LONGHORN ARMY AMMUNITION PLANT KARNACK, TEXAS

ADMINISTRATIVE RECORD

Volume 15

2020

Bate Stamp Numbers
00974348 – 00976061

Prepared for

Department of the Army
Longhorn Army Ammunition Plant

1976–2020

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

VOLUME 15

2020

A. Title: (cont'd) Report – Quarterly Evaluation Report, 2nd Quarter (April–June) 2020 Groundwater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): Bhate Environmental Associates, Inc.
Recipient: U.S. Army Corps of Engineers – Tulsa District
Date: August 27, 2020
Bate Stamp: 00974348 – 00974789

B. Title: (8a.) Appendix F to Report – Quarterly Evaluation Report, 2nd Quarter (April–June) 2020 Groundwater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): Bhate Environmental Associates, Inc.
Recipient: U.S. Army Corps of Engineers – Tulsa District
Date: August 27, 2020
Bate Stamp: 00974790 – 00976061

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000563
Project:	HS20060898	**Date Analyzed:**	6/27/20 13:49

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200627\20200627_026	**Lab Code:**	EQ2000275-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	685428
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	341,911	3.00
	Upper Limit ==>	512,867	5.00
	Lower Limit ==>	170,956	1.00
Associated Analyses			
Continuing Calibration Verification	EQ2000275-01	242,980	2.95
Method Blank	EQ2000251-01	272,600	2.95
Batch QCMS	EQ2000251-04	192,307	2.91
Batch QCDMS	EQ2000251-05	179,413	2.90
Batch QC	E2000562-001	179,480	2.91

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000563
Project:	HS20060898	**Date Analyzed:**	6/27/20 15:23

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200627\20200627_037	**Lab Code:**	EQ2000275-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	685428
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	341,911	3.00
	Upper Limit ==>	512,867	5.00
	Lower Limit ==>	170,956	1.00
Associated Analyses			
Continuing Calibration Verification	EQ2000275-02	241,448	2.94
MW19_061620	E2000563-001	177,421	2.90

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000563
Project:	HS20060898	**Date Analyzed:**	6/27/20 16:49

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200627\20200627_048	**Lab Code:**	EQ2000275-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	685428
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	341,911	3.00
	Upper Limit ==>	512,867	5.00
	Lower Limit ==>	170,956	1.00
Associated Analyses			
Continuing Calibration Verification	EQ2000275-03	227,426	2.94

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000563
Project:	HS20060898	**Date Analyzed:**	6/27/20 18:01

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200627\20200627_057	**Lab Code:**	EQ2000275-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	685428
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	341,911	3.00
	Upper Limit ==>	512,867	5.00
	Lower Limit ==>	170,956	1.00
Associated Analyses			
Continuing Calibration Verification	EQ2000275-04	247,018	2.94

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000563
Project:	HS20060898	**Date Analyzed:**	6/29/20 10:05

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200629\20200629_007	**Lab Code:**	EQ2000275-05
Instrument ID:	E-LCMS-01	**Analysis Lot:**	685428
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	341,911	3.00
	Upper Limit ==>	512,867	5.00
	Lower Limit ==>	170,956	1.00
Associated Analyses			
Continuing Calibration Verification	EQ2000275-05	290,562	2.98
Lab Control Sample	EQ2000251-02	331,603	2.96
Duplicate Lab Control Sample	EQ2000251-03	318,006	2.95

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000563
Project:	HS20060898	**Date Analyzed:**	6/29/20 11:33

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200629\20200629_018	**Lab Code:**	EQ2000275-06
Instrument ID:	E-LCMS-01	**Analysis Lot:**	685428
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	341,911	3.00
	Upper Limit ==>	512,867	5.00
	Lower Limit ==>	170,956	1.00
Associated Analyses			
Continuing Calibration Verification	EQ2000275-06	278,770	2.95
18CPTMW15_061620	E2000563-002	313,171	2.95
18CPTMW16_061720	E2000563-003	300,282	2.94

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000563
Project:	HS20060898	**Date Analyzed:**	6/29/20 14:32

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200629\20200629_028	**Lab Code:**	EQ2000275-07
Instrument ID:	E-LCMS-01	**Analysis Lot:**	685428
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	341,911	3.00
	Upper Limit ==>	512,867	5.00
	Lower Limit ==>	170,956	1.00
Associated Analyses			
Continuing Calibration Verification	EQ2000275-07	277,402	2.95

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

ALS Group Houston

PERCHLORATE7

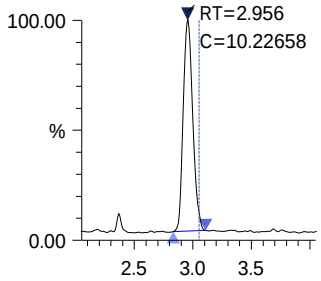
Date acquired: 6/27/2020 1:49:07 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200627\20200627_026.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	6/27/2020 1:49:07 PM	337362	10.22658	20200627_026	2.956	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/27/2020 1:49:07 PM	242980	1.00000	20200627_026	2.954	25.0000	1.0000	4

Perchlorate

Conc 10.22658
Area 337362

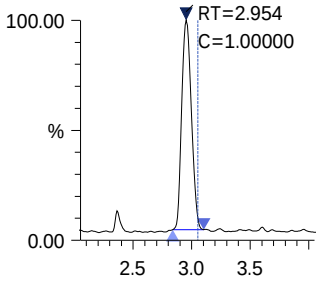
Q 99.00>83.00 (-) 5.95e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 242980

ISTD 107.00>89.00 (-) 4.36e4



ALS Group Houston

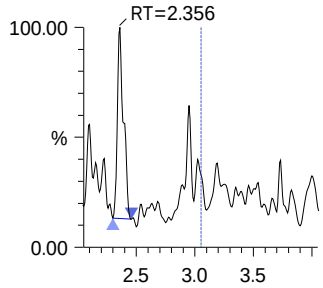
EQ2000251-01

Date acquired: 6/27/2020 2:27:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200627\20200627_030.lcd
Vial: 32 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000251-01	6/27/2020 2:27:55 PM	----	----	20200627_030	----	25.0000	1.0000	32
Sodium Perchlorate-18O4_IS	EQ2000251-01	6/27/2020 2:27:55 PM	272600	1.00000	20200627_030	2.946	25.0000	1.0000	32

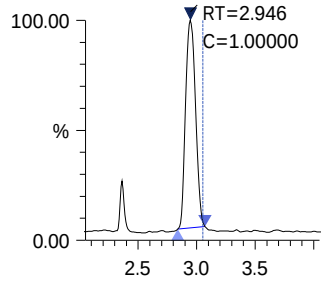
Perchlorate

Conc ----
Area ----
Q 99.00>83.00 (-) 2.82e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 272600
ISTD 107.00>89.00 (-) 4.78e4



ALS Group Houston

Method File: I:\LCMS01\DATA\20200629\20200625.lcm

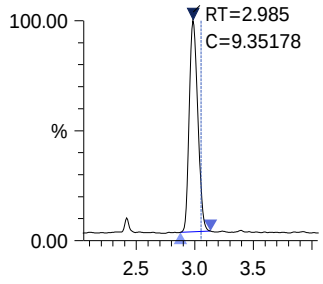
PERCHLORATE7

Date acquired: 6/29/2020 10:05:23 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200629\20200629_007.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	6/29/2020 10:05:23 AM	368916	9.35178	20200629_007	2.985	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/29/2020 10:05:23 AM	290562	1.00000	20200629_007	2.984	25.0000	1.0000	4

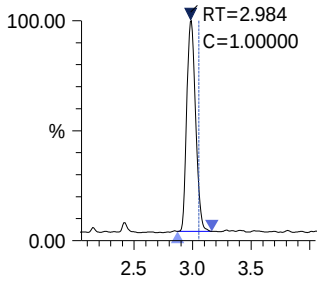
Perchlorate

Conc 9.35178
Area 368916
Q 99.00>83.00 (-) 7.26e4



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 290562
ISTD 107.00>89.00 (-) 5.62e4



ALS Group Houston

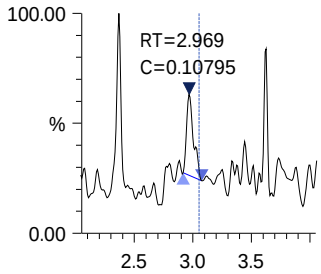
EQ2000251-02

Date acquired: 6/29/2020 10:44:56 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200629\20200629_012.lcd
Vial: 53 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000251-02	6/29/2020 10:44:56 AM	4814	0.10795	20200629_012	2.969	25.0000	1.0000	53
Sodium Perchlorate-18O4_IS	EQ2000251-02	6/29/2020 10:44:56 AM	331603	1.00000	20200629_012	2.964	25.0000	1.0000	53

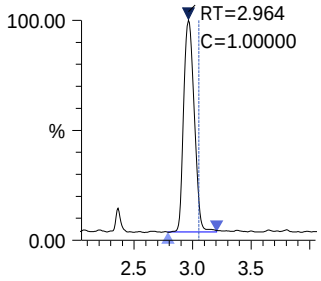
Perchlorate

Conc 0.10795
Area 4814
Q 99.00>83.00 (-) 3.04e3



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 331603
ISTD 107.00>89.00 (-) 5.35e4



ALS Group Houston

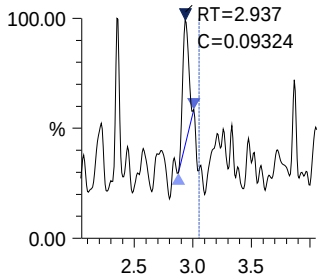
EQ2000251-03

Date acquired: 6/29/2020 10:52:51 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200629\20200629_013.lcd
Vial: 54 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000251-03	6/29/2020 10:52:51 AM	3988	0.09324	20200629_013	2.937	25.0000	1.0000	54
Sodium Perchlorate-18O4_IS	EQ2000251-03	6/29/2020 10:52:51 AM	318006	1.00000	20200629_013	2.948	25.0000	1.0000	54

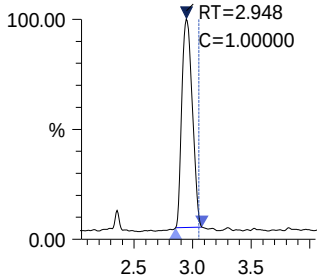
Perchlorate

Conc 0.09324
Area 3988
Q 99.00>83.00 (-) 1.93e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 318006
ISTD 107.00>89.00 (-) 5.25e4



ALS Group Houston

Method File: I:\LCMS01\DATA\20200629\20200625.lcm

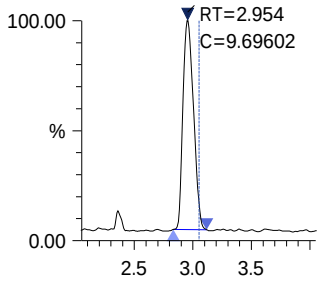
PERCHLORATE7

Date acquired: 6/29/2020 11:33:08 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200629\20200629_018.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	6/29/2020 11:33:08 AM	366974	9.69602	20200629_018	2.954	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/29/2020 11:33:08 AM	278770	1.00000	20200629_018	2.953	25.0000	1.0000	4

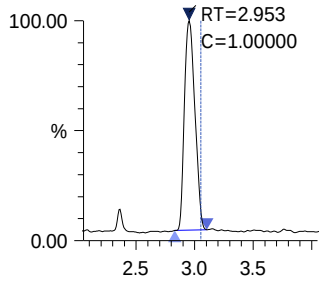
Perchlorate

Conc 9.69602
Area 366974
Q 99.00>83.00 (-) 5.89e4



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 278770
ISTD 107.00>89.00 (-) 4.60e4



ALS Group Houston

EQ2000251-04

Date acquired: 6/27/2020 2:51:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200627\20200627_033.lcd
Vial: 35 | Inj. Volume: 25.0000uL | Tray: 1

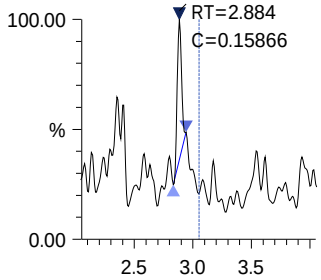
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000251-04	6/27/2020 2:51:33 PM	4142	0.15866	20200627_033	2.884	25.0000	1.0000	35
Sodium Perchlorate-18O4_IS	EQ2000251-04	6/27/2020 2:51:33 PM	192307	1.00000	20200627_033	2.905	25.0000	1.0000	35

Perchlorate

Conc 0.15866

Area 4142

Q 99.00>83.00 (-) 2.57e3

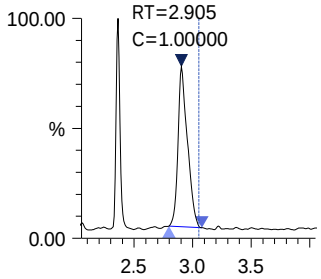


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 192307

ISTD 107.00>89.00 (-) 4.58e4



ALS Group Houston

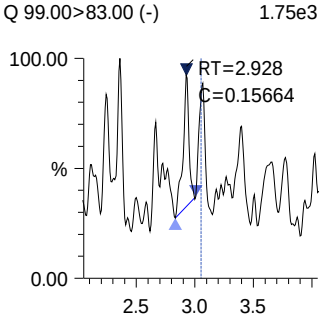
EQ2000251-05

Date acquired: 6/27/2020 2:59:24 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200627\20200627_034.lcd
Vial: 36 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000251-05	6/27/2020 2:59:24 PM	3816	0.15664	20200627_034	2.928	25.0000	1.0000	36
Sodium Perchlorate-18O4_IS	EQ2000251-05	6/27/2020 2:59:24 PM	179413	1.00000	20200627_034	2.903	25.0000	1.0000	36

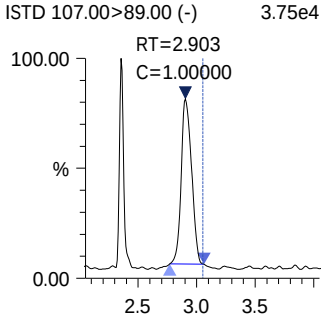
Perchlorate

Conc 0.15664
Area 3816



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 179413



ALS Group Houston

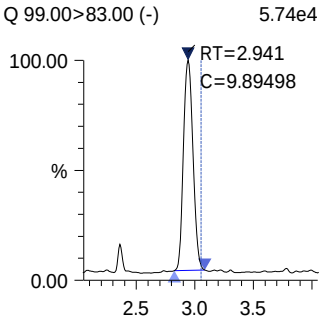
PERCHLORATE7

Date acquired: 6/27/2020 3:23:09 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200627\20200627_037.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	6/27/2020 3:23:09 PM	324365	9.89498	20200627_037	2.941	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/27/2020 3:23:09 PM	241448	1.00000	20200627_037	2.938	25.0000	1.0000	4

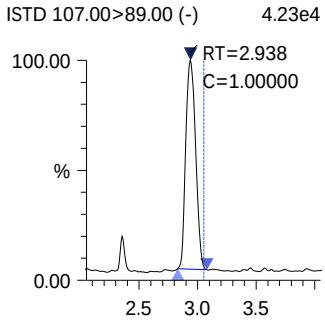
Perchlorate

Conc 9.89498
Area 324365



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 241448



10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

July 24, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20070043**

Laboratory Results for: **LHAAP / ICT Wells**

Dear Marcia Olive,

ALS Environmental received 20 sample(s) on Jul 01, 2020 for the analysis presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

Regards,

Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Work Order: HS20070043

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20070043-01	ICT2_063020	Groundwater		30-Jun-2020 08:40	01-Jul-2020 09:40	☐
HS20070043-02	ICT4_063020	Groundwater		30-Jun-2020 08:55	01-Jul-2020 09:40	☐
HS20070043-03	ICT4_063020_a	Groundwater		30-Jun-2020 08:55	01-Jul-2020 09:40	☐
HS20070043-04	ICT7_063020	Groundwater		30-Jun-2020 09:15	01-Jul-2020 09:40	☐
HS20070043-05	ICT8_063020	Groundwater		30-Jun-2020 09:25	01-Jul-2020 09:40	☐
HS20070043-06	ICT8_063020_a	Groundwater		30-Jun-2020 09:25	01-Jul-2020 09:40	☐
HS20070043-07	ICT11_063020	Groundwater		30-Jun-2020 09:45	01-Jul-2020 09:40	☐
HS20070043-08	ICT12B_063020	Groundwater		30-Jun-2020 09:55	01-Jul-2020 09:40	☐
HS20070043-09	ICT12C_063020	Groundwater		30-Jun-2020 10:10	01-Jul-2020 09:40	☐
HS20070043-10	ICT12D_063020	Groundwater		30-Jun-2020 10:20	01-Jul-2020 09:40	☐
HS20070043-11	ICT12E_063020	Groundwater		30-Jun-2020 10:30	01-Jul-2020 09:40	☐
HS20070043-12	ICT13A_063020	Groundwater		30-Jun-2020 10:40	01-Jul-2020 09:40	☐
HS20070043-13	ICT13B_063020	Groundwater		30-Jun-2020 10:55	01-Jul-2020 09:40	☐
HS20070043-14	ICT13D_063020	Groundwater		30-Jun-2020 11:10	01-Jul-2020 09:40	☐
HS20070043-15	ICT13E_063020	Groundwater		30-Jun-2020 11:25	01-Jul-2020 09:40	☐
HS20070043-16	ICT13F_063020	Groundwater		30-Jun-2020 11:35	01-Jul-2020 09:40	☐
HS20070043-17	ICT14B_063020	Groundwater		30-Jun-2020 11:50	01-Jul-2020 09:40	☐
HS20070043-18	ICT14C_063020	Groundwater		30-Jun-2020 12:00	01-Jul-2020 09:40	☐
HS20070043-19	ICT14D_063020	Groundwater		30-Jun-2020 12:30	01-Jul-2020 09:40	☐
HS20070043-20	Trip Blank	Water	CG 042320 -60	30-Jun-2020 00:00	01-Jul-2020 09:40	☐

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Work Order: HS20070043

CASE NARRATIVE

Work Order Comments

• REV01: Revised to add Mercury.

Work Order Comments

• Analysis of Perchlorate was performed by ALS Houston TX, High Resolution. Laboratory. Final report attached.

GCMS Volatiles by Method SW8260

Batch ID: R365018

Sample ID: ICT12E_063020 (HS20070043-11)

• Surrogate Toluene-d8 exceeded QC recovery limits. The compound reported is not associated with this surrogate

Batch ID: R364980

Sample ID: ICT14D_063020 (HS20070043-19)

• Surrogate Toluene-d8 failure due to matrix. Confirmed by re-analysis @ dilution.

Sample ID: ICT14D_063020 (HS20070043-19MS)

• MS/MSD failed QC and RPD limits for few compounds.

Batch ID: R364892

Sample ID: ICT12C_063020 (HS20070043-09)

• Surrogate 1,2-Dichloroethane-d4 exceeded QC limits due to matrix confirmed by re-analysis @ dilution.

Sample ID: ICT12D_063020 (HS20070043-10)

• Surrogate 1,2-Dichloroethane-d4 exceeded QC limits due to matrix confirmed by re-analysis @ dilution.

Sample ID: ICT14B_063020 (HS20070043-17MS)

• The recovery of the Matrix Spike (MS and of the) and 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 MS/MSD may be due to sample matrix interference 1,1-Dichloroethane, Acetone, cis-1,2-Dichloroethene, Trichloroethene

Sample ID: VLCSW-200710

• 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene and Naphthalene exceeded QC limits for LCS. Samples are ND for these compounds.

Batch ID: R364746

Sample ID: HS20070055-03MS

• MS and MSD are for an unrelated ample

Sample ID: HS20070055-04MS

• MS and MSD are for an unrelated ample

Batch ID: R364903

Sample ID: CT12D_063020(HS20070043-10MSD)

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Work Order: HS20070043

CASE NARRATIVE

GCMS Volatiles by Method SW8260

Batch ID: R364903

- The recovery of the Matrix Spike Duplicate (MSD) 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

Metals by Method SW7470

Batch ID: 155761

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

Metals by Method SW6020

Batch ID: 155343

Sample ID: ICT14D_063020 (HS20070043-19MS)

- Antimony, Chromium, Potassium failed for MS but passed for MSD and PDS.

- The MS and/or MSD recovery was outside of the control; however, the result in the parent sample is greater than 4x the spike amount. Barium, Magnesium, Calcium, Manganese, Sodium

Sample ID: ICT14D_063020 (HS20070043-19MSD)

- Cadmium, Cobalt, Copper, Iron, Lead, Nickel, Silver failed for MS/MSD but passed for PDS.
  Aluminum failed for MSD but passed for MS and PDS.

Sample ID: ICT14D_063020 (HS20070043-19PDS)

- The PDS recovery was outside method control limits, however the result in the parent sample is greater than 4x the spike amount. Barium, Calcium, Magnesium, Manganese

Sample ID: ICT14D_063020 (HS20070043-19SD)

- The percent difference between the results of the sample and the serial dilution were greater than 10%. Zinc

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT2_063020
Collection Date: 30-Jun-2020 08:40

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 17:01
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 17:01
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
1,1-Dichloroethane	**0.53**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jul-2020 17:01
1,1-Dichloroethene	**1.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jul-2020 17:01
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 17:01
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 17:01
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 17:01
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 17:01
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 17:01
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 17:01
1,2-Dichloroethane	**21**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jul-2020 17:01
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 17:01
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 17:01
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 17:01
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 17:01
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jul-2020 17:01
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	08-Jul-2020 17:01
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 17:01
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	08-Jul-2020 17:01
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jul-2020 17:01
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 17:01
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 17:01
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 17:01
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 17:01
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 17:01
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 17:01
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	08-Jul-2020 17:01
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 17:01
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 17:01

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT2_063020
Collection Date: 30-Jun-2020 08:40

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 17:01
cis-1,2-Dichloroethene	**73**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jul-2020 17:01
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	08-Jul-2020 17:01
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 17:01
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	08-Jul-2020 17:01
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jul-2020 17:01
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jul-2020 17:01
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 17:01
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 17:01
trans-1,2-Dichloroethene	**1.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jul-2020 17:01
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 17:01
Trichloroethene	**480**		**5.0**	**12**	**25**	**UG/L**	25	08-Jul-2020 19:01
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 17:01
Vinyl chloride	**2.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jul-2020 17:01
Surr: 1,2-Dichloroethane-d4	*92.4*			**0**	*81-118*	*%REC*	*1*	*08-Jul-2020 17:01*
Surr: 1,2-Dichloroethane-d4	*105*			**0**	*81-118*	*%REC*	*25*	*08-Jul-2020 19:01*
Surr: 4-Bromofluorobenzene	*99.1*			**0**	*85-114*	*%REC*	*1*	*08-Jul-2020 17:01*
Surr: 4-Bromofluorobenzene	*107*			**0**	*85-114*	*%REC*	*25*	*08-Jul-2020 19:01*
Surr: Dibromofluoromethane	*93.1*			**0**	*80-119*	*%REC*	*1*	*08-Jul-2020 17:01*
Surr: Dibromofluoromethane	*107*			**0**	*80-119*	*%REC*	*25*	*08-Jul-2020 19:01*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*1*	*08-Jul-2020 17:01*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*25*	*08-Jul-2020 19:01*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT2_063020
Collection Date: 30-Jun-2020 08:40

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**0.102**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	15-Jul-2020 14:41
Antimony	**0.000861**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:41
Arsenic	**0.00318**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:41
Barium	**0.137**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 14:41
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 14:41
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 14:41
Calcium	**15.8**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 14:41
Chromium	**0.00230**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:41
Cobalt	**0.00749**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 14:41
Copper	**0.0204**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 14:41
Iron	**4.34**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:41
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	15-Jul-2020 14:41
Magnesium	**16.8**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:41
Manganese	**0.285**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 14:41
Nickel	**0.00819**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:41
Potassium	**1.34**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:41
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	15-Jul-2020 14:41
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 14:41
Sodium	**131**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:41
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 14:41
Vanadium	**0.00134**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:41
Zinc	**0.0485**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 14:41
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 15:38
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT4_063020
Collection Date: 30-Jun-2020 08:55

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
1,1,1-Trichloroethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 21:24
1,1,2,2-Tetrachloroethane	10	U	5.0	10	10	UG/L	10	08-Jul-2020 21:24
1,1,2-Trichloroethane	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
1,1-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 21:24
1,1-Dichloroethene	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 21:24
1,1-Dichloropropene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
1,2,3-Trichlorobenzene	10	U	4.0	10	10	UG/L	10	08-Jul-2020 21:24
1,2,3-Trichloropropane	10	U	5.0	10	10	UG/L	10	08-Jul-2020 21:24
1,2,4-Trichlorobenzene	10	U	5.0	10	10	UG/L	10	08-Jul-2020 21:24
1,2,4-Trimethylbenzene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
1,2-Dibromo-3-chloropropane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 21:24
1,2-Dibromoethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 21:24
1,2-Dichlorobenzene	10	U	5.0	10	10	UG/L	10	08-Jul-2020 21:24
1,2-Dichloroethane	**130**		**2.0**	**5.0**	**10**	**UG/L**	10	08-Jul-2020 21:24
1,2-Dichloropropane	10	U	5.0	10	10	UG/L	10	08-Jul-2020 21:24
1,3,5-Trimethylbenzene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
1,3-Dichlorobenzene	10	U	4.0	10	10	UG/L	10	08-Jul-2020 21:24
1,3-Dichloropropane	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
1,4-Dichlorobenzene	10	U	4.0	10	10	UG/L	10	08-Jul-2020 21:24
2,2-Dichloropropane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 21:24
2-Butanone	10	U	5.0	10	20	UG/L	10	08-Jul-2020 21:24
2-Chlorotoluene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
2-Hexanone	20	U	10	20	20	UG/L	10	08-Jul-2020 21:24
4-Chlorotoluene	10	U	4.0	10	10	UG/L	10	08-Jul-2020 21:24
4-Isopropyltoluene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
4-Methyl-2-pentanone	20	U	7.0	20	20	UG/L	10	08-Jul-2020 21:24
Acetone	10	U	4.0	10	20	UG/L	10	08-Jul-2020 21:24
Benzene	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 21:24
Bromobenzene	10	U	4.0	10	10	UG/L	10	08-Jul-2020 21:24
Bromochloromethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 21:24
Bromodichloromethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 21:24
Bromoform	10	U	4.0	10	10	UG/L	10	08-Jul-2020 21:24
Bromomethane	10	U	4.0	10	10	UG/L	10	08-Jul-2020 21:24
Carbon disulfide	10	U	6.0	10	20	UG/L	10	08-Jul-2020 21:24
Carbon tetrachloride	**14**		**5.0**	**10**	**10**	**UG/L**	10	08-Jul-2020 21:24
Chlorobenzene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
Chloroethane	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
Chloroform	**9.5**	J	**2.0**	**5.0**	**10**	**UG/L**	10	08-Jul-2020 21:24

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT4_063020
Collection Date: 30-Jun-2020 08:55

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 21:24
cis-1,2-Dichloroethene	**1,000**		**2.0**	**5.0**	**10**	**UG/L**	10	08-Jul-2020 21:24
cis-1,3-Dichloropropene	5.0	U	1.0	5.0	10	UG/L	10	08-Jul-2020 21:24
Dibromochloromethane	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
Dibromomethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 21:24
Dichlorodifluoromethane	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
Ethylbenzene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
Hexachlorobutadiene	10	U	10	10	10	UG/L	10	08-Jul-2020 21:24
Isopropylbenzene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
m,p-Xylene	10	U	5.0	10	20	UG/L	10	08-Jul-2020 21:24
Methylene chloride	10	U	4.0	10	20	UG/L	10	08-Jul-2020 21:24
n-Butylbenzene	10	U	4.0	10	10	UG/L	10	08-Jul-2020 21:24
n-Propylbenzene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
Naphthalene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
o-Xylene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
sec-Butylbenzene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
Styrene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
tert-Butylbenzene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
Tetrachloroethene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
Toluene	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 21:24
trans-1,2-Dichloroethene	**5.9**	J	**2.0**	**5.0**	**10**	**UG/L**	10	08-Jul-2020 21:24
trans-1,3-Dichloropropene	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 21:24
Trichloroethene	**4,900**		**20**	**50**	**100**	**UG/L**	100	08-Jul-2020 21:48
Trichlorofluoromethane	10	U	3.0	10	10	UG/L	10	08-Jul-2020 21:24
Vinyl chloride	**10**		**2.0**	**5.0**	**10**	**UG/L**	10	08-Jul-2020 21:24
Surr: 1,2-Dichloroethane-d4	*103*			**0**	*81-118*	*%REC*	*100*	*08-Jul-2020 21:48*
Surr: 1,2-Dichloroethane-d4	*105*			**0**	*81-118*	*%REC*	*10*	*08-Jul-2020 21:24*
Surr: 4-Bromofluorobenzene	*96.5*			**0**	*85-114*	*%REC*	*10*	*08-Jul-2020 21:24*
Surr: 4-Bromofluorobenzene	*97.7*			**0**	*85-114*	*%REC*	*100*	*08-Jul-2020 21:48*
Surr: Dibromofluoromethane	*105*			**0**	*80-119*	*%REC*	*10*	*08-Jul-2020 21:24*
Surr: Dibromofluoromethane	*103*			**0**	*80-119*	*%REC*	*100*	*08-Jul-2020 21:48*
Surr: Toluene-d8	*96.1*			**0**	*89-112*	*%REC*	*10*	*08-Jul-2020 21:24*
Surr: Toluene-d8	*96.7*			**0**	*89-112*	*%REC*	*100*	*08-Jul-2020 21:48*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT4_063020
Collection Date: 30-Jun-2020 08:55

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**0.00743**	J	**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	15-Jul-2020 14:50
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	15-Jul-2020 14:50
Arsenic	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	15-Jul-2020 14:50
Barium	**0.105**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 14:50
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 14:50
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 14:50
Calcium	**20.5**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 14:50
Chromium	**0.00111**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:50
Cobalt	**0.00306**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 14:50
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	15-Jul-2020 14:50
Iron	**0.0134**	J	**0.0120**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:50
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	15-Jul-2020 14:50
Magnesium	**18.3**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:50
Manganese	**0.120**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 14:50
Nickel	**0.00468**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:50
Potassium	**0.986**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:50
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	15-Jul-2020 14:50
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 14:50
Sodium	**154**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:50
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 14:50
Vanadium	**0.000810**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:50
Zinc	**0.00266**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 14:50
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 15:40
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT4_063020_a
Collection Date: 30-Jun-2020 08:55

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
1,1,1-Trichloroethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 22:12
1,1,2,2-Tetrachloroethane	10	U	5.0	10	10	UG/L	10	08-Jul-2020 22:12
1,1,2-Trichloroethane	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
1,1-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 22:12
1,1-Dichloroethene	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 22:12
1,1-Dichloropropene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
1,2,3-Trichlorobenzene	10	U	4.0	10	10	UG/L	10	08-Jul-2020 22:12
1,2,3-Trichloropropane	10	U	5.0	10	10	UG/L	10	08-Jul-2020 22:12
1,2,4-Trichlorobenzene	10	U	5.0	10	10	UG/L	10	08-Jul-2020 22:12
1,2,4-Trimethylbenzene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
1,2-Dibromo-3-chloropropane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 22:12
1,2-Dibromoethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 22:12
1,2-Dichlorobenzene	10	U	5.0	10	10	UG/L	10	08-Jul-2020 22:12
1,2-Dichloroethane	**110**		**2.0**	**5.0**	**10**	**UG/L**	10	08-Jul-2020 22:12
1,2-Dichloropropane	10	U	5.0	10	10	UG/L	10	08-Jul-2020 22:12
1,3,5-Trimethylbenzene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
1,3-Dichlorobenzene	10	U	4.0	10	10	UG/L	10	08-Jul-2020 22:12
1,3-Dichloropropane	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
1,4-Dichlorobenzene	10	U	4.0	10	10	UG/L	10	08-Jul-2020 22:12
2,2-Dichloropropane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 22:12
2-Butanone	10	U	5.0	10	20	UG/L	10	08-Jul-2020 22:12
2-Chlorotoluene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
2-Hexanone	20	U	10	20	20	UG/L	10	08-Jul-2020 22:12
4-Chlorotoluene	10	U	4.0	10	10	UG/L	10	08-Jul-2020 22:12
4-Isopropyltoluene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
4-Methyl-2-pentanone	20	U	7.0	20	20	UG/L	10	08-Jul-2020 22:12
Acetone	10	U	4.0	10	20	UG/L	10	08-Jul-2020 22:12
Benzene	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 22:12
Bromobenzene	10	U	4.0	10	10	UG/L	10	08-Jul-2020 22:12
Bromochloromethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 22:12
Bromodichloromethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 22:12
Bromoform	10	U	4.0	10	10	UG/L	10	08-Jul-2020 22:12
Bromomethane	10	U	4.0	10	10	UG/L	10	08-Jul-2020 22:12
Carbon disulfide	10	U	6.0	10	20	UG/L	10	08-Jul-2020 22:12
Carbon tetrachloride	**15**		**5.0**	**10**	**10**	**UG/L**	10	08-Jul-2020 22:12
Chlorobenzene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
Chloroethane	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
Chloroform	**9.6**	J	**2.0**	**5.0**	**10**	**UG/L**	10	08-Jul-2020 22:12

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT4_063020_a
Collection Date: 30-Jun-2020 08:55

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 22:12
cis-1,2-Dichloroethene	**960**		**2.0**	**5.0**	**10**	**UG/L**	10	08-Jul-2020 22:12
cis-1,3-Dichloropropene	5.0	U	1.0	5.0	10	UG/L	10	08-Jul-2020 22:12
Dibromochloromethane	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
Dibromomethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 22:12
Dichlorodifluoromethane	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
Ethylbenzene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
Hexachlorobutadiene	10	U	10	10	10	UG/L	10	08-Jul-2020 22:12
Isopropylbenzene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
m,p-Xylene	10	U	5.0	10	20	UG/L	10	08-Jul-2020 22:12
Methylene chloride	10	U	4.0	10	20	UG/L	10	08-Jul-2020 22:12
n-Butylbenzene	10	U	4.0	10	10	UG/L	10	08-Jul-2020 22:12
n-Propylbenzene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
Naphthalene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
o-Xylene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
sec-Butylbenzene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
Styrene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
tert-Butylbenzene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
Tetrachloroethene	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
Toluene	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 22:12
trans-1,2-Dichloroethene	**5.0**	J	**2.0**	**5.0**	**10**	**UG/L**	10	08-Jul-2020 22:12
trans-1,3-Dichloropropene	5.0	U	2.0	5.0	10	UG/L	10	08-Jul-2020 22:12
Trichloroethene	**4,700**		**20**	**50**	**100**	**UG/L**	100	08-Jul-2020 22:36
Trichlorofluoromethane	10	U	3.0	10	10	UG/L	10	08-Jul-2020 22:12
Vinyl chloride	**10**		**2.0**	**5.0**	**10**	**UG/L**	10	08-Jul-2020 22:12
Surr: 1,2-Dichloroethane-d4	*108*			**0**	*81-118*	*%REC*	*10*	*08-Jul-2020 22:12*
Surr: 1,2-Dichloroethane-d4	*109*			**0**	*81-118*	*%REC*	*100*	*08-Jul-2020 22:36*
Surr: 4-Bromofluorobenzene	*104*			**0**	*85-114*	*%REC*	*10*	*08-Jul-2020 22:12*
Surr: 4-Bromofluorobenzene	*105*			**0**	*85-114*	*%REC*	*100*	*08-Jul-2020 22:36*
Surr: Dibromofluoromethane	*109*			**0**	*80-119*	*%REC*	*100*	*08-Jul-2020 22:36*
Surr: Dibromofluoromethane	*108*			**0**	*80-119*	*%REC*	*10*	*08-Jul-2020 22:12*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*10*	*08-Jul-2020 22:12*
Surr: Toluene-d8	*98.7*			**0**	*89-112*	*%REC*	*100*	*08-Jul-2020 22:36*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT4_063020_a
Collection Date: 30-Jun-2020 08:55

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**0.00754**	J	**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	15-Jul-2020 14:52
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	15-Jul-2020 14:52
Arsenic	**0.000409**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:52
Barium	**0.104**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 14:52
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 14:52
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 14:52
Calcium	**20.5**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 14:52
Chromium	**0.000885**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:52
Cobalt	**0.00310**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 14:52
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	15-Jul-2020 14:52
Iron	0.0500	U	0.0120	0.0500	0.200	mg/L	1	15-Jul-2020 14:52
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	15-Jul-2020 14:52
Magnesium	**18.3**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:52
Manganese	**0.119**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 14:52
Nickel	**0.00455**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:52
Potassium	**1.000**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:52
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	15-Jul-2020 14:52
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 14:52
Sodium	**156**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:52
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 14:52
Vanadium	**0.00115**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:52
Zinc	**0.00240**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 14:52
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 15:42
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT7_063020
Collection Date: 30-Jun-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 20:12
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 20:12
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 20:12
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 20:12
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 20:12
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 20:12
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 20:12
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 20:12
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jul-2020 20:12
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	08-Jul-2020 20:12
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 20:12
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	08-Jul-2020 20:12
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jul-2020 20:12
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 20:12
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 20:12
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 20:12
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	08-Jul-2020 20:12
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 20:12
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT7_063020
Collection Date: 30-Jun-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	08-Jul-2020 20:12
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	08-Jul-2020 20:12
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jul-2020 20:12
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jul-2020 20:12
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 20:12
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12
Trichloroethene	**1.4**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jul-2020 20:12
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:12
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:12
Surr: 1,2-Dichloroethane-d4	*97.6*			**0**	*81-118*	*%REC*	*1*	*08-Jul-2020 20:12*
Surr: 4-Bromofluorobenzene	*104*			**0**	*85-114*	*%REC*	*1*	*08-Jul-2020 20:12*
Surr: Dibromofluoromethane	*99.4*			**0**	*80-119*	*%REC*	*1*	*08-Jul-2020 20:12*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*1*	*08-Jul-2020 20:12*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT7_063020
Collection Date: 30-Jun-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**2.54**		**0.0900**	**0.250**	**0.500**	**mg/L**	50	15-Jul-2020 16:45
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	15-Jul-2020 14:54
Arsenic	**0.000833**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:54
Barium	**0.103**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 14:54
Beryllium	**0.000444**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	15-Jul-2020 14:54
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 14:54
Calcium	**2.25**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 14:54
Chromium	**0.00839**		**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:54
Cobalt	**0.00240**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 14:54
Copper	**0.00979**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 14:54
Iron	**3.72**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:54
Lead	**0.00130**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:54
Magnesium	**2.40**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:54
Manganese	**0.0556**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 14:54
Nickel	**0.00981**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:54
Potassium	**1.47**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:54
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	15-Jul-2020 14:54
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 14:54
Sodium	**31.5**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:54
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 14:54
Vanadium	**0.00955**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:54
Zinc	**0.0200**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 14:54
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 15:43
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT8_063020
Collection Date: 30-Jun-2020 09:25

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
1,1,1-Trichloroethane	25	U	10	25	50	UG/L	50	13-Jul-2020 21:42
1,1,2,2-Tetrachloroethane	50	U	25	50	50	UG/L	50	13-Jul-2020 21:42
1,1,2-Trichloroethane	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
1,1-Dichloroethane	25	U	10	25	50	UG/L	50	13-Jul-2020 21:42
1,1-Dichloroethene	25	U	10	25	50	UG/L	50	13-Jul-2020 21:42
1,1-Dichloropropene	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
1,2,3-Trichlorobenzene	50	U	20	50	50	UG/L	50	13-Jul-2020 21:42
1,2,3-Trichloropropane	50	U	25	50	50	UG/L	50	13-Jul-2020 21:42
1,2,4-Trichlorobenzene	50	U	25	50	50	UG/L	50	13-Jul-2020 21:42
1,2,4-Trimethylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
1,2-Dibromo-3-chloropropane	25	U	10	25	50	UG/L	50	13-Jul-2020 21:42
1,2-Dibromoethane	25	U	10	25	50	UG/L	50	13-Jul-2020 21:42
1,2-Dichlorobenzene	50	U	25	50	50	UG/L	50	13-Jul-2020 21:42
1,2-Dichloroethane	**70**		**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 21:42
1,2-Dichloropropane	50	U	25	50	50	UG/L	50	13-Jul-2020 21:42
1,3,5-Trimethylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
1,3-Dichlorobenzene	50	U	20	50	50	UG/L	50	13-Jul-2020 21:42
1,3-Dichloropropane	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
1,4-Dichlorobenzene	50	U	20	50	50	UG/L	50	13-Jul-2020 21:42
2,2-Dichloropropane	25	U	10	25	50	UG/L	50	13-Jul-2020 21:42
2-Butanone	50	U	25	50	100	UG/L	50	13-Jul-2020 21:42
2-Chlorotoluene	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
2-Hexanone	100	U	50	100	100	UG/L	50	13-Jul-2020 21:42
4-Chlorotoluene	50	U	20	50	50	UG/L	50	13-Jul-2020 21:42
4-Isopropyltoluene	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
4-Methyl-2-pentanone	100	U	35	100	100	UG/L	50	13-Jul-2020 21:42
Acetone	50	U	20	50	100	UG/L	50	13-Jul-2020 21:42
Benzene	25	U	10	25	50	UG/L	50	13-Jul-2020 21:42
Bromobenzene	50	U	20	50	50	UG/L	50	13-Jul-2020 21:42
Bromochloromethane	25	U	10	25	50	UG/L	50	13-Jul-2020 21:42
Bromodichloromethane	25	U	10	25	50	UG/L	50	13-Jul-2020 21:42
Bromoform	50	U	20	50	50	UG/L	50	13-Jul-2020 21:42
Bromomethane	50	U	20	50	50	UG/L	50	13-Jul-2020 21:42
Carbon disulfide	50	U	30	50	100	UG/L	50	13-Jul-2020 21:42
Carbon tetrachloride	50	U	25	50	50	UG/L	50	13-Jul-2020 21:42
Chlorobenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
Chloroethane	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
Chloroform	25	U	10	25	50	UG/L	50	13-Jul-2020 21:42

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT8_063020
Collection Date: 30-Jun-2020 09:25

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	25	U	10	25	50	UG/L	50	13-Jul-2020 21:42
cis-1,2-Dichloroethene	**8,300**		**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 21:42
cis-1,3-Dichloropropene	25	U	5.0	25	50	UG/L	50	13-Jul-2020 21:42
Dibromochloromethane	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
Dibromomethane	25	U	10	25	50	UG/L	50	13-Jul-2020 21:42
Dichlorodifluoromethane	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
Ethylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
Hexachlorobutadiene	50	U	50	50	50	UG/L	50	13-Jul-2020 21:42
Isopropylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
m,p-Xylene	50	U	25	50	100	UG/L	50	13-Jul-2020 21:42
Methylene chloride	**26,000**		**200**	**500**	**1000**	**UG/L**	500	13-Jul-2020 22:06
n-Butylbenzene	50	U	20	50	50	UG/L	50	13-Jul-2020 21:42
n-Propylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
Naphthalene	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
o-Xylene	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
sec-Butylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
Styrene	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
tert-Butylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
Tetrachloroethene	**220**		**15**	**50**	**50**	**UG/L**	50	13-Jul-2020 21:42
Toluene	25	U	10	25	50	UG/L	50	13-Jul-2020 21:42
trans-1,2-Dichloroethene	**24**	J	**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 21:42
trans-1,3-Dichloropropene	25	U	10	25	50	UG/L	50	13-Jul-2020 21:42
Trichloroethene	**7,200**		**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 21:42
Trichlorofluoromethane	50	U	15	50	50	UG/L	50	13-Jul-2020 21:42
Vinyl chloride	**84**		**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 21:42
Surr: 1,2-Dichloroethane-d4	*89.2*			**0**	*81-118*	*%REC*	*50*	*13-Jul-2020 21:42*
Surr: 1,2-Dichloroethane-d4	*88.5*			**0**	*81-118*	*%REC*	*500*	*13-Jul-2020 22:06*
Surr: 4-Bromofluorobenzene	*95.9*			**0**	*85-114*	*%REC*	*50*	*13-Jul-2020 21:42*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*500*	*13-Jul-2020 22:06*
Surr: Dibromofluoromethane	*91.6*			**0**	*80-119*	*%REC*	*50*	*13-Jul-2020 21:42*
Surr: Dibromofluoromethane	*89.3*			**0**	*80-119*	*%REC*	*500*	*13-Jul-2020 22:06*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*50*	*13-Jul-2020 21:42*
Surr: Toluene-d8	*100*			**0**	*89-112*	*%REC*	*500*	*13-Jul-2020 22:06*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT8_063020
Collection Date: 30-Jun-2020 09:25

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**0.0479**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	15-Jul-2020 14:58
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	15-Jul-2020 14:58
Arsenic	**0.00167**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:58
Barium	**0.509**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 14:58
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 14:58
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 14:58
Calcium	**16.5**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 14:58
Chromium	**0.00265**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:58
Cobalt	**0.00408**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 14:58
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	15-Jul-2020 14:58
Iron	**2.52**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:58
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	15-Jul-2020 14:58
Magnesium	**13.3**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:58
Manganese	**0.370**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 14:58
Nickel	**0.00841**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:58
Potassium	**1.33**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:58
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	15-Jul-2020 14:58
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 14:58
Sodium	**83.1**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 14:58
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 14:58
Vanadium	**0.00178**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 14:58
Zinc	**0.00395**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 14:58
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 15:45
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT8_063020_a
Collection Date: 30-Jun-2020 09:25

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
1,1,1-Trichloroethane	25	U	10	25	50	UG/L	50	13-Jul-2020 22:30
1,1,2,2-Tetrachloroethane	50	U	25	50	50	UG/L	50	13-Jul-2020 22:30
1,1,2-Trichloroethane	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
1,1-Dichloroethane	25	U	10	25	50	UG/L	50	13-Jul-2020 22:30
1,1-Dichloroethene	25	U	10	25	50	UG/L	50	13-Jul-2020 22:30
1,1-Dichloropropene	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
1,2,3-Trichlorobenzene	50	U	20	50	50	UG/L	50	13-Jul-2020 22:30
1,2,3-Trichloropropane	50	U	25	50	50	UG/L	50	13-Jul-2020 22:30
1,2,4-Trichlorobenzene	50	U	25	50	50	UG/L	50	13-Jul-2020 22:30
1,2,4-Trimethylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
1,2-Dibromo-3-chloropropane	25	U	10	25	50	UG/L	50	13-Jul-2020 22:30
1,2-Dibromoethane	25	U	10	25	50	UG/L	50	13-Jul-2020 22:30
1,2-Dichlorobenzene	50	U	25	50	50	UG/L	50	13-Jul-2020 22:30
1,2-Dichloroethane	**90**		**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 22:30
1,2-Dichloropropane	50	U	25	50	50	UG/L	50	13-Jul-2020 22:30
1,3,5-Trimethylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
1,3-Dichlorobenzene	50	U	20	50	50	UG/L	50	13-Jul-2020 22:30
1,3-Dichloropropane	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
1,4-Dichlorobenzene	50	U	20	50	50	UG/L	50	13-Jul-2020 22:30
2,2-Dichloropropane	25	U	10	25	50	UG/L	50	13-Jul-2020 22:30
2-Butanone	50	U	25	50	100	UG/L	50	13-Jul-2020 22:30
2-Chlorotoluene	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
2-Hexanone	100	U	50	100	100	UG/L	50	13-Jul-2020 22:30
4-Chlorotoluene	50	U	20	50	50	UG/L	50	13-Jul-2020 22:30
4-Isopropyltoluene	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
4-Methyl-2-pentanone	100	U	35	100	100	UG/L	50	13-Jul-2020 22:30
Acetone	50	U	20	50	100	UG/L	50	13-Jul-2020 22:30
Benzene	25	U	10	25	50	UG/L	50	13-Jul-2020 22:30
Bromobenzene	50	U	20	50	50	UG/L	50	13-Jul-2020 22:30
Bromochloromethane	**32**	J	**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 22:30
Bromodichloromethane	25	U	10	25	50	UG/L	50	13-Jul-2020 22:30
Bromoform	50	U	20	50	50	UG/L	50	13-Jul-2020 22:30
Bromomethane	50	U	20	50	50	UG/L	50	13-Jul-2020 22:30
Carbon disulfide	50	U	30	50	100	UG/L	50	13-Jul-2020 22:30
Carbon tetrachloride	50	U	25	50	50	UG/L	50	13-Jul-2020 22:30
Chlorobenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
Chloroethane	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
Chloroform	25	U	10	25	50	UG/L	50	13-Jul-2020 22:30

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT8_063020_a
Collection Date: 30-Jun-2020 09:25

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	25	U	10	25	50	UG/L	50	13-Jul-2020 22:30
cis-1,2-Dichloroethene	**9,300**		**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 22:30
cis-1,3-Dichloropropene	25	U	5.0	25	50	UG/L	50	13-Jul-2020 22:30
Dibromochloromethane	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
Dibromomethane	25	U	10	25	50	UG/L	50	13-Jul-2020 22:30
Dichlorodifluoromethane	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
Ethylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
Hexachlorobutadiene	50	U	50	50	50	UG/L	50	13-Jul-2020 22:30
Isopropylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
m,p-Xylene	50	U	25	50	100	UG/L	50	13-Jul-2020 22:30
Methylene chloride	**41,000**		**200**	**500**	**1000**	**UG/L**	500	13-Jul-2020 22:54
n-Butylbenzene	50	U	20	50	50	UG/L	50	13-Jul-2020 22:30
n-Propylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
Naphthalene	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
o-Xylene	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
sec-Butylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
Styrene	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
tert-Butylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
Tetrachloroethene	**180**		**15**	**50**	**50**	**UG/L**	50	13-Jul-2020 22:30
Toluene	25	U	10	25	50	UG/L	50	13-Jul-2020 22:30
trans-1,2-Dichloroethene	**28**	J	**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 22:30
trans-1,3-Dichloropropene	25	U	10	25	50	UG/L	50	13-Jul-2020 22:30
Trichloroethene	**7,300**		**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 22:30
Trichlorofluoromethane	50	U	15	50	50	UG/L	50	13-Jul-2020 22:30
Vinyl chloride	**99**		**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 22:30
Surr: 1,2-Dichloroethane-d4	*88.2*			**0**	*81-118*	*%REC*	*50*	*13-Jul-2020 22:30*
Surr: 1,2-Dichloroethane-d4	*87.5*			**0**	*81-118*	*%REC*	*500*	*13-Jul-2020 22:54*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*50*	*13-Jul-2020 22:30*
Surr: 4-Bromofluorobenzene	*98.5*			**0**	*85-114*	*%REC*	*500*	*13-Jul-2020 22:54*
Surr: Dibromofluoromethane	*89.5*			**0**	*80-119*	*%REC*	*50*	*13-Jul-2020 22:30*
Surr: Dibromofluoromethane	*91.3*			**0**	*80-119*	*%REC*	*500*	*13-Jul-2020 22:54*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*50*	*13-Jul-2020 22:30*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*500*	*13-Jul-2020 22:54*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT8_063020_a
Collection Date: 30-Jun-2020 09:25

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**0.0455**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	15-Jul-2020 15:00
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	15-Jul-2020 15:00
Arsenic	**0.00155**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:00
Barium	**0.516**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:00
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:00
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:00
Calcium	**16.4**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 15:00
Chromium	**0.00223**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:00
Cobalt	**0.00367**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 15:00
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	15-Jul-2020 15:00
Iron	**2.23**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:00
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	15-Jul-2020 15:00
Magnesium	**13.1**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:00
Manganese	**0.343**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:00
Nickel	**0.00774**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:00
Potassium	**1.46**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:00
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	15-Jul-2020 15:00
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 15:00
Sodium	**85.6**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:00
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:00
Vanadium	**0.00209**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:00
Zinc	**0.00315**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:00
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 15:50
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT11_063020
Collection Date: 30-Jun-2020 09:45

