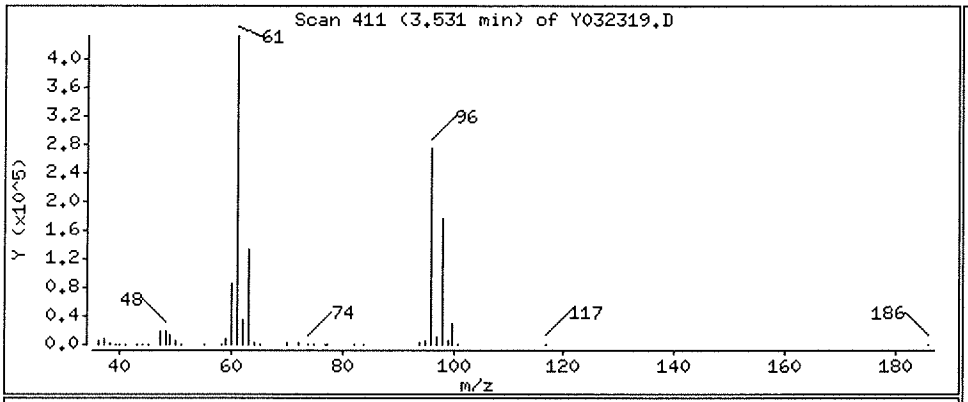
Operator: PC

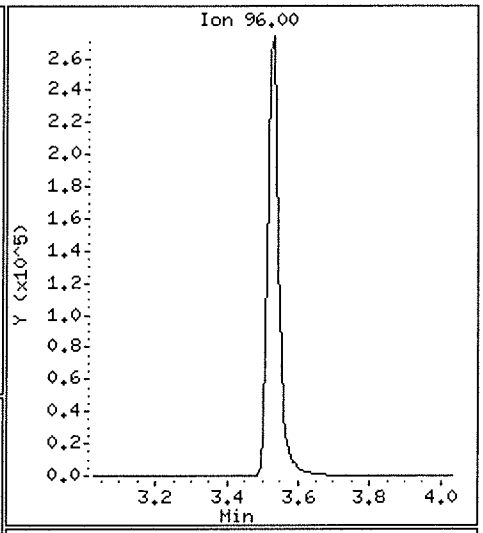
Column phase: DB624

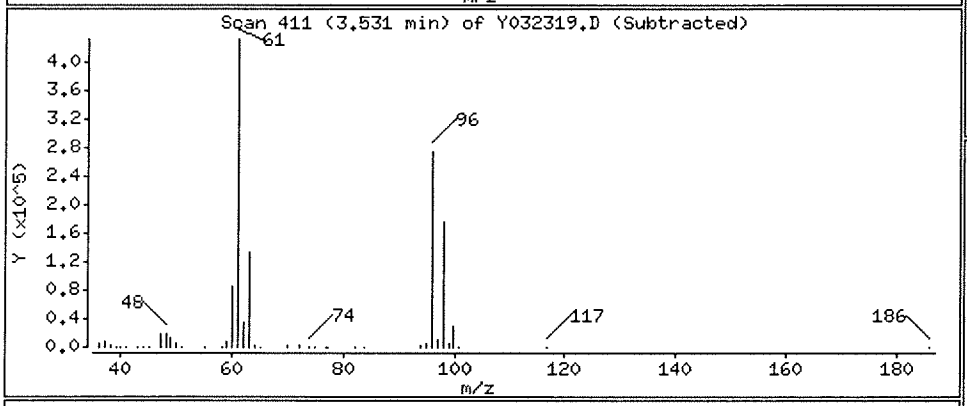
Column diameter: 0.18

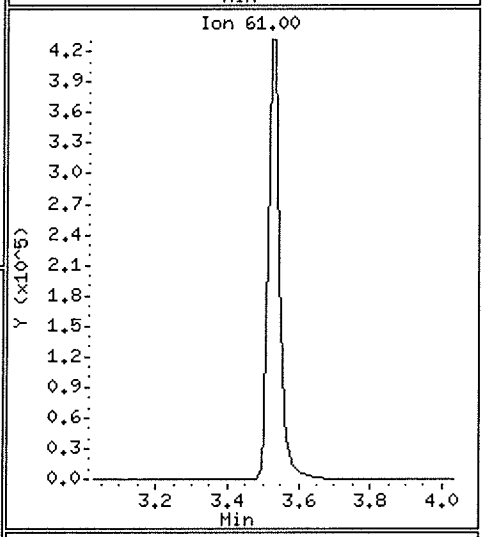
27 cis-1,2-Dichloroethene

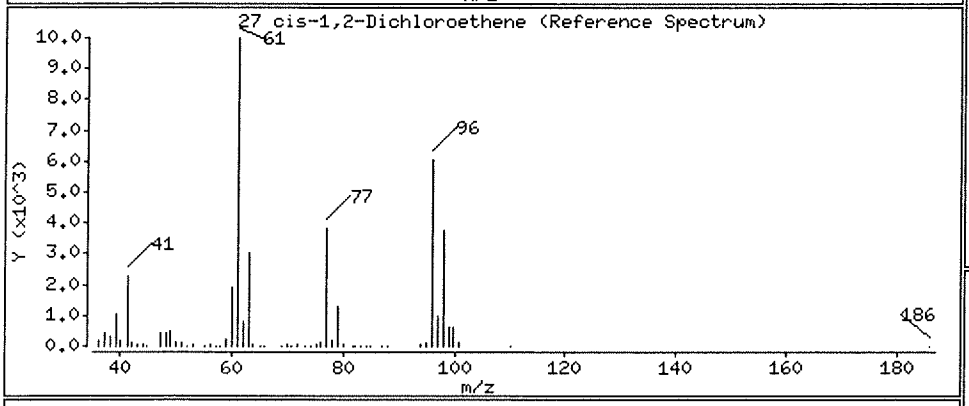
Concentration: 6574.06 ug/l

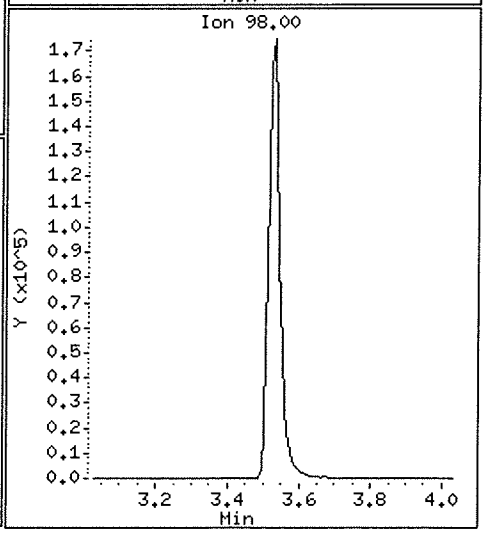


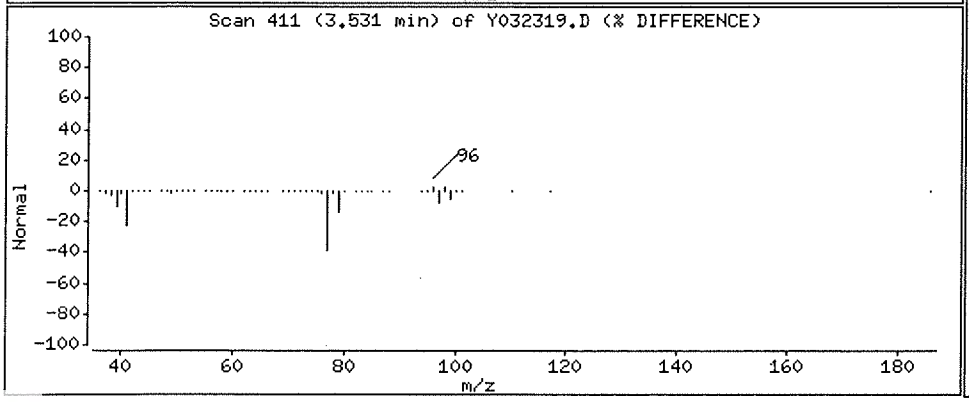












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032319.D

Date : 24-MAR-2020 06:57

Client ID: HS20030888-06

Instrument: voa6.i

Sample Info: HS20030888-06;HS20030888-06;;;

Purge Volume: 5.0

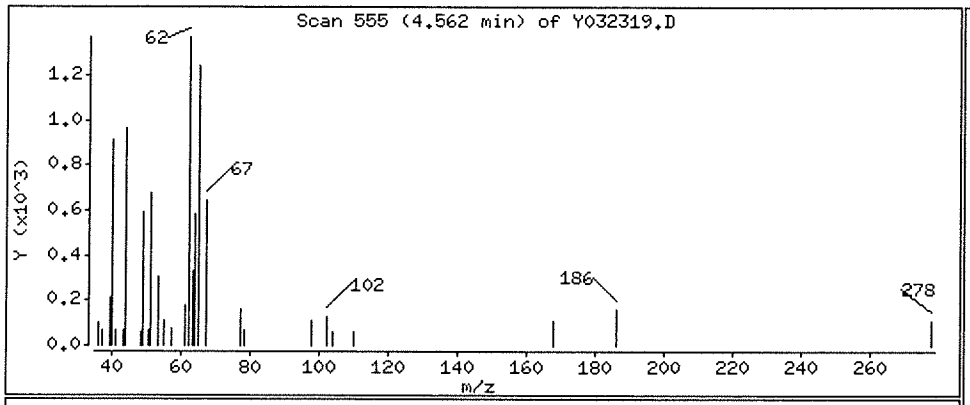
Operator: PC

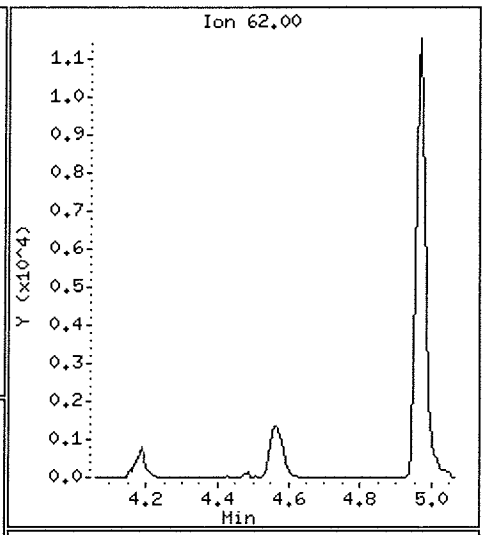
Column phase: DB624

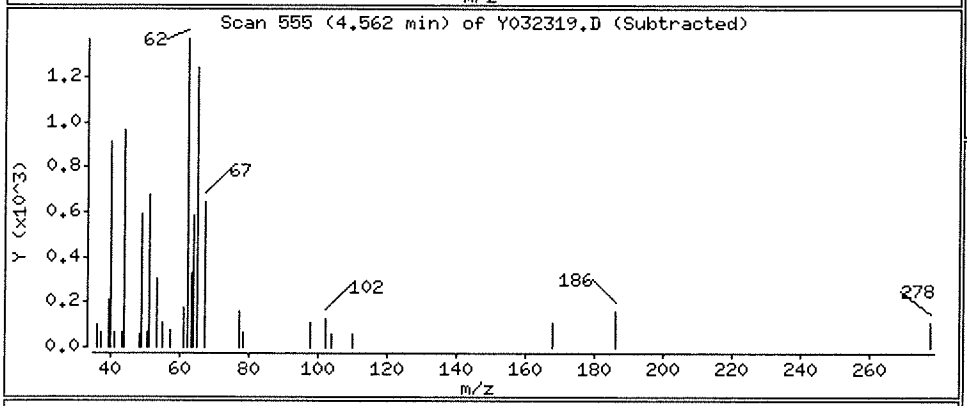
Column diameter: 0.18

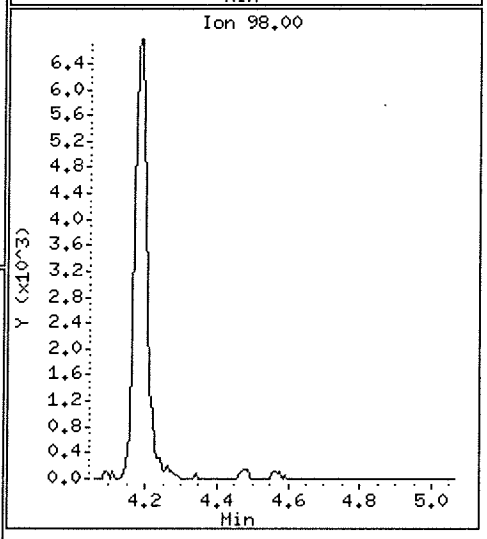
33 1,2-Dichloroethane

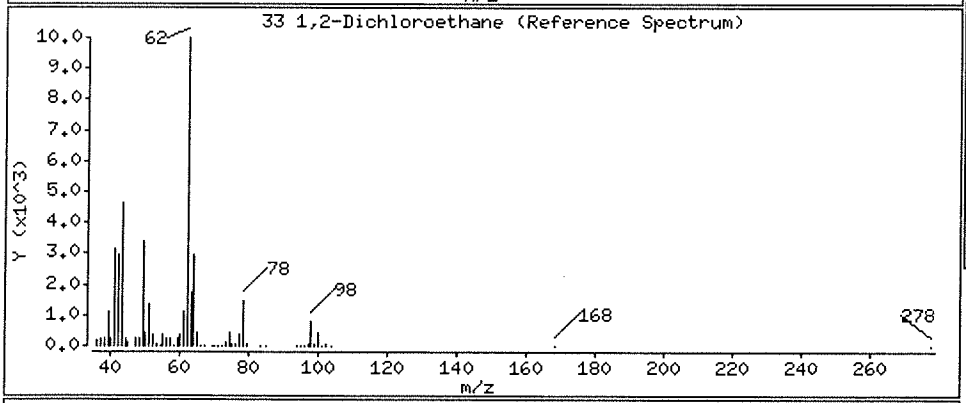
Concentration: 26.35 ug/l

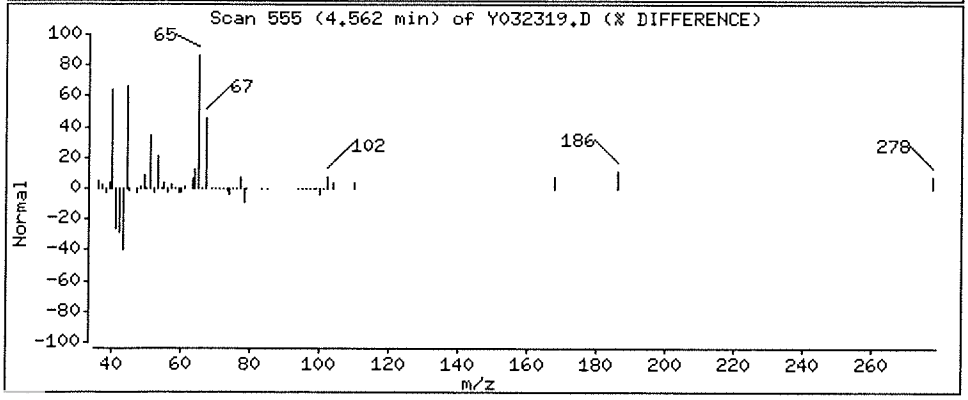












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032319.D

Date : 24-MAR-2020 06:57

Client ID: HS20030888-06

Instrument: voa6.i

Sample Info: HS20030888-06;HS20030888-06;;;

Purge Volume: 5.0

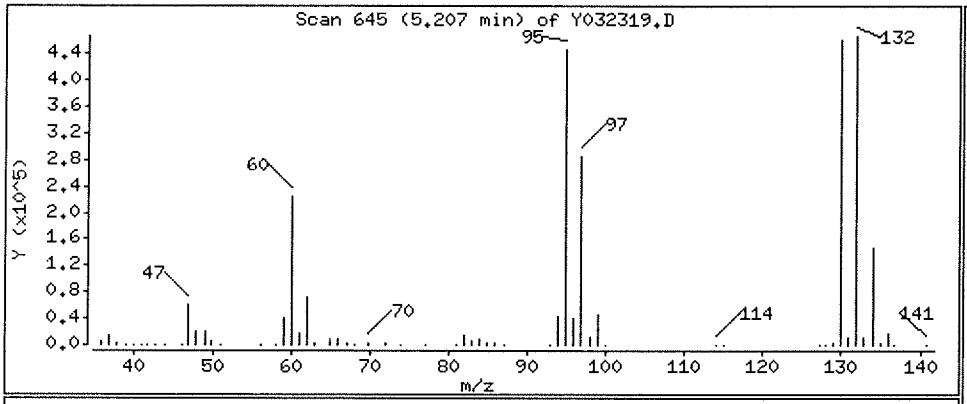
Operator: PC

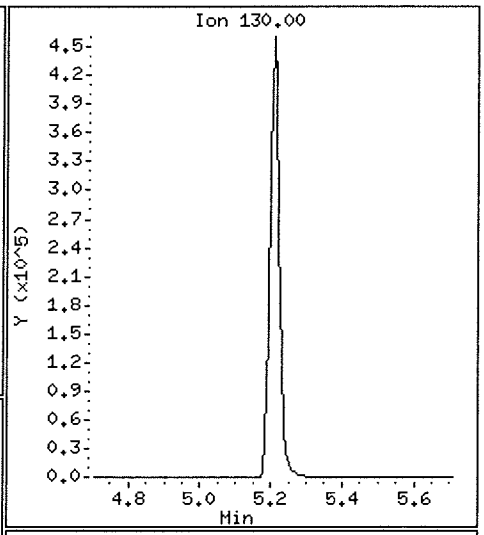
Column phase: DB624

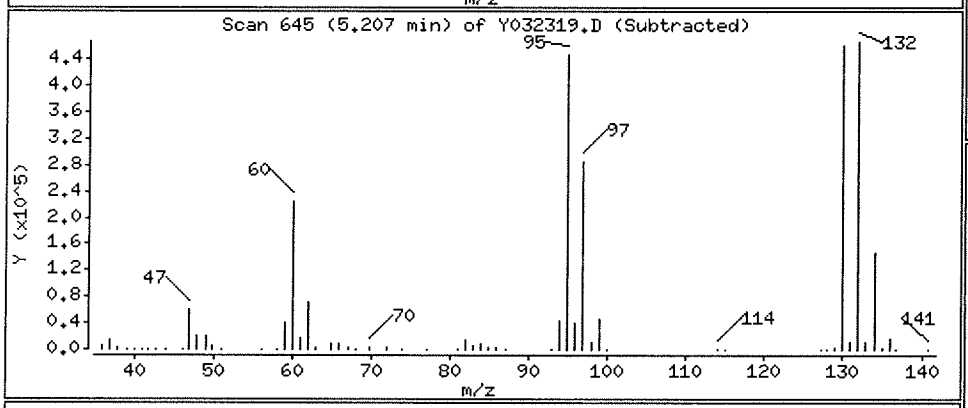
Column diameter: 0.18

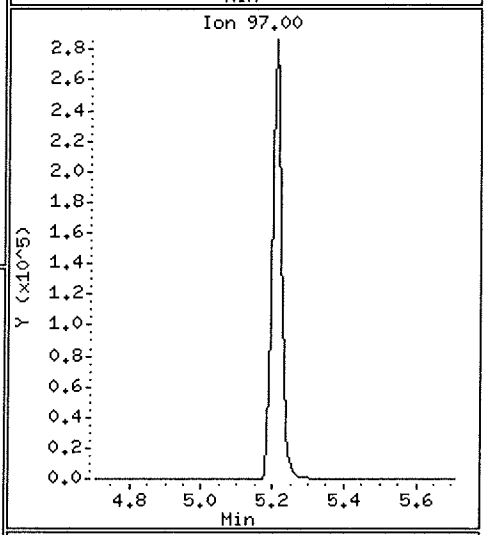
38 Trichloroethene

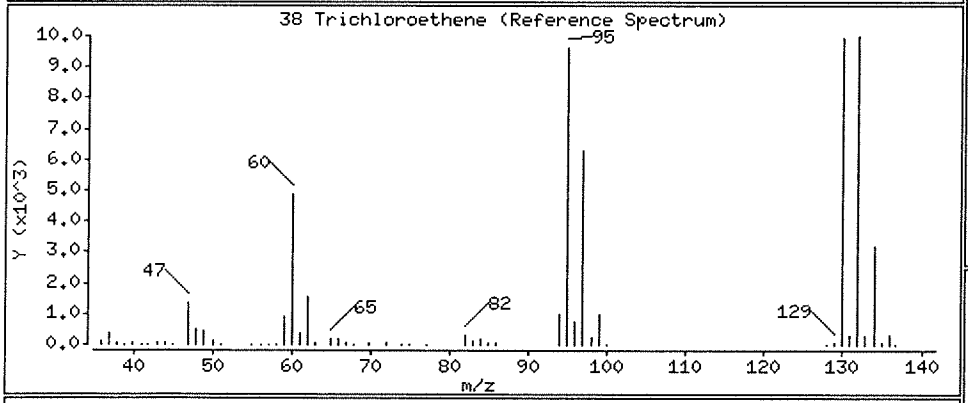
Concentration: 9728.62 ug/l

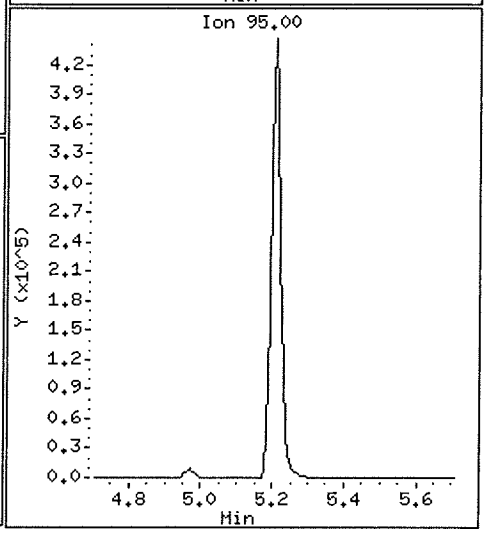


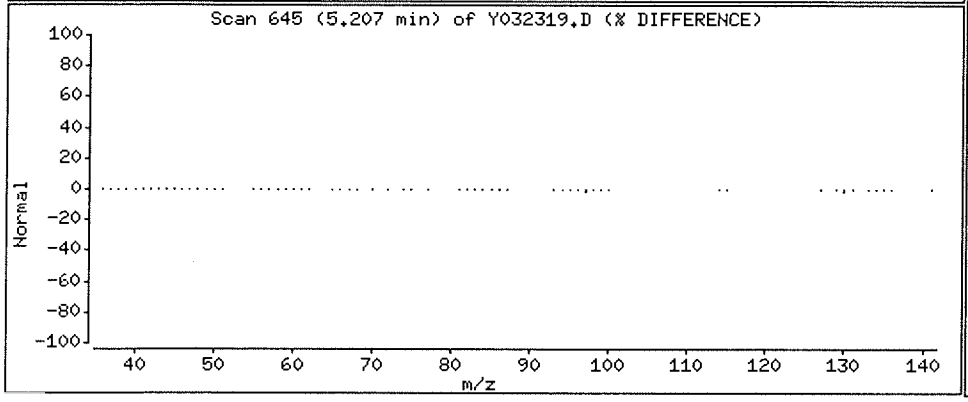












ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032321.D
Lab Smp Id: HS20030888-07 Client Smp ID: HS20030888-07
Inj Date : 24-MAR-2020 07:45
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-07;HS20030888-07;;;
Misc Info : HS18090001;WATER;0;50;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 23-Apr-2020 11:45 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 49
Dil Factor: 50.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	50.000	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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	401929	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	188413	47.1737	47.17
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	226440	44.8269	44.82
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	595252	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	498502	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	671280	52.5713	52.57
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	233139	48.5909	48.59
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	233438	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	6269	1.02378	51.18(a)
11 1,1-Dichloroethene	96	1.912	1.911	(0.457)	2152	0.63186	31.59(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	290659	63.5014	3175.07
38 Trichloroethene	130	5.207	5.206	(1.048)	1600247	387.867	19393.36(A)

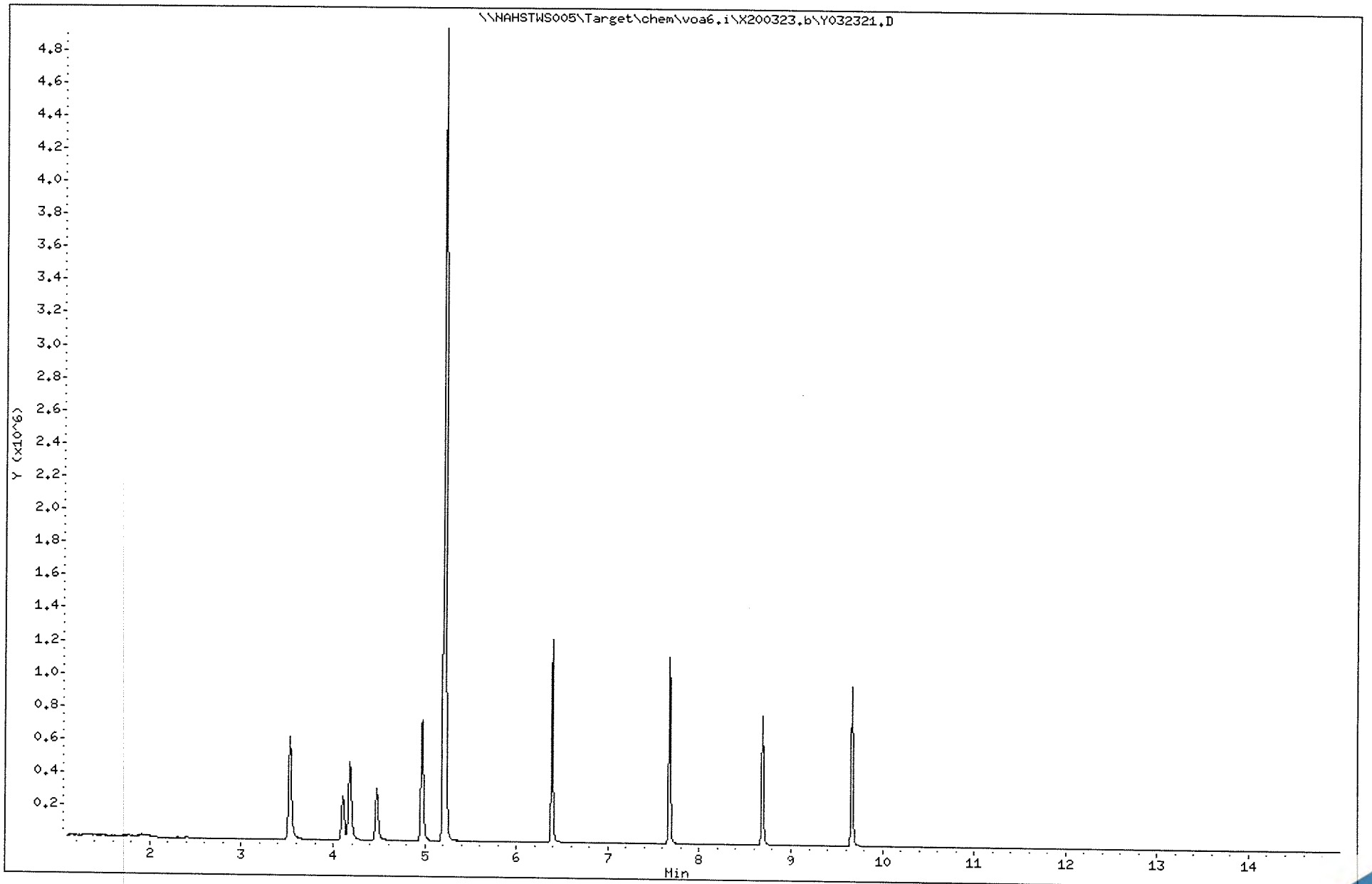
QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032321.D
Date : 24-MAR-2020 07:45
Client ID: HS20030888-07
Sample Info: HS20030888-07;HS20030888-07;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i

Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032321.D

Date : 24-MAR-2020 07:45

Client ID: HS20030888-07

Instrument: voa6.i

Sample Info: HS20030888-07;HS20030888-07;;;

Purge Volume: 5.0

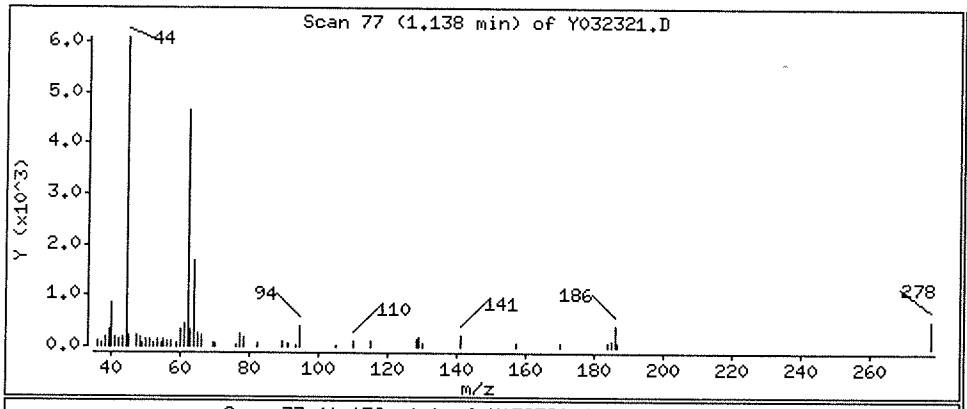
Operator: PC

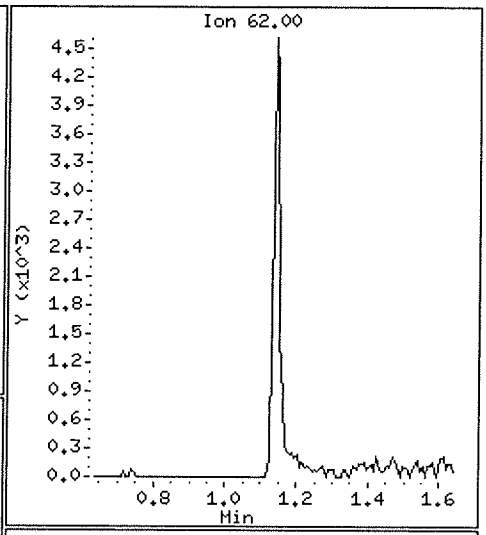
Column phase: DB624

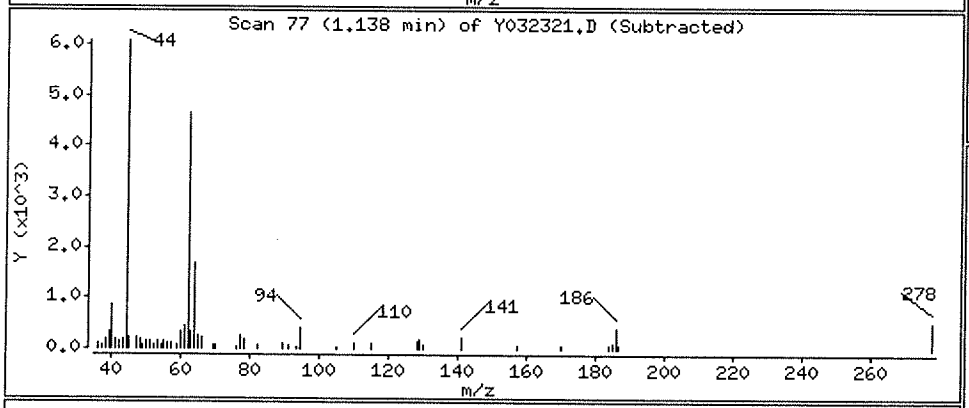
Column diameter: 0.18

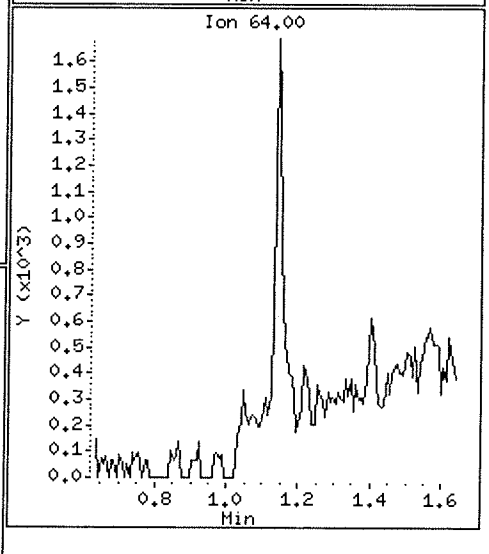
5 Vinyl Chloride

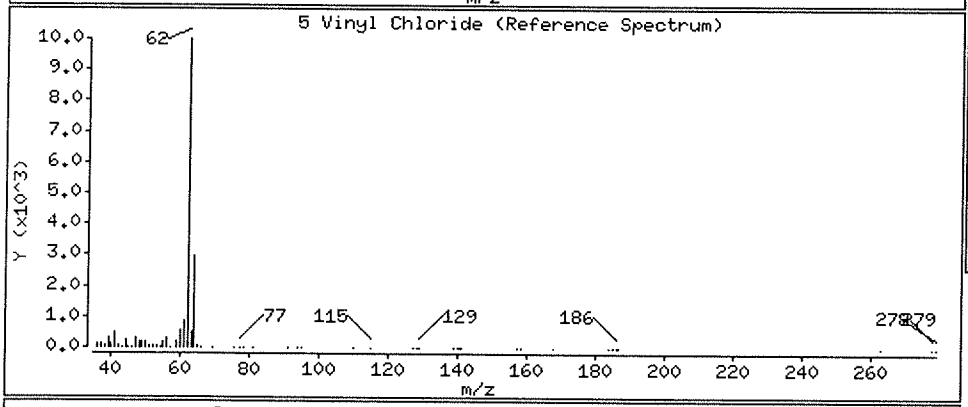
Concentration: 51.18 ug/l

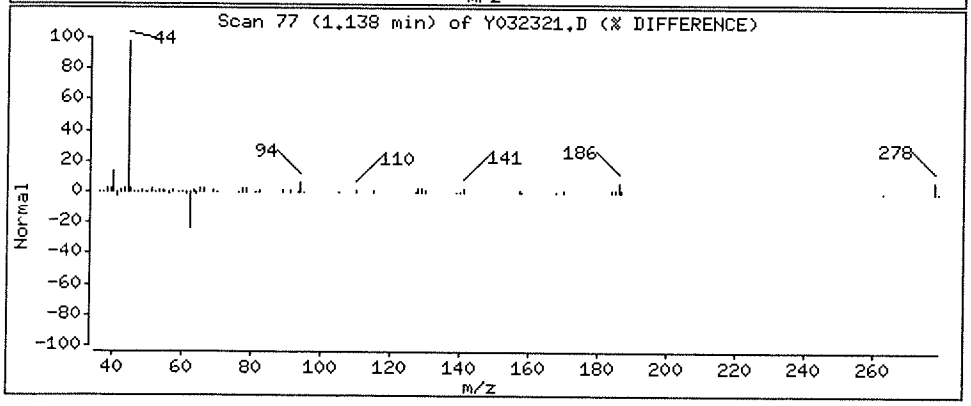












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032321.D

Date : 24-MAR-2020 07:45

Client ID: HS20030888-07

Instrument: voa6.i

Sample Info: HS20030888-07;HS20030888-07;;;

Purge Volume: 5.0

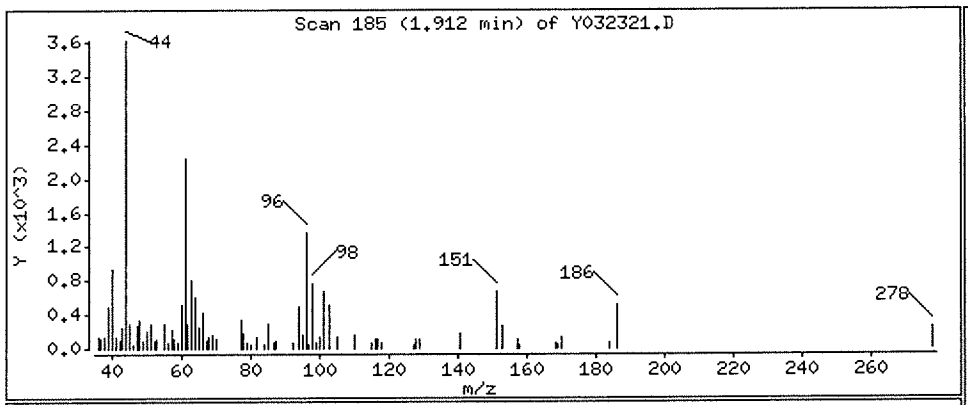
Operator: PC

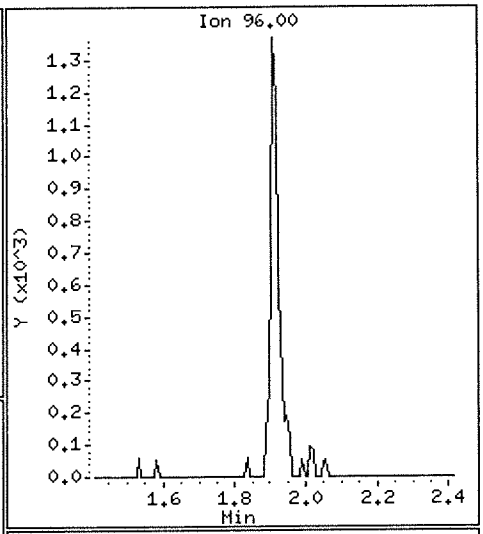
Column phase: DB624

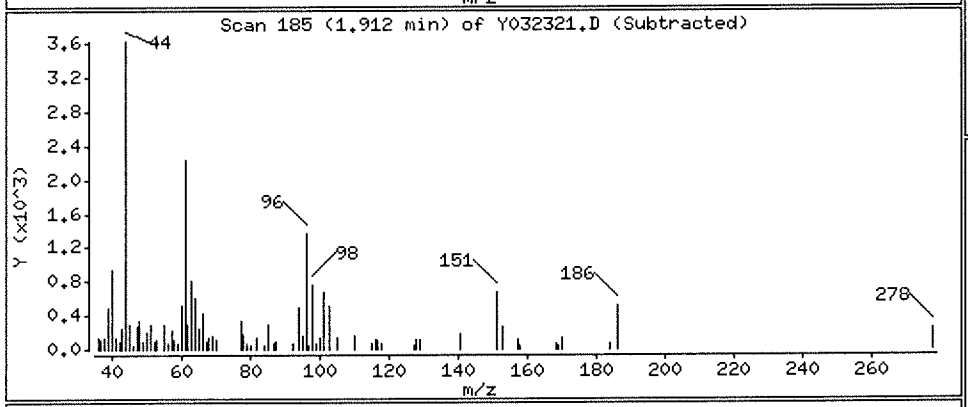
Column diameter: 0.18

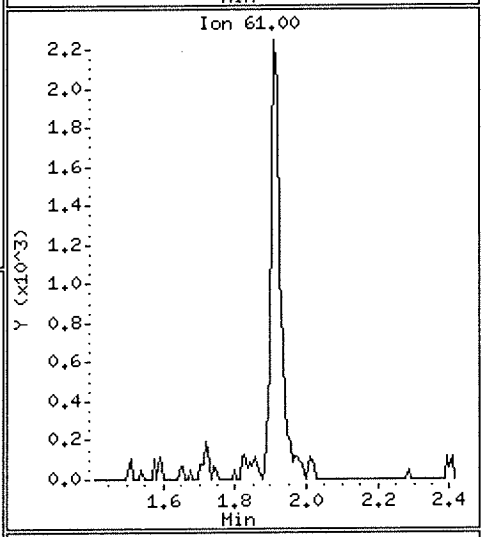
11 1,1-Dichloroethene

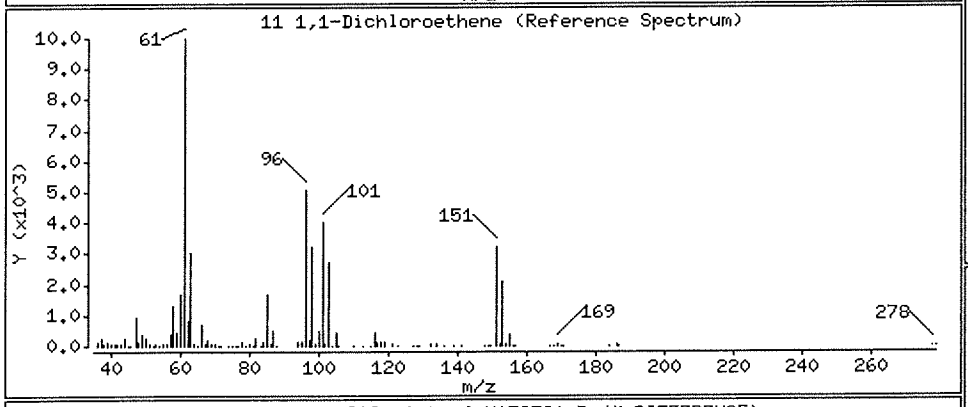
Concentration: 31.59 ug/l

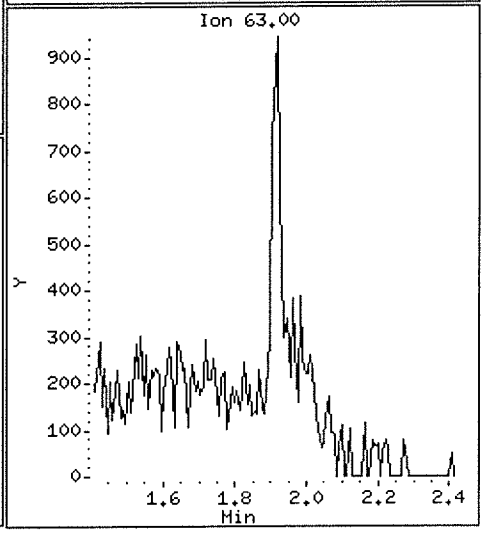


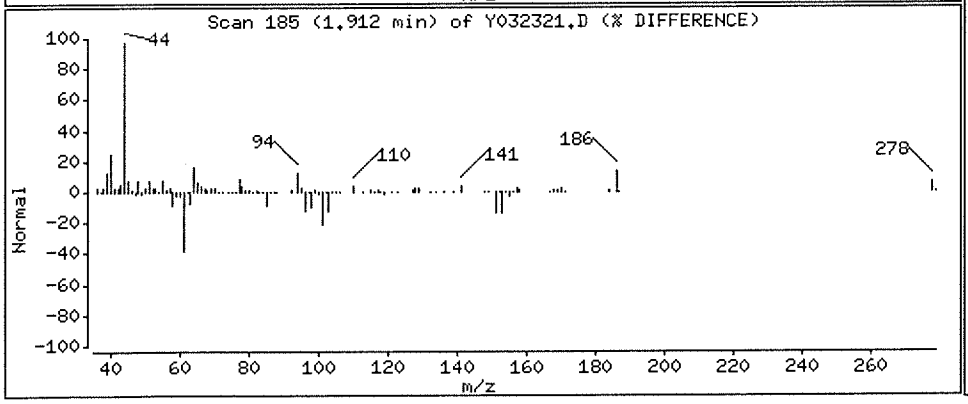












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032321.D

Date : 24-MAR-2020 07:45

Client ID: HS20030888-07

Instrument: voa6.i

Sample Info: HS20030888-07;HS20030888-07;;;