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 15:08
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	10-Jul-2020 15:08
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 15:08
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 15:08
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 15:08
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	10-Jul-2020 15:08
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	10-Jul-2020 15:08
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 15:08
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 15:08
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	10-Jul-2020 15:08
1,2-Dichloroethane	**1.8**		**0.20**	**0.50**	**1.0**	**UG/L**	1	10-Jul-2020 15:08
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	10-Jul-2020 15:08
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 15:08
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 15:08
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 15:08
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	10-Jul-2020 15:08
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	10-Jul-2020 15:08
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 15:08
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	10-Jul-2020 15:08
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	10-Jul-2020 15:08
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 15:08
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 15:08
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 15:08
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 15:08
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 15:08
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 15:08
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	10-Jul-2020 15:08
Carbon tetrachloride	**1.5**		**0.50**	**1.0**	**1.0**	**UG/L**	1	10-Jul-2020 15:08
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
Chloroform	**1.6**		**0.20**	**0.50**	**1.0**	**UG/L**	1	10-Jul-2020 15:08

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT11_063020
Collection Date: 30-Jun-2020 09:45

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 15:08
cis-1,2-Dichloroethene	**95**		**0.20**	**0.50**	**1.0**	**UG/L**	1	10-Jul-2020 15:08
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	10-Jul-2020 15:08
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 15:08
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	10-Jul-2020 15:08
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	10-Jul-2020 15:08
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	10-Jul-2020 15:08
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 15:08
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 15:08
trans-1,2-Dichloroethene	**0.50**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	10-Jul-2020 15:08
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 15:08
Trichloroethene	**710**		**5.0**	**12**	**25**	**UG/L**	25	10-Jul-2020 16:43
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 15:08
Vinyl chloride	**0.60**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	10-Jul-2020 15:08
Surr: 1,2-Dichloroethane-d4	*118*			**0**	*81-118*	*%REC*	*25*	*10-Jul-2020 16:43*
Surr: 1,2-Dichloroethane-d4	*91.8*			**0**	*81-118*	*%REC*	*1*	*10-Jul-2020 15:08*
Surr: 4-Bromofluorobenzene	*97.7*			**0**	*85-114*	*%REC*	*1*	*10-Jul-2020 15:08*
Surr: 4-Bromofluorobenzene	*105*			**0**	*85-114*	*%REC*	*25*	*10-Jul-2020 16:43*
Surr: Dibromofluoromethane	*94.5*			**0**	*80-119*	*%REC*	*1*	*10-Jul-2020 15:08*
Surr: Dibromofluoromethane	*118*			**0**	*80-119*	*%REC*	*25*	*10-Jul-2020 16:43*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*25*	*10-Jul-2020 16:43*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*1*	*10-Jul-2020 15:08*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT11_063020
Collection Date: 30-Jun-2020 09:45

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**0.0132**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	15-Jul-2020 15:02
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	15-Jul-2020 15:02
Arsenic	**0.000431**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:02
Barium	**0.261**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:02
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:02
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:02
Calcium	**8.26**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 15:02
Chromium	**0.0340**		**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:02
Cobalt	**0.000380**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 15:02
Copper	**0.00678**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:02
Iron	**0.251**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:02
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	15-Jul-2020 15:02
Magnesium	**5.99**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:02
Manganese	**0.0267**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:02
Nickel	**0.0260**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:02
Potassium	**0.871**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:02
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	15-Jul-2020 15:02
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 15:02
Sodium	**52.6**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:02
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:02
Vanadium	**0.00146**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:02
Zinc	**0.0133**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:02
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 15:52
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT12B_063020
Collection Date: 30-Jun-2020 09:55

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
1,1,1-Trichloroethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:07
1,1,2,2-Tetrachloroethane	10	U	5.0	10	10	UG/L	10	10-Jul-2020 17:07
1,1,2-Trichloroethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
1,1-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:07
1,1-Dichloroethene	**16**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 17:07
1,1-Dichloropropene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
1,2,3-Trichlorobenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 17:07
1,2,3-Trichloropropane	10	U	5.0	10	10	UG/L	10	10-Jul-2020 17:07
1,2,4-Trichlorobenzene	10	U	5.0	10	10	UG/L	10	10-Jul-2020 17:07
1,2,4-Trimethylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
1,2-Dibromo-3-chloropropane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:07
1,2-Dibromoethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:07
1,2-Dichlorobenzene	10	U	5.0	10	10	UG/L	10	10-Jul-2020 17:07
1,2-Dichloroethane	**44**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 17:07
1,2-Dichloropropane	10	U	5.0	10	10	UG/L	10	10-Jul-2020 17:07
1,3,5-Trimethylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
1,3-Dichlorobenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 17:07
1,3-Dichloropropane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
1,4-Dichlorobenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 17:07
2,2-Dichloropropane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:07
2-Butanone	10	U	5.0	10	20	UG/L	10	10-Jul-2020 17:07
2-Chlorotoluene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
2-Hexanone	20	U	10	20	20	UG/L	10	10-Jul-2020 17:07
4-Chlorotoluene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 17:07
4-Isopropyltoluene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
4-Methyl-2-pentanone	20	U	7.0	20	20	UG/L	10	10-Jul-2020 17:07
Acetone	10	U	4.0	10	20	UG/L	10	10-Jul-2020 17:07
Benzene	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:07
Bromobenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 17:07
Bromochloromethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:07
Bromodichloromethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:07
Bromoform	10	U	4.0	10	10	UG/L	10	10-Jul-2020 17:07
Bromomethane	10	U	4.0	10	10	UG/L	10	10-Jul-2020 17:07
Carbon disulfide	10	U	6.0	10	20	UG/L	10	10-Jul-2020 17:07
Carbon tetrachloride	**47**		**5.0**	**10**	**10**	**UG/L**	10	10-Jul-2020 17:07
Chlorobenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
Chloroethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
Chloroform	**48**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 17:07

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT12B_063020
Collection Date: 30-Jun-2020 09:55

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:07
cis-1,2-Dichloroethene	**80**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 17:07
cis-1,3-Dichloropropene	5.0	U	1.0	5.0	10	UG/L	10	10-Jul-2020 17:07
Dibromochloromethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
Dibromomethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:07
Dichlorodifluoromethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
Ethylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
Hexachlorobutadiene	10	U	10	10	10	UG/L	10	10-Jul-2020 17:07
Isopropylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
m,p-Xylene	10	U	5.0	10	20	UG/L	10	10-Jul-2020 17:07
Methylene chloride	10	U	4.0	10	20	UG/L	10	10-Jul-2020 17:07
n-Butylbenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 17:07
n-Propylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
Naphthalene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
o-Xylene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
sec-Butylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
Styrene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
tert-Butylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
Tetrachloroethene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
Toluene	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:07
trans-1,2-Dichloroethene	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:07
trans-1,3-Dichloropropene	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:07
Trichloroethene	**8,600**		**20**	**50**	**100**	**UG/L**	100	10-Jul-2020 17:31
Trichlorofluoromethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:07
Vinyl chloride	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:07
Surr: 1,2-Dichloroethane-d4	*115*			**0**	*81-118*	*%REC*	*10*	*10-Jul-2020 17:07*
Surr: 1,2-Dichloroethane-d4	*114*			**0**	*81-118*	*%REC*	*100*	*10-Jul-2020 17:31*
Surr: 4-Bromofluorobenzene	*105*			**0**	*85-114*	*%REC*	*10*	*10-Jul-2020 17:07*
Surr: 4-Bromofluorobenzene	*108*			**0**	*85-114*	*%REC*	*100*	*10-Jul-2020 17:31*
Surr: Dibromofluoromethane	*112*			**0**	*80-119*	*%REC*	*10*	*10-Jul-2020 17:07*
Surr: Dibromofluoromethane	*113*			**0**	*80-119*	*%REC*	*100*	*10-Jul-2020 17:31*
Surr: Toluene-d8	*99.9*			**0**	*89-112*	*%REC*	*100*	*10-Jul-2020 17:31*
Surr: Toluene-d8	*96.8*			**0**	*89-112*	*%REC*	*10*	*10-Jul-2020 17:07*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT12B_063020
Collection Date: 30-Jun-2020 09:55

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**0.0369**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	15-Jul-2020 15:06
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	15-Jul-2020 15:06
Arsenic	**0.000554**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:06
Barium	**0.172**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:06
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:06
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:06
Calcium	**18.3**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 15:06
Chromium	**0.00163**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:06
Cobalt	**0.000153**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 15:06
Copper	**0.0169**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:06
Iron	**0.0970**	J	**0.0120**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:06
Lead	**0.000629**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:06
Magnesium	**13.2**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:06
Manganese	**0.0117**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:06
Nickel	**0.00569**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:06
Potassium	**0.606**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:06
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	15-Jul-2020 15:06
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 15:06
Sodium	**168**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:06
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:06
Vanadium	**0.00173**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:06
Zinc	**0.0132**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:06
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 15:53
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT12C_063020
Collection Date: 30-Jun-2020 10:10

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
1,1,1-Trichloroethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:55
1,1,2,2-Tetrachloroethane	10	U	5.0	10	10	UG/L	10	10-Jul-2020 17:55
1,1,2-Trichloroethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
1,1-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:55
1,1-Dichloroethene	**6.2**	J	**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 17:55
1,1-Dichloropropene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
1,2,3-Trichlorobenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 17:55
1,2,3-Trichloropropane	10	U	5.0	10	10	UG/L	10	10-Jul-2020 17:55
1,2,4-Trichlorobenzene	10	U	5.0	10	10	UG/L	10	10-Jul-2020 17:55
1,2,4-Trimethylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
1,2-Dibromo-3-chloropropane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:55
1,2-Dibromoethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:55
1,2-Dichlorobenzene	10	U	5.0	10	10	UG/L	10	10-Jul-2020 17:55
1,2-Dichloroethane	**56**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 17:55
1,2-Dichloropropane	10	U	5.0	10	10	UG/L	10	10-Jul-2020 17:55
1,3,5-Trimethylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
1,3-Dichlorobenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 17:55
1,3-Dichloropropane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
1,4-Dichlorobenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 17:55
2,2-Dichloropropane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:55
2-Butanone	10	U	5.0	10	20	UG/L	10	10-Jul-2020 17:55
2-Chlorotoluene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
2-Hexanone	20	U	10	20	20	UG/L	10	10-Jul-2020 17:55
4-Chlorotoluene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 17:55
4-Isopropyltoluene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
4-Methyl-2-pentanone	20	U	7.0	20	20	UG/L	10	10-Jul-2020 17:55
Acetone	10	U	4.0	10	20	UG/L	10	10-Jul-2020 17:55
Benzene	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:55
Bromobenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 17:55
Bromochloromethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:55
Bromodichloromethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:55
Bromoform	10	U	4.0	10	10	UG/L	10	10-Jul-2020 17:55
Bromomethane	10	U	4.0	10	10	UG/L	10	10-Jul-2020 17:55
Carbon disulfide	10	U	6.0	10	20	UG/L	10	10-Jul-2020 17:55
Carbon tetrachloride	**9.3**	J	**5.0**	**10**	**10**	**UG/L**	10	10-Jul-2020 17:55
Chlorobenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
Chloroethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
Chloroform	**16**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 17:55

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT12C_063020
Collection Date: 30-Jun-2020 10:10

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:55
cis-1,2-Dichloroethene	**210**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 17:55
cis-1,3-Dichloropropene	5.0	U	1.0	5.0	10	UG/L	10	10-Jul-2020 17:55
Dibromochloromethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
Dibromomethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:55
Dichlorodifluoromethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
Ethylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
Hexachlorobutadiene	10	U	10	10	10	UG/L	10	10-Jul-2020 17:55
Isopropylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
m,p-Xylene	10	U	5.0	10	20	UG/L	10	10-Jul-2020 17:55
Methylene chloride	10	U	4.0	10	20	UG/L	10	10-Jul-2020 17:55
n-Butylbenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 17:55
n-Propylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
Naphthalene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
o-Xylene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
sec-Butylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
Styrene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
tert-Butylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
Tetrachloroethene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
Toluene	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:55
trans-1,2-Dichloroethene	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:55
trans-1,3-Dichloropropene	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 17:55
Trichloroethene	**5,700**		**20**	**50**	**100**	**UG/L**	100	10-Jul-2020 18:19
Trichlorofluoromethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 17:55
Vinyl chloride	**4.4**	J	**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 17:55
Surr: 1,2-Dichloroethane-d4	*122*	*S*		**0**	*81-118*	*%REC*	*10*	*10-Jul-2020 17:55*
Surr: 1,2-Dichloroethane-d4	*115*			**0**	*81-118*	*%REC*	*100*	*10-Jul-2020 18:19*
Surr: 4-Bromofluorobenzene	*109*			**0**	*85-114*	*%REC*	*10*	*10-Jul-2020 17:55*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*100*	*10-Jul-2020 18:19*
Surr: Dibromofluoromethane	*116*			**0**	*80-119*	*%REC*	*10*	*10-Jul-2020 17:55*
Surr: Dibromofluoromethane	*111*			**0**	*80-119*	*%REC*	*100*	*10-Jul-2020 18:19*
Surr: Toluene-d8	*97.0*			**0**	*89-112*	*%REC*	*100*	*10-Jul-2020 18:19*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*10*	*10-Jul-2020 17:55*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT12C_063020
Collection Date: 30-Jun-2020 10:10

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**0.140**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	15-Jul-2020 15:15
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	15-Jul-2020 15:15
Arsenic	**0.000676**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:15
Barium	**0.113**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:15
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:15
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:15
Calcium	**6.59**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 15:15
Chromium	**0.0577**		**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:15
Cobalt	**0.000455**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 15:15
Copper	**0.00130**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:15
Iron	**0.564**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:15
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	15-Jul-2020 15:15
Magnesium	**5.16**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:15
Manganese	**0.0121**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:15
Nickel	**0.0150**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:15
Potassium	**0.300**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:15
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	15-Jul-2020 15:15
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 15:15
Sodium	**80.8**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:15
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:15
Vanadium	**0.00200**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:15
Zinc	**0.00543**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:15
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 15:55
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT12D_063020
Collection Date: 30-Jun-2020 10:20

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-10
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
1,1,1-Trichloroethane	10	U	4.0	10	20	UG/L	20	10-Jul-2020 20:18
1,1,2,2-Tetrachloroethane	20	U	10	20	20	UG/L	20	10-Jul-2020 20:18
1,1,2-Trichloroethane	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
1,1-Dichloroethane	**28**		**4.0**	**10**	**20**	**UG/L**	20	10-Jul-2020 20:18
1,1-Dichloroethene	10	U	4.0	10	20	UG/L	20	10-Jul-2020 20:18
1,1-Dichloropropene	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
1,2,3-Trichlorobenzene	20	U	8.0	20	20	UG/L	20	10-Jul-2020 20:18
1,2,3-Trichloropropane	20	U	10	20	20	UG/L	20	10-Jul-2020 20:18
1,2,4-Trichlorobenzene	20	U	10	20	20	UG/L	20	10-Jul-2020 20:18
1,2,4-Trimethylbenzene	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
1,2-Dibromo-3-chloropropane	10	U	4.0	10	20	UG/L	20	10-Jul-2020 20:18
1,2-Dibromoethane	10	U	4.0	10	20	UG/L	20	10-Jul-2020 20:18
1,2-Dichlorobenzene	20	U	10	20	20	UG/L	20	10-Jul-2020 20:18
1,2-Dichloroethane	**240**		**4.0**	**10**	**20**	**UG/L**	20	10-Jul-2020 20:18
1,2-Dichloropropane	20	U	10	20	20	UG/L	20	10-Jul-2020 20:18
1,3,5-Trimethylbenzene	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
1,3-Dichlorobenzene	20	U	8.0	20	20	UG/L	20	10-Jul-2020 20:18
1,3-Dichloropropane	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
1,4-Dichlorobenzene	20	U	8.0	20	20	UG/L	20	10-Jul-2020 20:18
2,2-Dichloropropane	10	U	4.0	10	20	UG/L	20	10-Jul-2020 20:18
2-Butanone	20	U	10	20	40	UG/L	20	10-Jul-2020 20:18
2-Chlorotoluene	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
2-Hexanone	40	U	20	40	40	UG/L	20	10-Jul-2020 20:18
4-Chlorotoluene	20	U	8.0	20	20	UG/L	20	10-Jul-2020 20:18
4-Isopropyltoluene	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
4-Methyl-2-pentanone	40	U	14	40	40	UG/L	20	10-Jul-2020 20:18
Acetone	20	U	8.0	20	40	UG/L	20	10-Jul-2020 20:18
Benzene	10	U	4.0	10	20	UG/L	20	10-Jul-2020 20:18
Bromobenzene	20	U	8.0	20	20	UG/L	20	10-Jul-2020 20:18
Bromochloromethane	10	U	4.0	10	20	UG/L	20	10-Jul-2020 20:18
Bromodichloromethane	10	U	4.0	10	20	UG/L	20	10-Jul-2020 20:18
Bromoform	20	U	8.0	20	20	UG/L	20	10-Jul-2020 20:18
Bromomethane	20	U	8.0	20	20	UG/L	20	10-Jul-2020 20:18
Carbon disulfide	20	U	12	20	40	UG/L	20	10-Jul-2020 20:18
Carbon tetrachloride	20	U	10	20	20	UG/L	20	10-Jul-2020 20:18
Chlorobenzene	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
Chloroethane	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
Chloroform	**19**	J	**4.0**	**10**	**20**	**UG/L**	20	10-Jul-2020 20:18

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT12D_063020
Collection Date: 30-Jun-2020 10:20

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-10
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	10	U	4.0	10	20	UG/L	20	10-Jul-2020 20:18
cis-1,2-Dichloroethene	**11,000**		**50**	**120**	**250**	**UG/L**	250	12-Jul-2020 15:24
cis-1,3-Dichloropropene	10	U	2.0	10	20	UG/L	20	10-Jul-2020 20:18
Dibromochloromethane	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
Dibromomethane	10	U	4.0	10	20	UG/L	20	10-Jul-2020 20:18
Dichlorodifluoromethane	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
Ethylbenzene	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
Hexachlorobutadiene	20	U	20	20	20	UG/L	20	10-Jul-2020 20:18
Isopropylbenzene	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
m,p-Xylene	20	U	10	20	40	UG/L	20	10-Jul-2020 20:18
Methylene chloride	20	U	8.0	20	40	UG/L	20	10-Jul-2020 20:18
n-Butylbenzene	20	U	8.0	20	20	UG/L	20	10-Jul-2020 20:18
n-Propylbenzene	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
Naphthalene	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
o-Xylene	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
sec-Butylbenzene	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
Styrene	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
tert-Butylbenzene	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
Tetrachloroethene	**15**	J	**6.0**	**20**	**20**	**UG/L**	20	10-Jul-2020 20:18
Toluene	10	U	4.0	10	20	UG/L	20	10-Jul-2020 20:18
trans-1,2-Dichloroethene	**14**	J	**4.0**	**10**	**20**	**UG/L**	20	10-Jul-2020 20:18
trans-1,3-Dichloropropene	10	U	4.0	10	20	UG/L	20	10-Jul-2020 20:18
Trichloroethene	**13,000**		**50**	**120**	**250**	**UG/L**	250	12-Jul-2020 15:24
Trichlorofluoromethane	20	U	6.0	20	20	UG/L	20	10-Jul-2020 20:18
Vinyl chloride	**270**		**4.0**	**10**	**20**	**UG/L**	20	10-Jul-2020 20:18
Surr: 1,2-Dichloroethane-d4	*120*	*S*		**0**	*81-118*	*%REC*	*20*	*10-Jul-2020 20:18*
Surr: 1,2-Dichloroethane-d4	*97.7*			**0**	*81-118*	*%REC*	*250*	*12-Jul-2020 15:24*
Surr: 4-Bromofluorobenzene	*104*			**0**	*85-114*	*%REC*	*20*	*10-Jul-2020 20:18*
Surr: 4-Bromofluorobenzene	*99.7*			**0**	*85-114*	*%REC*	*250*	*12-Jul-2020 15:24*
Surr: Dibromofluoromethane	*115*			**0**	*80-119*	*%REC*	*20*	*10-Jul-2020 20:18*
Surr: Dibromofluoromethane	*91.1*			**0**	*80-119*	*%REC*	*250*	*12-Jul-2020 15:24*
Surr: Toluene-d8	*96.1*			**0**	*89-112*	*%REC*	*20*	*10-Jul-2020 20:18*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*250*	*12-Jul-2020 15:24*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT12D_063020
Collection Date: 30-Jun-2020 10:20

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-10
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**0.0138**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	15-Jul-2020 15:17
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	15-Jul-2020 15:17
Arsenic	**0.00971**		**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:17
Barium	**0.0456**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:17
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:17
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:17
Calcium	**8.16**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 15:17
Chromium	**0.0169**		**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:17
Cobalt	**0.0121**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 15:17
Copper	**0.0234**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:17
Iron	**24.1**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:17
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	15-Jul-2020 15:17
Magnesium	**8.10**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:17
Manganese	**0.362**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:17
Nickel	**0.138**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:17
Potassium	**0.423**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:17
Selenium	**0.00124**	J	**0.00110**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:17
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 15:17
Sodium	**49.8**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:17
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:17
Vanadium	**0.00118**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:17
Zinc	**0.00856**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:17
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 15:57
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT12E_063020
Collection Date: 30-Jun-2020 10:30

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-11
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
1,1,1-Trichloroethane	25	U	10	25	50	UG/L	50	13-Jul-2020 23:18
1,1,2,2-Tetrachloroethane	50	U	25	50	50	UG/L	50	13-Jul-2020 23:18
1,1,2-Trichloroethane	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
1,1-Dichloroethane	**130**		**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 23:18
1,1-Dichloroethene	**920**		**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 23:18
1,1-Dichloropropene	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
1,2,3-Trichlorobenzene	50	U	20	50	50	UG/L	50	13-Jul-2020 23:18
1,2,3-Trichloropropane	50	U	25	50	50	UG/L	50	13-Jul-2020 23:18
1,2,4-Trichlorobenzene	50	U	25	50	50	UG/L	50	13-Jul-2020 23:18
1,2,4-Trimethylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
1,2-Dibromo-3-chloropropane	25	U	10	25	50	UG/L	50	13-Jul-2020 23:18
1,2-Dibromoethane	25	U	10	25	50	UG/L	50	13-Jul-2020 23:18
1,2-Dichlorobenzene	50	U	25	50	50	UG/L	50	13-Jul-2020 23:18
1,2-Dichloroethane	**190**		**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 23:18
1,2-Dichloropropane	50	U	25	50	50	UG/L	50	13-Jul-2020 23:18
1,3,5-Trimethylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
1,3-Dichlorobenzene	50	U	20	50	50	UG/L	50	13-Jul-2020 23:18
1,3-Dichloropropane	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
1,4-Dichlorobenzene	50	U	20	50	50	UG/L	50	13-Jul-2020 23:18
2,2-Dichloropropane	25	U	10	25	50	UG/L	50	13-Jul-2020 23:18
2-Butanone	50	U	25	50	100	UG/L	50	13-Jul-2020 23:18
2-Chlorotoluene	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
2-Hexanone	100	U	50	100	100	UG/L	50	13-Jul-2020 23:18
4-Chlorotoluene	50	U	20	50	50	UG/L	50	13-Jul-2020 23:18
4-Isopropyltoluene	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
4-Methyl-2-pentanone	100	U	35	100	100	UG/L	50	13-Jul-2020 23:18
Acetone	**1,100**		**20**	**50**	**100**	**UG/L**	50	13-Jul-2020 23:18
Benzene	25	U	10	25	50	UG/L	50	13-Jul-2020 23:18
Bromobenzene	50	U	20	50	50	UG/L	50	13-Jul-2020 23:18
Bromochloromethane	**160**		**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 23:18
Bromodichloromethane	25	U	10	25	50	UG/L	50	13-Jul-2020 23:18
Bromoform	50	U	20	50	50	UG/L	50	13-Jul-2020 23:18
Bromomethane	50	U	20	50	50	UG/L	50	13-Jul-2020 23:18
Carbon disulfide	50	U	30	50	100	UG/L	50	13-Jul-2020 23:18
Carbon tetrachloride	50	U	25	50	50	UG/L	50	13-Jul-2020 23:18
Chlorobenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
Chloroethane	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
Chloroform	**120**		**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 23:18

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT12E_063020
Collection Date: 30-Jun-2020 10:30

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-11
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	25	U	10	25	50	UG/L	50	13-Jul-2020 23:18
cis-1,2-Dichloroethene	**14,000**		**100**	**250**	**500**	**UG/L**	500	13-Jul-2020 23:42
cis-1,3-Dichloropropene	25	U	5.0	25	50	UG/L	50	13-Jul-2020 23:18
Dibromochloromethane	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
Dibromomethane	25	U	10	25	50	UG/L	50	13-Jul-2020 23:18
Dichlorodifluoromethane	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
Ethylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
Hexachlorobutadiene	50	U	50	50	50	UG/L	50	13-Jul-2020 23:18
Isopropylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
m,p-Xylene	50	U	25	50	100	UG/L	50	13-Jul-2020 23:18
Methylene chloride	**48,000**		**1000**	**2500**	**5000**	**UG/L**	2500	14-Jul-2020 13:21
n-Butylbenzene	50	U	20	50	50	UG/L	50	13-Jul-2020 23:18
n-Propylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
Naphthalene	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
o-Xylene	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
sec-Butylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
Styrene	**35**	J	**15**	**50**	**50**	**UG/L**	50	13-Jul-2020 23:18
tert-Butylbenzene	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
Tetrachloroethene	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
Toluene	**46**	J	**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 23:18
trans-1,2-Dichloroethene	**50**		**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 23:18
trans-1,3-Dichloropropene	25	U	10	25	50	UG/L	50	13-Jul-2020 23:18
Trichloroethene	**74,000**		**100**	**250**	**500**	**UG/L**	500	13-Jul-2020 23:42
Trichlorofluoromethane	50	U	15	50	50	UG/L	50	13-Jul-2020 23:18
Vinyl chloride	**950**		**10**	**25**	**50**	**UG/L**	50	13-Jul-2020 23:18
Surr: 1,2-Dichloroethane-d4	*88.5*			**0**	*81-118*	*%REC*	*50*	*13-Jul-2020 23:18*
Surr: 1,2-Dichloroethane-d4	*89.7*			**0**	*81-118*	*%REC*	*500*	*13-Jul-2020 23:42*
Surr: 1,2-Dichloroethane-d4	*83.9*			**0**	*81-118*	*%REC*	*2500*	*14-Jul-2020 13:21*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*50*	*13-Jul-2020 23:18*
Surr: 4-Bromofluorobenzene	*97.1*			**0**	*85-114*	*%REC*	*500*	*13-Jul-2020 23:42*
Surr: 4-Bromofluorobenzene	*104*			**0**	*85-114*	*%REC*	*2500*	*14-Jul-2020 13:21*
Surr: Dibromofluoromethane	*90.2*			**0**	*80-119*	*%REC*	*50*	*13-Jul-2020 23:18*
Surr: Dibromofluoromethane	*89.7*			**0**	*80-119*	*%REC*	*500*	*13-Jul-2020 23:42*
Surr: Dibromofluoromethane	*88.5*			**0**	*80-119*	*%REC*	*2500*	*14-Jul-2020 13:21*
Surr: Toluene-d8	*98.5*			**0**	*89-112*	*%REC*	*50*	*13-Jul-2020 23:18*
Surr: Toluene-d8	*99.0*			**0**	*89-112*	*%REC*	*500*	*13-Jul-2020 23:42*
Surr: Toluene-d8	*116*	*S*		**0**	*89-112*	*%REC*	*2500*	*14-Jul-2020 13:21*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT12E_063020
Collection Date: 30-Jun-2020 10:30

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-11
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**0.106**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	15-Jul-2020 15:19
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	15-Jul-2020 15:19
Arsenic	**0.00112**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:19
Barium	**0.221**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:19
Beryllium	**0.000646**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	15-Jul-2020 15:19
Cadmium	**0.000531**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	15-Jul-2020 15:19
Calcium	**29.5**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 15:19
Chromium	**0.632**		**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:19
Cobalt	**0.0535**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 15:19
Copper	**0.0164**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:19
Iron	**13.8**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:19
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	15-Jul-2020 15:19
Magnesium	**25.3**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:19
Manganese	**1.33**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:19
Nickel	**1.11**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:19
Potassium	**1.85**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:19
Selenium	**0.00233**	J	**0.00110**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:19
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 15:19
Sodium	**288**		**0.280**	**1.00**	**4.00**	**mg/L**	20	15-Jul-2020 15:53
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:19
Vanadium	**0.000981**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:19
Zinc	**0.0353**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:19
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 15:58
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT13A_063020
Collection Date: 30-Jun-2020 10:40

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-12
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
1,1,1-Trichloroethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 18:43
1,1,2,2-Tetrachloroethane	10	U	5.0	10	10	UG/L	10	10-Jul-2020 18:43
1,1,2-Trichloroethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
1,1-Dichloroethane	**12**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 18:43
1,1-Dichloroethene	**32**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 18:43
1,1-Dichloropropene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
1,2,3-Trichlorobenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 18:43
1,2,3-Trichloropropane	10	U	5.0	10	10	UG/L	10	10-Jul-2020 18:43
1,2,4-Trichlorobenzene	10	U	5.0	10	10	UG/L	10	10-Jul-2020 18:43
1,2,4-Trimethylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
1,2-Dibromo-3-chloropropane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 18:43
1,2-Dibromoethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 18:43
1,2-Dichlorobenzene	10	U	5.0	10	10	UG/L	10	10-Jul-2020 18:43
1,2-Dichloroethane	**68**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 18:43
1,2-Dichloropropane	10	U	5.0	10	10	UG/L	10	10-Jul-2020 18:43
1,3,5-Trimethylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
1,3-Dichlorobenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 18:43
1,3-Dichloropropane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
1,4-Dichlorobenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 18:43
2,2-Dichloropropane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 18:43
2-Butanone	10	U	5.0	10	20	UG/L	10	10-Jul-2020 18:43
2-Chlorotoluene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
2-Hexanone	20	U	10	20	20	UG/L	10	10-Jul-2020 18:43
4-Chlorotoluene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 18:43
4-Isopropyltoluene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
4-Methyl-2-pentanone	20	U	7.0	20	20	UG/L	10	10-Jul-2020 18:43
Acetone	10	U	4.0	10	20	UG/L	10	10-Jul-2020 18:43
Benzene	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 18:43
Bromobenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 18:43
Bromochloromethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 18:43
Bromodichloromethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 18:43
Bromoform	10	U	4.0	10	10	UG/L	10	10-Jul-2020 18:43
Bromomethane	10	U	4.0	10	10	UG/L	10	10-Jul-2020 18:43
Carbon disulfide	10	U	6.0	10	20	UG/L	10	10-Jul-2020 18:43
Carbon tetrachloride	10	U	5.0	10	10	UG/L	10	10-Jul-2020 18:43
Chlorobenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
Chloroethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
Chloroform	**10**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 18:43

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT13A_063020
Collection Date: 30-Jun-2020 10:40

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-12
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 18:43
cis-1,2-Dichloroethene	**640**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 18:43
cis-1,3-Dichloropropene	5.0	U	1.0	5.0	10	UG/L	10	10-Jul-2020 18:43
Dibromochloromethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
Dibromomethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 18:43
Dichlorodifluoromethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
Ethylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
Hexachlorobutadiene	10	U	10	10	10	UG/L	10	10-Jul-2020 18:43
Isopropylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
m,p-Xylene	10	U	5.0	10	20	UG/L	10	10-Jul-2020 18:43
Methylene chloride	10	U	4.0	10	20	UG/L	10	10-Jul-2020 18:43
n-Butylbenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 18:43
n-Propylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
Naphthalene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
o-Xylene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
sec-Butylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
Styrene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
tert-Butylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
Tetrachloroethene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
Toluene	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 18:43
trans-1,2-Dichloroethene	**4.2**	J	**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 18:43
trans-1,3-Dichloropropene	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 18:43
Trichloroethene	**6,900**		**20**	**50**	**100**	**UG/L**	100	10-Jul-2020 19:07
Trichlorofluoromethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 18:43
Vinyl chloride	**15**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 18:43
Surr: 1,2-Dichloroethane-d4	*107*			**0**	*81-118*	*%REC*	*100*	*10-Jul-2020 19:07*
Surr: 1,2-Dichloroethane-d4	*115*			**0**	*81-118*	*%REC*	*10*	*10-Jul-2020 18:43*
Surr: 4-Bromofluorobenzene	*105*			**0**	*85-114*	*%REC*	*10*	*10-Jul-2020 18:43*
Surr: 4-Bromofluorobenzene	*99.8*			**0**	*85-114*	*%REC*	*100*	*10-Jul-2020 19:07*
Surr: Dibromofluoromethane	*105*			**0**	*80-119*	*%REC*	*100*	*10-Jul-2020 19:07*
Surr: Dibromofluoromethane	*112*			**0**	*80-119*	*%REC*	*10*	*10-Jul-2020 18:43*
Surr: Toluene-d8	*97.1*			**0**	*89-112*	*%REC*	*10*	*10-Jul-2020 18:43*
Surr: Toluene-d8	*94.6*			**0**	*89-112*	*%REC*	*100*	*10-Jul-2020 19:07*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT13A_063020
Collection Date: 30-Jun-2020 10:40

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-12
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**0.0173**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	15-Jul-2020 15:21
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	15-Jul-2020 15:21
Arsenic	**0.00156**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:21
Barium	**0.147**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:21
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:21
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:21
Calcium	**17.6**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 15:21
Chromium	**0.0322**		**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:21
Cobalt	**0.0182**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 15:21
Copper	**0.0101**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:21
Iron	**4.74**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:21
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	15-Jul-2020 15:21
Magnesium	**16.0**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:21
Manganese	**0.457**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:21
Nickel	**0.127**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:21
Potassium	**1.69**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:21
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	15-Jul-2020 15:21
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 15:21
Sodium	**251**		**0.280**	**1.00**	**4.00**	**mg/L**	20	15-Jul-2020 15:55
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:21
Vanadium	**0.00325**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:21
Zinc	**0.126**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:21
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 16:00
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT13B_063020
Collection Date: 30-Jun-2020 10:55

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-13
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 21:06
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	10-Jul-2020 21:06
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 21:06
1,1-Dichloroethene	**1.5**		**0.20**	**0.50**	**1.0**	**UG/L**	1	10-Jul-2020 21:06
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 21:06
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	10-Jul-2020 21:06
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	10-Jul-2020 21:06
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 21:06
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 21:06
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	10-Jul-2020 21:06
1,2-Dichloroethane	**44**		**0.20**	**0.50**	**1.0**	**UG/L**	1	10-Jul-2020 21:06
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	10-Jul-2020 21:06
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 21:06
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 21:06
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 21:06
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	10-Jul-2020 21:06
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	10-Jul-2020 21:06
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 21:06
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	10-Jul-2020 21:06
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	10-Jul-2020 21:06
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 21:06
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 21:06
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 21:06
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 21:06
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 21:06
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 21:06
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	10-Jul-2020 21:06
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	10-Jul-2020 21:06
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
Chloroform	**0.82**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	10-Jul-2020 21:06

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT13B_063020
Collection Date: 30-Jun-2020 10:55

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-13
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 21:06
cis-1,2-Dichloroethene	**120**		**0.20**	**0.50**	**1.0**	**UG/L**	1	10-Jul-2020 21:06
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	10-Jul-2020 21:06
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 21:06
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	10-Jul-2020 21:06
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	10-Jul-2020 21:06
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	10-Jul-2020 21:06
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 21:06
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 21:06
trans-1,2-Dichloroethene	**0.77**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	10-Jul-2020 21:06
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 21:06
Trichloroethene	**910**		**1.0**	**2.5**	**5.0**	**UG/L**	5	10-Jul-2020 15:31
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 21:06
Vinyl chloride	**1.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	10-Jul-2020 21:06
Surr: 1,2-Dichloroethane-d4	*114*			**0**	*81-118*	*%REC*	*5*	*10-Jul-2020 15:31*
Surr: 1,2-Dichloroethane-d4	*90.0*			**0**	*81-118*	*%REC*	*1*	*10-Jul-2020 21:06*
Surr: 4-Bromofluorobenzene	*98.1*			**0**	*85-114*	*%REC*	*1*	*10-Jul-2020 21:06*
Surr: 4-Bromofluorobenzene	*103*			**0**	*85-114*	*%REC*	*5*	*10-Jul-2020 15:31*
Surr: Dibromofluoromethane	*110*			**0**	*80-119*	*%REC*	*5*	*10-Jul-2020 15:31*
Surr: Dibromofluoromethane	*92.9*			**0**	*80-119*	*%REC*	*1*	*10-Jul-2020 21:06*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*1*	*10-Jul-2020 21:06*
Surr: Toluene-d8	*97.9*			**0**	*89-112*	*%REC*	*5*	*10-Jul-2020 15:31*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT13B_063020
Collection Date: 30-Jun-2020 10:55

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-13
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**0.00717**	J	**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	15-Jul-2020 15:24
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	15-Jul-2020 15:24
Arsenic	**0.000647**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:24
Barium	**0.113**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:24
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:24
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:24
Calcium	**7.46**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 15:24
Chromium	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	15-Jul-2020 15:24
Cobalt	**0.00714**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 15:24
Copper	**0.00104**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:24
Iron	**0.609**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:24
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	15-Jul-2020 15:24
Magnesium	**9.53**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:24
Manganese	**0.243**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:24
Nickel	**0.00739**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:24
Potassium	**1.43**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:24
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	15-Jul-2020 15:24
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 15:24
Sodium	**68.0**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:24
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:24
Vanadium	**0.000842**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:24
Zinc	**0.00808**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:24
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 16:02
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT13D_063020
Collection Date: 30-Jun-2020 11:10

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-14
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 21:00
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 21:00
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 21:00
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 21:00
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 21:00
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 21:00
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 21:00
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 21:00
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 21:00
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 21:00
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 21:00
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 21:00
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 21:00
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 21:00
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 21:00
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jul-2020 21:00
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	08-Jul-2020 21:00
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 21:00
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	08-Jul-2020 21:00
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jul-2020 21:00
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 21:00
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 21:00
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 21:00
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 21:00
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 21:00
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 21:00
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	08-Jul-2020 21:00
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 21:00
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 21:00

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT13D_063020
Collection Date: 30-Jun-2020 11:10

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-14
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 21:00
cis-1,2-Dichloroethene	**1.8**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jul-2020 21:00
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	08-Jul-2020 21:00
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 21:00
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	08-Jul-2020 21:00
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jul-2020 21:00
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jul-2020 21:00
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 21:00
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 21:00
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 21:00
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 21:00
Trichloroethene	**19**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jul-2020 21:00
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 21:00
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 21:00
Surr: 1,2-Dichloroethane-d4	*94.7*			**0**	*81-118*	*%REC*	*1*	*08-Jul-2020 21:00*
Surr: 4-Bromofluorobenzene	*97.1*			**0**	*85-114*	*%REC*	*1*	*08-Jul-2020 21:00*
Surr: Dibromofluoromethane	*97.7*			**0**	*80-119*	*%REC*	*1*	*08-Jul-2020 21:00*
Surr: Toluene-d8	*99.9*			**0**	*89-112*	*%REC*	*1*	*08-Jul-2020 21:00*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT13D_063020
Collection Date: 30-Jun-2020 11:10

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-14
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**0.121**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	15-Jul-2020 15:26
Antimony	**0.000751**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:26
Arsenic	**0.00105**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:26
Barium	**0.0481**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:26
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:26
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:26
Calcium	**2.31**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 15:26
Chromium	**0.0346**		**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:26
Cobalt	**0.000570**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 15:26
Copper	**0.00655**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:26
Iron	**2.41**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:26
Lead	**0.00763**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:26
Magnesium	**1.85**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:26
Manganese	**0.0113**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:26
Nickel	**0.0779**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:26
Potassium	**0.653**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:26
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	15-Jul-2020 15:26
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 15:26
Sodium	**13.6**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:26
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:26
Vanadium	**0.00129**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:26
Zinc	**0.130**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:26
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 16:04
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT13E_063020
Collection Date: 30-Jun-2020 11:25

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-15
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:25
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 19:25
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:25
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:25
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 19:25
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 19:25
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 19:25
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:25
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:25
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 19:25
1,2-Dichloroethane	**0.51**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jul-2020 19:25
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 19:25
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 19:25
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 19:25
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:25
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jul-2020 19:25
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	08-Jul-2020 19:25
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 19:25
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	08-Jul-2020 19:25
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jul-2020 19:25
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:25
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 19:25
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:25
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:25
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 19:25
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 19:25
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	08-Jul-2020 19:25
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 19:25
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:25

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT13E_063020
Collection Date: 30-Jun-2020 11:25

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-15
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:25
cis-1,2-Dichloroethene	**23**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jul-2020 19:25
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	08-Jul-2020 19:25
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:25
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	08-Jul-2020 19:25
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jul-2020 19:25
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jul-2020 19:25
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 19:25
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:25
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:25
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:25
Trichloroethene	**72**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jul-2020 19:25
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:25
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:25
Surr: 1,2-Dichloroethane-d4	*96.2*			**0**	*81-118*	*%REC*	*1*	*08-Jul-2020 19:25*
Surr: 4-Bromofluorobenzene	*99.5*			**0**	*85-114*	*%REC*	*1*	*08-Jul-2020 19:25*
Surr: Dibromofluoromethane	*96.7*			**0**	*80-119*	*%REC*	*1*	*08-Jul-2020 19:25*
Surr: Toluene-d8	*97.3*			**0**	*89-112*	*%REC*	*1*	*08-Jul-2020 19:25*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT13E_063020
Collection Date: 30-Jun-2020 11:25

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-15
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**4.56**		**0.0900**	**0.250**	**0.500**	**mg/L**	50	15-Jul-2020 15:57
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	15-Jul-2020 15:28
Arsenic	**0.00447**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:28
Barium	**0.0731**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:28
Beryllium	**0.000697**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	15-Jul-2020 15:28
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:28
Calcium	**1.04**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 15:28
Chromium	**0.316**		**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:28
Cobalt	**0.00320**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 15:28
Copper	**0.00996**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:28
Iron	**8.76**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:28
Lead	**0.00380**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:28
Magnesium	**1.10**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:28
Manganese	**0.0322**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:28
Nickel	**0.0186**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:28
Potassium	**1.06**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:28
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	15-Jul-2020 15:28
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 15:28
Sodium	**13.2**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:28
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:28
Vanadium	**0.0142**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:28
Zinc	**0.0318**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:28
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 16:05
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT13F_063020
Collection Date: 30-Jun-2020 11:35

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-16
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 20:36
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 20:36
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 20:36
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 20:36
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 20:36
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 20:36
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 20:36
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 20:36
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jul-2020 20:36
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	08-Jul-2020 20:36
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 20:36
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	08-Jul-2020 20:36
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jul-2020 20:36
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 20:36
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 20:36
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 20:36
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	08-Jul-2020 20:36
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 20:36
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT13F_063020
Collection Date: 30-Jun-2020 11:35

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-16
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	08-Jul-2020 20:36
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	08-Jul-2020 20:36
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jul-2020 20:36
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jul-2020 20:36
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 20:36
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 20:36
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 20:36
Surr: 1,2-Dichloroethane-d4	*98.7*			**0**	*81-118*	*%REC*	*1*	*08-Jul-2020 20:36*
Surr: 4-Bromofluorobenzene	*106*			**0**	*85-114*	*%REC*	*1*	*08-Jul-2020 20:36*
Surr: Dibromofluoromethane	*103*			**0**	*80-119*	*%REC*	*1*	*08-Jul-2020 20:36*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*1*	*08-Jul-2020 20:36*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT13F_063020
Collection Date: 30-Jun-2020 11:35

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-16
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**3.71**		**0.0900**	**0.250**	**0.500**	**mg/L**	50	15-Jul-2020 16:47
Antimony	**0.00108**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:30
Arsenic	**0.000972**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:30
Barium	**0.0839**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:30
Beryllium	**0.000572**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	15-Jul-2020 15:30
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:30
Calcium	**0.666**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 15:30
Chromium	**0.0104**		**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:30
Cobalt	**0.00458**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 15:30
Copper	**0.0615**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:30
Iron	**4.55**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:30
Lead	**0.00252**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:30
Magnesium	**1.000**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:30
Manganese	**0.0250**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:30
Nickel	**0.0141**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:30
Potassium	**1.42**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:30
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	15-Jul-2020 15:30
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 15:30
Sodium	**6.24**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:30
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:30
Vanadium	**0.0129**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:30
Zinc	**0.137**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:30
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 16:10
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT14B_063020
Collection Date: 30-Jun-2020 11:50

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-17
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 14:44
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	10-Jul-2020 14:44
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
1,1-Dichloroethane	**0.66**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	10-Jul-2020 14:44
1,1-Dichloroethene	**1.6**		**0.20**	**0.50**	**1.0**	**UG/L**	1	10-Jul-2020 14:44
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 14:44
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	10-Jul-2020 14:44
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	10-Jul-2020 14:44
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 14:44
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 14:44
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	10-Jul-2020 14:44
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 14:44
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	10-Jul-2020 14:44
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 14:44
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 14:44
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 14:44
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	10-Jul-2020 14:44
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	10-Jul-2020 14:44
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 14:44
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	10-Jul-2020 14:44
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	10-Jul-2020 14:44
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 14:44
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 14:44
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 14:44
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 14:44
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 14:44
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 14:44
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	10-Jul-2020 14:44
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	10-Jul-2020 14:44
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 14:44

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT14B_063020
Collection Date: 30-Jun-2020 11:50

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-17
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 14:44
cis-1,2-Dichloroethene	**15**		**0.20**	**0.50**	**1.0**	**UG/L**	1	10-Jul-2020 14:44
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	10-Jul-2020 14:44
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 14:44
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	10-Jul-2020 14:44
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	10-Jul-2020 14:44
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	10-Jul-2020 14:44
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	10-Jul-2020 14:44
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 14:44
trans-1,2-Dichloroethene	**0.42**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	10-Jul-2020 14:44
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	10-Jul-2020 14:44
Trichloroethene	**78**		**0.20**	**0.50**	**1.0**	**UG/L**	1	10-Jul-2020 14:44
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	10-Jul-2020 14:44
Vinyl chloride	**0.70**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	10-Jul-2020 14:44
Surr: 1,2-Dichloroethane-d4	*90.6*			**0**	*81-118*	*%REC*	*1*	*10-Jul-2020 14:44*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*10-Jul-2020 14:44*
Surr: Dibromofluoromethane	*93.8*			**0**	*80-119*	*%REC*	*1*	*10-Jul-2020 14:44*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*10-Jul-2020 14:44*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT14B_063020
Collection Date: 30-Jun-2020 11:50

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-17
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**0.0166**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	15-Jul-2020 15:46
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	15-Jul-2020 15:46
Arsenic	**0.00165**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:46
Barium	**0.177**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:46
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:46
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:46
Calcium	**5.21**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 15:46
Chromium	**0.259**		**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:46
Cobalt	**0.00134**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 15:46
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	15-Jul-2020 15:46
Iron	**5.66**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:46
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	15-Jul-2020 15:46
Magnesium	**4.91**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:46
Manganese	**0.0595**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:46
Nickel	**0.0267**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:46
Potassium	**0.389**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:46
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	15-Jul-2020 15:46
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 15:46
Sodium	**62.1**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:46
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:46
Vanadium	**0.00266**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:46
Zinc	**0.00389**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:46
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 16:12
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT14C_063020
Collection Date: 30-Jun-2020 12:00

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-18
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
1,1,1-Trichloroethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 19:30
1,1,2,2-Tetrachloroethane	10	U	5.0	10	10	UG/L	10	10-Jul-2020 19:30
1,1,2-Trichloroethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
1,1-Dichloroethane	**6.6**	J	**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 19:30
1,1-Dichloroethene	**68**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 19:30
1,1-Dichloropropene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
1,2,3-Trichlorobenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 19:30
1,2,3-Trichloropropane	10	U	5.0	10	10	UG/L	10	10-Jul-2020 19:30
1,2,4-Trichlorobenzene	10	U	5.0	10	10	UG/L	10	10-Jul-2020 19:30
1,2,4-Trimethylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
1,2-Dibromo-3-chloropropane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 19:30
1,2-Dibromoethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 19:30
1,2-Dichlorobenzene	10	U	5.0	10	10	UG/L	10	10-Jul-2020 19:30
1,2-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 19:30
1,2-Dichloropropane	10	U	5.0	10	10	UG/L	10	10-Jul-2020 19:30
1,3,5-Trimethylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
1,3-Dichlorobenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 19:30
1,3-Dichloropropane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
1,4-Dichlorobenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 19:30
2,2-Dichloropropane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 19:30
2-Butanone	10	U	5.0	10	20	UG/L	10	10-Jul-2020 19:30
2-Chlorotoluene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
2-Hexanone	20	U	10	20	20	UG/L	10	10-Jul-2020 19:30
4-Chlorotoluene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 19:30
4-Isopropyltoluene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
4-Methyl-2-pentanone	20	U	7.0	20	20	UG/L	10	10-Jul-2020 19:30
Acetone	10	U	4.0	10	20	UG/L	10	10-Jul-2020 19:30
Benzene	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 19:30
Bromobenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 19:30
Bromochloromethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 19:30
Bromodichloromethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 19:30
Bromoform	10	U	4.0	10	10	UG/L	10	10-Jul-2020 19:30
Bromomethane	10	U	4.0	10	10	UG/L	10	10-Jul-2020 19:30
Carbon disulfide	10	U	6.0	10	20	UG/L	10	10-Jul-2020 19:30
Carbon tetrachloride	10	U	5.0	10	10	UG/L	10	10-Jul-2020 19:30
Chlorobenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
Chloroethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
Chloroform	**15**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 19:30

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT14C_063020
Collection Date: 30-Jun-2020 12:00

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-18
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 19:30
cis-1,2-Dichloroethene	**3,400**		**20**	**50**	**100**	**UG/L**	100	10-Jul-2020 19:54
cis-1,3-Dichloropropene	5.0	U	1.0	5.0	10	UG/L	10	10-Jul-2020 19:30
Dibromochloromethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
Dibromomethane	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 19:30
Dichlorodifluoromethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
Ethylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
Hexachlorobutadiene	10	U	10	10	10	UG/L	10	10-Jul-2020 19:30
Isopropylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
m,p-Xylene	10	U	5.0	10	20	UG/L	10	10-Jul-2020 19:30
Methylene chloride	10	U	4.0	10	20	UG/L	10	10-Jul-2020 19:30
n-Butylbenzene	10	U	4.0	10	10	UG/L	10	10-Jul-2020 19:30
n-Propylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
Naphthalene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
o-Xylene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
sec-Butylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
Styrene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
tert-Butylbenzene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
Tetrachloroethene	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
Toluene	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 19:30
trans-1,2-Dichloroethene	**23**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 19:30
trans-1,3-Dichloropropene	5.0	U	2.0	5.0	10	UG/L	10	10-Jul-2020 19:30
Trichloroethene	**1,600**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 19:30
Trichlorofluoromethane	10	U	3.0	10	10	UG/L	10	10-Jul-2020 19:30
Vinyl chloride	**1,800**		**2.0**	**5.0**	**10**	**UG/L**	10	10-Jul-2020 19:30
Surr: 1,2-Dichloroethane-d4	*114*			**0**	*81-118*	*%REC*	*10*	*10-Jul-2020 19:30*
Surr: 1,2-Dichloroethane-d4	*112*			**0**	*81-118*	*%REC*	*100*	*10-Jul-2020 19:54*
Surr: 4-Bromofluorobenzene	*104*			**0**	*85-114*	*%REC*	*10*	*10-Jul-2020 19:30*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*100*	*10-Jul-2020 19:54*
Surr: Dibromofluoromethane	*112*			**0**	*80-119*	*%REC*	*10*	*10-Jul-2020 19:30*
Surr: Dibromofluoromethane	*110*			**0**	*80-119*	*%REC*	*100*	*10-Jul-2020 19:54*
Surr: Toluene-d8	*96.3*			**0**	*89-112*	*%REC*	*10*	*10-Jul-2020 19:30*
Surr: Toluene-d8	*96.8*			**0**	*89-112*	*%REC*	*100*	*10-Jul-2020 19:54*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT14C_063020
Collection Date: 30-Jun-2020 12:00