Purge Volume: 5.0

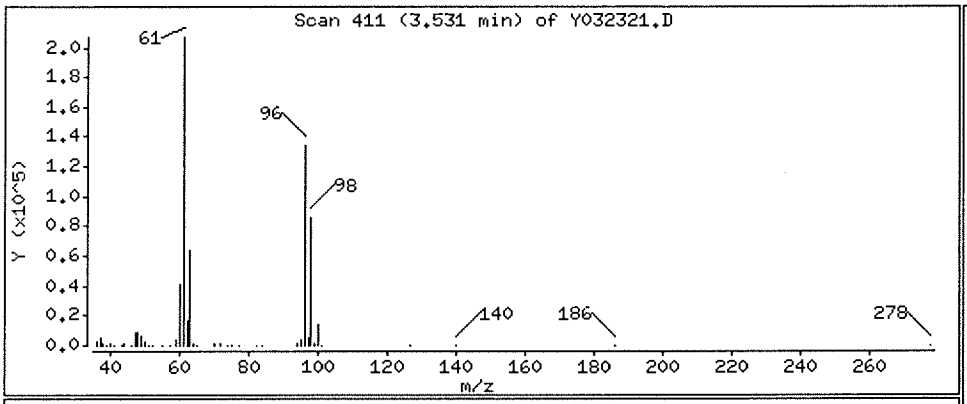
Operator: PC

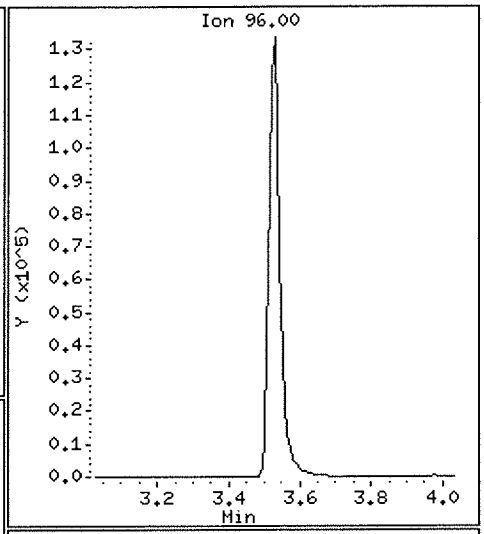
Column phase: DB624

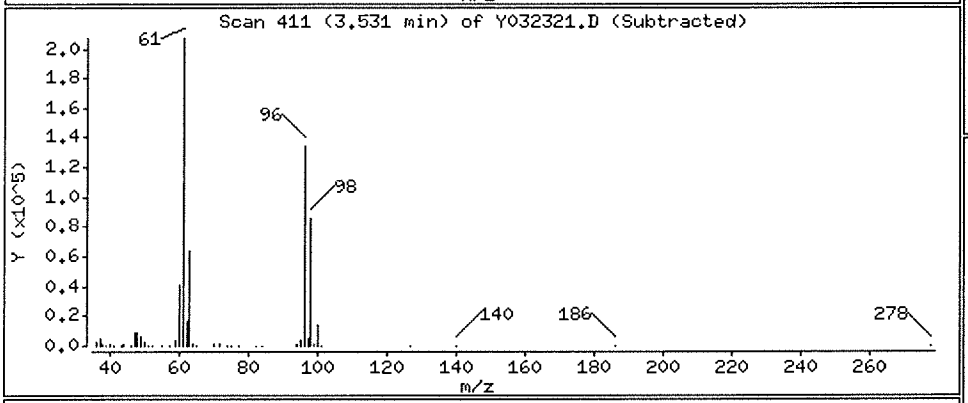
Column diameter: 0.18

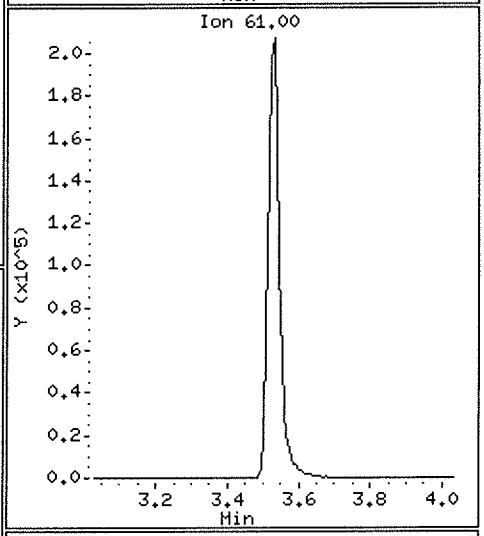
27 cis-1,2-Dichloroethene

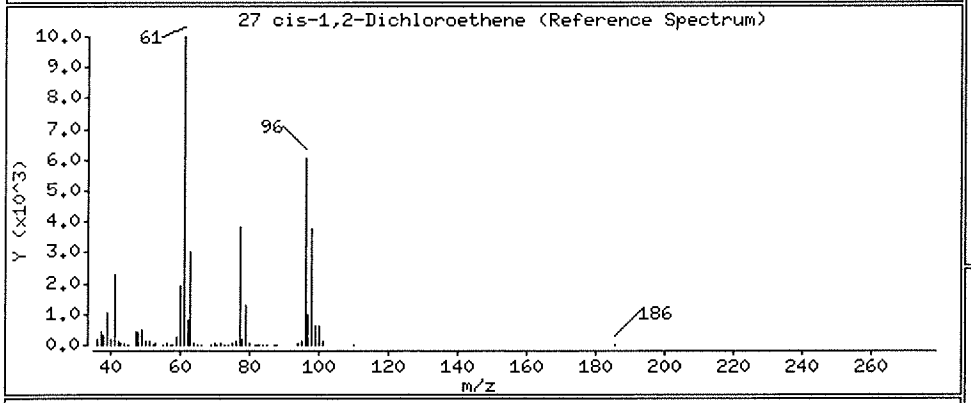
Concentration: 3175.07 ug/l

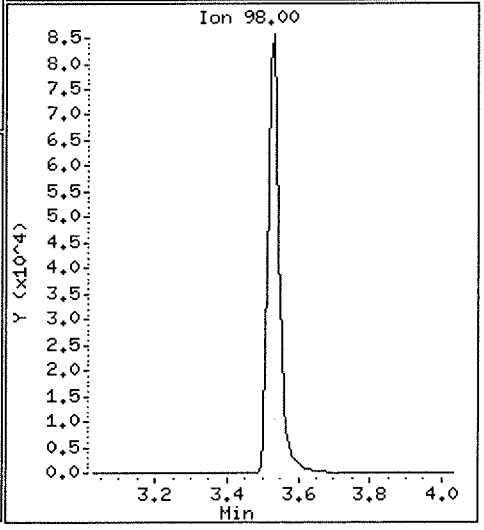


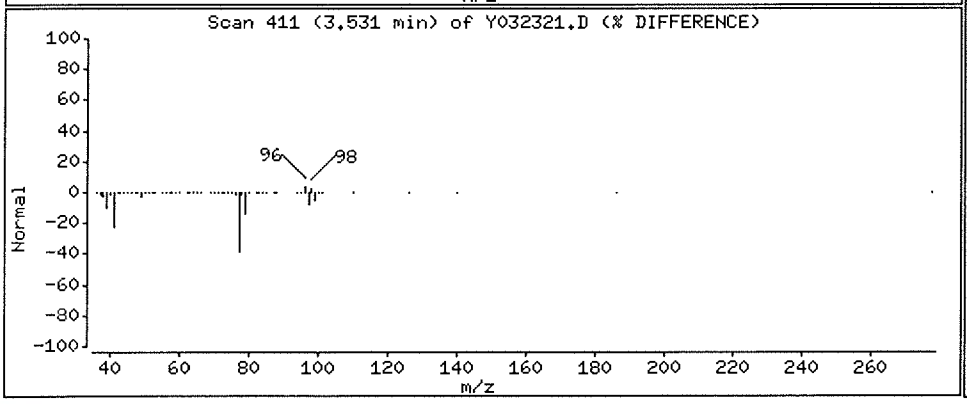












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032321.D

Date : 24-MAR-2020 07:45

Client ID: HS20030888-07

Instrument: voa6.i

Sample Info: HS20030888-07;HS20030888-07;;;

Purge Volume: 5.0

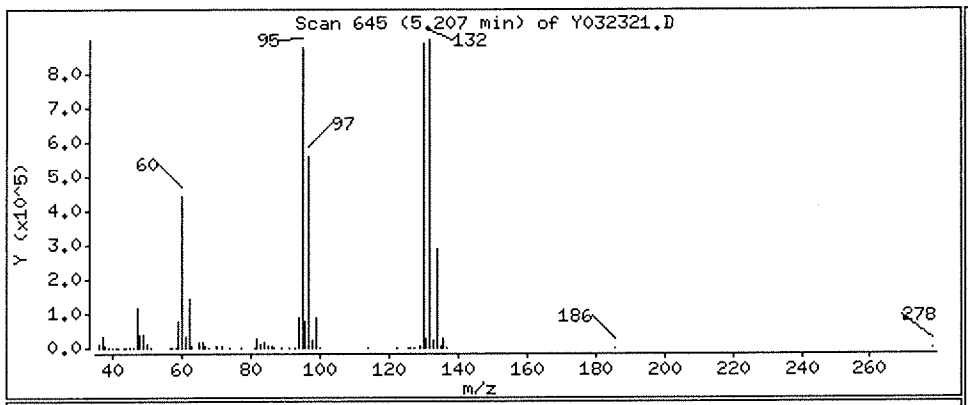
Operator: PC

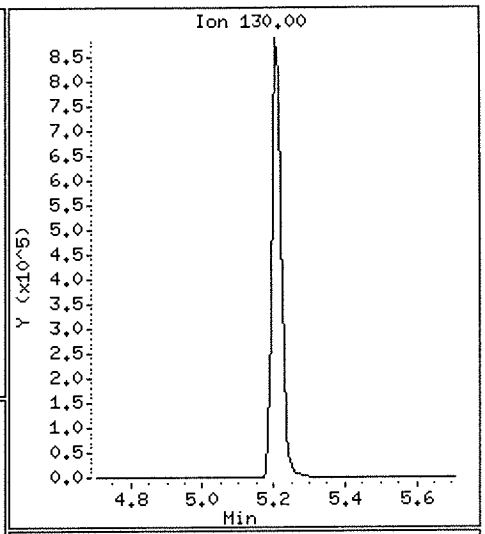
Column phase: DB624

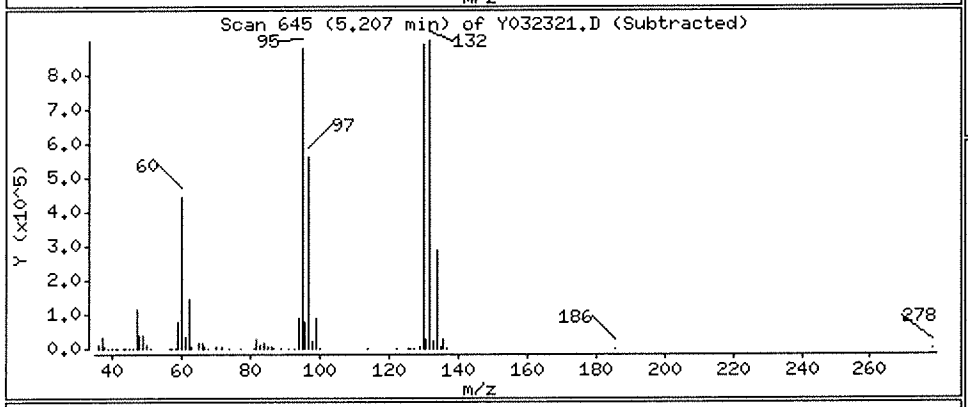
Column diameter: 0.18

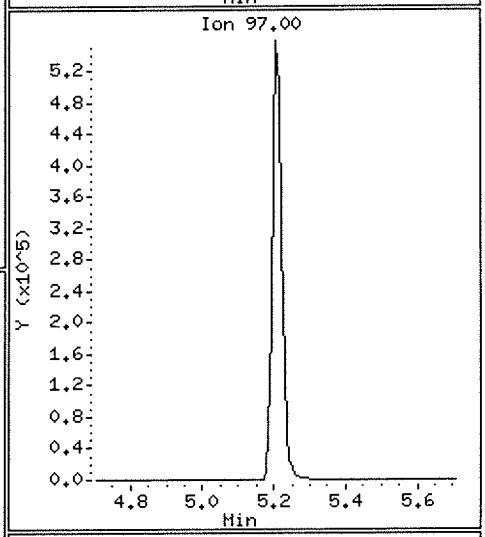
38 Trichloroethene

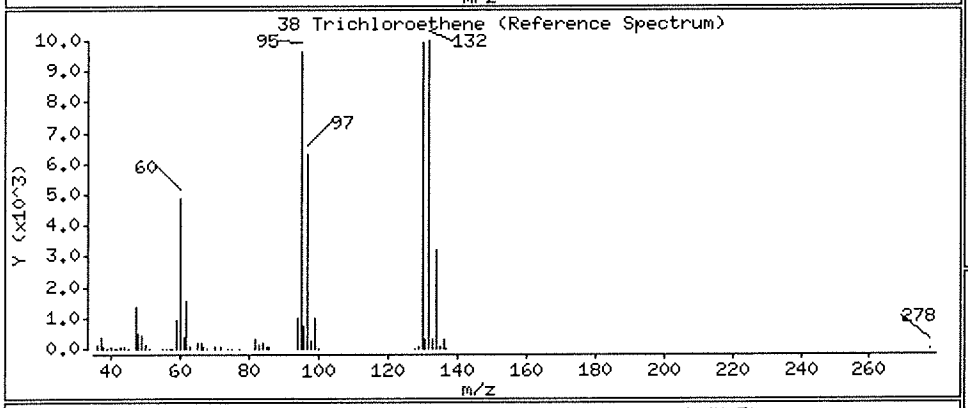
Concentration: 19393.36 ug/l

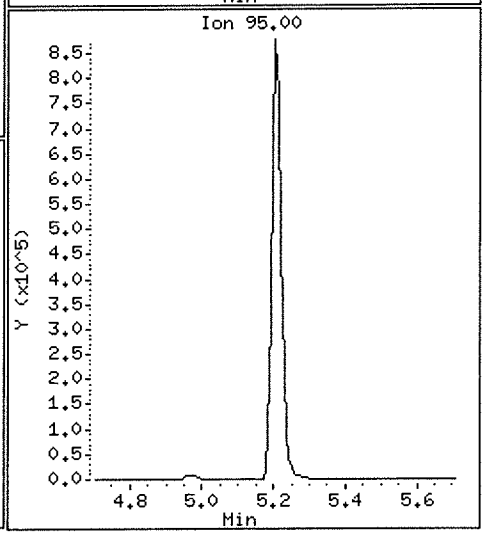


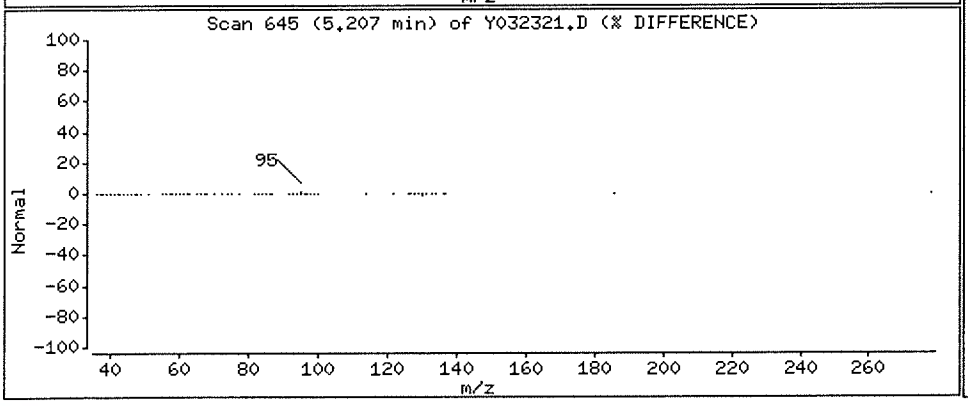












ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032322.D
Lab Smp Id: HS20030888-07 Client Smp ID: HS20030888-07
Inj Date : 24-MAR-2020 08:09
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-07;HS20030888-07;;;
Misc Info : HS18090001;WATER;0;500;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 23-Apr-2020 11:45 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 50
Dil Factor: 500.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	500.000	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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	407963	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	188110	46.3994	46.39
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	231786	45.2078	45.20
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	604221	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	518102	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	699489	52.7084	52.70
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	239995	48.1228	48.12
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	242070	50.0000	
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	31714	6.82620	3413.10
38 Trichloroethene	130	5.206	5.206	(1.048)	179384	42.8336	21416.82

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032322.D

Date : 24-MAR-2020 08:09

Client ID: HS20030888-07

Sample Info: HS20030888-07;HS20030888-07;;;

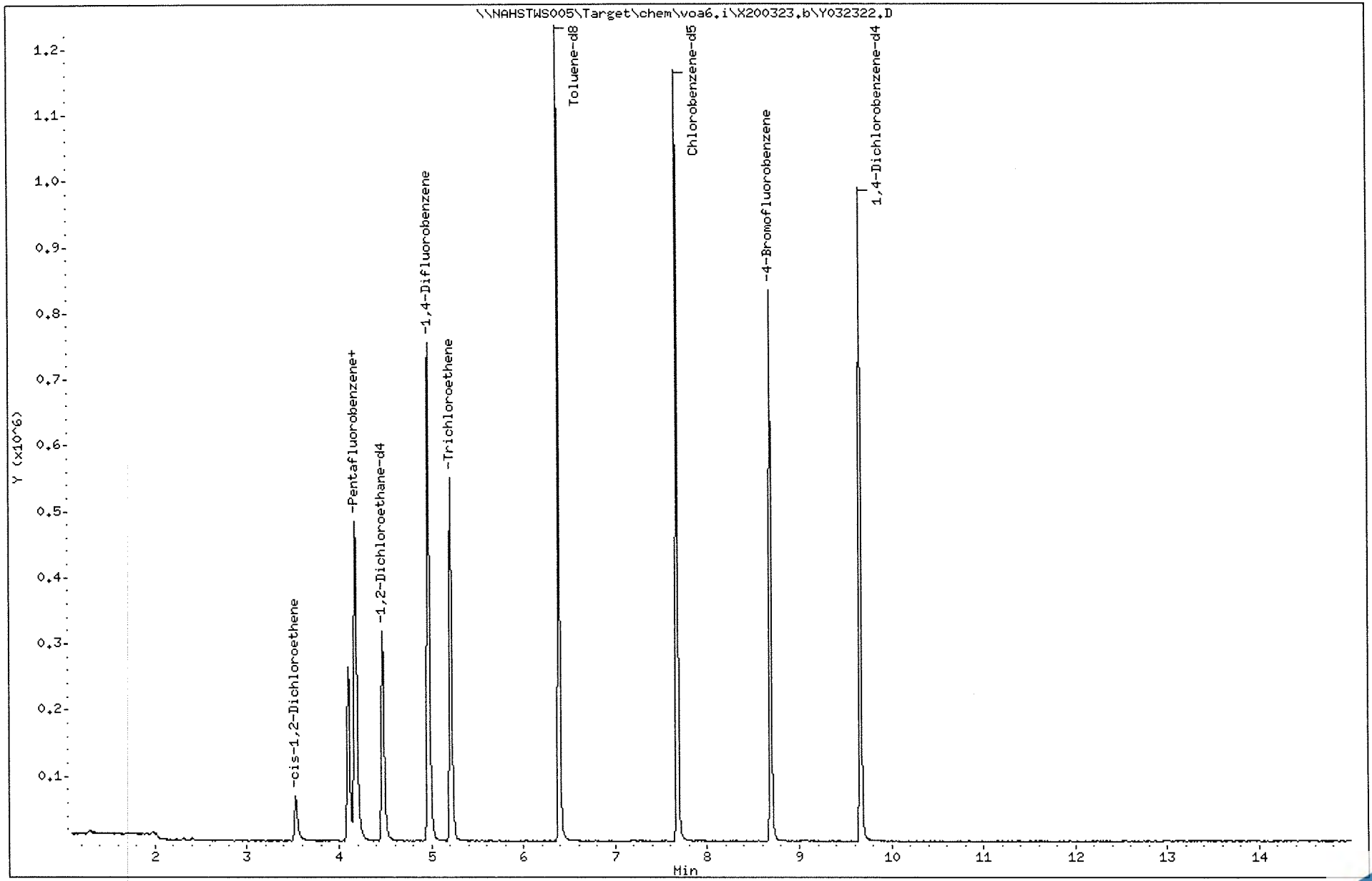
Purge Volume: 5.0

Column phase: DB624

Instrument: voa6.i

Operator: PC

Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032322.D

Date : 24-MAR-2020 08:09

Client ID: HS20030888-07

Instrument: voa6.i

Sample Info: HS20030888-07;HS20030888-07;;;

Purge Volume: 5.0

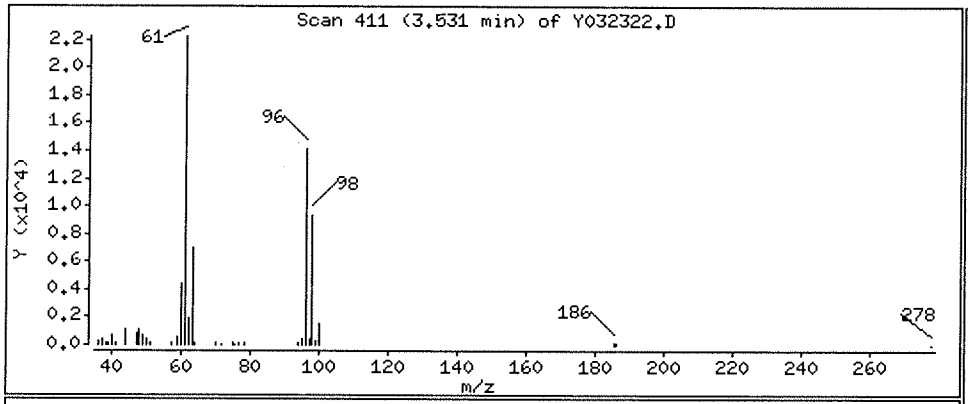
Operator: PC

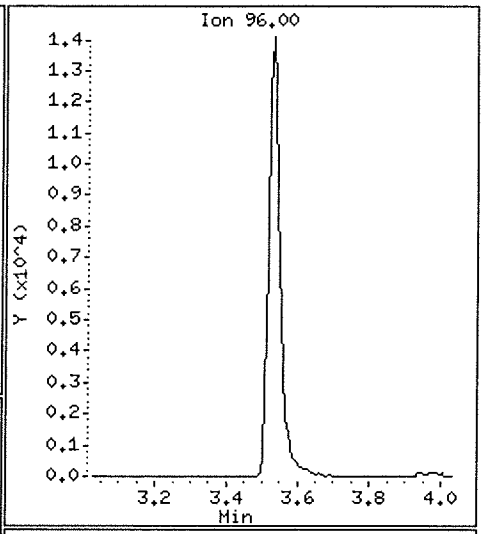
Column phase: DB624

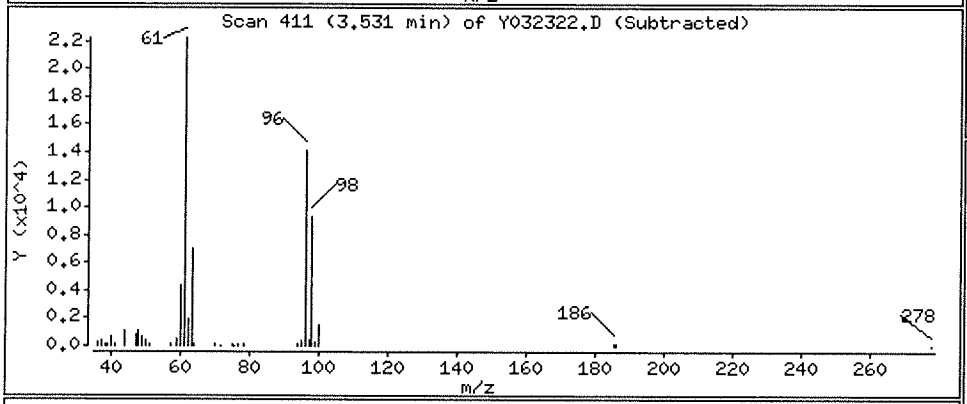
Column diameter: 0.18

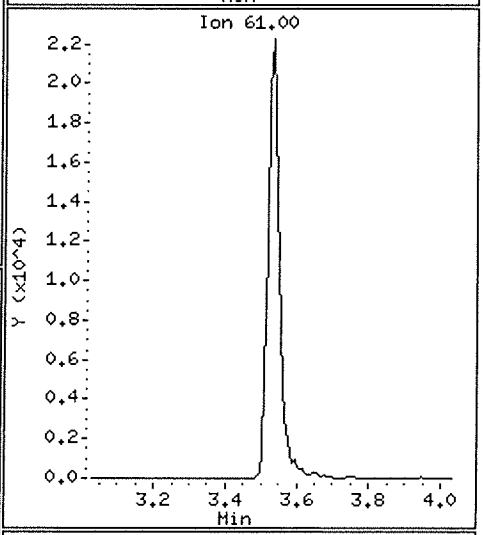
27 cis-1,2-Dichloroethene

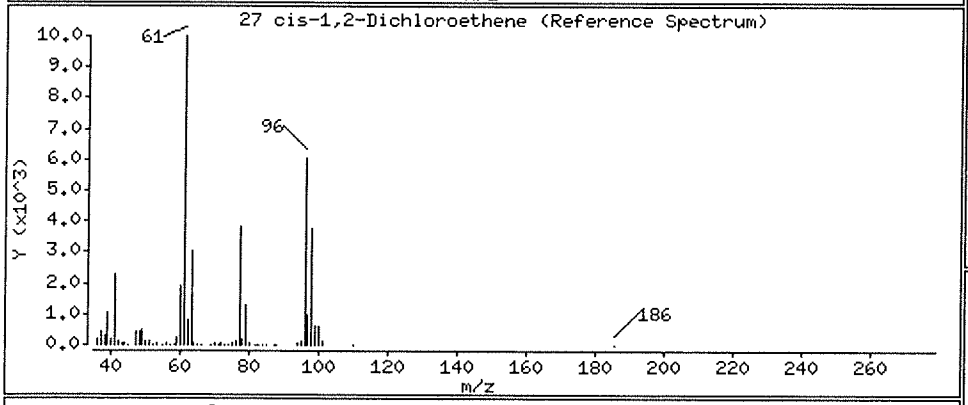
Concentration: 3413.10 ug/l

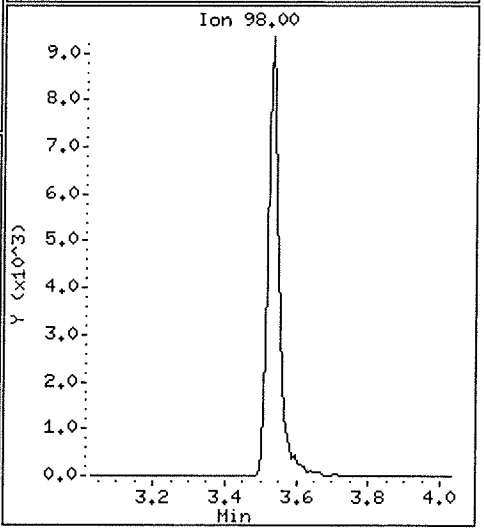


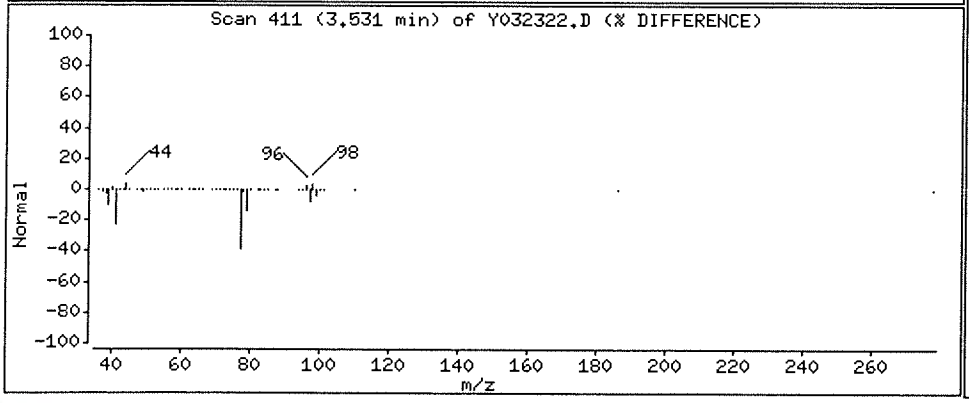












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032322.D

Date : 24-MAR-2020 08:09

Client ID: HS20030888-07

Instrument: voa6.i

Sample Info: HS20030888-07;HS20030888-07;;;

Purge Volume: 5.0

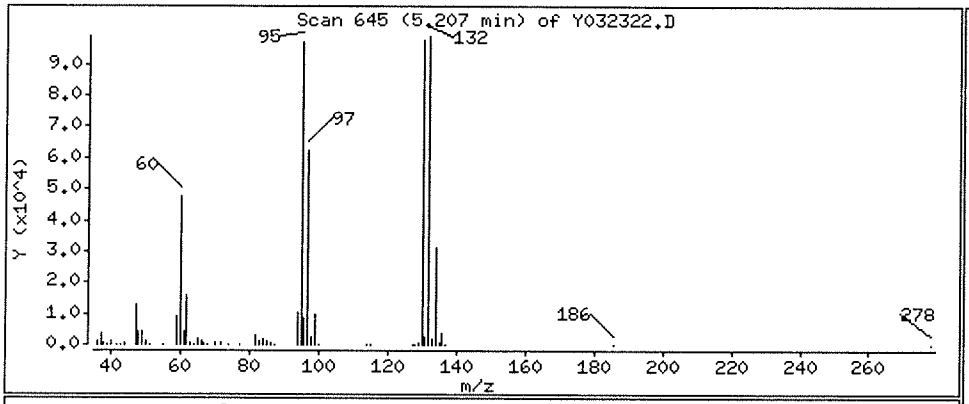
Operator: PC

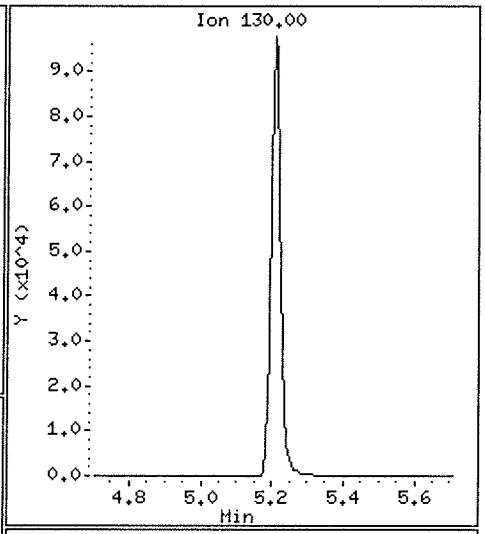
Column phase: DB624

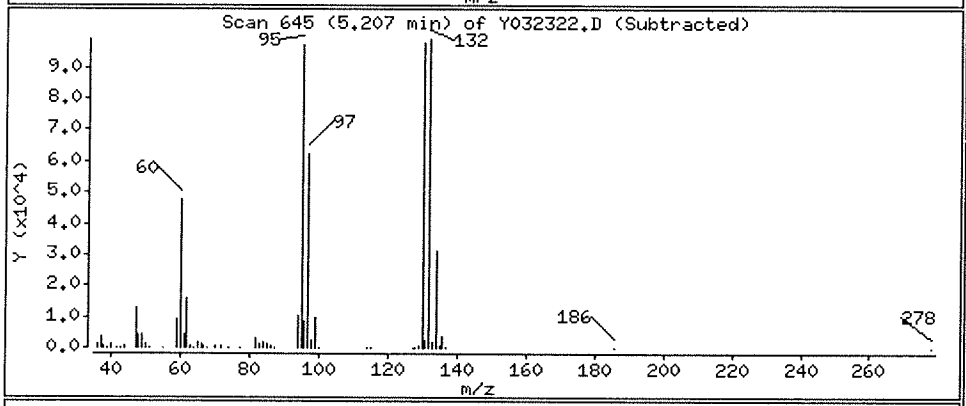
Column diameter: 0.18

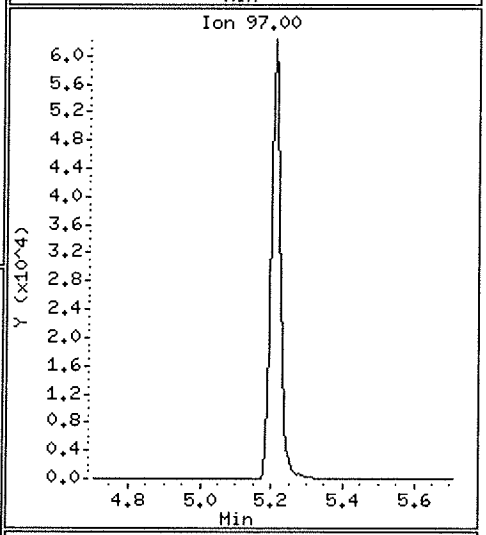
38 Trichloroethene

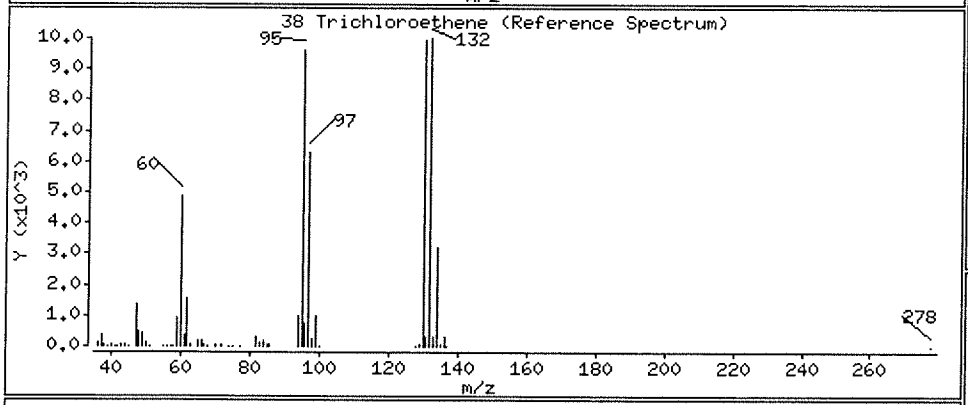
Concentration: 21416.82 ug/l

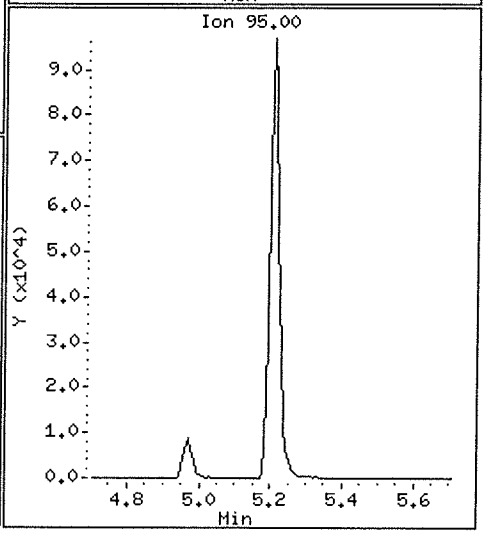


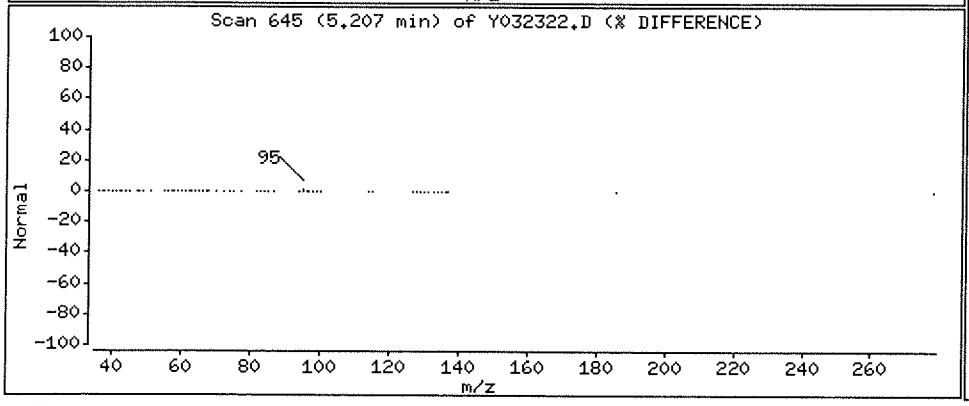












ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032327.D
Lab Smp Id: HS20030888-10 Client Smp ID: HS20030888-10
Inj Date : 24-MAR-2020 10:09
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-10;HS20030888-10;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200323.b\8260W.m
Meth Date : 23-Apr-2020 11:45 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 55
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	409269	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	192787	47.4036	47.40
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	228505	44.4230	44.42
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	614261	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	507419	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	676452	52.0447	52.04
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	236280	48.3780	48.37
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	236891	50.0000	
11 1,1-Dichloroethene	96	1.919	1.911	(0.459)	4823	1.39072	1.39(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	114618	24.5920	24.59
38 Trichloroethene	130	5.214	5.206	(1.049)	3860215	906.683	906.68(A)

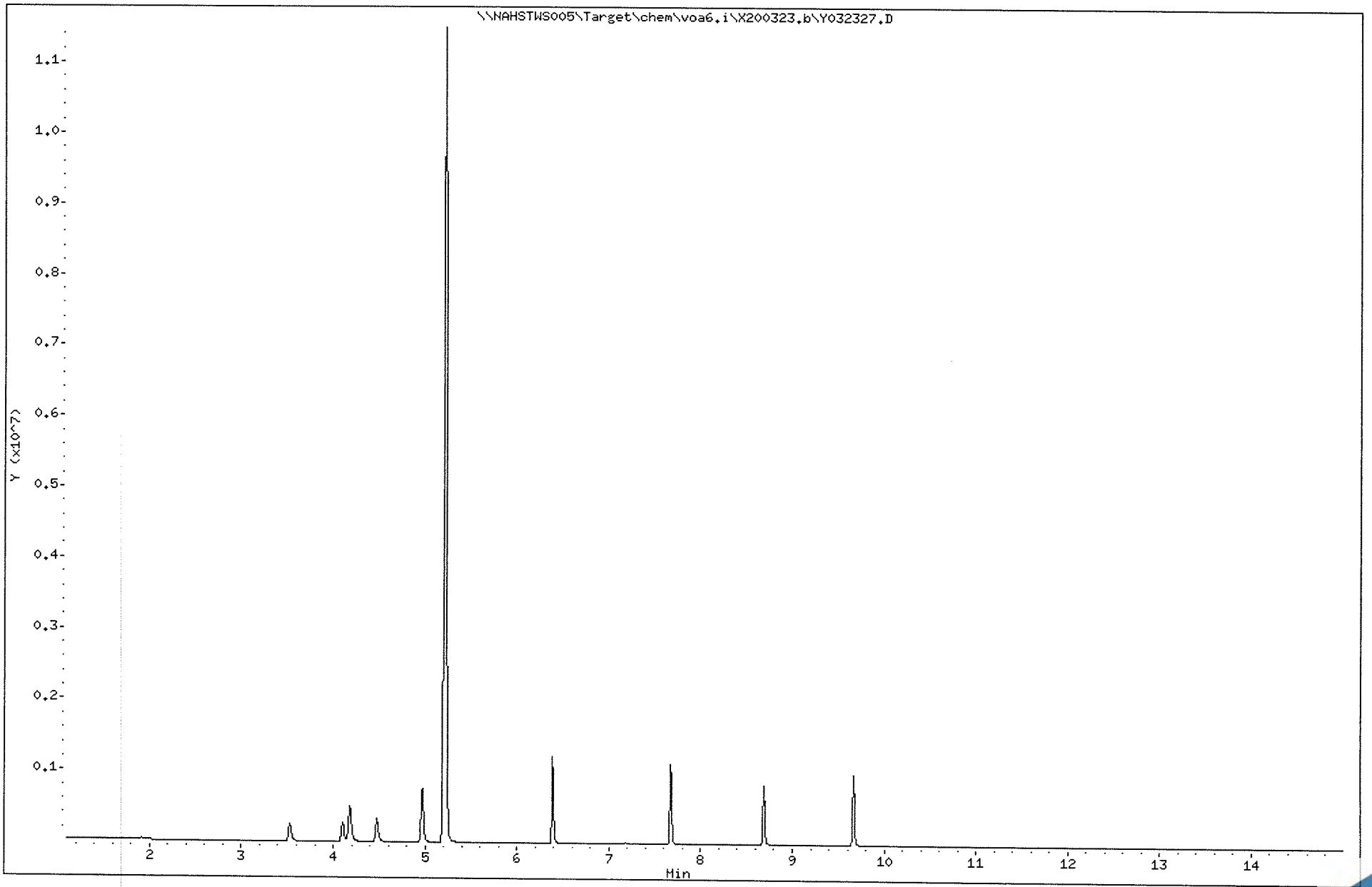
QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032327.D
Date : 24-MAR-2020 10:09
Client ID: HS20030888-10
Sample Info: HS20030888-10;HS20030888-10;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i

Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032327.D

Date : 24-MAR-2020 10:09

Client ID: HS20030888-10

Instrument: voa6.i

Sample Info: HS20030888-10;HS20030888-10;;;

Purge Volume: 5.0

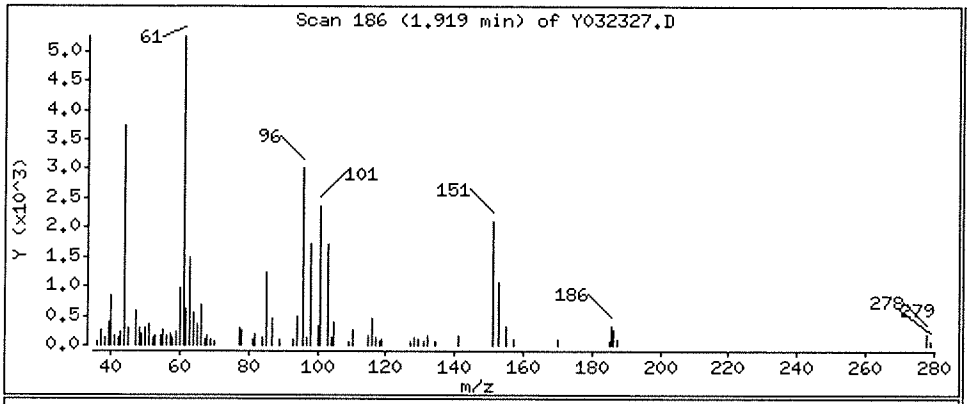
Operator: PC

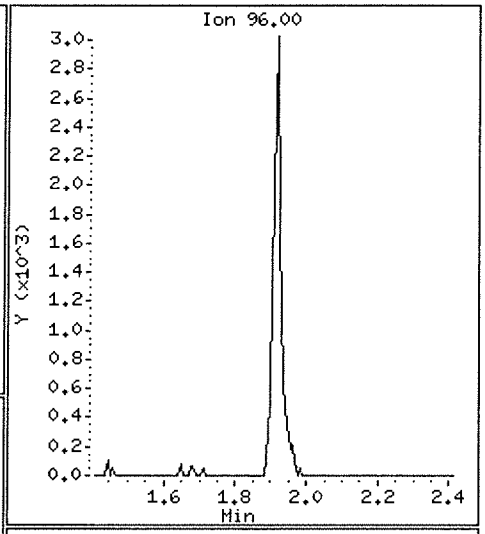
Column phase: DB624

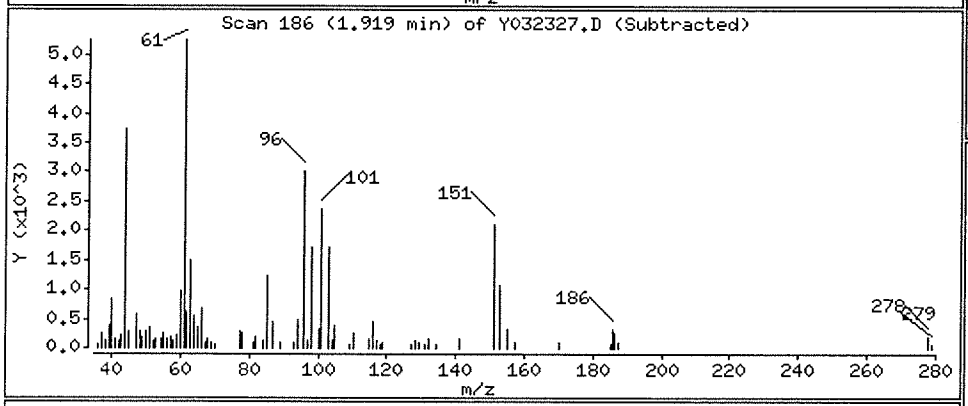
Column diameter: 0.18

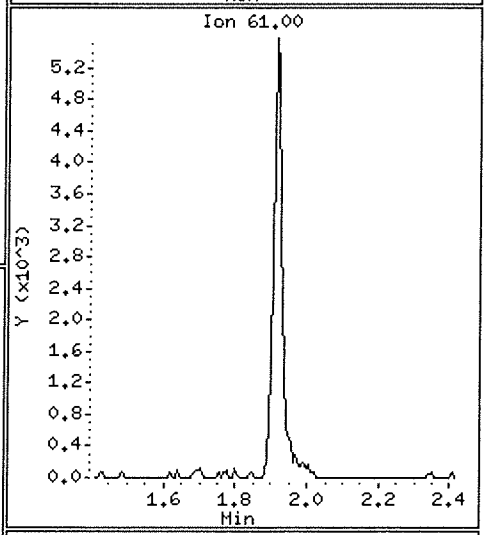
11 1,1-Dichloroethene

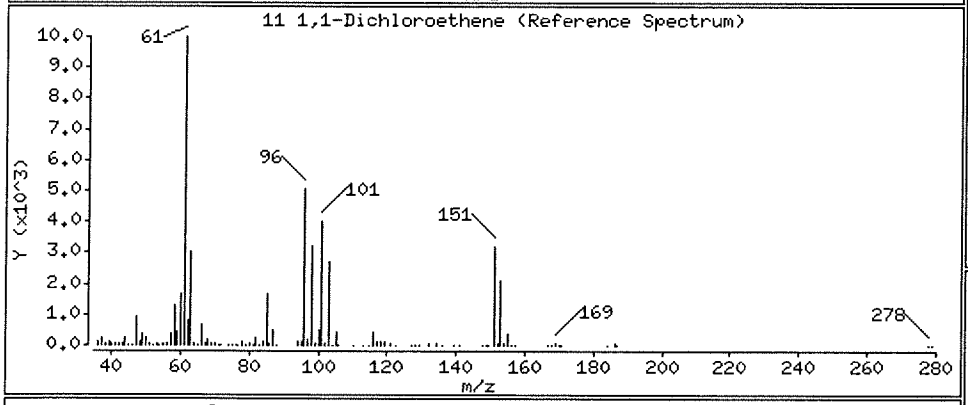
Concentration: 1.39 ug/l

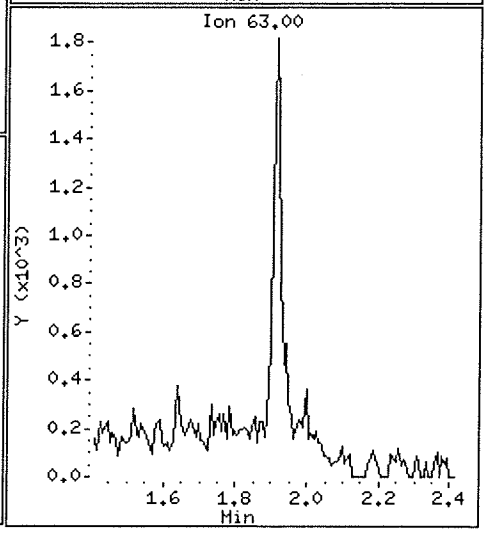


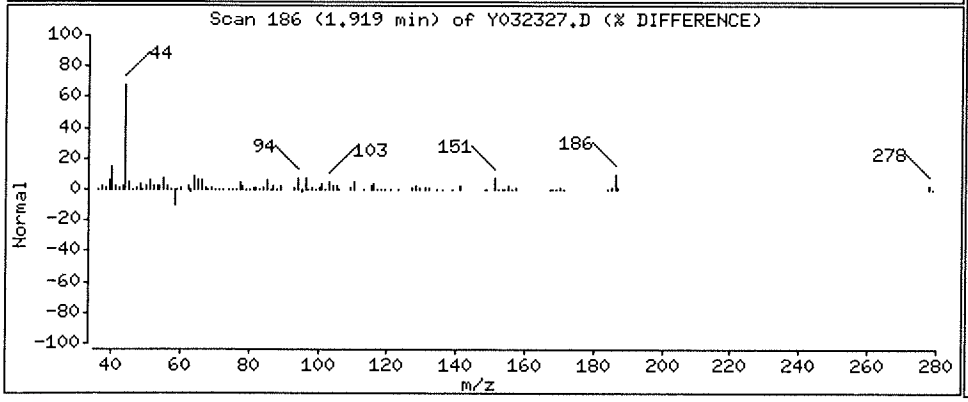












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032327.D

Date : 24-MAR-2020 10:09

Client ID: HS20030888-10

Instrument: voa6.i

Sample Info: HS20030888-10;HS20030888-10;;;