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-18
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JC
Aluminum	**0.0407**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	15-Jul-2020 15:48
Antimony	**0.000553**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:48
Arsenic	**0.0192**		**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:48
Barium	**1.35**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:48
Beryllium	**0.000295**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	15-Jul-2020 15:48
Cadmium	**0.000217**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	15-Jul-2020 15:48
Calcium	**54.1**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	15-Jul-2020 15:48
Chromium	**0.269**		**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:48
Cobalt	**0.0431**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	15-Jul-2020 15:48
Copper	**0.0240**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:48
Iron	**74.8**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:48
Lead	**0.0110**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:48
Magnesium	**36.6**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:48
Manganese	**2.48**		**0.0140**	**0.0500**	**0.100**	**mg/L**	20	15-Jul-2020 16:01
Nickel	**0.223**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:48
Potassium	**0.849**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:48
Selenium	**0.00115**	J	**0.00110**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:48
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	15-Jul-2020 15:48
Sodium	**142**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	15-Jul-2020 15:48
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	15-Jul-2020 15:48
Vanadium	**0.00365**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	15-Jul-2020 15:48
Zinc	**0.0433**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	15-Jul-2020 15:48
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	**0.0000440**	J	**0.0000300**	**0.000100**	**0.000200**	**mg/L**	1	24-Jul-2020 16:14
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT14D_063020
Collection Date: 30-Jun-2020 12:30

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-19
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
1,1,1-Trichloroethane	10	U	4.0	10	20	UG/L	20	13-Jul-2020 20:05
1,1,2,2-Tetrachloroethane	20	U	10	20	20	UG/L	20	13-Jul-2020 20:05
1,1,2-Trichloroethane	**11**	J	**6.0**	**20**	**20**	**UG/L**	20	13-Jul-2020 20:05
1,1-Dichloroethane	**14**	J	**4.0**	**10**	**20**	**UG/L**	20	13-Jul-2020 20:05
1,1-Dichloroethene	10	U	4.0	10	20	UG/L	20	13-Jul-2020 20:05
1,1-Dichloropropene	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
1,2,3-Trichlorobenzene	20	U	8.0	20	20	UG/L	20	13-Jul-2020 20:05
1,2,3-Trichloropropane	20	U	10	20	20	UG/L	20	13-Jul-2020 20:05
1,2,4-Trichlorobenzene	20	U	10	20	20	UG/L	20	13-Jul-2020 20:05
1,2,4-Trimethylbenzene	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
1,2-Dibromo-3-chloropropane	10	U	4.0	10	20	UG/L	20	13-Jul-2020 20:05
1,2-Dibromoethane	10	U	4.0	10	20	UG/L	20	13-Jul-2020 20:05
1,2-Dichlorobenzene	20	U	10	20	20	UG/L	20	13-Jul-2020 20:05
1,2-Dichloroethane	**27**		**4.0**	**10**	**20**	**UG/L**	20	13-Jul-2020 20:05
1,2-Dichloropropane	20	U	10	20	20	UG/L	20	13-Jul-2020 20:05
1,3,5-Trimethylbenzene	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
1,3-Dichlorobenzene	20	U	8.0	20	20	UG/L	20	13-Jul-2020 20:05
1,3-Dichloropropane	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
1,4-Dichlorobenzene	20	U	8.0	20	20	UG/L	20	13-Jul-2020 20:05
2,2-Dichloropropane	10	U	4.0	10	20	UG/L	20	13-Jul-2020 20:05
2-Butanone	20	U	10	20	40	UG/L	20	13-Jul-2020 20:05
2-Chlorotoluene	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
2-Hexanone	40	U	20	40	40	UG/L	20	13-Jul-2020 20:05
4-Chlorotoluene	20	U	8.0	20	20	UG/L	20	13-Jul-2020 20:05
4-Isopropyltoluene	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
4-Methyl-2-pentanone	40	U	14	40	40	UG/L	20	13-Jul-2020 20:05
Acetone	20	U	8.0	20	40	UG/L	20	13-Jul-2020 20:05
Benzene	10	U	4.0	10	20	UG/L	20	13-Jul-2020 20:05
Bromobenzene	20	U	8.0	20	20	UG/L	20	13-Jul-2020 20:05
Bromochloromethane	10	U	4.0	10	20	UG/L	20	13-Jul-2020 20:05
Bromodichloromethane	10	U	4.0	10	20	UG/L	20	13-Jul-2020 20:05
Bromoform	20	U	8.0	20	20	UG/L	20	13-Jul-2020 20:05
Bromomethane	20	U	8.0	20	20	UG/L	20	13-Jul-2020 20:05
Carbon disulfide	20	U	12	20	40	UG/L	20	13-Jul-2020 20:05
Carbon tetrachloride	20	U	10	20	20	UG/L	20	13-Jul-2020 20:05
Chlorobenzene	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
Chloroethane	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
Chloroform	**20**		**4.0**	**10**	**20**	**UG/L**	20	13-Jul-2020 20:05

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT14D_063020
Collection Date: 30-Jun-2020 12:30

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-19
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	10	U	4.0	10	20	UG/L	20	13-Jul-2020 20:05
cis-1,2-Dichloroethene	**7,500**		**40**	**100**	**200**	**UG/L**	200	13-Jul-2020 19:41
cis-1,3-Dichloropropene	10	U	2.0	10	20	UG/L	20	13-Jul-2020 20:05
Dibromochloromethane	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
Dibromomethane	10	U	4.0	10	20	UG/L	20	13-Jul-2020 20:05
Dichlorodifluoromethane	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
Ethylbenzene	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
Hexachlorobutadiene	20	U	20	20	20	UG/L	20	13-Jul-2020 20:05
Isopropylbenzene	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
m,p-Xylene	20	U	10	20	40	UG/L	20	13-Jul-2020 20:05
Methylene chloride	**5,900**		**80**	**200**	**400**	**UG/L**	200	13-Jul-2020 19:41
n-Butylbenzene	20	U	8.0	20	20	UG/L	20	13-Jul-2020 20:05
n-Propylbenzene	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
Naphthalene	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
o-Xylene	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
sec-Butylbenzene	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
Styrene	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
tert-Butylbenzene	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
Tetrachloroethene	**13**	J	**6.0**	**20**	**20**	**UG/L**	20	13-Jul-2020 20:05
Toluene	10	U	4.0	10	20	UG/L	20	13-Jul-2020 20:05
trans-1,2-Dichloroethene	**29**		**4.0**	**10**	**20**	**UG/L**	20	13-Jul-2020 20:05
trans-1,3-Dichloropropene	10	U	4.0	10	20	UG/L	20	13-Jul-2020 20:05
Trichloroethene	**4,900**		**40**	**100**	**200**	**UG/L**	200	13-Jul-2020 19:41
Trichlorofluoromethane	20	U	6.0	20	20	UG/L	20	13-Jul-2020 20:05
Vinyl chloride	**150**		**4.0**	**10**	**20**	**UG/L**	20	13-Jul-2020 20:05
Surr: 1,2-Dichloroethane-d4	*88.1*			**0**	*81-118*	*%REC*	*200*	*13-Jul-2020 19:41*
Surr: 1,2-Dichloroethane-d4	*88.0*			**0**	*81-118*	*%REC*	*20*	*13-Jul-2020 20:05*
Surr: 4-Bromofluorobenzene	*93.2*			**0**	*85-114*	*%REC*	*200*	*13-Jul-2020 19:41*
Surr: 4-Bromofluorobenzene	*114*			**0**	*85-114*	*%REC*	*20*	*13-Jul-2020 20:05*
Surr: Dibromofluoromethane	*89.5*			**0**	*80-119*	*%REC*	*200*	*13-Jul-2020 19:41*
Surr: Dibromofluoromethane	*90.8*			**0**	*80-119*	*%REC*	*20*	*13-Jul-2020 20:05*
Surr: Toluene-d8	*99.3*			**0**	*89-112*	*%REC*	*200*	*13-Jul-2020 19:41*
Surr: Toluene-d8	*115*	*S*		**0**	*89-112*	*%REC*	*20*	*13-Jul-2020 20:05*

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: ICT14D_063020
Collection Date: 30-Jun-2020 12:30

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-19
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Jul-2020		Analyst: JHD
Aluminum	**0.0146**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	16-Jul-2020 11:58
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	16-Jul-2020 11:58
Arsenic	**0.00305**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	16-Jul-2020 11:58
Barium	**1.44**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	16-Jul-2020 11:58
Beryllium	**0.000204**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	16-Jul-2020 11:58
Cadmium	**0.000276**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	16-Jul-2020 11:58
Calcium	**91.7**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	16-Jul-2020 11:58
Chromium	**0.00157**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	16-Jul-2020 11:58
Cobalt	**0.0120**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	16-Jul-2020 11:58
Copper	**0.0116**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	16-Jul-2020 11:58
Iron	**3.63**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	16-Jul-2020 11:58
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	16-Jul-2020 11:58
Magnesium	**63.3**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	16-Jul-2020 11:58
Manganese	**1.09**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	16-Jul-2020 11:58
Nickel	**0.0221**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	16-Jul-2020 11:58
Potassium	**1.10**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	16-Jul-2020 11:58
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	16-Jul-2020 11:58
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	16-Jul-2020 11:58
Sodium	**316**		**0.140**	**0.500**	**2.00**	**mg/L**	10	16-Jul-2020 14:26
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	16-Jul-2020 11:58
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	16-Jul-2020 11:58
Zinc	**0.0276**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	16-Jul-2020 11:58
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 24-Jul-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	24-Jul-2020 15:33
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	10-Jul-2020 10:52

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: Trip Blank
Collection Date: 30-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-20
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 19:49
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 19:49
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 19:49
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 19:49
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 19:49
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 19:49
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 19:49
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 19:49
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jul-2020 19:49
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	08-Jul-2020 19:49
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 19:49
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	08-Jul-2020 19:49
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jul-2020 19:49
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 19:49
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 19:49
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 19:49
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	08-Jul-2020 19:49
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jul-2020 19:49
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49

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

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Sample ID: Trip Blank
Collection Date: 30-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20070043
Lab ID:HS20070043-20
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	08-Jul-2020 19:49
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	08-Jul-2020 19:49
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jul-2020 19:49
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jul-2020 19:49
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jul-2020 19:49
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jul-2020 19:49
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jul-2020 19:49
Surr: 1,2-Dichloroethane-d4	*92.9*			**0**	*81-118*	*%REC*	*1*	*08-Jul-2020 19:49*
Surr: 4-Bromofluorobenzene	*99.9*			**0**	*85-114*	*%REC*	*1*	*08-Jul-2020 19:49*
Surr: Dibromofluoromethane	*96.5*			**0**	*80-119*	*%REC*	*1*	*08-Jul-2020 19:49*
Surr: Toluene-d8	*97.8*			**0**	*89-112*	*%REC*	*1*	*08-Jul-2020 19:49*

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

Revision: 1

ALS Houston, US

Date: 24-Jul-20

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

Batch ID: 155343 **Start Date:** 13 Jul 2020 09:30 **End Date:** 13 Jul 2020 13:30
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20070043-01		10 (mL)	10 (mL)	1
HS20070043-02		10 (mL)	10 (mL)	1
HS20070043-03		10 (mL)	10 (mL)	1
HS20070043-04		10 (mL)	10 (mL)	1
HS20070043-05		10 (mL)	10 (mL)	1
HS20070043-06		10 (mL)	10 (mL)	1
HS20070043-07		10 (mL)	10 (mL)	1
HS20070043-08		10 (mL)	10 (mL)	1
HS20070043-09		10 (mL)	10 (mL)	1
HS20070043-10		10 (mL)	10 (mL)	1
HS20070043-11		10 (mL)	10 (mL)	1
HS20070043-12		10 (mL)	10 (mL)	1
HS20070043-13		10 (mL)	10 (mL)	1
HS20070043-14		10 (mL)	10 (mL)	1
HS20070043-15		10 (mL)	10 (mL)	1
HS20070043-16		10 (mL)	10 (mL)	1
HS20070043-17		10 (mL)	10 (mL)	1
HS20070043-18		10 (mL)	10 (mL)	1
HS20070043-19		10 (mL)	10 (mL)	1

Batch ID: 155761 **Start Date:** 24 Jul 2020 10:30 **End Date:** 24 Jul 2020 12:30
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20070043-01		10 (mL)	10 (mL)	1
HS20070043-02		10 (mL)	10 (mL)	1
HS20070043-03		10 (mL)	10 (mL)	1
HS20070043-04		10 (mL)	10 (mL)	1
HS20070043-05		10 (mL)	10 (mL)	1
HS20070043-06		10 (mL)	10 (mL)	1
HS20070043-07		10 (mL)	10 (mL)	1
HS20070043-08		10 (mL)	10 (mL)	1
HS20070043-09		10 (mL)	10 (mL)	1
HS20070043-10		10 (mL)	10 (mL)	1
HS20070043-11		10 (mL)	10 (mL)	1
HS20070043-12		10 (mL)	10 (mL)	1
HS20070043-13		10 (mL)	10 (mL)	1
HS20070043-14		10 (mL)	10 (mL)	1
HS20070043-15		10 (mL)	10 (mL)	1
HS20070043-16		10 (mL)	10 (mL)	1
HS20070043-17		10 (mL)	10 (mL)	1
HS20070043-18		10 (mL)	10 (mL)	1
HS20070043-19		10 (mL)	10 (mL)	1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 155343 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Groundwater	
HS20070043-01	ICT2_063020	30 Jun 2020 08:40		13 Jul 2020 13:30	15 Jul 2020 14:41	1
HS20070043-02	ICT4_063020	30 Jun 2020 08:55		13 Jul 2020 13:30	15 Jul 2020 14:50	1
HS20070043-03	ICT4_063020_a	30 Jun 2020 08:55		13 Jul 2020 13:30	15 Jul 2020 14:52	1
HS20070043-04	ICT7_063020	30 Jun 2020 09:15		13 Jul 2020 13:30	15 Jul 2020 16:45	50
HS20070043-04	ICT7_063020	30 Jun 2020 09:15		13 Jul 2020 13:30	15 Jul 2020 14:54	1
HS20070043-05	ICT8_063020	30 Jun 2020 09:25		13 Jul 2020 13:30	15 Jul 2020 14:58	1
HS20070043-06	ICT8_063020_a	30 Jun 2020 09:25		13 Jul 2020 13:30	15 Jul 2020 15:00	1
HS20070043-07	ICT11_063020	30 Jun 2020 09:45		13 Jul 2020 13:30	15 Jul 2020 15:02	1
HS20070043-08	ICT12B_063020	30 Jun 2020 09:55		13 Jul 2020 13:30	15 Jul 2020 15:06	1
HS20070043-09	ICT12C_063020	30 Jun 2020 10:10		13 Jul 2020 13:30	15 Jul 2020 15:15	1
HS20070043-10	ICT12D_063020	30 Jun 2020 10:20		13 Jul 2020 13:30	15 Jul 2020 15:17	1
HS20070043-11	ICT12E_063020	30 Jun 2020 10:30		13 Jul 2020 13:30	15 Jul 2020 15:53	20
HS20070043-11	ICT12E_063020	30 Jun 2020 10:30		13 Jul 2020 13:30	15 Jul 2020 15:19	1
HS20070043-12	ICT13A_063020	30 Jun 2020 10:40		13 Jul 2020 13:30	15 Jul 2020 15:55	20
HS20070043-12	ICT13A_063020	30 Jun 2020 10:40		13 Jul 2020 13:30	15 Jul 2020 15:21	1
HS20070043-13	ICT13B_063020	30 Jun 2020 10:55		13 Jul 2020 13:30	15 Jul 2020 15:24	1
HS20070043-14	ICT13D_063020	30 Jun 2020 11:10		13 Jul 2020 13:30	15 Jul 2020 15:26	1
HS20070043-15	ICT13E_063020	30 Jun 2020 11:25		13 Jul 2020 13:30	15 Jul 2020 15:57	50
HS20070043-15	ICT13E_063020	30 Jun 2020 11:25		13 Jul 2020 13:30	15 Jul 2020 15:28	1
HS20070043-16	ICT13F_063020	30 Jun 2020 11:35		13 Jul 2020 13:30	15 Jul 2020 16:47	50
HS20070043-16	ICT13F_063020	30 Jun 2020 11:35		13 Jul 2020 13:30	15 Jul 2020 15:30	1
HS20070043-17	ICT14B_063020	30 Jun 2020 11:50		13 Jul 2020 13:30	15 Jul 2020 15:46	1
HS20070043-18	ICT14C_063020	30 Jun 2020 12:00		13 Jul 2020 13:30	15 Jul 2020 16:01	20
HS20070043-18	ICT14C_063020	30 Jun 2020 12:00		13 Jul 2020 13:30	15 Jul 2020 15:48	1
HS20070043-19	ICT14D_063020	30 Jun 2020 12:30		13 Jul 2020 13:30	16 Jul 2020 14:26	10
HS20070043-19	ICT14D_063020	30 Jun 2020 12:30		13 Jul 2020 13:30	16 Jul 2020 11:58	1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 155761 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Groundwater	
HS20070043-01	ICT2_063020	30 Jun 2020 08:40		24 Jul 2020 10:30	24 Jul 2020 15:38	1
HS20070043-02	ICT4_063020	30 Jun 2020 08:55		24 Jul 2020 10:30	24 Jul 2020 15:40	1
HS20070043-03	ICT4_063020_a	30 Jun 2020 08:55		24 Jul 2020 10:30	24 Jul 2020 15:42	1
HS20070043-04	ICT7_063020	30 Jun 2020 09:15		24 Jul 2020 10:30	24 Jul 2020 15:43	1
HS20070043-05	ICT8_063020	30 Jun 2020 09:25		24 Jul 2020 10:30	24 Jul 2020 15:45	1
HS20070043-06	ICT8_063020_a	30 Jun 2020 09:25		24 Jul 2020 10:30	24 Jul 2020 15:50	1
HS20070043-07	ICT11_063020	30 Jun 2020 09:45		24 Jul 2020 10:30	24 Jul 2020 15:52	1
HS20070043-08	ICT12B_063020	30 Jun 2020 09:55		24 Jul 2020 10:30	24 Jul 2020 15:53	1
HS20070043-09	ICT12C_063020	30 Jun 2020 10:10		24 Jul 2020 10:30	24 Jul 2020 15:55	1
HS20070043-10	ICT12D_063020	30 Jun 2020 10:20		24 Jul 2020 10:30	24 Jul 2020 15:57	1
HS20070043-11	ICT12E_063020	30 Jun 2020 10:30		24 Jul 2020 10:30	24 Jul 2020 15:58	1
HS20070043-12	ICT13A_063020	30 Jun 2020 10:40		24 Jul 2020 10:30	24 Jul 2020 16:00	1
HS20070043-13	ICT13B_063020	30 Jun 2020 10:55		24 Jul 2020 10:30	24 Jul 2020 16:02	1
HS20070043-14	ICT13D_063020	30 Jun 2020 11:10		24 Jul 2020 10:30	24 Jul 2020 16:04	1
HS20070043-15	ICT13E_063020	30 Jun 2020 11:25		24 Jul 2020 10:30	24 Jul 2020 16:05	1
HS20070043-16	ICT13F_063020	30 Jun 2020 11:35		24 Jul 2020 10:30	24 Jul 2020 16:10	1
HS20070043-17	ICT14B_063020	30 Jun 2020 11:50		24 Jul 2020 10:30	24 Jul 2020 16:12	1
HS20070043-18	ICT14C_063020	30 Jun 2020 12:00		24 Jul 2020 10:30	24 Jul 2020 16:14	1
HS20070043-19	ICT14D_063020	30 Jun 2020 12:30		24 Jul 2020 10:30	24 Jul 2020 15:33	1
Batch ID: R364746 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20070043-20	Trip Blank	30 Jun 2020 00:00			08 Jul 2020 19:49	1
Batch ID: R364746 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20070043-01	ICT2_063020	30 Jun 2020 08:40			08 Jul 2020 19:01	25
HS20070043-01	ICT2_063020	30 Jun 2020 08:40			08 Jul 2020 17:01	1
HS20070043-02	ICT4_063020	30 Jun 2020 08:55			08 Jul 2020 21:48	100
HS20070043-02	ICT4_063020	30 Jun 2020 08:55			08 Jul 2020 21:24	10
HS20070043-03	ICT4_063020_a	30 Jun 2020 08:55			08 Jul 2020 22:36	100
HS20070043-03	ICT4_063020_a	30 Jun 2020 08:55			08 Jul 2020 22:12	10
HS20070043-04	ICT7_063020	30 Jun 2020 09:15			08 Jul 2020 20:12	1
HS20070043-14	ICT13D_063020	30 Jun 2020 11:10			08 Jul 2020 21:00	1
HS20070043-15	ICT13E_063020	30 Jun 2020 11:25			08 Jul 2020 19:25	1
HS20070043-16	ICT13F_063020	30 Jun 2020 11:35			08 Jul 2020 20:36	1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R364840 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20070043-01	ICT2_063020	30 Jun 2020 08:40			10 Jul 2020 10:52	1
HS20070043-02	ICT4_063020	30 Jun 2020 08:55			10 Jul 2020 10:52	1
HS20070043-03	ICT4_063020_a	30 Jun 2020 08:55			10 Jul 2020 10:52	1
HS20070043-04	ICT7_063020	30 Jun 2020 09:15			10 Jul 2020 10:52	1
HS20070043-05	ICT8_063020	30 Jun 2020 09:25			10 Jul 2020 10:52	1
HS20070043-06	ICT8_063020_a	30 Jun 2020 09:25			10 Jul 2020 10:52	1
HS20070043-07	ICT11_063020	30 Jun 2020 09:45			10 Jul 2020 10:52	1
HS20070043-08	ICT12B_063020	30 Jun 2020 09:55			10 Jul 2020 10:52	1
HS20070043-09	ICT12C_063020	30 Jun 2020 10:10			10 Jul 2020 10:52	1
HS20070043-10	ICT12D_063020	30 Jun 2020 10:20			10 Jul 2020 10:52	1
HS20070043-11	ICT12E_063020	30 Jun 2020 10:30			10 Jul 2020 10:52	1
HS20070043-12	ICT13A_063020	30 Jun 2020 10:40			10 Jul 2020 10:52	1
HS20070043-13	ICT13B_063020	30 Jun 2020 10:55			10 Jul 2020 10:52	1
HS20070043-14	ICT13D_063020	30 Jun 2020 11:10			10 Jul 2020 10:52	1
HS20070043-15	ICT13E_063020	30 Jun 2020 11:25			10 Jul 2020 10:52	1
HS20070043-16	ICT13F_063020	30 Jun 2020 11:35			10 Jul 2020 10:52	1
HS20070043-17	ICT14B_063020	30 Jun 2020 11:50			10 Jul 2020 10:52	1
HS20070043-18	ICT14C_063020	30 Jun 2020 12:00			10 Jul 2020 10:52	1
HS20070043-19	ICT14D_063020	30 Jun 2020 12:30			10 Jul 2020 10:52	1
Batch ID: R364892 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20070043-07	ICT11_063020	30 Jun 2020 09:45			10 Jul 2020 16:43	25
HS20070043-07	ICT11_063020	30 Jun 2020 09:45			10 Jul 2020 15:08	1
HS20070043-08	ICT12B_063020	30 Jun 2020 09:55			10 Jul 2020 17:31	100
HS20070043-08	ICT12B_063020	30 Jun 2020 09:55			10 Jul 2020 17:07	10
HS20070043-09	ICT12C_063020	30 Jun 2020 10:10			10 Jul 2020 18:19	100
HS20070043-09	ICT12C_063020	30 Jun 2020 10:10			10 Jul 2020 17:55	10
HS20070043-10	ICT12D_063020	30 Jun 2020 10:20			10 Jul 2020 20:18	20
HS20070043-12	ICT13A_063020	30 Jun 2020 10:40			10 Jul 2020 19:07	100
HS20070043-12	ICT13A_063020	30 Jun 2020 10:40			10 Jul 2020 18:43	10
HS20070043-13	ICT13B_063020	30 Jun 2020 10:55			10 Jul 2020 21:06	1
HS20070043-13	ICT13B_063020	30 Jun 2020 10:55			10 Jul 2020 15:31	5
HS20070043-17	ICT14B_063020	30 Jun 2020 11:50			10 Jul 2020 14:44	1
HS20070043-18	ICT14C_063020	30 Jun 2020 12:00			10 Jul 2020 19:54	100
HS20070043-18	ICT14C_063020	30 Jun 2020 12:00			10 Jul 2020 19:30	10
Batch ID: R364903 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20070043-10	ICT12D_063020	30 Jun 2020 10:20			12 Jul 2020 15:24	250

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R364980 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20070043-05	ICT8_063020	30 Jun 2020 09:25			13 Jul 2020 22:06	500
HS20070043-05	ICT8_063020	30 Jun 2020 09:25			13 Jul 2020 21:42	50
HS20070043-06	ICT8_063020_a	30 Jun 2020 09:25			13 Jul 2020 22:54	500
HS20070043-06	ICT8_063020_a	30 Jun 2020 09:25			13 Jul 2020 22:30	50
HS20070043-11	ICT12E_063020	30 Jun 2020 10:30			13 Jul 2020 23:42	500
HS20070043-11	ICT12E_063020	30 Jun 2020 10:30			13 Jul 2020 23:18	50
HS20070043-19	ICT14D_063020	30 Jun 2020 12:30			13 Jul 2020 20:05	20
HS20070043-19	ICT14D_063020	30 Jun 2020 12:30			13 Jul 2020 19:41	200
Batch ID: R365018 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20070043-11	ICT12E_063020	30 Jun 2020 10:30			14 Jul 2020 13:21	2500

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: 155343 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-155343** Units: **mg/L** Analysis Date: **15-Jul-2020 14:25**
Client ID: Run ID: **ICPMS06_365077** SeqNo: **5662980** PrepDate: **13-Jul-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.005474	0.0100								J
Antimony	0.00100	0.00500								U
Arsenic	0.00100	0.00500								U
Barium	0.00250	0.00500								U
Beryllium	0.000500	0.00200								U
Cadmium	0.000500	0.00200								U
Calcium	0.0500	0.500								U
Chromium	0.00100	0.00500								U
Cobalt	0.000500	0.00500								U
Copper	0.00250	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00100	0.00500								U
Magnesium	0.01638	0.200								J
Manganese	0.00250	0.00500								U
Nickel	0.00100	0.00500								U
Potassium	0.0500	0.200								U
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U
Sodium	0.0500	0.200								U
Thallium	0.000500	0.00200								U
Vanadium	0.00100	0.00500								U
Zinc	0.00250	0.00500								U

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: 155343 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-155343** Units: **mg/L** Analysis Date: **15-Jul-2020 14:28**
Client ID: Run ID: **ICPMS06_365077** SeqNo: **5662981** PrepDate: **13-Jul-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.09258	0.0100	0.1	0	92.6	84 - 117				
Antimony	0.04407	0.00500	0.05	0	88.1	85 - 117				
Arsenic	0.04533	0.00500	0.05	0	90.7	84 - 116				
Barium	0.04522	0.00500	0.05	0	90.4	86 - 114				
Beryllium	0.04552	0.00200	0.05	0	91.0	83 - 121				
Cadmium	0.04659	0.00200	0.05	0	93.2	87 - 115				
Calcium	4.448	0.500	5	0	89.0	87 - 118				
Chromium	0.04482	0.00500	0.05	0	89.6	85 - 116				
Cobalt	0.04483	0.00500	0.05	0	89.7	86 - 115				
Copper	0.04626	0.00500	0.05	0	92.5	85 - 118				
Iron	4.52	0.200	5	0	90.4	87 - 118				
Magnesium	4.653	0.200	5	0	93.1	83 - 118				
Manganese	0.04567	0.00500	0.05	0	91.3	87 - 115				
Nickel	0.04595	0.00500	0.05	0	91.9	85 - 117				
Potassium	4.597	0.200	5	0	91.9	87 - 115				
Selenium	0.0475	0.00500	0.05	0	95.0	80 - 120				
Silver	0.04455	0.00500	0.05	0	89.1	85 - 116				
Sodium	4.494	0.200	5	0	89.9	85 - 117				
Thallium	0.04346	0.00200	0.05	0	86.9	82 - 116				
Vanadium	0.04388	0.00500	0.05	0	87.8	86 - 115				
Zinc	0.04762	0.00500	0.05	0	95.2	83 - 119				

LCS Sample ID: **LCS-155343** Units: **mg/L** Analysis Date: **16-Jul-2020 12:09**
Client ID: Run ID: **ICPMS06_365160** SeqNo: **5664095** PrepDate: **13-Jul-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	0.04443	0.00500	0.05	0	88.9	88 - 115				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: 155343 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS20070043-19MS** Units: **mg/L** Analysis Date: **16-Jul-2020 12:02**
Client ID: **ICT14D_063020** Run ID: **ICPMS06_365160** SeqNo: **5664092** PrepDate: **13-Jul-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1046	0.0100	0.1	0.01458	90.0	84 - 117				
Antimony	0.04221	0.00500	0.05	0.000193	84.0	85 - 117				S
Arsenic	0.04654	0.00500	0.05	0.003053	87.0	84 - 116				
Barium	1.408	0.00500	0.05	1.437	-58.9	86 - 114				SO
Beryllium	0.04285	0.00200	0.05	0.000204	85.3	83 - 121				
Cadmium	0.04247	0.00200	0.05	0.000276	84.4	87 - 115				S
Calcium	92.61	0.500	5	91.74	17.5	87 - 118				SO
Chromium	0.04335	0.00500	0.05	0.001569	83.6	85 - 116				S
Cobalt	0.05339	0.00500	0.05	0.01196	82.8	86 - 115				S
Copper	0.05269	0.00500	0.05	0.01158	82.2	85 - 118				S
Iron	7.673	0.200	5	3.628	80.9	87 - 118				S
Lead	0.04185	0.00500	0.05	0.000094	83.5	88 - 115				S
Magnesium	65.28	0.200	5	63.25	40.6	83 - 118				SO
Manganese	1.083	0.00500	0.05	1.085	-4.30	87 - 115				SO
Nickel	0.06239	0.00500	0.05	0.0221	80.6	85 - 117				S
Potassium	5.351	0.200	5	1.099	85.0	87 - 115				S
Selenium	0.04364	0.00500	0.05	0.000343	86.6	80 - 120				
Silver	0.04018	0.00500	0.05	0.00003	80.3	85 - 116				S
Sodium	309.7	0.200	5	318.3	-170	85 - 117				SEO
Thallium	0.04172	0.00200	0.05	0.000069	83.3	82 - 116				
Vanadium	0.04364	0.00500	0.05	0.000333	86.6	86 - 115				
Zinc	0.06991	0.00500	0.05	0.02763	84.6	83 - 119				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: 155343 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS20070043-19MSD** Units: **mg/L** Analysis Date: **15-Jul-2020 14:35**
Client ID: **ICT14D_063020** Run ID: **ICPMS06_365077** SeqNo: **5662984** PrepDate: **13-Jul-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.09616	0.0100	0.1	0.01458	81.6	84 - 117	0.1046	8.4	20	S
Antimony	0.04335	0.00500	0.05	0	86.7	85 - 117	0.04221	2.66	20	
Arsenic	0.04858	0.00500	0.05	0.003053	91.1	84 - 116	0.04654	4.29	20	
Barium	1.464	0.00500	0.05	1.437	54.1	86 - 114	1.408	3.93	20	SO
Beryllium	0.04434	0.00200	0.05	0.000204	88.3	83 - 121	0.04285	3.43	20	
Cadmium	0.04335	0.00200	0.05	0.000276	86.1	87 - 115	0.04247	2.05	20	S
Calcium	92.85	0.500	5	91.74	22.1	87 - 118	92.61	0.251	20	SO
Chromium	0.04544	0.00500	0.05	0.001569	87.8	85 - 116	0.04335	4.71	20	
Cobalt	0.0537	0.00500	0.05	0.01196	83.5	86 - 115	0.05339	0.588	20	S
Copper	0.05396	0.00500	0.05	0.01158	84.8	85 - 118	0.05269	2.38	20	S
Iron	7.916	0.200	5	3.628	85.8	87 - 118	7.673	3.12	20	S
Lead	0.04343	0.00500	0.05	0	86.9	88 - 115	0.04185	3.69	20	S
Magnesium	65.91	0.200	5	63.25	53.1	83 - 118	65.28	0.954	20	SO
Manganese	1.108	0.00500	0.05	1.085	46.4	87 - 115	1.083	2.31	20	SO
Nickel	0.06245	0.00500	0.05	0.0221	80.7	85 - 117	0.06239	0.0961	20	S
Potassium	5.615	0.200	5	1.099	90.3	87 - 115	5.351	4.82	20	
Selenium	0.04444	0.00500	0.05	0	88.9	80 - 120	0.04364	1.8	20	
Silver	0.04114	0.00500	0.05	0	82.3	85 - 116	0.04018	2.36	20	S
Sodium	308.4	0.200	5	318.3	-197	85 - 117	309.7	0.428	20	SEO
Thallium	0.04358	0.00200	0.05	0	87.2	82 - 116	0.04172	4.38	20	
Vanadium	0.04442	0.00500	0.05	0	88.8	86 - 115	0.04364	1.77	20	
Zinc	0.07018	0.00500	0.05	0.02763	85.1	83 - 119	0.06991	0.385	20	

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: 155343 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS20070043-19PDS** Units: **mg/L** Analysis Date: **16-Jul-2020 12:06**
Client ID: **ICT14D_063020** Run ID: **ICPMS06_365160** SeqNo: **5664094** PrepDate: **13-Jul-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.09877	0.0100	0.1	0.01458	84.2	80 - 120				
Antimony	0.08616	0.00500	0.1	0.000193	86.0	80 - 120				
Arsenic	0.09549	0.00500	0.1	0.003053	92.4	80 - 120				
Barium	1.357	0.00500	0.1	1.437	-80.8	80 - 120				SO
Beryllium	0.09161	0.00200	0.1	0.000204	91.4	80 - 120				
Cadmium	0.09049	0.00200	0.1	0.000276	90.2	80 - 120				
Calcium	88.99	0.500	10	91.74	-27.5	80 - 120				SO
Chromium	0.09108	0.00500	0.1	0.001569	89.5	80 - 120				
Cobalt	0.09983	0.00500	0.1	0.01196	87.9	80 - 120				
Copper	0.09782	0.00500	0.1	0.01158	86.2	80 - 120				
Iron	12.29	0.200	10	3.628	86.6	80 - 120				
Lead	0.08983	0.00500	0.1	0.000094	89.7	80 - 120				
Magnesium	65.51	0.200	10	63.25	22.6	80 - 120				SO
Manganese	1.058	0.00500	0.1	1.085	-27.4	80 - 120				SO
Nickel	0.1057	0.00500	0.1	0.0221	83.6	80 - 120				
Potassium	10.03	0.200	10	1.099	89.3	80 - 120				
Selenium	0.09462	0.00500	0.1	0.000343	94.3	80 - 120				
Silver	0.09037	0.00500	0.1	0.00003	90.3	80 - 120				
Thallium	0.08955	0.00200	0.1	0.000069	89.5	80 - 120				
Vanadium	0.09106	0.00500	0.1	0.000333	90.7	80 - 120				
Zinc	0.1149	0.00500	0.1	0.02763	87.2	80 - 120				

PDS Sample ID: **HS20070043-19PDS** Units: **mg/L** Analysis Date: **16-Jul-2020 14:29**
Client ID: **ICT14D_063020** Run ID: **ICPMS06_365160** SeqNo: **5664267** PrepDate: **13-Jul-2020** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	401.4	2.00	100	315.8	85.6	80 - 120				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: 155343 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS20070043-19SD** Units: **mg/L** Analysis Date: **16-Jul-2020 12:00**
Client ID: **ICT14D_063020** Run ID: **ICPMS06_365160** SeqNo: **5664091** PrepDate: **13-Jul-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	0.0250	0.0500					0.01458	0	10	U
Antimony	0.00500	0.0250					0.000193	0	10	U
Arsenic	0.002916	0.0250					0.003053	0	10	J
Barium	1.477	0.0250					1.437	2.76	10	
Beryllium	0.00250	0.0100					0.000204	0	10	U
Cadmium	0.00250	0.0100					0.000276	0	10	U
Calcium	90.57	2.50					91.74	1.28	10	
Chromium	0.00500	0.0250					0.001569	0	10	U
Cobalt	0.01208	0.0250					0.01196	0	10	J
Copper	0.01179	0.0250					0.01158	0	10	J
Iron	3.74	1.00					3.628	3.09	10	
Lead	0.00500	0.0250					0.000094	0	10	U
Magnesium	64.06	1.00					63.25	1.28	10	
Manganese	1.129	0.0250					1.085	4.03	10	
Nickel	0.02182	0.0250					0.0221	0	10	J
Potassium	1.123	1.00					1.099	2.15	10	
Selenium	0.0125	0.0250					0.000343	0	10	U
Silver	0.00250	0.0250					0.00003	0	10	U
Thallium	0.00250	0.0100					0.000069	0	10	U
Vanadium	0.00500	0.0250					0.000333	0	10	U
Zinc	0.03116	0.0250					0.02763	12.8	10	R

SD Sample ID: **HS20070043-19SD** Units: **mg/L** Analysis Date: **16-Jul-2020 14:28**
Client ID: **ICT14D_063020** Run ID: **ICPMS06_365160** SeqNo: **5664266** PrepDate: **13-Jul-2020** DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Sodium	316.6	10.0					315.8	0.245	10	

The following samples were analyzed in this batch:

HS20070043-01	HS20070043-02	HS20070043-03	HS20070043-04
HS20070043-05	HS20070043-06	HS20070043-07	HS20070043-08
HS20070043-09	HS20070043-10	HS20070043-11	HS20070043-12
HS20070043-13	HS20070043-14	HS20070043-15	HS20070043-16
HS20070043-17	HS20070043-18	HS20070043-19	

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: 155761 (0) **Instrument: HG03** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-155761** Units: **mg/L** Analysis Date: **24-Jul-2020 15:30**
Client ID: Run ID: **HG03_365625** SeqNo: **5673677** PrepDate: **24-Jul-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.000100	0.000200								U

LCS Sample ID: **LCS-155761** Units: **mg/L** Analysis Date: **24-Jul-2020 15:31**
Client ID: Run ID: **HG03_365625** SeqNo: **5673678** PrepDate: **24-Jul-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00511	0.000200	0.005	0	102	82 - 119				

MS Sample ID: **HS20070043-19MS** Units: **mg/L** Analysis Date: **24-Jul-2020 15:35**
Client ID: **ICT14D_063020** Run ID: **HG03_365625** SeqNo: **5673680** PrepDate: **24-Jul-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00505	0.000200	0.005	0.00001500	101	82 - 119				

MSD Sample ID: **HS20070043-19MSD** Units: **mg/L** Analysis Date: **24-Jul-2020 15:36**
Client ID: **ICT14D_063020** Run ID: **HG03_365625** SeqNo: **5673681** PrepDate: **24-Jul-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00511	0.000200	0.005	0.00001500	102	82 - 119	0.005050	1.18	20	

The following samples were analyzed in this batch:

HS20070043-01	HS20070043-02	HS20070043-03	HS20070043-04
HS20070043-05	HS20070043-06	HS20070043-07	HS20070043-08
HS20070043-09	HS20070043-10	HS20070043-11	HS20070043-12
HS20070043-13	HS20070043-14	HS20070043-15	HS20070043-16
HS20070043-17	HS20070043-18	HS20070043-19	

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364746 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200708** Units: **UG/L** Analysis Date: **08-Jul-2020 13:49**
Client ID: Run ID: **VOA6_364746** SeqNo: **5655577** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364746 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200708** Units: **UG/L** Analysis Date: **08-Jul-2020 13:49**
Client ID: Run ID: **VOA6_364746** SeqNo: **5655577** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*44.73*	*1.0*	*50*	*0*	*89.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.31*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*47.03*	*1.0*	*50*	*0*	*94.1*	*80 - 119*				
Surr: Toluene-d8	*52.05*	*1.0*	*50*	*0*	*104*	*89 - 112*				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364746 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200708** Units: **UG/L** Analysis Date: **08-Jul-2020 12:36**
Client ID: Run ID: **VOA6_364746** SeqNo: **5655576** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.38	1.0	20	0	96.9	78 - 124				
1,1,1-Trichloroethane	19.17	1.0	20	0	95.9	74 - 131				
1,1,2,2-Tetrachloroethane	17.67	1.0	20	0	88.4	71 - 121				
1,1,2-Trichloroethane	18.86	1.0	20	0	94.3	80 - 119				
1,1-Dichloroethane	18.55	1.0	20	0	92.8	77 - 125				
1,1-Dichloroethene	19.51	1.0	20	0	97.5	71 - 131				
1,1-Dichloropropene	18.73	1.0	20	0	93.7	78 - 125				
1,2,3-Trichlorobenzene	21.47	1.0	20	0	107	69 - 129				
1,2,3-Trichloropropane	17.83	1.0	20	0	89.2	73 - 122				
1,2,4-Trichlorobenzene	21.55	1.0	20	0	108	69 - 130				
1,2,4-Trimethylbenzene	19.14	1.0	20	0	95.7	76 - 124				
1,2-Dibromo-3-chloropropane	14.77	1.0	20	0	73.8	62 - 128				
1,2-Dibromoethane	18.65	1.0	20	0	93.2	77 - 121				
1,2-Dichlorobenzene	18.07	1.0	20	0	90.3	80 - 119				
1,2-Dichloroethane	19.73	1.0	20	0	98.6	73 - 128				
1,2-Dichloropropane	19.8	1.0	20	0	99.0	78 - 122				
1,3,5-Trimethylbenzene	19.58	1.0	20	0	97.9	75 - 124				
1,3-Dichlorobenzene	19.11	1.0	20	0	95.5	80 - 119				
1,3-Dichloropropane	18.9	1.0	20	0	94.5	80 - 119				
1,4-Dichlorobenzene	19.88	1.0	20	0	99.4	79 - 118				
2,2-Dichloropropane	20.66	1.0	20	0	103	60 - 139				
2-Butanone	33.67	2.0	40	0	84.2	56 - 143				
2-Chlorotoluene	18.84	1.0	20	0	94.2	79 - 122				
2-Hexanone	34.66	2.0	40	0	86.6	57 - 139				
4-Chlorotoluene	19.51	1.0	20	0	97.6	78 - 122				
4-Isopropyltoluene	19.47	1.0	20	0	97.4	77 - 127				
4-Methyl-2-pentanone	35.68	2.0	40	0	89.2	67 - 130				
Acetone	18.47	2.0	40	0	46.2	39 - 160				
Benzene	19.21	1.0	20	0	96.1	79 - 120				
Bromobenzene	19.39	1.0	20	0	97.0	80 - 120				
Bromochloromethane	17.34	1.0	20	0	86.7	78 - 123				
Bromodichloromethane	19.84	1.0	20	0	99.2	79 - 125				
Bromoform	17.78	1.0	20	0	88.9	66 - 130				
Bromomethane	20.32	1.0	20	0	102	53 - 141				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364746 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200708** Units: **UG/L** Analysis Date: **08-Jul-2020 12:36**
Client ID: Run ID: **VOA6_364746** SeqNo: **5655576** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	38.58	2.0	40	0	96.5	64 - 133				
Carbon tetrachloride	19.08	1.0	20	0	95.4	72 - 136				
Chlorobenzene	19.12	1.0	20	0	95.6	82 - 118				
Chloroethane	16.68	1.0	20	0	83.4	60 - 138				
Chloroform	19.06	1.0	20	0	95.3	79 - 124				
Chloromethane	18.29	1.0	20	0	91.5	50 - 139				
cis-1,2-Dichloroethene	19.13	1.0	20	0	95.6	78 - 123				
cis-1,3-Dichloropropene	19.51	1.0	20	0	97.6	75 - 124				
Dibromochloromethane	19.13	1.0	20	0	95.6	74 - 126				
Dibromomethane	19.46	1.0	20	0	97.3	79 - 123				
Dichlorodifluoromethane	18.49	1.0	20	0	92.4	32 - 152				
Ethylbenzene	19.12	1.0	20	0	95.6	79 - 121				
Hexachlorobutadiene	24.39	1.0	20	0	122	66 - 134				
Isopropylbenzene	18.99	1.0	20	0	94.9	72 - 131				
m,p-Xylene	38.39	2.0	40	0	96.0	80 - 121				
Methylene chloride	20.43	2.0	20	0	102	74 - 124				
Naphthalene	18.3	1.0	20	0	91.5	61 - 128				
n-Butylbenzene	19.63	1.0	20	0	98.1	75 - 128				
n-Propylbenzene	19.36	1.0	20	0	96.8	76 - 126				
o-Xylene	19.01	1.0	20	0	95.1	78 - 122				
sec-Butylbenzene	19.09	1.0	20	0	95.4	77 - 126				
Styrene	18.62	1.0	20	0	93.1	78 - 123				
tert-Butylbenzene	19.8	1.0	20	0	99.0	78 - 124				
Tetrachloroethene	19.31	1.0	20	0	96.5	74 - 129				
Toluene	19.54	1.0	20	0	97.7	80 - 121				
trans-1,2-Dichloroethene	19.43	1.0	20	0	97.1	75 - 124				
trans-1,3-Dichloropropene	19.05	1.0	20	0	95.2	73 - 127				
Trichloroethene	19.06	1.0	20	0	95.3	79 - 123				
Trichlorofluoromethane	18.38	1.0	20	0	91.9	65 - 141				
Vinyl chloride	16.8	1.0	20	0	84.0	58 - 137				
Surr: 1,2-Dichloroethane-d4	*49.73*	*1.0*	*50*	*0*	*99.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.44*	*1.0*	*50*	*0*	*98.9*	*85 - 114*				
Surr: Dibromofluoromethane	*49.6*	*1.0*	*50*	*0*	*99.2*	*80 - 119*				
Surr: Toluene-d8	*48.05*	*1.0*	*50*	*0*	*96.1*	*89 - 112*				

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364746 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20070055-04MS** Units: **UG/L** Analysis Date: **08-Jul-2020 18:13**
Client ID: Run ID: **VOA6_364746** SeqNo: **5655587** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.39	1.0	20	0	102	78 - 124				
1,1,1-Trichloroethane	19.24	1.0	20	0	96.2	74 - 131				
1,1,2,2-Tetrachloroethane	18.97	1.0	20	0	94.9	71 - 121				
1,1,2-Trichloroethane	19.72	1.0	20	0	98.6	80 - 119				
1,1-Dichloroethane	17.81	1.0	20	0	89.0	77 - 125				
1,1-Dichloroethene	16.61	1.0	20	0	83.1	71 - 131				
1,1-Dichloropropene	19.86	1.0	20	0	99.3	78 - 125				
1,2,3-Trichlorobenzene	20.66	1.0	20	0	103	69 - 129				
1,2,3-Trichloropropane	18.53	1.0	20	0	92.7	73 - 122				
1,2,4-Trichlorobenzene	20.9	1.0	20	0	104	69 - 130				
1,2,4-Trimethylbenzene	21.6	1.0	20	0	108	76 - 124				
1,2-Dibromo-3-chloropropane	16.53	1.0	20	0	82.7	62 - 128				
1,2-Dibromoethane	19	1.0	20	0	95.0	77 - 121				
1,2-Dichlorobenzene	20.15	1.0	20	0	101	80 - 119				
1,2-Dichloroethane	18.61	1.0	20	0	93.0	73 - 128				
1,2-Dichloropropane	19.65	1.0	20	0	98.3	78 - 122				
1,3,5-Trimethylbenzene	22.19	1.0	20	0	111	75 - 124				
1,3-Dichlorobenzene	20.99	1.0	20	0	105	80 - 119				
1,3-Dichloropropane	19.2	1.0	20	0	96.0	80 - 119				
1,4-Dichlorobenzene	22.37	1.0	20	0	112	79 - 118				
2,2-Dichloropropane	19.88	1.0	20	0	99.4	60 - 139				
2-Butanone	25.56	2.0	40	0	63.9	56 - 143				
2-Chlorotoluene	21.63	1.0	20	0	108	79 - 122				
2-Hexanone	32.93	2.0	40	0	82.3	57 - 139				
4-Chlorotoluene	21.42	1.0	20	0	107	78 - 122				
4-Isopropyltoluene	22.42	1.0	20	0	112	77 - 127				
4-Methyl-2-pentanone	35.92	2.0	40	0	89.8	67 - 130				
Acetone	61.84	2.0	40	0	155	39 - 160				
Benzene	19.74	1.0	20	0	98.7	79 - 120				
Bromobenzene	21.34	1.0	20	0	107	80 - 120				
Bromochloromethane	17.11	1.0	20	0	85.5	78 - 123				
Bromodichloromethane	19.2	1.0	20	0	96.0	79 - 125				
Bromoform	18.28	1.0	20	0	91.4	66 - 130				
Bromomethane	17.71	1.0	20	0	88.5	53 - 141				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364746 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20070055-04MS** Units: **UG/L** Analysis Date: **08-Jul-2020 18:13**
Client ID: Run ID: **VOA6_364746** SeqNo: **5655587** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	31.17	2.0	40	0	77.9	64 - 133				
Carbon tetrachloride	20.26	1.0	20	0	101	72 - 136				
Chlorobenzene	20.11	1.0	20	0	101	82 - 118				
Chloroethane	15.56	1.0	20	0	77.8	60 - 138				
Chloroform	18.58	1.0	20	0	92.9	79 - 124				
Chloromethane	19.21	1.0	20	0	96.0	50 - 139				
cis-1,2-Dichloroethene	18.36	1.0	20	0	91.8	78 - 123				
cis-1,3-Dichloropropene	19.11	1.0	20	0	95.6	75 - 124				
Dibromochloromethane	19.23	1.0	20	0	96.1	74 - 126				
Dibromomethane	18.44	1.0	20	0	92.2	79 - 123				
Dichlorodifluoromethane	17.05	1.0	20	0	85.2	32 - 152				
Ethylbenzene	20.9	1.0	20	0	105	79 - 121				
Hexachlorobutadiene	23.26	1.0	20	0	116	66 - 134				
Isopropylbenzene	20.93	1.0	20	0	105	72 - 131				
m,p-Xylene	41.34	2.0	40	0	103	80 - 121				
Methylene chloride	14.79	2.0	20	0	74.0	74 - 124				S
Naphthalene	19.27	1.0	20	0	96.3	61 - 128				
n-Butylbenzene	22.36	1.0	20	0	112	75 - 128				
n-Propylbenzene	22.58	1.0	20	0	113	76 - 126				
o-Xylene	20.39	1.0	20	0	102	78 - 122				
sec-Butylbenzene	22.15	1.0	20	0	111	77 - 126				
Styrene	20.27	1.0	20	0	101	78 - 123				
tert-Butylbenzene	22.48	1.0	20	0	112	78 - 124				
Tetrachloroethene	21.65	1.0	20	0	108	74 - 129				
Toluene	20.99	1.0	20	0	105	80 - 121				
trans-1,2-Dichloroethene	19.07	1.0	20	0	95.3	75 - 124				
trans-1,3-Dichloropropene	18.58	1.0	20	0	92.9	73 - 127				
Trichloroethene	20	1.0	20	0	100	79 - 123				
Trichlorofluoromethane	17.5	1.0	20	0	87.5	65 - 141				
Vinyl chloride	18.59	1.0	20	0	92.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*44.82*	*1.0*	*50*	*0*	*89.6*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.52*	*1.0*	*50*	*0*	*99.0*	*85 - 114*				
Surr: Dibromofluoromethane	*46.72*	*1.0*	*50*	*0*	*93.4*	*80 - 119*				
Surr: Toluene-d8	*50.75*	*1.0*	*50*	*0*	*102*	*89 - 112*				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364746 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20070055-03MS** Units: **UG/L** Analysis Date: **08-Jul-2020 17:25**
Client ID: Run ID: **VOA6_364746** SeqNo: **5655585** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.89	1.0	20	0	99.5	78 - 124				
1,1,1-Trichloroethane	19.34	1.0	20	0	96.7	74 - 131				
1,1,2,2-Tetrachloroethane	20.58	1.0	20	0	103	71 - 121				
1,1,2-Trichloroethane	19.52	1.0	20	0	97.6	80 - 119				
1,1-Dichloroethane	18.25	1.0	20	0	91.3	77 - 125				
1,1-Dichloroethene	19.32	1.0	20	0	96.6	71 - 131				
1,1-Dichloropropene	19.67	1.0	20	0	98.3	78 - 125				
1,2,3-Trichlorobenzene	18.24	1.0	20	0	91.2	69 - 129				
1,2,3-Trichloropropane	20	1.0	20	0	100	73 - 122				
1,2,4-Trichlorobenzene	20.41	1.0	20	0	102	69 - 130				
1,2,4-Trimethylbenzene	19.41	1.0	20	0	97.0	76 - 124				
1,2-Dibromo-3-chloropropane	17.64	1.0	20	0	88.2	62 - 128				
1,2-Dibromoethane	18.48	1.0	20	0	92.4	77 - 121				
1,2-Dichlorobenzene	21.38	1.0	20	0	107	80 - 119				
1,2-Dichloroethane	18.47	1.0	20	0	92.3	73 - 128				
1,2-Dichloropropane	19.73	1.0	20	0	98.7	78 - 122				
1,3,5-Trimethylbenzene	23.36	1.0	20	0	117	75 - 124				
1,3-Dichlorobenzene	19.68	1.0	20	0	98.4	80 - 119				
1,3-Dichloropropane	19.32	1.0	20	0	96.6	80 - 119				
1,4-Dichlorobenzene	20.53	1.0	20	0	103	79 - 118				
2,2-Dichloropropane	20.49	1.0	20	0	102	60 - 139				
2-Butanone	26.69	2.0	40	0	66.7	56 - 143				
2-Chlorotoluene	23	1.0	20	0	115	79 - 122				
2-Hexanone	33.24	2.0	40	0	83.1	57 - 139				
4-Chlorotoluene	22.7	1.0	20	0	113	78 - 122				
4-Isopropyltoluene	21.13	1.0	20	0	106	77 - 127				
4-Methyl-2-pentanone	36.52	2.0	40	0	91.3	67 - 130				
Acetone	8.695	2.0	40	0	21.7	39 - 160				S
Benzene	19.46	1.0	20	0	97.3	79 - 120				
Bromobenzene	23.16	1.0	20	0	116	80 - 120				
Bromochloromethane	16.99	1.0	20	0	84.9	78 - 123				
Bromodichloromethane	19.4	1.0	20	0	97.0	79 - 125				
Bromoform	17.83	1.0	20	0	89.2	66 - 130				
Bromomethane	20.16	1.0	20	0	101	53 - 141				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364746 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20070055-03MS** Units: **UG/L** Analysis Date: **08-Jul-2020 17:25**
Client ID: Run ID: **VOA6_364746** SeqNo: **5655585** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	39.68	2.0	40	0	99.2	64 - 133				
Carbon tetrachloride	20.19	1.0	20	0	101	72 - 136				
Chlorobenzene	19.7	1.0	20	0	98.5	82 - 118				
Chloroethane	17.03	1.0	20	0	85.1	60 - 138				
Chloroform	18.42	1.0	20	0	92.1	79 - 124				
Chloromethane	19.23	1.0	20	0	96.1	50 - 139				
cis-1,2-Dichloroethene	18.92	1.0	20	0	94.6	78 - 123				
cis-1,3-Dichloropropene	19.2	1.0	20	0	96.0	75 - 124				
Dibromochloromethane	19.07	1.0	20	0	95.3	74 - 126				
Dibromomethane	18.38	1.0	20	0	91.9	79 - 123				
Dichlorodifluoromethane	17.83	1.0	20	0	89.2	32 - 152				
Ethylbenzene	20.27	1.0	20	0	101	79 - 121				
Hexachlorobutadiene	25.4	1.0	20	0	127	66 - 134				
Isopropylbenzene	20.53	1.0	20	0	103	72 - 131				
m,p-Xylene	40.28	2.0	40	0	101	80 - 121				
Methylene chloride	17.8	2.0	20	0	89.0	74 - 124				
Naphthalene	16.18	1.0	20	0	80.9	61 - 128				
n-Butylbenzene	23.91	1.0	20	0	120	75 - 128				
n-Propylbenzene	23.83	1.0	20	0	119	76 - 126				
o-Xylene	19.93	1.0	20	0	99.7	78 - 122				
sec-Butylbenzene	20.02	1.0	20	0	100	77 - 126				
Styrene	19.56	1.0	20	0	97.8	78 - 123				
tert-Butylbenzene	20.41	1.0	20	0	102	78 - 124				
Tetrachloroethene	21.77	1.0	20	0	109	74 - 129				
Toluene	21	1.0	20	0	105	80 - 121				
trans-1,2-Dichloroethene	19.64	1.0	20	0	98.2	75 - 124				
trans-1,3-Dichloropropene	18.8	1.0	20	0	94.0	73 - 127				
Trichloroethene	19.78	1.0	20	0	98.9	79 - 123				
Trichlorofluoromethane	19.08	1.0	20	0	95.4	65 - 141				
Vinyl chloride	19.63	1.0	20	0	98.1	58 - 137				
Surr: 1,2-Dichloroethane-d4	*44.6*	*1.0*	*50*	*0*	*89.2*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.69*	*1.0*	*50*	*0*	*97.4*	*85 - 114*				
Surr: Dibromofluoromethane	*46.96*	*1.0*	*50*	*0*	*93.9*	*80 - 119*				
Surr: Toluene-d8	*50.94*	*1.0*	*50*	*0*	*102*	*89 - 112*				

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364746 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20070055-04MSD** Units: **UG/L** Analysis Date: **08-Jul-2020 18:37**
Client ID: Run ID: **VOA6_364746** SeqNo: **5655588** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.59	1.0	20	0	97.9	78 - 124	20.39	4	20	
1,1,1-Trichloroethane	18.74	1.0	20	0	93.7	74 - 131	19.24	2.63	20	
1,1,2,2-Tetrachloroethane	17.66	1.0	20	0	88.3	71 - 121	18.97	7.15	20	
1,1,2-Trichloroethane	19.12	1.0	20	0	95.6	80 - 119	19.72	3.06	20	
1,1-Dichloroethane	17.88	1.0	20	0	89.4	77 - 125	17.81	0.388	20	
1,1-Dichloroethene	16.87	1.0	20	0	84.4	71 - 131	16.61	1.55	20	
1,1-Dichloropropene	18.73	1.0	20	0	93.6	78 - 125	19.86	5.87	20	
1,2,3-Trichlorobenzene	19.4	1.0	20	0	97.0	69 - 129	20.66	6.29	20	
1,2,3-Trichloropropane	17.75	1.0	20	0	88.8	73 - 122	18.53	4.31	20	
1,2,4-Trichlorobenzene	19.72	1.0	20	0	98.6	69 - 130	20.9	5.78	20	
1,2,4-Trimethylbenzene	20.13	1.0	20	0	101	76 - 124	21.6	7.09	20	
1,2-Dibromo-3-chloropropane	15.47	1.0	20	0	77.3	62 - 128	16.53	6.65	20	
1,2-Dibromoethane	18.69	1.0	20	0	93.4	77 - 121	19	1.68	20	
1,2-Dichlorobenzene	18.81	1.0	20	0	94.0	80 - 119	20.15	6.91	20	
1,2-Dichloroethane	18.44	1.0	20	0	92.2	73 - 128	18.61	0.869	20	
1,2-Dichloropropane	19	1.0	20	0	95.0	78 - 122	19.65	3.36	20	
1,3,5-Trimethylbenzene	20.15	1.0	20	0	101	75 - 124	22.19	9.64	20	
1,3-Dichlorobenzene	19.35	1.0	20	0	96.8	80 - 119	20.99	8.13	20	
1,3-Dichloropropane	18.87	1.0	20	0	94.4	80 - 119	19.2	1.74	20	
1,4-Dichlorobenzene	20.24	1.0	20	0	101	79 - 118	22.37	10	20	
2,2-Dichloropropane	19	1.0	20	0	95.0	60 - 139	19.88	4.52	20	
2-Butanone	25.76	2.0	40	0	64.4	56 - 143	25.56	0.774	20	
2-Chlorotoluene	19.4	1.0	20	0	97.0	79 - 122	21.63	10.9	20	
2-Hexanone	33.01	2.0	40	0	82.5	57 - 139	32.93	0.236	20	
4-Chlorotoluene	19.8	1.0	20	0	99.0	78 - 122	21.42	7.86	20	
4-Isopropyltoluene	20.31	1.0	20	0	102	77 - 127	22.42	9.87	20	
4-Methyl-2-pentanone	35.57	2.0	40	0	88.9	67 - 130	35.92	0.978	20	
Acetone	6.938	2.0	40	0	17.3	39 - 160	61.84	160	20	SR
Benzene	18.81	1.0	20	0	94.1	79 - 120	19.74	4.79	20	
Bromobenzene	19.38	1.0	20	0	96.9	80 - 120	21.34	9.63	20	
Bromochloromethane	16.72	1.0	20	0	83.6	78 - 123	17.11	2.26	20	
Bromodichloromethane	18.96	1.0	20	0	94.8	79 - 125	19.2	1.27	20	
Bromoform	17.81	1.0	20	0	89.1	66 - 130	18.28	2.58	20	
Bromomethane	18.55	1.0	20	0	92.7	53 - 141	17.71	4.64	20	

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364746 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20070055-04MSD** Units: **UG/L** Analysis Date: **08-Jul-2020 18:37**
Client ID: Run ID: **VOA6_364746** SeqNo: **5655588** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	33.88	2.0	40	0	84.7	64 - 133	31.17	8.32	20	
Carbon tetrachloride	19.39	1.0	20	0	96.9	72 - 136	20.26	4.39	20	
Chlorobenzene	19.36	1.0	20	0	96.8	82 - 118	20.11	3.8	20	
Chloroethane	15.9	1.0	20	0	79.5	60 - 138	15.56	2.16	20	
Chloroform	17.92	1.0	20	0	89.6	79 - 124	18.58	3.59	20	
Chloromethane	17.42	1.0	20	0	87.1	50 - 139	19.21	9.78	20	
cis-1,2-Dichloroethene	17.88	1.0	20	0	89.4	78 - 123	18.36	2.65	20	
cis-1,3-Dichloropropene	18.47	1.0	20	0	92.3	75 - 124	19.11	3.43	20	
Dibromochloromethane	19	1.0	20	0	95.0	74 - 126	19.23	1.21	20	
Dibromomethane	17.85	1.0	20	0	89.3	79 - 123	18.44	3.21	20	
Dichlorodifluoromethane	15.94	1.0	20	0	79.7	32 - 152	17.05	6.71	20	
Ethylbenzene	19.78	1.0	20	0	98.9	79 - 121	20.9	5.51	20	
Hexachlorobutadiene	21.15	1.0	20	0	106	66 - 134	23.26	9.52	20	
Isopropylbenzene	19.96	1.0	20	0	99.8	72 - 131	20.93	4.75	20	
m,p-Xylene	39.24	2.0	40	0	98.1	80 - 121	41.34	5.2	20	
Methylene chloride	17.7	2.0	20	0	88.5	74 - 124	14.79	17.9	20	
Naphthalene	16.74	1.0	20	0	83.7	61 - 128	19.27	14	20	
n-Butylbenzene	20.51	1.0	20	0	103	75 - 128	22.36	8.66	20	
n-Propylbenzene	20.31	1.0	20	0	102	76 - 126	22.58	10.5	20	
o-Xylene	19.52	1.0	20	0	97.6	78 - 122	20.39	4.35	20	
sec-Butylbenzene	20.14	1.0	20	0	101	77 - 126	22.15	9.52	20	
Styrene	19.3	1.0	20	0	96.5	78 - 123	20.27	4.89	20	
tert-Butylbenzene	20.63	1.0	20	0	103	78 - 124	22.48	8.57	20	
Tetrachloroethene	20.55	1.0	20	0	103	74 - 129	21.65	5.23	20	
Toluene	20.05	1.0	20	0	100	80 - 121	20.99	4.58	20	
trans-1,2-Dichloroethene	18.69	1.0	20	0	93.4	75 - 124	19.07	2.01	20	
trans-1,3-Dichloropropene	18.48	1.0	20	0	92.4	73 - 127	18.58	0.558	20	
Trichloroethene	19.23	1.0	20	0	96.1	79 - 123	20	3.97	20	
Trichlorofluoromethane	17.6	1.0	20	0	88.0	65 - 141	17.5	0.55	20	
Vinyl chloride	16.49	1.0	20	0	82.5	58 - 137	18.59	11.9	20	
Surr: 1,2-Dichloroethane-d4	*43.77*	*1.0*	*50*	*0*	*87.5*	*81 - 118*	*44.82*	*2.38*	*20*	
Surr: 4-Bromofluorobenzene	*50.68*	*1.0*	*50*	*0*	*101*	*85 - 114*	*49.52*	*2.33*	*20*	
Surr: Dibromofluoromethane	*46.38*	*1.0*	*50*	*0*	*92.8*	*80 - 119*	*46.72*	*0.724*	*20*	
Surr: Toluene-d8	*50.16*	*1.0*	*50*	*0*	*100*	*89 - 112*	*50.75*	*1.17*	*20*	

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364746 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20070055-03MSD** Units: **UG/L** Analysis Date: **08-Jul-2020 17:49**
Client ID: Run ID: **VOA6_364746** SeqNo: **5655586** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.6	1.0	20	0	98.0	78 - 124	19.89	1.46	20	
1,1,1-Trichloroethane	18.76	1.0	20	0	93.8	74 - 131	19.34	3.02	20	
1,1,2,2-Tetrachloroethane	18.25	1.0	20	0	91.2	71 - 121	20.58	12	20	
1,1,2-Trichloroethane	19.51	1.0	20	0	97.6	80 - 119	19.52	0.00862	20	
1,1-Dichloroethane	17.54	1.0	20	0	87.7	77 - 125	18.25	3.97	20	
1,1-Dichloroethene	17.88	1.0	20	0	89.4	71 - 131	19.32	7.73	20	
1,1-Dichloropropene	18.94	1.0	20	0	94.7	78 - 125	19.67	3.79	20	
1,2,3-Trichlorobenzene	17.91	1.0	20	0	89.5	69 - 129	18.24	1.84	20	
1,2,3-Trichloropropane	18.07	1.0	20	0	90.4	73 - 122	20	10.1	20	
1,2,4-Trichlorobenzene	19.69	1.0	20	0	98.5	69 - 130	20.41	3.56	20	
1,2,4-Trimethylbenzene	19.46	1.0	20	0	97.3	76 - 124	19.41	0.268	20	
1,2-Dibromo-3-chloropropane	16.41	1.0	20	0	82.0	62 - 128	17.64	7.23	20	
1,2-Dibromoethane	18.37	1.0	20	0	91.9	77 - 121	18.48	0.57	20	
1,2-Dichlorobenzene	16.68	1.0	20	0	83.4	80 - 119	21.38	24.7	20	R
1,2-Dichloroethane	18.64	1.0	20	0	93.2	73 - 128	18.47	0.943	20	
1,2-Dichloropropane	19.58	1.0	20	0	97.9	78 - 122	19.73	0.762	20	
1,3,5-Trimethylbenzene	21.44	1.0	20	0	107	75 - 124	23.36	8.57	20	
1,3-Dichlorobenzene	19.62	1.0	20	0	98.1	80 - 119	19.68	0.305	20	
1,3-Dichloropropane	18.91	1.0	20	0	94.5	80 - 119	19.32	2.19	20	
1,4-Dichlorobenzene	20.9	1.0	20	0	105	79 - 118	20.53	1.79	20	
2,2-Dichloropropane	19.88	1.0	20	0	99.4	60 - 139	20.49	3.05	20	
2-Butanone	25.42	2.0	40	0	63.6	56 - 143	26.69	4.88	20	
2-Chlorotoluene	20.54	1.0	20	0	103	79 - 122	23	11.3	20	
2-Hexanone	33.25	2.0	40	0	83.1	57 - 139	33.24	0.0178	20	
4-Chlorotoluene	20.91	1.0	20	0	105	78 - 122	22.7	8.18	20	
4-Isopropyltoluene	21.42	1.0	20	0	107	77 - 127	21.13	1.4	20	
4-Methyl-2-pentanone	34.27	2.0	40	0	85.7	67 - 130	36.52	6.38	20	
Acetone	8.021	2.0	40	0	20.1	39 - 160	8.695	8.06	20	S
Benzene	19.02	1.0	20	0	95.1	79 - 120	19.46	2.28	20	
Bromobenzene	20.39	1.0	20	0	102	80 - 120	23.16	12.7	20	
Bromochloromethane	16.66	1.0	20	0	83.3	78 - 123	16.99	1.95	20	
Bromodichloromethane	18.46	1.0	20	0	92.3	79 - 125	19.4	4.97	20	
Bromoform	17.88	1.0	20	0	89.4	66 - 130	17.83	0.301	20	
Bromomethane	19.39	1.0	20	0	96.9	53 - 141	20.16	3.93	20	

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364746 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20070055-03MSD** Units: **UG/L** Analysis Date: **08-Jul-2020 17:49**
Client ID: Run ID: **VOA6_364746** SeqNo: **5655586** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	37.63	2.0	40	0	94.1	64 - 133	39.68	5.3	20	
Carbon tetrachloride	19.56	1.0	20	0	97.8	72 - 136	20.19	3.2	20	
Chlorobenzene	19.67	1.0	20	0	98.3	82 - 118	19.7	0.139	20	
Chloroethane	15.53	1.0	20	0	77.7	60 - 138	17.03	9.19	20	
Chloroform	18.08	1.0	20	0	90.4	79 - 124	18.42	1.89	20	
Chloromethane	18.32	1.0	20	0	91.6	50 - 139	19.23	4.85	20	
cis-1,2-Dichloroethene	17.95	1.0	20	0	89.8	78 - 123	18.92	5.27	20	
cis-1,3-Dichloropropene	18.52	1.0	20	0	92.6	75 - 124	19.2	3.57	20	
Dibromochloromethane	18.51	1.0	20	0	92.6	74 - 126	19.07	2.96	20	
Dibromomethane	18.21	1.0	20	0	91.1	79 - 123	18.38	0.935	20	
Dichlorodifluoromethane	16.99	1.0	20	0	85.0	32 - 152	17.83	4.83	20	
Ethylbenzene	20.15	1.0	20	0	101	79 - 121	20.27	0.631	20	
Hexachlorobutadiene	21.74	1.0	20	0	109	66 - 134	25.4	15.5	20	
Isopropylbenzene	20.25	1.0	20	0	101	72 - 131	20.53	1.36	20	
m,p-Xylene	40.02	2.0	40	0	100	80 - 121	40.28	0.642	20	
Methylene chloride	17.33	2.0	20	0	86.6	74 - 124	17.8	2.72	20	
Naphthalene	16.57	1.0	20	0	82.9	61 - 128	16.18	2.43	20	
n-Butylbenzene	18.32	1.0	20	0	91.6	75 - 128	23.91	26.5	20	R
n-Propylbenzene	21.49	1.0	20	0	107	76 - 126	23.83	10.3	20	
o-Xylene	19.8	1.0	20	0	99.0	78 - 122	19.93	0.653	20	
sec-Butylbenzene	21.13	1.0	20	0	106	77 - 126	20.02	5.41	20	
Styrene	19.46	1.0	20	0	97.3	78 - 123	19.56	0.534	20	
tert-Butylbenzene	21.59	1.0	20	0	108	78 - 124	20.41	5.62	20	
Tetrachloroethene	20.67	1.0	20	0	103	74 - 129	21.77	5.18	20	
Toluene	20.28	1.0	20	0	101	80 - 121	21	3.51	20	
trans-1,2-Dichloroethene	18.76	1.0	20	0	93.8	75 - 124	19.64	4.57	20	
trans-1,3-Dichloropropene	18.68	1.0	20	0	93.4	73 - 127	18.8	0.645	20	
Trichloroethene	18.9	1.0	20	0	94.5	79 - 123	19.78	4.55	20	
Trichlorofluoromethane	18.28	1.0	20	0	91.4	65 - 141	19.08	4.29	20	
Vinyl chloride	17.94	1.0	20	0	89.7	58 - 137	19.63	8.97	20	
Surr: 1,2-Dichloroethane-d4	*44.66*	*1.0*	*50*	*0*	*89.3*	*81 - 118*	*44.6*	*0.142*	*20*	
Surr: 4-Bromofluorobenzene	*48.96*	*1.0*	*50*	*0*	*97.9*	*85 - 114*	*48.69*	*0.546*	*20*	
Surr: Dibromofluoromethane	*46.85*	*1.0*	*50*	*0*	*93.7*	*80 - 119*	*46.96*	*0.242*	*20*	
Surr: Toluene-d8	*50.65*	*1.0*	*50*	*0*	*101*	*89 - 112*	*50.94*	*0.588*	*20*	

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364746 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:

HS20070043-01	HS20070043-02	HS20070043-03	HS20070043-04
HS20070043-14	HS20070043-15	HS20070043-16	HS20070043-20

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364892 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200710** Units: **UG/L** Analysis Date: **10-Jul-2020 13:56**
Client ID: Run ID: **VOA6_364892** SeqNo: **5658729** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364892 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200710** Units: **UG/L** Analysis Date: **10-Jul-2020 13:56**
Client ID: Run ID: **VOA6_364892** SeqNo: **5658729** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*45.2*	*1.0*	*50*	*0*	*90.4*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.38*	*1.0*	*50*	*0*	*98.8*	*85 - 114*				
Surr: Dibromofluoromethane	*46.39*	*1.0*	*50*	*0*	*92.8*	*80 - 119*				
Surr: Toluene-d8	*47.93*	*1.0*	*50*	*0*	*95.9*	*89 - 112*				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364892 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200710** Units: **UG/L** Analysis Date: **10-Jul-2020 13:07**
Client ID: Run ID: **VOA6_364892** SeqNo: **5658728** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.68	1.0	20	0	98.4	78 - 124				
1,1,1-Trichloroethane	17.81	1.0	20	0	89.0	74 - 131				
1,1,2,2-Tetrachloroethane	22.16	1.0	20	0	111	71 - 121				
1,1,2-Trichloroethane	20.3	1.0	20	0	102	80 - 119				
1,1-Dichloroethane	18.26	1.0	20	0	91.3	77 - 125				
1,1-Dichloroethene	17.16	1.0	20	0	85.8	71 - 131				
1,1-Dichloropropene	17.02	1.0	20	0	85.1	78 - 125				
1,2,3-Trichlorobenzene	31.68	1.0	20	0	158	69 - 129				S
1,2,3-Trichloropropane	22.86	1.0	20	0	114	73 - 122				
1,2,4-Trichlorobenzene	28.82	1.0	20	0	144	69 - 130				S
1,2,4-Trimethylbenzene	19.91	1.0	20	0	99.6	76 - 124				
1,2-Dibromo-3-chloropropane	24.65	1.0	20	0	123	62 - 128				
1,2-Dibromoethane	20.17	1.0	20	0	101	77 - 121				
1,2-Dichlorobenzene	19.19	1.0	20	0	96.0	80 - 119				
1,2-Dichloroethane	19.43	1.0	20	0	97.1	73 - 128				
1,2-Dichloropropane	19.44	1.0	20	0	97.2	78 - 122				
1,3,5-Trimethylbenzene	19.22	1.0	20	0	96.1	75 - 124				
1,3-Dichlorobenzene	18.1	1.0	20	0	90.5	80 - 119				
1,3-Dichloropropane	19.35	1.0	20	0	96.7	80 - 119				
1,4-Dichlorobenzene	18.87	1.0	20	0	94.4	79 - 118				
2,2-Dichloropropane	19.79	1.0	20	0	98.9	60 - 139				
2-Butanone	38.76	2.0	40	0	96.9	56 - 143				
2-Chlorotoluene	19.78	1.0	20	0	98.9	79 - 122				
2-Hexanone	43.11	2.0	40	0	108	57 - 139				
4-Chlorotoluene	20.34	1.0	20	0	102	78 - 122				
4-Isopropyltoluene	16.43	1.0	20	0	82.2	77 - 127				
4-Methyl-2-pentanone	43.5	2.0	40	0	109	67 - 130				
Acetone	18.79	2.0	40	0	47.0	39 - 160				
Benzene	18.57	1.0	20	0	92.8	79 - 120				
Bromobenzene	21.47	1.0	20	0	107	80 - 120				
Bromochloromethane	18.76	1.0	20	0	93.8	78 - 123				
Bromodichloromethane	19.19	1.0	20	0	95.9	79 - 125				
Bromoform	19.93	1.0	20	0	99.7	66 - 130				
Bromomethane	20.71	1.0	20	0	104	53 - 141				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364892 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200710** Units: **UG/L** Analysis Date: **10-Jul-2020 13:07**
Client ID: Run ID: **VOA6_364892** SeqNo: **5658728** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	35.35	2.0	40	0	88.4	64 - 133				
Carbon tetrachloride	16.8	1.0	20	0	84.0	72 - 136				
Chlorobenzene	19.14	1.0	20	0	95.7	82 - 118				
Chloroethane	16.48	1.0	20	0	82.4	60 - 138				
Chloroform	19.16	1.0	20	0	95.8	79 - 124				
Chloromethane	18.28	1.0	20	0	91.4	50 - 139				
cis-1,2-Dichloroethene	19.24	1.0	20	0	96.2	78 - 123				
cis-1,3-Dichloropropene	18.85	1.0	20	0	94.2	75 - 124				
Dibromochloromethane	19.93	1.0	20	0	99.7	74 - 126				
Dibromomethane	19.04	1.0	20	0	95.2	79 - 123				
Dichlorodifluoromethane	15.27	1.0	20	0	76.4	32 - 152				
Ethylbenzene	17.71	1.0	20	0	88.6	79 - 121				
Hexachlorobutadiene	25.89	1.0	20	0	129	66 - 134				
Isopropylbenzene	17.11	1.0	20	0	85.5	72 - 131				
m,p-Xylene	34.53	2.0	40	0	86.3	80 - 121				
Methylene chloride	18.7	2.0	20	0	93.5	74 - 124				
Naphthalene	28.68	1.0	20	0	143	61 - 128				S
n-Butylbenzene	16.02	1.0	20	0	80.1	75 - 128				
n-Propylbenzene	18.99	1.0	20	0	94.9	76 - 126				
o-Xylene	18.48	1.0	20	0	92.4	78 - 122				
sec-Butylbenzene	17.68	1.0	20	0	88.4	77 - 126				
Styrene	18.81	1.0	20	0	94.1	78 - 123				
tert-Butylbenzene	18.63	1.0	20	0	93.2	78 - 124				
Tetrachloroethene	17.63	1.0	20	0	88.1	74 - 129				
Toluene	19.23	1.0	20	0	96.1	80 - 121				
trans-1,2-Dichloroethene	18.78	1.0	20	0	93.9	75 - 124				
trans-1,3-Dichloropropene	19.46	1.0	20	0	97.3	73 - 127				
Trichloroethene	17.76	1.0	20	0	88.8	79 - 123				
Trichlorofluoromethane	17.16	1.0	20	0	85.8	65 - 141				
Vinyl chloride	16.01	1.0	20	0	80.0	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.8*	*1.0*	*50*	*0*	*106*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.09*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*51.33*	*1.0*	*50*	*0*	*103*	*80 - 119*				
Surr: Toluene-d8	*49.04*	*1.0*	*50*	*0*	*98.1*	*89 - 112*				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364892 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20070043-17MS** Units: **UG/L** Analysis Date: **10-Jul-2020 15:55**
Client ID: **ICT14B_063020** Run ID: **VOA6_364892** SeqNo: **5658734** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.31	1.0	20	0	96.5	78 - 124				
1,1,1-Trichloroethane	17.18	1.0	20	0	85.9	74 - 131				
1,1,2,2-Tetrachloroethane	19.68	1.0	20	0	98.4	71 - 121				
1,1,2-Trichloroethane	19.79	1.0	20	0	98.9	80 - 119				
1,1-Dichloroethane	16.02	1.0	20	0.6579	76.8	77 - 125				S
1,1-Dichloroethene	17.92	1.0	20	1.621	81.5	71 - 131				
1,1-Dichloropropene	18.6	1.0	20	0	93.0	78 - 125				
1,2,3-Trichlorobenzene	22.78	1.0	20	0	114	69 - 129				
1,2,3-Trichloropropane	19.75	1.0	20	0	98.8	73 - 122				
1,2,4-Trichlorobenzene	23.21	1.0	20	0	116	69 - 130				
1,2,4-Trimethylbenzene	19.29	1.0	20	0	96.4	76 - 124				
1,2-Dibromo-3-chloropropane	21.8	1.0	20	0	109	62 - 128				
1,2-Dibromoethane	19.43	1.0	20	0	97.2	77 - 121				
1,2-Dichlorobenzene	19.41	1.0	20	0	97.0	80 - 119				
1,2-Dichloroethane	18.65	1.0	20	0	93.3	73 - 128				
1,2-Dichloropropane	19.14	1.0	20	0	95.7	78 - 122				
1,3,5-Trimethylbenzene	19.63	1.0	20	0	98.1	75 - 124				
1,3-Dichlorobenzene	19.13	1.0	20	0	95.6	80 - 119				
1,3-Dichloropropane	19.33	1.0	20	0	96.6	80 - 119				
1,4-Dichlorobenzene	20.11	1.0	20	0	101	79 - 118				
2,2-Dichloropropane	17.79	1.0	20	0	89.0	60 - 139				
2-Butanone	28.82	2.0	40	0	72.0	56 - 143				
2-Chlorotoluene	19.14	1.0	20	0	95.7	79 - 122				
2-Hexanone	41.91	2.0	40	0	105	57 - 139				
4-Chlorotoluene	19.44	1.0	20	0	97.2	78 - 122				
4-Isopropyltoluene	19.47	1.0	20	0	97.4	77 - 127				
4-Methyl-2-pentanone	41.44	2.0	40	0	104	67 - 130				
Acetone	9.401	2.0	40	0	23.5	39 - 160				S
Benzene	18.49	1.0	20	0	92.4	79 - 120				
Bromobenzene	19.56	1.0	20	0	97.8	80 - 120				
Bromochloromethane	16.14	1.0	20	0	80.7	78 - 123				
Bromodichloromethane	18.96	1.0	20	0	94.8	79 - 125				
Bromoform	19.61	1.0	20	0	98.1	66 - 130				
Bromomethane	18.33	1.0	20	0	91.6	53 - 141				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364892 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20070043-17MS** Units: **UG/L** Analysis Date: **10-Jul-2020 15:55**
Client ID: **ICT14B_063020** Run ID: **VOA6_364892** SeqNo: **5658734** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	31.59	2.0	40	0	79.0	64 - 133				
Carbon tetrachloride	19.32	1.0	20	0	96.6	72 - 136				
Chlorobenzene	19.22	1.0	20	0	96.1	82 - 118				
Chloroethane	16.46	1.0	20	0	82.3	60 - 138				
Chloroform	16.9	1.0	20	0	84.5	79 - 124				
Chloromethane	19.7	1.0	20	0	98.5	50 - 139				
cis-1,2-Dichloroethene	27.72	1.0	20	15.39	61.7	78 - 123				S
cis-1,3-Dichloropropene	20.76	1.0	20	0	104	75 - 124				
Dibromochloromethane	19.72	1.0	20	0	98.6	74 - 126				
Dibromomethane	18.55	1.0	20	0	92.7	79 - 123				
Dichlorodifluoromethane	17.02	1.0	20	0	85.1	32 - 152				
Ethylbenzene	19.76	1.0	20	0	98.8	79 - 121				
Hexachlorobutadiene	22.36	1.0	20	0	112	66 - 134				
Isopropylbenzene	20.11	1.0	20	0	101	72 - 131				
m,p-Xylene	39.02	2.0	40	0	97.6	80 - 121				
Methylene chloride	17.85	2.0	20	0	89.2	74 - 124				
Naphthalene	21.89	1.0	20	0	109	61 - 128				
n-Butylbenzene	19.82	1.0	20	0	99.1	75 - 128				
n-Propylbenzene	19.62	1.0	20	0	98.1	76 - 126				
o-Xylene	19.5	1.0	20	0	97.5	78 - 122				
sec-Butylbenzene	19.43	1.0	20	0	97.1	77 - 126				
Styrene	19.19	1.0	20	0	96.0	78 - 123				
tert-Butylbenzene	19.72	1.0	20	0	98.6	78 - 124				
Tetrachloroethene	20.3	1.0	20	0	102	74 - 129				
Toluene	19.8	1.0	20	0	99.0	80 - 121				
trans-1,2-Dichloroethene	16.48	1.0	20	0.4181	80.3	75 - 124				
trans-1,3-Dichloropropene	22.2	1.0	20	0	111	73 - 127				
Trichloroethene	79.03	1.0	20	77.74	6.45	79 - 123				S
Trichlorofluoromethane	18.6	1.0	20	0	93.0	65 - 141				
Vinyl chloride	18.79	1.0	20	0.7027	90.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*42.88*	*1.0*	*50*	*0*	*85.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.92*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*44.55*	*1.0*	*50*	*0*	*89.1*	*80 - 119*				
Surr: Toluene-d8	*50.25*	*1.0*	*50*	*0*	*100*	*89 - 112*				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364892 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20070043-17MSD** Units: **UG/L** Analysis Date: **10-Jul-2020 16:19**
Client ID: **ICT14B_063020** Run ID: **VOA6_364892** SeqNo: **5658735** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	18.98	1.0	20	0	94.9	78 - 124	19.31	1.72	20	
1,1,1-Trichloroethane	17.74	1.0	20	0	88.7	74 - 131	17.18	3.24	20	
1,1,2,2-Tetrachloroethane	20.42	1.0	20	0	102	71 - 121	19.68	3.73	20	
1,1,2-Trichloroethane	19.66	1.0	20	0	98.3	80 - 119	19.79	0.624	20	
1,1-Dichloroethane	17.52	1.0	20	0.6579	84.3	77 - 125	16.02	8.92	20	
1,1-Dichloroethene	16.76	1.0	20	1.621	75.7	71 - 131	17.92	6.65	20	
1,1-Dichloropropene	18.42	1.0	20	0	92.1	78 - 125	18.6	0.998	20	
1,2,3-Trichlorobenzene	23.64	1.0	20	0	118	69 - 129	22.78	3.73	20	
1,2,3-Trichloropropane	20.65	1.0	20	0	103	73 - 122	19.75	4.43	20	
1,2,4-Trichlorobenzene	23.2	1.0	20	0	116	69 - 130	23.21	0.025	20	
1,2,4-Trimethylbenzene	19.69	1.0	20	0	98.4	76 - 124	19.29	2.06	20	
1,2-Dibromo-3-chloropropane	23.32	1.0	20	0	117	62 - 128	21.8	6.76	20	
1,2-Dibromoethane	19.26	1.0	20	0	96.3	77 - 121	19.43	0.909	20	
1,2-Dichlorobenzene	19.82	1.0	20	0	99.1	80 - 119	19.41	2.1	20	
1,2-Dichloroethane	19.31	1.0	20	0	96.6	73 - 128	18.65	3.48	20	
1,2-Dichloropropane	18.85	1.0	20	0	94.3	78 - 122	19.14	1.49	20	
1,3,5-Trimethylbenzene	19.81	1.0	20	0	99.0	75 - 124	19.63	0.9	20	
1,3-Dichlorobenzene	19.86	1.0	20	0	99.3	80 - 119	19.13	3.75	20	
1,3-Dichloropropane	19.07	1.0	20	0	95.4	80 - 119	19.33	1.33	20	
1,4-Dichlorobenzene	20.59	1.0	20	0	103	79 - 118	20.11	2.37	20	
2,2-Dichloropropane	19.03	1.0	20	0	95.2	60 - 139	17.79	6.73	20	
2-Butanone	33.05	2.0	40	0	82.6	56 - 143	28.82	13.7	20	
2-Chlorotoluene	19.37	1.0	20	0	96.9	79 - 122	19.14	1.22	20	
2-Hexanone	41.68	2.0	40	0	104	57 - 139	41.91	0.565	20	
4-Chlorotoluene	19.34	1.0	20	0	96.7	78 - 122	19.44	0.566	20	
4-Isopropyltoluene	20.36	1.0	20	0	102	77 - 127	19.47	4.43	20	
4-Methyl-2-pentanone	43.07	2.0	40	0	108	67 - 130	41.44	3.86	20	
Acetone	10.87	2.0	40	0	27.2	39 - 160	9.401	14.4	20	S
Benzene	18.72	1.0	20	0	93.6	79 - 120	18.49	1.25	20	
Bromobenzene	19.46	1.0	20	0	97.3	80 - 120	19.56	0.518	20	
Bromochloromethane	16.35	1.0	20	0	81.8	78 - 123	16.14	1.27	20	
Bromodichloromethane	18.61	1.0	20	0	93.0	79 - 125	18.96	1.88	20	
Bromoform	19.66	1.0	20	0	98.3	66 - 130	19.61	0.236	20	
Bromomethane	16.22	1.0	20	0	81.1	53 - 141	18.33	12.2	20	

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364892 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20070043-17MSD** Units: **UG/L** Analysis Date: **10-Jul-2020 16:19**
Client ID: **ICT14B_063020** Run ID: **VOA6_364892** SeqNo: **5658735** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	30.04	2.0	40	0	75.1	64 - 133	31.59	5.04	20	
Carbon tetrachloride	18.75	1.0	20	0	93.7	72 - 136	19.32	3.02	20	
Chlorobenzene	18.98	1.0	20	0	94.9	82 - 118	19.22	1.26	20	
Chloroethane	14.25	1.0	20	0	71.3	60 - 138	16.46	14.3	20	
Chloroform	17.88	1.0	20	0	89.4	79 - 124	16.9	5.63	20	
Chloromethane	17.48	1.0	20	0	87.4	50 - 139	19.7	12	20	
cis-1,2-Dichloroethene	29.82	1.0	20	15.39	72.2	78 - 123	27.72	7.31	20	S
cis-1,3-Dichloropropene	18.55	1.0	20	0	92.7	75 - 124	20.76	11.3	20	
Dibromochloromethane	18.85	1.0	20	0	94.2	74 - 126	19.72	4.54	20	
Dibromomethane	18.71	1.0	20	0	93.5	79 - 123	18.55	0.853	20	
Dichlorodifluoromethane	15.28	1.0	20	0	76.4	32 - 152	17.02	10.7	20	
Ethylbenzene	19.11	1.0	20	0	95.5	79 - 121	19.76	3.37	20	
Hexachlorobutadiene	20.91	1.0	20	0	105	66 - 134	22.36	6.68	20	
Isopropylbenzene	19.5	1.0	20	0	97.5	72 - 131	20.11	3.12	20	
m,p-Xylene	37.89	2.0	40	0	94.7	80 - 121	39.02	2.94	20	
Methylene chloride	18.26	2.0	20	0	91.3	74 - 124	17.85	2.29	20	
Naphthalene	25.31	1.0	20	0	127	61 - 128	21.89	14.5	20	
n-Butylbenzene	20.74	1.0	20	0	104	75 - 128	19.82	4.55	20	
n-Propylbenzene	20.16	1.0	20	0	101	76 - 126	19.62	2.72	20	
o-Xylene	19.05	1.0	20	0	95.2	78 - 122	19.5	2.35	20	
sec-Butylbenzene	20.02	1.0	20	0	100	77 - 126	19.43	2.98	20	
Styrene	18.69	1.0	20	0	93.5	78 - 123	19.19	2.64	20	
tert-Butylbenzene	20.12	1.0	20	0	101	78 - 124	19.72	1.99	20	
Tetrachloroethene	19.5	1.0	20	0	97.5	74 - 129	20.3	4.01	20	
Toluene	19.19	1.0	20	0	96.0	80 - 121	19.8	3.14	20	
trans-1,2-Dichloroethene	18.18	1.0	20	0.4181	88.8	75 - 124	16.48	9.81	20	
trans-1,3-Dichloropropene	18.95	1.0	20	0	94.7	73 - 127	22.2	15.8	20	
Trichloroethene	77.51	1.0	20	77.74	-1.16	79 - 123	79.03	1.94	20	S
Trichlorofluoromethane	16.77	1.0	20	0	83.9	65 - 141	18.6	10.3	20	
Vinyl chloride	16.91	1.0	20	0.7027	81.0	58 - 137	18.79	10.5	20	
Surr: 1,2-Dichloroethane-d4	*44.65*	*1.0*	*50*	*0*	*89.3*	*81 - 118*	*42.88*	*4.06*	*20*	
Surr: 4-Bromofluorobenzene	*50.44*	*1.0*	*50*	*0*	*101*	*85 - 114*	*50.92*	*0.942*	*20*	
Surr: Dibromofluoromethane	*46.84*	*1.0*	*50*	*0*	*93.7*	*80 - 119*	*44.55*	*5.01*	*20*	
Surr: Toluene-d8	*49.49*	*1.0*	*50*	*0*	*99.0*	*89 - 112*	*50.25*	*1.52*	*20*	

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364892 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:

HS20070043-07	HS20070043-08	HS20070043-09	HS20070043-10
HS20070043-12	HS20070043-13	HS20070043-17	HS20070043-18

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364903 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200712** Units: **UG/L** Analysis Date: **12-Jul-2020 15:00**
Client ID: Run ID: **VOA6_364903** SeqNo: **5658919** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*45.05*	*1.0*	*50*	*0*	*90.1*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.82*	*1.0*	*50*	*0*	*97.6*	*85 - 114*				
Surr: Dibromofluoromethane	*46.94*	*1.0*	*50*	*0*	*93.9*	*80 - 119*				
Surr: Toluene-d8	*52.52*	*1.0*	*50*	*0*	*105*	*89 - 112*				

LCS Sample ID: **VLCSW-200712** Units: **UG/L** Analysis Date: **12-Jul-2020 12:22**
Client ID: Run ID: **VOA6_364903** SeqNo: **5658918** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	19.11	1.0	20	0	95.6	78 - 123				
Trichloroethene	17.77	1.0	20	0	88.8	79 - 123				
Surr: 1,2-Dichloroethane-d4	*55.51*	*1.0*	*50*	*0*	*111*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.66*	*1.0*	*50*	*0*	*97.3*	*85 - 114*				
Surr: Dibromofluoromethane	*54.7*	*1.0*	*50*	*0*	*109*	*80 - 119*				
Surr: Toluene-d8	*49.05*	*1.0*	*50*	*0*	*98.1*	*89 - 112*				

MS Sample ID: **HS20070043-10MS** Units: **UG/L** Analysis Date: **12-Jul-2020 15:48**
Client ID: **ICT12D_063020** Run ID: **VOA6_364903** SeqNo: **5658921** PrepDate: DF: **250**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	16700	250	5000	10900	116	78 - 123				
Trichloroethene	18670	250	5000	13480	104	79 - 123				
Surr: 1,2-Dichloroethane-d4	*11500*	*250*	*12500*	*0*	*92.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*12470*	*250*	*12500*	*0*	*99.7*	*85 - 114*				
Surr: Dibromofluoromethane	*11750*	*250*	*12500*	*0*	*94.0*	*80 - 119*				
Surr: Toluene-d8	*11760*	*250*	*12500*	*0*	*94.1*	*89 - 112*				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364903 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20070043-10MSD** Units: **UG/L** Analysis Date: **12-Jul-2020 16:12**
Client ID: **ICT12D_063020** Run ID: **VOA6_364903** SeqNo: **5658922** PrepDate: DF: **250**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	14680	250	5000	10900	75.7	78 - 123	16700	12.9	20	S
Trichloroethene	19020	250	5000	13480	111	79 - 123	18670	1.88	20	
Surr: 1,2-Dichloroethane-d4	*11370*	*250*	*12500*	*0*	*90.9*	*81 - 118*	*11500*	*1.16*	*20*	
Surr: 4-Bromofluorobenzene	*12700*	*250*	*12500*	*0*	*102*	*85 - 114*	*12470*	*1.88*	*20*	
Surr: Dibromofluoromethane	*11220*	*250*	*12500*	*0*	*89.8*	*80 - 119*	*11750*	*4.6*	*20*	
Surr: Toluene-d8	*12560*	*250*	*12500*	*0*	*100*	*89 - 112*	*11760*	*6.55*	*20*	

The following samples were analyzed in this batch: HS20070043-10

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200713** Units: **UG/L** Analysis Date: **13-Jul-2020 18:29**
Client ID: Run ID: **VOA6_364980** SeqNo: **5660687** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200713** Units: **UG/L** Analysis Date: **13-Jul-2020 18:29**
Client ID: Run ID: **VOA6_364980** SeqNo: **5660687** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*41.41*	*1.0*	*50*	*0*	*82.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.99*	*1.0*	*50*	*0*	*98.0*	*85 - 114*				
Surr: Dibromofluoromethane	*45.38*	*1.0*	*50*	*0*	*90.8*	*80 - 119*				
Surr: Toluene-d8	*51.83*	*1.0*	*50*	*0*	*104*	*89 - 112*				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364980 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200713** Units: **UG/L** Analysis Date: **13-Jul-2020 17:41**
Client ID: Run ID: **VOA6_364980** SeqNo: **5660686** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.18	1.0	20	0	95.9	78 - 124				
1,1,1-Trichloroethane	18.57	1.0	20	0	92.9	74 - 131				
1,1,2,2-Tetrachloroethane	19.72	1.0	20	0	98.6	71 - 121				
1,1,2-Trichloroethane	20.64	1.0	20	0	103	80 - 119				
1,1-Dichloroethane	19.67	1.0	20	0	98.3	77 - 125				
1,1-Dichloroethene	17.3	1.0	20	0	86.5	71 - 131				
1,1-Dichloropropene	17.95	1.0	20	0	89.7	78 - 125				
1,2,3-Trichlorobenzene	25.56	1.0	20	0	128	69 - 129				
1,2,3-Trichloropropane	20.21	1.0	20	0	101	73 - 122				
1,2,4-Trichlorobenzene	24.4	1.0	20	0	122	69 - 130				
1,2,4-Trimethylbenzene	19.44	1.0	20	0	97.2	76 - 124				
1,2-Dibromo-3-chloropropane	21.9	1.0	20	0	109	62 - 128				
1,2-Dibromoethane	21.06	1.0	20	0	105	77 - 121				
1,2-Dichlorobenzene	19.38	1.0	20	0	96.9	80 - 119				
1,2-Dichloroethane	20.44	1.0	20	0	102	73 - 128				
1,2-Dichloropropane	19.22	1.0	20	0	96.1	78 - 122				
1,3,5-Trimethylbenzene	18.53	1.0	20	0	92.6	75 - 124				
1,3-Dichlorobenzene	19.49	1.0	20	0	97.4	80 - 119				
1,3-Dichloropropane	19.7	1.0	20	0	98.5	80 - 119				
1,4-Dichlorobenzene	19.39	1.0	20	0	97.0	79 - 118				
2,2-Dichloropropane	19.46	1.0	20	0	97.3	60 - 139				
2-Butanone	43.98	2.0	40	0	110	56 - 143				
2-Chlorotoluene	18.39	1.0	20	0	92.0	79 - 122				
2-Hexanone	42.25	2.0	40	0	106	57 - 139				
4-Chlorotoluene	18.55	1.0	20	0	92.8	78 - 122				
4-Isopropyltoluene	17.95	1.0	20	0	89.8	77 - 127				
4-Methyl-2-pentanone	41.64	2.0	40	0	104	67 - 130				
Acetone	33.55	2.0	40	0	83.9	39 - 160				
Benzene	19.95	1.0	20	0	99.7	79 - 120				
Bromobenzene	19.58	1.0	20	0	97.9	80 - 120				
Bromochloromethane	19.01	1.0	20	0	95.1	78 - 123				
Bromodichloromethane	19.11	1.0	20	0	95.6	79 - 125				
Bromoform	19.24	1.0	20	0	96.2	66 - 130				
Bromomethane	19.98	1.0	20	0	99.9	53 - 141				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364980 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200713** Units: **UG/L** Analysis Date: **13-Jul-2020 17:41**
Client ID: Run ID: **VOA6_364980** SeqNo: **5660686** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	34.38	2.0	40	0	85.9	64 - 133				
Carbon tetrachloride	17.13	1.0	20	0	85.6	72 - 136				
Chlorobenzene	19.29	1.0	20	0	96.4	82 - 118				
Chloroethane	16.24	1.0	20	0	81.2	60 - 138				
Chloroform	19.98	1.0	20	0	99.9	79 - 124				
Chloromethane	20.48	1.0	20	0	102	50 - 139				
cis-1,2-Dichloroethene	20.31	1.0	20	0	102	78 - 123				
cis-1,3-Dichloropropene	19.42	1.0	20	0	97.1	75 - 124				
Dibromochloromethane	19.54	1.0	20	0	97.7	74 - 126				
Dibromomethane	19.17	1.0	20	0	95.8	79 - 123				
Dichlorodifluoromethane	17.14	1.0	20	0	85.7	32 - 152				
Ethylbenzene	18.92	1.0	20	0	94.6	79 - 121				
Hexachlorobutadiene	19.41	1.0	20	0	97.0	66 - 134				
Isopropylbenzene	17.66	1.0	20	0	88.3	72 - 131				
m,p-Xylene	38.36	2.0	40	0	95.9	80 - 121				
Methylene chloride	18.66	2.0	20	0	93.3	74 - 124				
Naphthalene	25.04	1.0	20	0	125	61 - 128				
n-Butylbenzene	17.8	1.0	20	0	89.0	75 - 128				
n-Propylbenzene	18.04	1.0	20	0	90.2	76 - 126				
o-Xylene	18.8	1.0	20	0	94.0	78 - 122				
sec-Butylbenzene	17.28	1.0	20	0	86.4	77 - 126				
Styrene	19.29	1.0	20	0	96.4	78 - 123				
tert-Butylbenzene	17.87	1.0	20	0	89.4	78 - 124				
Tetrachloroethene	17.3	1.0	20	0	86.5	74 - 129				
Toluene	19.11	1.0	20	0	95.5	80 - 121				
trans-1,2-Dichloroethene	19.48	1.0	20	0	97.4	75 - 124				
trans-1,3-Dichloropropene	19.78	1.0	20	0	98.9	73 - 127				
Trichloroethene	18.71	1.0	20	0	93.5	79 - 123				
Trichlorofluoromethane	15.64	1.0	20	0	78.2	65 - 141				
Vinyl chloride	17.47	1.0	20	0	87.3	58 - 137				
Surr: 1,2-Dichloroethane-d4	*54.24*	*1.0*	*50*	*0*	*108*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.01*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*52.35*	*1.0*	*50*	*0*	*105*	*80 - 119*				
Surr: Toluene-d8	*47.84*	*1.0*	*50*	*0*	*95.7*	*89 - 112*				