Purge Volume: 5.0

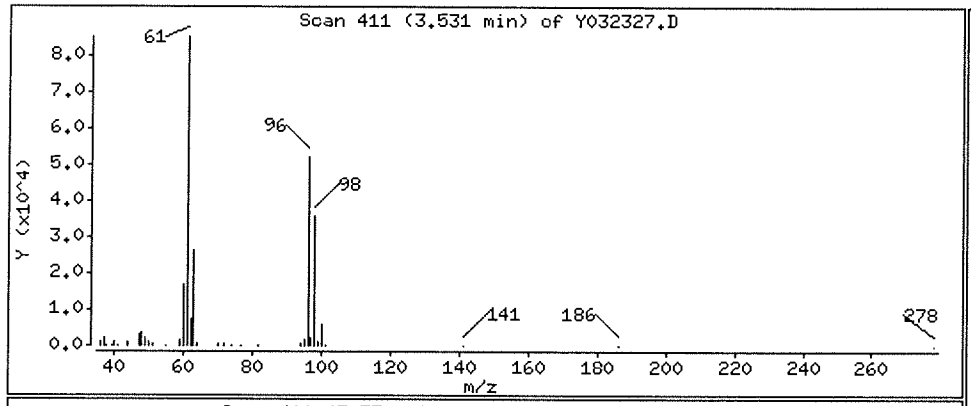
Operator: PC

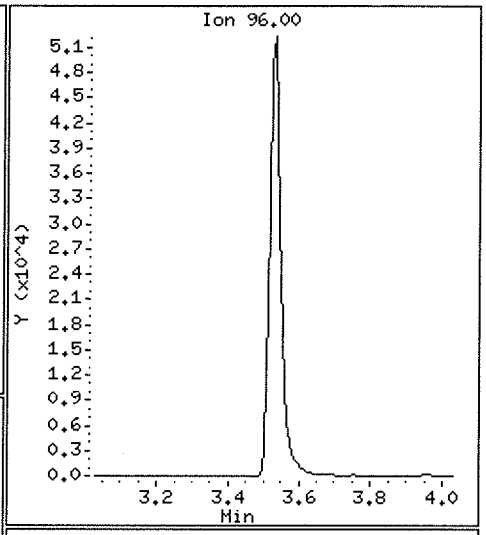
Column phase: DB624

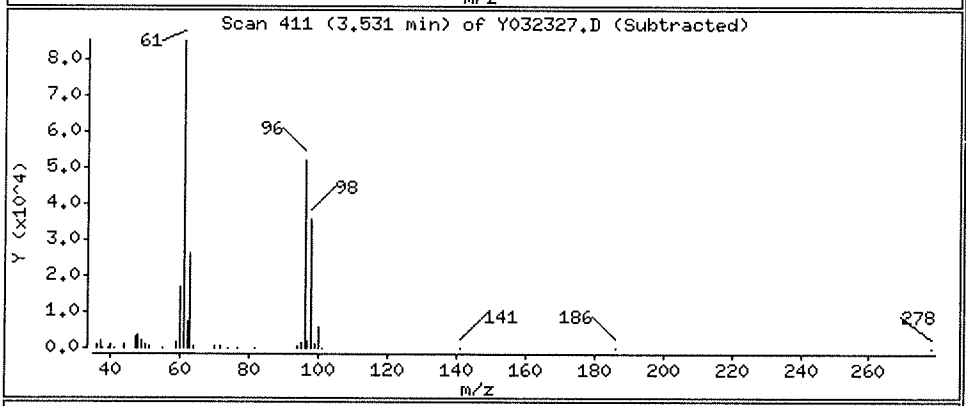
Column diameter: 0.18

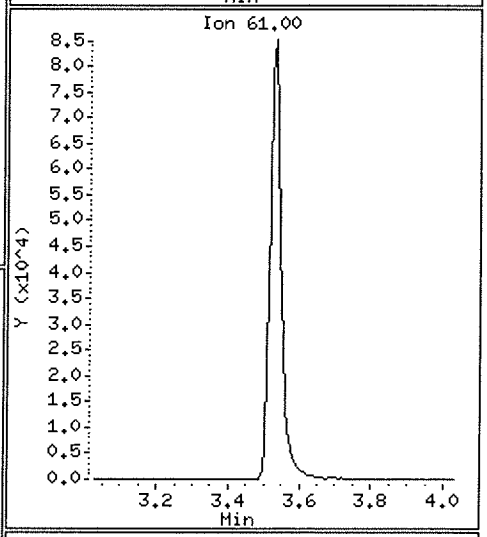
27 cis-1,2-Dichloroethene

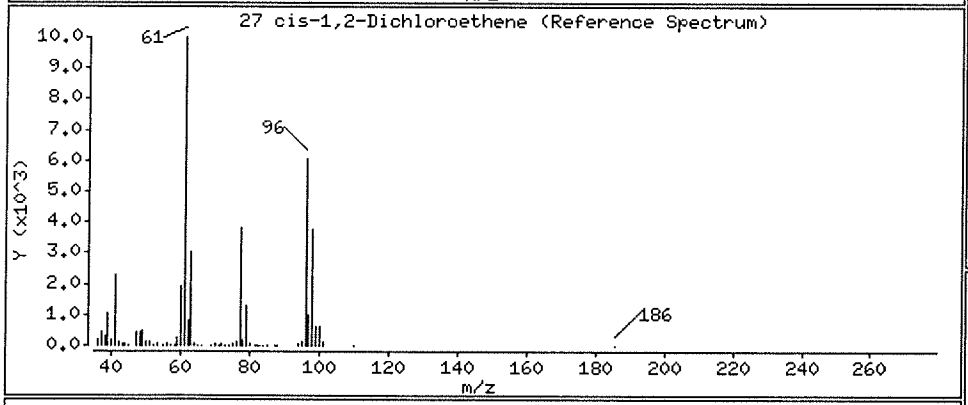
Concentration: 24.59 ug/l

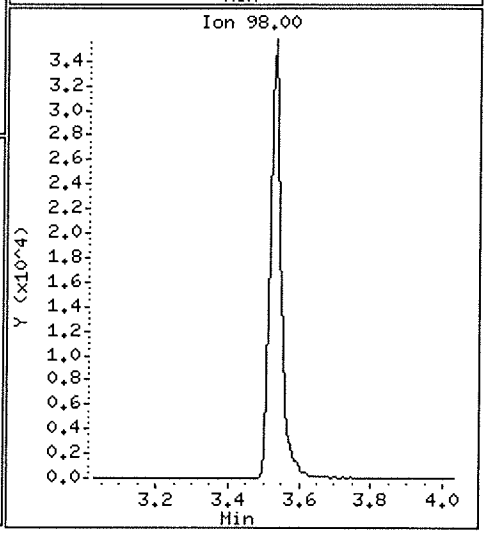


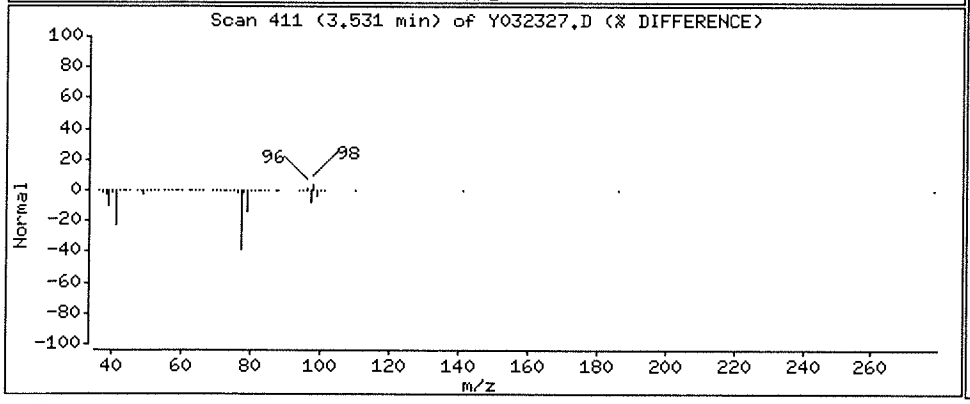












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032327.D

Date : 24-MAR-2020 10:09

Client ID: HS20030888-10

Instrument: voa6.i

Sample Info: HS20030888-10;HS20030888-10;;;

Purge Volume: 5.0

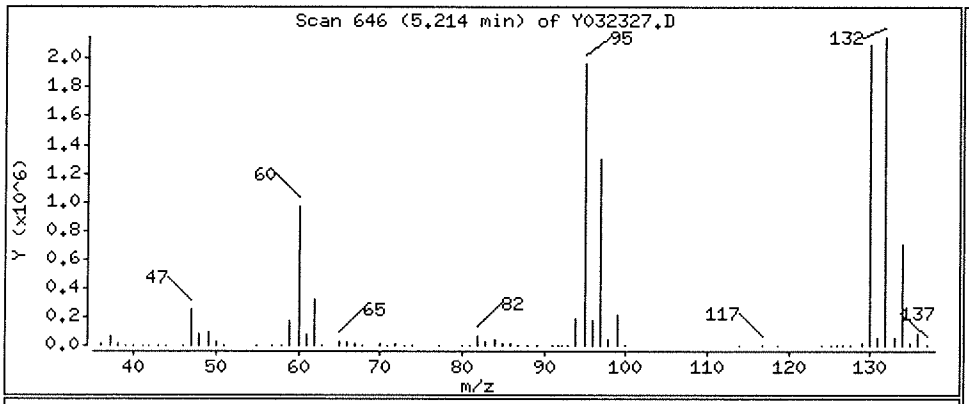
Operator: PC

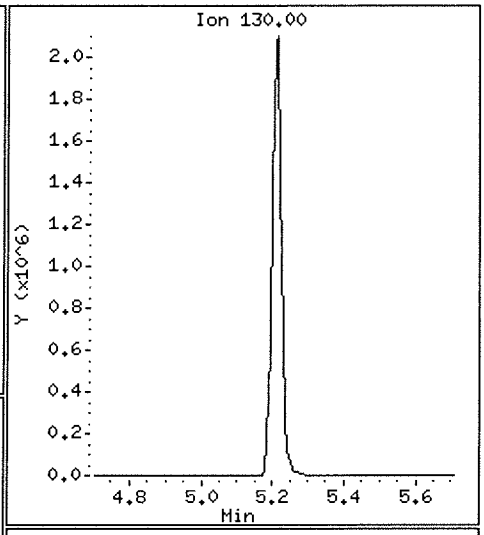
Column phase: DB624

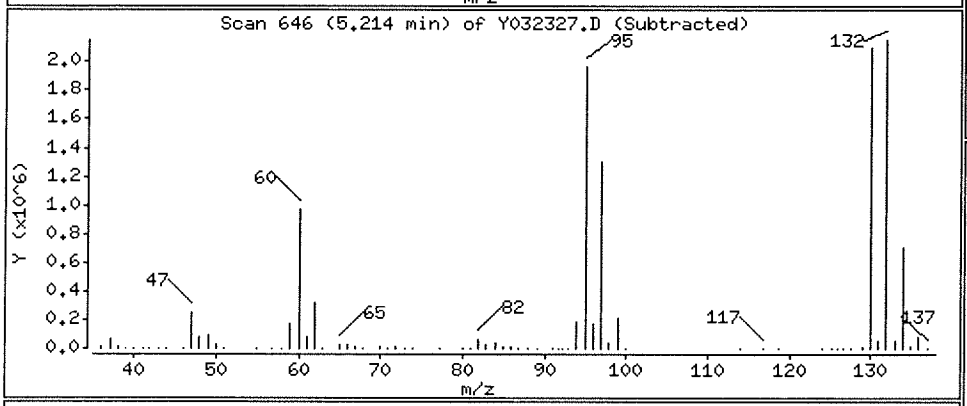
Column diameter: 0.18

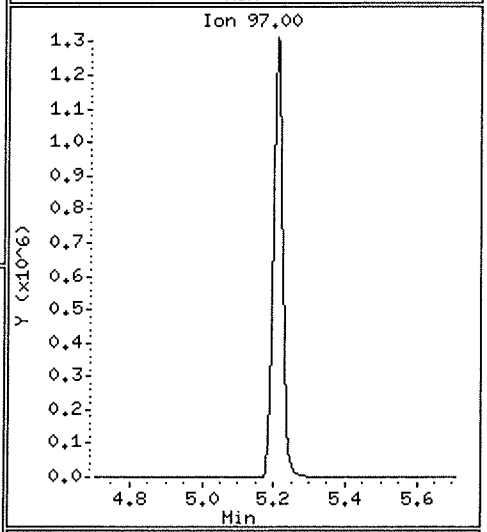
38 Trichloroethene

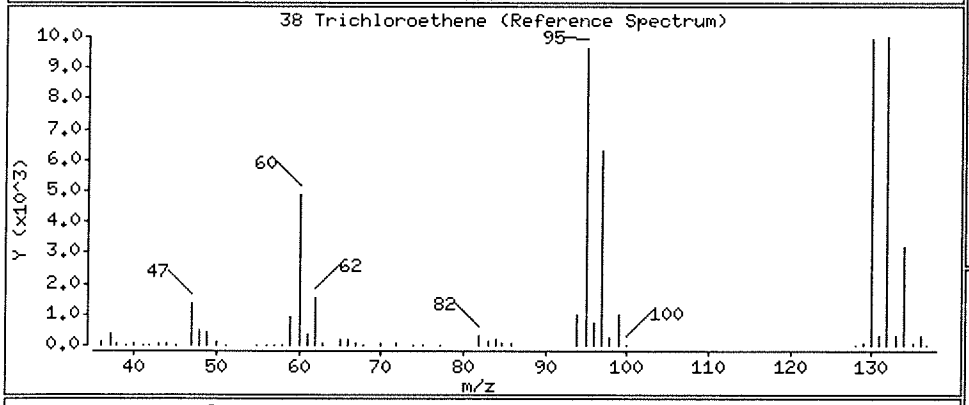
Concentration: 906.68 ug/l

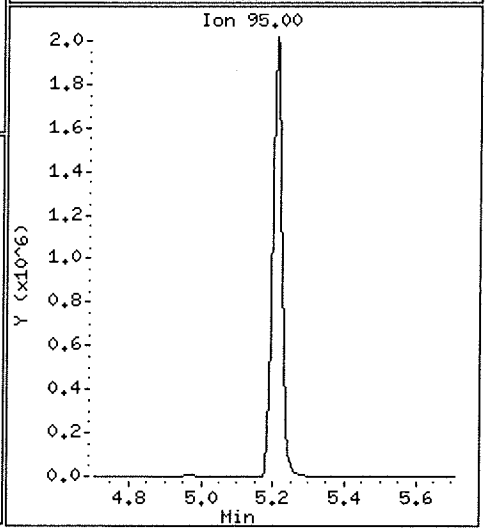


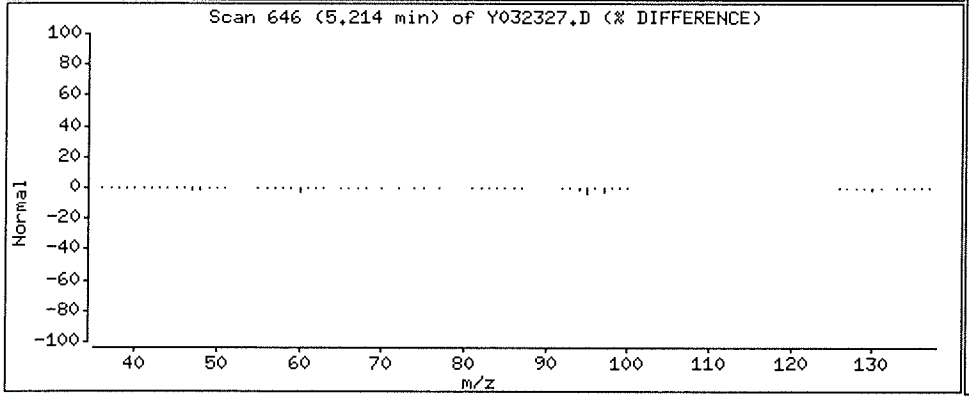


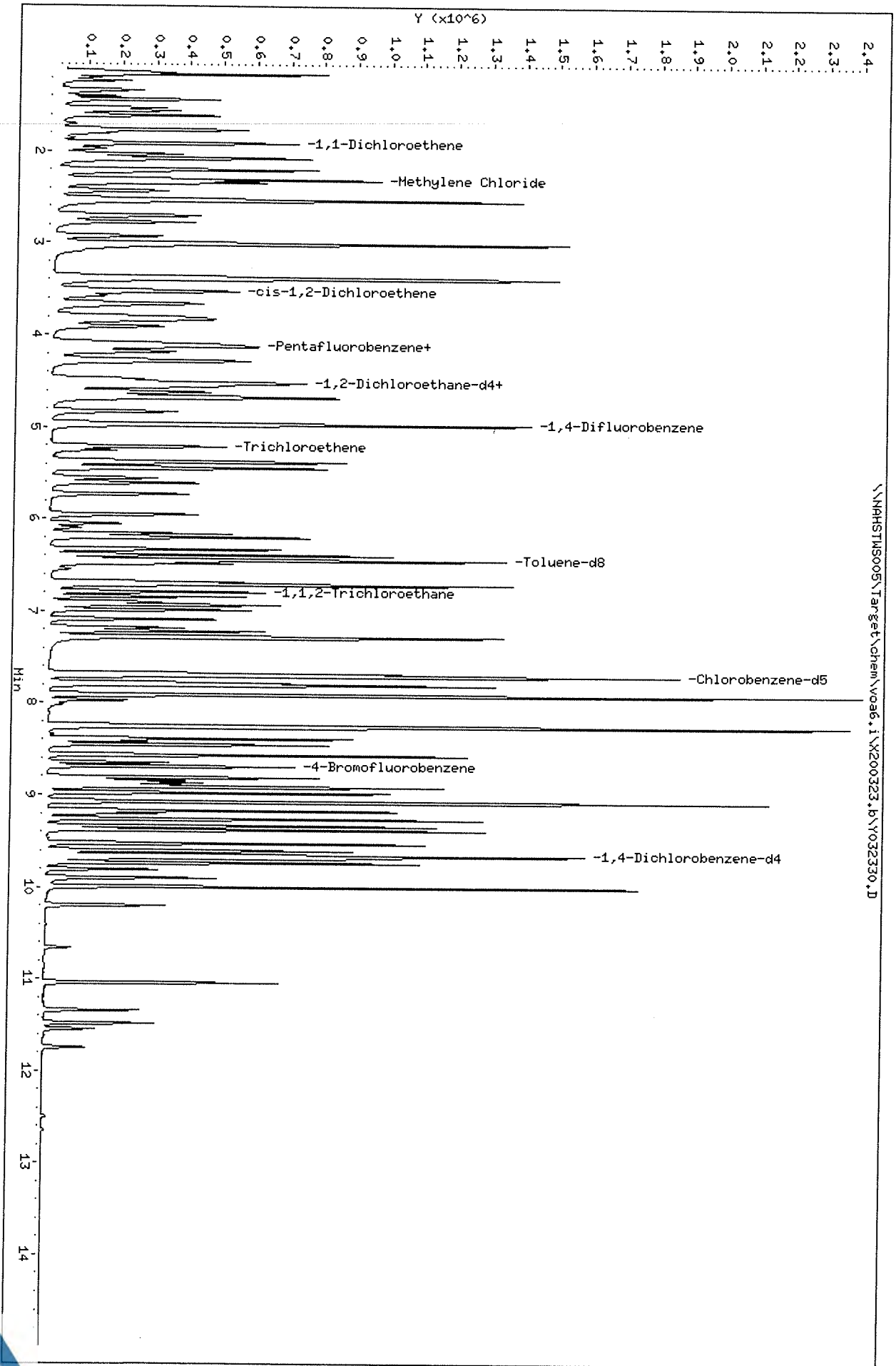












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200323.b\Y032330.D
Date : 24-MAR-2020 11:21
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

MSVOA06 -Logbook

Batch: 40076
Date: 03-24-2020
Method: 8260
Comments:

Analyst: Presenta Cabascango
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	03-24-2020 11:53 am	1.00	50 mL	50 mL	X032401a.D	Liquid	Y	NA
	Auto find/ purged									
2	BFB	TUNE	03-24-2020 12:17 pm	1.00	50 mL	50 mL	X032402.D	Liquid	Y	NA
	Auto find/ purged									
3	CCV	CCV	03-24-2020 12:41 pm	1.00	50 mL	50 mL	X032403.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
4	CCB	SAMP	03-24-2020 01:05 pm	1.00	50 mL	50 mL	X032404.D	Liquid	Y	NA
5	VLCSW-200324	LCS	03-24-2020 01:29 pm	1.00	50 mL	50 mL	X032405.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
6	BLANK	SAMP	03-24-2020 01:53 pm	1.00	50 mL	50 mL	X032406.D	Liquid	Y	NA
7	VBLKW1-200324	MBLK	03-24-2020 02:17 pm	1.00	50 mL	50 mL	X032407.D	Liquid	Y	NA
8	VBLKW2-200324	MBLK	03-24-2020 02:41 pm	1.00	50 mL	50 mL	X032408.D	Liquid	Y	NA
9	HS20021070-06	SAMP	03-24-2020 03:05 pm	1.00	50 mL	50 mL	X032409.D	Liquid	Y	NA
10	HS20021070-07	SAMP	03-24-2020 03:29 pm	1.00	50 mL	50 mL	X032410.D	Liquid	Y	NA
11	HS20030892-01	SAMP	03-24-2020 03:53 pm	1.00	50 mL	50 mL	X032411.D	Liquid	Y	<2
12	HS20030892-03	SAMP	03-24-2020 04:17 pm	1.00	50 mL	50 mL	X032412.D	Liquid	Y	<2
13	HS20030892-06	SAMP	03-24-2020 04:41 pm	1.00	50 mL	50 mL	X032413.D	Liquid	Y	<2
14	HS20030888-08	SAMP	03-24-2020 05:05 pm	5.00	10 mL	50 mL	X032414.D	Liquid	Y	<2
15	HS20030888-06	SAMP	03-24-2020 05:29 pm	10.00	5 mL	50 mL	X032415.D	Liquid	Y	<2
16	HS20030892-06MS	MS	03-24-2020 05:53 pm	1.00	50 mL	50 mL	X032416.D	Liquid	Y	<2
	3.5 uL cal std/40 mL samp									
17	HS20030892-06MSD	MSD	03-24-2020 06:17 pm	1.00	50 mL	50 mL	X032417.D	Liquid	Y	<2
	3.5 uL cal std/40 mL samp									
18	HS20030770-05	SAMP	03-24-2020 06:41 pm	1.00	50 mL	50 mL	X032418.D	Liquid	Y	<2
19	HS20030770-06	SAMP	03-24-2020 07:05 pm	1.00	50 mL	50 mL	X032419.D	Liquid	Y	<2
20	HS20030892-02	SAMP	03-24-2020 07:30 pm	1.00	50 mL	50 mL	X032420.D	Liquid	Y	<2
21	HS20030892-04	SAMP	03-24-2020 07:54 pm	1.00	50 mL	50 mL	X032421.D	Liquid	Y	<2
22	HS20030892-05	SAMP	03-24-2020 08:18 pm	1.00	50 mL	50 mL	X032422.D	Liquid	Y	<2
23	HS20030892-07	SAMP	03-24-2020 08:42 pm	1.00	50 mL	50 mL	X032423.D	Liquid	Y	<2
24	HS20030892-08	SAMP	03-24-2020 09:06 pm	1.00	50 mL	50 mL	X032424.D	Liquid	Y	<2
25	HS20030892-09	SAMP	03-24-2020 09:30 pm	1.00	50 mL	50 mL	X032425.D	Liquid	Y	<2
26	HS20030892-10	SAMP	03-24-2020 09:54 pm	1.00	50 mL	50 mL	X032426.D	Liquid	Y	<2
27	HS20030864-02	SAMP	03-24-2020 10:18 pm	1.00	50 mL	50 mL	X032427.D	Liquid	Y	<2
28	HS20030864-01	SAMP	03-24-2020 10:42 pm	1.00	50 mL	50 mL	X032428.D	Liquid	Y	<2
29	CCV-END	CCV	03-24-2020 11:06 pm	1.00	50 mL	50 mL	X032429.D	Liquid	Y	na
30	HS20030972-18	SAMP	03-24-2020 11:30 pm	1.00	50 mL	50 mL	X032430.D	Liquid	Y	<2
31	HS20030934-05	SAMP	03-24-2020 11:54 pm	1.00	50 mL	50 mL	X032431.D	Liquid	Y	<2
32	BFB	TUNE	03-25-2020 12:18 am	1.00	50 mL	50 mL	Y032401a.D	Liquid	Y	na
	Auto find/ purged									
33	BFB	TUNE	03-25-2020 12:42 am	1.00	50 mL	50 mL	Y032402.D	Liquid	Y	na
	Auto find/ purged									
34	CCV	CCV	03-25-2020 01:06 am	1.00	50 mL	50 mL	Y032403.D	Liquid	Y	na
	10 uL cal std/50 mL DI									
35	CCB	SAMP	03-25-2020 01:30 am	1.00	50 mL	50 mL	Y032404.D	Liquid	Y	na
36	VLCSW-200324	LCS	03-25-2020 01:54 am	1.00	50 mL	50 mL	Y032405.D	Liquid	Y	na
	4.0 uL cal std/50 mL DI									

MSVOA06 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
37	BLANK	SAMP	03-25-2020 02:18 am	1.00	50 mL	50 mL	Y032406.D	Liquid	Y	na
38	VBLKW1-200324	MBLK	03-25-2020 02:42 am	1.00	50 mL	50 mL	Y032407.D	Liquid	Y	na
39	HS20030887-02	SAMP	03-25-2020 03:06 am	1.00	50 mL	50 mL	Y032408.D	Liquid	Y	<2
40	HS20030869-01	SAMP	03-25-2020 03:30 am	1.00	50 mL	50 mL	Y032409.D	Liquid	Y	<2
41	HS20030887-01	SAMP	03-25-2020 03:54 am	1.00	50 mL	50 mL	Y032410.D	Liquid	Y	<2
42	HS20030869-02	SAMP	03-25-2020 04:18 am	1.00	50 mL	50 mL	Y032411.D	Liquid	Y	<2
43	HS20030869-04	SAMP	03-25-2020 04:42 am	1.00	50 mL	50 mL	Y032412.D	Liquid	Y	<2
44	HS20030869-05	SAMP	03-25-2020 05:06 am	1.00	50 mL	50 mL	Y032413.D	Liquid	Y	<2
45	HS20030869-06	SAMP	03-25-2020 05:30 am	1.00	50 mL	50 mL	Y032414.D	Liquid	Y	<2
46	HS20030869-07	SAMP	03-25-2020 05:54 am	1.00	50 mL	50 mL	Y032415.D	Liquid	Y	<2
47	HS20030869-03	SAMP	03-25-2020 06:18 am	1.00	50 mL	50 mL	Y032416.D	Liquid	Y	<2
48	HS20030869-02MS	MS	03-25-2020 06:42 am	1.00	50 mL	50 mL	Y032417.D	Liquid	Y	<2
	3.5 uL cal std/40 mL samp									
49	HS20030869-02MSD	MSD	03-25-2020 07:07 am	1.00	50 mL	50 mL	Y032418.D	Liquid	Y	<2
	3.5 uL cal std/40 mL samp									
50	CCV-END	CCV	03-25-2020 07:30 am	1.00	50 mL	50 mL	Y032419.D	Liquid	Y	na
	10 uL cal std/50 mL DI									
51	HS20030976-09	SAMP	03-25-2020 07:55 am	1.00	50 mL	50 mL	Y032420.D	Liquid	Y	<2
52	HS20030967-13	SAMP	03-25-2020 08:19 am	1.00	50 mL	50 mL	Y032421.D	Liquid	Y	<2
53	HS20030967-09	SAMP	03-25-2020 08:43 am	1.00	50 mL	50 mL	Y032422.D	Liquid	Y	<2
54	HS20030967-10	SAMP	03-25-2020 09:07 am	1.00	50 mL	50 mL	Y032423.D	Liquid	Y	<2
55	HS20030967-11	SAMP	03-25-2020 09:31 am	1.00	50 mL	50 mL	Y032424.D	Liquid	Y	<2
56	HS20030967-12	SAMP	03-25-2020 09:55 am	1.00	50 mL	50 mL	Y032425.D	Liquid	Y	<2
57	HS20031080-02	SAMP	03-25-2020 10:19 am	1.00	50 mL	50 mL	Y032426.D	Liquid	Y	<2
58	HS20031080-01	SAMP	03-25-2020 10:43 am	1.00	50 mL	50 mL	Y032427.D	Liquid	Y	<2
59	HS20030941-01	SAMP	03-25-2020 11:07 am	1.00	50 mL	50 mL	Y032428.D	Liquid	Y	<2
60	HS20030941-02	SAMP	03-25-2020 11:31 am	1.00	50 mL	50 mL	Y032429.D	Liquid	Y	<2
61	HS20030941-03	SAMP	03-25-2020 11:55 am	1.00	50 mL	50 mL	Y032430.D	Liquid	Y	<2
62	CCV-END	CCV	03-25-2020 12:19 pm	1.00	50 mL	50 mL	Y032431.D	Liquid	Y	na
	10 uL cal std/50 mL DI									

Chemical	Value
SURR SPK ID	31106-21-06
IS ID	31106-21-06
CAL STD ID	31106-22-01/02
BFB ID	31106-21-06
pH Paper	634-64-11

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

	CLIENT SAMPLE NO.	SMC1 #	SMC2 (DCE)#	SMC3 (TOL)#	OTHER #	TOT OUT
01	CCB	94	89	106	97	0
02	VLCSW-200324	102	104	100	99	0
03	VBLKW1-20032	96	91	106	100	0
04	HS20030888-0	95	90	103	101	0
05	HS20030888-0	95	93	103	98	0
06	HS20030892-0	95	92	102	98	0
07	HS20030892-0	95	90	105	97	0
08						
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		QC LIMITS
SMC1	= Dibromofluoromethane	(70-130)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(70-130)
SMC3 (TOL)	= Toluene-d8	(70-130)
OTHER	= 4-Bromofluorobenzene	(70-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKW1-200324

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

Lab File ID: X032407 Lab Sample ID: VBLKW1-200324

Date Analyzed: 03/24/20 Time Analyzed: 1417

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	CCB	CCB	X032404	1305
02	VLCSW-200324	VLCSW-200324	X032405	1329
03	HS20030888-0	HS20030888-08	X032414	1705
04	HS20030888-0	HS20030888-06	X032415	1729
05	HS20030892-0	HS20030892-06M	X032416	1753
06	HS20030892-0	HS20030892-06M	X032417	1817
07				
08				
09				
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30				

COMMENTS:

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

Lab File ID: X032402 BFB Injection Date: 03/24/20

Instrument ID: VOA6 BFB Injection Time: 1217

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
61	156.2 - 190.9% of mass 96	
96	Base Peak, 100% relative abundance	
98	57.7 - 70.6% of mass 96	

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	X032403	03/24/20	1241
02	CCB	CCB	X032404	03/24/20	1305
03	VLCSW-200324	VLCSW-200324	X032405	03/24/20	1329
04	VBLKW1-20032	VBLKW1-200324	X032407	03/24/20	1417
05	HS20030888-0	HS20030888-08	X032414	03/24/20	1705
06	HS20030888-0	HS20030888-06	X032415	03/24/20	1729
07	HS20030892-0	HS20030892-06M	X032416	03/24/20	1753
08	HS20030892-0	HS20030892-06M	X032417	03/24/20	1817
09	CCV-END	CCV-END	X032429	03/24/20	2306
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

Instrument ID: VOA6 Calibration Date: 03/24/20 Time: 1241

Lab File ID: X032403 Init. Calib. Date(s): 03/19/20 03/19/20

Init. Calib. Times: 1134 1533

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Vinyl Chloride	0.7620000	0.7590376	0.7590376	0.1	0.39	20.00	AVRG
Methylene Chloride	51.614998	50.000000	0.5518160	0.1	-3.23	20.00	LINR
1,1-Dichloroethene	0.4240000	0.4217633	0.4217633	0.1	0.53	20.00	AVRG
1,2-Dichloroethane	0.5280000	0.5359783	0.5359783	0.1	-1.51	20.00	AVRG
Trichloroethene	0.3460000	0.3510540	0.3510540	0.2	-1.46	20.00	AVRG
cis-1,2-Dichloroethene	0.5690000	0.5824103	0.5824103	0.1	-2.36	20.00	AVRG
1,1,2-Trichloroethane	0.2880000	0.2787596	0.2787596	0.1	3.21	20.00	AVRG
Dibromofluoromethane	51.317360	50.000000	0.5220336	0.1	-2.63	20.00	LINR
1,2-Dichloroethane-d4	50.742111	50.000000	0.6377135	0.1	-1.48	20.00	LINR
Toluene-d8	47.936650	50.000000	1.3011964	0.1	4.13	20.00	LINR
4-Bromofluorobenzene	48.924826	50.000000	0.4782480	0.1	2.15	20.00	LINR

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

Lab Code: ALS-HS Case No.: SAS No.: SDG No.: HS20030888

Instrument ID: VOA6 Calibration Date: 03/24/20 Time: 2306

Lab File ID: X032429 Init. Calib. Date(s): 03/19/20 03/19/20

Init. Calib. Times: 1134 1533

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Vinyl Chloride	0.7620000	0.7590376	0.7590376	0.1	0.39	20.00	AVRG
Methylene Chloride	51.907800	50.000000	0.5518160	0.1	-3.82	20.00	LINR
1,1-Dichloroethene	0.4240000	0.4217633	0.4217633	0.1	0.53	20.00	AVRG
1,2-Dichloroethane	0.5280000	0.5359783	0.5359783	0.1	-1.51	20.00	AVRG
Trichloroethene	0.3460000	0.3510540	0.3510540	0.2	-1.46	20.00	AVRG
cis-1,2-Dichloroethene	0.5690000	0.5824103	0.5824103	0.1	-2.36	20.00	AVRG
1,1,2-Trichloroethane	0.2880000	0.2787596	0.2787596	0.1	3.21	20.00	AVRG
Dibromofluoromethane	52.545743	50.000000	0.5220336	0.1	-5.09	20.00	LINR
1,2-Dichloroethane-d4	50.761992	50.000000	0.6377135	0.1	-1.52	20.00	LINR
Toluene-d8	50.796446	50.000000	1.3011964	0.1	-1.59	20.00	LINR
4-Bromofluorobenzene	49.700077	50.000000	0.4782480	0.1	0.60	20.00	LINR

FORM VII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

outputFile debug: C:\tp\envision\results\HS20030888/08a.01 Lab Code: AL

Lab File ID (Standard): X032403 Date Analyzed: 03/24/20

Instrument ID: VOA6 Time Analyzed: 1241

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	IS1 RT #	IS2(DFB) AREA #	IS2(DFB) RT #	IS3(CBZ) AREA #	IS3(CBZ) RT #
	12 HOUR STD	289100	4.18	459733	4.97	425155	7.67
	UPPER LIMIT	578200	4.68	919466	5.47	850310	8.17
	LOWER LIMIT	144550	3.68	229867	4.47	212578	7.17
	CLIENT SAMPLE NO.						
01	CCB	386734	4.18	571219	4.97	496217	7.67
02	VLCSW-200324	312855	4.18	484659	4.97	439952	7.67
03	VBLKW1-20032	400410	4.18	595336	4.97	512106	7.67
04	HS20030888-0	402456	4.18	597416	4.97	517703	7.67
05	HS20030888-0	381156	4.18	573543	4.97	490302	7.67
06	HS20030892-0	372734	4.18	553731	4.97	488149	7.67
07	HS20030892-0	376512	4.18	561034	4.97	483259	7.67
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS LABORATORY GROUP Contract:

outputFile debug: C:\tp\envision\results\HS20030888/08a.01 Lab Code: AL

Lab File ID (Standard): X032403 Date Analyzed: 03/24/20

Instrument ID: VOA6 Time Analyzed: 1241

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS4 (DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	209375	9.67				
	UPPER LIMIT	418750	10.17				
	LOWER LIMIT	104688	9.17				
	CLIENT SAMPLE NO.						
01	CCB	223395	9.67				
02	VLCSW-200324	217621	9.66				
03	VBLKW1-20032	244672	9.67				
04	HS20030888-0	251808	9.67				
05	HS20030888-0	233013	9.67				
06	HS20030892-0	233489	9.66				
07	HS20030892-0	223110	9.67				
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032402.D

Date : 24-MAR-2020 12:17

Client ID: BFB

Instrument: voa6.i

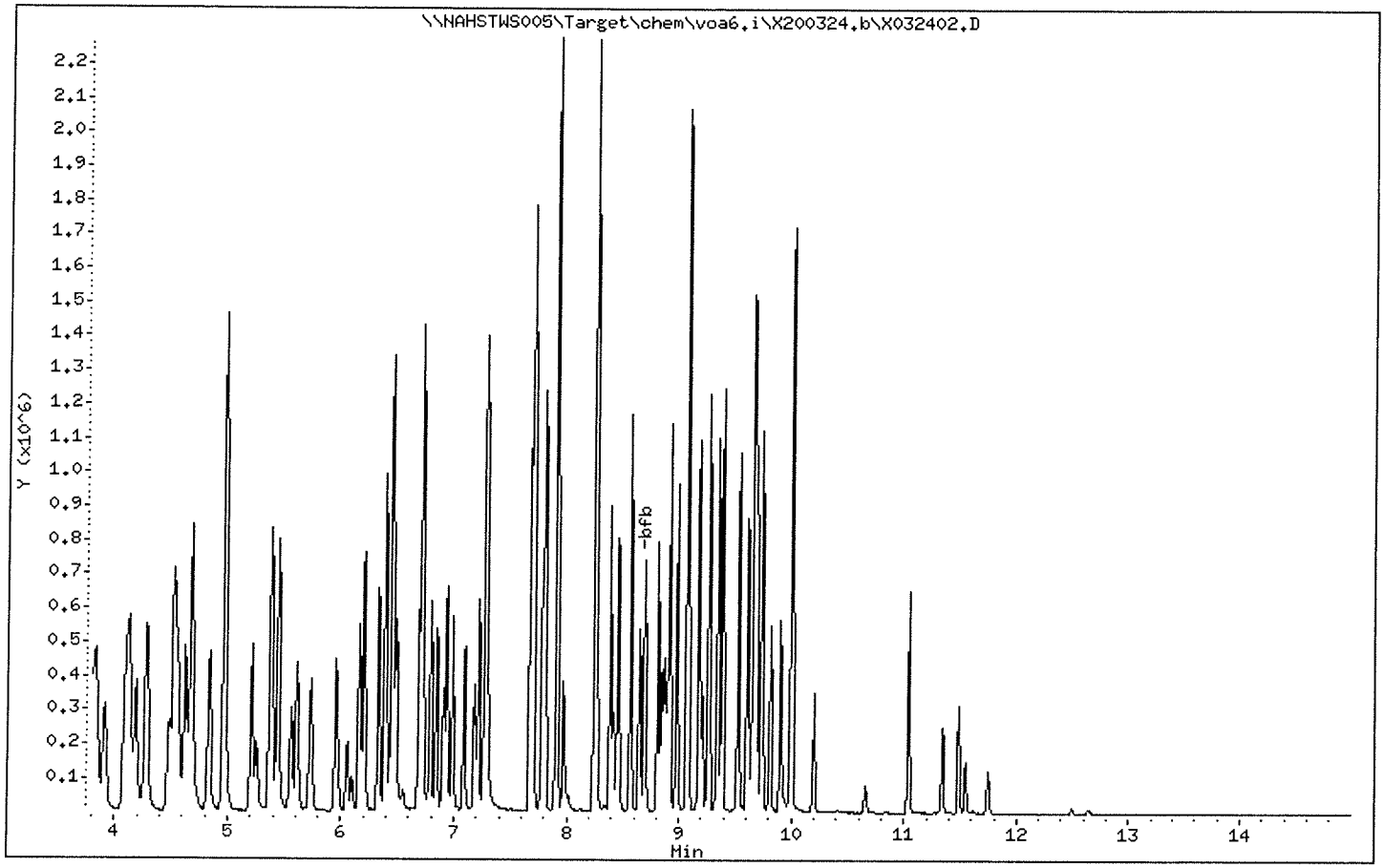
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032402.D

Date : 24-MAR-2020 12:17

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

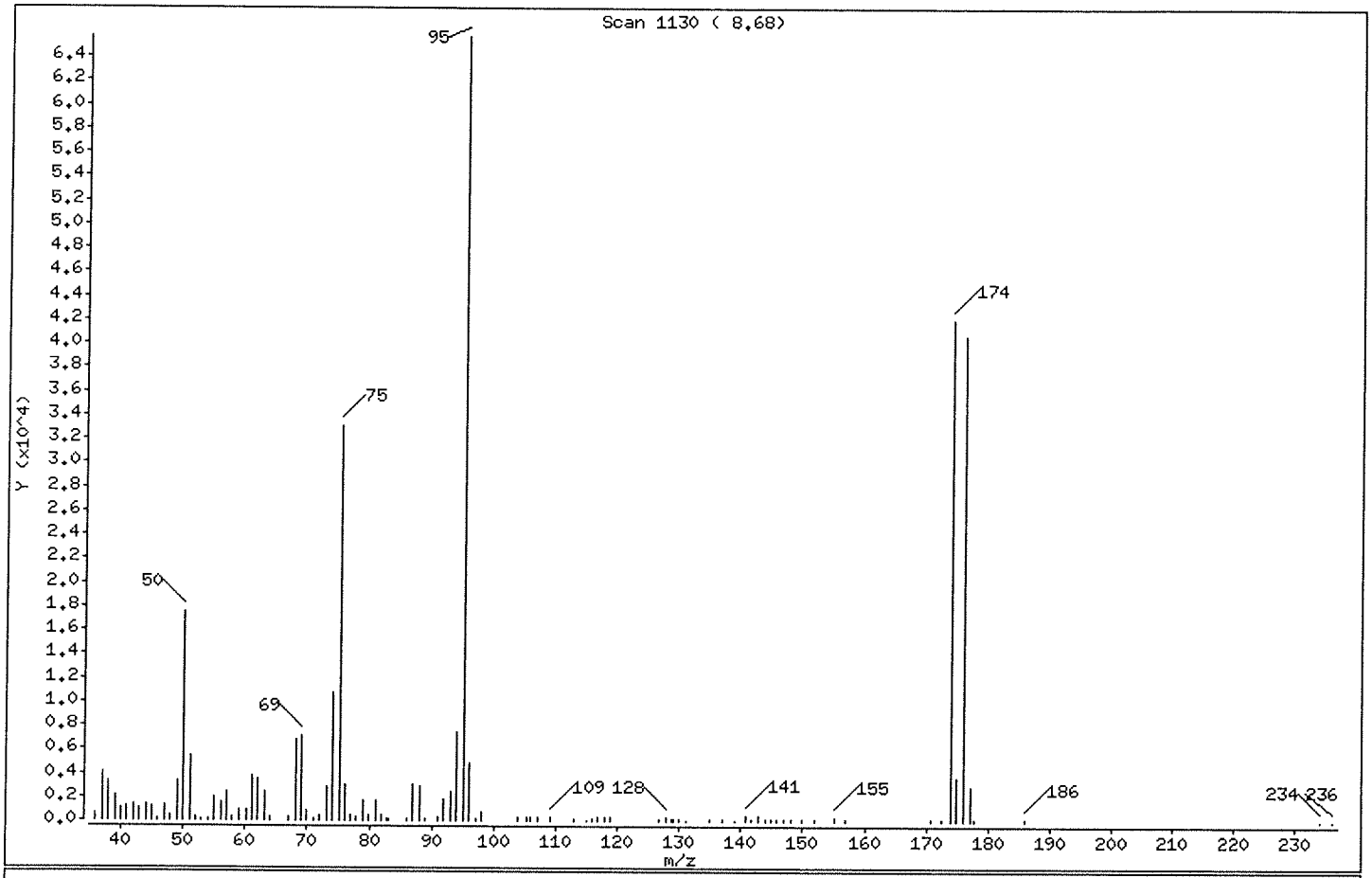
Volume Injected (uL): 2.0

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	26.75
75	30.00 - 60.00% of mass 95	50.28
96	5.00 - 9.00% of mass 95	7.30
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	63.80
175	5.00 - 9.00% of mass 174	5.48 (8.58)
176	95.00 - 101.00% of mass 174	61.83 (96.91)
177	5.00 - 9.00% of mass 176	4.31 (6.98)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032402.D

Date : 24-MAR-2020 12:17

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: X032402.D
Spectrum: Scan 1130 (8.68)
Location of Maximum: 95.00
Number of points: 101

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	605	62.00	3475	91.90	1863	139.10	58
37.00	4104	63.00	2479	92.90	2450	140.80	527
38.00	3345	64.00	331	94.00	7459	141.80	121
39.00	2090	67.00	324	95.00	65680	142.80	489
39.90	1000	68.00	6772	96.00	4796	143.90	99
41.00	1159	69.00	7165	97.00	117	145.00	129
42.00	1323	70.00	898	98.00	716	145.80	109
43.00	1047	71.10	122	103.90	285	146.90	84
44.00	1306	72.00	385	105.20	268	148.00	174
45.00	1247	73.00	2893	106.00	288	150.00	94
45.80	109	74.00	10742	107.00	284	151.90	82
47.00	1386	75.00	33024	109.00	349	155.00	271
47.80	495	76.00	3089	113.00	98	156.90	112
49.00	3300	77.00	440	115.00	71	170.80	135
50.00	17568	77.80	377	116.00	93	172.50	200
51.00	5466	78.90	1728	116.80	335	174.00	41904
52.00	312	79.80	497	117.80	233	174.90	3596
52.90	87	80.90	1603	118.90	279	175.90	40608
54.00	177	82.00	381	126.70	224	177.00	2834
55.00	2021	82.80	160	128.00	351	177.80	108
56.00	1582	83.20	110	128.70	168	186.00	212
57.00	2368	85.90	107	129.00	151	234.00	59
58.00	254	87.00	3078	130.00	214	235.90	56
59.10	934	88.00	2921	131.10	71		
60.10	877	88.80	117	134.80	106		
61.00	3727	91.00	289	137.00	201		