Revision: 1

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364980 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20070043-19MS** Units: **UG/L** Analysis Date: **13-Jul-2020 20:29**
Client ID: **ICT14D_063020** Run ID: **VOA6_364980** SeqNo: **5660692** PrepDate: DF: **200**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	4078	200	4000	0	102	78 - 124				
1,1,1-Trichloroethane	4002	200	4000	0	100	74 - 131				
1,1,2,2-Tetrachloroethane	4165	200	4000	0	104	71 - 121				
1,1,2-Trichloroethane	4274	200	4000	0	107	80 - 119				
1,1-Dichloroethane	4023	200	4000	0	101	77 - 125				
1,1-Dichloroethene	3760	200	4000	0	94.0	71 - 131				
1,1-Dichloropropene	4206	200	4000	0	105	78 - 125				
1,2,3-Trichlorobenzene	3628	200	4000	0	90.7	69 - 129				
1,2,3-Trichloropropane	4116	200	4000	0	103	73 - 122				
1,2,4-Trichlorobenzene	3974	200	4000	0	99.4	69 - 130				
1,2,4-Trimethylbenzene	4293	200	4000	0	107	76 - 124				
1,2-Dibromo-3-chloropropane	3846	200	4000	0	96.1	62 - 128				
1,2-Dibromoethane	4396	200	4000	0	110	77 - 121				
1,2-Dichlorobenzene	4188	200	4000	0	105	80 - 119				
1,2-Dichloroethane	4212	200	4000	0	105	73 - 128				
1,2-Dichloropropane	4168	200	4000	0	104	78 - 122				
1,3,5-Trimethylbenzene	4227	200	4000	0	106	75 - 124				
1,3-Dichlorobenzene	4022	200	4000	0	101	80 - 119				
1,3-Dichloropropane	4204	200	4000	0	105	80 - 119				
1,4-Dichlorobenzene	4015	200	4000	0	100	79 - 118				
2,2-Dichloropropane	3666	200	4000	0	91.6	60 - 139				
2-Butanone	7578	400	8000	0	94.7	56 - 143				
2-Chlorotoluene	3883	200	4000	0	97.1	79 - 122				
2-Hexanone	8086	400	8000	0	101	57 - 139				
4-Chlorotoluene	4117	200	4000	0	103	78 - 122				
4-Isopropyltoluene	4228	200	4000	0	106	77 - 127				
4-Methyl-2-pentanone	8508	400	8000	0	106	67 - 130				
Acetone	5564	400	8000	0	69.6	39 - 160				
Benzene	4349	200	4000	0	109	79 - 120				
Bromobenzene	4253	200	4000	0	106	80 - 120				
Bromochloromethane	3664	200	4000	0	91.6	78 - 123				
Bromodichloromethane	3995	200	4000	0	99.9	79 - 125				
Bromoform	4068	200	4000	0	102	66 - 130				
Bromomethane	4279	200	4000	0	107	53 - 141				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364980 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20070043-19MS** Units: **UG/L** Analysis Date: **13-Jul-2020 20:29**
Client ID: **ICT14D_063020** Run ID: **VOA6_364980** SeqNo: **5660692** PrepDate: DF: **200**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	6931	400	8000	0	86.6	64 - 133				
Carbon tetrachloride	4139	200	4000	0	103	72 - 136				
Chlorobenzene	4307	200	4000	0	108	82 - 118				
Chloroethane	3677	200	4000	0	91.9	60 - 138				
Chloroform	3956	200	4000	0	98.9	79 - 124				
Chloromethane	4309	200	4000	0	108	50 - 139				
cis-1,2-Dichloroethene	11910	200	4000	7546	109	78 - 123				
cis-1,3-Dichloropropene	4131	200	4000	0	103	75 - 124				
Dibromochloromethane	4142	200	4000	0	104	74 - 126				
Dibromomethane	4005	200	4000	0	100	79 - 123				
Dichlorodifluoromethane	4269	200	4000	0	107	32 - 152				
Ethylbenzene	4258	200	4000	0	106	79 - 121				
Hexachlorobutadiene	4133	200	4000	0	103	66 - 134				
Isopropylbenzene	4252	200	4000	0	106	72 - 131				
m,p-Xylene	8390	400	8000	0	105	80 - 121				
Methylene chloride	8790	400	4000	5861	73.2	74 - 124				S
Naphthalene	3905	200	4000	0	97.6	61 - 128				
n-Butylbenzene	4300	200	4000	0	108	75 - 128				
n-Propylbenzene	3651	200	4000	0	91.3	76 - 126				
o-Xylene	4161	200	4000	0	104	78 - 122				
sec-Butylbenzene	3782	200	4000	0	94.5	77 - 126				
Styrene	4126	200	4000	0	103	78 - 123				
tert-Butylbenzene	4452	200	4000	0	111	78 - 124				
Tetrachloroethene	4254	200	4000	0	106	74 - 129				
Toluene	4254	200	4000	0	106	80 - 121				
trans-1,2-Dichloroethene	3893	200	4000	0	97.3	75 - 124				
trans-1,3-Dichloropropene	3887	200	4000	0	97.2	73 - 127				
Trichloroethene	9168	200	4000	4889	107	79 - 123				
Trichlorofluoromethane	3785	200	4000	0	94.6	65 - 141				
Vinyl chloride	4065	200	4000	155	97.8	58 - 137				
Surr: 1,2-Dichloroethane-d4	*9021*	*200*	*10000*	*0*	*90.2*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*10110*	*200*	*10000*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*9110*	*200*	*10000*	*0*	*91.1*	*80 - 119*				
Surr: Toluene-d8	*9957*	*200*	*10000*	*0*	*99.6*	*89 - 112*				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364980 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20070043-19MSD** Units: **UG/L** Analysis Date: **13-Jul-2020 20:54**
Client ID: **ICT14D_063020** Run ID: **VOA6_364980** SeqNo: **5660693** PrepDate: DF: **200**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	4203	200	4000	0	105	78 - 124	4078	3.01	20	
1,1,1-Trichloroethane	3766	200	4000	0	94.1	74 - 131	4002	6.08	20	
1,1,2,2-Tetrachloroethane	4714	200	4000	0	118	71 - 121	4165	12.4	20	
1,1,2-Trichloroethane	4408	200	4000	0	110	80 - 119	4274	3.08	20	
1,1-Dichloroethane	3813	200	4000	0	95.3	77 - 125	4023	5.35	20	
1,1-Dichloroethene	3373	200	4000	0	84.3	71 - 131	3760	10.8	20	
1,1-Dichloropropene	4137	200	4000	0	103	78 - 125	4206	1.65	20	
1,2,3-Trichlorobenzene	2965	200	4000	0	74.1	69 - 129	3628	20.1	20	R
1,2,3-Trichloropropane	4715	200	4000	0	118	73 - 122	4116	13.6	20	
1,2,4-Trichlorobenzene	3041	200	4000	0	76.0	69 - 130	3974	26.6	20	R
1,2,4-Trimethylbenzene	4606	200	4000	0	115	76 - 124	4293	7.04	20	
1,2-Dibromo-3-chloropropane	3430	200	4000	0	85.8	62 - 128	3846	11.4	20	
1,2-Dibromoethane	4491	200	4000	0	112	77 - 121	4396	2.14	20	
1,2-Dichlorobenzene	4512	200	4000	0	113	80 - 119	4188	7.46	20	
1,2-Dichloroethane	4327	200	4000	0	108	73 - 128	4212	2.7	20	
1,2-Dichloropropane	4111	200	4000	0	103	78 - 122	4168	1.36	20	
1,3,5-Trimethylbenzene	4505	200	4000	0	113	75 - 124	4227	6.36	20	
1,3-Dichlorobenzene	4474	200	4000	0	112	80 - 119	4022	10.6	20	
1,3-Dichloropropane	4192	200	4000	0	105	80 - 119	4204	0.287	20	
1,4-Dichlorobenzene	4470	200	4000	0	112	79 - 118	4015	10.7	20	
2,2-Dichloropropane	3439	200	4000	0	86.0	60 - 139	3666	6.39	20	
2-Butanone	7508	400	8000	0	93.8	56 - 143	7578	0.937	20	
2-Chlorotoluene	3712	200	4000	0	92.8	79 - 122	3883	4.5	20	
2-Hexanone	8518	400	8000	0	106	57 - 139	8086	5.2	20	
4-Chlorotoluene	4318	200	4000	0	108	78 - 122	4117	4.78	20	
4-Isopropyltoluene	4723	200	4000	0	118	77 - 127	4228	11.1	20	
4-Methyl-2-pentanone	8401	400	8000	0	105	67 - 130	8508	1.27	20	
Acetone	5133	400	8000	0	64.2	39 - 160	5564	8.07	20	
Benzene	4248	200	4000	0	106	79 - 120	4349	2.35	20	
Bromobenzene	4670	200	4000	0	117	80 - 120	4253	9.33	20	
Bromochloromethane	3599	200	4000	0	90.0	78 - 123	3664	1.77	20	
Bromodichloromethane	3746	200	4000	0	93.7	79 - 125	3995	6.44	20	
Bromoform	4231	200	4000	0	106	66 - 130	4068	3.92	20	
Bromomethane	3665	200	4000	0	91.6	53 - 141	4279	15.5	20	

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364980 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20070043-19MSD** Units: **UG/L** Analysis Date: **13-Jul-2020 20:54**
Client ID: **ICT14D_063020** Run ID: **VOA6_364980** SeqNo: **5660693** PrepDate: DF: **200**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	6322	400	8000	0	79.0	64 - 133	6931	9.19	20	
Carbon tetrachloride	4041	200	4000	0	101	72 - 136	4139	2.4	20	
Chlorobenzene	4207	200	4000	0	105	82 - 118	4307	2.36	20	
Chloroethane	3337	200	4000	0	83.4	60 - 138	3677	9.69	20	
Chloroform	3825	200	4000	0	95.6	79 - 124	3956	3.37	20	
Chloromethane	4084	200	4000	0	102	50 - 139	4309	5.36	20	
cis-1,2-Dichloroethene	11300	200	4000	7546	94.0	78 - 123	11910	5.25	20	
cis-1,3-Dichloropropene	3770	200	4000	0	94.2	75 - 124	4131	9.15	20	
Dibromochloromethane	4257	200	4000	0	106	74 - 126	4142	2.76	20	
Dibromomethane	3988	200	4000	0	99.7	79 - 123	4005	0.42	20	
Dichlorodifluoromethane	3943	200	4000	0	98.6	32 - 152	4269	7.94	20	
Ethylbenzene	4315	200	4000	0	108	79 - 121	4258	1.32	20	
Hexachlorobutadiene	2596	200	4000	0	64.9	66 - 134	4133	45.7	20	SR
Isopropylbenzene	4290	200	4000	0	107	72 - 131	4252	0.899	20	
m,p-Xylene	8642	400	8000	0	108	80 - 121	8390	2.96	20	
Methylene chloride	8224	400	4000	5861	59.1	74 - 124	8790	6.66	20	S
Naphthalene	3118	200	4000	0	78.0	61 - 128	3905	22.4	20	R
n-Butylbenzene	4547	200	4000	0	114	75 - 128	4300	5.58	20	
n-Propylbenzene	4729	200	4000	0	118	76 - 126	3651	25.7	20	R
o-Xylene	3991	200	4000	0	99.8	78 - 122	4161	4.17	20	
sec-Butylbenzene	4584	200	4000	0	115	77 - 126	3782	19.2	20	
Styrene	4255	200	4000	0	106	78 - 123	4126	3.1	20	
tert-Butylbenzene	4778	200	4000	0	119	78 - 124	4452	7.07	20	
Tetrachloroethene	4274	200	4000	0	107	74 - 129	4254	0.466	20	
Toluene	4269	200	4000	0	107	80 - 121	4254	0.352	20	
trans-1,2-Dichloroethene	3801	200	4000	0	95.0	75 - 124	3893	2.39	20	
trans-1,3-Dichloropropene	3942	200	4000	0	98.6	73 - 127	3887	1.4	20	
Trichloroethene	9018	200	4000	4889	103	79 - 123	9168	1.66	20	
Trichlorofluoromethane	3552	200	4000	0	88.8	65 - 141	3785	6.37	20	
Vinyl chloride	3552	200	4000	155	84.9	58 - 137	4065	13.5	20	
Surr: 1,2-Dichloroethane-d4	*8788*	*200*	*10000*	*0*	*87.9*	*81 - 118*	*9021*	*2.62*	*20*	
Surr: 4-Bromofluorobenzene	*9799*	*200*	*10000*	*0*	*98.0*	*85 - 114*	*10110*	*3.13*	*20*	
Surr: Dibromofluoromethane	*9200*	*200*	*10000*	*0*	*92.0*	*80 - 119*	*9110*	*0.989*	*20*	
Surr: Toluene-d8	*10180*	*200*	*10000*	*0*	*102*	*89 - 112*	*9957*	*2.23*	*20*	

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R364980 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:	HS20070043-05	HS20070043-06	HS20070043-11	HS20070043-19

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R365018 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200714** Units: **UG/L** Analysis Date: **14-Jul-2020 12:57**
Client ID: Run ID: **VOA6_365018** SeqNo: **5661430** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Methylene chloride	1.0	2.0								U
Surr: 1,2-Dichloroethane-d4	*43.56*	*1.0*	*50*	*0*	*87.1*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.87*	*1.0*	*50*	*0*	*97.7*	*85 - 114*				
Surr: Dibromofluoromethane	*44.21*	*1.0*	*50*	*0*	*88.4*	*80 - 119*				
Surr: Toluene-d8	*51.58*	*1.0*	*50*	*0*	*103*	*89 - 112*				

LCS Sample ID: **VLCSW-200714** Units: **UG/L** Analysis Date: **14-Jul-2020 12:09**
Client ID: Run ID: **VOA6_365018** SeqNo: **5661429** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Methylene chloride	21.26	2.0	20	0	106	74 - 124				
Surr: 1,2-Dichloroethane-d4	*52.45*	*1.0*	*50*	*0*	*105*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*52.51*	*1.0*	*50*	*0*	*105*	*85 - 114*				
Surr: Dibromofluoromethane	*52.3*	*1.0*	*50*	*0*	*105*	*80 - 119*				
Surr: Toluene-d8	*49.43*	*1.0*	*50*	*0*	*98.9*	*89 - 112*				

MS Sample ID: **HS20070400-04MS** Units: **UG/L** Analysis Date: **14-Jul-2020 16:10**
Client ID: Run ID: **VOA6_365018** SeqNo: **5661632** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Methylene chloride	21.18	2.0	20	0	106	74 - 124				
Surr: 1,2-Dichloroethane-d4	*44.4*	*1.0*	*50*	*0*	*88.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.77*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*46.5*	*1.0*	*50*	*0*	*93.0*	*80 - 119*				
Surr: Toluene-d8	*50.57*	*1.0*	*50*	*0*	*101*	*89 - 112*				

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: HS20070043

QC BATCH REPORT

Batch ID: R365018 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20070400-04MSD** Units: **UG/L** Analysis Date: **14-Jul-2020 16:34**
Client ID: Run ID: **VOA6_365018** SeqNo: **5661633** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Methylene chloride	17.37	2.0	20	0	86.9	74 - 124	21.18	19.7	20	
Surr: 1,2-Dichloroethane-d4	*42.9*	*1.0*	*50*	*0*	*85.8*	*81 - 118*	*44.4*	*3.44*	*20*	
Surr: 4-Bromofluorobenzene	*56.32*	*1.0*	*50*	*0*	*113*	*85 - 114*	*50.77*	*10.4*	*20*	
Surr: Dibromofluoromethane	*43.77*	*1.0*	*50*	*0*	*87.5*	*80 - 119*	*46.5*	*6.05*	*20*	
Surr: Toluene-d8	*47.25*	*1.0*	*50*	*0*	*94.5*	*89 - 112*	*50.57*	*6.79*	*20*	

The following samples were analyzed in this batch: HS20070043-11

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
WorkOrder: **HS20070043**

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: 24-Jul-20

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	20-030-0	26-Mar-2021
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Illinois	2000322020-4	09-May-2021
Kansas	E-10352 2019-2020	31-Jul-2020
North Carolina	624-2020	31-Dec-2020
Oklahoma	2019-141	31-Aug-2020
Texas	T104704231-20-26	30-Apr-2021

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Work Order: HS20070043

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20070043-01	ICT2_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-01	ICT2_063020	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-01	ICT2_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-02	ICT4_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-02	ICT4_063020	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-02	ICT4_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-03	ICT4_063020_a	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-03	ICT4_063020_a	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-03	ICT4_063020_a	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-04	ICT7_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-04	ICT7_063020	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-04	ICT7_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-05	ICT8_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-05	ICT8_063020	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-05	ICT8_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-06	ICT8_063020_a	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-06	ICT8_063020_a	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-06	ICT8_063020_a	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-07	ICT11_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-07	ICT11_063020	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-07	ICT11_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-08	ICT12B_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-08	ICT12B_063020	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-08	ICT12B_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-09	ICT12C_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-09	ICT12C_063020	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-09	ICT12C_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-10	ICT12D_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-10	ICT12D_063020	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-10	ICT12D_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-11	ICT12E_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-11	ICT12E_063020	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-11	ICT12E_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-12	ICT13A_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-12	ICT13A_063020	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-12	ICT13A_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-13	ICT13B_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-13	ICT13B_063020	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-13	ICT13B_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed

ALS Houston, US Date: 24-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP / ICT Wells
Work Order: HS20070043

SAMPLE TRACKING

HS20070043-14	ICT13D_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-14	ICT13D_063020	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-14	ICT13D_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-15	ICT13E_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-15	ICT13E_063020	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-15	ICT13E_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-16	ICT13F_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-16	ICT13F_063020	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-16	ICT13F_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-17	ICT14B_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-17	ICT14B_063020	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-17	ICT14B_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-18	ICT14C_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-18	ICT14C_063020	Login	7/1/2020 3:08:48 PM	JRM	Sub
HS20070043-18	ICT14C_063020	Login	7/1/2020 3:08:48 PM	JRM	Disposed
HS20070043-20	Trip Blank	Login	7/1/2020 3:08:48 PM	JRM	Disposed

00974478

ALS Houston, US Date: 24-Jul-20

Sample Receipt Checklist

Work Order ID: HS20070043 **Date/Time Received:** 01-Jul-2020 09:40

Client Name: Bhate Environmental **Received by:** Jared R. Makan

Completed By:	/S/ Jared R. Makan	01-Jul-2020 16:52	**Reviewed by:**	/S/ RJ Modashia	01-Jul-2020 21:21
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **Water** Carrier name: **ALS Courier**

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 ☐	2 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):	1.3°C/1.3°C UC/C	IR25
Cooler(s)/Kit(s):	Blue	
Date/Time sample(s) sent to storage:	07/01/2020 16:50	

Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

bhate

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Page: ____ of ____

Project/Phase No: NWO1312.0150

COC Number(1): ____

LIMS Number: ____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / ICT Wells

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code [2]	Sample Number [3]	Sample Matrix [4]	Number of containers	VOC	PERCHLORATE	TOTAL METALS								Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
							Sample Analysis Requested [5]											Quality Assurance Samples [6]			
ICT2_063020	30 Jun 2020	08:40	-	N		WG	5	X	X	X											
ICT4_063020	30 Jun 2020	08:55	-	N		WG	5	X	X	X											
ICT4_063020_a	30 Jun 2020	08:55	-	FD		WG	5	X	X	X											
ICT7_063020	30 Jun 2020	09:15		N		WG	5	X	X	X											
ICT8_063020	30 Jun 2020	09:25		N		WG	5	X	X	X											
ICT8_063020_a	30 Jun 2020	09:25	-	FD		WG	5	X	X	X											
ICT11_063020	30 Jun 2020	09:45	-	N		WG	5	X	X	X											
ICT12B_063020	30 Jun 2020	09:55	-	N		WG	5	X	X	X											
ICT12C_063020	30 Jun 2020	10:10	-	N		WG	5	X	X	X											
ICT12D_063020	30 Jun 2020	10:20	-	N		WG	5	X	X	X											
ICT12E_063020	30 Jun 2020	10:30	-	N		WG	5	X	X	X											

COMMENTS: ____

HS20070043

Bhate Environmental Associates, Inc.
LHAAP / ICT Wells

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	6/30/20	1430	1.	7/1/2020	0940
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: ____ Shipped ____ No.: ____

Method of Shipment: ____

Fed Ex ____ Airbill Number: ____

Analytical Lab: ALS 10450 Stanclift Rd, Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: SONIA WEST Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SD = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

Blue ice
+25 cf ice

bhate

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Page: _____ of _____

Project/Phase No: NWO1312.0150

COC Number(1): _____

LIMS Number: _____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / ICT Wells

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Number of containers	VOC	PERCHLORATE	TOTAL METALS							Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
							Sample Analysis Requested (5)										Quality Assurance Samples (6)			
ICT13A_063020	30 Jun 2020	10:40	-	N		WG	5	X	X	X										
ICT13B_063020	30 Jun 2020	10:55	-	N		WG	5	X	X	X										
ICT13D_063020	30 Jun 2020	11:10	-	N		WG	5	X	X	X										
ICT13E_063020	30 Jun 2020	11:25		N		WG	5	X	X	X										
ICT13F_063020	30 Jun 2020	11:35		N		WG	5	X	X	X										
ICT14B_063020	30 Jun 2020	11:50	-	N		WG	5	X	X	X										
ICT14C_063020	30 Jun 2020	12:00	-	N		WG	5	X	X	X										
ICT14D_063020	30 Jun 2020	12:30	-	N		WG	5	X	X	X										
ICT14D_063020_MS	30 Jun 2020	12:30	-	MS		WG	5	X	X	X										
ICT14D_063020_MSD	30 Jun 2020	12:30	-	SD		WG	5	X	X	X										
Trip Blank	30 Jun 2020		-	TB		WG	5	X	X	X										

COMMENTS: _____

HS20070043

Bhate Environmental Associates, Inc.
LHAAP / ICT Wells

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Scott Beesinger	6/30/20	1430			
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped No.:

_____ Method of Shipment: _____

_____ Fed Ex _____ Airbill Number:

_____ Analytical Lab: ALS 10450 Stanchiff Rd, Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: SONIA WEST Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

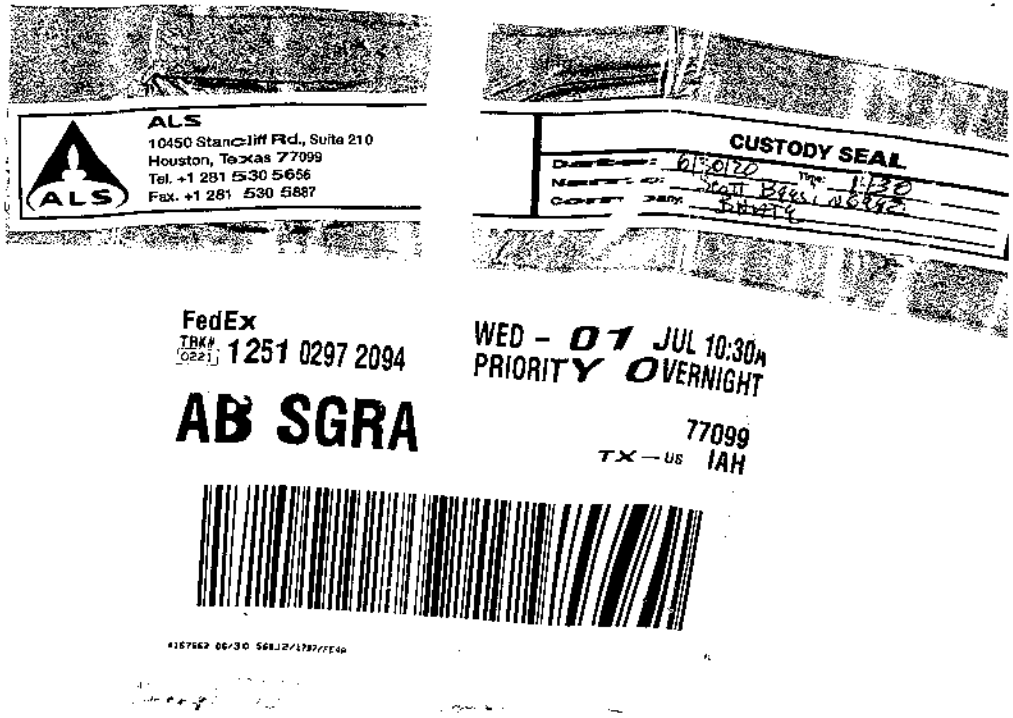
2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
ALS
CUSTODY SEAL
FedEx
TRK# 0221 1251 0297 2094
AB SGRA
WED - 01 JUL 10:30A
PRIORITY OVERNIGHT
77099
TX - US IAH

July 10, 2020 Service Request No:E2000607

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

Laboratory Results for: HS20070043

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory July 02, 2020
For your reference, these analyses have been assigned our service request number **E2000607.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2000607
Project:	HS20070043	**Date Received:**	07/02/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Nineteen samples were received for analysis at ALS Environmental in Houston on 07/02/20.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000287: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits. MS/MSD recoveries elevated due to parent sample (high concentration in sample vs spike amount at 0.1 ppb).

The batch precision (MS/DMS) measurements were determined on another order in the extraction batch. The MS/DMS results are not included in this report.

DOD certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2000607
Project: HS20070043

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000607-001	ICT2_063020	6/30/2020	0840
E2000607-002	ICT4_063020	6/30/2020	0855
E2000607-003	ICT4_063020_a	6/30/2020	0855
E2000607-004	ICT7_063020	6/30/2020	0915
E2000607-005	ICT8_063020	6/30/2020	0925
E2000607-006	ICT8_063020_a	6/30/2020	0925
E2000607-007	ICT11_063020	6/30/2020	0945
E2000607-008	ICT12B_063020	6/30/2020	0955
E2000607-009	ICT12C_063020	6/30/2020	1010
E2000607-010	ICT12D_063020	6/30/2020	1020
E2000607-011	ICT12E_063020	6/30/2020	1030
E2000607-012	ICT13A_063020	6/30/2020	1040
E2000607-013	ICT13B_063020	6/30/2020	1055
E2000607-014	ICT13D_063020	6/30/2020	1110
E2000607-015	ICT13E_063020	6/30/2020	1125
E2000607-016	ICT13F_063020	6/30/2020	1135
E2000607-017	ICT14B_063020	6/30/2020	1150
E2000607-018	ICT14C_063020	6/30/2020	1200
E2000607-019	ICT14D_063020	6/30/2020	1230

Service Request Summary

Folder #: **E2000607**
Client Name: ALS Environmental - US
Project Name: HS20070043
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 07/02/20
Internal Due Date: 7/16/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20070043
EDD: No EDD Specified

21 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 2B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000607-001	ICT2_063020	Water	06/30/20 0840	**IV**
E2000607-002	ICT4_063020	Water	06/30/20 0855	**IV**
E2000607-003	ICT4_063020_a	Water	06/30/20 0855	**IV**
E2000607-004	ICT7_063020	Water	06/30/20 0915	**IV**
E2000607-005	ICT8_063020	Water	06/30/20 0925	**IV**
E2000607-006	ICT8_063020_a	Water	06/30/20 0925	**IV**
E2000607-007	ICT11_063020	Water	06/30/20 0945	**IV**
E2000607-008	ICT12B_063020	Water	06/30/20 0955	**IV**
E2000607-009	ICT12C_063020	Water	06/30/20 1010	**IV**
E2000607-010	ICT12D_063020	Water	06/30/20 1020	**IV**
E2000607-011	ICT12E_063020	Water	06/30/20 1030	**IV**
E2000607-012	ICT13A_063020	Water	06/30/20 1040	**IV**
E2000607-013	ICT13B_063020	Water	06/30/20 1055	**IV**
E2000607-014	ICT13D_063020	Water	06/30/20 1110	**IV**
E2000607-015	ICT13E_063020	Water	06/30/20 1125	**IV**
E2000607-016	ICT13F_063020	Water	06/30/20 1135	**IV**

Printed 7/10/2020 8:44:34 AM

Service Request Summary

Folder #: **E2000607**
Client Name: ALS Environmental - US
Project Name: HS20070043
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 07/02/20
Internal Due Date: 7/16/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20070043
EDD: No EDD Specified

21 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 2B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000607-017	ICT14B_063020	Water	06/30/20 1150	**IV**
E2000607-018	ICT14C_063020	Water	06/30/20 1200	**IV**
E2000607-019	ICT14D_063020	Water	06/30/20 1230	**IV**

Service Request Summary

Folder #:	**E2000607**
Client Name:	ALS Environmental - US
Project Name:	HS20070043
Project Number:	

Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	07/02/20
Internal Due Date:	7/16/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20070043
EDD:	No EDD Specified

21 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-WIC 2B

Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	18	Level IV due 7/23,level II 7/16
Semivoa GCMS	ClO4 DOD/6850	1	MS/MSD

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
Department of Defense	A2LA 2897.01	11/30/2021
Hawaii Department of Health	2020	4/30/2021
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Department of Health and Human Services	2020016	6/5/2022
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13 (2020)	4/30/2021
Nevada Department of Concervation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com



E2000607
ALS Laboratory Group
HS20070043

5



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: **Texas** **COC ID:** **14231**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

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:	HS20070043
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20070043-01**	**ICT2_063020**	**Groundwater**	**30 Jun 2020 08:40**
	SUB_Perch-6850			10 Jul 2020
2.	**HS20070043-02**	**ICT4_063020**	**Groundwater**	**30 Jun 2020 08:55**
	SUB_Perch-6850			10 Jul 2020
3.	**HS20070043-03**	**ICT4_063020_a**	**Groundwater**	**30 Jun 2020 08:55**
	SUB_Perch-6850			10 Jul 2020
4.	**HS20070043-04**	**ICT7_063020**	**Groundwater**	**30 Jun 2020 09:15**
	SUB_Perch-6850			10 Jul 2020
5.	**HS20070043-05**	**ICT8_063020**	**Groundwater**	**30 Jun 2020 09:25**
	SUB_Perch-6850			10 Jul 2020
6.	**HS20070043-06**	**ICT8_063020_a**	**Groundwater**	**30 Jun 2020 09:25**
	SUB_Perch-6850			10 Jul 2020
7.	**HS20070043-07**	**ICT11_063020**	**Groundwater**	**30 Jun 2020 09:45**
	SUB_Perch-6850			10 Jul 2020
8.	**HS20070043-08**	**ICT12B_063020**	**Groundwater**	**30 Jun 2020 09:55**
	SUB_Perch-6850			10 Jul 2020
9.	**HS20070043-09**	**ICT12C_063020**	**Groundwater**	**30 Jun 2020 10:10**

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID: 14231**

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
		ANALYSIS REQUESTED		DUE DATE
		SUB_Perch-6850		10 Jul 2020
10.	**HS20070043-10**	**ICT12D_063020**	**Groundwater**	**30 Jun 2020 10:20**
		SUB_Perch-6850		10 Jul 2020
11.	**HS20070043-11**	**ICT12E_063020**	**Groundwater**	**30 Jun 2020 10:30**
		SUB_Perch-6850		10 Jul 2020
12.	**HS20070043-12**	**ICT13A_063020**	**Groundwater**	**30 Jun 2020 10:40**
		SUB_Perch-6850		10 Jul 2020
13.	**HS20070043-13**	**ICT13B_063020**	**Groundwater**	**30 Jun 2020 10:55**
		SUB_Perch-6850		10 Jul 2020
14.	**HS20070043-14**	**ICT13D_063020**	**Groundwater**	**30 Jun 2020 11:10**
		SUB_Perch-6850		10 Jul 2020
15.	**HS20070043-15**	**ICT13E_063020**	**Groundwater**	**30 Jun 2020 11:25**
		SUB_Perch-6850		10 Jul 2020
16.	**HS20070043-16**	**ICT13F_063020**	**Groundwater**	**30 Jun 2020 11:35**
		SUB_Perch-6850		10 Jul 2020
17.	**HS20070043-17**	**ICT14B_063020**	**Groundwater**	**30 Jun 2020 11:50**
		SUB_Perch-6850		10 Jul 2020
18.	**HS20070043-18**	**ICT14C_063020**	**Groundwater**	**30 Jun 2020 12:00**
		SUB_Perch-6850		10 Jul 2020
19.	**HS20070043-19**	**ICT14D_063020**	**Groundwater**	**30 Jun 2020 12:30**
		SUB_Perch-6850		10 Jul 2020

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

HS20070043-19 MS/MSD

QC Level: DOD IV (DoD Data Package)

Relinquished By: J. Muhammad Date/Time: 07/02/20

Received By: LL Date/Time: 7/2/20 0400

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist: LY

Client/Project: ALS-HI

Thermometer ID: 1825

Date/Time Received: 7/2/20 Initials: LY Date/Time Logged in: 7/2/20 Initials: LY

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ Courier (ALS) ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No
   Were they intact? ○ Yes ○ No ✓ N/A
   Were they signed and dated? ○ Yes ○ No ✓ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ○ Baggies ✓ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		7/2/20	0900	LY	0.4	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E2000607 ALS Laboratory Group HS20070043 5

10450 Stancliff Rd., Suite 210
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www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 361279 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 7/8/20 14:47

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000607-001	ICT2_063020	.01	6850/ClO4 DOD			Water	10mL	
2	E2000607-002	ICT4_063020	.01	6850/ClO4 DOD			Water	10mL	
3	E2000607-003	ICT4_063020_a	.01	6850/ClO4 DOD			Water	10mL	
4	E2000607-004	ICT7_063020	.01	6850/ClO4 DOD			Water	10mL	
5	E2000607-005	ICT8_063020	.01	6850/ClO4 DOD			Water	10mL	
6	E2000607-006	ICT8_063020_a	.01	6850/ClO4 DOD			Water	10mL	
7	E2000607-007	ICT11_063020	.01	6850/ClO4 DOD			Water	10mL	
8	E2000607-008	ICT12B_063020	.01	6850/ClO4 DOD			Water	10mL	
9	E2000607-009	ICT12C_063020	.01	6850/ClO4 DOD			Water	10mL	
10	E2000607-010	ICT12D_063020	.01	6850/ClO4 DOD			Water	10mL	
11	E2000607-011	ICT12E_063020	.01	6850/ClO4 DOD			Water	10mL	
12	E2000607-012	ICT13A_063020	.01	6850/ClO4 DOD			Water	10mL	
13	E2000607-013	ICT13B_063020	.01	6850/ClO4 DOD			Water	10mL	
14	E2000607-014	ICT13D_063020	.01	6850/ClO4 DOD			Water	10mL	
15	E2000607-015	ICT13E_063020	.01	6850/ClO4 DOD			Water	10mL	
16	E2000607-016	ICT13F_063020	.01	6850/ClO4 DOD			Water	10mL	
17	E2000607-017	ICT14B_063020	.01	6850/ClO4 DOD			Water	10mL	
18	E2000607-018	ICT14C_063020	.01	6850/ClO4 DOD			Water	10mL	
19	E2000607-019	ICT14D_063020	.01	6850/ClO4 DOD			Water	10mL	
20	EQ2000287-01	MB		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000287-02	LCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2000287-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
23	EQ2000287-04	ICT14D_063020 MS	.01	6850/ClO4 DOD			Liquid	10mL	
24	EQ2000287-05	ICT14D_063020 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 202037 Logbook Ref: Sodium Perchlorate Expires On: 05/22/2021

E2000607-001	100.00µL	E2000607-002	100.00µL	E2000607-003	100.00µL	E2000607-004	100.00µL	E2000607-005	100.00µL	E2000607-006	100.00µL
E2000607-007	100.00µL	E2000607-008	100.00µL	E2000607-009	100.00µL	E2000607-010	100.00µL	E2000607-011	100.00µL	E2000607-012	100.00µL
E2000607-013	100.00µL	E2000607-014	100.00µL	E2000607-015	100.00µL	E2000607-016	100.00µL	E2000607-017	100.00µL	E2000607-018	100.00µL
E2000607-019	100.00µL	EQ2000287-01	100.00µL	EQ2000287-02	100.00µL	EQ2000287-03	100.00µL	EQ2000287-04	100.00µL	EQ2000287-05	100.00µL

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000287-02	1.00µL	EQ2000287-03	1.00µL	EQ2000287-04	1.00µL	EQ2000287-05	1.00µL

Preparation Information Benchsheet

Prep Run#: 361279
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 7/8/20 14:47

Preparation Steps

Step: Preparation
Started: 7/8/20 14:47
Finished: 7/8/20 16:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 0840
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT2_063020	**Units:**	µg/L
Lab Code:	E2000607-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**1740**		10.0	5.00	2.50	100	7/ 8/20	7/9/20 10:13	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 0855
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT4_063020	**Units:**	µg/L
Lab Code:	E2000607-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**4970**		20.0	10.0	5.00	200	7/ 8/20	7/9/20 10:23	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 0855
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT4_063020_a	**Units:**	µg/L
Lab Code:	E2000607-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**4890**		20.0	10.0	5.00	200	7/ 8/20	7/9/20 10:31	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 0915
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT7_063020	**Units:**	µg/L
Lab Code:	E2000607-004	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**378**		1.00	0.500	0.250	10	7/ 8/20	7/9/20 10:39	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 0925
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT8_063020	**Units:**	µg/L
Lab Code:	E2000607-005	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**519**		2.00	1.00	0.500	20	7/ 8/20	7/9/20 10:47	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 0925
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT8_063020_a	**Units:**	µg/L
Lab Code:	E2000607-006	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**529**		2.00	1.00	0.500	20	7/ 8/20	7/9/20 10:54	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 0945
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT11_063020	**Units:**	µg/L
Lab Code:	E2000607-007	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**4200**		10.0	5.00	2.50	100	7/ 8/20	7/9/20 11:10	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 0955
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT12B_063020	**Units:**	µg/L
Lab Code:	E2000607-008	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**76100**		200	100	50.0	2000	7/ 8/20	7/9/20 11:18	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 1010
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT12C_063020	**Units:**	µg/L
Lab Code:	E2000607-009	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**15100**		50.0	25.0	12.5	500	7/ 8/20	7/9/20 11:26	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 1020
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT12D_063020	**Units:**	µg/L
Lab Code:	E2000607-010	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**369**		1.00	0.500	0.250	10	7/ 8/20	7/9/20 11:34	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 1030
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT12E_063020	**Units:**	µg/L
Lab Code:	E2000607-011	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**21400**		100	50.0	25.0	1000	7/ 8/20	7/9/20 14:49	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 1040
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT13A_063020	**Units:**	µg/L
Lab Code:	E2000607-012	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**13300**		50.0	25.0	12.5	500	7/ 8/20	7/9/20 11:50	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 1055
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT13B_063020	**Units:**	µg/L
Lab Code:	E2000607-013	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**185**		1.00	0.500	0.250	10	7/ 8/20	7/9/20 11:58	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 1110
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT13D_063020	**Units:**	µg/L
Lab Code:	E2000607-014	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**53.6**		0.200	0.100	0.0500	2	7/ 8/20	7/9/20 12:07	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 1125
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT13E_063020	**Units:**	µg/L
Lab Code:	E2000607-015	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**108**		1.00	0.500	0.250	10	7/ 8/20	7/9/20 12:15	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 1135
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT13F_063020	**Units:**	µg/L
Lab Code:	E2000607-016	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.120**		0.100	0.0500	0.0250	1	7/ 8/20	7/9/20 09:40	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 1150
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT14B_063020	**Units:**	µg/L
Lab Code:	E2000607-017	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**2830**		10.0	5.00	2.50	100	7/ 8/20	7/9/20 12:39	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 1200
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT14C_063020	**Units:**	µg/L
Lab Code:	E2000607-018	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**9.17**		0.100	0.0500	0.0250	1	7/ 8/20	7/9/20 09:48	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 1230
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT14D_063020	**Units:**	µg/L
Lab Code:	E2000607-019	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**3260**		10.0	5.00	2.50	100	7/ 8/20	7/9/20 12:47	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000287-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	7/ 8/20	7/8/20 18:53	361279	686082	

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Analyzed:**	7/ 8/20
Sample Matrix:	Water		

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	361279

	Lab Control Sample EQ2000287-02			Duplicate Lab Control Sample EQ2000287-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.106	0.100	106	0.119	0.100	119	84 - 119	11	15

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

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000287-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.106**		0.100	0.0500	0.0250	1	7/ 8/20	7/8/20 19:01	361279	686082	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000287-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.119**		0.100	0.0500	0.0250	1	7/ 8/20	7/8/20 19:08	361279	686082	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20
Sample Matrix:	Water	**Date Received:**	7/2/20
		Date Analyzed:	7/ 9/20

Matrix Spike Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	ICT14D_063020	**Units:**	µg/L
Lab Code:	E2000607-019	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		ICT14D_063020MS				ICT14D_063020DMS					
		Matrix Spike				**Duplicate Matrix Spike**					
		EQ2000287-04				EQ2000287-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**		**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	3260	3280	0.100	15911	#	3280	0.100	15955	#	84 - 119	<1	15

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

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 1230
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT14D_063020	**Units:**	µg/L
Lab Code:	EQ2000287-04	**Basis:**	NA
Run Type:	Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**3280**		10.0	5.00	2.50	100	7/ 8/20	7/9/20 09:57	361279	686570	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Collected:**	6/30/20 1230
Sample Matrix:	Water	**Date Received:**	7/ 2/20
Sample Name:	ICT14D_063020	**Units:**	µg/L
Lab Code:	EQ2000287-05	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**3280**		10.0	5.00	2.50	100	7/ 8/20	7/9/20 10:05	361279	686570	

Initial Calibration

ALS Environmental - Houston HRMS
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20200625

1st Review: Kneir
2nd Review: Hvan

Injection Log
LCMS01 -Shimadzu 8050

ICAL Date: 6/25/2020
Cal. Std. xp: 11/18/2020
ICAL ID: EC2000009

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200625_001	Perchlorate6850b.lcm	1x	☒		6/25/2020 16:46
	null		20200625_002	Perchlorate6850b.lcm	1x	☒		6/25/2020 16:51
	IB		20200625_003	Perchlorate6850b.lcm	1x	☒		6/25/2020 16:56
	IB		20200625_004	Perchlorate6850b.lcm	1x	☒		6/25/2020 17:06
	IB		20200625_005	Perchlorate6850b.lcm	1x	☒		6/25/2020 17:13
	PERCHLORATE1		20200625_006	Perchlorate6850b.lcm	1x	☒	3100806-05	6/25/2020 17:21
	PERCHLORATE2		20200625_007	Perchlorate6850b.lcm	1x	☒	3100806-06	6/25/2020 17:29
	PERCHLORATE3		20200625_008	Perchlorate6850b.lcm	1x	☒	3100806-07	6/25/2020 17:37
	PERCHLORATE4		20200625_009	Perchlorate6850b.lcm	1x	☒	3100807-01	6/25/2020 17:45
	PERCHLORATE5		20200625_011	Perchlorate6850b.lcm	1x	☒	3100807-03	6/25/2020 18:01
	PERCHLORATE6		20200625_012	Perchlorate6850b.lcm	1x	☒	3100807-04	6/25/2020 18:09
	PERCHLORATE7		20200625_013	Perchlorate6850b.lcm	1x	☒	3100807-05	6/25/2020 18:17
	PERCHLORATE8		20200625_014	Perchlorate6850b.lcm	1x	☒	3100807-06	6/25/2020 18:25
	PERCHLORATE9		20200625_015	Perchlorate6850b.lcm	1x	☒	3100807-07	6/25/2020 18:33
	PERCHLORATEICV		20200625_016	Perchlorate6850b.lcm	1x	☒	3100807-08	6/25/2020 18:40
	IB		20200625_017	Perchlorate6850b.lcm	1x	☒		6/25/2020 18:48
	IB		20200625_018	Perchlorate6850b.lcm	1x	☒		6/25/2020 18:56
	LODV		20200625_019	Perchlorate6850b.lcm	1x	☒		6/25/2020 19:04
	ICS		20200625_020	Perchlorate6850b.lcm	1x	☒		6/25/2020 19:12
	PERCHLORATE7		20200625_021	Perchlorate6850b.lcm	1x	☒	3100807-05	6/25/2020 19:20
	EQ2000244-01		20200625_022	Perchlorate6850b.lcm	1x	☒		6/25/2020 19:28
	EQ2000244-02		20200625_023	Perchlorate6850b.lcm	1x	☒		6/25/2020 19:36
	EQ2000244-03		20200625_024	Perchlorate6850b.lcm	1x	☒		6/25/2020 19:44
	EQ2000244-04		20200625_025	Perchlorate6850b.lcm	1x	☒		6/25/2020 19:52
	EQ2000244-05		20200625_026	Perchlorate6850b.lcm	1x	☒		6/25/2020 20:00
	E2000537-001		20200625_027	Perchlorate6850b.lcm	1x	☒		6/25/2020 20:08
	E2000537-002		20200625_028	Perchlorate6850b.lcm	1x	☒		6/25/2020 20:15
	E2000537-003		20200625_029	Perchlorate6850b.lcm	1x	☒		6/25/2020 20:23
	E2000537-004		20200625_030	Perchlorate6850b.lcm	1x	☒		6/25/2020 20:31
	E2000537-005		20200625_031	Perchlorate6850b.lcm	1x	☒		6/25/2020 20:39
	PERCHLORATE7		20200625_032	Perchlorate6850b.lcm	1x	☒	3100807-05	6/25/2020 20:47
	E2000537-006		20200625_033	Perchlorate6850b.lcm	1x	☒		6/25/2020 20:55
	E2000537-007		20200625_034	Perchlorate6850b.lcm	1x	☒		6/25/2020 21:03
	E2000537-008		20200625_035	Perchlorate6850b.lcm	1x	☒		6/25/2020 21:11
	E2000537-009		20200625_036	Perchlorate6850b.lcm	1x	☒		6/25/2020 21:19
	E2000540-001		20200625_037	Perchlorate6850b.lcm	1x	☒		6/25/2020 21:27
	E2000540-002		20200625_038	Perchlorate6850b.lcm	1x	☒		6/25/2020 21:34
	E2000540-003		20200625_039	Perchlorate6850b.lcm	1x	☒		6/25/2020 21:42
	E2000540-004		20200625_040	Perchlorate6850b.lcm	1x	☒		6/25/2020 21:50
	E2000537-001		20200625_041	Perchlorate6850b.lcm	1x	☒		6/25/2020 21:58
	E2000537-002		20200625_042	Perchlorate6850b.lcm	1x	☒		6/25/2020 22:06
	PERCHLORATE7		20200625_043	Perchlorate6850b.lcm	1x	☒	3100807-05	6/25/2020 22:14
	EQ2000243-01		20200625_044	Perchlorate6850b.lcm	1x	☒		6/25/2020 22:22
	EQ2000243-02		20200625_045	Perchlorate6850b.lcm	1x	☒		6/25/2020 22:30
	EQ2000243-03		20200625_046	Perchlorate6850b.lcm	1x	☒		6/25/2020 22:38
	EQ2000243-04		20200625_047	Perchlorate6850b.lcm	1x	☒		6/25/2020 22:45
	EQ2000243-05		20200625_048	Perchlorate6850b.lcm	1x	☒		6/25/2020 22:53
	E2000541-001		20200625_049	Perchlorate6850b.lcm	1x	☒		6/25/2020 23:01
	E2000541-002		20200625_050	Perchlorate6850b.lcm	1x	☒		6/25/2020 23:09
	E2000541-003		20200625_051	Perchlorate6850b.lcm	1x	☒		6/25/2020 23:17
	E2000541-004		20200625_052	Perchlorate6850b.lcm	1x	☒		6/25/2020 23:25
	E2000541-005		20200625_053	Perchlorate6850b.lcm	1x	☒		6/25/2020 23:33
	PERCHLORATE7		20200625_054	Perchlorate6850b.lcm	1x	☒	3100807-05	6/25/2020 23:41
	E2000541-006		20200625_055	Perchlorate6850b.lcm	1x	☒		6/25/2020 23:49
	E2000541-007		20200625_056	Perchlorate6850b.lcm	1x	☒		6/25/2020 23:57
	E2000541-008		20200625_057	Perchlorate6850b.lcm	1x	☒		6/26/2020 0:05
	E2000541-009		20200625_058	Perchlorate6850b.lcm	1x	☒		6/26/2020 0:12
	E2000541-010		20200625_059	Perchlorate6850b.lcm	1x	☒		6/26/2020 0:20
	E2000541-011		20200625_060	Perchlorate6850b.lcm	1x	☒		6/26/2020 0:28
	E2000541-012		20200625_061	Perchlorate6850b.lcm	1x	☒		6/26/2020 0:36
	E2000541-013		20200625_062	Perchlorate6850b.lcm	1x	☒		6/26/2020 0:44
	E2000541-014		20200625_063	Perchlorate6850b.lcm	1x	☒		6/26/2020 0:52
	E2000541-015		20200625_064	Perchlorate6850b.lcm	1x	☒		6/26/2020 1:00
	PERCHLORATE7		20200625_065	Perchlorate6850b.lcm	1x	☒	3100807-05	6/26/2020 1:08

Initial Calibration - Detailed Report

Calibration ID: EC2000009 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2000009-01	PERCHLORATE1	20200625_006	06/25/2020 17:21
02	EC2000009-02	PERCHLORATE2	20200625_007	06/25/2020 17:29
03	EC2000009-03	PERCHLORATE3	20200625_008	06/25/2020 17:37
04	EC2000009-04	PERCHLORATE4	20200625_009	06/25/2020 17:45
05	EC2000009-05	PERCHLORATE5	20200625_011	06/25/2020 18:01
06	EC2000009-06	PERCHLORATE6	20200625_012	06/25/2020 18:09
07	EC2000009-07	PERCHLORATE7	20200625_013	06/25/2020 18:17
08	EC2000009-08	PERCHLORATE8	20200625_014	06/25/2020 18:25
09	EC2000009-09	PERCHLORATE9	20200625_015	06/25/2020 18:33

Analyte **Curve Fit** **Weighting**

Perchlorate **Average RF** **RSD = 12.17** **Average RF = 0.1345**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.173	02	0.5000	0.1369	03	0.7000	0.1363	04	1.0000	0.1365
05	5.0000	0.1253	06	10.0000	0.1383	07	20.0000	0.126	08	30.0000	0.1197
09	50.0000	0.1184									

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.129	28.6	02	0.5000	0.509	1.8	03	0.7000	0.709	1.3
04	1.0000	1.02	1.5	05	5.0000	4.66	-6.8	06	10.0000	10.3	2.9
07	20.0000	18.7	-6.3	08	30.0000	26.7	-11.0	09	50.0000	44.0	-12.0

Initial Calibration Verification Summary Report

Calibration ID:	EC2000009	**Instrument ID:**	E-LCMS-01
Datafile ID:	20200625_016	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000009-10	T	Average RF	10	10.115	ng/mL	1.2	<= 15

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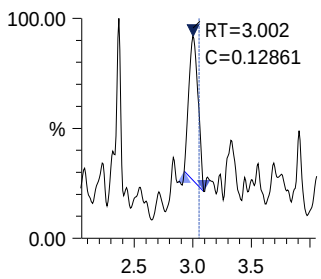
PERCHLORATE1

Date acquired: 6/25/2020 5:21:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_006.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	6/25/2020 5:21:49 PM	6704	0.12861	20200625_006	3.002	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	6/25/2020 5:21:49 PM	387624	1.00000	20200625_006	3.002	25.0000	1.0000	5

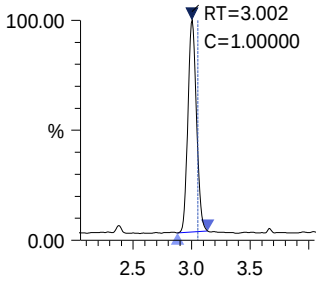
Perchlorate

Conc 0.12861
Area 6704
Q 99.00>83.00 (-) 1.79e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 387624
ISTD 107.00>89.00 (-) 7.66e4



ALS Group Houston

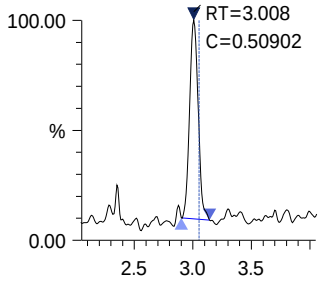
PERCHLORATE2

Date acquired: 6/25/2020 5:29:41 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_007.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	6/25/2020 5:29:41 PM	26486	0.50902	20200625_007	3.008	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	PERCHLORATE2	6/25/2020 5:29:41 PM	386905	1.00000	20200625_007	3.003	25.0000	1.0000	6

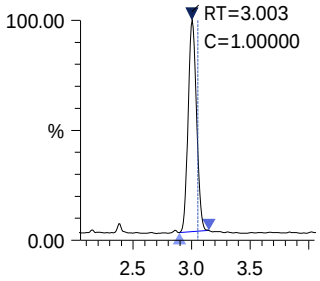
Perchlorate

Conc 0.50902
Area 26486
Q 99.00>83.00 (-) 5.58e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 386905
ISTD 107.00>89.00 (-) 7.79e4



ALS Group Houston

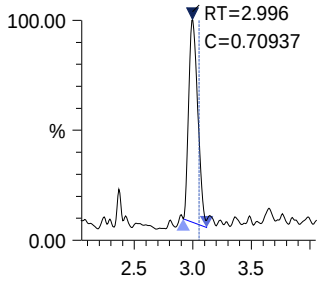
PERCHLORATE3

Date acquired: 6/25/2020 5:37:36 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_008.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	6/25/2020 5:37:36 PM	36977	0.70937	20200625_008	2.996	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE3	6/25/2020 5:37:36 PM	387606	1.00000	20200625_008	2.998	25.0000	1.0000	7

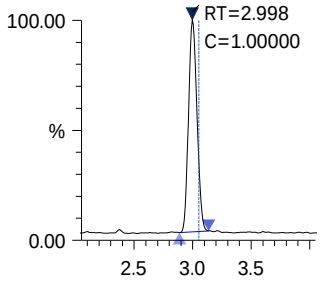
Perchlorate

Conc 0.70937
Area 36977
Q 99.00>83.00 (-) 7.15e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 387606
ISTD 107.00>89.00 (-) 7.76e4



ALS Group Houston

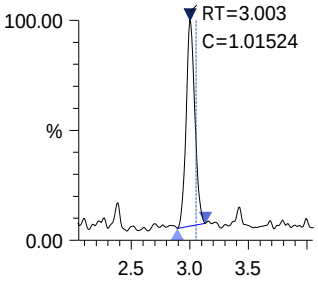
PERCHLORATE4

Date acquired: 6/25/2020 5:45:31 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_009.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	6/25/2020 5:45:31 PM	49004	1.01524	20200625_009	3.003	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE4	6/25/2020 5:45:31 PM	358914	1.00000	20200625_009	3.001	25.0000	1.0000	8

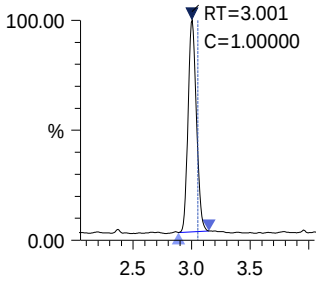
Perchlorate

Conc 1.01524
Area 49004
Q 99.00>83.00 (-) 9.81e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 358914
ISTD 107.00>89.00 (-) 7.26e4



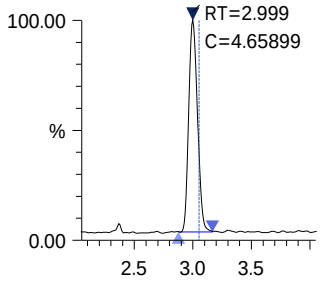
PERCHLORATE5

Date acquired: 6/25/2020 6:01:22 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_011.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	6/25/2020 6:01:22 PM	232008	4.65899	20200625_011	2.999	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE5	6/25/2020 6:01:22 PM	370291	1.00000	20200625_011	2.996	25.0000	1.0000	10

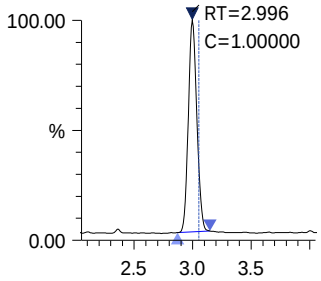
Perchlorate

Conc 4.65899
Area 232008
Q 99.00>83.00 (-) 4.49e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 370291
ISTD 107.00>89.00 (-) 7.40e4



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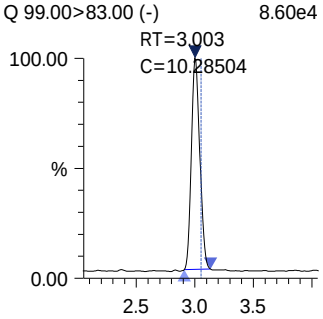
PERCHLORATE6

Date acquired: 6/25/2020 6:09:15 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_012.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	6/25/2020 6:09:15 PM	427451	10.28504	20200625_012	3.003	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE6	6/25/2020 6:09:15 PM	309038	1.00000	20200625_012	3.001	25.0000	1.0000	4

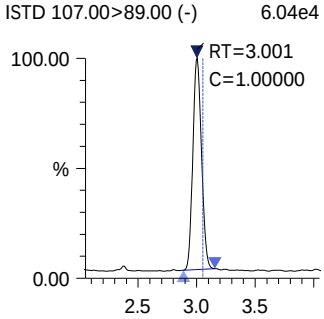
Perchlorate

Conc 10.28504
Area 427451



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 309038



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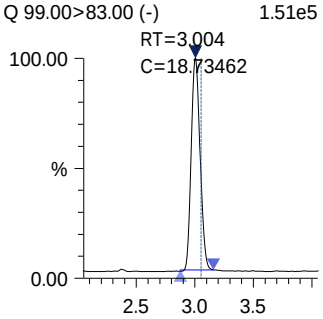
PERCHLORATE7

Date acquired: 6/25/2020 6:17:10 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_013.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	6/25/2020 6:17:10 PM	786893	18.73462	20200625_013	3.004	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/25/2020 6:17:10 PM	312322	1.00000	20200625_013	3.002	25.0000	1.0000	11

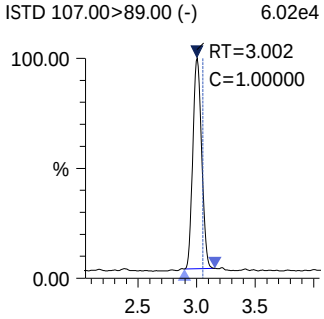
Perchlorate

Conc 18.73462
Area 786893



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 312322



ALS Group Houston

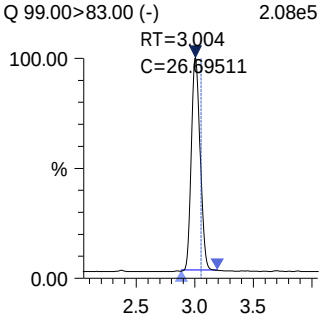
PERCHLORATE8

Date acquired: 6/25/2020 6:25:06 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_014.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	6/25/2020 6:25:06 PM	1075993	26.69511	20200625_014	3.004	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE8	6/25/2020 6:25:06 PM	299716	1.00000	20200625_014	3.004	25.0000	1.0000	12

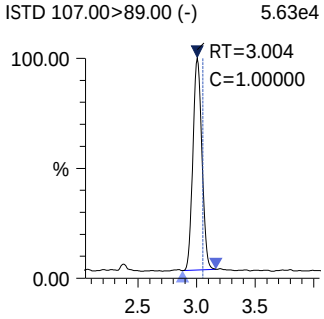
Perchlorate

Conc 26.69511
Area 1075993



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 299716



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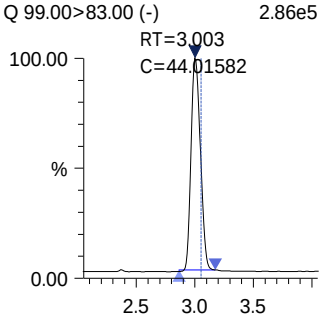
PERCHLORATE9

Date acquired: 6/25/2020 6:33:01 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_015.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	6/25/2020 6:33:01 PM	1567374	44.01582	20200625_015	3.003	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE9	6/25/2020 6:33:01 PM	264786	1.00000	20200625_015	3.002	25.0000	1.0000	13

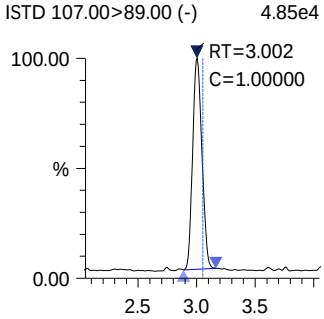
Perchlorate

Conc 44.01582
Area 1567374



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 264786



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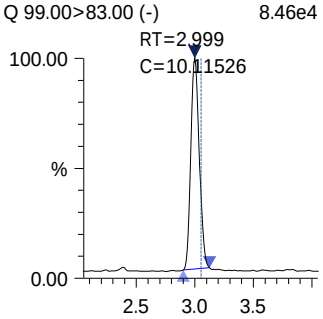
PERCHLORATEICV

Date acquired: 6/25/2020 6:40:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_016.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	6/25/2020 6:40:55 PM	420958	10.11526	20200625_016	2.999	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	6/25/2020 6:40:55 PM	309452	1.00000	20200625_016	2.996	25.0000	1.0000	14

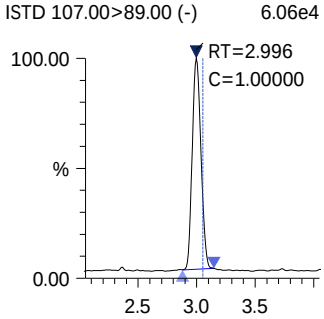
Perchlorate

Conc 10.11526
Area 420958



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 309452



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200708

ALS Environmental

1st Review: Kneir
2nd Review: Hvan

Injection Log
LCMS01 -Shimadzu 8050

ICAL Date: 6/25/2020
Cal. Std. xp: 11/18/2020
ICAL ID: EC2000009

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilutio	R	Comments
1	null		20200708_001	Perchlorate6850b.lcm	1x	☒	
2	null		20200708_002	Perchlorate6850b.lcm	1x	☒	
3	IB		20200708_003	Perchlorate6850b.lcm	1x	☒	
4	IB		20200708_004	Perchlorate6850b.lcm	1x	☒	
5	LODV		20200708_005	Perchlorate6850b.lcm	1x	☒	
6	ICS		20200708_006	Perchlorate6850b.lcm	1x	☒	
7	PERCHLORATE7		20200708_007	Perchlorate6850b.lcm	1x	☒	3100807-04
8	EQ2000288-01		20200708_008	Perchlorate6850b.lcm	1x	☒	
9	EQ2000288-02		20200708_009	Perchlorate6850b.lcm	1x	☒	
10	EQ2000288-03		20200708_010	Perchlorate6850b.lcm	1x	☒	
11	E2000588-001		20200708_011	Perchlorate6850b.lcm	1x	☒	
12	E2000606-001		20200708_012	Perchlorate6850b.lcm	1x	☒	
13	PERCHLORATE7		20200708_013	Perchlorate6850b.lcm	1x	☒	3100807-04
14	EQ2000287-01		20200708_014	Perchlorate6850b.lcm	1x	☒	
15	EQ2000287-02		20200708_015	Perchlorate6850b.lcm	1x	☒	
16	EQ2000287-03		20200708_016	Perchlorate6850b.lcm	1x	☒	
17	EQ2000287-04		20200708_017	Perchlorate6850b.lcm	1x	☒	
18	EQ2000287-05		20200708_018	Perchlorate6850b.lcm	1x	☒	
19	E2000607-001		20200708_019	Perchlorate6850b.lcm	1x	☒	
20	E2000607-002		20200708_020	Perchlorate6850b.lcm	1x	☒	
21	E2000607-003		20200708_021	Perchlorate6850b.lcm	1x	☒	
22	E2000607-004		20200708_022	Perchlorate6850b.lcm	1x	☒	
23	E2000607-005		20200708_023	Perchlorate6850b.lcm	1x	☒	
24	PERCHLORATE7		20200708_024	Perchlorate6850b.lcm	1x	☒	3100807-04
25	E2000607-006		20200708_025	Perchlorate6850b.lcm	1x	☒	
26	E2000607-007		20200708_026	Perchlorate6850b.lcm	1x	☒	
27	E2000607-008		20200708_027	Perchlorate6850b.lcm	1x	☒	
28	E2000607-009		20200708_028	Perchlorate6850b.lcm	1x	☒	
29	E2000607-010		20200708_029	Perchlorate6850b.lcm	1x	☒	
30	E2000607-011		20200708_030	Perchlorate6850b.lcm	1x	☒	
31	E2000607-012		20200708_031	Perchlorate6850b.lcm	1x	☒	
32	E2000607-013		20200708_032	Perchlorate6850b.lcm	1x	☒	
33	E2000607-014		20200708_033	Perchlorate6850b.lcm	1x	☒	
34	E2000607-015		20200708_034	Perchlorate6850b.lcm	1x	☒	
35	PERCHLORATE7		20200708_035	Perchlorate6850b.lcm	1x	☒	3100807-04
36	E2000607-016		20200708_036	Perchlorate6850b.lcm	1x	☒	
37	E2000607-017		20200708_037	Perchlorate6850b.lcm	1x	☒	
38	E2000607-018		20200708_038	Perchlorate6850b.lcm	1x	☒	
39	E2000607-019		20200708_039	Perchlorate6850b.lcm	1x	☒	
40	PERCHLORATE7		20200708_040	Perchlorate6850b.lcm	1x	☒	3100807-04

20200709

ALS Environmental

Injection Log
LCMS01 -Shimadzu 8050

ICAL Date: 6/25/2020
Cal. Std. xp: 11/18/2020
ICAL ID: EC2000009

1st Review: Kneir
2nd Review: Hvan

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments
1	null		20200709_001	Perchlorate6850b.lcm	1x	☒	
2	null		20200709_002	Perchlorate6850b.lcm	1x	☒	
3	IB		20200709_003	Perchlorate6850b.lcm	1x	☒	
4	IB		20200709_004	Perchlorate6850b.lcm	1x	☒	
5	LODV		20200709_005	Perchlorate6850b.lcm	1x	☒	
6	ICS		20200709_006	Perchlorate6850b.lcm	1x	☒	
7	PERCHLORATE7		20200709_007	Perchlorate6850b.lcm	1x	☒	3100807-04
8	E2000607-016RR		20200709_008	Perchlorate6850b.lcm	1x	☒	
9	E2000607-018RR		20200709_009	Perchlorate6850b.lcm	1x	☒	
10	EQ2000287-04X100		20200709_010	Perchlorate6850b.lcm	100	☒	
11	EQ2000287-05X100		20200709_011	Perchlorate6850b.lcm	100	☒	
12	E2000607-001X100		20200709_012	Perchlorate6850b.lcm	100	☒	
13	E2000607-002X200		20200709_013	Perchlorate6850b.lcm	200	☒	
14	E2000607-003X200		20200709_014	Perchlorate6850b.lcm	200	☒	
15	E2000607-004X10		20200709_015	Perchlorate6850b.lcm	10	☒	
16	E2000607-005X20		20200709_016	Perchlorate6850b.lcm	20	☒	
17	E2000607-006X20		20200709_017	Perchlorate6850b.lcm	20	☒	
18	PERCHLORATE7		20200709_018	Perchlorate6850b.lcm	1x	☒	3100807-04
19	E2000607-007X100		20200709_019	Perchlorate6850b.lcm	100	☒	
20	E2000607-008X2000		20200709_020	Perchlorate6850b.lcm	2000	☒	
21	E2000607-009X500		20200709_021	Perchlorate6850b.lcm	500	☒	
22	E2000607-010X10		20200709_022	Perchlorate6850b.lcm	10	☒	
23	E2000607-011X1000		20200709_023	Perchlorate6850b.lcm	1000	☒	
24	E2000607-012X500		20200709_024	Perchlorate6850b.lcm	500	☒	
25	E2000607-013X10		20200709_025	Perchlorate6850b.lcm	10	☒	
26	E2000607-014X2		20200709_026	Perchlorate6850b.lcm	2	☒	
27	E2000607-015X10		20200709_027	Perchlorate6850b.lcm	10	☒	
28	E2000539-005X100,000		20200709_028	Perchlorate6850b.lcm	100000	☒	
29	PERCHLORATE7		20200709_029	Perchlorate6850b.lcm	1x	☒	3100807-04
30	E2000607-017X100		20200709_030	Perchlorate6850b.lcm	100	☒	
31	E2000607-019X100		20200709_031	Perchlorate6850b.lcm	100	☒	
32	E2000607-009X500RR		20200709_032	Perchlorate6850b.lcm	500	☒	
33	E2000607-011X2000		20200709_033	Perchlorate6850b.lcm	2000	☒	
34	PERCHLORATE7		20200709_034	Perchlorate6850b.lcm	1x	☒	3100807-04
35	E2000607-011X1000RP		20200709_035	Perchlorate6850b.lcm	1000	☒	
36	E2000539-005X100,000RP		20200709_036	Perchlorate6850b.lcm	100000	☒	
37	E2000607-009X500RP		20200709_037	Perchlorate6850b.lcm	500	☒	
38	PERCHLORATE7		20200709_038	Perchlorate6850b.lcm	1x	☒	3100807-04

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Analyzed:**	7/ 8/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/25/20
File ID:	I:\LCMS01\DATA\20200708\20200708_007	**Calibration ID:**	EC2000009
		Analysis Lot:	686082
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.69	0.1345	0.1316	-2.2	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Analyzed:**	7/ 8/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/25/20
File ID:	I:\LCMS01\DATA\20200708\20200708_013	**Calibration ID:**	EC2000009
		Analysis Lot:	686082
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.82	0.1345	0.1333	-0.9	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Analyzed:**	7/ 8/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/25/20
File ID:	I:\LCMS01\DATA\20200708\20200708_024	**Calibration ID:**	EC2000009
		Analysis Lot:	686082
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.98	0.1345	0.1355	0.8	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Analyzed:**	7/ 9/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/25/20
File ID:	I:\LCMS01\DATA\20200709\20200709_007	**Calibration ID:**	EC2000009
		Analysis Lot:	686570
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.48	0.1345	0.1286	-4.3	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Analyzed:**	7/ 9/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/25/20
File ID:	I:\LCMS01\DATA\20200709\20200709_018	**Calibration ID:**	EC2000009
		Analysis Lot:	686570
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.55	0.1345	0.1296	-3.6	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Analyzed:**	7/ 9/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/25/20
File ID:	I:\LCMS01\DATA\20200709\20200709_029	**Calibration ID:**	EC2000009
		Analysis Lot:	686570
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.36	0.1345	0.1271	-5.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Analyzed:**	7/ 9/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/25/20
File ID:	I:\LCMS01\DATA\20200709\20200709_034	**Calibration ID:**	EC2000009
		Analysis Lot:	686570
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.86	0.1345	0.1338	-0.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Analyzed:**	7/ 9/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/25/20
File ID:	I:\LCMS01\DATA\20200709\20200709_038	**Calibration ID:**	EC2000009
		Analysis Lot:	686570
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.62	0.1345	0.1307	-2.8	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Analyzed:**	7/8/20 17:57

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200708\20200708_007	**Lab Code:**	EQ2000292-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	686082
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	341,911	3.00
	Upper Limit ==>	512,867	5.00
	Lower Limit ==>	170,956	1.00
Associated Analyses			
Continuing Calibration Verification	EQ2000292-01	315,436	2.93

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Analyzed:**	7/8/20 18:45

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200708\20200708_013	**Lab Code:**	EQ2000292-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	686082
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	341,911	3.00
	Upper Limit ==>	512,867	5.00
	Lower Limit ==>	170,956	1.00
Associated Analyses			
Continuing Calibration Verification	EQ2000292-02	308,199	2.93
Method Blank	EQ2000287-01	312,488	2.94
Lab Control Sample	EQ2000287-02	346,287	2.93
Duplicate Lab Control Sample	EQ2000287-03	376,404	2.92

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Analyzed:**	7/8/20 20:12

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200708\20200708_024	**Lab Code:**	EQ2000292-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	686082
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	341,911	3.00
	Upper Limit ==>	512,867	5.00
	Lower Limit ==>	170,956	1.00
Associated Analyses			
Continuing Calibration Verification	EQ2000292-03	303,219	2.94

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Analyzed:**	7/9/20 09:32

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200709\20200709_007	**Lab Code:**	EQ2000293-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	686570
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	341,911	3.00
	Upper Limit ==>	512,867	5.00
	Lower Limit ==>	170,956	1.00
Associated Analyses			
Continuing Calibration Verification	EQ2000293-01	273,874	2.93
ICT13F_063020	E2000607-016	350,134	2.92
ICT14C_063020	E2000607-018	238,951	2.92
ICT14D_063020MS	EQ2000287-04	269,288	2.89
ICT14D_063020DMS	EQ2000287-05	256,984	2.94
ICT2_063020	E2000607-001	274,035	2.94
ICT4_063020	E2000607-002	275,888	2.89
ICT4_063020_a	E2000607-003	269,096	2.93
ICT7_063020	E2000607-004	276,570	2.92
ICT8_063020	E2000607-005	272,678	2.93
ICT8_063020_a	E2000607-006	274,144	2.92

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Analyzed:**	7/9/20 11:02

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200709\20200709_018	**Lab Code:**	EQ2000293-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	686570
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	341,911	3.00
	Upper Limit ==>	512,867	5.00
	Lower Limit ==>	170,956	1.00
Associated Analyses			
Continuing Calibration Verification	EQ2000293-02	280,911	2.93
ICT11_063020	E2000607-007	248,419	2.93
ICT12B_063020	E2000607-008	257,337	2.92
ICT12C_063020	E2000607-009	268,082	2.92
ICT12D_063020	E2000607-010	274,024	2.93
ICT13A_063020	E2000607-012	261,630	2.92
ICT13B_063020	E2000607-013	299,112	2.91
ICT13D_063020	E2000607-014	280,330	2.89
ICT13E_063020	E2000607-015	316,602	2.92

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Analyzed:**	7/9/20 12:31

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200709\20200709_029	**Lab Code:**	EQ2000293-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	686570
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	341,911	3.00
	Upper Limit ==>	512,867	5.00
	Lower Limit ==>	170,956	1.00
Associated Analyses			
Continuing Calibration Verification	EQ2000293-03	278,856	2.92
ICT14B_063020	E2000607-017	275,345	2.92
ICT14D_063020	E2000607-019	265,178	2.93

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Analyzed:**	7/9/20 13:11

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200709\20200709_034	**Lab Code:**	EQ2000293-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	686570
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	341,911	3.00
	Upper Limit ==>	512,867	5.00
	Lower Limit ==>	170,956	1.00
Associated Analyses			
Continuing Calibration Verification	EQ2000293-04	278,728	2.92
ICT12E_063020	E2000607-011	318,389	2.91

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000607
Project:	HS20070043	**Date Analyzed:**	7/9/20 15:12

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200709\20200709_038	**Lab Code:**	EQ2000293-05
Instrument ID:	E-LCMS-01	**Analysis Lot:**	686570
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	341,911	3.00
	Upper Limit ==>	512,867	5.00
	Lower Limit ==>	170,956	1.00
Associated Analyses			
Continuing Calibration Verification	EQ2000293-05	312,192	2.97

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

ALS Group Houston

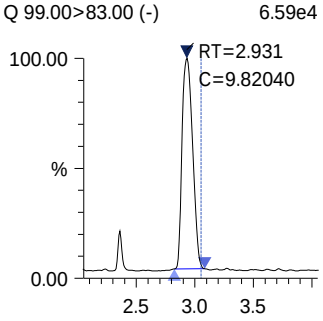
PERCHLORATE7

Date acquired: 7/8/2020 6:45:13 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200708\20200708_013.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	7/8/2020 6:45:13 PM	410918	9.82040	20200708_013	2.931	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	7/8/2020 6:45:13 PM	308199	1.00000	20200708_013	2.929	25.0000	1.0000	4

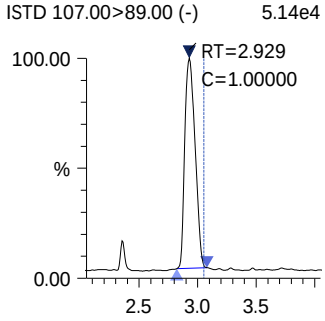
Perchlorate

Conc 9.82040
Area 410918



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 308199



ALS Group Houston

EQ2000287-01

Date acquired: 7/8/2020 6:53:10 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200708\20200708_014.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 2

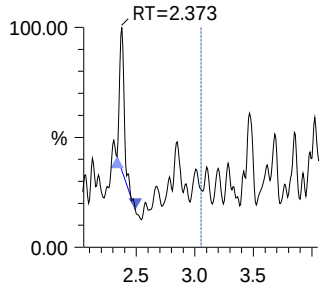
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000287-01	7/8/2020 6:53:10 PM	----	----	20200708_014	----	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000287-01	7/8/2020 6:53:10 PM	312488	1.00000	20200708_014	2.938	25.0000	1.0000	6

Perchlorate

Conc ----

Area ----

Q 99.00>83.00 (-) 1.68e3

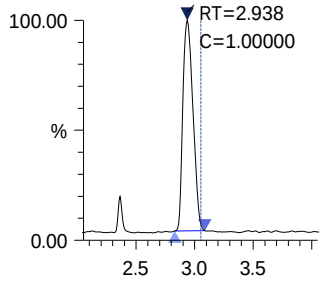


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 312488

ISTD 107.00>89.00 (-) 5.31e4



ALS Group Houston

EQ2000287-02

Date acquired: 7/8/2020 7:01:04 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200708\20200708_015.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 2

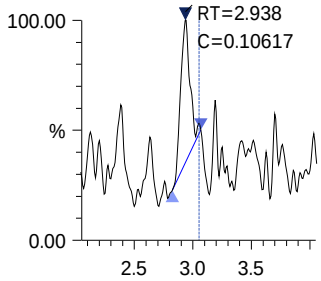
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000287-02	7/8/2020 7:01:04 PM	4992	0.10617	20200708_015	2.938	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	EQ2000287-02	7/8/2020 7:01:04 PM	346287	1.00000	20200708_015	2.930	25.0000	1.0000	7

Perchlorate

Conc 0.10617

Area 4992

Q 99.00>83.00 (-) 1.36e3

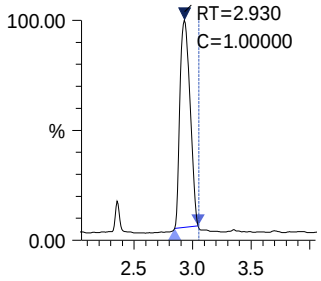


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 346287

ISTD 107.00>89.00 (-) 5.93e4



ALS Group Houston

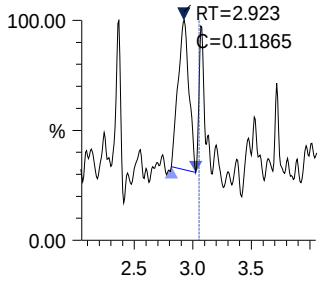
EQ2000287-03

Date acquired: 7/8/2020 7:08:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200708\20200708_016.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 2

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000287-03	7/8/2020 7:08:56 PM	6064	0.11865	20200708_016	2.923	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	EQ2000287-03	7/8/2020 7:08:56 PM	376404	1.00000	20200708_016	2.924	25.0000	1.0000	8

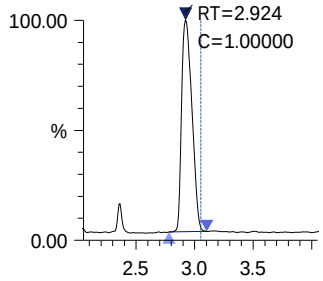
Perchlorate

Conc 0.11865
Area 6064
Q 99.00>83.00 (-) 1.34e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 376404
ISTD 107.00>89.00 (-) 6.21e4



ALS Group Houston

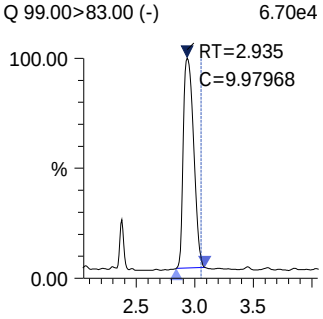
PERCHLORATE7

Date acquired: 7/8/2020 8:12:09 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200708\20200708_024.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	7/8/2020 8:12:09 PM	410836	9.97968	20200708_024	2.935	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	7/8/2020 8:12:09 PM	303219	1.00000	20200708_024	2.936	25.0000	1.0000	4

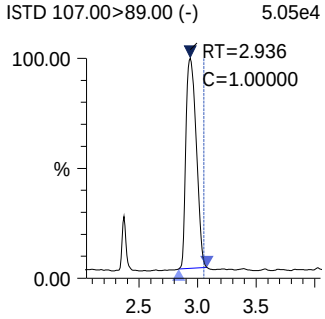
Perchlorate

Conc 9.97968
Area 410836



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 303219



ALS Group Houston

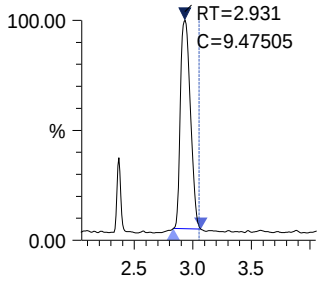
PERCHLORATE7

Date acquired: 7/9/2020 9:32:15 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200709\20200709_007.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	7/9/2020 9:32:15 AM	352312	9.47505	20200709_007	2.931	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	7/9/2020 9:32:15 AM	273874	1.00000	20200709_007	2.926	25.0000	1.0000	4

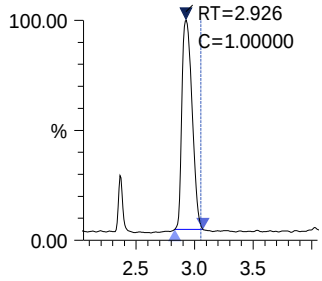
Perchlorate

Conc 9.47505
Area 352312
Q 99.00>83.00 (-) 5.99e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 273874
ISTD 107.00>89.00 (-) 4.64e4



ALS Group Houston

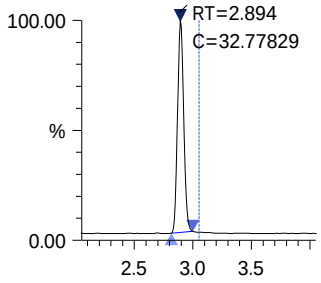
EQ2000287-04X100

Date acquired: 7/9/2020 9:57:32 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200709\20200709_010.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 2

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000287-04X100	7/9/2020 9:57:32 AM	1198389	32.77829	20200709_010	2.894	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	EQ2000287-04X100	7/9/2020 9:57:32 AM	269288	1.00000	20200709_010	2.892	25.0000	1.0000	9

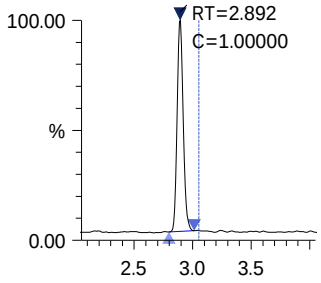
Perchlorate

Conc 32.77829
Area 1198389
Q 99.00>83.00 (-) 3.34e5



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 269288
ISTD 107.00>89.00 (-) 7.42e4



ALS Group Houston

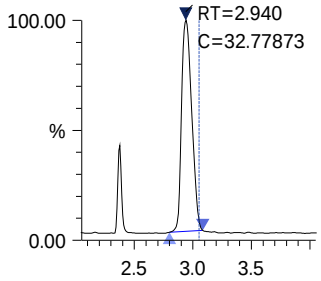
EQ2000287-05X100

Date acquired: 7/9/2020 10:05:25 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200709\20200709_011.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 2

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000287-05X100	7/9/2020 10:05:25 AM	1143651	32.77873	20200709_011	2.940	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	EQ2000287-05X100	7/9/2020 10:05:25 AM	256984	1.00000	20200709_011	2.938	25.0000	1.0000	10

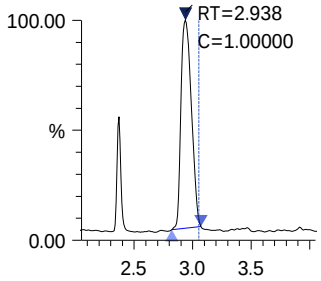
Perchlorate

Conc 32.77873
Area 1143651
Q 99.00>83.00 (-) 1.89e5



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 256984
ISTD 107.00>89.00 (-) 4.29e4



ALS Group Houston

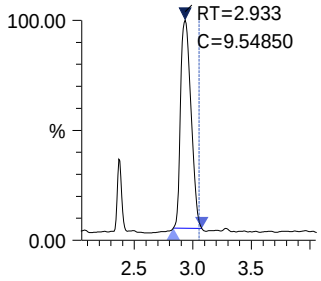
PERCHLORATE7

Date acquired: 7/9/2020 11:02:54 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200709\20200709_018.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	7/9/2020 11:02:54 AM	364166	9.54850	20200709_018	2.933	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	7/9/2020 11:02:54 AM	280911	1.00000	20200709_018	2.930	25.0000	1.0000	4

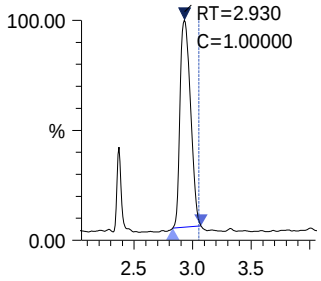
Perchlorate

Conc 9.54850
Area 364166
Q 99.00>83.00 (-) 5.95e4



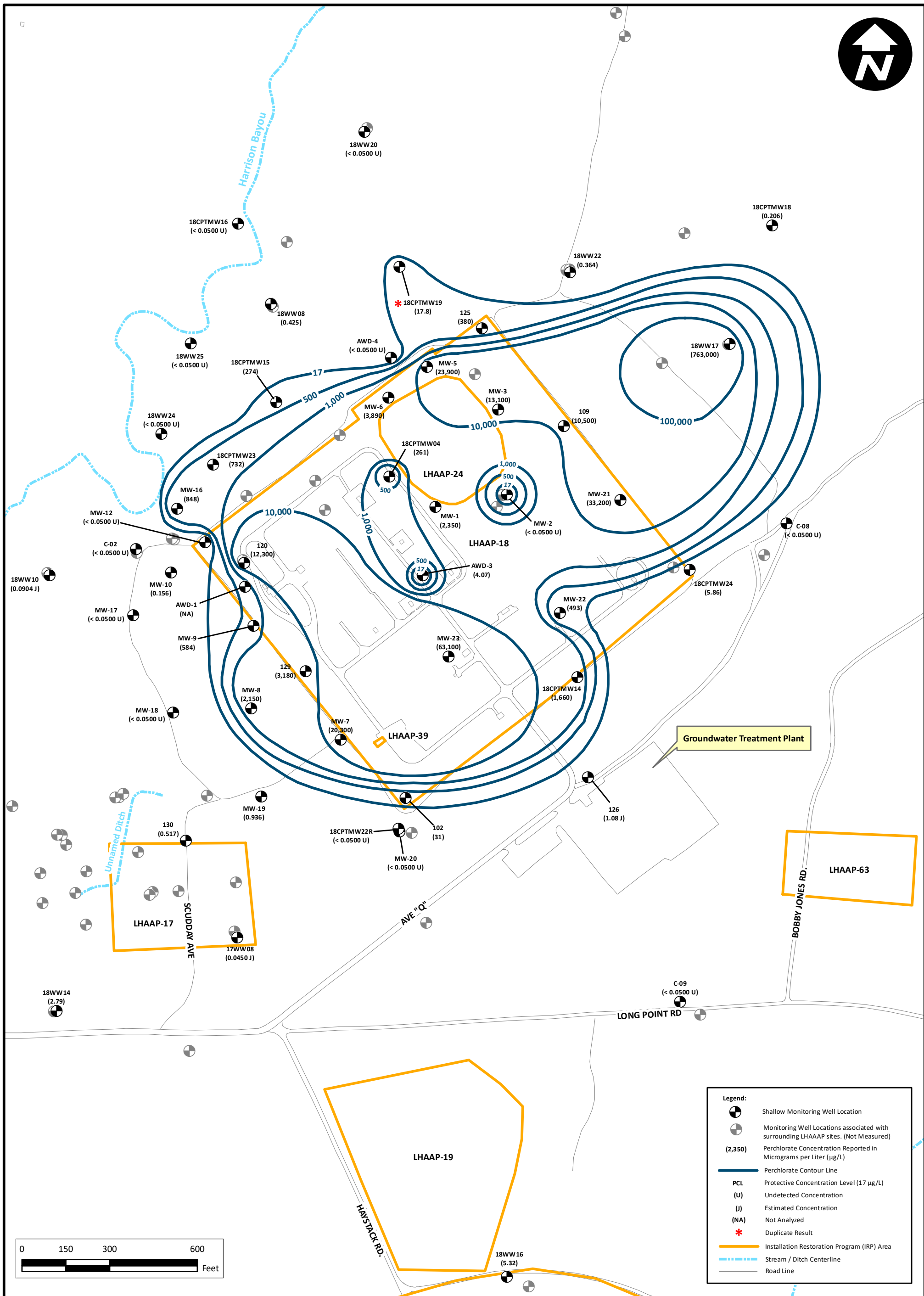
Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 280911
ISTD 107.00>89.00 (-) 4.67e4



APPENDIX D
ISOPLETH CONTOUR MAPS

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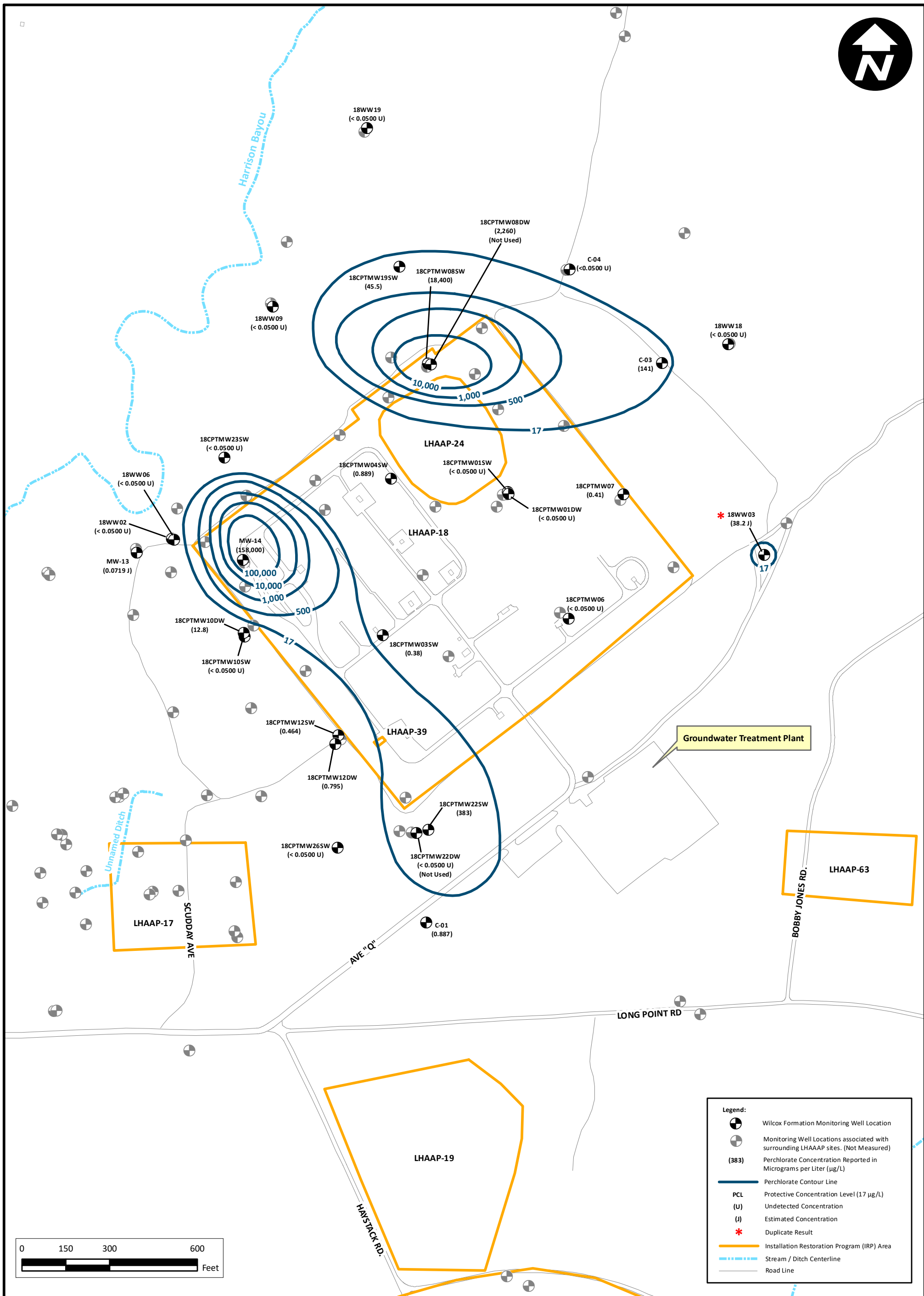
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Quarterly Evaluation Report 2nd Quarter (April – June) 2020
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	8/19/2020	MRM

Perchlorate Isopleth Contours in Shallow Zone (June 2020)

Figure D-1



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Quarterly Evaluation Report 2nd Quarter (April – June) 2020
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	8/19/2020	MRM

Perchlorate Isopleth Contours in Wilcox Formation (June 2020)

Figure D-2

Harrison Bayou
18WW20 (0.60 J)
18CPTMW16 (NA)
18CPTMW18 (< 0.5 U)
18CPTMW19 (< 0.5 U)
18WW22 (< 0.5 U)
18WW08 (< 0.5 U)
125 (< 0.5 U)
18WW25 (< 0.5 U)
AWD-4 (< 0.5 U)
MW-5 (38)
18WW17 (40)
18CPTMW15 (2.4)
MW-3 (360)
MW-6 (19)
109 (310)
18WW24 (< 0.5 U)
LHAAP-24
500
1,000
18CPTMW04 (310)
18CPTMW23 (2,300)
MW-2 (1,200)
MW-21 (7,200)
C-08 (< 0.5 U)
MW-16 (1,200)
MW-1 (31,000)
10,000
LHAAP-18
C-02 (< 0.5 U)
MW-12 (100)
120 (6,100)
1,000
500
18CPTMW24 (8.4)
MW-10 (2.7)
AWD-3 (340)
AWD-1 (NA)
18WW10 (< 0.5 U)
MW-22 (400)
MW-17 (NA)
MW-23 (2,300)
MW-9 (710)
129 (450)
MW-18 (15)
MW-8 (120)
18CPTMW14 (840)
MW-7 (2,100)
LHAAP-39
Groundwater Treatment Plant
126 (0.88 J)
MW-19 (1.2)
102 (< 0.5 U)
18CPTMW22R (< 0.5 U)
130 (0.73 J)
Unnamed Ditch
MW-20 (< 0.5 U)
LHAAP-63
SCUDDAY AVE
LHAAP-17
17WW08 (< 0.5 U)
AVE "Q"
BOBBY JONES RD.
18WW14 (NA)
C-09 (< 0.5 U)
LONG POINT RD
LHAAP-19
HAYSTACK RD.
18WW16 (< 0.5 U)

0 150 300 600 Feet

Legend:
- Shallow Monitoring Well Location
- Monitoring Well Locations associated with surrounding LHAAAP sites. (Not Measured)
- (2,300) Trichloroethene Concentration Reported in Micrograms per Liter (µg/L)
- Trichloroethene Contour Line
- PCL Protective Concentration Level (5 µg/L)
- (U) Undetected Concentration
- (J) Estimated Concentration
- (NA) Not Analyzed
- * Duplicate Result
- Installation Restoration Program (IRP) Area
- Stream / Ditch Centerline
- Road Line

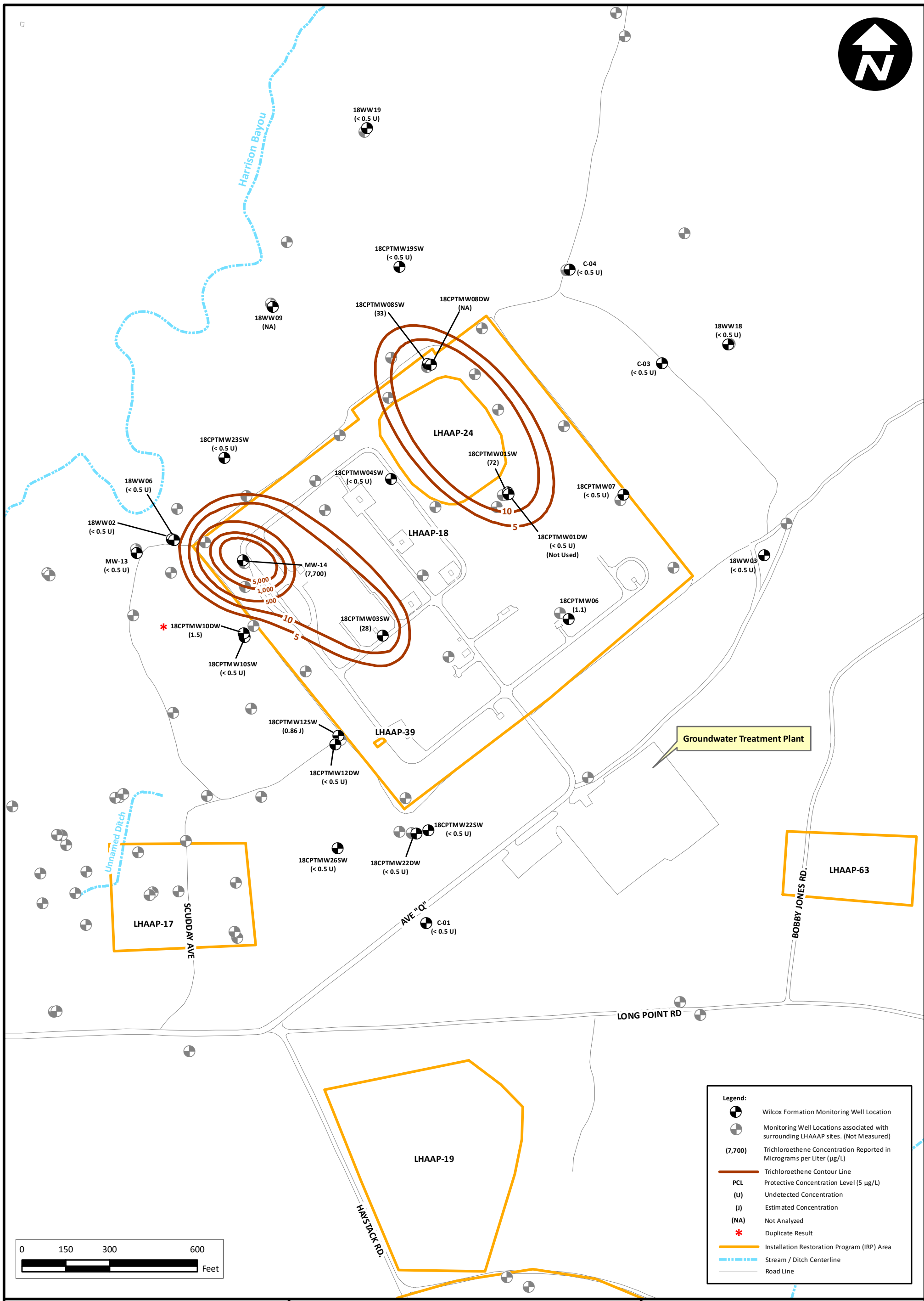
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Quarterly Evaluation Report 2nd Quarter (April – June) 2020
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	8/19/2020	MRM

Trichloroethene Isopleth Contours in Shallow Zone (June 2020)

Figure D-3



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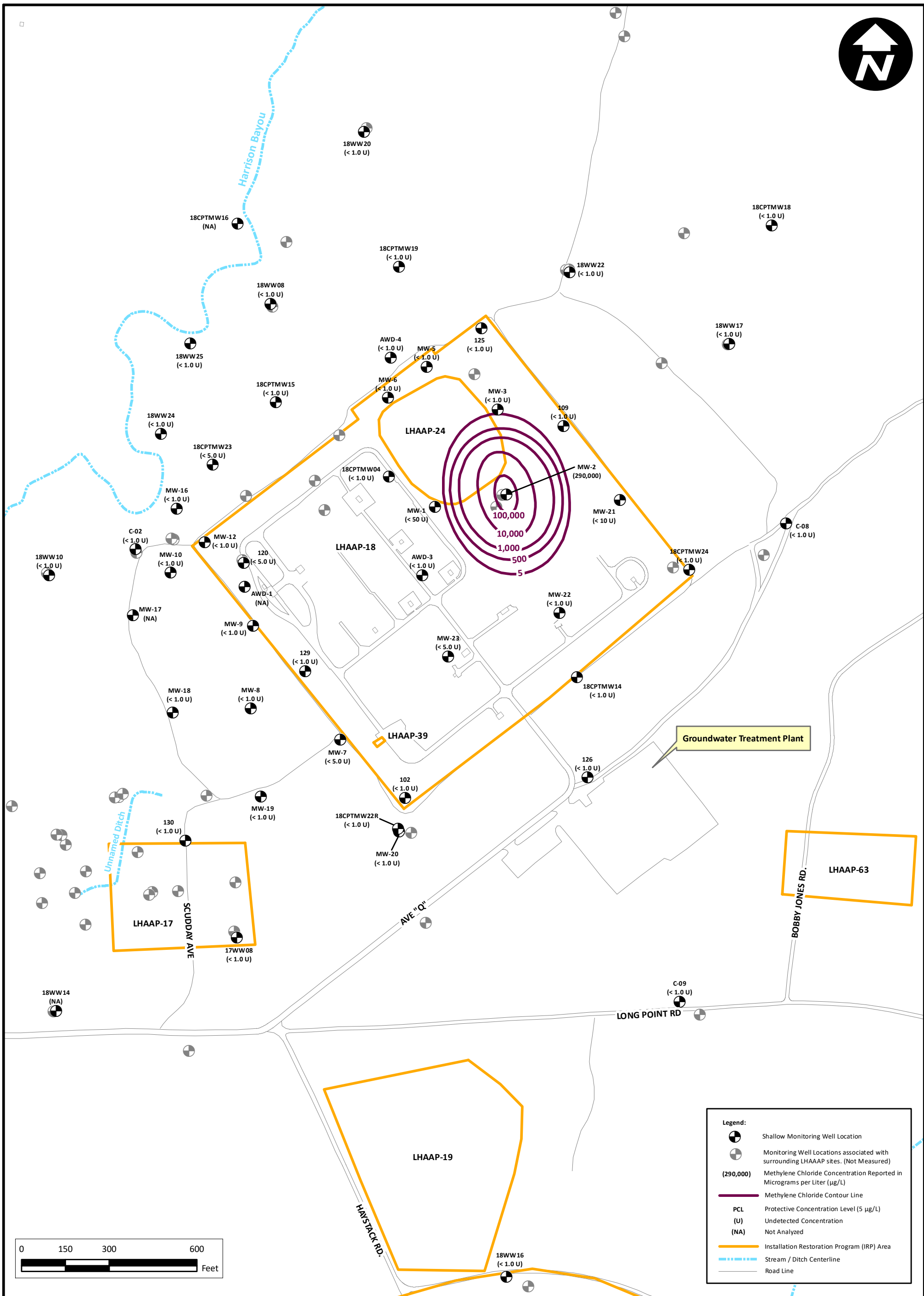
www.bhate.com

Quarterly Evaluation Report 2nd Quarter (April – June) 2020
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	8/19/2020	MRM

Trichloroethene Isopleth Contours in Wilcox Formation (June 2020)

Figure D-4



bhate

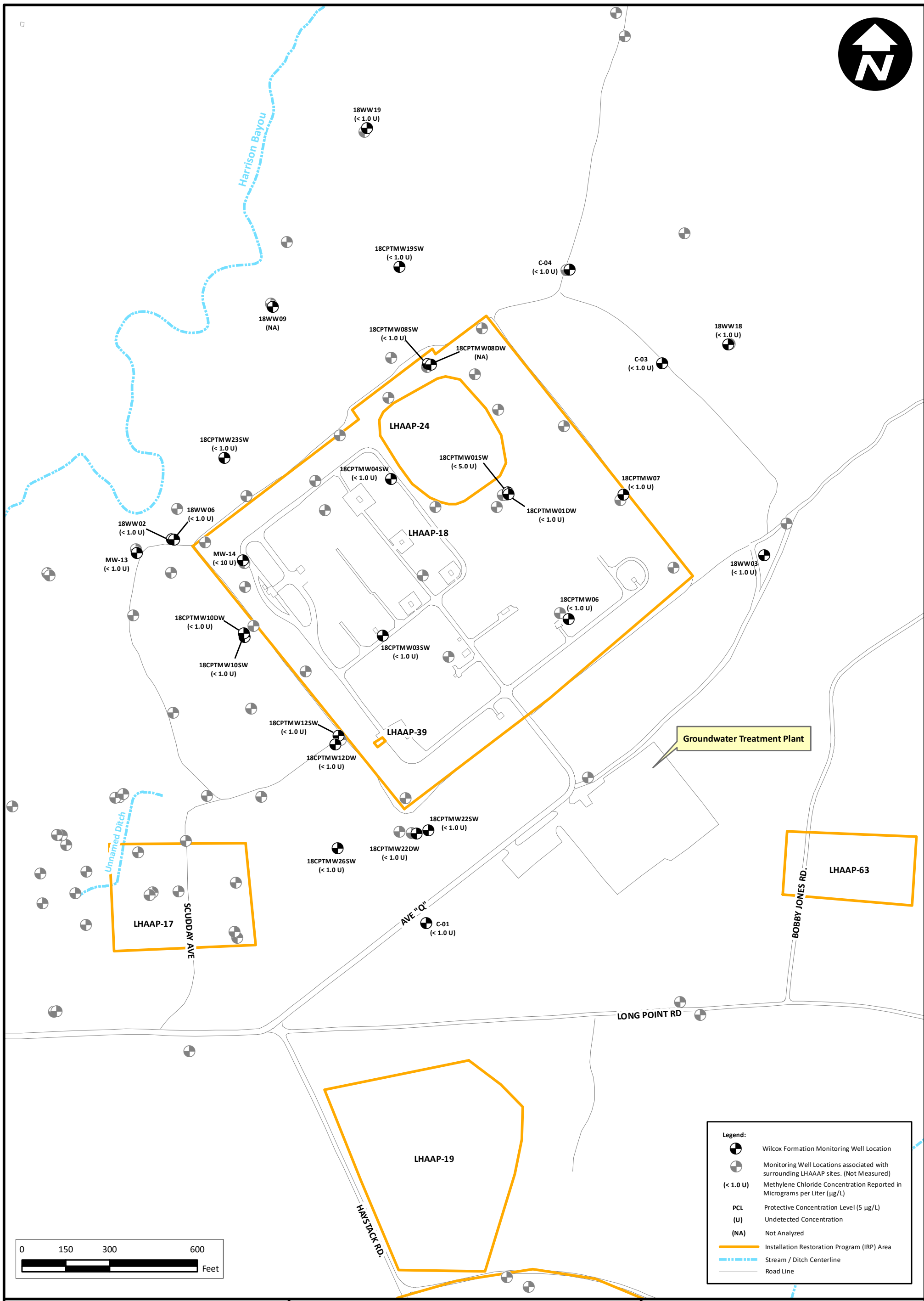
www.bhate.com

Quarterly Evaluation Report 2nd Quarter (April – June) 2020
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	8/19/2020	MRM