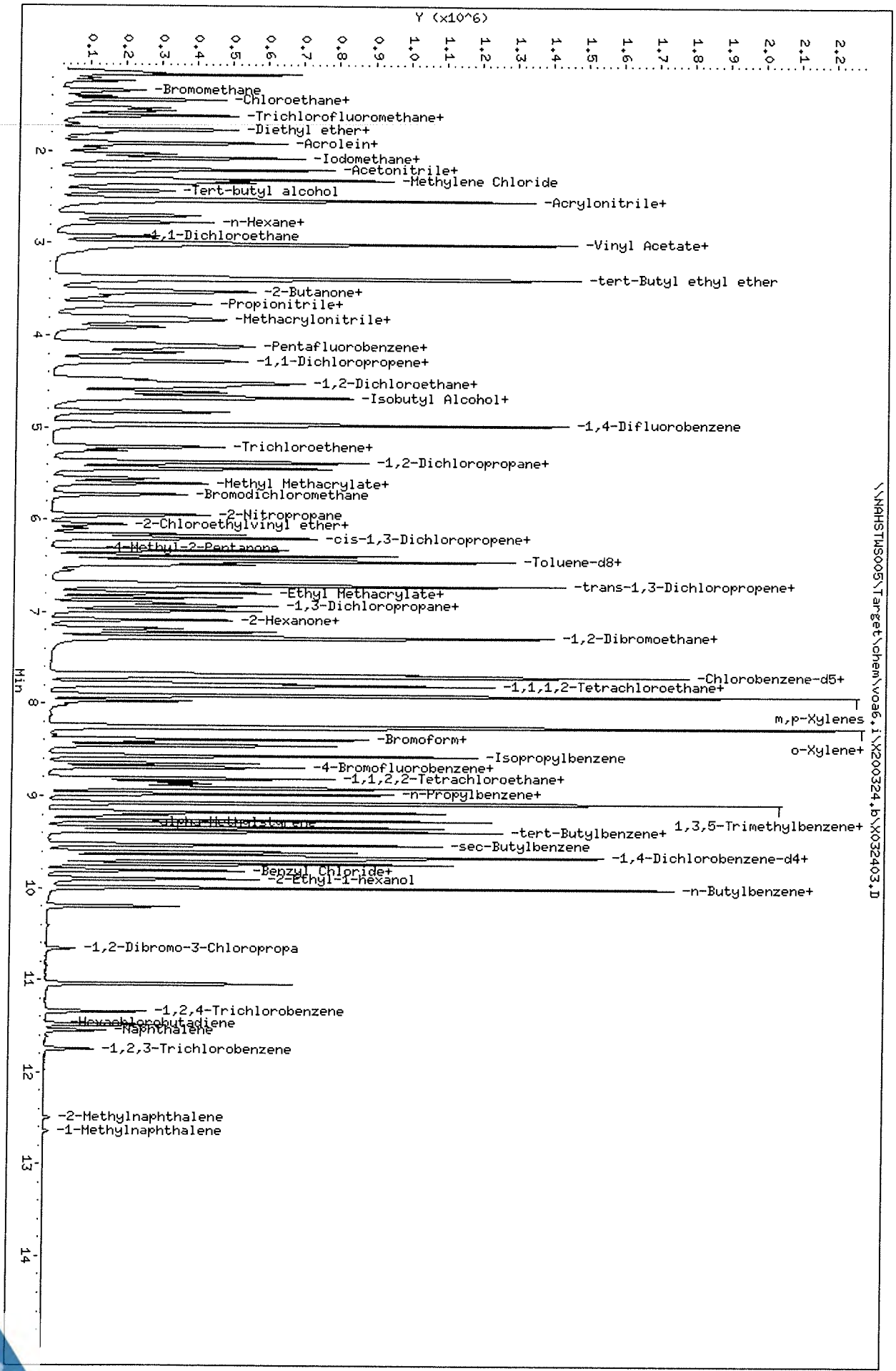
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032403.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 24-MAR-2020 12:41
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\8260W.m
Meth Date : 21-Apr-2020 15:56 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	289100	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	147399	50.0000	51.31
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	184291	50.0000	50.74
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	459733	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	425155	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	522111	50.0000	47.93
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	200189	50.0000	48.92
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	209375	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	201012	50.0000	45.63
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	114605	50.0000	46.78
17 Methylene Chloride	84	2.305	2.305	(0.551)	158654	50.0000	51.61
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	165808	50.0000	50.36
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	243195	50.0000	50.07
38 Trichloroethene	130	5.206	5.206	(1.048)	156081	50.0000	48.98
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	117953	50.0000	48.15



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032403.D
Date : 24-MAR-2020 12:41
Client ID: CCV
Sample Info: CCV;CCV;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032404.D
Lab Smp Id: CCB Client Smp ID: CCB
Inj Date : 24-MAR-2020 13:05
Operator : PC Inst ID: voa6.i
Smp Info : CCB;CCB;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\8260W.m
Meth Date : 21-Apr-2020 15:56 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

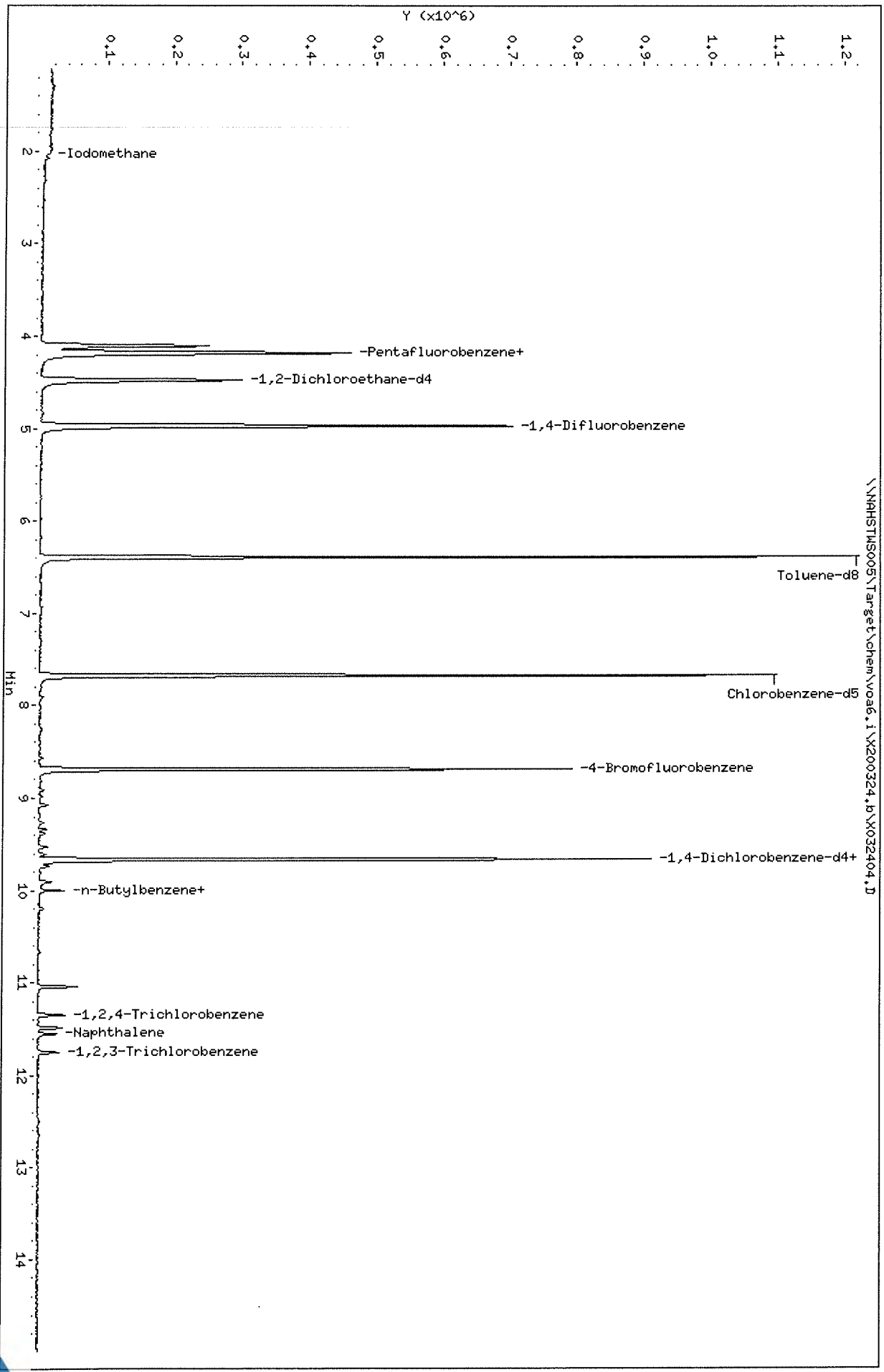
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	386734	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	181700	47.2806	47.28
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	217406	44.7291	44.72
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	571219	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	496217	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	673563	52.9936	52.99
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	231355	48.4396	48.43
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	223395	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032404.D
Date : 24-MAR-2020 13:05
Client ID: CCB
Sample Info: CCB;CCB;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032405.D
Lab Smp Id: VLCSW-200324 Client Smp ID: VLCSW-200324
Inj Date : 24-MAR-2020 13:29
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-200324;VLCSW-200324;3;;LCS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\8260W.m
Meth Date : 21-Apr-2020 15:56 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 5 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

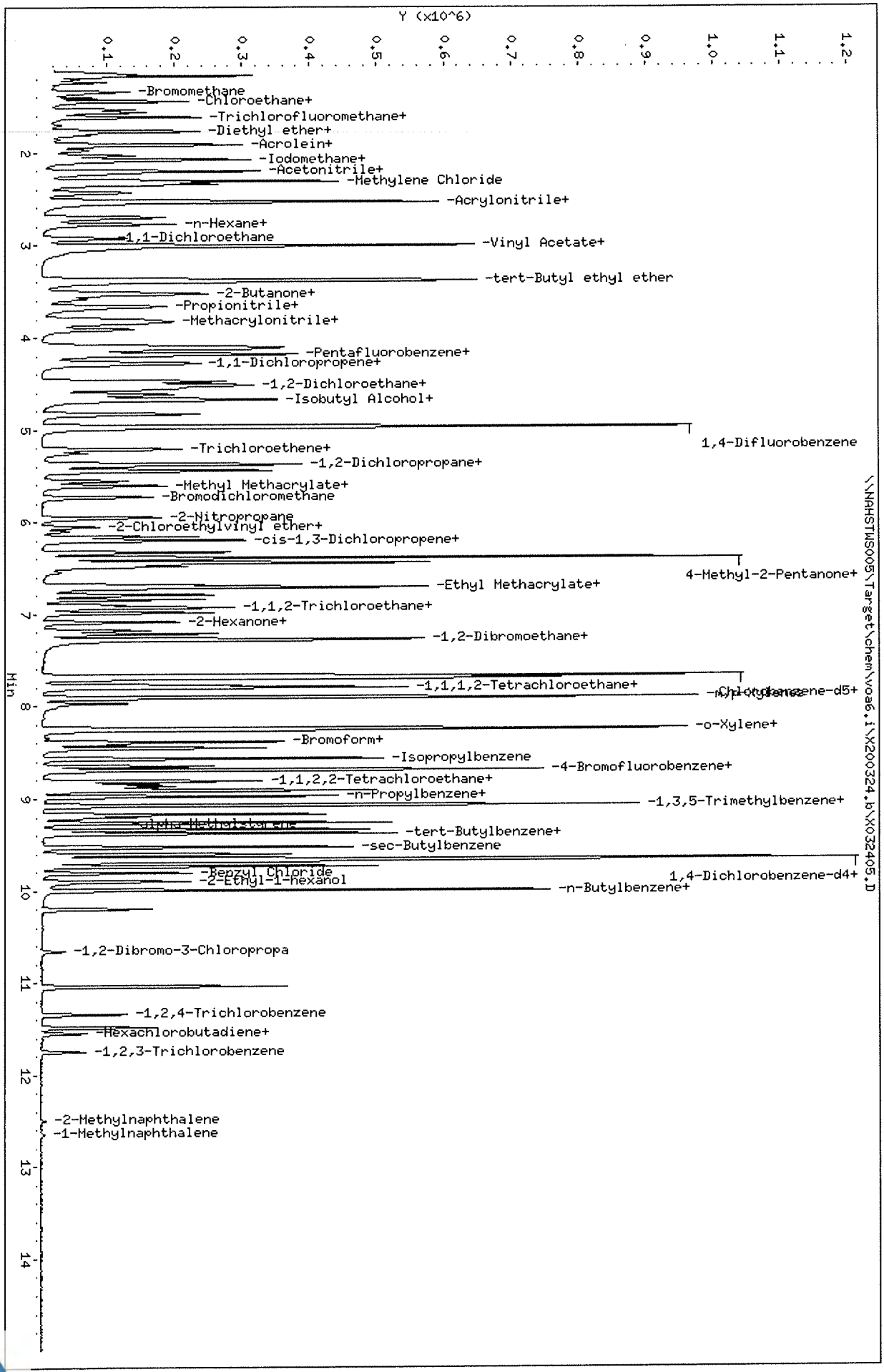
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	312855	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	159158	51.2037	51.20
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	203944	51.8932	51.89
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	484659	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	439952	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	560882	49.7672	49.76
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	210342	49.6848	49.68
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	217621	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	89271	18.7294	18.72
11 1,1-Dichloroethene	96	1.912	1.911	(0.457)	51913	19.5823	19.58
17 Methylene Chloride	84	2.306	2.305	(0.551)	68396	19.7107	19.71
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	73465	20.6199	20.61
33 1,2-Dichloroethane	62	4.555	4.562	(0.916)	104287	20.3671	20.36
38 Trichloroethene	130	5.207	5.206	(1.048)	69796	20.7774	20.77
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	51926	20.4859	20.48

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032405.D
Date : 24-MAR-2020 13:29
Client ID: VLCSW-200324
Sample Info: VLCSW-200324;VLCSW-200324;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032407.D
Lab Smp Id: VBLKW1-200324 Client Smp ID: VBLKW1-200324
Inj Date : 24-MAR-2020 14:17
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW1-200324;VBLKW1-200324;3;;BLANK
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\8260W.m
Meth Date : 21-Apr-2020 15:56 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 7 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

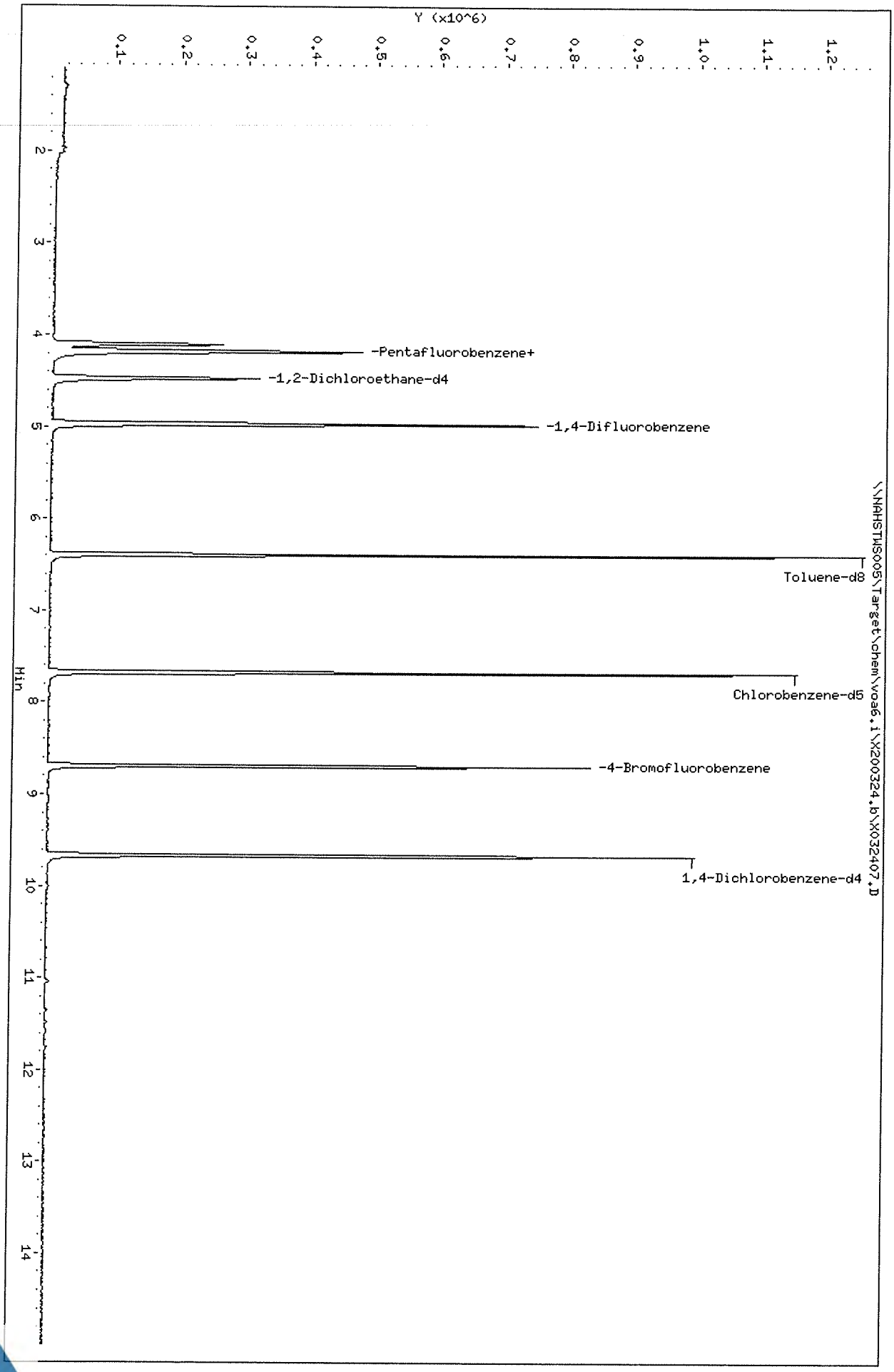
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	400410	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	191055	48.0185	48.01
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	228384	45.3852	45.38
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	595336	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	512106	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	693187	52.8453	52.84
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	246646	50.0551	50.05
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	244672	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032407.D
Date : 24-MAR-2020 14:17
Client ID: VBLKW1-200324
Sample Info: VBLKW1-200324;VBLKW1-200324;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032414.D
Lab Smp Id: HS20030888-08 Client Smp ID: HS20030888-08
Inj Date : 24-MAR-2020 17:05
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-08;HS20030888-08;;;
Misc Info : HS18090001;WATER;0;5;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\8260W.m
Meth Date : 21-Apr-2020 16:04 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 14
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	5.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

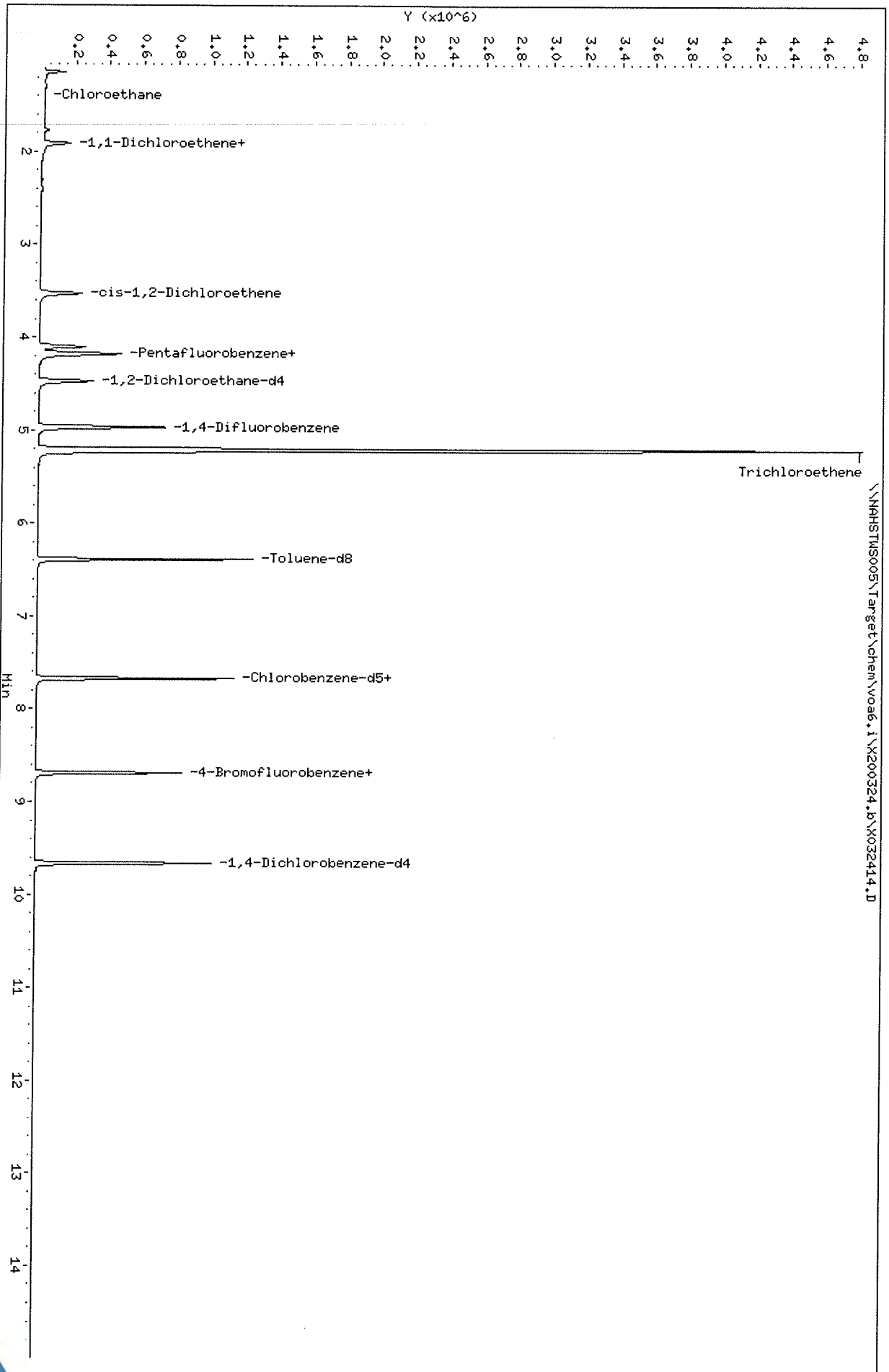
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	402456	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	190575	47.6536	47.65
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	227221	44.9229	44.92
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	597416	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	517703	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	684904	51.6476	51.64
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	250661	50.3226	50.32
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	251808	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	92700	15.1188	75.59
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	8072	2.36697	11.83(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	112426	24.5300	122.64
38 Trichloroethene	130	5.206	5.206	(1.048)	1563519	377.593	1887.96(A)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032414.D
Date : 24-MAR-2020 17:05
Client ID: HS200330888-08
Sample Info: HS200330888-08;HS200330888-08;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032414.D

Date : 24-MAR-2020 17:05

Client ID: HS20030888-08

Instrument: voa6.i

Sample Info: HS20030888-08;HS20030888-08;;;

Purge Volume: 5.0

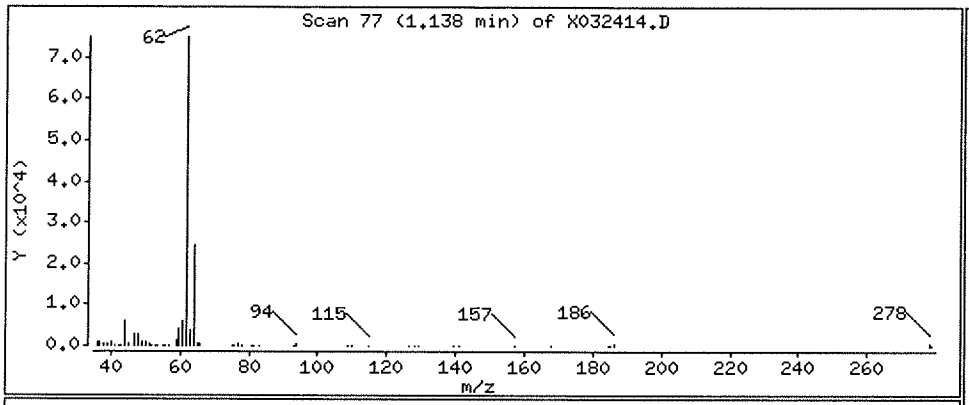
Operator: PC

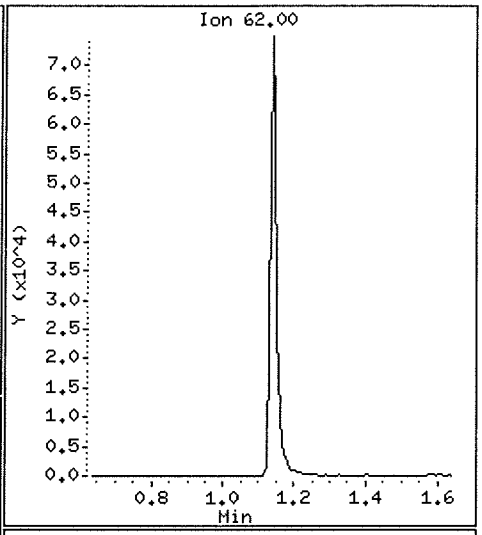
Column phase: DB624

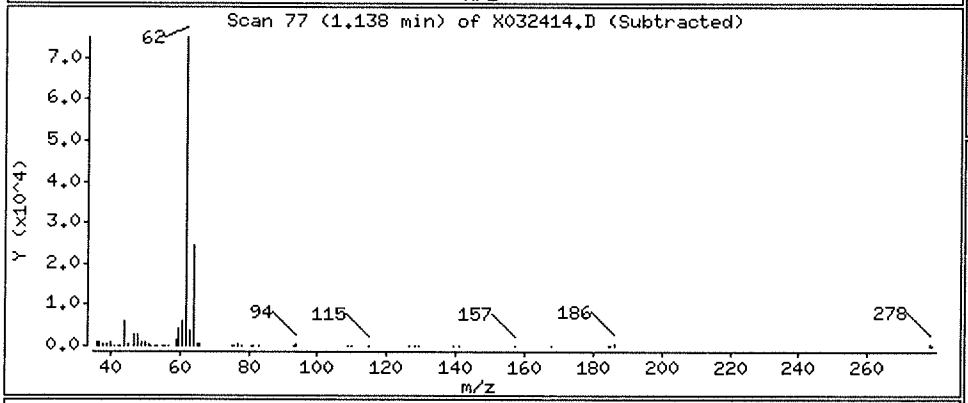
Column diameter: 0.18

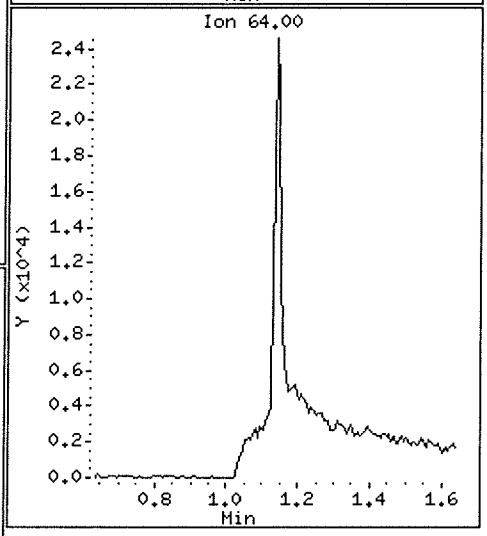
5 Vinyl Chloride

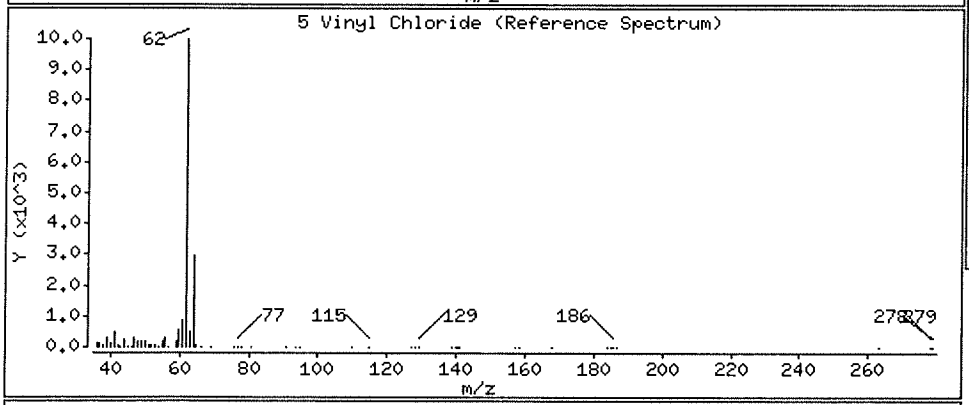
Concentration: 75.59 ug/l

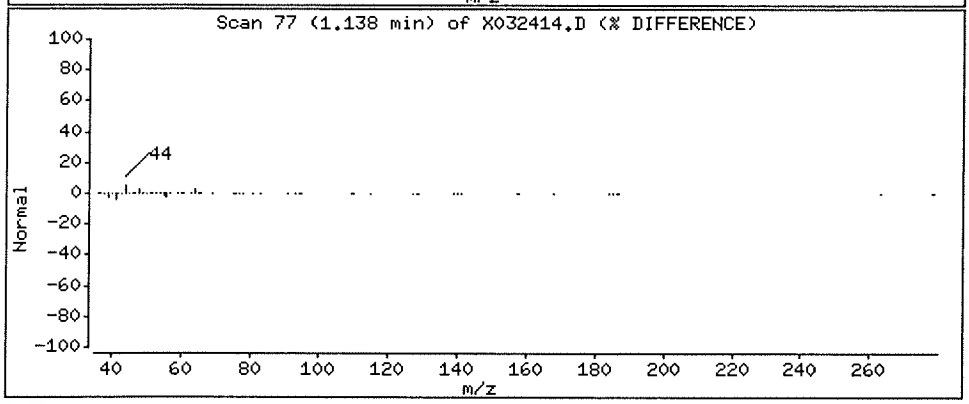












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032414.D

Date : 24-MAR-2020 17:05

Client ID: HS20030888-08

Instrument: voa6.i

Sample Info: HS20030888-08;HS20030888-08;;;

Purge Volume: 5.0

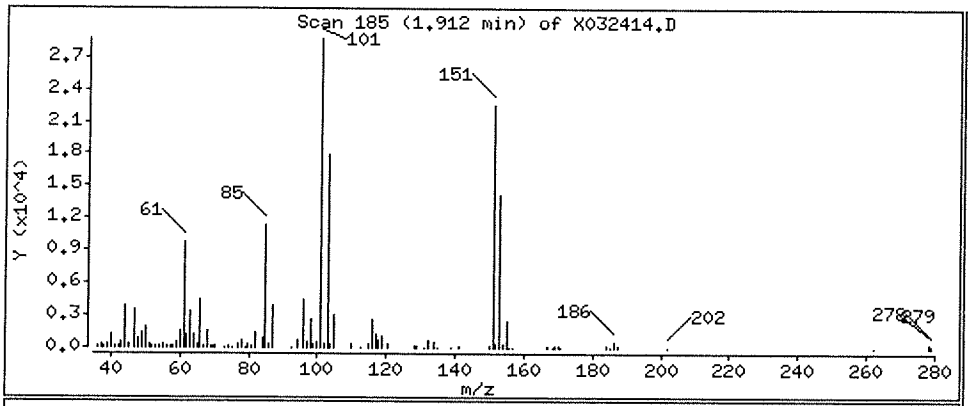
Operator: PC

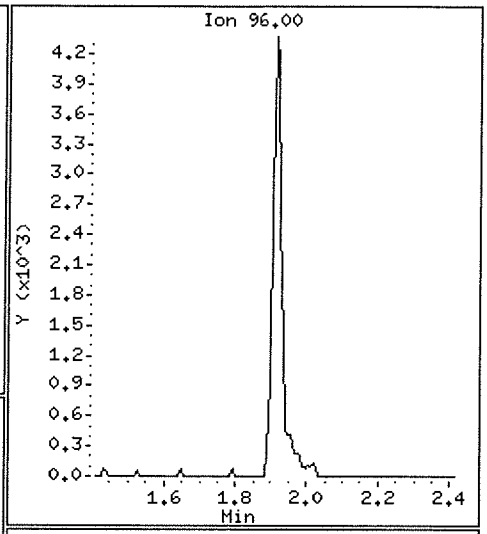
Column phase: DB624

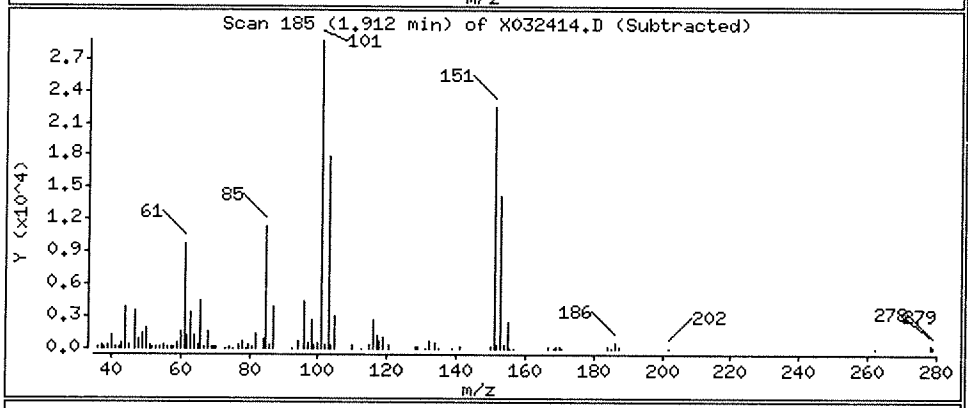
Column diameter: 0.18

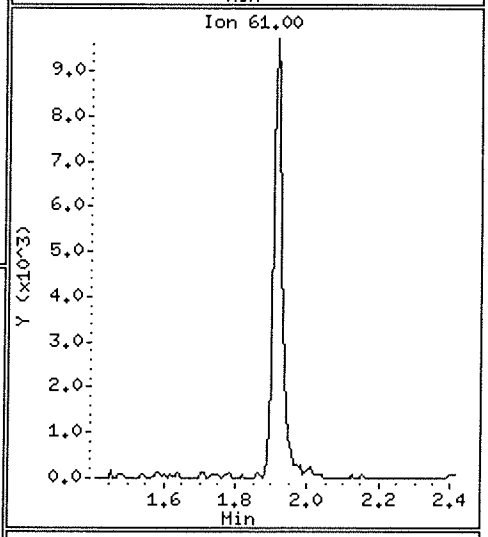
11 1,1-Dichloroethene

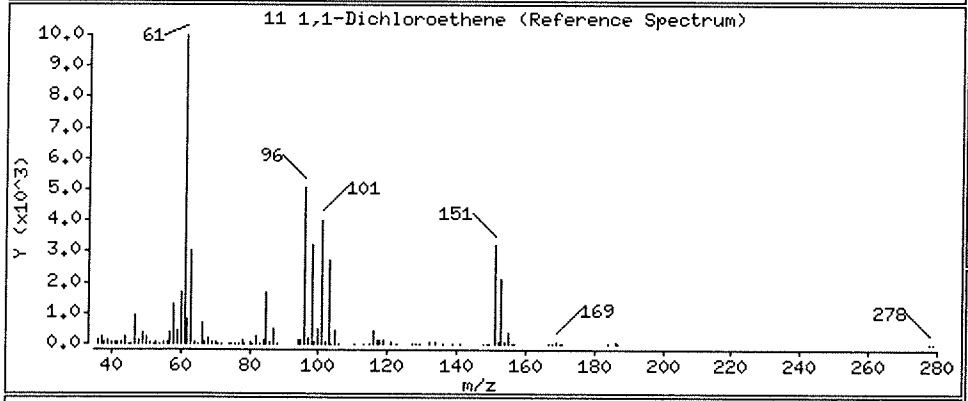
Concentration: 11.83 ug/l

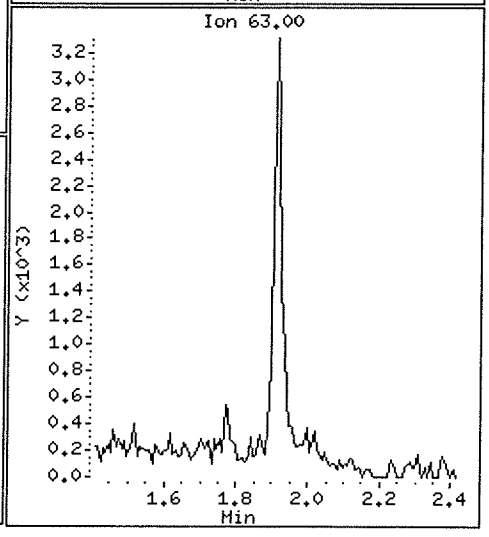


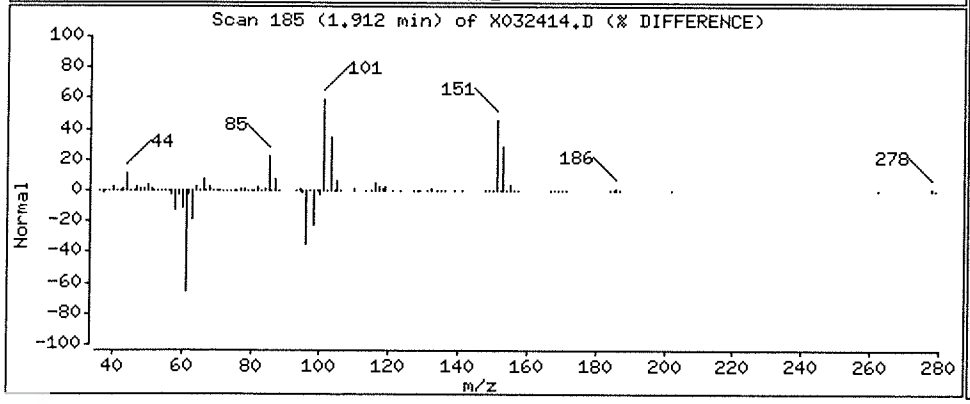












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032414.D

Date : 24-MAR-2020 17:05

Client ID: HS20030888-08

Instrument: voa6.i

Sample Info: HS20030888-08;HS20030888-08;;;

Purge Volume: 5.0

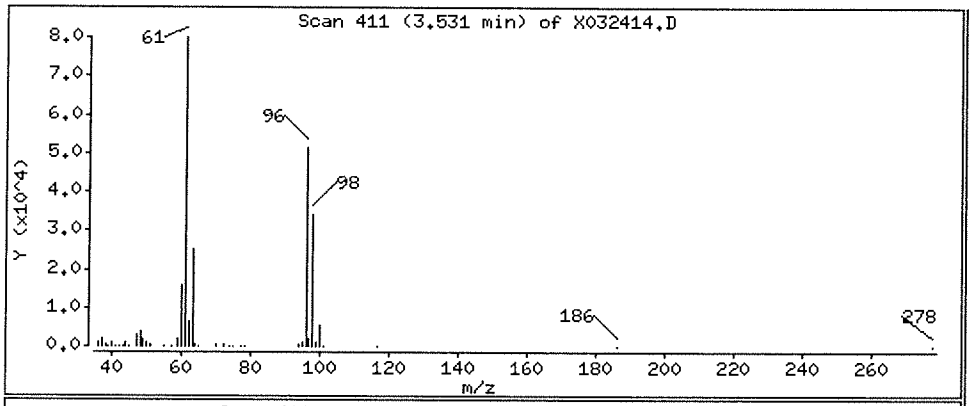
Operator: PC

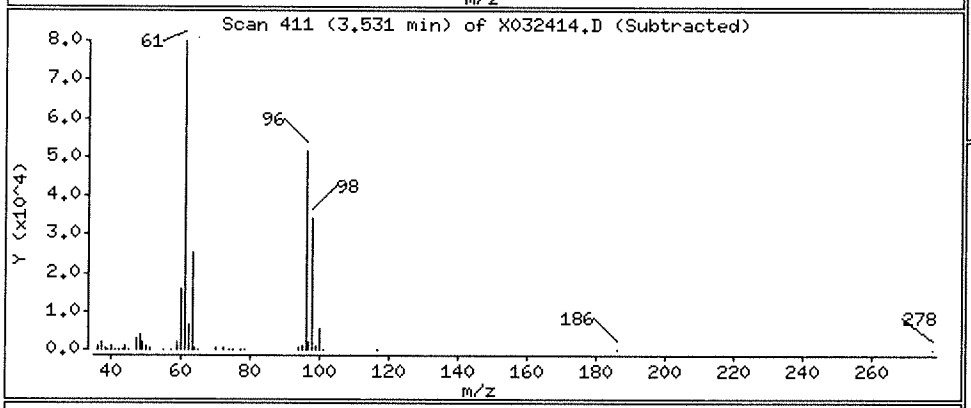
Column phase: DB624

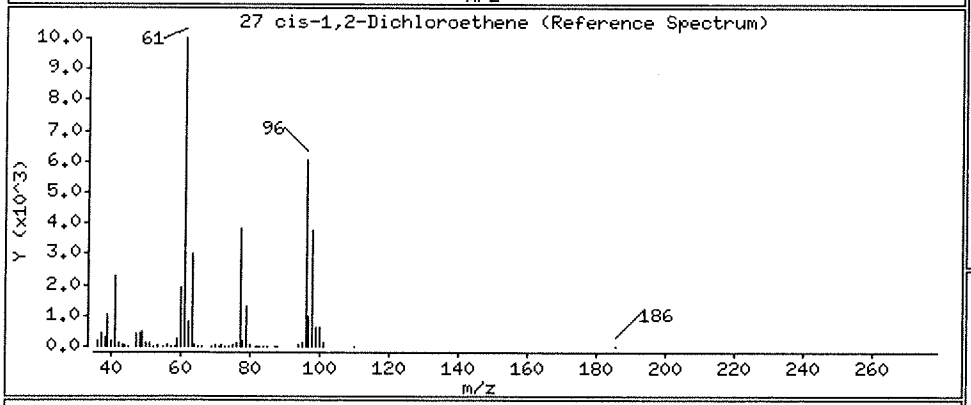
Column diameter: 0.18

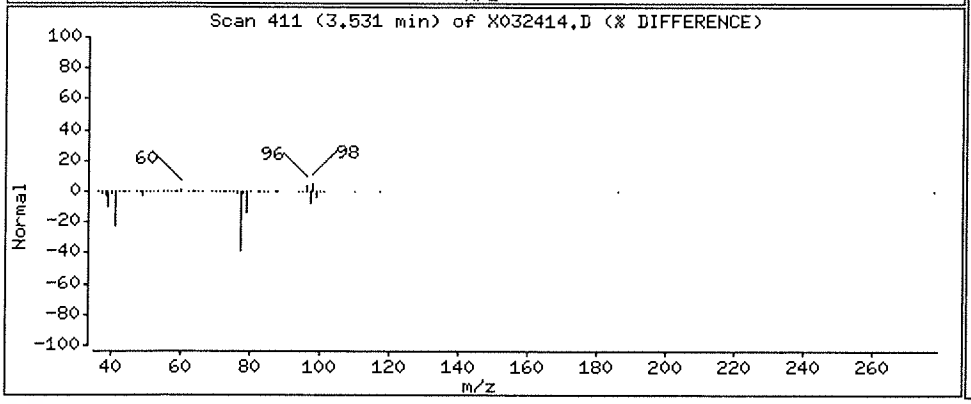
27 cis-1,2-Dichloroethene

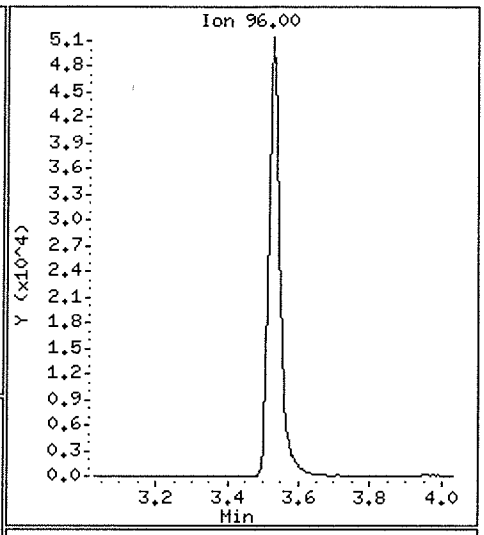
Concentration: 122.64 ug/l

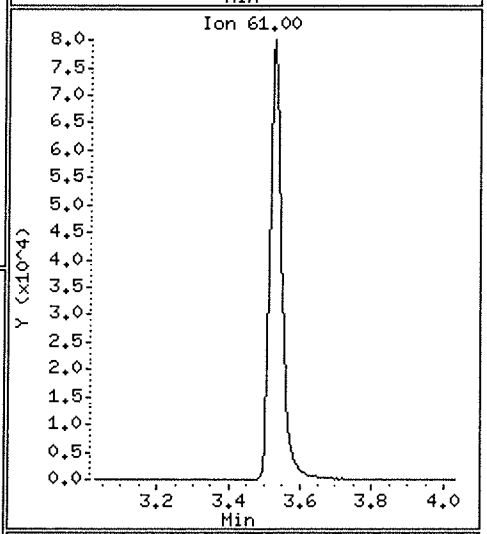


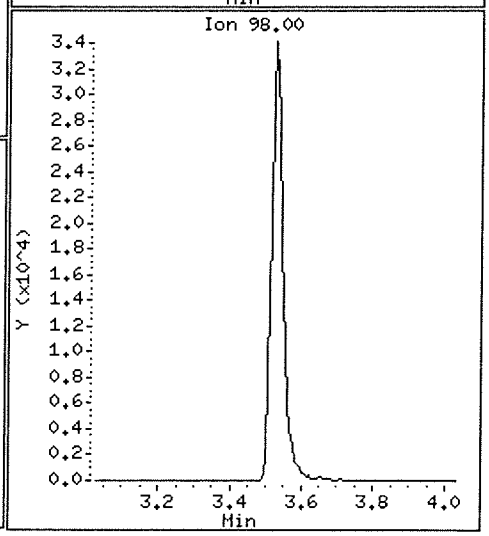












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032414.D

Date : 24-MAR-2020 17:05

Client ID: HS20030888-08

Instrument: voa6.i

Sample Info: HS20030888-08;HS20030888-08;;;

Purge Volume: 5.0

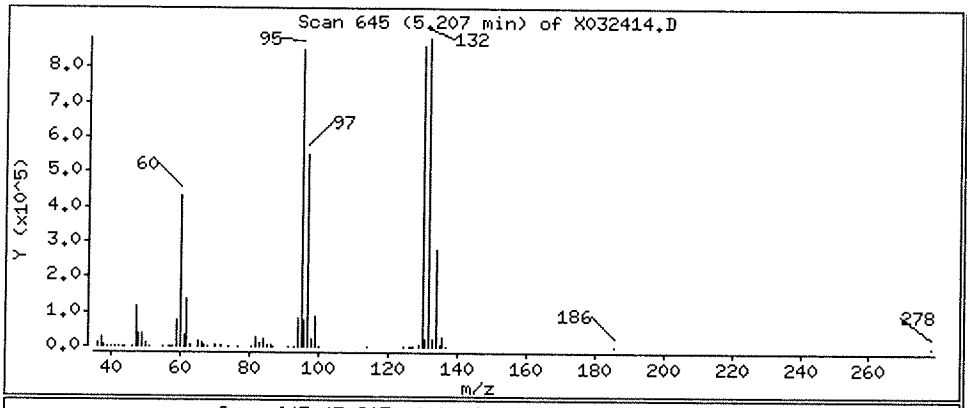
Operator: PC

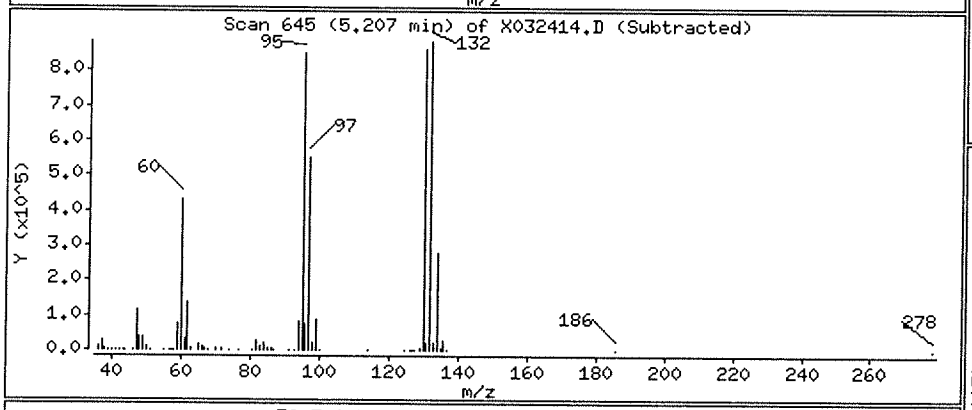
Column phase: DB624

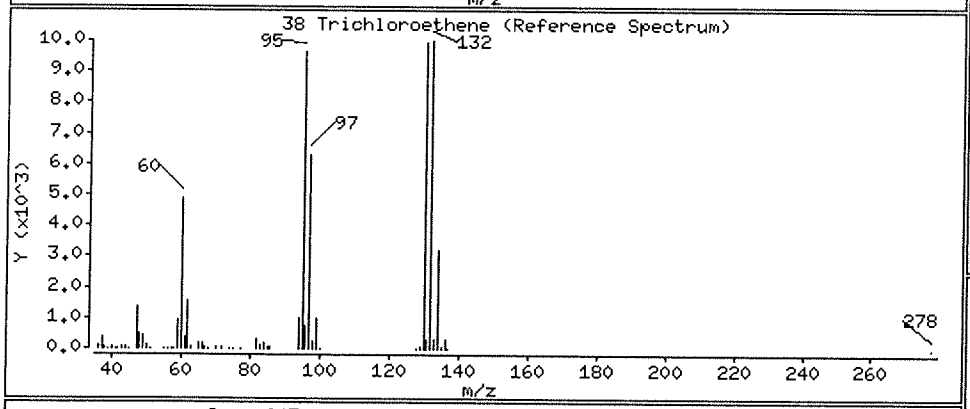
Column diameter: 0.18

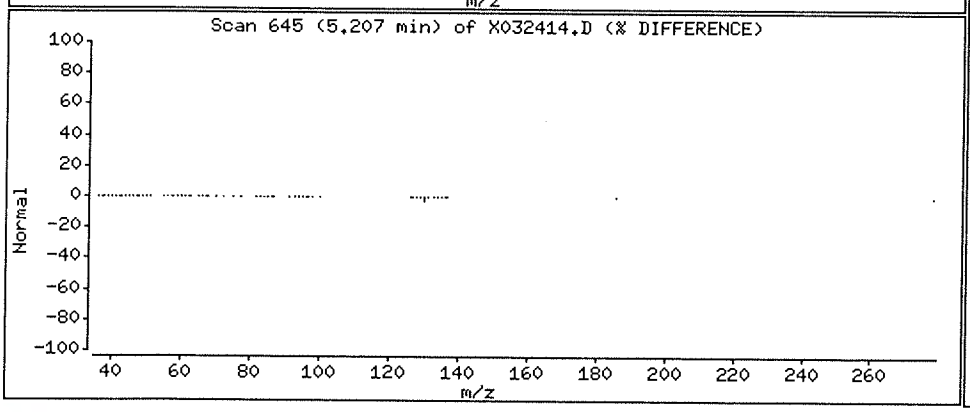
38 Trichloroethene

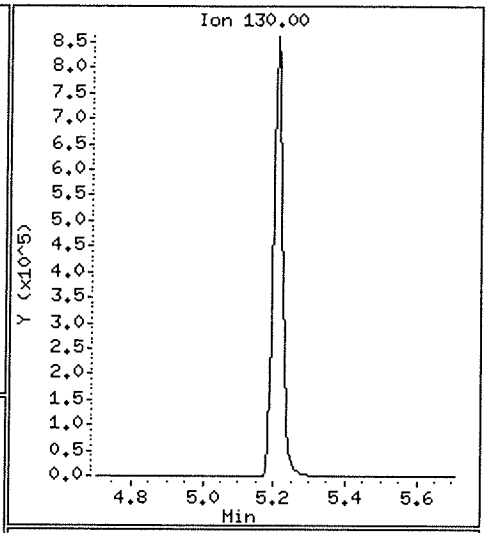
Concentration: 1887.96 ug/l

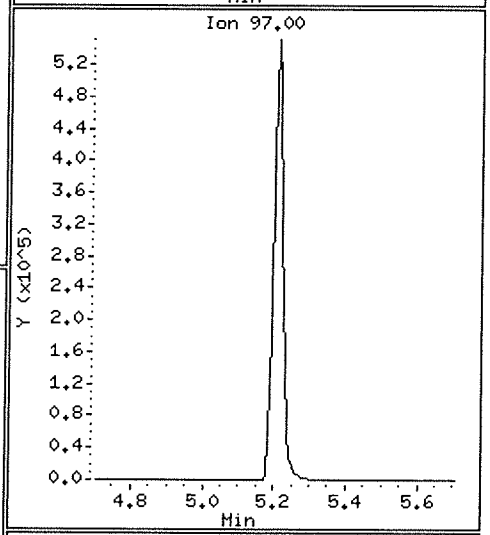


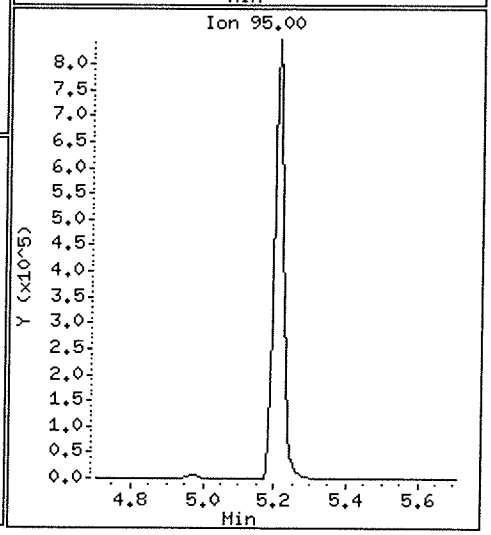












ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032415.D
Lab Smp Id: HS20030888-06 Client Smp ID: HS20030888-06
Inj Date : 24-MAR-2020 17:29
Operator : PC Inst ID: voa6.i
Smp Info : HS20030888-06;HS20030888-06;;;
Misc Info : HS18090001;WATER;0;10;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\8260W.m
Meth Date : 21-Apr-2020 16:04 Qin.Xu Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 15
Dil Factor: 10.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

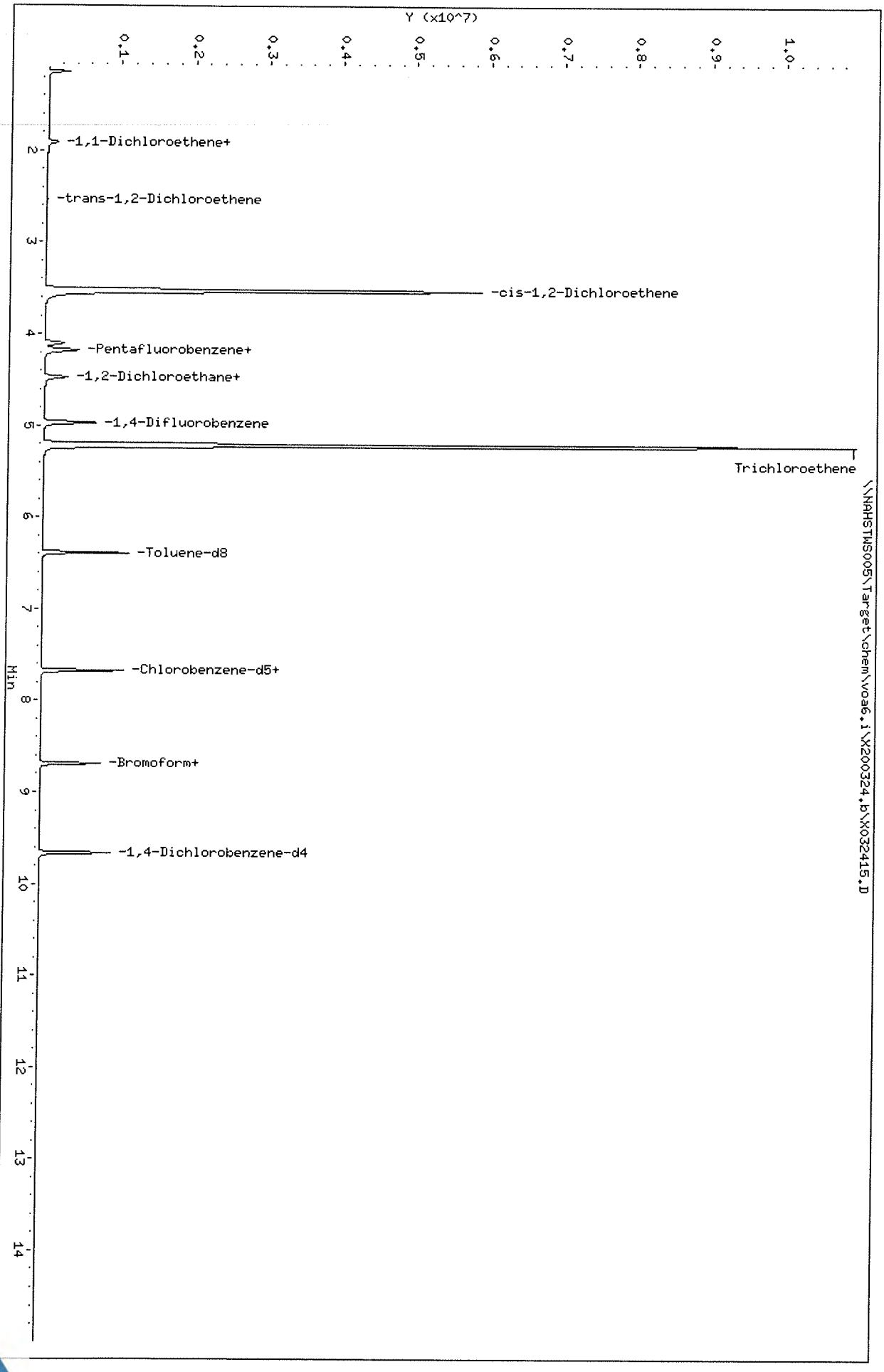
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	10.000	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	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	381156	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	180409	47.6325	47.63
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	222367	46.4253	46.42
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	573543	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	490302	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	644468	51.3139	51.31
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	231924	49.1517	49.15
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	233013	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	212445	36.5847	365.84
11 1,1-Dichloroethene	96	1.912	1.911	(0.457)	21215	6.56857	65.68
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	2780298	640.527	6405.27(AM)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	12583	2.07660	20.76(a)
38 Trichloroethene	130	5.207	5.206	(1.048)	3684312	926.803	9268.03(A)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6,i\X200324,b\X032415.D
Date : 24-MAR-2020 17:29
Client ID: HS20030888-06
Sample Info: HS20030888-06;HS20030888-06;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032415.D

Date : 24-MAR-2020 17:29

Client ID: HS20030888-06

Instrument: voa6.i

Sample Info: HS20030888-06;HS20030888-06;;;

Purge Volume: 5.0

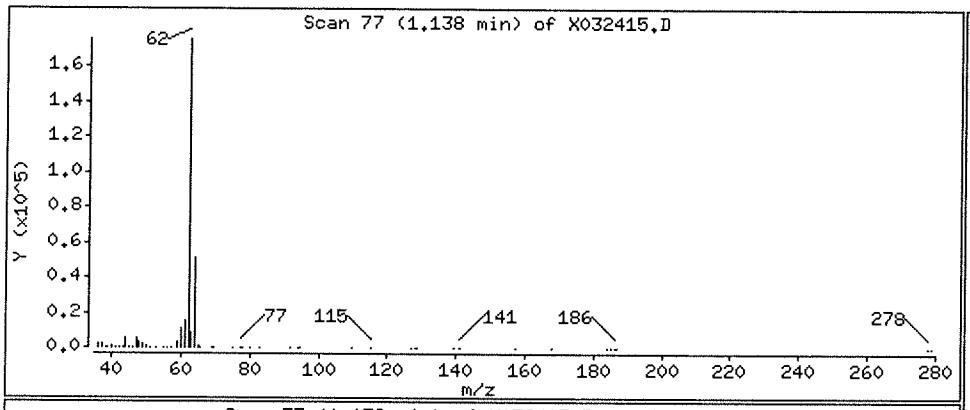
Operator: PC

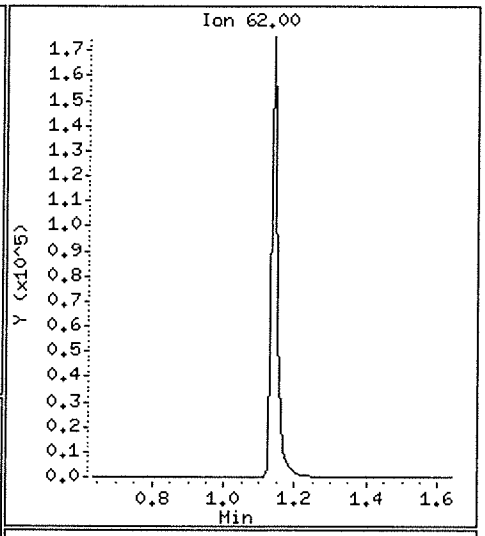
Column phase: DB624

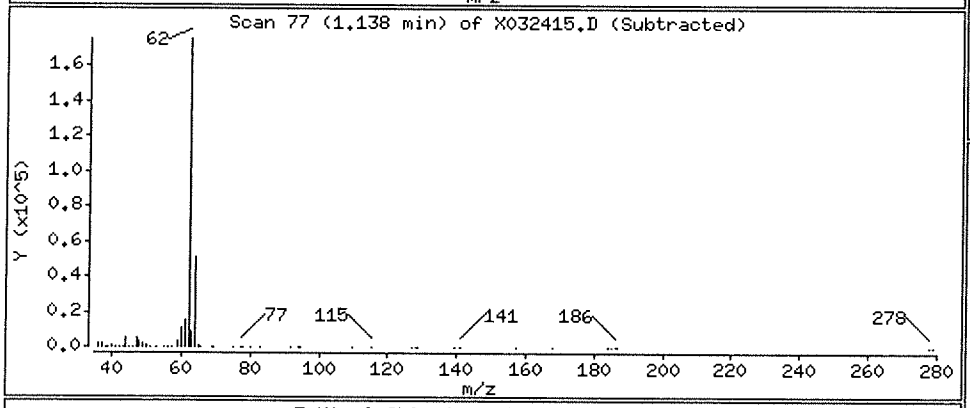
Column diameter: 0.18

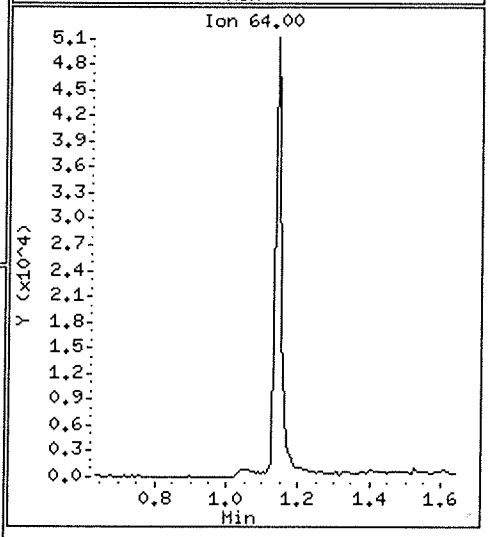
5 Vinyl Chloride

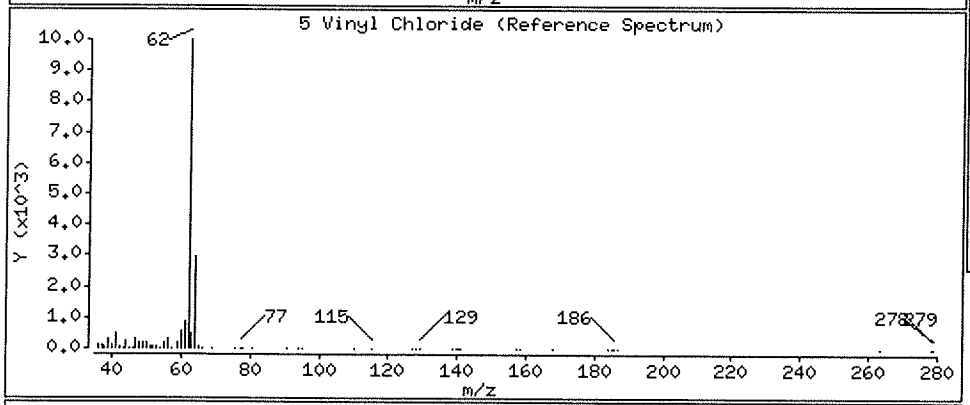
Concentration: 365.84 ug/l

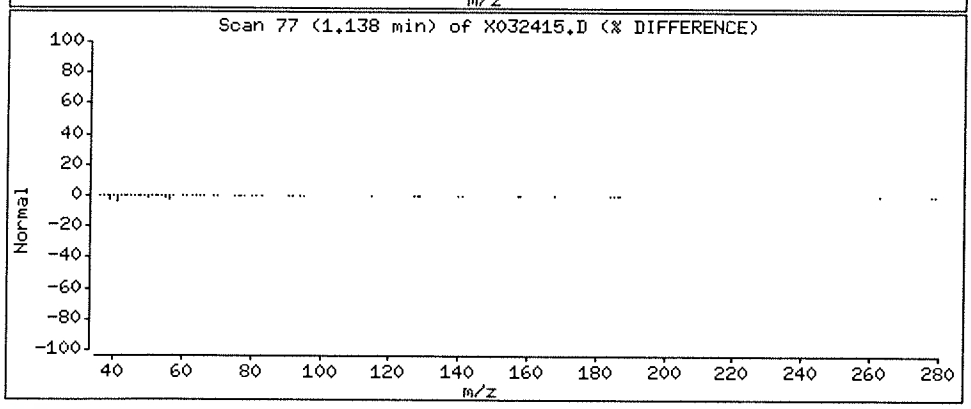












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032415.D

Date : 24-MAR-2020 17:29

Client ID: HS20030888-06

Instrument: voa6.i

Sample Info: HS20030888-06;HS20030888-06;;;

Purge Volume: 5.0

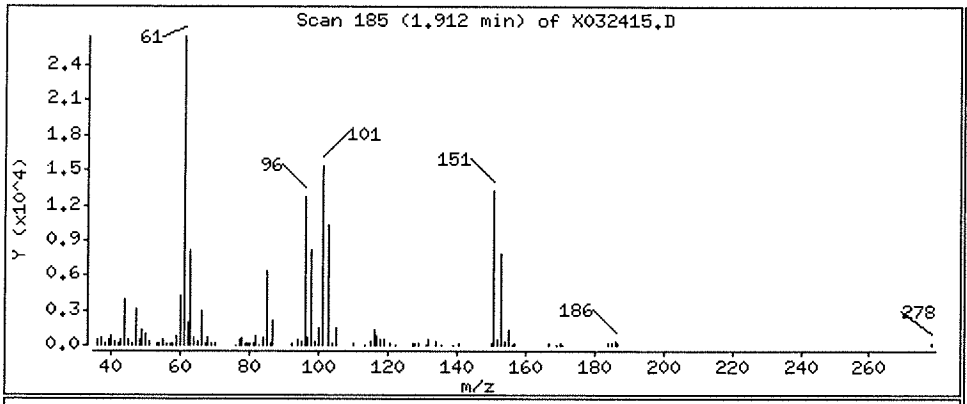
Operator: PC

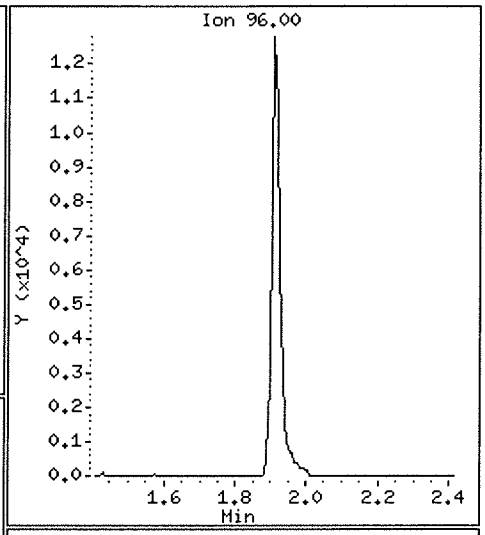
Column phase: DB624

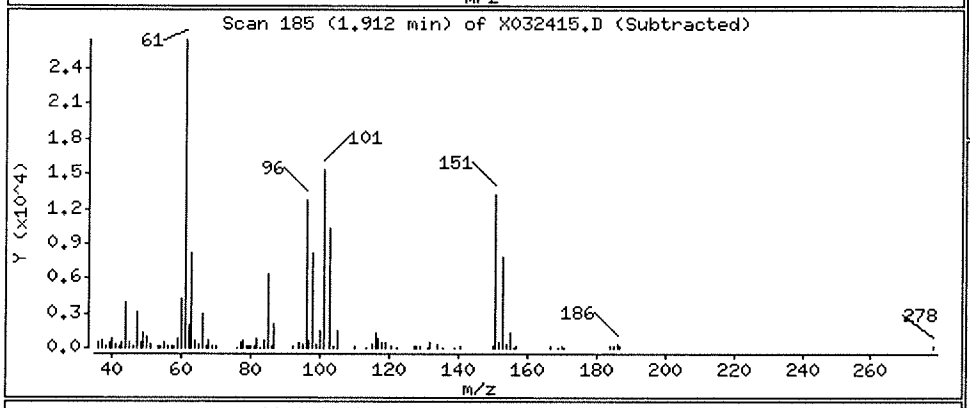
Column diameter: 0.18

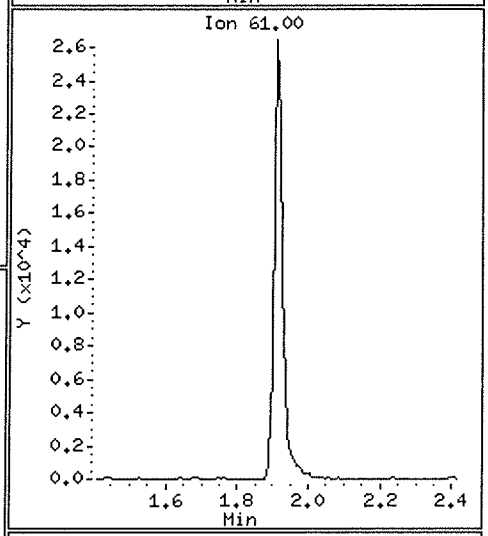
11 1,1-Dichloroethene

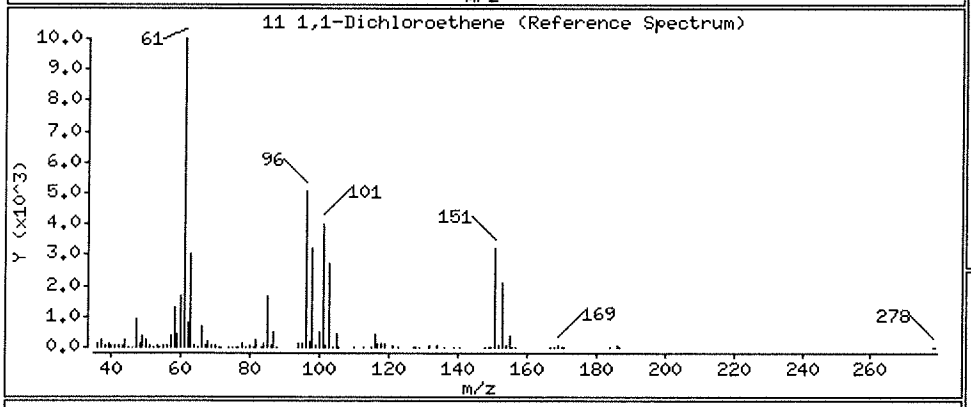
Concentration: 65.68 ug/l

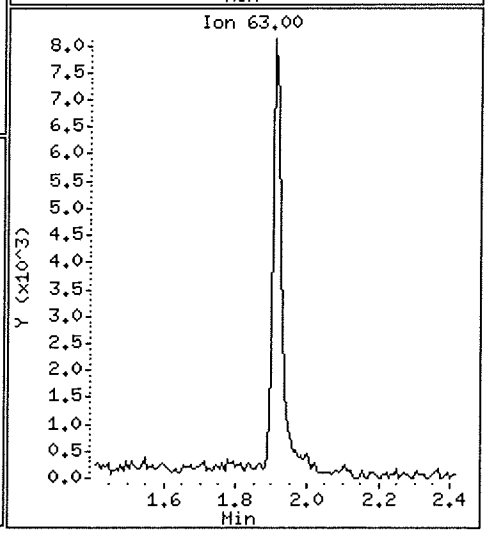


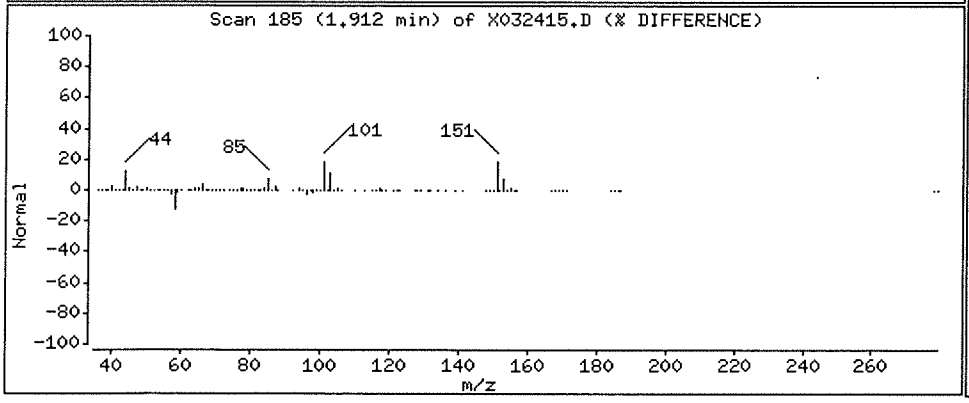












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032415.D

Date : 24-MAR-2020 17:29

Client ID: HS20030888-06

Instrument: voa6.i

Sample Info: HS20030888-06;HS20030888-06;;;

Purge Volume: 5.0

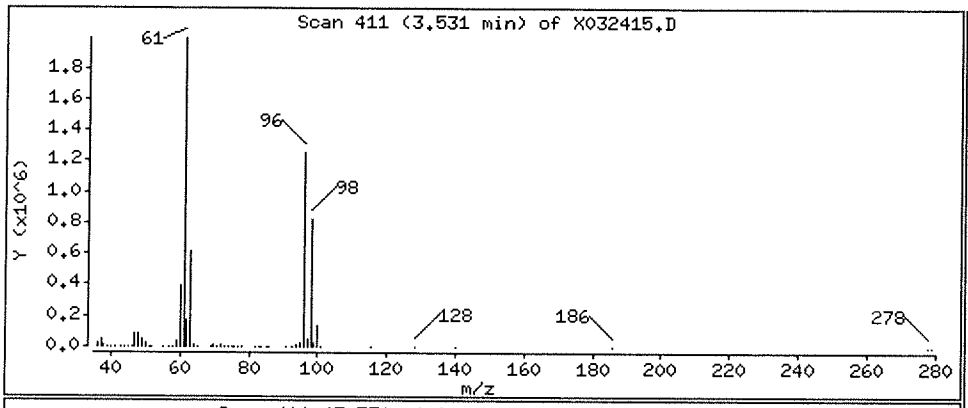
Operator: PC

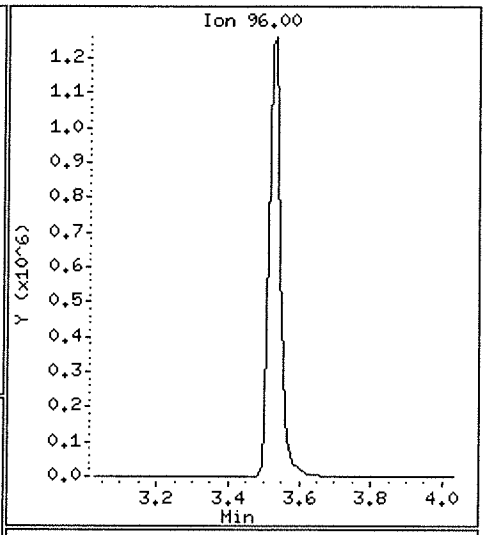
Column phase: DB624

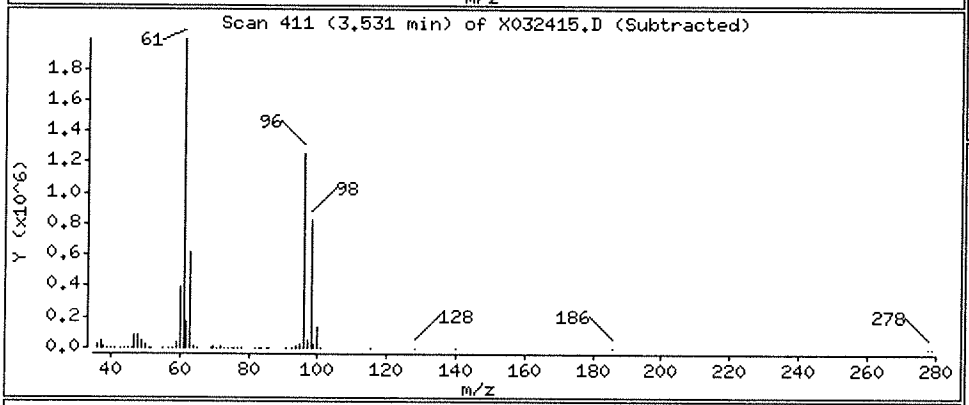
Column diameter: 0.18

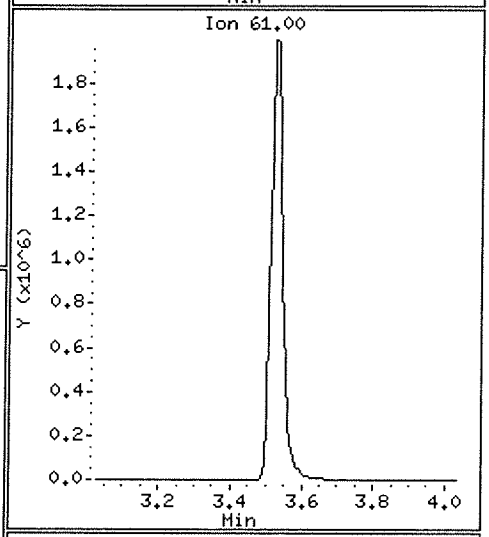
27 cis-1,2-Dichloroethene

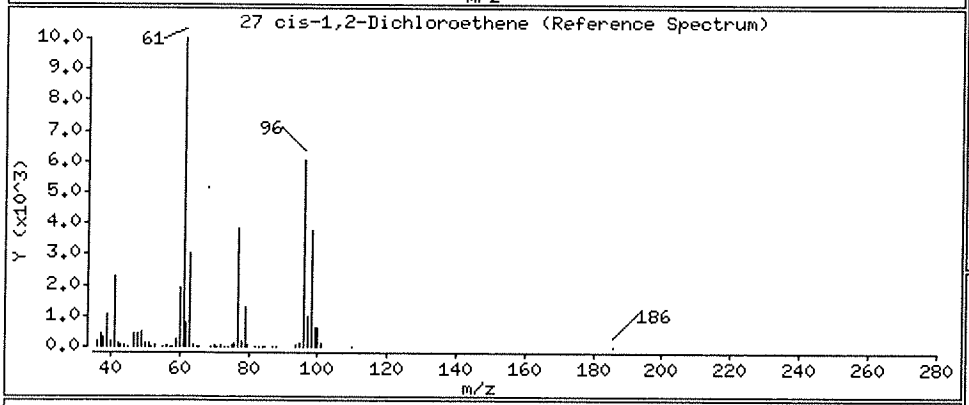
Concentration: 6405.27 ug/l

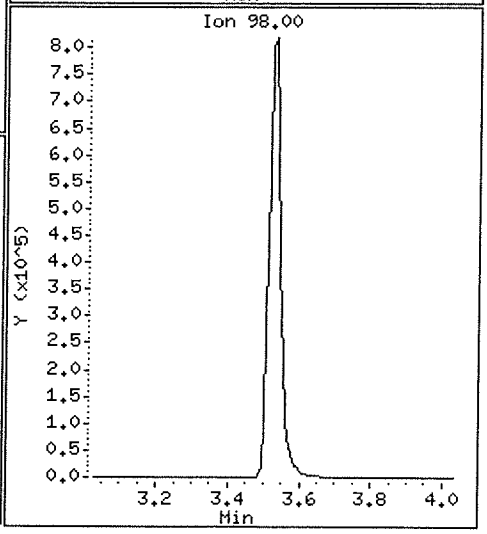


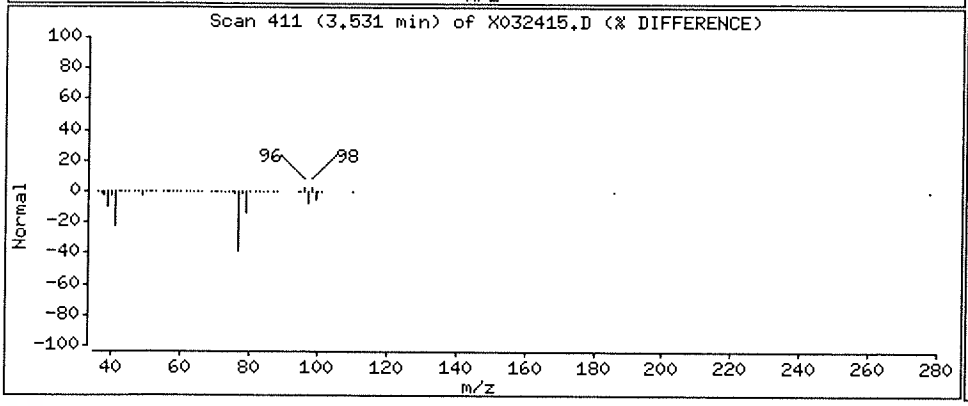












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032415.D

Date : 24-MAR-2020 17:29

Client ID: HS20030888-06

Instrument: voa6.i

Sample Info: HS20030888-06;HS20030888-06;;;

Purge Volume: 5.0

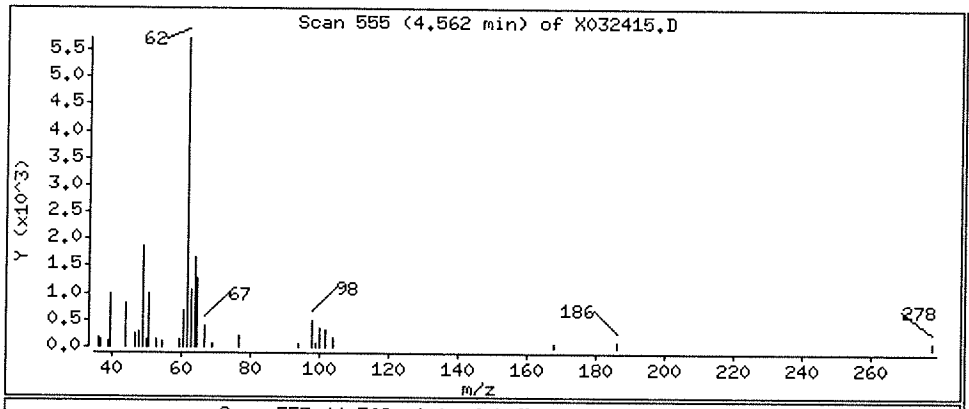
Operator: PC

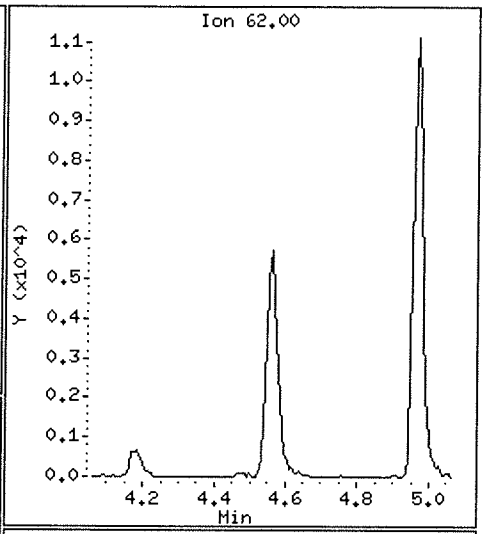
Column phase: DB624

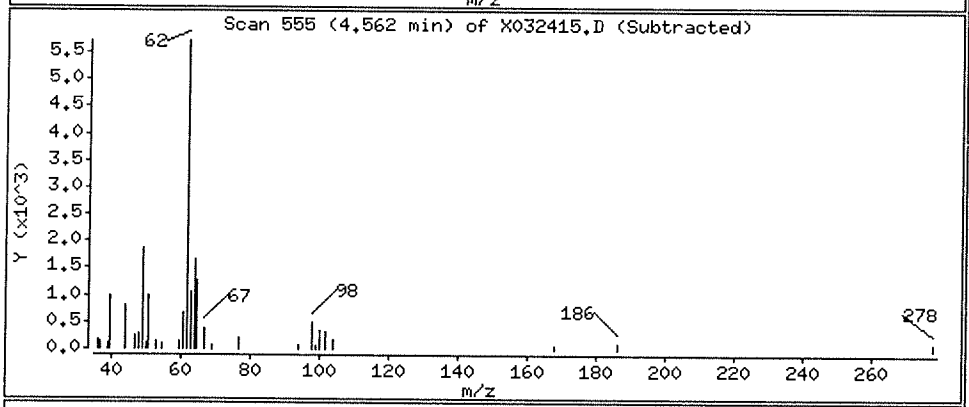
Column diameter: 0.18

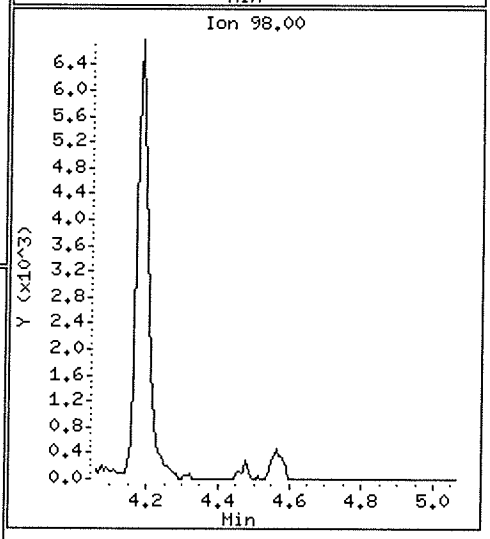
33 1,2-Dichloroethane

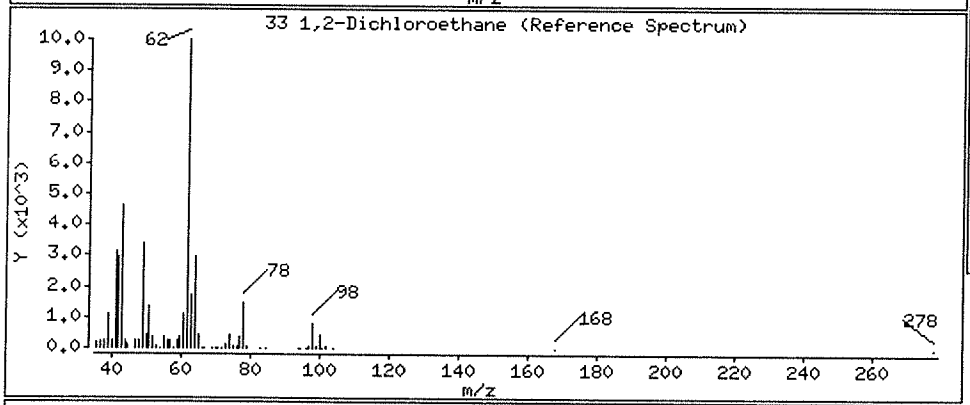
Concentration: 20.76 ug/l

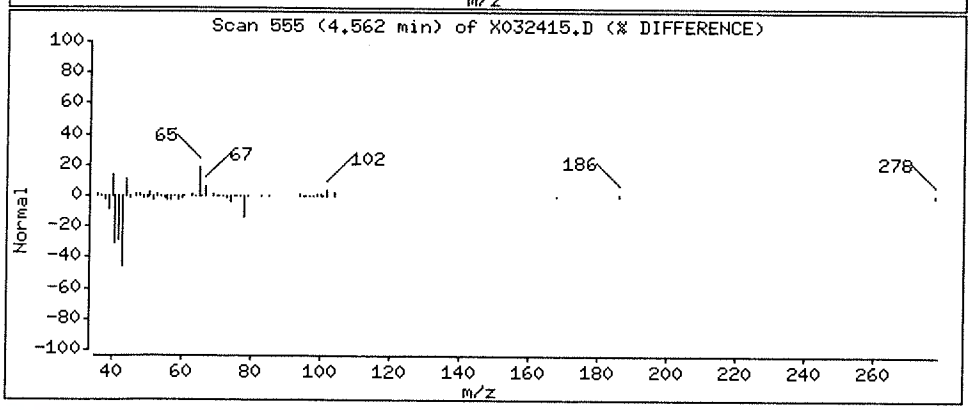












Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032415.D

Date : 24-MAR-2020 17:29

Client ID: HS20030888-06

Instrument: voa6.i

Sample Info: HS20030888-06;HS20030888-06;;;