Methylene Chloride Isopleth Contours in Shallow Zone (June 2020)

Figure D-5



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Quarterly Evaluation Report 2nd Quarter (April – June) 2020
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	8/19/2020	MRM

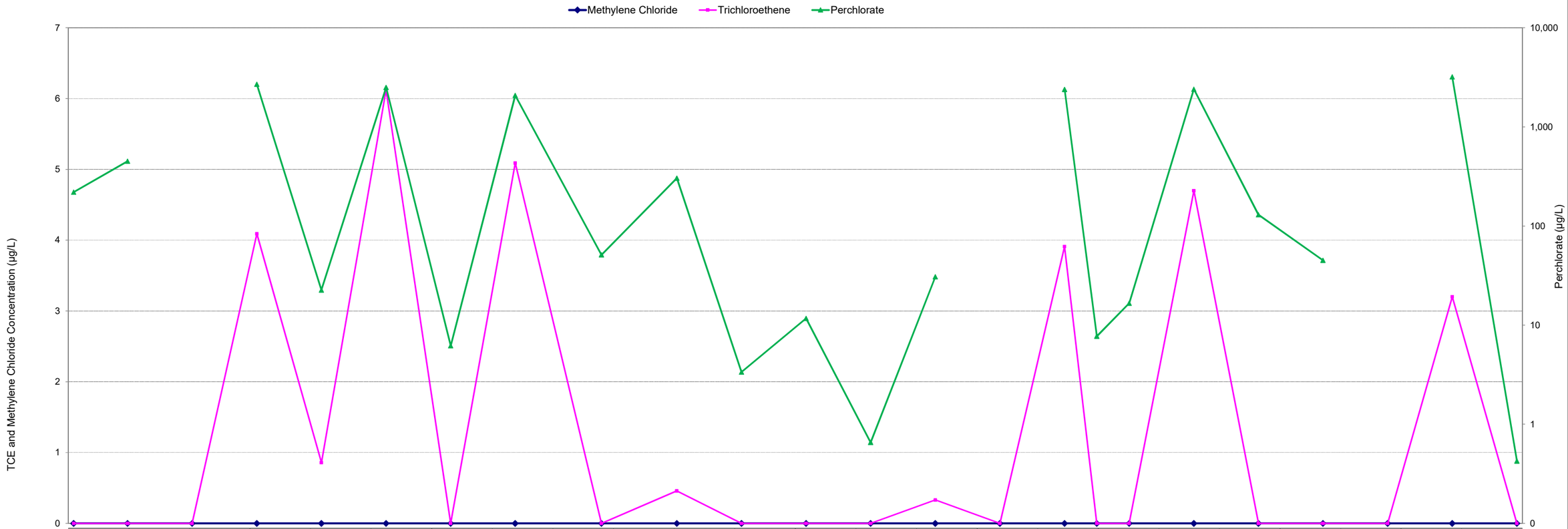
Methylene Chloride Isopleth Contours in Wilcox Formation (June 2020)

Figure D-6

APPENDIX E
MONITORING WELL TREND CHARTS

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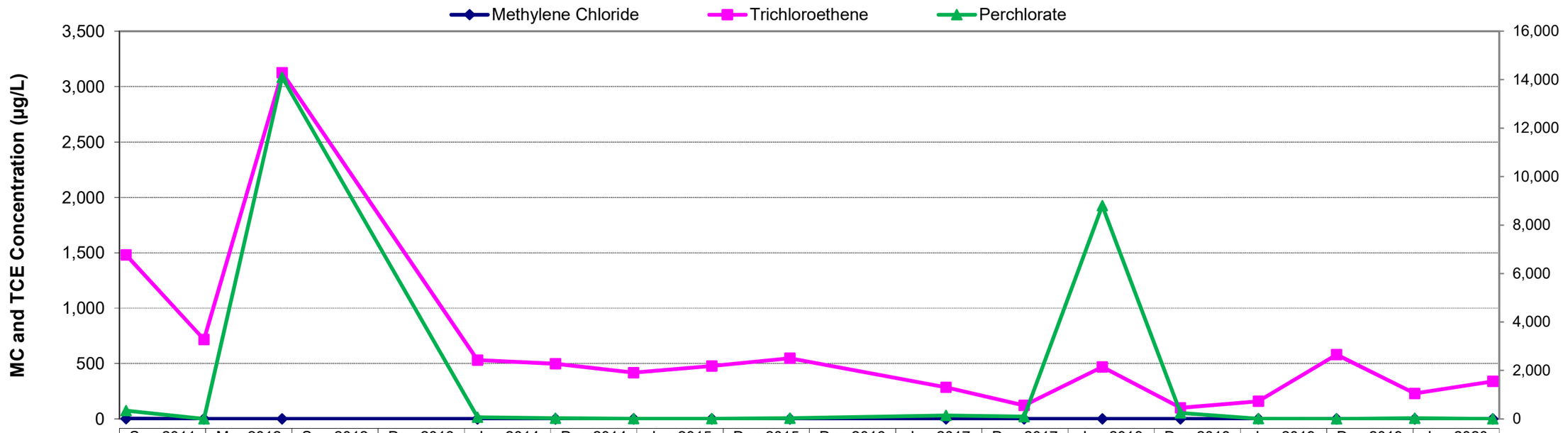
Monitoring Well 18WW08



	Apr-2009	Sep-2009	Mar-2010	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Mar-2017	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020
Methylene Chloride	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	0	0	0	4.09	0.858	6.12	0	5.09	0	0.459	0	0	0	0.331	0	3.91	0	0	4.7	0	0	0	3.2	0
Perchlorate	220	450	0	2700	22.6	2500	6.19	2080	51.2	304	3.36	11.7	0.655	30.8	0	2390	7.72	16.6	2400	130	45	0	3200	0.425

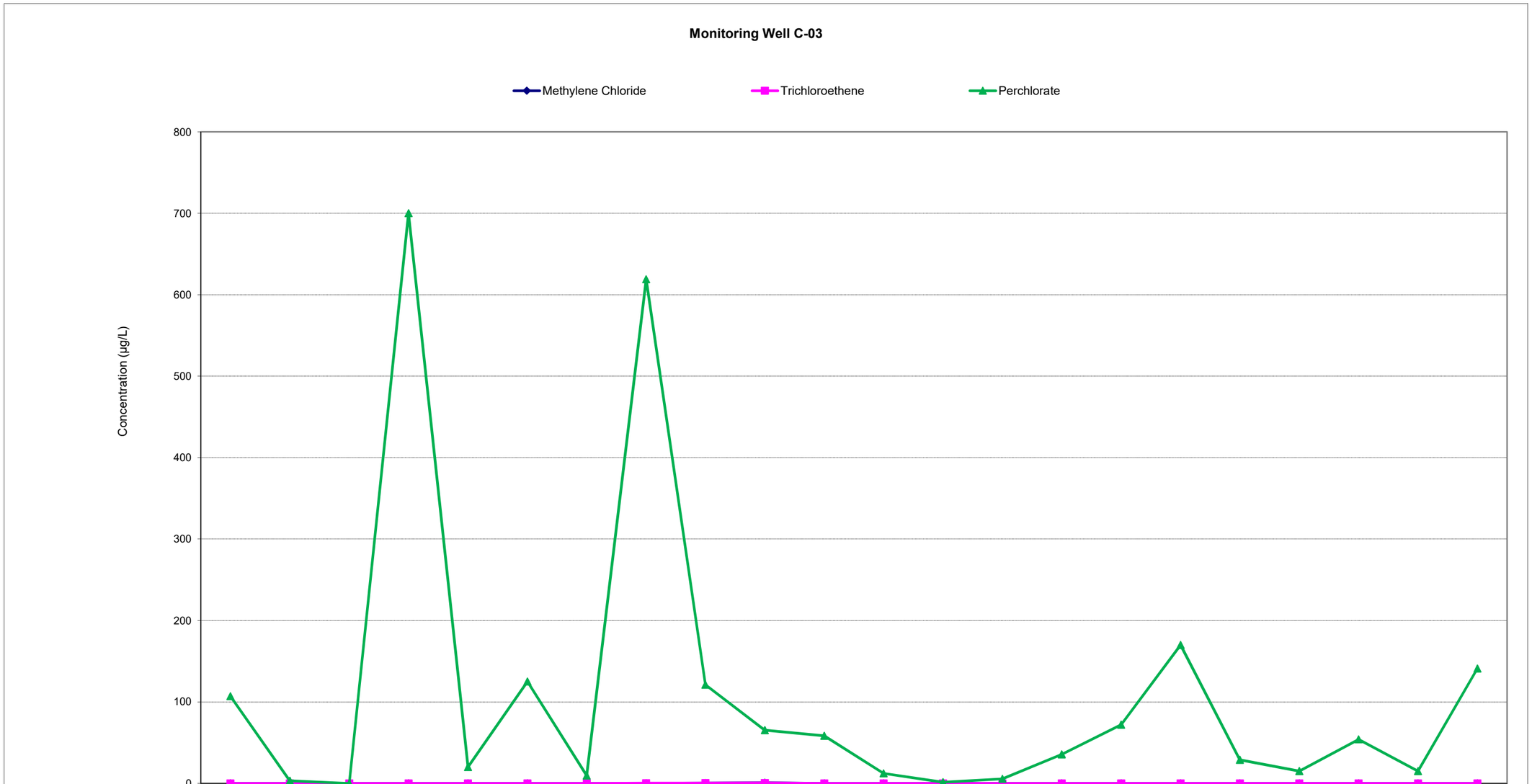
Sample Date

Monitoring Well AWD-3



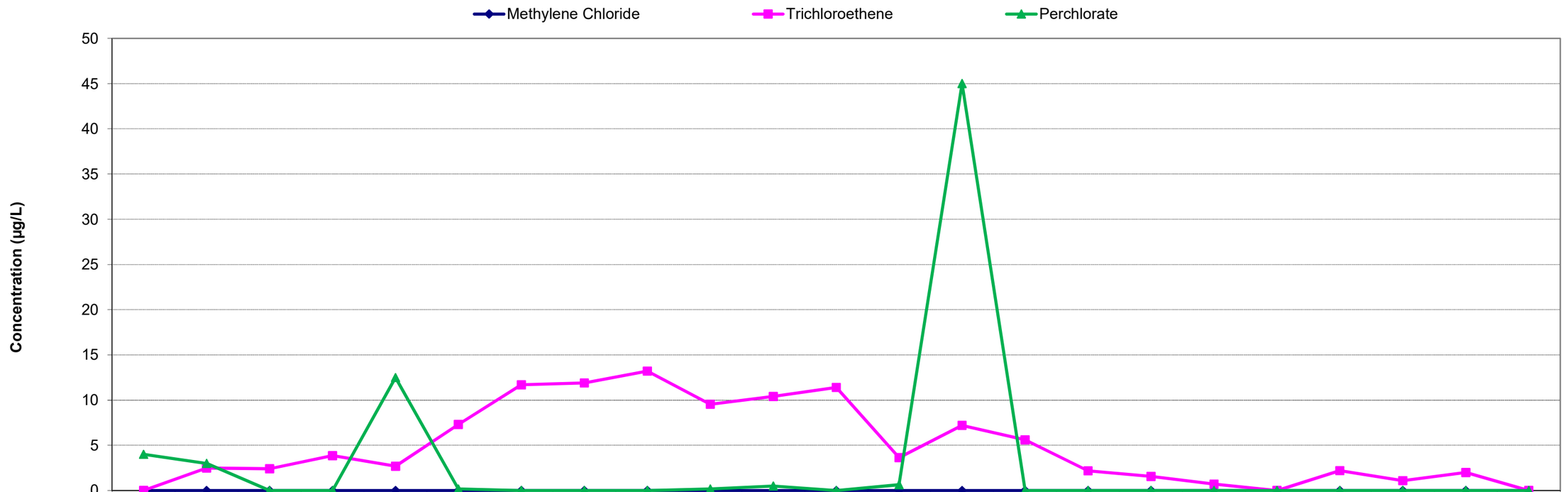
	Sep-2011	Mar-2012	Sep-2012	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020
Methylene Chloride	2.92J	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	1480	716	3125	530	499	417	477	547	285	122	470	100	160	580	230	340
Perchlorate	342	3.88	14100	67.2	25	13.6	8.33	33.8	140	95.4	8800	250	6.9	1.8	32	4.07

Sample Date



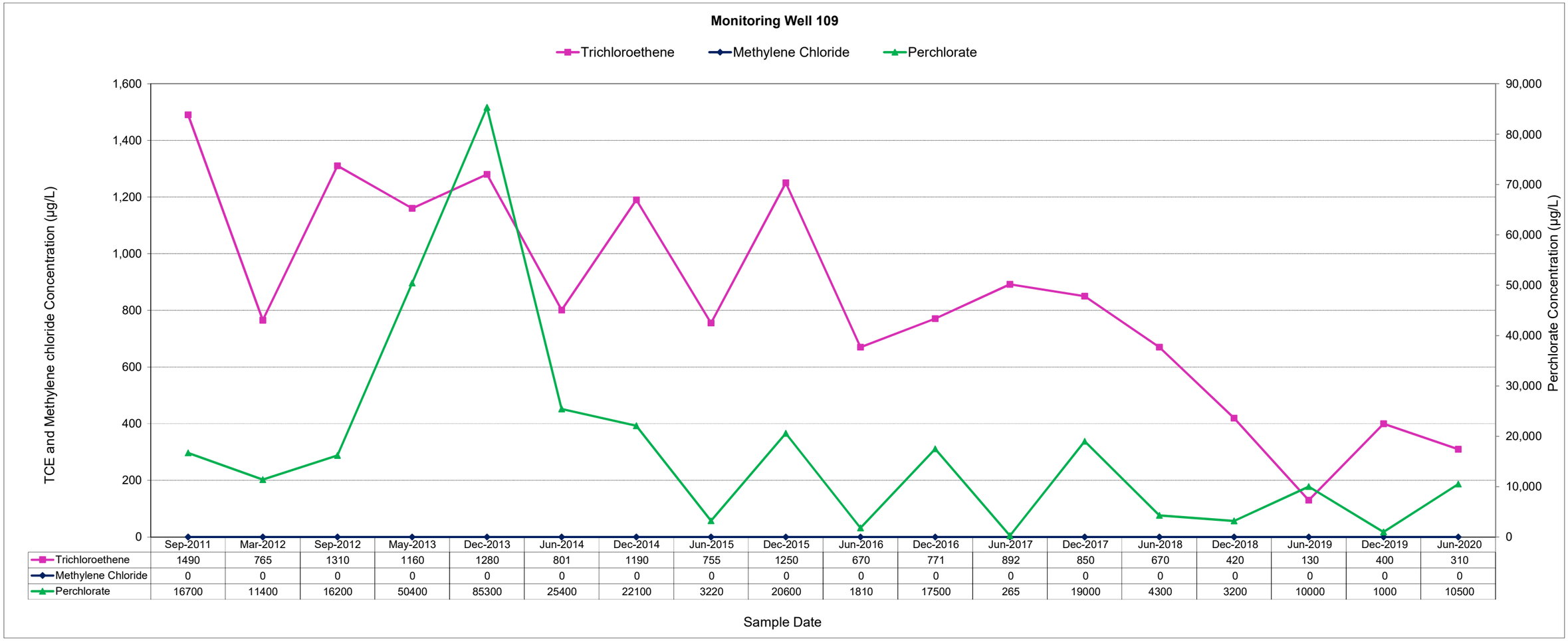
	Apr-2009	Sep-2009	Mar-2010	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2019	Dec-2019	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020
Methylene Chloride	0	0	0	0	0	0	0	0	0.336	0.738	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	0	0	0	0	0	0	0	0.267	0.476	0.491	0	0	0	0	0	0	0	0	0	0	0	0
Perchlorate	107	3.2	0	700	20	125	9.45	619	121	65.3	58.3	12.3	1.35	5.48	35.6	72	170	29	15	54	15	141

Monitoring Well C-08

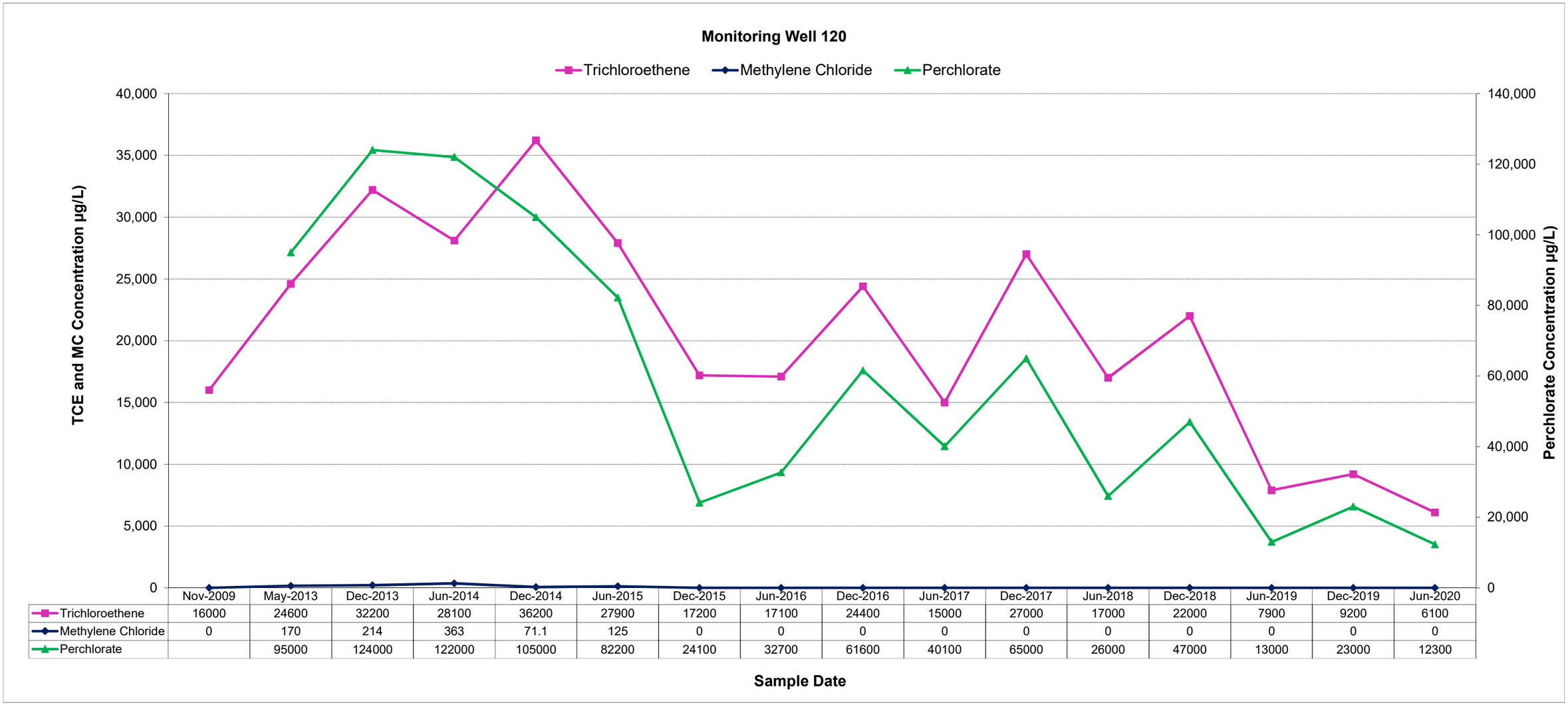


	Apr-2009	Sep-2009	Mar-2010	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020
Methylene Chloride	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	0	2.49	2.41	3.87	2.7	7.3	11.7	11.9	13.2	9.54	10.4	11.4	3.64	7.21	5.61	2.18	1.57	0.7	0	2.2	1.1	2	0
Perchlorate	4	3	0	0	12.5	0.179J	0	0	0	0.17	0.501	0	0.648	45	0	0	0	0	0	0	0	0	0

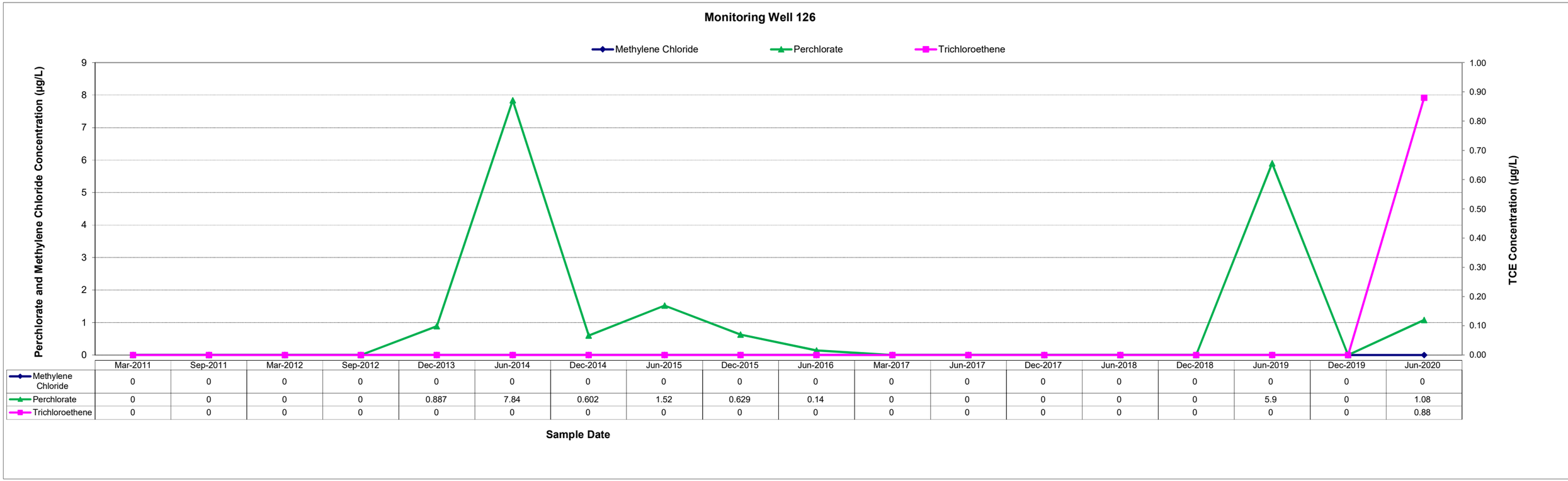
Sample Date



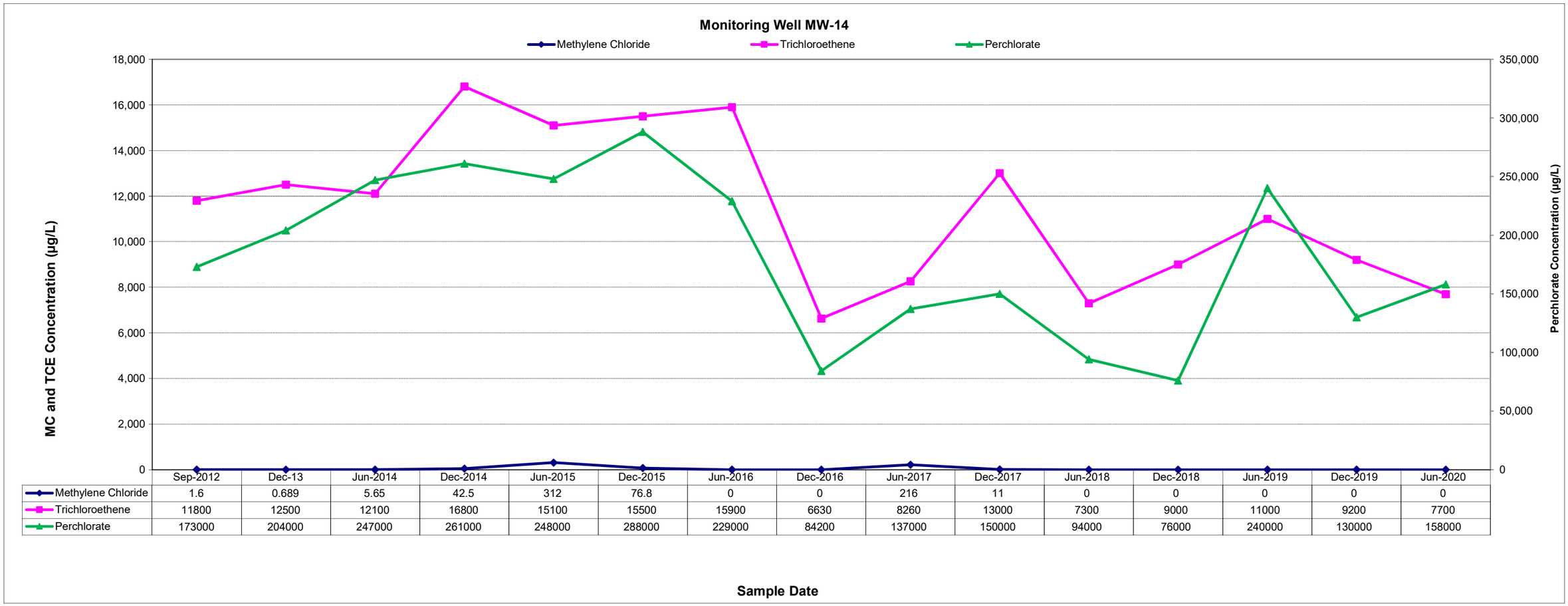
	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020
Trichloroethene	1490	765	1310	1160	1280	801	1190	755	1250	670	771	892	850	670	420	130	400	310
Methylene Chloride	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Perchlorate	16700	11400	16200	50400	85300	25400	22100	3220	20600	1810	17500	265	19000	4300	3200	10000	1000	10500



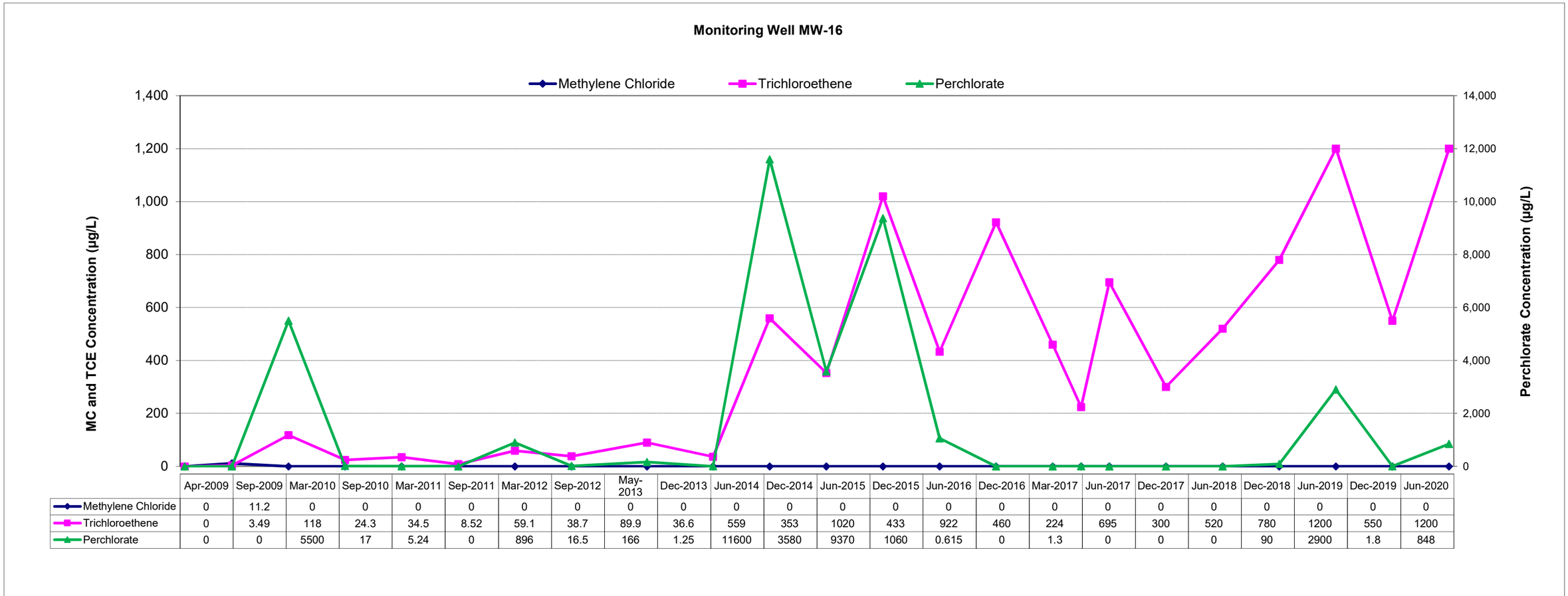
	Nov-2009	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020
Trichloroethene	16000	24600	32200	28100	36200	27900	17200	17100	24400	15000	27000	17000	22000	7900	9200	6100
Methylene Chloride	0	170	214	363	71.1	125	0	0	0	0	0	0	0	0	0	0
Perchlorate		95000	124000	122000	105000	82200	24100	32700	61600	40100	65000	26000	47000	13000	23000	12300



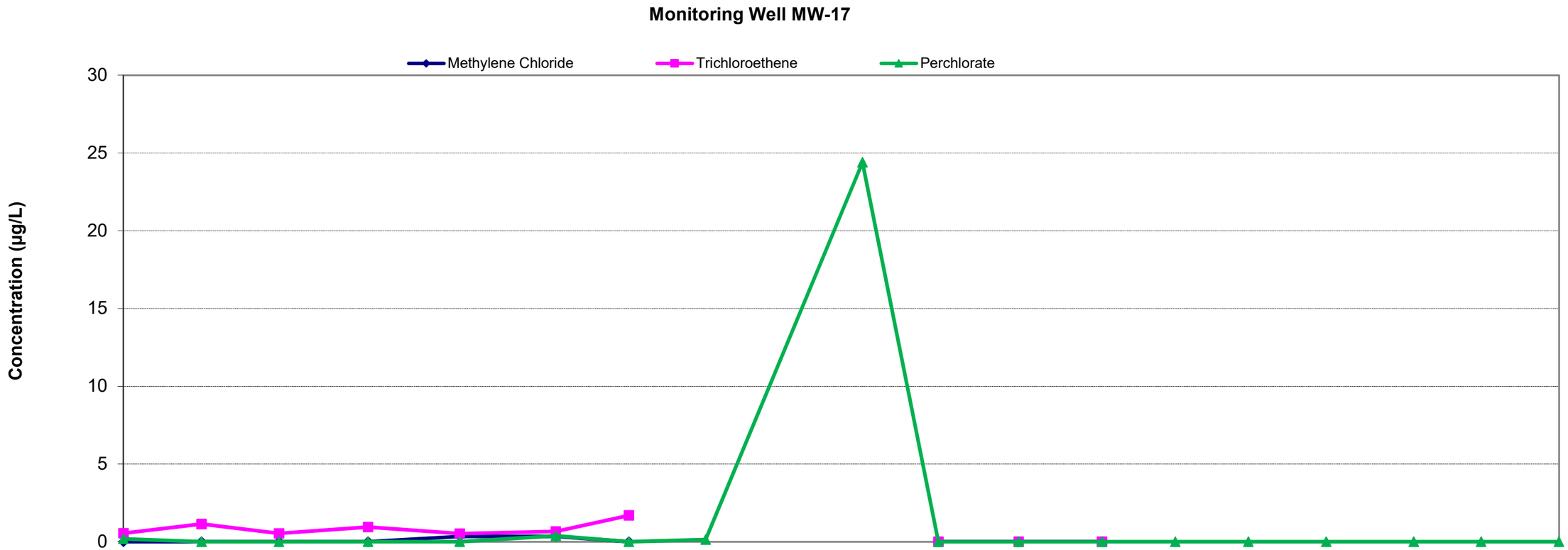
	Mar-2011	Sep-2011	Mar-2012	Sep-2012	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Mar-2017	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020
Methylene Chloride	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Perchlorate	0	0	0	0	0.887	7.84	0.602	1.52	0.629	0.14	0	0	0	0	0	5.9	0	1.08
Trichloroethene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.88



	Sep-2012	Dec-13	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020
Methylene Chloride	1.6	0.689	5.65	42.5	312	76.8	0	0	216	11	0	0	0	0	0
Trichloroethene	11800	12500	12100	16800	15100	15500	15900	6630	8260	13000	7300	9000	11000	9200	7700
Perchlorate	173000	204000	247000	261000	248000	288000	229000	84200	137000	150000	94000	76000	240000	130000	158000

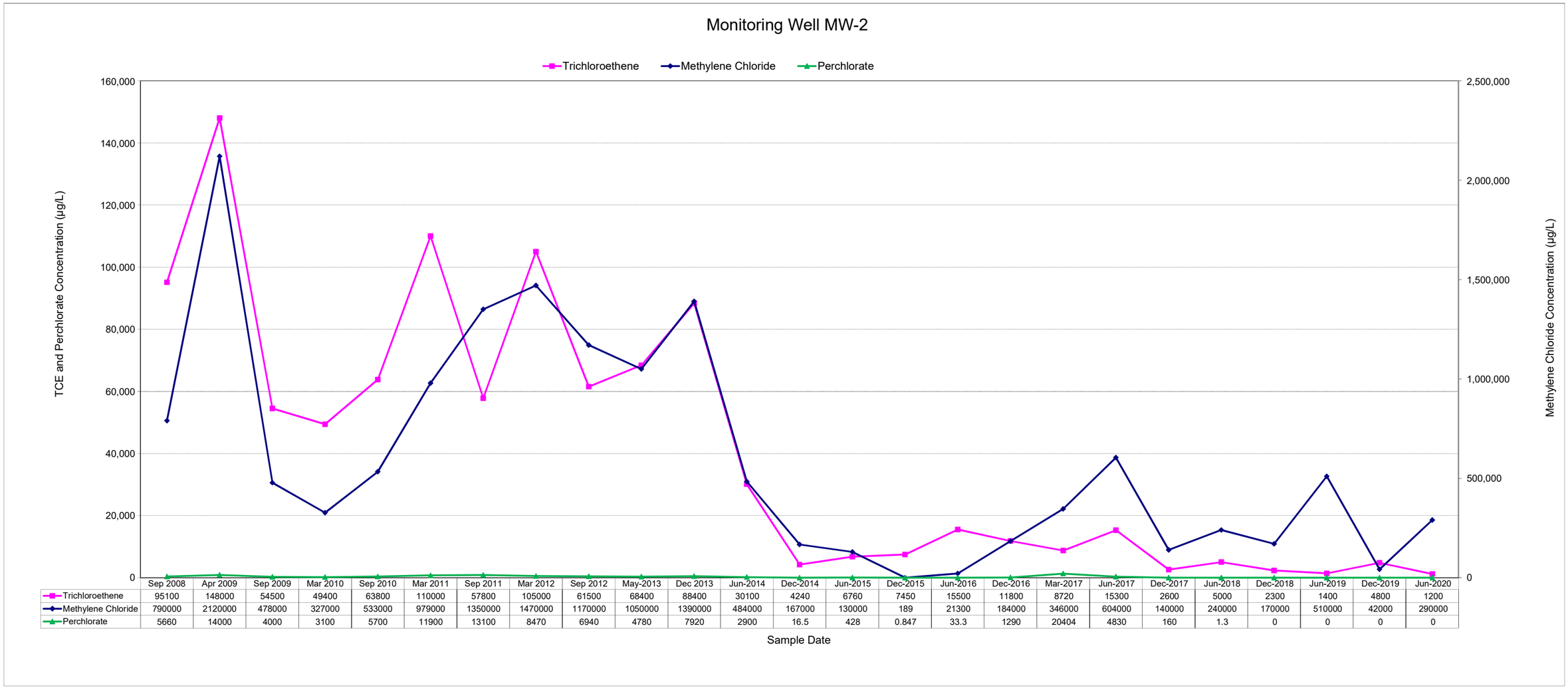


	Apr-2009	Sep-2009	Mar-2010	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Mar-2017	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020
Methylene Chloride	0	11.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	0	3.49	118	24.3	34.5	8.52	59.1	38.7	89.9	36.6	559	353	1020	433	922	460	224	695	300	520	780	1200	550	1200
Perchlorate	0	0	5500	17	5.24	0	896	16.5	166	1.25	11600	3580	9370	1060	0.615	0	1.3	0	0	0	90	2900	1.8	848

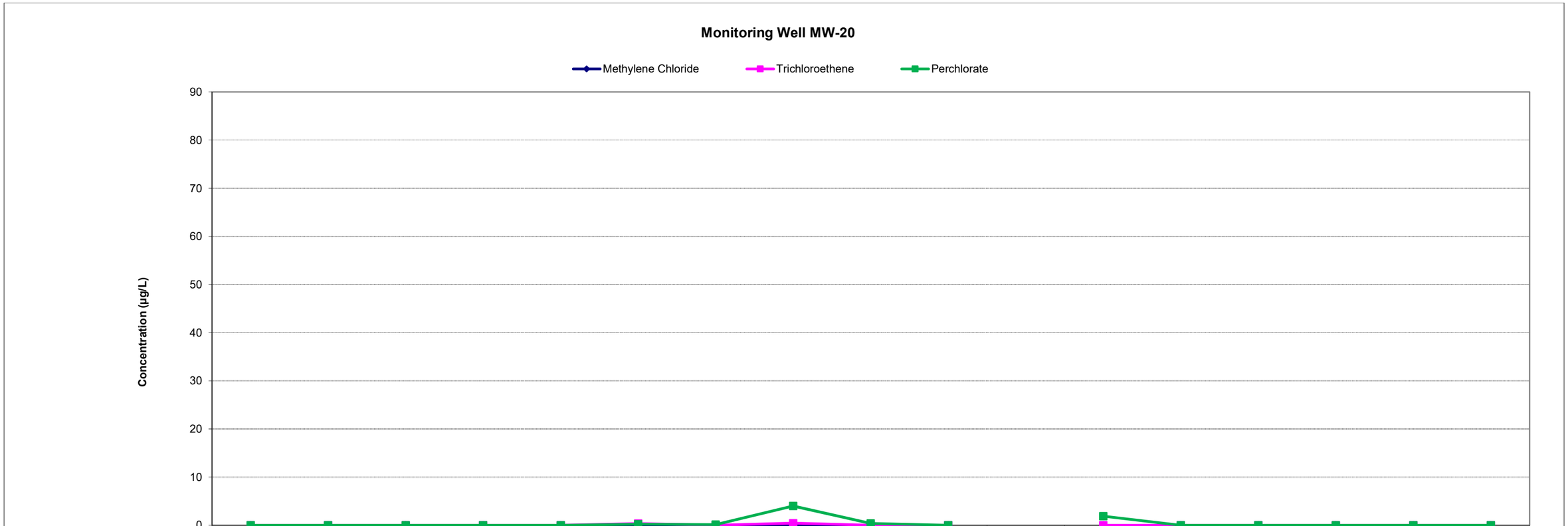


	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020
Methylene Chloride	0	0	0	0	0.335	0.346	0			0	0	0						
Trichloroethene	0.551	1.14	0.537	0.943	0.519	0.656	1.69			0	0	0						
Perchlorate	0.179	0	0	0	0	0.376	0	0.143	24.4	0	0	0	0	0	0	0	0	0

Sample Date

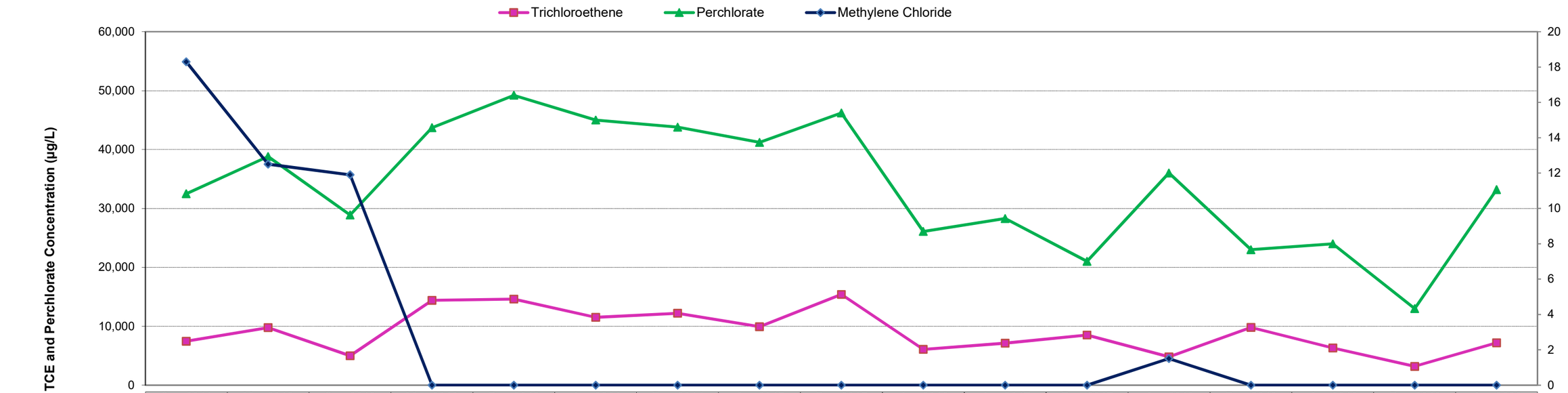


	Sep 2008	Apr 2009	Sep 2009	Mar 2010	Sep 2010	Mar 2011	Sep 2011	Mar 2012	Sep 2012	May-2013	Dec 2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Mar-2017	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020
Trichloroethene	95100	148000	54500	49400	63800	110000	57800	105000	61500	68400	88400	30100	4240	6760	7450	15500	11800	8720	15300	2600	5000	2300	1400	4800	1200
Methylene Chloride	790000	2120000	478000	327000	533000	979000	1350000	1470000	1170000	1050000	1390000	484000	167000	130000	189	21300	184000	346000	604000	140000	240000	170000	510000	42000	290000
Perchlorate	5660	14000	4000	3100	5700	11900	13100	8470	6940	4780	7920	2900	16.5	428	0.847	33.3	1290	20404	4830	160	1.3	0	0	0	0



	Apr-2009	Sep-2009	Mar-2010	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Jun-2015	Dec-2015	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020
Methylene Chloride	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Trichloroethene	0	0	0	0	0	0.355J	0	0.441	0	0		0	0	0	0	0	0
Perchlorate	0	0	0	0	0	0.216	0.148	4	0.398	0		1.9	0	0	0	0	0

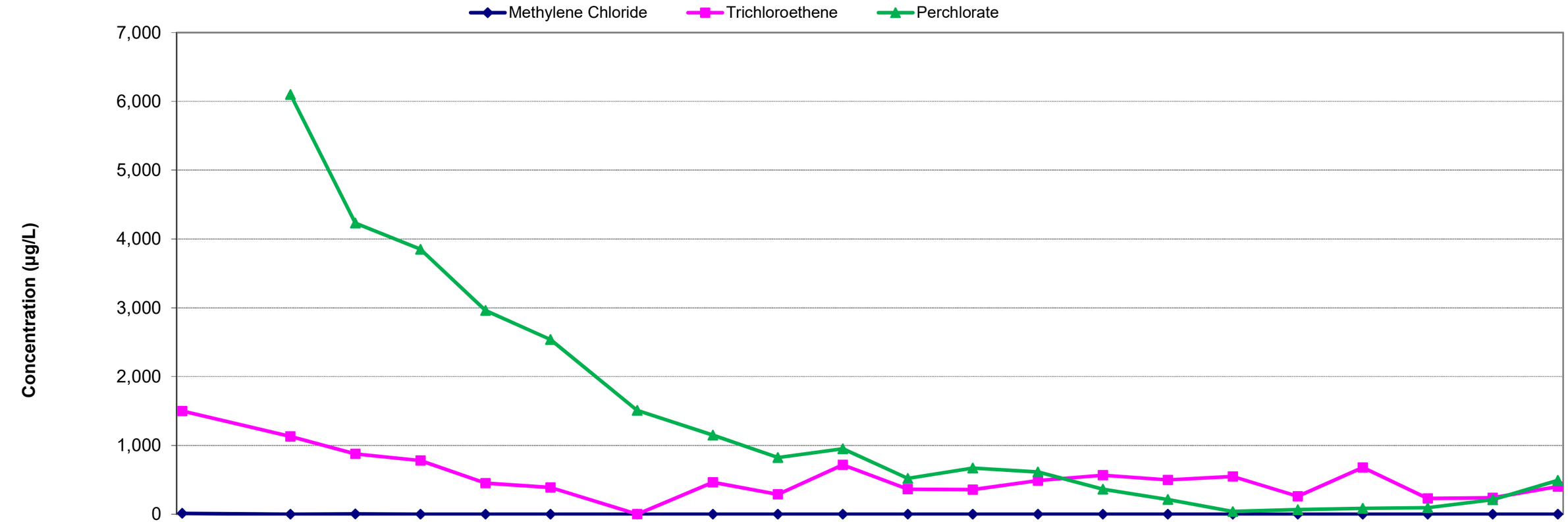
Monitoring Well MW-21



	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020
Trichloroethene	7470	9760	4980	14400	14600	11500	12200	9910	15400	6080	7140	8500	4800	9800	6300	3200	7200
Perchlorate	32500	38800	28900	43700	49200	45000	43800	41200	46200	26100	28300	21000	36000	23000	24000	13000	33200
Methylene Chloride	18.3J	12.5	11.9	0	0	0	0	0	0	0	0	0	1.5	0	0	0	0

Sample Date

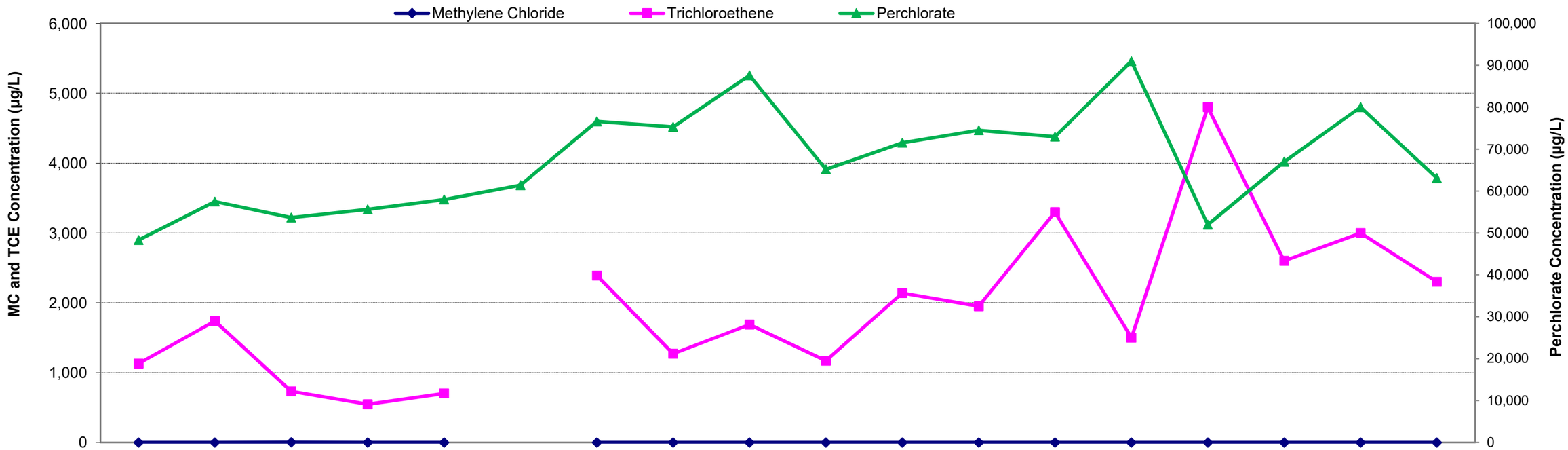
Monitoring Well MW-22



	Nov-2009	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020
Methylene Chloride	12	0	3.04	0	0	0	0.531	0	0	0	0.601	0	0	0	0	0	0	0	0	0	0
Trichloroethene	1500	1130	877	779	450	388	0	463	288	719	364	359	488	566	500	550	260	680	230	240	400
Perchlorate		6100	4230	3850	2960	2540	1510	1150	824	953	519	671	615	363	214	40	66	84	95	210	493

Sample Date

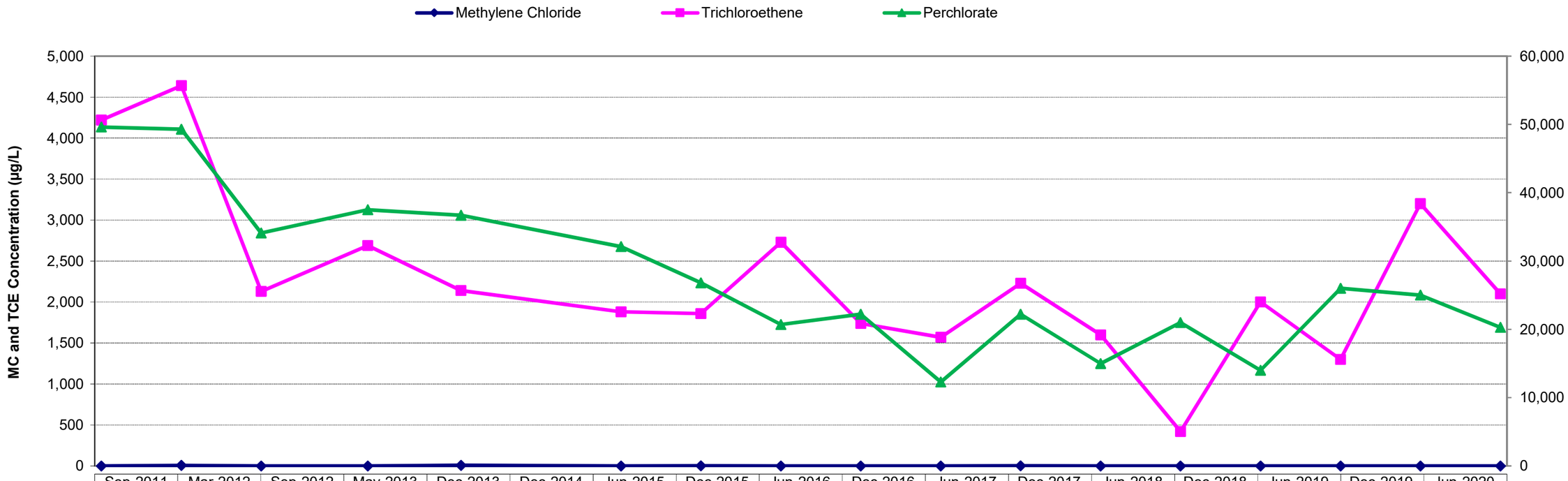
Monitoring Well MW-23



	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020
Methylene Chloride	0	0	1.34	0	0.338		0	0.492	0	0	0	0	0	0	0	0	0	0
Trichloroethene	1130	1740	731	547	703		2390	1270	1690	1170	2140	1950	3300	1500	4800	2600	3000	2300
Perchlorate	48300	57500	53650	55600	58000	61400	76600	75300	87600	65200	71500	74500	73000	91000	52000	67000	80000	63100

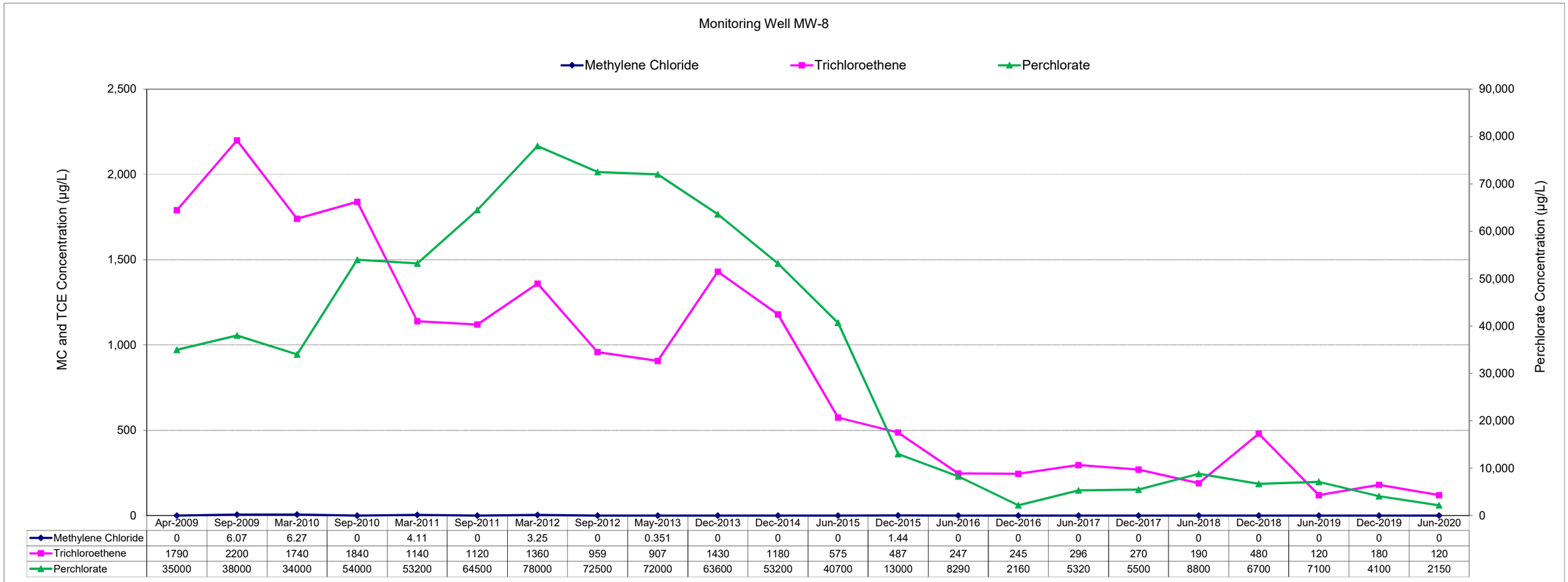
Sample Date

Monitoring Well MW-7



	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020
Methylene Chloride	0	7.75	0	0	7.81	0	0.352	0	0	0	0.314	0	0	0	0	0	0
Trichloroethene	4220	4640	2130	2690	2140	1880	1860	2730	1740	1570	2230	1600	420	2000	1300	3200	2100
Perchlorate	49600	49300	34100	37500	36700	32100	26800	20700	22200	12300	22200	15000	21000	14000	26000	25000	20300

Sample Date



	Apr-2009	Sep-2009	Mar-2010	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020
Methylene Chloride	0	6.07	6.27	0	4.11	0	3.25	0	0.351	0	0	0	1.44	0	0	0	0	0	0	0	0	0
Trichloroethene	1790	2200	1740	1840	1140	1120	1360	959	907	1430	1180	575	487	247	245	296	270	190	480	120	180	120
Perchlorate	35000	38000	34000	54000	53200	64500	78000	72500	72000	63600	53200	40700	13000	8290	2160	5320	5500	8800	6700	7100	4100	2150

APPENDIX F
GWTP WATER SAMPLING LABORATORY ANALYTICAL RESULTS
(PROVIDED ELECTRONICALLY AS A SEPARATE FILE)

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APPENDIX G
QUALITY CONTROL SUMMARY REPORT

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QUALITY CONTROL SUMMARY REPORT
2nd QUARTER (APRIL-JUNE) 2020
GROUNDWATER TREATMENT PLANT
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

August 2020

Prepared For:

Longhorn Army Ammunition Plant
Karnack, Texas

Under Contract To:

U.S. Army Corps of Engineers
Tulsa District
Tulsa, Oklahoma

Contract Number: W9128F-13-D-0012
Task Order Number: W912BV17F0150

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1 INTRODUCTION

Bhate reviewed 41 data packages from ALS Environmental, Houston, Texas. Groundwater samples were collected from April 7, 2020, through June 30, 2020, at the Groundwater Treatment Plant (GWTP) and June 1, 2020, to June 30, 2020, at Site LHAAP 18/24 at Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas. Data were reviewed for conformance to the requirements of the following guidance documents: [U.S. Environmental Protection Agency] *USEPA Contract Laboratory Program* [CLP] *National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA, January 2017); *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (USEPA, January 2017); and the *Final Basewide Uniform Federal Policy* [UFP] – *Quality Assurance Project Plan* [QAPP] *Longhorn Army Ammunition Plant* which is in Appendix C of the *Final Installation-Wide Work Plan for Longhorn Army Ammunition Plant Karnack, Texas* (Bhate, May 2018).