Purge Volume: 5.0

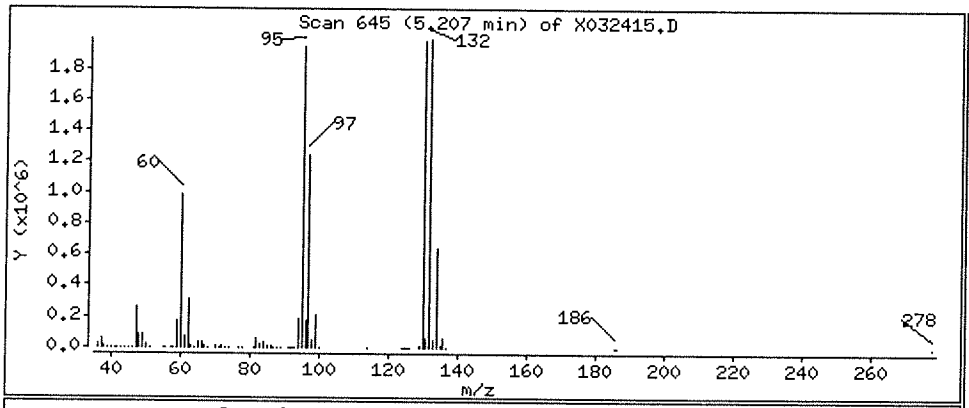
Operator: PC

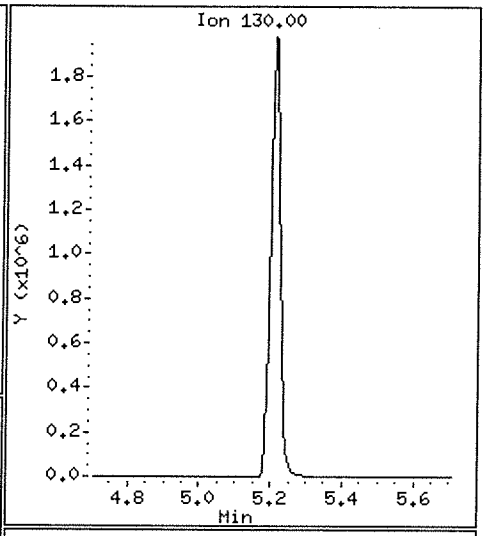
Column phase: DB624

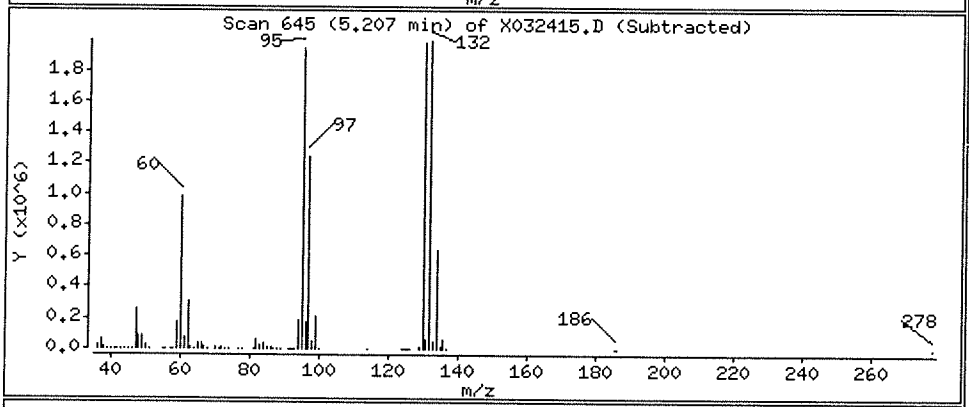
Column diameter: 0.18

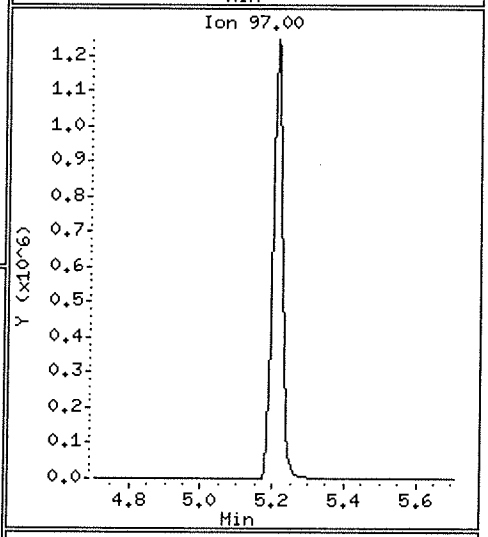
38 Trichloroethene

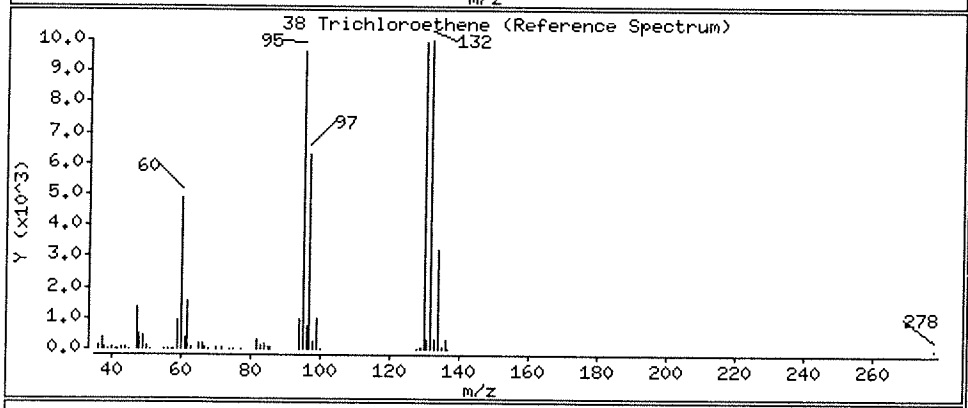
Concentration: 9268.03 ug/l

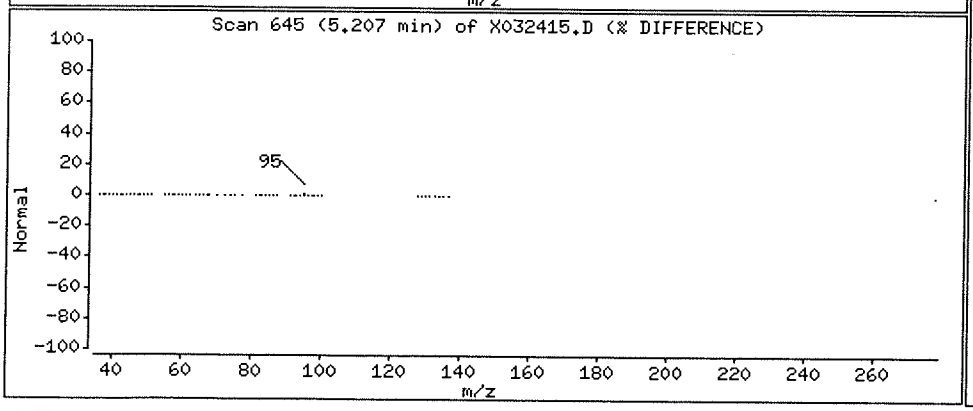


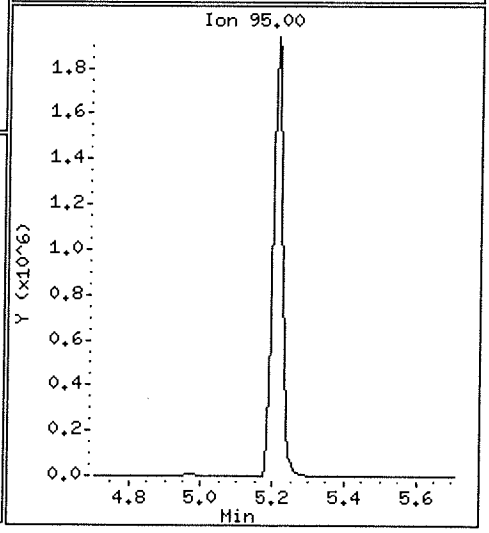












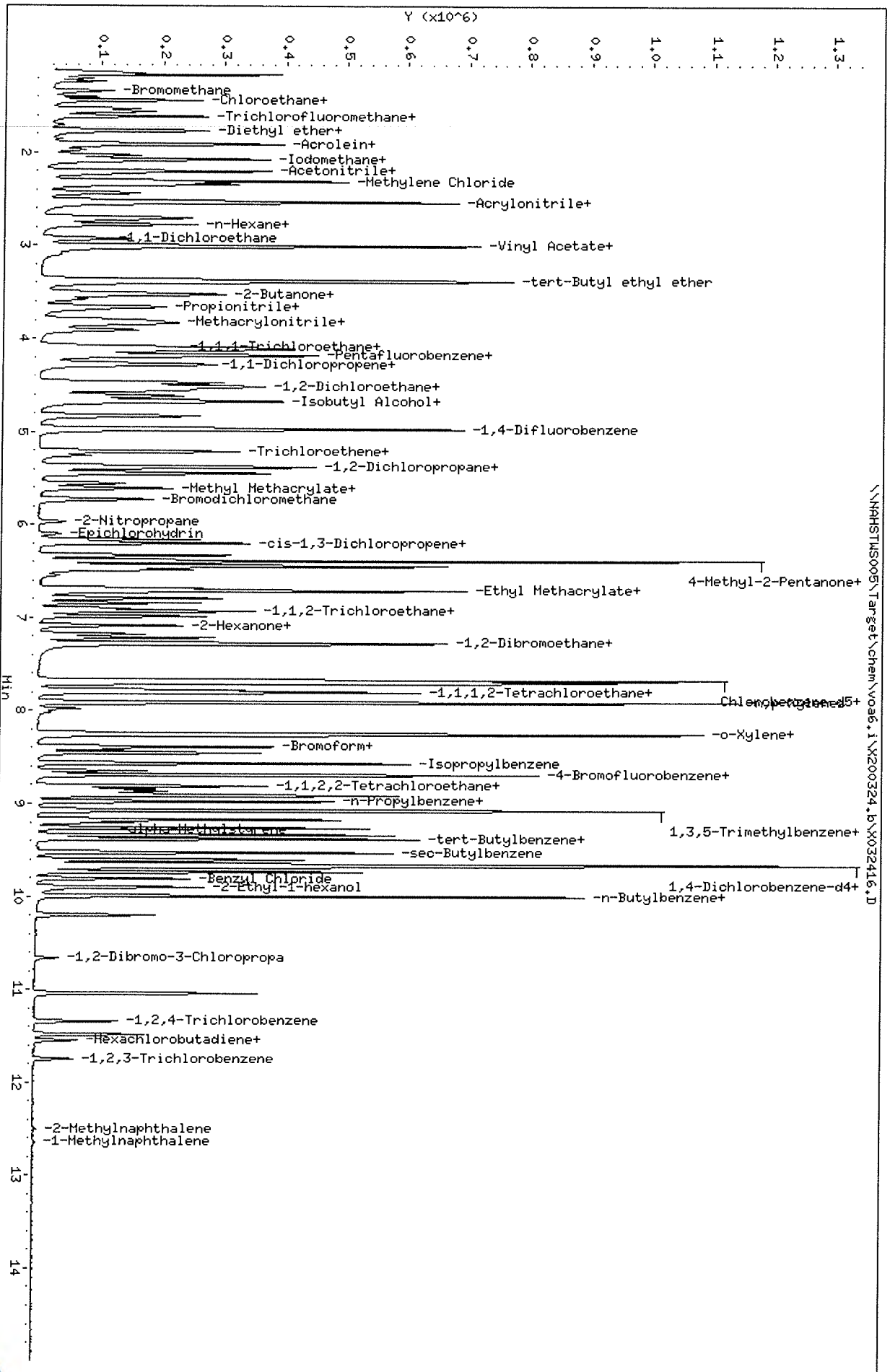
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032416.D
Lab Smp Id: HS20030892-06MS Client Smp ID: HS20030892-06MS
Inj Date : 24-MAR-2020 17:53
Operator : PC Inst ID: voa6.i
Smp Info : HS20030892-06MS;HS20030892-06MS;3;;MS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\8260W.m
Meth Date : 21-Apr-2020 15:56 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 16 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	372734	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	175744	47.4488	47.44
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	214866	45.8710	45.87
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	553731	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	488149	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	639942	51.1780	51.17
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	230627	49.0918	49.09
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	233489	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	108261	19.0646	19.06
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	61972	19.6213	19.62
17 Methylene Chloride	84	2.305	2.305	(0.551)	75903	18.2632	18.26
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	91779	21.6219	21.62
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	119526	20.4314	20.43
38 Trichloroethene	130	5.206	5.206	(1.048)	107348	27.9700	27.96
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	58142	20.6735	20.67



Data File: \\NAHSTWS005\Target\chem\voa6,i\X200324,b\X032416,D
Date : 24-MAR-2020 17:53
Client ID: HS20030892-06MS
Sample Info: HS20030892-06MS;HS20030892-06MS;3;;MS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032417.D Page 1
Report Date: 21-Apr-2020 15:57

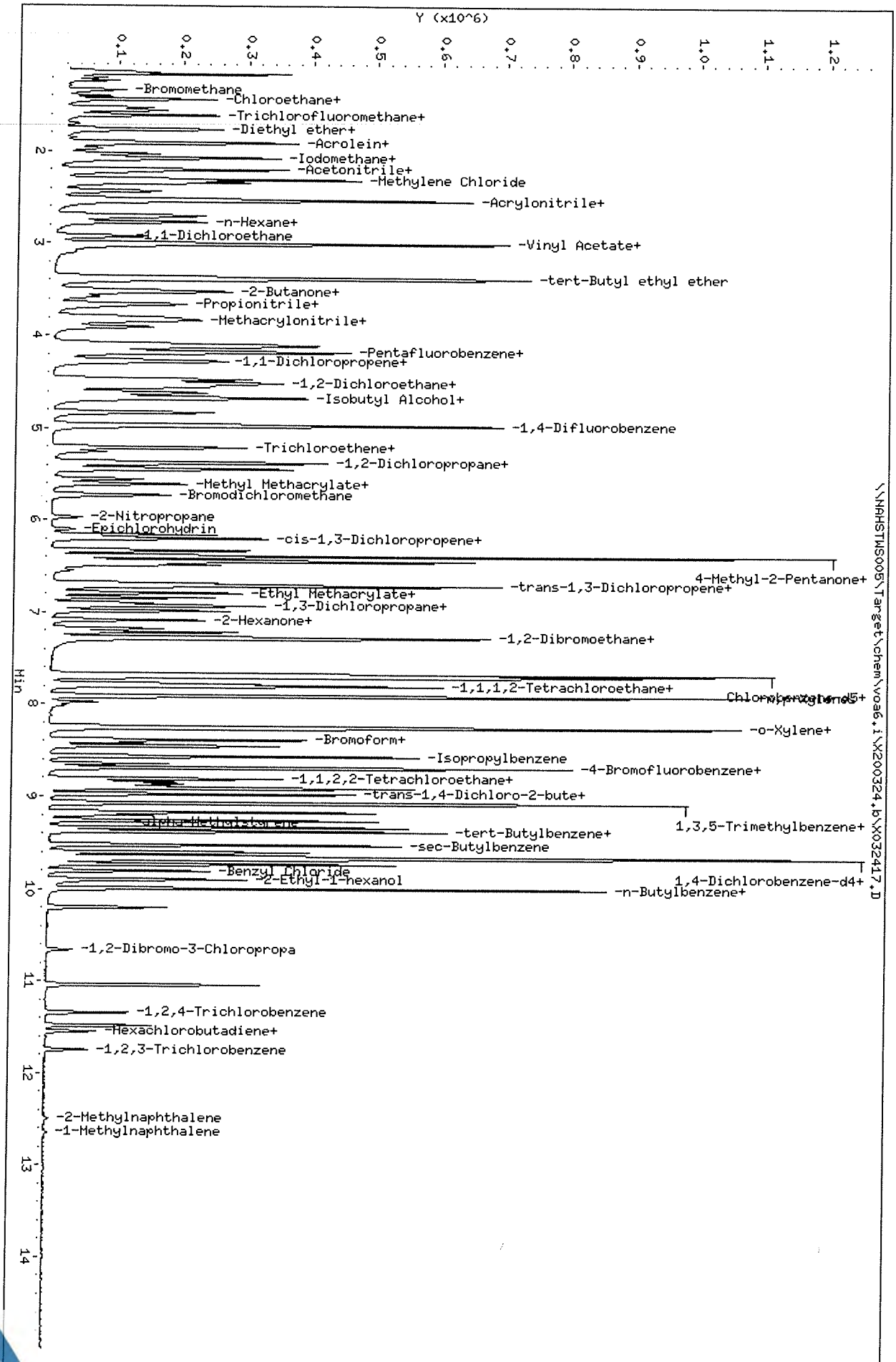
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032417.D
Lab Smp Id: HS20030892-06MSD Client Smp ID: HS20030892-06MSD
Inj Date : 24-MAR-2020 18:17
Operator : PC Inst ID: voa6.i
Smp Info : HS20030892-06MSD;HS20030892-06MSD;3;;MSD
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\8260W.m
Meth Date : 21-Apr-2020 15:56 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 16 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	376512	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	177139	47.3453	47.34
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	212142	44.8314	44.83
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	561034	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	483259	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	648645	52.4007	52.40
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	226001	48.5889	48.58
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	223110	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	100787	17.5704	17.57
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	57945	18.1622	18.16
17 Methylene Chloride	84	2.305	2.305	(0.551)	75103	17.8604	17.86
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	81976	19.1186	19.11
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	113439	19.1385	19.13
38 Trichloroethene	130	5.206	5.206	(1.048)	98774	25.4010	25.40
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	55775	20.0325	20.03



Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032417.D
Date : 24-MAR-2020 18:17
Client ID: HS20030892-06MSD
Sample Info: HS20030892-06MSD;HS20030892-06MSD;3;;HSD
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

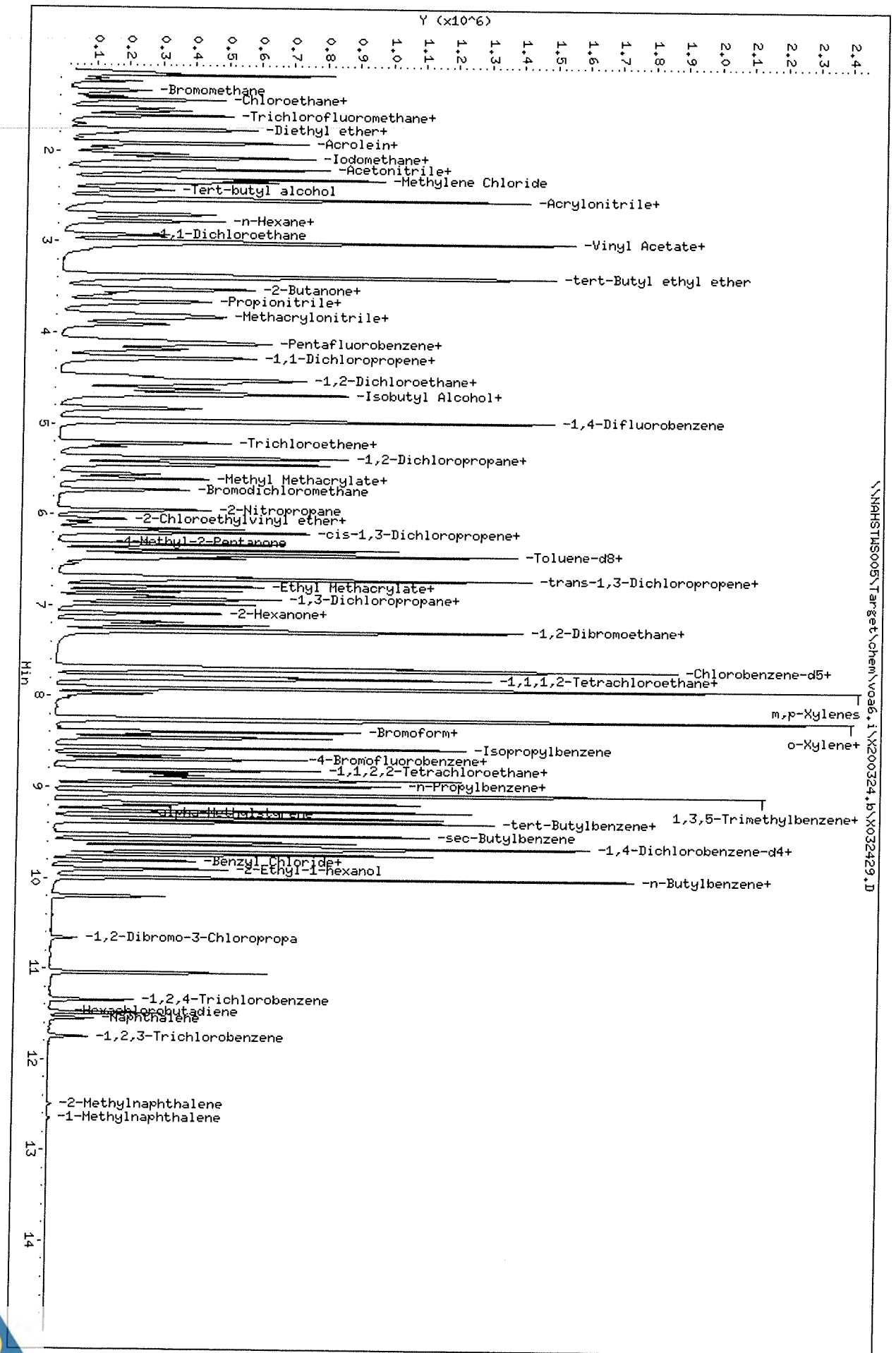
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032429.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 24-MAR-2020 23:06
Operator : PC Inst ID: voa6.i
Smp Info : CCV-END;CCV-END;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X200324.b\8260W.m
Meth Date : 21-Apr-2020 15:57 voa6.i Quant Type: ISTD
Cal Date : 19-MAR-2020 14:22 Cal File: X031908.D
Als bottle: 28 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0474-dod.sub
Target Version: 4.14
Processing Host: NAHSTW7066

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)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	306691	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	160103	50.0000	52.54
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	195581	50.0000	50.76
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	474605	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	438166	50.0000	
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	570140	50.0000	50.79
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	209552	50.0000	49.70
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	207956	50.0000	
5 Vinyl Chloride	62	1.138	1.138	(0.272)	232790	50.0000	49.82
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	129351	50.0000	49.77
17 Methylene Chloride	84	2.305	2.305	(0.551)	169237	50.0000	51.90
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	178620	50.0000	51.14
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	254378	50.0000	50.73
38 Trichloroethene	130	5.206	5.206	(1.048)	166612	50.0000	50.64
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	122143	50.0000	48.38



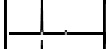
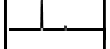
Data File: \\NAHSTWS005\Target\chem\voa6.i\X200324.b\X032429.D
Date : 24-MAR-2020 23:06
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

HS20030888 Wet Chem Raw Data (IC)

ALS WO# HS20030888

Sequence: 033020A
Last Update Operator: Janki.Desai

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	Processing Method	Volume	Status	Inject Time
	STD1	2970209205	Calibration	GA1	1.0000	1	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 7:39:11 PM -06:00
	STD2	NEW PRGM	Calibration	GA2	1.0000	2	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 7:57:16 PM -06:00
	STD3		Calibration	GA3	1.0000	3	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 8:15:24 PM -06:00
	STD4		Calibration	GA4	1.0000	4	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 8:33:31 PM -06:00
	STD5	NO2/PO4	Calibration	GA5	1.0000	5	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 8:51:36 PM -06:00
	STD6	MAX 10PPM	Calibration	GA6	1.0000	6	Anions Prog	Anions Proce	5.0	Finished	2/5/2020 9:09:41 PM -06:00
	ICV	2970209123	Unknown	GA7	1.0000		Anions Prog	Anions Proce	5.0	Finished	2/5/2020 9:27:48 PM -06:00
	ICB		Unknown	GA8	1.0000		Anions Prog	Anions Proce	5.0	Finished	2/5/2020 9:45:53 PM -06:00
	CCV	8	Unknown	BA1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/30/2020 6:14:20 PM -05:00
	CCB		Unknown	BA2	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/30/2020 6:32:25 PM -05:00
	HS20031096-07DF500		Unknown	BC8	500.0000		Anions Prog	Anions Proce	5.0	Finished	3/30/2020 9:33:25 PM -05:00
	CCV1		Unknown	BA3	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/30/2020 9:51:31 PM -05:00
	CCB		Unknown	BA4	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/30/2020 10:09:37 PM -05:00
	HS20031096-07MSDF500		Unknown	BD1	500.0000		Anions Prog	Anions Proce	5.0	Finished	3/30/2020 10:27:43 PM -05:00
	HS20031096-07MSDDF500		Unknown	BD2	500.0000		Anions Prog	Anions Proce	5.0	Finished	3/30/2020 10:45:48 PM -05:00
	HS20030888-10DF5		Unknown	BD3	5.0000		Anions Prog	Anions Proce	5.0	Finished	3/30/2020 11:03:53 PM -05:00
	CCV	8	Unknown	BA1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/31/2020 1:28:39 AM -05:00
	CCB		Unknown	BA2	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/31/2020 1:46:44 AM -05:00
	MBLK-03.30.20		Unknown	GD1	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/31/2020 2:41:05 AM -05:00
	LCS		Unknown	GD2	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/31/2020 2:59:09 AM -05:00
	LCSD		Unknown	GD3	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/31/2020 3:17:15 AM -05:00
	CCV1		Unknown	BA3	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/31/2020 4:11:33 AM -05:00
	CCB		Unknown	BA4	1.0000		Anions Prog	Anions Proce	5.0	Finished	3/31/2020 4:29:40 AM -05:00

Sequence: 033020A
Injection #6: STD6

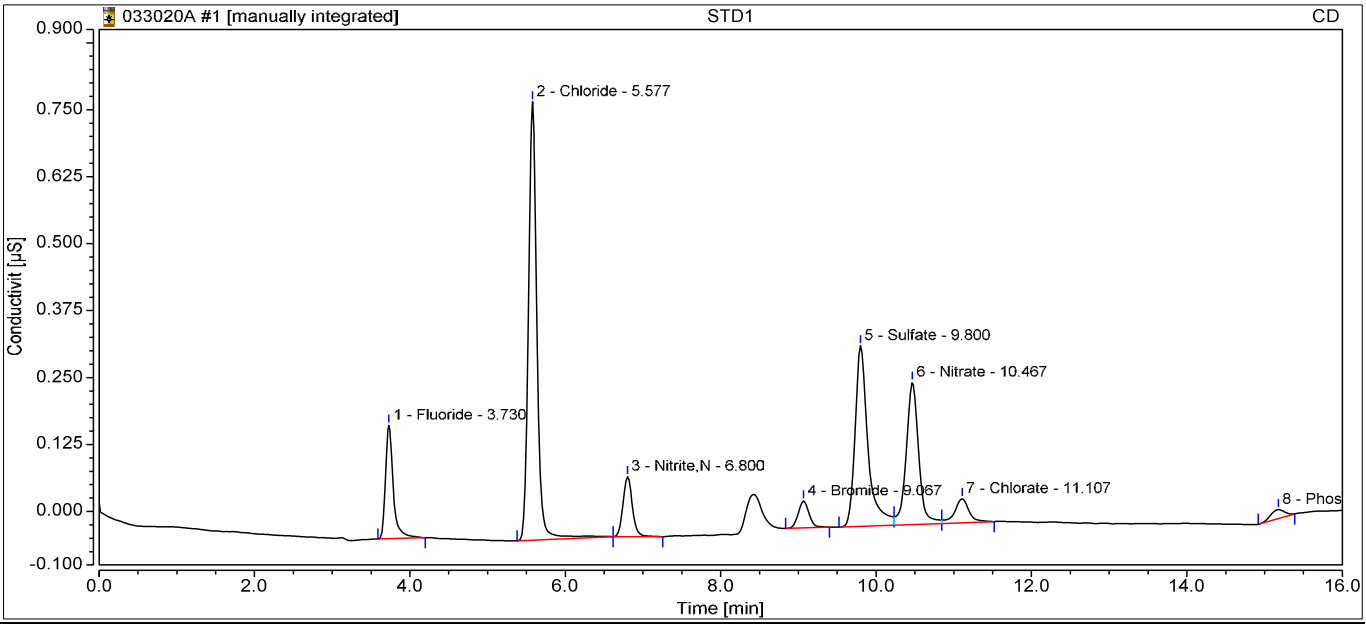
Calibration

Peak No.	Peak Name	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	*Fluoride*	*Lin, WithOffset, 1/*	*Area*	*6*	*13.4314*	*0.99915*	*-0.0083*	*0.3414*	*0.0000*
2	Chloride	Lin, WithOffset, 1/	Area	6	2.2020	0.99998	-0.0141	0.2320	0.0000
3	Nitrite,N	Lin, WithOffset, 1/	Area	6	30.0137	0.99594	-0.0159	0.4671	0.0000
4	Bromide	Lin, WithOffset, 1/	Area	6	12.1436	0.99933	-0.0033	0.0991	0.0000
5	Sulfate	Lin, WithOffset, 1/	Area	6	4.2312	0.99991	-0.0170	0.1679	0.0000
6	Nitrate	Lin, WithOffset, 1/	Area	6	2.3081	0.99997	-0.0076	0.5843	0.0000
7	Chlorate	Lin, WithOffset, 1/	Area	6	9.7729	0.99945	0.0017	0.0949	0.0000
8	Phosphate	Lin, WithOffset, 1/	Area	6	20.6471	0.99870	-0.0235	0.2186	0.0000
Maximum					**30.0137**	0.99998			
Minimum					2.2020	**0.99594**			

1 STD1

Sample Name:	**STD1**	*Injection Volume:*	**5.00**
Vial Number:	**GA1**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 19:39**	*Sample Weight:*	**1.0000**

Run Time:



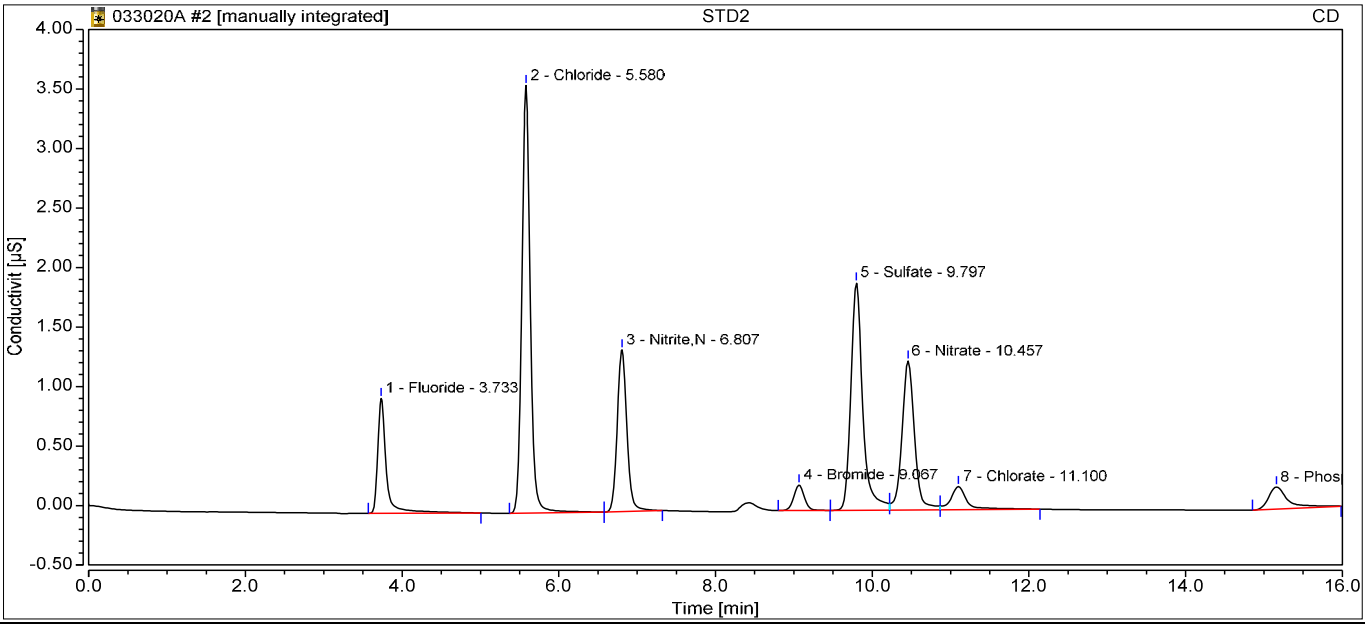
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.024	0.0955	0.0955	1.0000
2	5.58	Chloride	BMB	0.103	0.5065	0.5065	1.0000
3	6.80	Nitrite,N	BMB	0.016	0.0673	0.0673	1.0000
4	9.07	Bromide	BMB	0.008	0.1156	0.1156	1.0000
5	9.80	Sulfate	BM	0.065	0.4885	0.4885	1.0000
6	10.47	Nitrate	M	0.049	0.0974	0.0974	1.0000
7	11.11	Chlorate	MB	0.010	0.0834	0.0834	1.0000
8	15.18	Phosphate	BMB*	0.003	0.1235	0.1235	1.0000
Total:			**0.000**	**0.279**		**1.58**	

2 STD2

Sample Name:	**STD2**	*Injection Volume:*	**5.00**
Vial Number:	**GA2**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 19:57**	*Sample Weight:*	**1.0000**

Run Time:



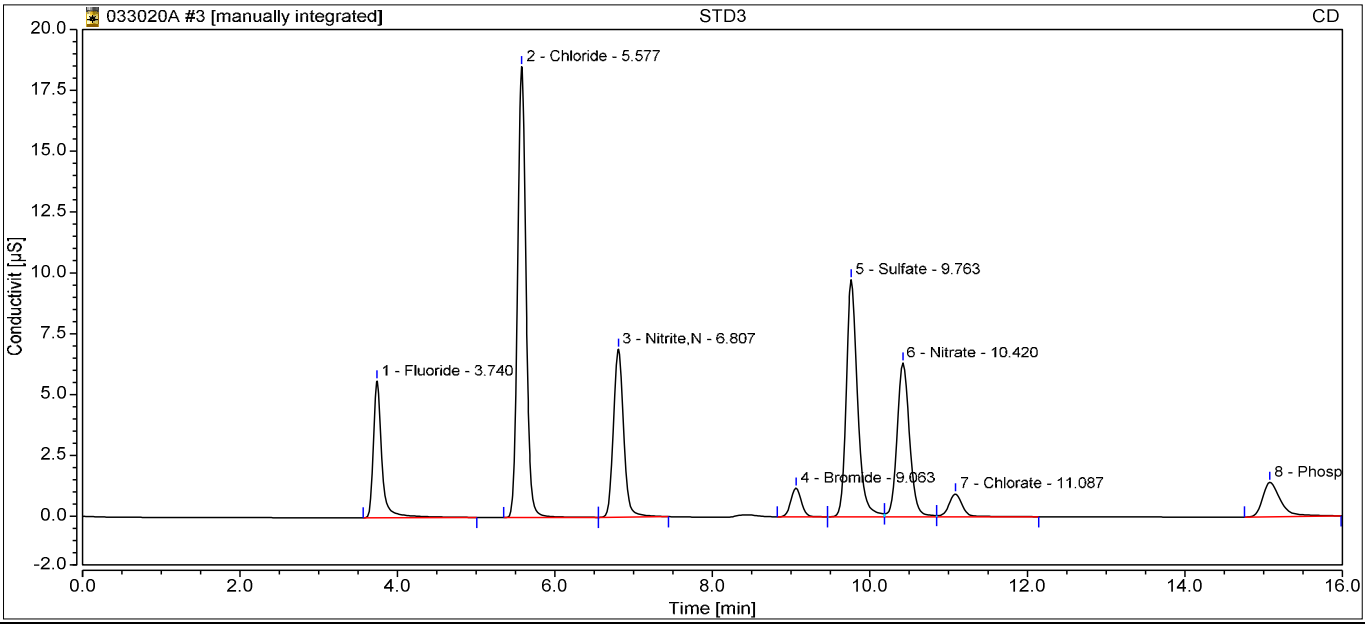
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.123	0.3833	0.3833	1.0000
2	5.58	Chloride	BMb*	0.449	1.9963	1.9963	1.0000
3	6.81	Nitrite,N	bMB*	0.194	0.4500	0.4500	1.0000
4	9.07	Bromide	BMB	0.034	0.3722	0.3722	1.0000
5	9.80	Sulfate	BM	0.335	2.0973	2.0973	1.0000
6	10.46	Nitrate	M	0.232	0.4103	0.4103	1.0000
7	11.10	Chlorate	MB	0.047	0.4759	0.4759	1.0000
8	15.16	Phosphate	BMB	0.053	0.3508	0.3508	1.0000
Total:			**0.000**	**1.467**		**6.54**	

3 STD3

Sample Name:	**STD3**	*Injection Volume:*	**5.00**
Vial Number:	**GA3**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 20:15**	*Sample Weight:*	**1.0000**

Run Time:



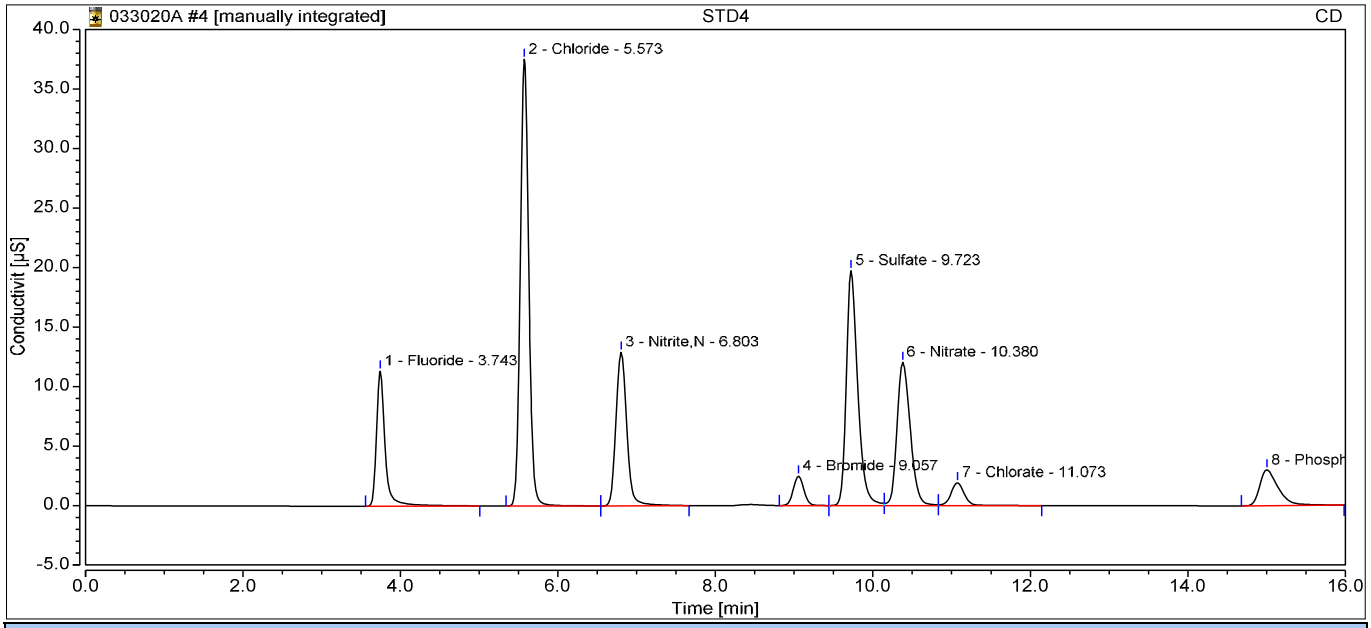
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.701	2.0769	2.0769	1.0000
2	5.58	Chloride	BMb*	2.284	9.9073	9.9073	1.0000
3	6.81	Nitrite,N	bMB*	1.029	2.2369	2.2369	1.0000
4	9.06	Bromide	BM	0.182	1.8657	1.8657	1.0000
5	9.76	Sulfate	M	1.624	9.7730	9.7730	1.0000
6	10.42	Nitrate	M	1.160	1.9980	1.9980	1.0000
7	11.09	Chlorate	MB	0.189	1.9689	1.9689	1.0000
8	15.08	Phosphate	BMB	0.374	1.8187	1.8187	1.0000
Total:			**0.000**	**7.542**		**31.65**	

4 STD4

Sample Name:	**STD4**	*Injection Volume:*	**5.00**
Vial Number:	**GA4**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 20:33**	*Sample Weight:*	**1.0000**

Run Time:



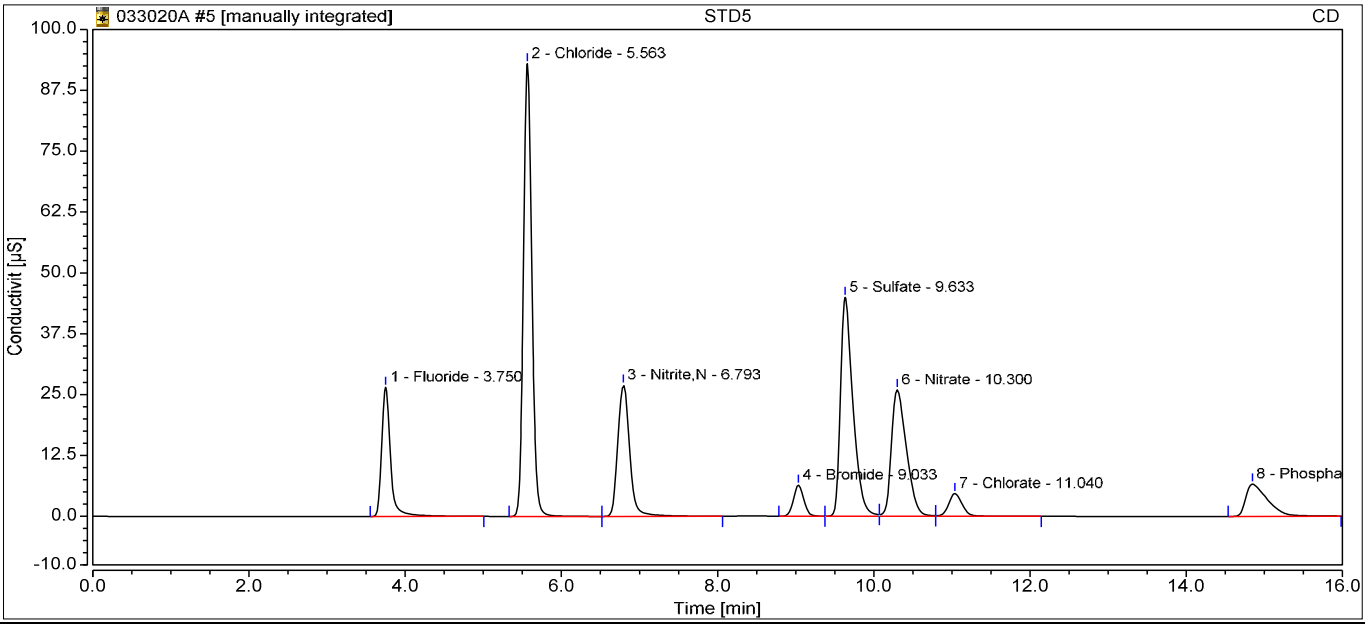
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.428	4.2080	4.2080	1.0000
2	5.57	Chloride	BMb*	4.627	20.0069	20.0069	1.0000
3	6.80	Nitrite,N	bMB*	2.046	4.4146	4.4146	1.0000
4	9.06	Bromide	BM	0.382	3.8871	3.8871	1.0000
5	9.72	Sulfate	M	3.337	19.9713	19.9713	1.0000
6	10.38	Nitrate	M	2.343	4.0228	4.0228	1.0000
7	11.07	Chlorate	MB	0.380	3.9830	3.9830	1.0000
8	15.00	Phosphate	BMB	0.824	3.8745	3.8745	1.0000
Total:			**0.000**	**15.366**		**64.37**	

5 STD5

Sample Name:	**STD5**	*Injection Volume:*	**5.00**
Vial Number:	**GA5**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 20:51**	*Sample Weight:*	**1.0000**

Run Time:



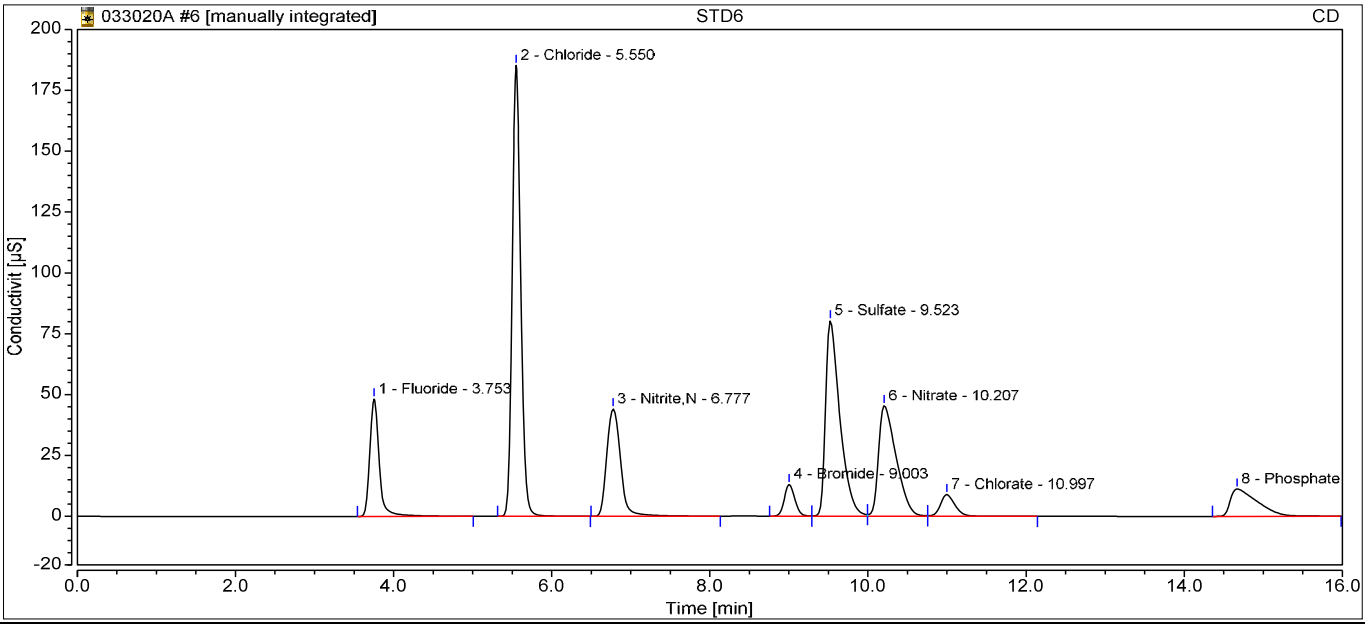
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	3.472	10.1940	10.1940	1.0000
2	5.56	Chloride	BMB	11.516	49.7057	49.7057	1.0000
3	6.79	Nitrite,N	BMB*	4.776	10.2593	10.2593	1.0000
4	9.03	Bromide	BM	0.981	9.9279	9.9279	1.0000
5	9.63	Sulfate	M	8.325	49.6811	49.6811	1.0000
6	10.30	Nitrate	M	5.799	9.9382	9.9382	1.0000
7	11.04	Chlorate	MB	0.944	9.9252	9.9252	1.0000
8	14.85	Phosphate	BMB	2.135	9.8737	9.8737	1.0000
Total:			**0.000**	**37.949**		**159.51**	

6 STD6

Sample Name:	**STD6**	*Injection Volume:*	**5.00**
Vial Number:	**GA6**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 21:09**	*Sample Weight:*	**1.0000**

Run Time:



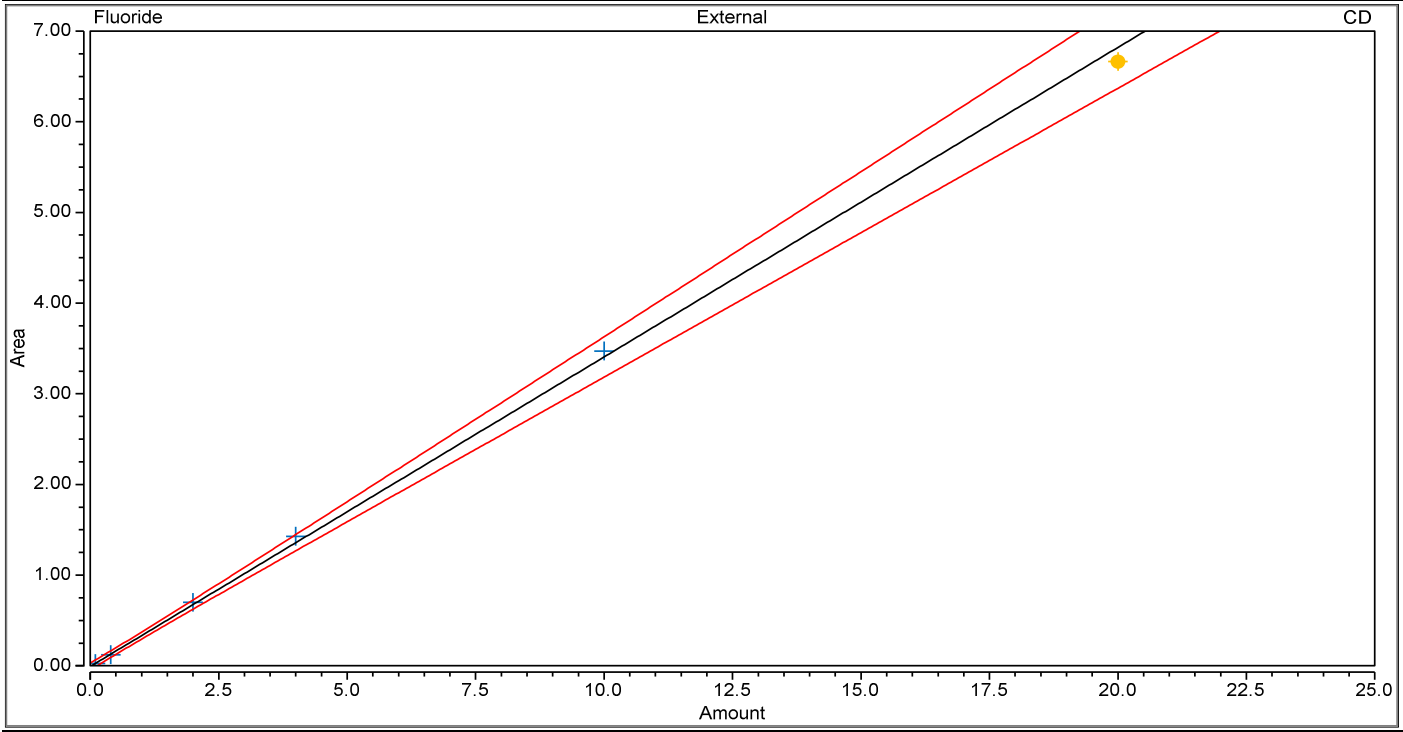
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	6.664	19.5424	19.5424	1.0000
2	5.55	Chloride	BMB	23.270	100.3774	100.3774	1.0000
3	6.78	Nitrite,N	BMB*	8.893	19.0718	19.0718	1.0000
4	9.00	Bromide	BM	2.012	20.3316	20.3316	1.0000
5	9.52	Sulfate	M	16.857	100.4888	100.4888	1.0000
6	10.21	Nitrate	M	11.698	20.0333	20.0333	1.0000
7	11.00	Chlorate	MB	1.906	20.0635	20.0635	1.0000
8	14.67	Phosphate	BMB	4.450	20.4589	20.4589	1.0000
Total:			**0.000**	**75.750**		**320.37**	

Calibration

Calibration Details	Fluoride		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0083
Evaluation Type	Area	*Slope (C1)*	0.3414
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9991

Calibration Plot **Fluoride**



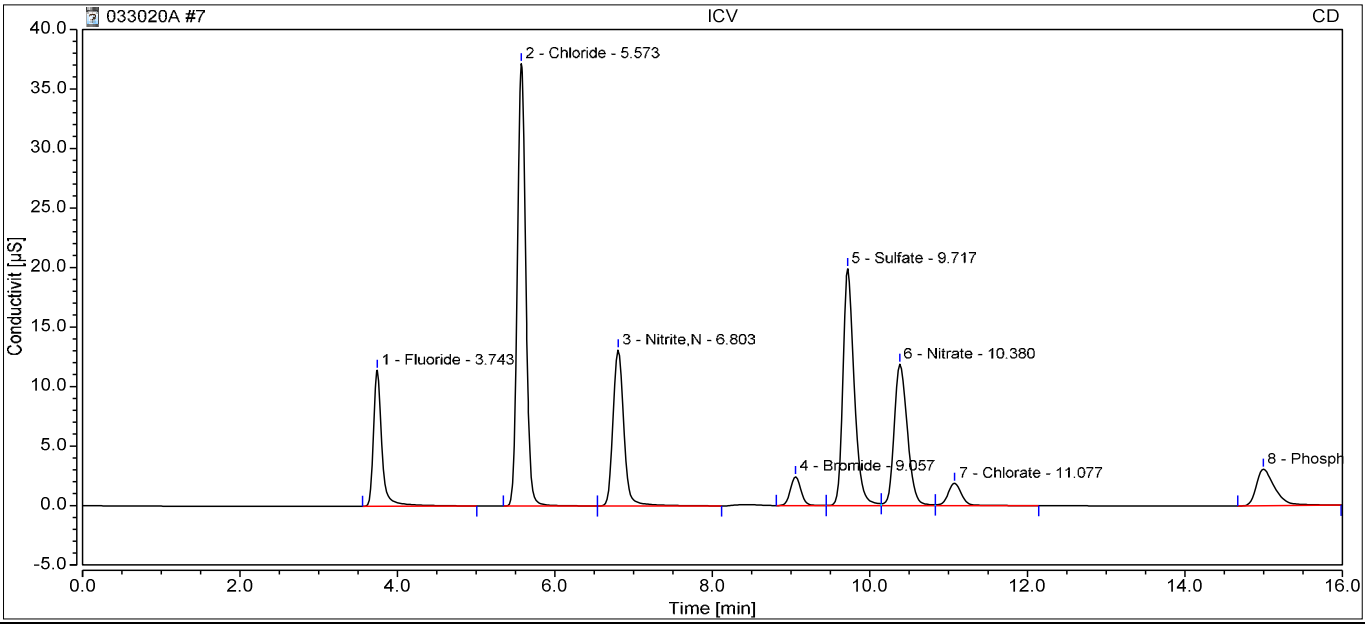
Calibration Results **Fluoride**

No.	Injection Name	Calibration Level	X Value CD Fluoride	Y Value CD Fluoride	Y Value CD Fluoride	Area µS*min CD Fluoride	Height µS CD Fluoride
1	STD1	1	0.1000	0.0243	0.0243	0.024	0.212
2	STD2	2	0.4000	0.1226	0.1226	0.123	0.964
3	STD3	3	2.0000	0.7008	0.7008	0.701	5.614
4	STD4	4	4.0000	1.4284	1.4284	1.428	11.345
5	STD5	5	10.0000	3.4723	3.4723	3.472	26.547
6	STD6	6	20.0000	6.6641	6.6641	6.664	48.233

7 ICV

Sample Name:	**ICV**	*Injection Volume:*	**5.00**
Vial Number:	**GA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 21:27**	*Sample Weight:*	**1.0000**

Run Time:



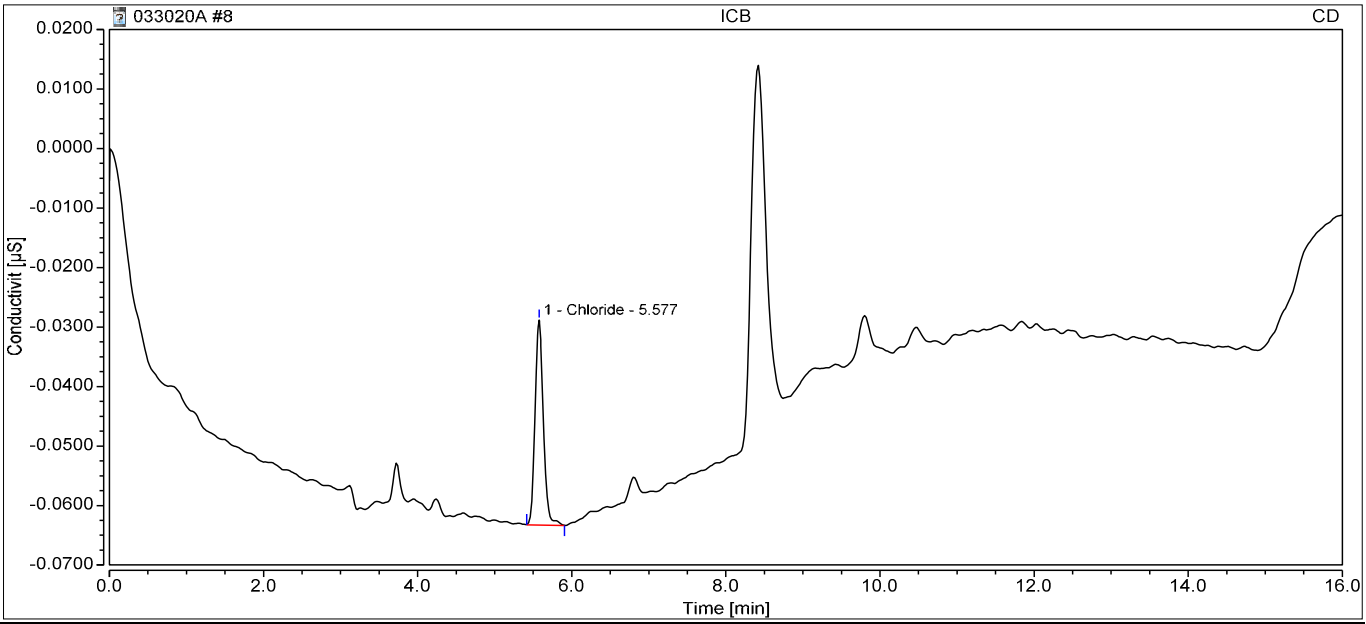
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.412	4.1607	4.1607	1.0000
2	5.57	Chloride	BMB	4.570	19.7627	19.7627	1.0000
3	6.80	Nitrite,N	BMB	2.081	4.4887	4.4887	1.0000
4	9.06	Bromide	BM	0.374	3.8104	3.8104	1.0000
5	9.72	Sulfate	M	3.327	19.9126	19.9126	1.0000
6	10.38	Nitrate	M	2.299	3.9478	3.9478	1.0000
7	11.08	Chlorate	MB	0.379	3.9799	3.9799	1.0000
8	15.00	Phosphate	BMB	0.835	3.9271	3.9271	1.0000
Total:			**0.000**	**15.278**		**63.99**	

8 ICB

Sample Name:	**ICB**	*Injection Volume:*	**5.00**
Vial Number:	**GA8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/05/2020 21:45**	*Sample Weight:*	**1.0000**

Run Time:



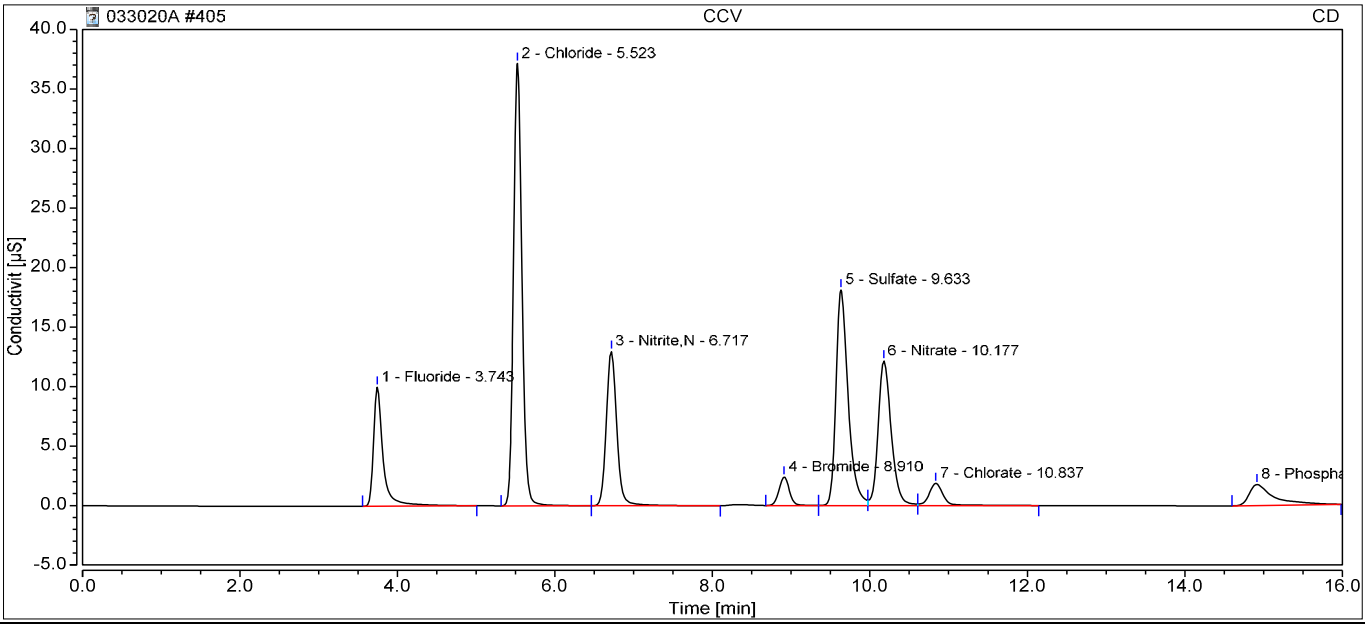
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.58	Chloride	BMB	0.004	0.0794	0.0794	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.004**		**0.08**	

405 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/30/2020 18:14**	*Sample Weight:*	**1.0000**

Run Time:



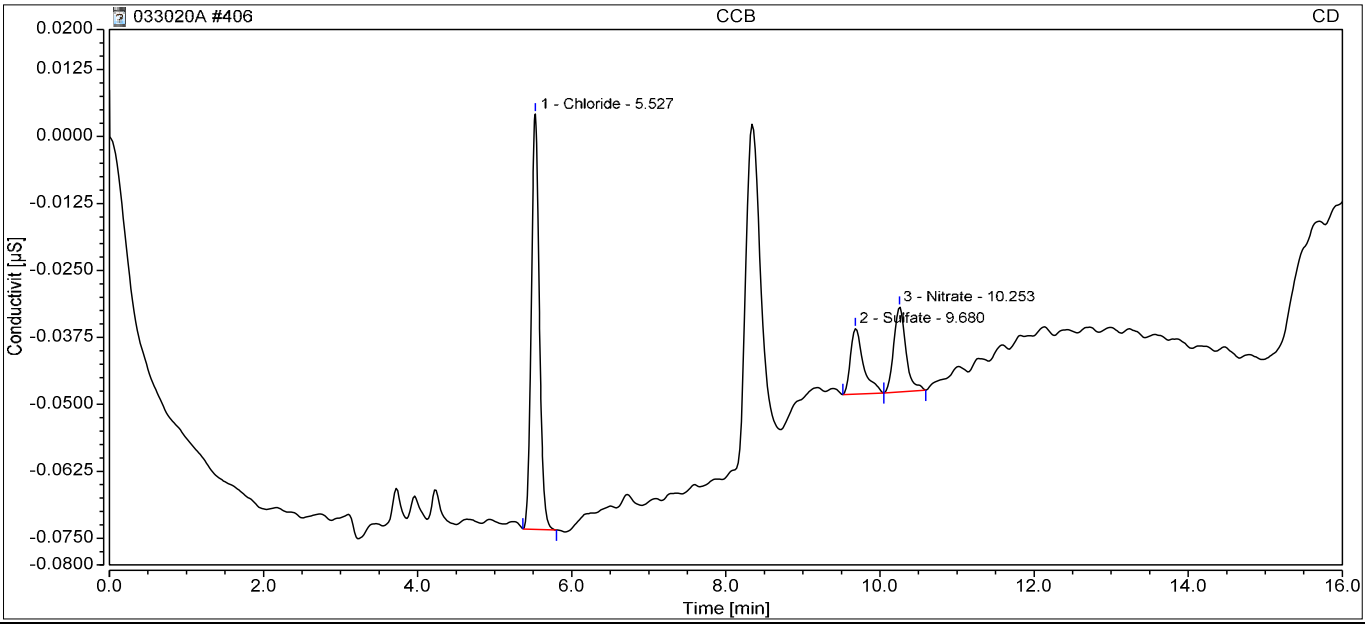
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.401	4.1273	4.1273	1.0000
2	5.52	Chloride	BMB	4.553	19.6872	19.6872	1.0000
3	6.72	Nitrite,N	BMB	2.032	4.3840	4.3840	1.0000
4	8.91	Bromide	BM	0.366	3.7292	3.7292	1.0000
5	9.63	Sulfate	M	3.227	19.3186	19.3186	1.0000
6	10.18	Nitrate	M	2.342	4.0207	4.0207	1.0000
7	10.84	Chlorate	MB	0.393	4.1236	4.1236	1.0000
8	14.92	Phosphate	BMB	0.644	3.0540	3.0540	1.0000
Total:			**0.000**	**14.958**		**62.44**	

406 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/30/2020 18:32**	*Sample Weight:*	**1.0000**

Run Time:



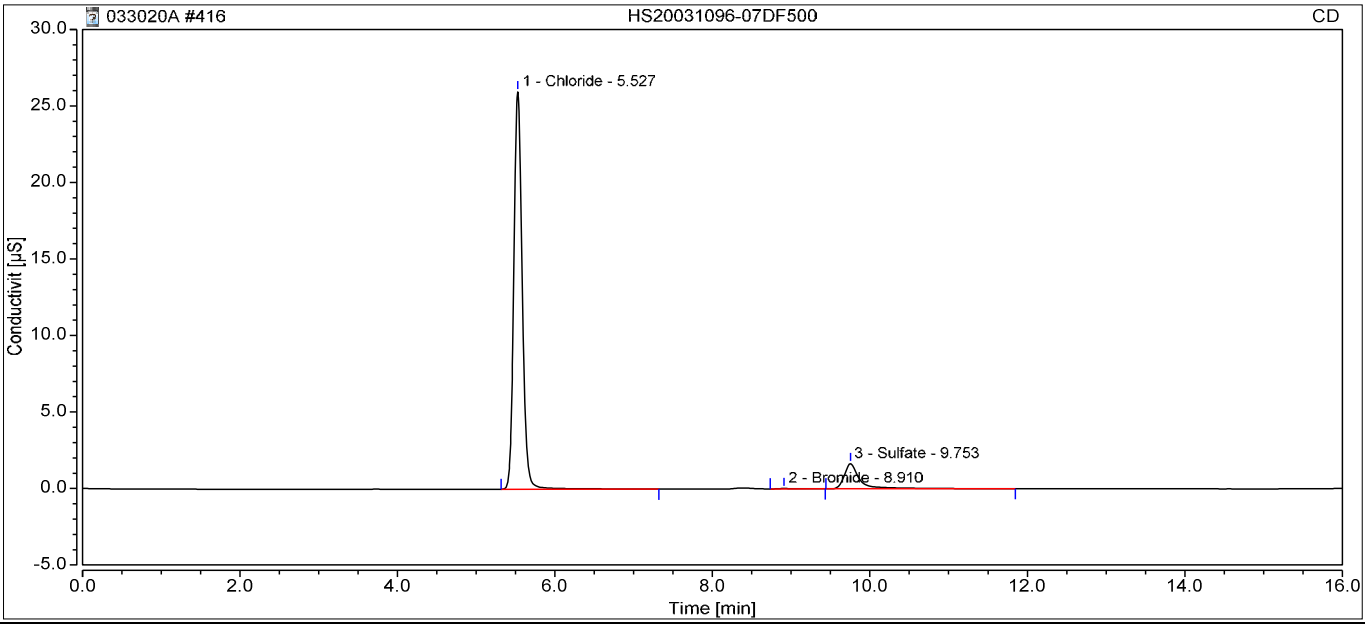
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.53	Chloride	BMB	0.009	0.1013	0.1013	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
2	9.68	Sulfate	BMB	0.002	0.1156	0.1156	1.0000
3	10.25	Nitrate	BMB	0.003	0.0179	0.0179	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.015**		**0.23**	

416 HS20031096-07DF500

Sample Name:	**HS20031096-07DF500**	*Injection Volume:*	**5.00**
Vial Number:	**BC8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**500.0000**
Recording Time:	**03/30/2020 21:33**	*Sample Weight:*	**1.0000**

Run Time:



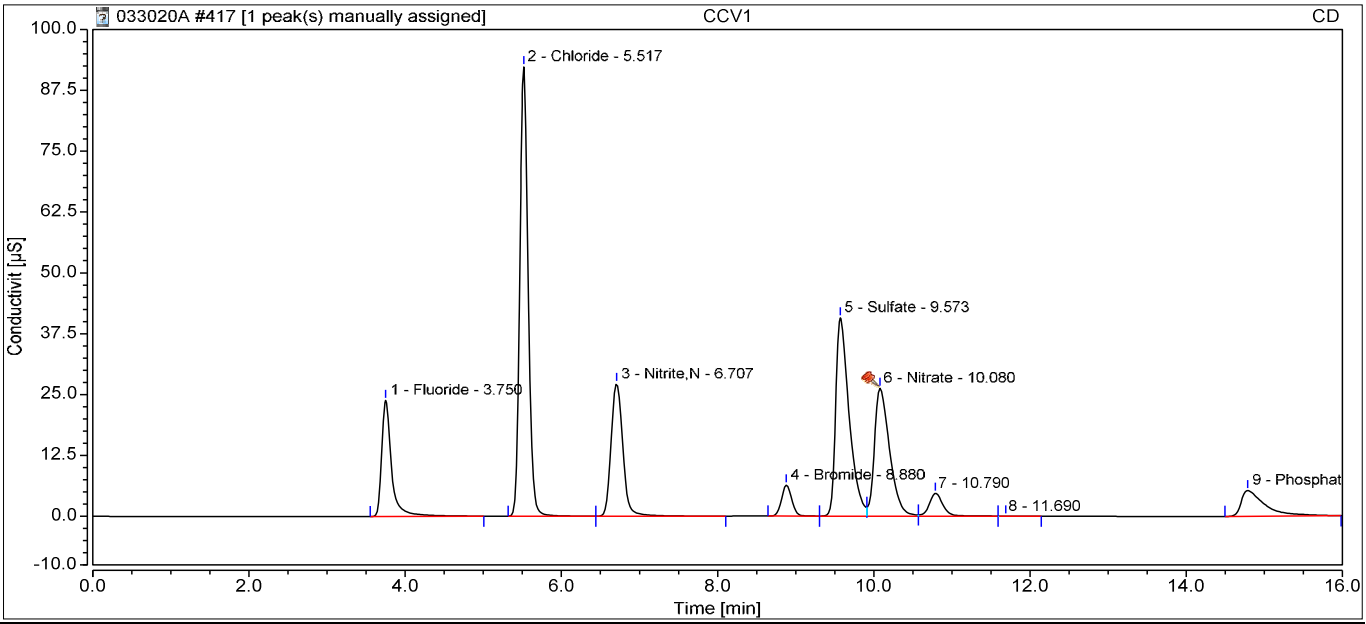
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	500.0000
1	5.53	Chloride	BMB	3.198	13.8473	6923.6419	500.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	500.0000
2	8.91	Bromide	BMB	0.005	0.0813	40.6470	500.0000
3	9.75	Sulfate	BMB	0.386	2.3996	1199.7907	500.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	500.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	500.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	500.0000
Total:			**0.000**	**3.589**		**8164.08**	

417 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/30/2020 21:51**	*Sample Weight:*	**1.0000**

Run Time:



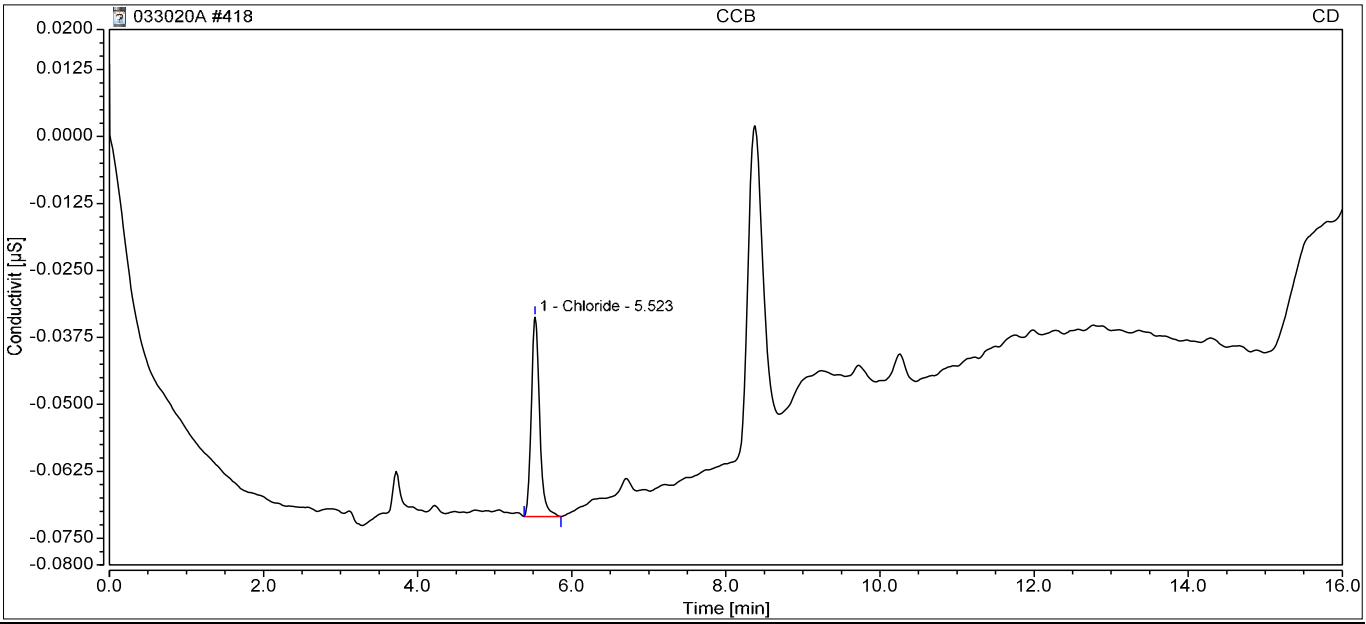
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	3.478	10.2112	10.2112	1.0000
2	5.52	Chloride	BMB	11.439	49.3749	49.3749	1.0000
3	6.71	Nitrite,N	BMB	4.794	10.2977	10.2977	1.0000
4	8.88	Bromide	BM	0.963	9.7471	9.7471	1.0000
5	9.57	Sulfate	M	8.123	48.4738	48.4738	1.0000
6	10.08	Nitrate	M ^	5.905	10.1192	10.1192	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
9	14.79	Phosphate	BMB	1.869	8.6559	8.6559	1.0000
Total:			**0.000**	**36.571**		**146.88**	

418 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/30/2020 22:09**	*Sample Weight:*	**1.0000**

Run Time:



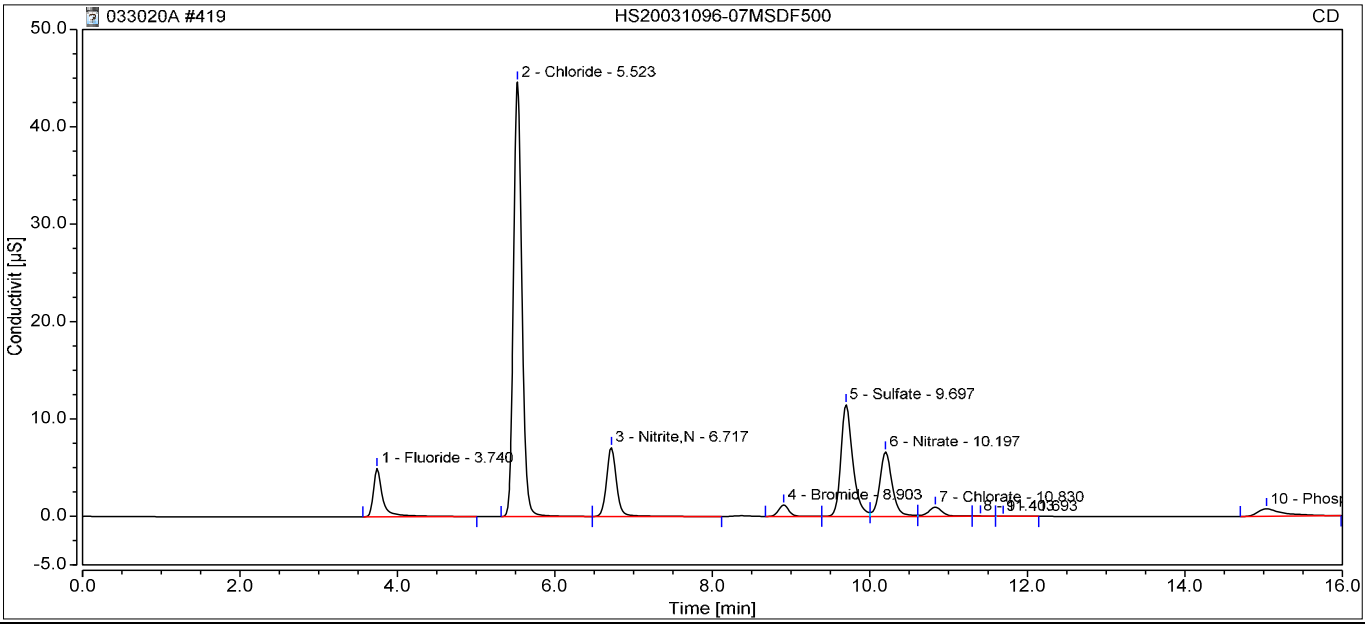
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.52	Chloride	BMB	0.005	0.0811	0.0811	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.005**		**0.08**	

419 HS20031096-07MSDF500

Sample Name:	**HS20031096-07MSDF500**	*Injection Volume:*	**5.00**
Vial Number:	**BD1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**500.0000**
Recording Time:	**03/30/2020 22:27**	*Sample Weight:*	**1.0000**

Run Time:



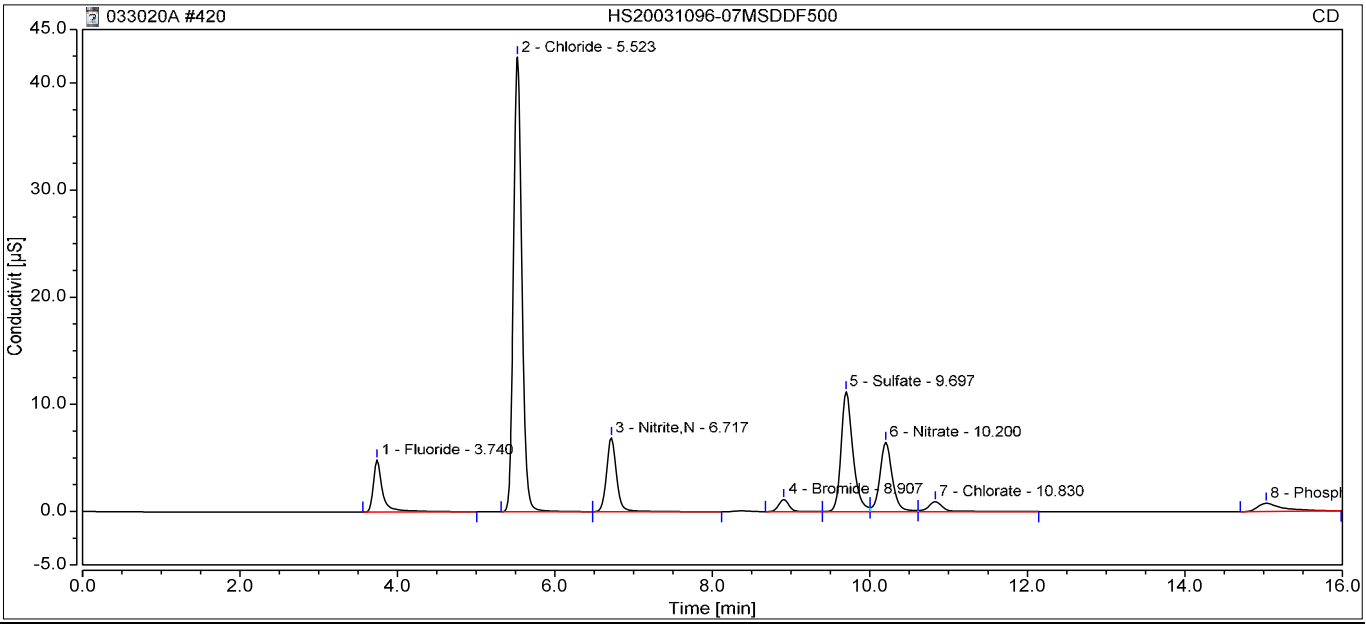
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.691	2.0483	1024.1645	500.0000
2	5.52	Chloride	BMB	5.476	23.6689	11834.4544	500.0000
3	6.72	Nitrite,N	BMB	1.056	2.2953	1147.6694	500.0000
4	8.90	Bromide	BM	0.182	1.8741	937.0613	500.0000
5	9.70	Sulfate	M	2.027	12.1703	6085.1424	500.0000
6	10.20	Nitrate	M	1.213	2.0892	1044.5899	500.0000
7	10.83	Chlorate	M	0.199	2.0765	1038.2540	500.0000
10	15.04	Phosphate	BMB	0.299	1.4738	736.9055	500.0000
Total:			**0.000**	**11.143**		**23848.24**	

420 HS20031096-07MSDDF500

Sample Name:	**HS20031096-07MSDDF500**	*Injection Volume:*	**5.00**
Vial Number:	**BD2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**500.0000**
Recording Time:	**03/30/2020 22:45**	*Sample Weight:*	**1.0000**

Run Time:



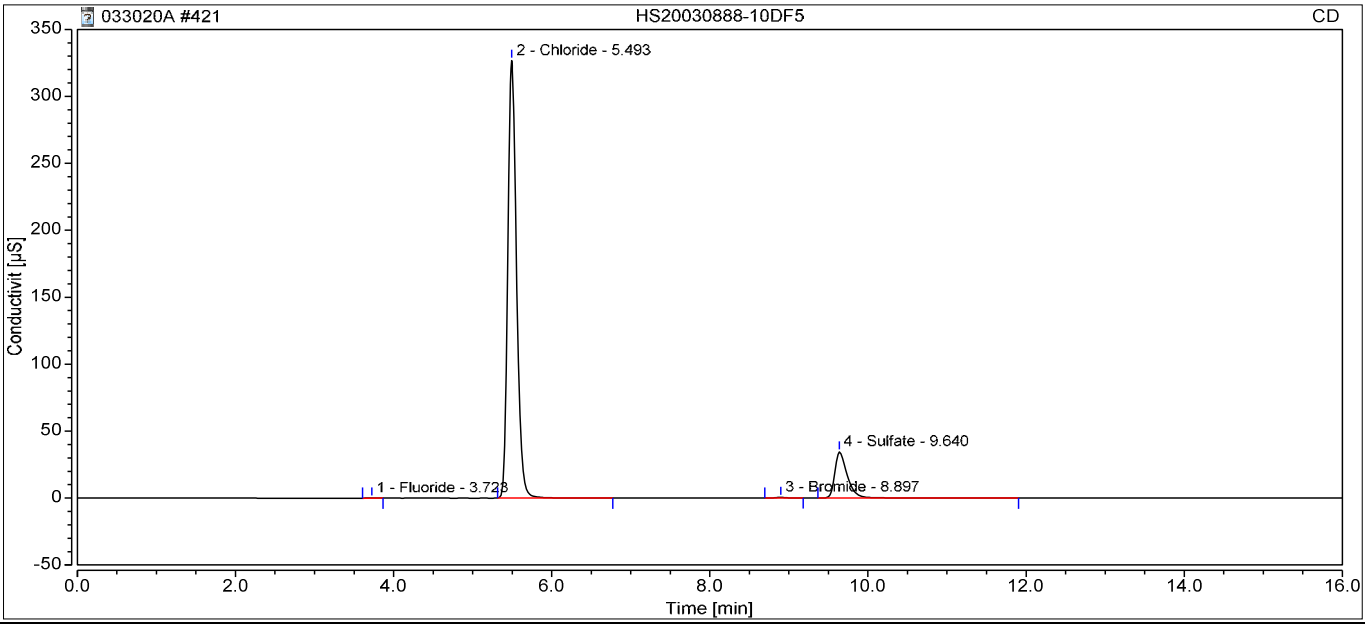
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.675	2.0020	1000.9876	500.0000
2	5.52	Chloride	BMB	5.212	22.5299	11264.9465	500.0000
3	6.72	Nitrite,N	BMB	1.029	2.2373	1118.6398	500.0000
4	8.91	Bromide	BM	0.177	1.8220	911.0010	500.0000
5	9.70	Sulfate	M	1.961	11.7814	5890.6850	500.0000
6	10.20	Nitrate	M	1.181	2.0345	1017.2707	500.0000
7	10.83	Chlorate	MB	0.207	2.1581	1079.0716	500.0000
8	15.03	Phosphate	BMB	0.296	1.4622	731.0799	500.0000
Total:			**0.000**	**10.739**		**23013.68**	

421 HS20030888-10DF5

Sample Name:	**HS20030888-10DF5**	*Injection Volume:*	**5.00**
Vial Number:	**BD3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**5.0000**
Recording Time:	**03/30/2020 23:03**	*Sample Weight:*	**1.0000**

Run Time:



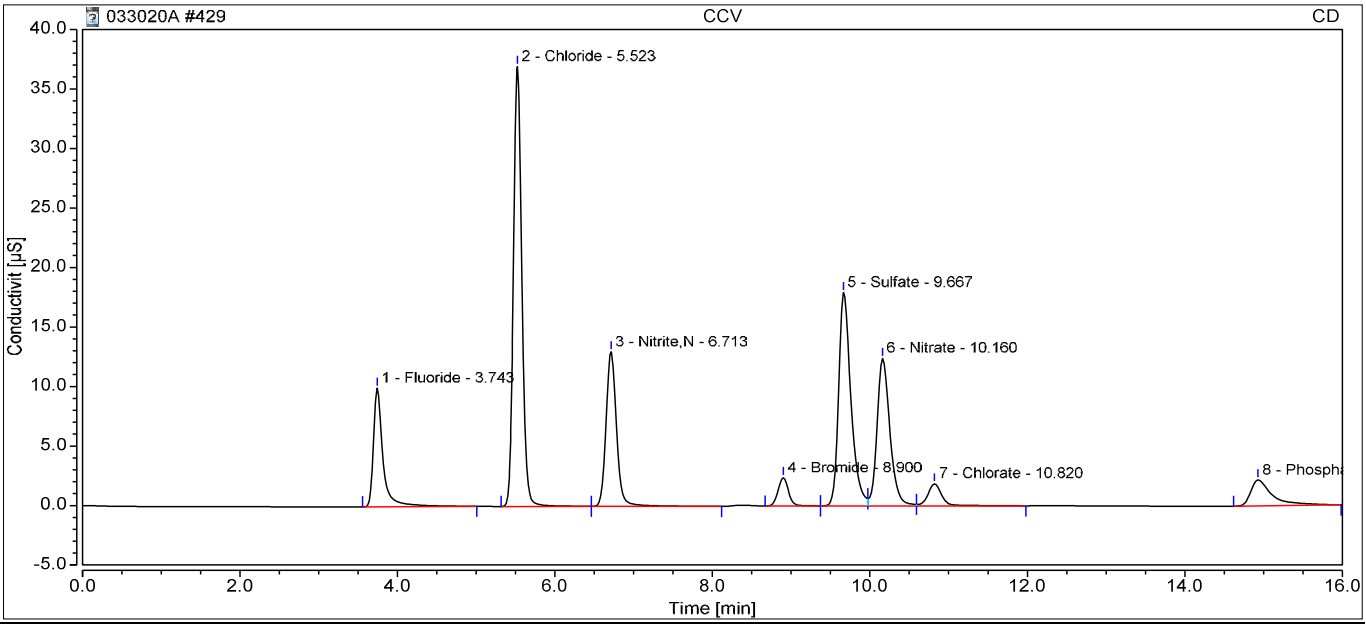
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.002	0.0313	0.1563	5.0000
2	5.49	Chloride	BMB	42.095	181.5299	907.6496	5.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	5.0000
3	8.90	Bromide	BMB	0.070	0.7419	3.7093	5.0000
4	9.64	Sulfate	BMB	6.364	38.0019	190.0095	5.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	5.0000
Total:			**0.000**	**48.532**		**1101.52**	

429 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/31/2020 01:28**	*Sample Weight:*	**1.0000**

Run Time:



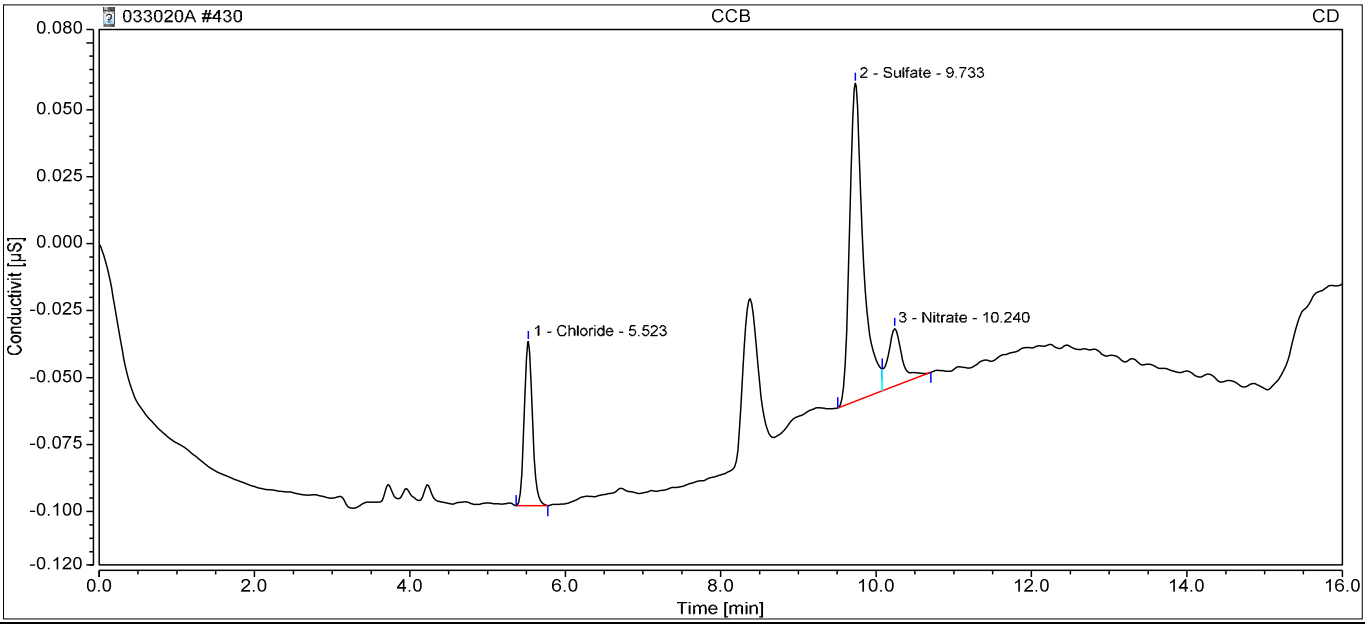
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.390	4.0956	4.0956	1.0000
2	5.52	Chloride	BMB	4.522	19.5559	19.5559	1.0000
3	6.71	Nitrite,N	BMB	2.023	4.3657	4.3657	1.0000
4	8.90	Bromide	BM	0.364	3.7026	3.7026	1.0000
5	9.67	Sulfate	M	3.236	19.3750	19.3750	1.0000
6	10.16	Nitrate	M	2.341	4.0188	4.0188	1.0000
7	10.82	Chlorate	MB	0.385	4.0412	4.0412	1.0000
8	14.93	Phosphate	BMB	0.698	3.2989	3.2989	1.0000
Total:			**0.000**	**14.959**		**62.45**	

430 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/31/2020 01:46**	*Sample Weight:*	**1.0000**

Run Time:



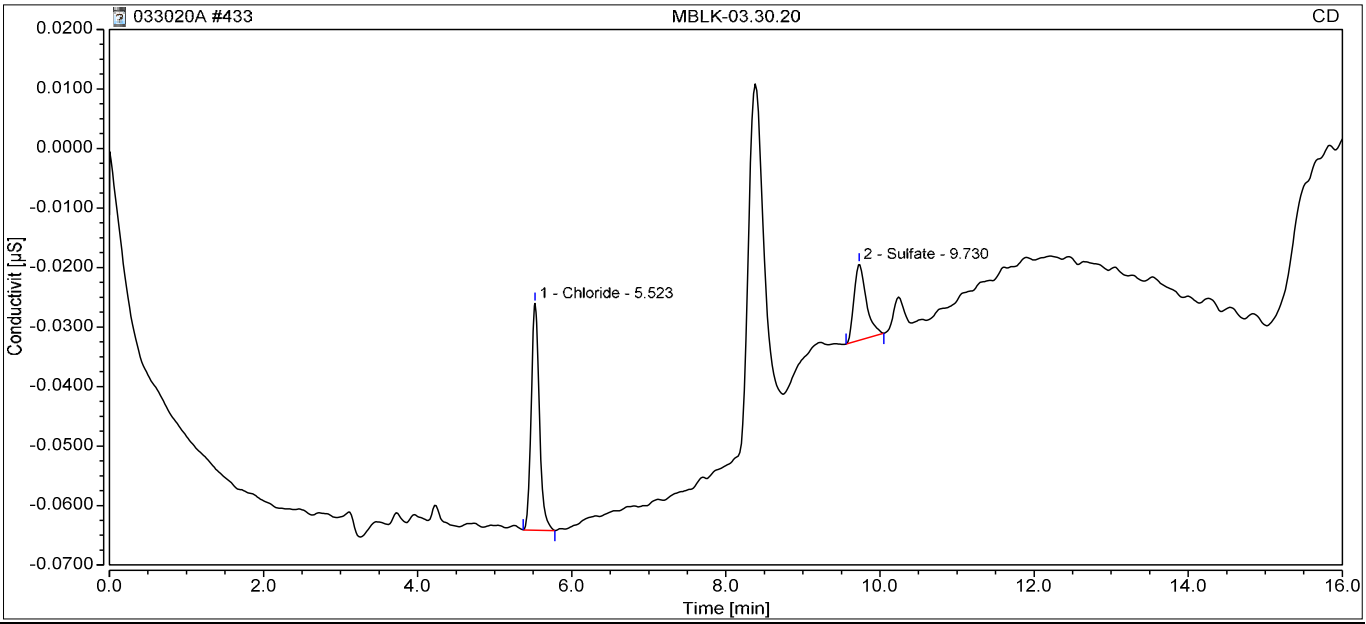
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.52	Chloride	BMB	0.007	0.0931	0.0931	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
2	9.73	Sulfate	BM	0.024	0.2447	0.2447	1.0000
3	10.24	Nitrate	MB	0.005	0.0209	0.0209	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.036**		**0.36**	

433 MBLK-03.30.20

Sample Name:	**MBLK-03.30.20**	*Injection Volume:*	**5.00**
Vial Number:	**GD1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/31/2020 02:41**	*Sample Weight:*	**1.0000**

Run Time:



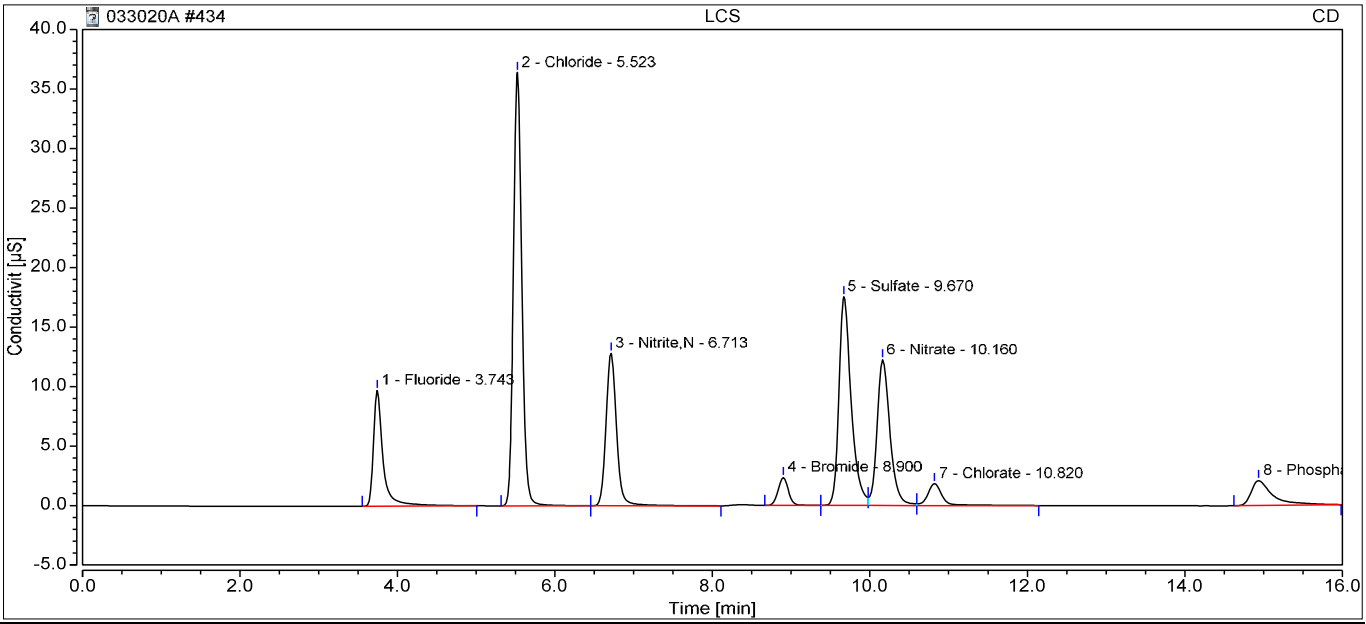
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.52	Chloride	BMB	0.005	0.0811	0.0811	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
2	9.73	Sulfate	BMB	0.002	0.1155	0.1155	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.007**		**0.20**	

434 LCS

Sample Name:	**LCS**	*Injection Volume:*	**5.00**
Vial Number:	**GD2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/31/2020 02:59**	*Sample Weight:*	**1.0000**

Run Time:



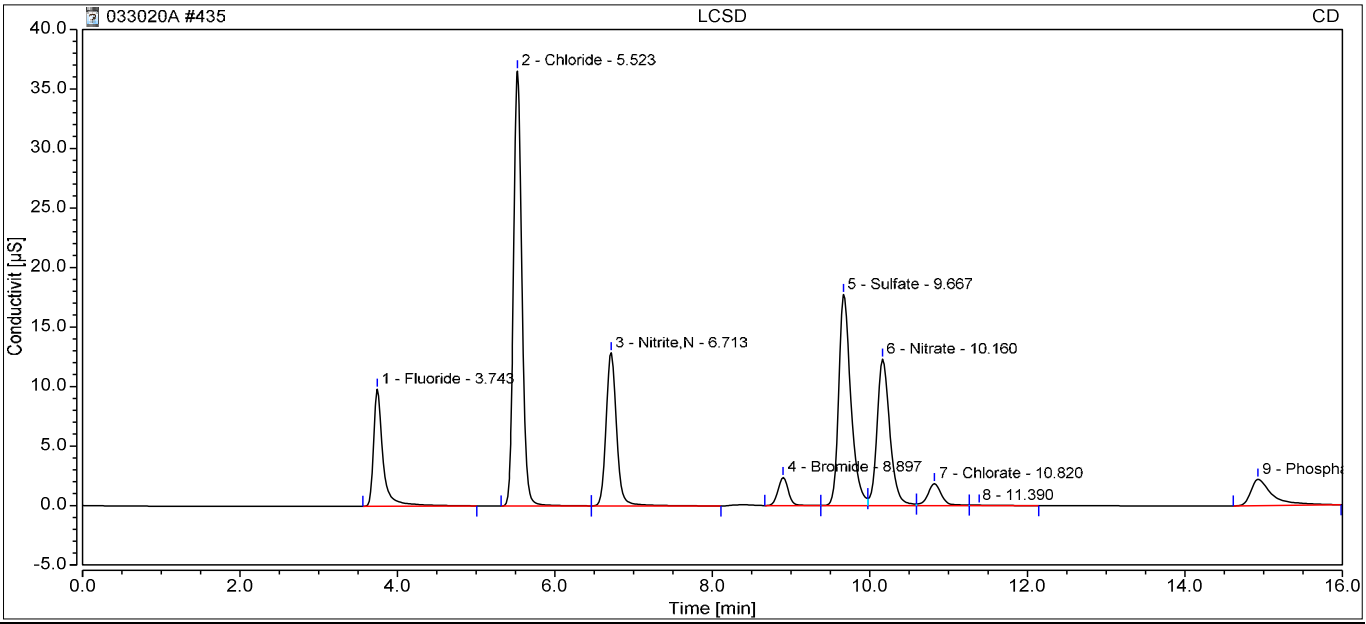
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.374	4.0471	4.0471	1.0000
2	5.52	Chloride	BMB	4.459	19.2845	19.2845	1.0000
3	6.71	Nitrite,N	BMB	2.007	4.3306	4.3306	1.0000
4	8.90	Bromide	BM	0.359	3.6572	3.6572	1.0000
5	9.67	Sulfate	M	3.171	18.9858	18.9858	1.0000
6	10.16	Nitrate	M	2.321	3.9857	3.9857	1.0000
7	10.82	Chlorate	MB	0.394	4.1340	4.1340	1.0000
8	14.94	Phosphate	BMB	0.667	3.1589	3.1589	1.0000
Total:			**0.000**	**14.753**		**61.58**	

435 LCSD

Sample Name:	**LCSD**	*Injection Volume:*	**5.00**
Vial Number:	**GD3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/31/2020 03:17**	*Sample Weight:*	**1.0000**

Run Time:



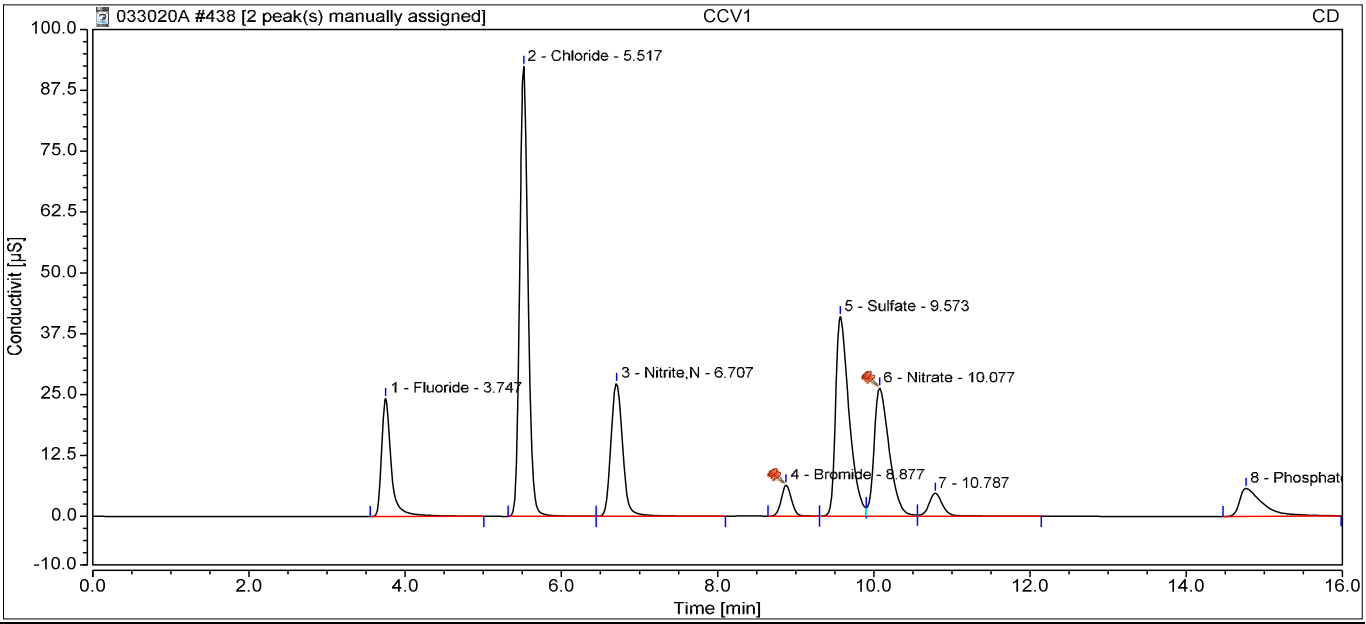
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.367	4.0291	4.0291	1.0000
2	5.52	Chloride	BMB	4.474	19.3469	19.3469	1.0000
3	6.71	Nitrite,N	BMB	2.009	4.3348	4.3348	1.0000
4	8.90	Bromide	BM	0.359	3.6522	3.6522	1.0000
5	9.67	Sulfate	M	3.176	19.0182	19.0182	1.0000
6	10.16	Nitrate	M	2.318	3.9804	3.9804	1.0000
7	10.82	Chlorate	M	0.374	3.9202	3.9202	1.0000
9	14.93	Phosphate	BMB	0.698	3.3000	3.3000	1.0000
Total:			**0.000**	**14.775**		**61.58**	

438 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/31/2020 04:11**	*Sample Weight:*	**1.0000**

Run Time:



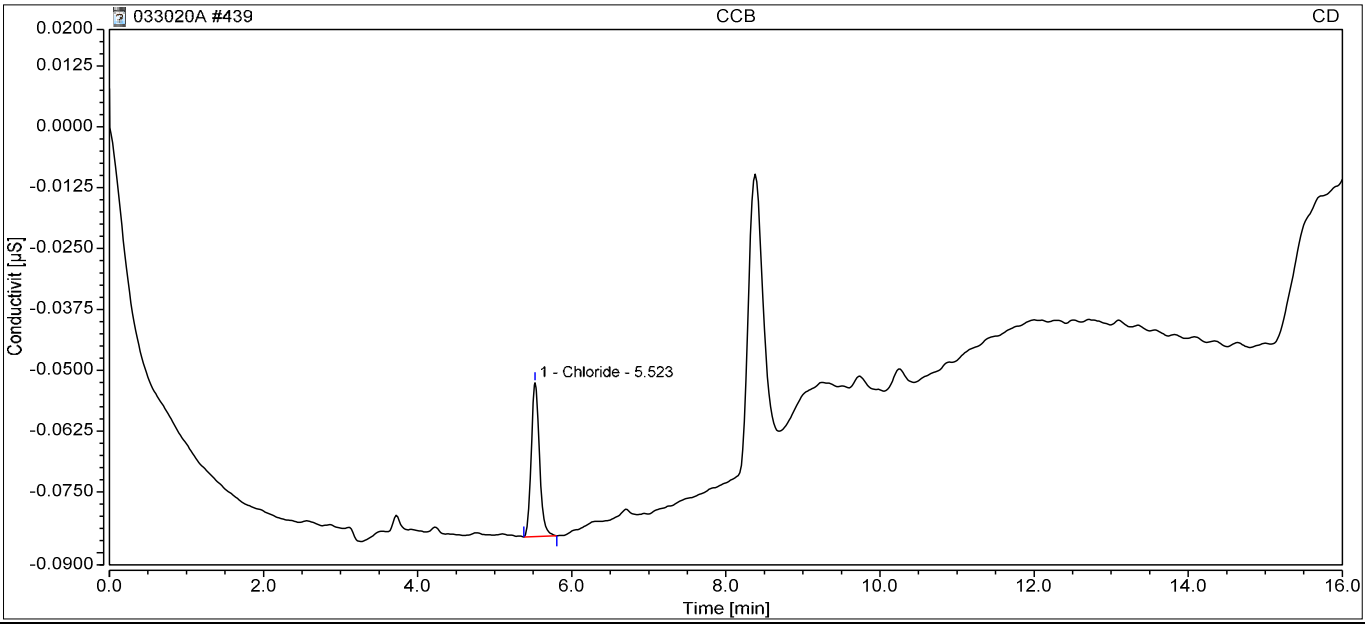
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.75	Fluoride	BMB	3.484	10.2274	10.2274	1.0000
2	5.52	Chloride	BMB	11.460	49.4638	49.4638	1.0000
3	6.71	Nitrite,N	BMB	4.799	10.3080	10.3080	1.0000
4	8.88	Bromide	BM ^	0.965	9.7695	9.7695	1.0000
5	9.57	Sulfate	M	8.200	48.9319	48.9319	1.0000
6	10.08	Nitrate	M ^	5.895	10.1018	10.1018	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
8	14.77	Phosphate	BMB	1.970	9.1201	9.1201	1.0000
Total:			**0.000**	**36.773**		**147.92**	

439 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 02052020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**03/31/2020 04:29**	*Sample Weight:*	**1.0000**

Run Time:



Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.52	Chloride	BMB	0.004	0.0778	0.0778	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.004**		**0.08**	

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April 03, 2020

Susan Huang
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS20031162**

Laboratory Results for: **Longhorn Army Ammunition Plant- 16**

Dear Susan,

ALS Environmental received 9 sample(s) on Mar 26, 2020 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: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
Work Order: HS20031162

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20031162-01	16WW55-200325	Groundwater		25-Mar-2020 08:25	26-Mar-2020 08:37	☐
HS20031162-02	16IW10-200325	Groundwater		25-Mar-2020 09:15	26-Mar-2020 08:37	☐
HS20031162-03	16IW09-200325	Groundwater		25-Mar-2020 10:25	26-Mar-2020 08:37	☐
HS20031162-04	16IW09-200325-FD	Groundwater		25-Mar-2020 10:25	26-Mar-2020 08:37	☐
HS20031162-05	16EW06-200325	Groundwater		25-Mar-2020 11:35	26-Mar-2020 08:37	☐
HS20031162-06	16EW03-200325	Groundwater		25-Mar-2020 13:00	26-Mar-2020 08:37	☐
HS20031162-07	16EW07-200325	Groundwater		25-Mar-2020 13:45	26-Mar-2020 08:37	☐
HS20031162-08	16IW03-200325	Groundwater		25-Mar-2020 14:35	26-Mar-2020 08:37	☐
HS20031162-09	Trip Blank	Water	CG 111519 -105	26-Mar-2020 00:00	26-Mar-2020 08:37	☐

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
Project: Longhorn Army Ammunition Plant- 16
Work Order: HS20031162

Work Order Comments

- The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.
- The analysis for Perchlorate was subcontracted to ALS Salt Lake City, UT. Final report attached.

GC Semivolatiles by Method RSK-175

Batch ID: R359276

Sample ID: HS20031163-02MS

- MS and MSD are for an unrelated sample

GCMS Volatiles by Method SW8260

Batch ID: R359115

Sample ID: 16EW06-200325 (HS20031162-05)

- Lowest practical dilution for sample Hs20031162-05 due to matrix.

Sample ID: 16EW07-200325 (HS20031162-07)

- Lowest practical dilution for sample HS20031162-07 due to matrix.

Sample ID: 16IW09-200325 (HS20031162-03)

- Lowest practical dilution for sample HS20031162-03 due to matrix.

Sample ID: 16IW09-200325-FD (HS20031162-04)

- Lowest practical dilution for sample HS20031162-04 due to matrix.

Sample ID: 16IW10-200325 (HS20031162-02)

- Lowest practical dilution for sample HS20031162-02 due to matrix.

Sample ID: 16EW03-200325 (HS20031162-06MSD)

- The recovery of the Matrix Spike Duplicate (MSD) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MSD may be due to sample matrix interference. cis-1,2-Dichloroethene

WetChemistry by Method SW9056

Batch ID: R359085

Sample ID: 16IW03-200325 (HS20031162-08MS)

- 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. (Sulfate)

Sample ID: HS20031135-01MSD

- MSD is for an unrelated sample (Sulfate)

WetChemistry by Method SM2320B

Batch ID: R359058

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
Work Order: HS20031162

CASE NARRATIVE

WetChemistry by Method SM2320B

Batch ID: R359058

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
Sample ID: 16WW55-200325
Collection Date: 25-Mar-2020 08:25

ANALYTICAL REPORT
WorkOrder:HS20031162
Lab ID:HS20031162-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	2.5	U	1.5	2.5	5.0	UG/L	5	27-Mar-2020 16:04
1,1-Dichloroethene	**10**		**1.0**	**2.5**	**5.0**	**UG/L**	5	27-Mar-2020 16:04
1,2-Dichloroethane	**5.8**		**1.0**	**2.5**	**5.0**	**UG/L**	5	27-Mar-2020 16:04
cis-1,2-Dichloroethene	**380**		**1.0**	**2.5**	**5.0**	**UG/L**	5	27-Mar-2020 16:04
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	27-Mar-2020 16:04
Trichloroethene	**4,300**		**10**	**25**	**50**	**UG/L**	50	27-Mar-2020 16:28
Vinyl chloride	**25**		**1.0**	**2.5**	**5.0**	**UG/L**	5	27-Mar-2020 16:04
Surr: 1,2-Dichloroethane-d4	*89.8*			**0**	*81-118*	*%REC*	*5*	*27-Mar-2020 16:04*
Surr: 1,2-Dichloroethane-d4	*90.7*			**0**	*81-118*	*%REC*	*50*	*27-Mar-2020 16:28*
Surr: 4-Bromofluorobenzene	*95.2*			**0**	*85-114*	*%REC*	*5*	*27-Mar-2020 16:04*
Surr: 4-Bromofluorobenzene	*97.6*			**0**	*85-114*	*%REC*	*50*	*27-Mar-2020 16:28*
Surr: Dibromofluoromethane	*95.2*			**0**	*80-119*	*%REC*	*5*	*27-Mar-2020 16:04*
Surr: Dibromofluoromethane	*94.7*			**0**	*80-119*	*%REC*	*50*	*27-Mar-2020 16:28*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*5*	*27-Mar-2020 16:04*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*50*	*27-Mar-2020 16:28*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	**0.000607**	J	**0.000144**	**0.000500**	**0.00100**	**mg/L**	1	31-Mar-2020 10:28
Ethene	**0.00206**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	31-Mar-2020 10:28
Methane	**0.0701**		**0.000535**	**0.00250**	**0.00250**	**mg/L**	5	31-Mar-2020 10:38
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**381**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	27-Mar-2020 04:05
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**3.78**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	26-Mar-2020 22:42
Nitrogen, Nitrate (As N)	**1.21**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	26-Mar-2020 22:42
Sulfate	**770**		**10.0**	**25.0**	**25.0**	**mg/L**	50	27-Mar-2020 01:07
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	02-Apr-2020 12:39
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	03-Apr-2020 15:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
Sample ID: 16IW10-200325
Collection Date: 25-Mar-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20031162
Lab ID:HS20031162-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	5.0	U	3.0	5.0	10	UG/L	10	27-Mar-2020 14:03
1,1-Dichloroethene	5.0	U	2.0	5.0	10	UG/L	10	27-Mar-2020 14:03
1,2-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	27-Mar-2020 14:03
cis-1,2-Dichloroethene	**110**		**2.0**	**5.0**	**10**	**UG/L**	10	27-Mar-2020 14:03
Methylene chloride	10	U	4.0	10	20	UG/L	10	27-Mar-2020 14:03
Trichloroethene	**200**		**2.0**	**5.0**	**10**	**UG/L**	10	27-Mar-2020 14:03
Vinyl chloride	5.0	U	2.0	5.0	10	UG/L	10	27-Mar-2020 14:03
Surr: 1,2-Dichloroethane-d4	*88.8*			**0**	*81-118*	*%REC*	*10*	*27-Mar-2020 14:03*
Surr: 4-Bromofluorobenzene	*97.8*			**0**	*85-114*	*%REC*	*10*	*27-Mar-2020 14:03*
Surr: Dibromofluoromethane	*94.5*			**0**	*80-119*	*%REC*	*10*	*27-Mar-2020 14:03*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*10*	*27-Mar-2020 14:03*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	**0.00646**		**0.000144**	**0.000500**	**0.00100**	**mg/L**	1	31-Mar-2020 10:47
Ethene	**0.0483**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	31-Mar-2020 10:47
Methane	**1.45**		**0.0107**	**0.0500**	**0.0500**	**mg/L**	100	31-Mar-2020 10:58
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**2,390**	a	**25.0**	**25.0**	**25.0**	**mg/L**	5	27-Mar-2020 04:33
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**143**		**0.600**	**2.00**	**2.00**	**mg/L**	20	27-Mar-2020 01:25
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	26-Mar-2020 23:00
Sulfate	**3.19**		**0.200**	**0.500**	**0.500**	**mg/L**	1	26-Mar-2020 23:00
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	02-Apr-2020 12:39
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	03-Apr-2020 15:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
Sample ID: 16IW09-200325
Collection Date: 25-Mar-2020 10:25

ANALYTICAL REPORT
WorkOrder:HS20031162
Lab ID:HS20031162-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	5.0	U	3.0	5.0	10	UG/L	10	27-Mar-2020 14:28
1,1-Dichloroethene	5.0	U	2.0	5.0	10	UG/L	10	27-Mar-2020 14:28
1,2-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	27-Mar-2020 14:28
cis-1,2-Dichloroethene	5.0	U	2.0	5.0	10	UG/L	10	27-Mar-2020 14:28
Methylene chloride	10	U	4.0	10	20	UG/L	10	27-Mar-2020 14:28
Trichloroethene	5.0	U	2.0	5.0	10	UG/L	10	27-Mar-2020 14:28
Vinyl chloride	5.0	U	2.0	5.0	10	UG/L	10	27-Mar-2020 14:28
Surr: 1,2-Dichloroethane-d4	*89.2*			**0**	*81-118*	*%REC*	*10*	*27-Mar-2020 14:28*
Surr: 4-Bromofluorobenzene	*95.5*			**0**	*85-114*	*%REC*	*10*	*27-Mar-2020 14:28*
Surr: Dibromofluoromethane	*94.7*			**0**	*80-119*	*%REC*	*10*	*27-Mar-2020 14:28*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*10*	*27-Mar-2020 14:28*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	**0.0114**		**0.000144**	**0.000500**	**0.00100**	**mg/L**	1	31-Mar-2020 11:30
Ethene	**0.0102**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	31-Mar-2020 11:30
Methane	**1.34**		**0.0107**	**0.0500**	**0.0500**	**mg/L**	100	31-Mar-2020 11:38
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**432**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	27-Mar-2020 04:39
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**11.6**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	26-Mar-2020 23:55
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	26-Mar-2020 23:55
Sulfate	**1.43**		**0.200**	**0.500**	**0.500**	**mg/L**	1	26-Mar-2020 23:55
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	02-Apr-2020 12:39
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	03-Apr-2020 15:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
Sample ID: 16IW09-200325-FD
Collection Date: 25-Mar-2020 10:25

ANALYTICAL REPORT
WorkOrder:HS20031162
Lab ID:HS20031162-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	5.0	U	3.0	5.0	10	UG/L	10	27-Mar-2020 14:52
1,1-Dichloroethene	5.0	U	2.0	5.0	10	UG/L	10	27-Mar-2020 14:52
1,2-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	27-Mar-2020 14:52
cis-1,2-Dichloroethene	5.0	U	2.0	5.0	10	UG/L	10	27-Mar-2020 14:52
Methylene chloride	10	U	4.0	10	20	UG/L	10	27-Mar-2020 14:52
Trichloroethene	5.0	U	2.0	5.0	10	UG/L	10	27-Mar-2020 14:52
Vinyl chloride	5.0	U	2.0	5.0	10	UG/L	10	27-Mar-2020 14:52
Surr: 1,2-Dichloroethane-d4	*90.3*			**0**	*81-118*	*%REC*	*10*	*27-Mar-2020 14:52*
Surr: 4-Bromofluorobenzene	*95.4*			**0**	*85-114*	*%REC*	*10*	*27-Mar-2020 14:52*
Surr: Dibromofluoromethane	*95.6*			**0**	*80-119*	*%REC*	*10*	*27-Mar-2020 14:52*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*10*	*27-Mar-2020 14:52*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	**0.0119**		**0.000144**	**0.000500**	**0.00100**	**mg/L**	1	31-Mar-2020 11:48
Ethene	**0.00793**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	31-Mar-2020 11:48
Methane	**1.11**		**0.0107**	**0.0500**	**0.0500**	**mg/L**	100	31-Mar-2020 12:05
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**440**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	27-Mar-2020 05:18
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**11.3**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	27-Mar-2020 00:13
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	27-Mar-2020 00:13
Sulfate	**1.48**		**0.200**	**0.500**	**0.500**	**mg/L**	1	27-Mar-2020 00:13
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	02-Apr-2020 12:39
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	03-Apr-2020 15:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
Sample ID: 16EW06-200325
Collection Date: 25-Mar-2020 11:35

ANALYTICAL REPORT
WorkOrder:HS20031162
Lab ID:HS20031162-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	50	U	30	50	100	UG/L	100	27-Mar-2020 15:16
1,1-Dichloroethene	50	U	20	50	100	UG/L	100	27-Mar-2020 15:16
1,2-Dichloroethane	50	U	20	50	100	UG/L	100	27-Mar-2020 15:16
cis-1,2-Dichloroethene	**160**		**20**	**50**	**100**	**UG/L**	100	27-Mar-2020 15:16
Methylene chloride	100	U	40	100	200	UG/L	100	27-Mar-2020 15:16
Trichloroethene	50	U	20	50	100	UG/L	100	27-Mar-2020 15:16
Vinyl chloride	50	U	20	50	100	UG/L	100	27-Mar-2020 15:16
Surr: 1,2-Dichloroethane-d4	*90.0*			**0**	*81-118*	*%REC*	*100*	*27-Mar-2020 15:16*
Surr: 4-Bromofluorobenzene	*94.5*			**0**	*85-114*	*%REC*	*100*	*27-Mar-2020 15:16*
Surr: Dibromofluoromethane	*95.1*			**0**	*80-119*	*%REC*	*100*	*27-Mar-2020 15:16*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*100*	*27-Mar-2020 15:16*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	02-Apr-2020 12:39

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
Sample ID: 16EW03-200325
Collection Date: 25-Mar-2020 13:00

ANALYTICAL REPORT
WorkOrder:HS20031162
Lab ID:HS20031162-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	2.5	U	1.5	2.5	5.0	UG/L	5	27-Mar-2020 13:39
1,1-Dichloroethene	2.5	U	1.0	2.5	5.0	UG/L	5	27-Mar-2020 13:39
1,2-Dichloroethane	**4.5**	J	**1.0**	**2.5**	**5.0**	**UG/L**	5	27-Mar-2020 13:39
cis-1,2-Dichloroethene	**1,700**		**5.0**	**12**	**25**	**UG/L**	25	27-Mar-2020 17:40
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	27-Mar-2020 13:39
Trichloroethene	**170**		**1.0**	**2.5**	**5.0**	**UG/L**	5	27-Mar-2020 13:39
Vinyl chloride	**750**		**1.0**	**2.5**	**5.0**	**UG/L**	5	27-Mar-2020 13:39
Surr: 1,2-Dichloroethane-d4	*88.9*			**0**	*81-118*	*%REC*	*5*	*27-Mar-2020 13:39*
Surr: 1,2-Dichloroethane-d4	*88.1*			**0**	*81-118*	*%REC*	*25*	*27-Mar-2020 17:40*
Surr: 4-Bromofluorobenzene	*92.8*			**0**	*85-114*	*%REC*	*25*	*27-Mar-2020 17:40*
Surr: 4-Bromofluorobenzene	*96.4*			**0**	*85-114*	*%REC*	*5*	*27-Mar-2020 13:39*
Surr: Dibromofluoromethane	*93.4*			**0**	*80-119*	*%REC*	*5*	*27-Mar-2020 13:39*
Surr: Dibromofluoromethane	*93.6*			**0**	*80-119*	*%REC*	*25*	*27-Mar-2020 17:40*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*5*	*27-Mar-2020 13:39*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*25*	*27-Mar-2020 17:40*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	02-Apr-2020 12:39

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
Sample ID: 16EW07-200325
Collection Date: 25-Mar-2020 13:45

ANALYTICAL REPORT
WorkOrder:HS20031162
Lab ID:HS20031162-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	50	U	30	50	100	UG/L	100	27-Mar-2020 15:40
1,1-Dichloroethene	50	U	20	50	100	UG/L	100	27-Mar-2020 15:40
1,2-Dichloroethane	50	U	20	50	100	UG/L	100	27-Mar-2020 15:40
cis-1,2-Dichloroethene	50	U	20	50	100	UG/L	100	27-Mar-2020 15:40
Methylene chloride	100	U	40	100	200	UG/L	100	27-Mar-2020 15:40
Trichloroethene	**100**		**20**	**50**	**100**	**UG/L**	100	27-Mar-2020 15:40
Vinyl chloride	50	U	20	50	100	UG/L	100	27-Mar-2020 15:40
Surr: 1,2-Dichloroethane-d4	*91.2*			**0**	*81-118*	*%REC*	*100*	*27-Mar-2020 15:40*
Surr: 4-Bromofluorobenzene	*93.9*			**0**	*85-114*	*%REC*	*100*	*27-Mar-2020 15:40*
Surr: Dibromofluoromethane	*94.7*			**0**	*80-119*	*%REC*	*100*	*27-Mar-2020 15:40*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*100*	*27-Mar-2020 15:40*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	02-Apr-2020 12:39

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
Sample ID: 16IW03-200325
Collection Date: 25-Mar-2020 14:35

ANALYTICAL REPORT
WorkOrder:HS20031162
Lab ID:HS20031162-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	5.0	U	3.0	5.0	10	UG/L	10	27-Mar-2020 16:52
1,1-Dichloroethene	**37**		**2.0**	**5.0**	**10**	**UG/L**	10	27-Mar-2020 16:52
1,2-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	27-Mar-2020 16:52
cis-1,2-Dichloroethene	**14,000**		**20**	**50**	**100**	**UG/L**	100	27-Mar-2020 17:16
Methylene chloride	10	U	4.0	10	20	UG/L	10	27-Mar-2020 16:52
Trichloroethene	**8,000**		**20**	**50**	**100**	**UG/L**	100	27-Mar-2020 17:16
Vinyl chloride	**160**		**2.0**	**5.0**	**10**	**UG/L**	10	27-Mar-2020 16:52
Surr: 1,2-Dichloroethane-d4	*90.8*			**0**	*81-118*	*%REC*	*10*	*27-Mar-2020 16:52*
Surr: 1,2-Dichloroethane-d4	*90.0*			**0**	*81-118*	*%REC*	*100*	*27-Mar-2020 17:16*
Surr: 4-Bromofluorobenzene	*97.2*			**0**	*85-114*	*%REC*	*10*	*27-Mar-2020 16:52*
Surr: 4-Bromofluorobenzene	*96.4*			**0**	*85-114*	*%REC*	*100*	*27-Mar-2020 17:16*
Surr: Dibromofluoromethane	*95.0*			**0**	*80-119*	*%REC*	*10*	*27-Mar-2020 16:52*
Surr: Dibromofluoromethane	*94.7*			**0**	*80-119*	*%REC*	*100*	*27-Mar-2020 17:16*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*10*	*27-Mar-2020 16:52*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*100*	*27-Mar-2020 17:16*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	**0.00138**		**0.000144**	**0.000500**	**0.00100**	**mg/L**	1	31-Mar-2020 12:15
Ethene	**0.00460**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	31-Mar-2020 12:15
Methane	**0.0124**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	31-Mar-2020 12:15
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**502**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	27-Mar-2020 04:51
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KVL
Bromide	**0.582**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	27-Mar-2020 00:31
Nitrogen, Nitrate (As N)	**0.325**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	27-Mar-2020 00:31
Sulfate	**6.92**		**0.200**	**0.500**	**0.500**	**mg/L**	1	27-Mar-2020 00:31
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	02-Apr-2020 12:39
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	03-Apr-2020 15:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
Sample ID: Trip Blank
Collection Date: 26-Mar-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20031162
Lab ID:HS20031162-09
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	27-Mar-2020 13:15
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	27-Mar-2020 13:15
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	27-Mar-2020 13:15
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	27-Mar-2020 13:15
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	27-Mar-2020 13:15
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	27-Mar-2020 13:15
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	27-Mar-2020 13:15
Surr: 1,2-Dichloroethane-d4	*88.3*			**0**	*81-118*	*%REC*	*1*	*27-Mar-2020 13:15*
Surr: 4-Bromofluorobenzene	*96.7*			**0**	*85-114*	*%REC*	*1*	*27-Mar-2020 13:15*
Surr: Dibromofluoromethane	*92.5*			**0**	*80-119*	*%REC*	*1*	*27-Mar-2020 13:15*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*1*	*27-Mar-2020 13:15*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
WorkOrder: HS20031162

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R359058 (0)	**Test Name :** ALKALINITY BY SM2320B				**Matrix:** Groundwater	
HS20031162-01	16WW55-200325	25 Mar 2020 08:25			27 Mar 2020 04:05	1
HS20031162-02	16IW10-200325	25 Mar 2020 09:15			27 Mar 2020 04:33	5
HS20031162-03	16IW09-200325	25 Mar 2020 10:25			27 Mar 2020 04:39	1
HS20031162-04	16IW09-200325-FD	25 Mar 2020 10:25			27 Mar 2020 05:18	1
HS20031162-08	16IW03-200325	25 Mar 2020 14:35			27 Mar 2020 04:51	1
Batch ID: R359085 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20031162-01	16WW55-200325	25 Mar 2020 08:25			27 Mar 2020 01:07	50
HS20031162-01	16WW55-200325	25 Mar 2020 08:25			26 Mar 2020 22:42	1
HS20031162-02	16IW10-200325	25 Mar 2020 09:15			27 Mar 2020 01:25	20
HS20031162-02	16IW10-200325	25 Mar 2020 09:15			26 Mar 2020 23:00	1
HS20031162-03	16IW09-200325	25 Mar 2020 10:25			26 Mar 2020 23:55	1
HS20031162-04	16IW09-200325-FD	25 Mar 2020 10:25			27 Mar 2020 00:13	1
HS20031162-08	16IW03-200325	25 Mar 2020 14:35			27 Mar 2020 00:31	1
Batch ID: R359115 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20031162-09	Trip Blank	26 Mar 2020 00:00			27 Mar 2020 13:15	1
Batch ID: R359115 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20031162-01	16WW55-200325	25 Mar 2020 08:25			27 Mar 2020 16:28	50
HS20031162-01	16WW55-200325	25 Mar 2020 08:25			27 Mar 2020 16:04	5
HS20031162-02	16IW10-200325	25 Mar 2020 09:15			27 Mar 2020 14:03	10
HS20031162-03	16IW09-200325	25 Mar 2020 10:25			27 Mar 2020 14:28	10
HS20031162-04	16IW09-200325-FD	25 Mar 2020 10:25			27 Mar 2020 14:52	10
HS20031162-05	16EW06-200325	25 Mar 2020 11:35			27 Mar 2020 15:16	100
HS20031162-06	16EW03-200325	25 Mar 2020 13:00			27 Mar 2020 17:40	25
HS20031162-06	16EW03-200325	25 Mar 2020 13:00			27 Mar 2020 13:39	5
HS20031162-07	16EW07-200325	25 Mar 2020 13:45			27 Mar 2020 15:40	100
HS20031162-08	16IW03-200325	25 Mar 2020 14:35			27 Mar 2020 17:16	100
HS20031162-08	16IW03-200325	25 Mar 2020 14:35			27 Mar 2020 16:52	10
Batch ID: R359276 (0)	**Test Name :** DISSOLVED GASES BY RSK-175				**Matrix:** Groundwater	
HS20031162-01	16WW55-200325	25 Mar 2020 08:25			31 Mar 2020 10:38	5
HS20031162-01	16WW55-200325	25 Mar 2020 08:25			31 Mar 2020 10:28	1
HS20031162-02	16IW10-200325	25 Mar 2020 09:15			31 Mar 2020 10:58	100
HS20031162-02	16IW10-200325	25 Mar 2020 09:15			31 Mar 2020 10:47	1
HS20031162-03	16IW09-200325	25 Mar 2020 10:25			31 Mar 2020 11:38	100
HS20031162-03	16IW09-200325	25 Mar 2020 10:25			31 Mar 2020 11:30	1
HS20031162-04	16IW09-200325-FD	25 Mar 2020 10:25			31 Mar 2020 12:05	100
HS20031162-04	16IW09-200325-FD	25 Mar 2020 10:25			31 Mar 2020 11:48	1
HS20031162-08	16IW03-200325	25 Mar 2020 14:35			31 Mar 2020 12:15	1

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
WorkOrder: HS20031162

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R359385 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20031162-01	16WW55-200325	25 Mar 2020 08:25			02 Apr 2020 12:39	1
HS20031162-02	16IW10-200325	25 Mar 2020 09:15			02 Apr 2020 12:39	1
HS20031162-03	16IW09-200325	25 Mar 2020 10:25			02 Apr 2020 12:39	1
HS20031162-04	16IW09-200325-FD	25 Mar 2020 10:25			02 Apr 2020 12:39	1
HS20031162-05	16EW06-200325	25 Mar 2020 11:35			02 Apr 2020 12:39	1
HS20031162-06	16EW03-200325	25 Mar 2020 13:00			02 Apr 2020 12:39	1
HS20031162-07	16EW07-200325	25 Mar 2020 13:45			02 Apr 2020 12:39	1
HS20031162-08	16IW03-200325	25 Mar 2020 14:35			02 Apr 2020 12:39	1
Batch ID: R359470 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Groundwater	
HS20031162-01	16WW55-200325	25 Mar 2020 08:25			03 Apr 2020 15:23	1
HS20031162-02	16IW10-200325	25 Mar 2020 09:15			03 Apr 2020 15:23	1
HS20031162-03	16IW09-200325	25 Mar 2020 10:25			03 Apr 2020 15:23	1
HS20031162-04	16IW09-200325-FD	25 Mar 2020 10:25			03 Apr 2020 15:23	1
HS20031162-08	16IW03-200325	25 Mar 2020 14:35			03 Apr 2020 15:23	1

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
WorkOrder: HS20031162

QC BATCH REPORT

Batch ID: R359276 (0) **Instrument: FID-4** **Method: DISSOLVED GASES BY RSK-175**

MBLK Sample ID: **MBLK-200331** Units: **mg/L** Analysis Date: **31-Mar-2020 06:29**
Client ID: Run ID: **FID-4_359276** SeqNo: **5539615** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.000500	0.00100								U
Ethene	0.000500	0.00100								U
Methane	0.000500	0.000500								U

LCS Sample ID: **LCS-200331** Units: **mg/L** Analysis Date: **31-Mar-2020 06:11**
Client ID: Run ID: **FID-4_359276** SeqNo: **5539613** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0176	0.00100	0.01804	0	97.3	75 - 125				
Ethene	0.0174	0.00100	0.0168	0	104	75 - 125				
Methane	0.00930	0.000500	0.009647	0	96.4	75 - 125				

LCSD Sample ID: **LCSD-200331** Units: **mg/L** Analysis Date: **31-Mar-2020 06:20**
Client ID: Run ID: **FID-4_359276** SeqNo: **5539614** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0174	0.00100	0.01804	0	96.1	75 - 125	0.01755	1.19	30	
Ethene	0.0172	0.00100	0.0168	0	102	75 - 125	0.01745	1.71	30	
Methane	0.00946	0.000500	0.009647	0	98.1	75 - 125	0.009296	1.76	30	

MS Sample ID: **HS20031163-02MS** Units: **mg/L** Analysis Date: **31-Mar-2020 07:19**
Client ID: Run ID: **FID-4_359276** SeqNo: **5539619** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0285	0.00100	0.01804	0	158	75 - 125				S
Ethene	0.0292	0.00100	0.0168	0.004463	147	75 - 125				S
Methane	0.548	0.000500	0.009647	0.5938	-476	75 - 125				SEO

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
WorkOrder: HS20031162

QC BATCH REPORT

Batch ID: R359276 (0) **Instrument: FID-4** **Method: DISSOLVED GASES BY RSK-175**

MSD Sample ID: **HS20031163-02MSD** Units: **mg/L** Analysis Date: **31-Mar-2020 07:28**
Client ID: Run ID: **FID-4_359276** SeqNo: **5539620** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0292	0.00100	0.01804	0	162	75 - 125	0.02848	2.48	30	S
Ethene	0.0303	0.00100	0.0168	0.004463	154	75 - 125	0.02918	3.67	30	S
Methane	0.546	0.000500	0.009647	0.5938	-497	75 - 125	0.5478	0.362	30	SEO

The following samples were analyzed in this batch: HS20031162-01 HS20031162-02 HS20031162-03 HS20031162-04 HS20031162-08

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
WorkOrder: HS20031162

QC BATCH REPORT

Batch ID: R359115 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200327** Units: **UG/L** Analysis Date: **27-Mar-2020 12:51**
Client ID: Run ID: **VOA6_359115** SeqNo: **5536088** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*44.86*	*1.0*	*50*	*0*	*89.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.65*	*1.0*	*50*	*0*	*95.3*	*85 - 114*				
Surr: Dibromofluoromethane	*47.58*	*1.0*	*50*	*0*	*95.2*	*80 - 119*				
Surr: Toluene-d8	*52.28*	*1.0*	*50*	*0*	*105*	*89 - 112*				

LCS Sample ID: **VLCSW-200327** Units: **UG/L** Analysis Date: **27-Mar-2020 12:03**
Client ID: Run ID: **VOA6_359115** SeqNo: **5536087** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	20.01	1.0	20	0	100	80 - 119				
1,1-Dichloroethene	18.16	1.0	20	0	90.8	71 - 131				
1,2-Dichloroethane	20	1.0	20	0	100.0	73 - 128				
cis-1,2-Dichloroethene	19.87	1.0	20	0	99.4	78 - 123				
Methylene chloride	19.13	2.0	20	0	95.7	74 - 124				
Trichloroethene	19.49	1.0	20	0	97.5	79 - 123				
Vinyl chloride	16.6	1.0	20	0	83.0	58 - 137				
Surr: 1,2-Dichloroethane-d4	*50.89*	*1.0*	*50*	*0*	*102*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.72*	*1.0*	*50*	*0*	*99.4*	*85 - 114*				
Surr: Dibromofluoromethane	*52.07*	*1.0*	*50*	*0*	*104*	*80 - 119*				
Surr: Toluene-d8	*49.21*	*1.0*	*50*	*0*	*98.4*	*89 - 112*				

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
WorkOrder: HS20031162

QC BATCH REPORT

Batch ID: R359115 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20031162-06MS** Units: **UG/L** Analysis Date: **27-Mar-2020 18:04**
Client ID: **16EW03-200325** Run ID: **VOA6_359115** SeqNo: **5536101** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	501.9	25	500	0	100	80 - 119				
1,1-Dichloroethene	495.1	25	500	0	99.0	71 - 131				
1,2-Dichloroethane	505.1	25	500	0	101	73 - 128				
cis-1,2-Dichloroethene	2190	25	500	1699	98.1	78 - 123				
Methylene chloride	475.7	50	500	0	95.1	74 - 124				
Trichloroethene	706.8	25	500	214.5	98.5	79 - 123				
Vinyl chloride	1377	25	500	836.3	108	58 - 137				
Surr: 1,2-Dichloroethane-d4	*1112*	*25*	*1250*	*0*	*89.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*1225*	*25*	*1250*	*0*	*98.0*	*85 - 114*				
Surr: Dibromofluoromethane	*1200*	*25*	*1250*	*0*	*96.0*	*80 - 119*				
Surr: Toluene-d8	*1287*	*25*	*1250*	*0*	*103*	*89 - 112*				

MSD Sample ID: **HS20031162-06MSD** Units: **UG/L** Analysis Date: **27-Mar-2020 18:28**
Client ID: **16EW03-200325** Run ID: **VOA6_359115** SeqNo: **5536102** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	488.9	25	500	0	97.8	80 - 119	501.9	2.64	20	
1,1-Dichloroethene	440.5	25	500	0	88.1	71 - 131	495.1	11.7	20	
1,2-Dichloroethane	488.5	25	500	0	97.7	73 - 128	505.1	3.33	20	
cis-1,2-Dichloroethene	2069	25	500	1699	73.9	78 - 123	2190	5.67	20	S
Methylene chloride	446.4	50	500	0	89.3	74 - 124	475.7	6.36	20	
Trichloroethene	696	25	500	214.5	96.3	79 - 123	706.8	1.53	20	
Vinyl chloride	1235	25	500	836.3	79.7	58 - 137	1377	10.9	20	
Surr: 1,2-Dichloroethane-d4	*1123*	*25*	*1250*	*0*	*89.8*	*81 - 118*	*1112*	*0.992*	*20*	
Surr: 4-Bromofluorobenzene	*1224*	*25*	*1250*	*0*	*97.9*	*85 - 114*	*1225*	*0.0997*	*20*	
Surr: Dibromofluoromethane	*1199*	*25*	*1250*	*0*	*95.9*	*80 - 119*	*1200*	*0.0887*	*20*	
Surr: Toluene-d8	*1280*	*25*	*1250*	*0*	*102*	*89 - 112*	*1287*	*0.541*	*20*	

The following samples were analyzed in this batch:

HS20031162-01	HS20031162-02	HS20031162-03	HS20031162-04
HS20031162-05	HS20031162-06	HS20031162-07	HS20031162-08
HS20031162-09			

ALS Houston, US Date: 03-Apr-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant- 16
WorkOrder: HS20031162

QC BATCH REPORT

Batch ID: R359058 (0) **Instrument: ManTech01** **Method: ALKALINITY BY SM2320B**

MBLK Sample ID: **WBLKW2-200326** Units: **mg/L** Analysis Date: **27-Mar-2020 02:11**
Client ID: Run ID: **ManTech01_359058** SeqNo: **5534287** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	5.00	5.00								U

LCS Sample ID: **LCS2-200326** Units: **mg/L** Analysis Date: **27-Mar-2020 02:20**
Client ID: Run ID: **ManTech01_359058** SeqNo: **5534288** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1088	5.00	1000	0	109	85 - 115				

LCSD Sample ID: **LCSD2-200326** Units: **mg/L** Analysis Date: **27-Mar-2020 02:46**
Client ID: Run ID: **ManTech01_359058** SeqNo: **5534291** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1092	5.00	1000	0	109	85 - 115	1088	0.327	20	

DUP Sample ID: **HS20031096-07DUP** Units: **mg/L** Analysis Date: **27-Mar-2020 02:59**
Client ID: Run ID: **ManTech01_359058** SeqNo: **5534293** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	456.5	5.00					461.5	1.08	20	

The following samples were analyzed in this batch: HS20031162-01 HS20031162-02 HS20031162-03 HS20031162-04 HS20031162-08