1.1 Intended Use of Data

The objective of sampling at the GWTP is to monitor effluent streams to confirm compliance with discharge limits.

Analyses performed include:

- E6850 – Perchlorate
- E350.3 – Nitrogen, Ammonia
- E365.3 – Orthophosphate
- SM5310C – Total Organic Carbon
- SW8260C - Volatile Organic Compounds (VOCs)
- SW8270D Selected Ion Monitoring (SIM) - 1,4-Dioxane
- SW6020A/7470A – Metals
- SW9056A – Chloride (Cl) and Sulfate (SO_4)
- SW7196A – Hexavalent Chromium
- E410.4 – Chemical Oxygen Demand
- E1664A – Oil and Grease
- TO-15 – Volatiles in Air

Table 1 lists the sample identification (ID) numbers and their associated laboratory package.

Table 2 lists qualified results with the qualification flag and reason code.

The following narrative is a brief synopsis of data that required qualification due to quality control discrepancies.

1.2 Preservation and Holding Times

Sample identification data were evaluated for agreement with the chain-of-custody (COC). All samples were received in appropriate containers, within the proper temperature range, in good condition, and within the required hold time with the following exception:

- The hold time for ortho-phosphate was exceeded in sample LH18/24-SP650_050520. The result was considered estimated and flagged "J".

1.3 Calibrations

All analytes reported must be present in the initial and continuing calibration. The calibrations must meet the acceptance criteria specified in Worksheet 24 (Analytical Instrument Calibration) of the QAPP. All results reported must be within the calibration range. Samples were diluted, if necessary, to bring analyte responses within the calibration range.

1.3.1 Continuing Calibration Verifications

The calibrations must meet the following criteria otherwise the compound is qualified as J or UJ: The continuing calibration verification (CCV) criteria are 20 percent difference (%D) for VOCs and Semi-Volatile Organic Compounds (SVOCs) and 50% for closing CCVs. Metals and general chemistry - 10%D; perchlorate - 15%D; and volatiles in air - 30%D.

The following LHAAP-18/24 samples were outside calibration limits:

- 18CPTMW12SW_060220, 18CPTMW12DW_060220, MW7_060220, MW9_060220, 18CPTMW23_060220, 18CPTMW23SW_060220, 18WW24_060220, 18WW19_060320, 18WW20_060320, 18CPTMW19_060320, 18CPTMW19_060320-a, 18CPTMW19SW_060320, 18WW08_060320, C06_060320, C09_060320, 102_060320, 120_060320 and 129_060320 for 1,2,3-trichlorobenzene and naphthalene.
- MW14_060320, 18CPTMW14_060420, 18CPTMW24_060420, 18WW10_060420, 18WW25_060420, MW13_060420 and C02_060420 for 1,2,3-trichlorobenzene; 1,2-dibromo-3-chloropropane; and naphthalene.
- MW5_060920, 18CPTMW08SW_060920, MW23_060920, C01_060920, MW16_060920, 18CPTMW18_060920 and C03_060920 for 1,2,3-trichlorobenzene; 1,2,4-trichlorobenzene; and hexachlorobutadiene.

The associated sample compounds were qualified as estimated non-detected, "UJ".

1.4 Blanks

If the analyte result for an associated sample was less than 5X (10X for common laboratory contaminants) the analyte concentration in the blank, that result was qualified "UB" and considered an artifact of blank contamination. Where the sample result for the affected analyte was non-detect or greater than 5X the amount in the blank, no qualifier was applied.

1.4.1 SW6020A

Samples ICT4_063020, ICT4_063020-a, ICT11_063020, ICT12D_063020, ICT13A_063020, ICT13B_063020, ICT14B_063020 and ICT14D_063020 reported concentrations of aluminum <5x the method blank concentration and were flagged "UB".

1.5 Surrogates

Surrogates were evaluated using limits defined by each method in the project-specific QAPP Worksheet 28.

Surrogate 1,2-dichloroethane-d4 was reported above control limits in samples ICT12C_063020 and ICT12D_063020. Surrogate toluene-d8 was reported above control limits in samples ICT14D_063020 and ICT12E_063020. The associated detected compounds were qualified as estimated and flagged "J".

1.6 Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD)

LCS/LCSD recoveries were evaluated using limits defined in the project-specific QAPP Worksheet 15.

No data were qualified due to LCS discrepancies.

1.7 Matrix Spike (MS)/Matrix Spike Duplicate Sample (MSD)

MS/MSD recoveries were evaluated using limits defined in Worksheet 15 of the project-specific QAPP. When sample results were greater than 4x the spike amount, control limits were not applicable and require no qualification. Furthermore, if a MS/MSD analyses was performed on a batched (unrelated) sample no qualification was made to the sample data. Otherwise, only the sample used for spiking requires qualification.

1.7.1 Volatiles - SW8260C

The GWTP quarterly influent sample LH18/24-SP140_051920 reported 1,2,3-trichlorobenzene, bromochloromethane and tetrachlorethene below MS and/or MSD control limits. LHAAP-18/24 spike sample 18CPTMW24_060420 reported bromomethane below MSD recovery limits. Sample C01_060920 reported the MS and/or MSD recoveries of chloromethane and dichlorodifluoromethane below control limits. Sample MW18_061020 reported the MS recovery of 1,2,3-trichlorobenzene; 1,2,4-trichlorobenzene; hexachlorobutadiene; and naphthalene below control limits and cis-1,2-dichloroethene above MS recovery control limits. Sample MW6_061120 reported the MS recovery below control limits for 1,2,3-trichlorobenzene; 1,2,4-trichlorobenzene; and naphthalene. Sample ICT14B_063020 reported the MS/MSD recoveries below control limits for acetone, cis-1,2-dichloroethene and trichloroethene. The MSD recovery of cis-1,2-dichloroethene in sample ICT12D_063020 was below control limits. The MS and/or MSD recoveries of methylene chloride and hexachlorobutadiene were below control limits in sample ICT14D_063020. These compounds were qualified estimated detect/non-detect "J/UJ".

1.7.2 Hexavalent Chromium (7196A)

The GWTP monthly influent sample LH18/24-SP140_040720 reported hexavalent chromium below MS/MSD recovery control limits and qualified estimated non-detected "UJ".

1.7.3 Metals - SW6020

The LHAAP-18/24 spike samples 18WW19_060320 reported aluminum above MS recovery limits. Sample 17WW08_061520 reported the MS recovery of aluminum below control limits. Sample ICT14D_063020 reported the MS and/or MSD recoveries of antimony, cadmium, chromium, cobalt, copper, iron, lead, nickel, potassium and silver below control limits. These metals were qualified estimated "J/UJ".

Additionally, the serial dilution for zinc in sample ICT14D_063020 exceeded control limits. Zinc was qualified estimated "J".

1.8 Internal Standards

If the percent recovery (%R) for an internal standard in a sample is not within the limit, the associated sample is qualified for those analytes associated with the internal standard(s) outside of the limit.

Internal standards were within acceptance criteria for the associated compounds.

1.9 Precision

Precision is the measure of variability of individual sample measurements. Evaluation of laboratory and/or field duplicates for precision was done using the relative percent difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. Field duplicate RPD limits were set at <30% for groundwater and air matrices. Laboratory duplicate RPD limits were set at <25% for air matrices.

1.9.1 Laboratory Duplicate

The laboratory duplicate result for Total Organic Carbon (TOC) in the weekly GWTP sample LH18/24-SP650_060220 was above control limits and flagged as estimated, "J".

1.9.2 Field Duplicate

Air sample LH18/24-AIR_052720_Stripper and its duplicate exceeded control limits for dichlorodifluoromethane, ethanol, acetone, trichlorofluoromethane, 2-butanone, n-hexane, tetrahydrofuran and toluene.

The LHAAP-18/24 sample MW2_061020 and its duplicate reported bromochloromethane outside control limits. Sample 126_061120 and its duplicate were outside the RPD limit for aluminum, manganese, nickel, zinc and perchlorate. Sample 18WW03_061120 and its duplicate were outside RPD limits for vanadium and perchlorate. Sample ICT8_063020 and its duplicate were outside RPD limits for methylene chloride. These compounds were qualified as estimated, "J", in both parent sample and associated duplicate.

2 DATA USABILITY SUMMARY

The data are usable for the intended purposes of the project (Table 3). The data quality objectives have been met for the project.

Table 1: Field Sample Identification and Laboratory Packages

Client Sample ID	Lab Package	SW6850	E350.3	E365.3	SM5310C	SW8270D SIM	SW8260C	SW6020A /7470A	SW9056A	SW7196A	E410.4	1664A	TO-15
GWTP Samples													
LH18/24-SP650_040720/BIX	HS20040289	X	X	X	X								
LH18/24-SP650_040720/BIX	HS20040284	X				X	X	X		X			
LH18/24-SP140_040720	HS20040287	X						X		X			
LH18/24-SP650_041620/BIX	HS20040700	X	X	X	X								
LH18/24-SP650_041620	HS20040699						X		X				
LH18/24-SP650_042120/BIX	HS20040851	X	X	X	X								
LH18/24-SP650_042820/BIX	HS20041130	X	X	X	X								
LH18/24-SP650_042820	HS20041127						X		X				
LH18/24-SP650_050520/BIX	HS20050178	X	X	X	X								
LH18/24-SP140_050520	HS20050177	X						X		X			
LH18/24-SP650_050520/BIX	HS20050176	X				X	X	X		X			
LH18/24-SP650_051220/BIX	HS20050454	X	X	X	X								
LH 18/24-SP650_051220	HS20050456						X		X				
LH18/24-SP650_051920/BIX	HS20050757	X				X	X	X	X		X	X	
LH18/24-SP140_051920	HS20050754	X				X	X	X	X		X	X	
LH18/24-SP650_051920/BIX	HS20050737	X	X	X	X								
LH18/24-SP650_052820	HS20051138						X		X				
LH18/24-SP650_052820/BIX	HS20051122	X	X	X	X								
LH18/24-SP650_060220/BIX	HS20060115	X	X	X	X								
LH18/24-SP650_060220/BIX	HS20060114	X				X	X	X		X			
LH18/24-SP140_060220	HS20060116	X						X		X			
LH18/24-SP650_060920/BIX	HS20060451	X	X	X	X								
LH18/24-SP650_060920	HS20060453						X		X				
LH18/24-SP650_061620/BIX	HS20060840	X	X	X	X								
LH18/24-SP650_062320/BIX	HS20061177	X	X	X	X								
LH18/24-SP650_062320	HS20061179						X		X				
LH18/24-SP650_063020/BIX	HS20070018	X	X	X	X								
Air Samples													
LH18/24-Air_052720_Stripper	P2003019												X
LH18/24-Air_052720_Stripper_a	P2003019												X
LH18/24-Air_052720_GWTP	P2003019												X
LH18/24-Air_052720_Downwind_South	P2003019												X
Site 18/24													
AWD1_060920	HS20060495					X							
AWD3_0621120	HS20060659	X					X	X					
AWD3_0621120-a	HS20060659	X					X	X					
AWD4_061520	HS20060849	X				X	X	X					
18CPTMW01DW_061020	HS20060545	X				X	X	X					
18CPTMW01SW_061020	HS20060545	X				X	X	X					
18CPTMW03SW_060920	HS20060495	X				X	X	X					
18CPTMW04_061020	HS20060547	X				X	X						
18CPTMW04_061020-a	HS20060547	X				X	X						
18CPTMW04SW_061020	HS20060547	X				X	X	X					
18CPTMW06_061020	HS20060545	X				X	X	X					
18CPTMW07_060920	HS20060495	X				X	X						
18CPTMW08SW_060920	HS20060498	X				X	X						
18CPTMW08DW_060920	HS20060498	X				X							
18CPTMW10SW_061520	HS20060849	X				X	X						
18CPTMW10DW_061520	HS20060849	X					X	X					
18CPTMW10DW_061520-a	HS20060849	X					X	X					
18CPTMW12SW_060220	HS20060135	X				X	X	X					
18CPTMW12DW_060220	HS20060135	X				X	X	X					

Client Sample ID	Lab Package	SW6850	E350.3	E365.3	SM5310C	SW8270D SIM	SW8260C	SW6020A /7470A	SW9056A	SW7196A	E410.4	1664A	TO-15
18CPTMW14_060420	HS20060251	X				X	X	X					
18CPTMW15_061620	HS20060898	X				X	X						
18CPTMW16_061720	HS20060898	X				X							
18CPTMW18_060920	HS20060498	X				X	X	X					
18CPTMW19_060320	HS20060202	X				X	X						
18CPTMW19_060320-a	HS20060202	X				X	X						
18CPTMW19SW_060320	HS20060202	X				X	X	X					
18CPTMW22R_060120	HS20060133	X				X	X	X					
18CPTMW22SW_060120	HS20060133	X				X	X	X					
18CPTMW22DW_060120	HS20060133	X				X	X	X					
18CPTMW23_060220	HS20060135	X				X	X						
18CPTMW23SW_060220	HS20060135	X				X	X						
18CPTMW24_060420	HS20060251	X				X	X						
18CPTMW26SW_060120	HS20060133	X				X	X						
17WW08_061520	HS20060849	X					X	X					
18WW02_061520	HS20060849	X				X	X	X					
18WW03_061120	HS20060659	X				X	X	X					
18WW03_061120_a	HS20060659	X				X	X	X					
18WW06_061520	HS20060849	X				X	X						
18WW08_060320	HS20060202	X				X	X						
18WW09_060320	HS20060202	X				X		X					
18WW10_060420	HS20060251	X				X	X						
18WW14_060220	HS20060135	X						X					
18WW16_061520	HS20060849	X					X	X					
18WW17_061520	HS20060849	X					X	X					
18WW18_061520	HS20060849	X				X	X	X					
18WW19_060320	HS20060202	X					X	X					
18WW20_060320	HS20060202	X				X	X	X					
18WW22_060120	HS20060133	X				X	X	X					
18WW24_060220	HS20060135	X					X	X					
18WW25_060420	HS20060251	X				X	X	X					
C01_060920	HS20060498	X					X						
C02_060420	HS20060251	X					X						
C03_060920	HS20060498	X				X	X	X					
C04_060120	HS20060133	X					X						
C04_060120-a	HS20060133	X					X						
C06_060320	HS20060202	X					X	X					
C08_061120	HS20060659	X				X	X						
C09_060320	HS20060202	X					X	X					
MW1_061120	HS20060659	X					X	X					
MW2_061020	HS20060545	X				X	X						
MW2_061020_a	HS20060545	X				X	X						
MW3_061020	HS20060547	X					X	X					
MW5_060920	HS20060498	X				X	X						
MW6_061120	HS20060659	X					X	X					
MW7_060220	HS20060135	X				X	X						
MW8_060120	HS20060133	X				X	X						
MW9_060220	HS20060135	X				X	X	X					
MW10_061020	HS20060547	X				X	X						
MW12_061120	HS20060659	X					X						
MW13_060420	HS20060251	X					X	X					
MW14_060320	HS20060208	X				X	X	X					
MW16_060920	HS20060498	X				X	X						
MW17_061020	HS20060547	X				X							

Client Sample ID	Lab Package	SW6850	E350.3	E365.3	SM5310C	SW8270D SIM	SW8260C	SW6020A /7470A	SW9056A	SW7196A	E410.4	1664A	TO-15
MW18_061020	HS20060547	X					X						
MW19_061620	HS20060898	X					X	X					
MW20_060120	HS20060133	X					X	X					
MW21-060920	HS20060495	X				X	X	X					
MW22_061020	HS20060545	X					X	X					
MW23_060920	HS20060498	X					X						
102_060320	HS20060208	X					X	X					
109_061020	HS20060547	X				X	X						
120_060320	HS20060208	X				X	X						
125_061520	HS20060849	X				X	X	X					
126_061120	HS20060659	X				X	X	X					
126_061120-a	HS20060659	X				X	X	X					
129_060320	HS20060208	X				X	X	X					
130_061020	HS20060547	X					X	X					
ICT2_063020	HS20070043	X					X	X					
ICT4_063020	HS20070043	X					X	X					
ICT4_063020-a	HS20070043	X					X	X					
ICT7_063020	HS20070043	X					X	X					
ICT8_063020	HS20070043	X					X	X					
ICT8_063020-a	HS20070043	X					X	X					
ICT11_063020	HS20070043	X					X	X					
ICT12B_063020	HS20070043	X					X	X					
ICT12C_063020	HS20070043	X					X	X					
ICT12D_063020	HS20070043	X					X	X					
ICT12E_063020	HS20070043	X					X	X					
ICT13A_063020	HS20070043	X					X	X					
ICT13B_063020	HS20070043	X					X	X					
ICT13D_063020	HS20070043	X					X	X					
ICT13E_063020	HS20070043	X					X	X					
ICT13F_063020	HS20070043	X					X	X					
ICT14B_063020	HS20070043	X					X	X					
ICT14C_063020	HS20070043	X					X	X					
ICT14D_063020	HS20070043	X					X	X					

Notes:
GWTP – Groundwater Treatment Plant
MW – Monitoring Well
SM – Standard Method
SW-846 - Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.
E – U.S. Environmental Protection Agency Method
HS – Houston
ICT – Interceptor Collection Trench

Table 2: Qualified Analytical Data

Client Sample ID Laboratory	Laboratory Package	Analyte Name	Data Validation Qualifier (volatiles in µg/L; metals/TOC in mg/L)	Reason for Qualification
GWTP				
LH18/24-SP140_040720	HS20040287	Hexavalent Chromium	< 0.0100 UJ	MS/MSD <
LH18/24-SP650_050520	HS20050178	Ortho-phosphate	0.804 J	Hold time
LH18/24-SP140_051920	HS20050754	1,2,3-Trichlorobenzene Bromochloromethane Tetrachloroethene	< 1.0 UJ 17 J 77 J	MS < MS/MSD < MSD <
LH18/24-SP650_060220	HS20060115	Total Organic Carbon	2.17 J	Lab RPD
LH18/24-AIR_052720_Stripper	P2003019	Dichlorodifluoromethane Ethanol Acetone Trichlorofluoromethane 2-Butanone n-Hexane Tetrahydrofuran Toluene	2.3 J 8.9 J 10 J 1.30 J 1.8 J 1.1 J 0.85 J 1.0 J	FD RPD
LH18/24-AIR_052720_Stripper_a	P2003019	Dichlorodifluoromethane Ethanol Acetone Trichlorofluoromethane 2-Butanone n-Hexane Tetrahydrofuran Toluene	6.0 J 34 J 21 J 8.3 J 5.3 J 21 J 26 J 4.5 J	FD RPD
LHAAP-18/24				
18CPTMW12SW_060220	HS20060135	1,2,3-Trichlorobenzene Naphthalene	< 1.0 UJ < 1.0 UJ	CCV
18CPTMW12DW_060220	HS20060135	1,2,3-Trichlorobenzene Naphthalene	< 1.0 UJ < 1.0 UJ	CCV
MW7_060220	HS20060135	1,2,3-Trichlorobenzene Naphthalene	< 5.0 UJ < 1.0 UJ	CCV
MW9_060220	HS20060135	1,2,3-Trichlorobenzene Naphthalene	< 5.0 UJ < 1.0 UJ	CCV
18CPTMW23_060220	HS20060135	1,2,3-Trichlorobenzene Naphthalene	< 5.0 UJ < 1.0 UJ	CCV
18CPTMW23SW_060220	HS20060135	1,2,3-Trichlorobenzene Naphthalene	< 5.0 UJ < 1.0 UJ	CCV
18WW24_060220	HS20060135	1,2,3-Trichlorobenzene Naphthalene	< 1.0 UJ < 1.0 UJ	CCV
18WW19_060320	HS20060202	1,2,3-Trichlorobenzene Naphthalene Aluminum	< 1.0 UJ < 1.0 UJ 0.187 J	CCV CCV MS >
18WW20_060320	HS20060202	1,2,3-Trichlorobenzene Naphthalene	< 1.0 UJ < 1.0 UJ	CCV
18CPTMW19_060320	HS20060202	1,2,3-Trichlorobenzene Naphthalene	< 1.0 UJ < 1.0 UJ	CCV
18CPTMW19_060320-a	HS20060202	1,2,3-Trichlorobenzene Naphthalene	< 1.0 UJ < 1.0 UJ	CCV
18CPTMW19SW_060320	HS20060202	1,2,3-Trichlorobenzene Naphthalene	< 1.0 UJ < 1.0 UJ	CCV
18WW08_060320	HS20060202	1,2,3-Trichlorobenzene Naphthalene	< 1.0 UJ < 1.0 UJ	CCV
C06_060320	HS20060202	1,2,3-Trichlorobenzene Naphthalene	< 1.0 UJ < 1.0 UJ	CCV
C09_060320	HS20060202	1,2,3-Trichlorobenzene Naphthalene	< 1.0 UJ < 1.0 UJ	CCV

Client Sample ID Laboratory	Laboratory Package	Analyte Name	Data Validation Qualifier (volatiles in µg/L; metals/TOC in mg/L)	Reason for Qualification
MW14_060320	HS20060208	1,2,3-Trichlorobenzene 1,2-Dibromo-3-chloropropane Naphthalene	< 10 UJ < 5.0 UJ < 10 UJ	CCV
102_060320	HS20060208	1,2,3-Trichlorobenzene Naphthalene	< 1.0 UJ < 1.0 UJ	CCV
120_060320	HS20060208	1,2,3-Trichlorobenzene Naphthalene	< 5.0 UJ < 5.0 UJ	CCV
129_060320	HS20060208	1,2,3-Trichlorobenzene Naphthalene	< 1.0 UJ < 1.0 UJ	CCV
18CPTMW14_060420	HS20060251	1,2,3-Trichlorobenzene 1,2-Dibromo-3-chloropropane Naphthalene	< 1.0 UJ < 0.5 UJ < 1.0 UJ	CCV
18CPTMW24_060420	HS20060251	1,2,3-Trichlorobenzene 1,2-Dibromo-3-chloropropane Naphthalene Bromomethane	< 1.0 UJ < 0.5 UJ < 1.0 UJ < 1.0 UJ	CCV CCV CCV MSD <
18WW10_060420	HS20060251	1,2,3-Trichlorobenzene 1,2-Dibromo-3-chloropropane Naphthalene	< 1.0 UJ < 0.5 UJ < 1.0 UJ	CCV
18WW25_060420	HS20060251	1,2,3-Trichlorobenzene 1,2-Dibromo-3-chloropropane Naphthalene	< 1.0 UJ < 0.5 UJ < 1.0 UJ	CCV
MW13_060420	HS20060251	1,2,3-Trichlorobenzene 1,2-Dibromo-3-chloropropane Naphthalene	< 1.0 UJ < 0.5 UJ < 1.0 UJ	CCV
C02_060420	HS20060251	1,2,3-Trichlorobenzene 1,2-Dibromo-3-chloropropane Naphthalene	< 1.0 UJ < 0.5 UJ < 1.0 UJ	CCV
MW5_060920	HS20060498	1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene	< 1.0 UJ < 1.0 UJ < 1.0 UJ	CCV
18CPTMW08SW_060920	HS20060498	1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene	< 1.0 UJ < 1.0 UJ < 1.0 UJ	CCV
MW23_060920	HS20060498	1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene	< 5.0 UJ < 5.0 UJ < 5.0 UJ	CCV
C01_060920	HS20060498	1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Chloromethane Dichlorodifluoromethane	< 1.0 UJ < 1.0 UJ < 1.0 UJ < 0.5 UJ < 1.0 UJ	CCV CCV CCV MS < MS/MSD <
MW16_060920	HS20060498	1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene	< 1.0 UJ < 1.0 UJ < 1.0 UJ	CCV
18CPTMW18_060920	HS20060498	1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene	< 1.0 UJ < 1.0 UJ < 1.0 UJ	CCV
C03_060920	HS20060498	1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene	< 1.0 UJ < 1.0 UJ < 1.0 UJ	CCV
MW2_061020	HS20060545	Bromochloromethane	190 J	FD RPD
MW2_061020_a	HS20060545	Bromochloromethane	100 J	FD RPD
MW18_061020	HS20060547	1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene cis-1,2-Dichloroethene	< 1.0 UJ < 1.0 UJ < 1.0 UJ < 1.0 UJ 0.86 J	MS < MS < MS < MS < MS >

Client Sample ID Laboratory	Laboratory Package	Analyte Name	Data Validation Qualifier (volatiles in µg/L; metals/TOC in mg/L)	Reason for Qualification
MW6_061120	HS20060659	1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene Naphthalene	< 1.0 UJ < 1.0 UJ < 1.0 UJ	MS < MS < MS <<
126_071120	HS20060659	Aluminum Manganese Nickel Zinc Perchlorate	0.0710 J 0.207 J 0.0122 J 0.0235 J 1.08 J	FD RPD
126_071120-a	HS20060659	Aluminum Manganese Nickel Zinc Perchlorate	0.138 J 0.404 J 0.0561 J 0.547 J 0.462 J	FD RPD
18WW03_061120	HS20060659	Vanadium Perchlorate	0.000664 J 0.11 J	FD RPD
18WW03_061120_a	HS20060659	Vanadium Perchlorate	0.00119 J 38.2 J	FD RPD
17WW08_061520	HS20060849	Aluminum	0.0420 J	MS <<
ICT4_063020	HS20070043	Aluminum	0.00743 UB	MB
ICT4_063020_a	HS20070043	Aluminum	0.00754 UB	MB
ICT8_063020	HS20070043	Methylene chloride	26,000 J	FD RPD
ICT8_063020_a	HS20070043	Methylene chloride	41,000 J	FD RPD
ICT11_063020	HS20070043	Aluminum	0.0132 UB	MB
ICT12C_063020	HS20070043	1,1-Dichloroethene 1,2-Dichloroethane Carbon Tetrachloride Chloroform cis-1,2-Dichloroethene Vinyl chloride	6.2 J 56 J 9.3 J 16 J 210 J 4.4 J	Surr >
ICT12D_063020	HS20070043	Aluminum 1,1-Dichloroethene 1,2-Dichloroethane Chloroform Tetrachloroethene trans-12-dichloroethene Vinyl chloride cis-1,2-Dichloroethene	0.0138 UB 28 J 240 J 19 J 15 J 14 J 270 J 11,000 J	MB Surr > Surr > Surr > Surr > Surr > Surr > MSD <<
ICT12E_063020	HS20070043	Methylene chloride	48,000 J	Surr >
ICT13A_063020	HS20070043	Aluminum	0.0173 UB	MB
ICT13B_063020	HS20070043	Aluminum	0.00717 UB	MB
ICT14B_063020	HS20070043	Aluminum Acetone cis-1,2-Dichloroethene Trichloroethene	0.0166 UB < 1.0 UJ 15 J 78 J	MB MS/MSD < MS/MSD < MS/MSD <<
ICT14D_063020	HS20070043	Aluminum Antimony Cadmium Chromium Cobalt Copper Iron Lead Nickel Potassium Silver Zinc Methylene chloride Hexachlorobutadiene 1,1,2-Trichloroethane	0.0146 UB < 0.00100 UJ 0.000276 J 0.00157 J 0.0120 J 0.0116 J 3.63 J < 0.00100 UJ 0.0221 J 1.10 J < 0.000500 UJ 0.0276 J 5,900 J < 20 UJ 11 J	MB MS < MS/MSD < MS < MS/MSD < MS/MSD < MS/MSD < MS/MSD < MS/MSD << MS << MS/MSD << SD MS/MSD << MSD << Surr >

Client Sample ID Laboratory	Laboratory Package	Analyte Name	Data Validation Qualifier (volatiles in µg/L; metals/TOC in mg/L)	Reason for Qualification
		1,1-Dichloroethane	14 J	Surr >
		1,2-Dichloroethane	27 J	Surr >
		Chloroform	20 J	Surr >
		Tetrachloroethene	13 J	Surr >
		trans-1,2-Dichloroethene	29 J	Surr >
		Vinyl chloride	150 J	Surr >

Notes:
mg/L – milligrams per liter
µg/L – micrograms per liter
J – Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
UJ – Estimated not detected; The analyte was not detected but considered estimated due to discrepancies in meeting quality control criteria and reported to the limit of detection.
UB – considered an artifact of blank contamination
FD RPD – Field Duplicate Relative Percent Difference outside control limits
MB – Method Blank contamination
CCV – Continuing calibration verification percent recovery outside control limits
MS/MSD <>– Matrix spike/Matrix spike duplicate below/above control limits
Surr > - surrogate recovery above control limits
SD – serial dilution above control limits

Table 3: Completeness by Method

Method	No. of Rejected Results	% Completeness
E6850	0	100
E350.3	0	100
E365.3	0	100
SM5310C	0	100
SW8270D	0	100
SW8260C	0	100
SW6020A/SW7470A	0	100
SW9056A	0	100
SW7196A	0	100
E410.4	0	100
E1664	0	100
TO-15	0	100

APPENDIX H
AIR MONITORING ANALYTICAL LABORATORY REPORT

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Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

LABORATORY REPORT

June 23, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Suite 129
Lakewood, CO 80228

RE: LHAAP - GWTP / NW01312.0150

Dear Marcia:

Enclosed are the results of the samples submitted to our laboratory on June 2, 2020. For your reference, these analyses have been assigned our service request number P2003019.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 3:31 pm, Jun 23, 2020

Sue Anderson
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client: Bhate Environmental Associates, Inc. Service Request No: P2003019
Project: LHAAP - GWTP / NW01312.0150

CASE NARRATIVE

The samples were received intact under chain of custody on June 2, 2020 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.1 compliance canisters were cleaned to <1/2 the MRL. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1776326
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-007
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-19-10
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272019-10
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Bhate Environmental Associates, Inc. Service Request: P2003019
Project ID: LHAAP - GWTP / NW01312.0150

Date Received: 6/2/2020
Time Received: 15:25

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pfl (psig)	TO-15 - VOC Cans
LH18/24-AIR_052720_Stripper	P2003019-001	Air	5/27/2020	14:00	AS01373	0.17	4.47	X
LH18/24-AIR_052720_Stripper_a	P2003019-002	Air	5/27/2020	14:00	AC01995	0.24	3.82	X
LH18/24-AIR_052720_GWTP	P2003019-003	Air	5/27/2020	14:15	AS00654	-0.04	4.08	X
LH18/24-AIR_052720_Downwind_South	P2003019-004	Air	5/28/2020	07:00	AS01257	-1.35	3.86	X

Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) (10 Day-Standard)

ALS Project No. R1003019

Company Name & Address (Reporting Information)	BHATE ENVIRONMENTAL 445 UNION BLVD Suite 129 LAKEWOOD, CO. 80228
Project Manager	Kim Nemmers
Phone	303-725-7631
Fax	
Email Address for Result Reporting	molive@bhate.com
Project Name	LHAAP - GWTP
Project Number	NW01312.0150
P.O. # / Billing Information	
Sampler (Print & Sign)	Scott Beesinger Scott Beesinger
ALS Contact:	

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method: TO-15		Comments e.g. Actual Preservative or specific instructions
~~LH18/24-Air_Stripper~~											
LH18/24-Air_052720_Stripper	1	5/27/20	1400	AS01373		-29	0	6L	X		
LH18/24-Air_052720_Stripper_a	2	5/27/20	1400	AC01995		-30	0	6L	X		
LH18/24-Air_052720_GWTP	3	5/27/20	1415	AS00654	FCR00512	-30	0	6L	X		
LH18/24-Air_052720_Downwind_South	7	5/28/20	0700	AS01257	FCR00496	-29	0	6L	X		

5 of 124

Report Tier Levels - please select

Tier I - Results (Default if not specified) _____ Tier III (Results + QC & Calibration Summaries) _____
Tier II (Results + QC Summaries) _____ Tier IV (Data Validation Package) 10% Surcharge _____

EDD required Yes / No
Type: _____ Units: _____

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature) Scott Beesinger	Date: 5/28/20	Time: 0715	Received by: (Signature)	Date:	Time:	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date: 6-2-20	Time: 1000	Cooler / Blank Temperature ____°C

00974621

ALS Environmental
Sample Acceptance Check Form

Client: Bhate Environmental Associates, Inc. Work order: P2003019

Project: LHAAP - GWTP / NW01312.0150

Sample(s) received on: 06/02/20 Date opened: 06/02/20 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2003019-001.01	6.0 L Silonite Can					
P2003019-002.01	6.0 L Ambient Can					
P2003019-003.01	6.0 L Silonite Can					
P2003019-004.01	6.0 L Silonite Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_052720_Stripper** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P2003019-001

Test Code: EPA TO-15 Date Collected: 5/27/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/2/20
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS01373

Initial Pressure (psig): 0.17 Final Pressure (psig): 4.47

Canister Dilution Factor: 1.29

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.68	ND	0.40	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.3**	0.68	**0.47**	0.14	
74-87-3	Chloromethane	ND	0.68	ND	0.33	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.68	ND	0.098	
75-01-4	Vinyl Chloride	ND	0.70	ND	0.27	
106-99-0	1,3-Butadiene	ND	0.68	ND	0.31	
74-83-9	Bromomethane	ND	0.70	ND	0.18	
75-00-3	Chloroethane	ND	0.70	ND	0.26	
64-17-5	Ethanol	**8.9**	6.7	**4.7**	3.6	
75-05-8	Acetonitrile	ND	0.68	ND	0.41	
107-02-8	Acrolein	ND	1.3	ND	0.56	
67-64-1	Acetone	**10**	6.8	**4.2**	2.9	
75-69-4	Trichlorofluoromethane (CFC 11)	**1.3**	0.68	**0.23**	0.12	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	2.7	ND	1.1	
107-13-1	Acrylonitrile	ND	0.68	ND	0.32	
75-35-4	1,1-Dichloroethene	ND	0.70	ND	0.18	
75-09-2	Methylene Chloride	ND	0.68	ND	0.20	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.70	ND	0.22	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**0.74**	0.70	**0.096**	0.091	
75-15-0	Carbon Disulfide	ND	1.4	ND	0.46	
156-60-5	trans-1,2-Dichloroethene	ND	0.70	ND	0.18	
75-34-3	1,1-Dichloroethane	ND	0.71	ND	0.18	
1634-04-4	Methyl tert-Butyl Ether	ND	0.70	ND	0.19	
108-05-4	Vinyl Acetate	ND	7.0	ND	2.0	
78-93-3	2-Butanone (MEK)	**1.8**	1.4	**0.60**	0.48	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_052720_Stripper** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P2003019-001

Test Code: EPA TO-15 Date Collected: 5/27/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/2/20
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS01373

Initial Pressure (psig): 0.17 Final Pressure (psig): 4.47

Canister Dilution Factor: 1.29

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.68	ND	0.17	
141-78-6	Ethyl Acetate	ND	1.4	ND	0.39	
110-54-3	n-Hexane	**1.1**	0.70	**0.31**	0.20	
67-66-3	Chloroform	ND	0.70	ND	0.14	
109-99-9	Tetrahydrofuran (THF)	**0.85**	0.71	**0.29**	0.24	
107-06-2	1,2-Dichloroethane	ND	0.70	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.70	ND	0.13	
71-43-2	Benzene	ND	0.68	ND	0.21	
56-23-5	Carbon Tetrachloride	ND	0.68	ND	0.11	
110-82-7	Cyclohexane	ND	1.4	ND	0.41	
78-87-5	1,2-Dichloropropane	ND	0.70	ND	0.15	
75-27-4	Bromodichloromethane	ND	0.70	ND	0.10	
79-01-6	Trichloroethene	ND	0.70	ND	0.13	
123-91-1	1,4-Dioxane	ND	0.70	ND	0.19	
80-62-6	Methyl Methacrylate	ND	1.4	ND	0.35	
142-82-5	n-Heptane	ND	0.70	ND	0.17	
10061-01-5	cis-1,3-Dichloropropene	ND	0.67	ND	0.15	
108-10-1	4-Methyl-2-pentanone	ND	0.68	ND	0.17	
10061-02-6	trans-1,3-Dichloropropene	ND	0.68	ND	0.15	
79-00-5	1,1,2-Trichloroethane	ND	0.70	ND	0.13	
108-88-3	Toluene	**1.0**	0.70	**0.28**	0.18	
591-78-6	2-Hexanone	ND	0.70	ND	0.17	
124-48-1	Dibromochloromethane	ND	0.70	ND	0.082	
106-93-4	1,2-Dibromoethane	ND	0.70	ND	0.091	
123-86-4	n-Butyl Acetate	ND	0.71	ND	0.15	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_052720_Stripper** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P2003019-001

Test Code: EPA TO-15 Date Collected: 5/27/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/2/20
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS01373

Initial Pressure (psig): 0.17 Final Pressure (psig): 4.47

Canister Dilution Factor: 1.29

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.70	ND	0.15	
127-18-4	Tetrachloroethene	ND	0.67	ND	0.099	
108-90-7	Chlorobenzene	ND	0.70	ND	0.15	
100-41-4	Ethylbenzene	ND	0.70	ND	0.16	
179601-23-1	m,p-Xylenes	ND	1.4	ND	0.33	
75-25-2	Bromoform	ND	0.70	ND	0.067	
100-42-5	Styrene	ND	0.68	ND	0.16	
95-47-6	o-Xylene	ND	0.70	ND	0.16	
111-84-2	n-Nonane	ND	0.70	ND	0.13	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.70	ND	0.10	
98-82-8	Cumene	ND	0.70	ND	0.14	
80-56-8	alpha-Pinene	ND	0.70	ND	0.13	
103-65-1	n-Propylbenzene	ND	0.70	ND	0.14	
622-96-8	4-Ethyltoluene	ND	0.70	ND	0.14	
108-67-8	1,3,5-Trimethylbenzene	ND	0.68	ND	0.14	
95-63-6	1,2,4-Trimethylbenzene	ND	0.70	ND	0.14	
100-44-7	Benzyl Chloride	ND	1.4	ND	0.27	
541-73-1	1,3-Dichlorobenzene	ND	0.70	ND	0.12	
106-46-7	1,4-Dichlorobenzene	ND	0.70	ND	0.12	
95-50-1	1,2-Dichlorobenzene	ND	0.70	ND	0.12	
5989-27-5	d-Limonene	ND	0.70	ND	0.13	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.68	ND	0.071	
120-82-1	1,2,4-Trichlorobenzene	ND	0.70	ND	0.094	
91-20-3	Naphthalene	ND	0.67	ND	0.13	
87-68-3	Hexachlorobutadiene	ND	0.68	ND	0.064	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_052720_Stripper_a** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P2003019-002

Test Code: EPA TO-15 Date Collected: 5/27/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/2/20
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01995

Initial Pressure (psig): 0.24 Final Pressure (psig): 3.82

Canister Dilution Factor: 1.24

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**1.6**	0.66	**0.92**	0.38	
75-71-8	Dichlorodifluoromethane (CFC 12)	**6.0**	0.66	**1.2**	0.13	
74-87-3	Chloromethane	ND	0.66	ND	0.32	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.66	ND	0.094	
75-01-4	Vinyl Chloride	ND	0.67	ND	0.26	
106-99-0	1,3-Butadiene	ND	0.66	ND	0.30	
74-83-9	Bromomethane	ND	0.67	ND	0.17	
75-00-3	Chloroethane	ND	0.67	ND	0.25	
64-17-5	Ethanol	**34**	6.4	**18**	3.4	
75-05-8	Acetonitrile	ND	0.66	ND	0.39	
107-02-8	Acrolein	ND	1.2	ND	0.54	
67-64-1	Acetone	**21**	6.6	**9.0**	2.8	
75-69-4	Trichlorofluoromethane (CFC 11)	**8.3**	0.66	**1.5**	0.12	
67-63-0	2-Propanol (Isopropyl Alcohol)	**5.2**	2.6	**2.1**	1.1	
107-13-1	Acrylonitrile	ND	0.66	ND	0.30	
75-35-4	1,1-Dichloroethene	ND	0.67	ND	0.17	
75-09-2	Methylene Chloride	ND	0.66	ND	0.19	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.67	ND	0.21	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**0.83**	0.67	**0.11**	0.087	
75-15-0	Carbon Disulfide	ND	1.4	ND	0.44	
156-60-5	trans-1,2-Dichloroethene	ND	0.67	ND	0.17	
75-34-3	1,1-Dichloroethane	ND	0.68	ND	0.17	
1634-04-4	Methyl tert-Butyl Ether	ND	0.67	ND	0.19	
108-05-4	Vinyl Acetate	ND	6.7	ND	1.9	
78-93-3	2-Butanone (MEK)	**5.3**	1.4	**1.8**	0.46	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_052720_Stripper_a** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P2003019-002

Test Code: EPA TO-15 Date Collected: 5/27/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/2/20
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01995

Initial Pressure (psig): 0.24 Final Pressure (psig): 3.82

Canister Dilution Factor: 1.24

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.66	ND	0.17	
141-78-6	Ethyl Acetate	ND	1.4	ND	0.38	
110-54-3	n-Hexane	**21**	0.67	**6.0**	0.19	
67-66-3	Chloroform	ND	0.67	ND	0.14	
109-99-9	Tetrahydrofuran (THF)	**26**	0.68	**8.8**	0.23	
107-06-2	1,2-Dichloroethane	ND	0.67	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.67	ND	0.12	
71-43-2	Benzene	**2.4**	0.66	**0.77**	0.21	
56-23-5	Carbon Tetrachloride	ND	0.66	ND	0.10	
110-82-7	Cyclohexane	ND	1.4	ND	0.40	
78-87-5	1,2-Dichloropropane	ND	0.67	ND	0.14	
75-27-4	Bromodichloromethane	ND	0.67	ND	0.10	
79-01-6	Trichloroethene	ND	0.67	ND	0.12	
123-91-1	1,4-Dioxane	ND	0.67	ND	0.19	
80-62-6	Methyl Methacrylate	ND	1.4	ND	0.33	
142-82-5	n-Heptane	**1.1**	0.67	**0.26**	0.16	
10061-01-5	cis-1,3-Dichloropropene	ND	0.64	ND	0.14	
108-10-1	4-Methyl-2-pentanone	ND	0.66	ND	0.16	
10061-02-6	trans-1,3-Dichloropropene	ND	0.66	ND	0.14	
79-00-5	1,1,2-Trichloroethane	ND	0.67	ND	0.12	
108-88-3	Toluene	**4.5**	0.67	**1.2**	0.18	
591-78-6	2-Hexanone	ND	0.67	ND	0.16	
124-48-1	Dibromochloromethane	ND	0.67	ND	0.079	
106-93-4	1,2-Dibromoethane	ND	0.67	ND	0.087	
123-86-4	n-Butyl Acetate	ND	0.68	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_052720_Stripper_a** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P2003019-002

Test Code: EPA TO-15 Date Collected: 5/27/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/2/20
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01995

Initial Pressure (psig): 0.24 Final Pressure (psig): 3.82

Canister Dilution Factor: 1.24

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.67	ND	0.14	
127-18-4	Tetrachloroethene	ND	0.64	ND	0.095	
108-90-7	Chlorobenzene	ND	0.67	ND	0.15	
100-41-4	Ethylbenzene	**0.76**	0.67	**0.17**	0.15	
179601-23-1	m,p-Xylenes	**2.5**	1.4	**0.57**	0.31	
75-25-2	Bromoform	ND	0.67	ND	0.065	
100-42-5	Styrene	ND	0.66	ND	0.15	
95-47-6	o-Xylene	**0.85**	0.67	**0.20**	0.15	
111-84-2	n-Nonane	ND	0.67	ND	0.13	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.67	ND	0.098	
98-82-8	Cumene	ND	0.67	ND	0.14	
80-56-8	alpha-Pinene	**0.68**	0.67	**0.12**	0.12	
103-65-1	n-Propylbenzene	ND	0.67	ND	0.14	
622-96-8	4-Ethyltoluene	ND	0.67	ND	0.14	
108-67-8	1,3,5-Trimethylbenzene	ND	0.66	ND	0.13	
95-63-6	1,2,4-Trimethylbenzene	**0.78**	0.67	**0.16**	0.14	
100-44-7	Benzyl Chloride	ND	1.4	ND	0.26	
541-73-1	1,3-Dichlorobenzene	ND	0.67	ND	0.11	
106-46-7	1,4-Dichlorobenzene	ND	0.67	ND	0.11	
95-50-1	1,2-Dichlorobenzene	ND	0.67	ND	0.11	
5989-27-5	d-Limonene	ND	0.67	ND	0.12	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.66	ND	0.068	
120-82-1	1,2,4-Trichlorobenzene	ND	0.67	ND	0.090	
91-20-3	Naphthalene	ND	0.64	ND	0.12	
87-68-3	Hexachlorobutadiene	ND	0.66	ND	0.062	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_052720_GWTP** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P2003019-003

Test Code: EPA TO-15 Date Collected: 5/27/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/2/20
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00654

Initial Pressure (psig): -0.04 Final Pressure (psig): 4.08

Canister Dilution Factor: 1.28

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.68	ND	0.39	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.3**	0.68	**0.46**	0.14	
74-87-3	Chloromethane	ND	0.68	ND	0.33	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.68	ND	0.097	
75-01-4	Vinyl Chloride	ND	0.69	ND	0.27	
106-99-0	1,3-Butadiene	ND	0.68	ND	0.31	
74-83-9	Bromomethane	ND	0.69	ND	0.18	
75-00-3	Chloroethane	ND	0.69	ND	0.26	
64-17-5	Ethanol	ND	6.7	ND	3.5	
75-05-8	Acetonitrile	ND	0.68	ND	0.40	
107-02-8	Acrolein	ND	1.3	ND	0.56	
67-64-1	Acetone	**8.2**	6.8	**3.4**	2.9	
75-69-4	Trichlorofluoromethane (CFC 11)	**1.2**	0.68	**0.21**	0.12	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	2.7	ND	1.1	
107-13-1	Acrylonitrile	ND	0.68	ND	0.31	
75-35-4	1,1-Dichloroethene	ND	0.69	ND	0.17	
75-09-2	Methylene Chloride	**0.99**	0.68	**0.29**	0.20	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.69	ND	0.22	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**7.6**	0.69	**1.0**	0.090	
75-15-0	Carbon Disulfide	**28**	1.4	**9.1**	0.45	
156-60-5	trans-1,2-Dichloroethene	ND	0.69	ND	0.17	
75-34-3	1,1-Dichloroethane	ND	0.70	ND	0.17	
1634-04-4	Methyl tert-Butyl Ether	ND	0.69	ND	0.19	
108-05-4	Vinyl Acetate	ND	6.9	ND	2.0	
78-93-3	2-Butanone (MEK)	ND	1.4	ND	0.48	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_052720_GWTP** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P2003019-003

Test Code: EPA TO-15 Date Collected: 5/27/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/2/20
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00654

Initial Pressure (psig): -0.04 Final Pressure (psig): 4.08

Canister Dilution Factor: 1.28

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	**2.7**	0.68	**0.69**	0.17	
141-78-6	Ethyl Acetate	ND	1.4	ND	0.39	
110-54-3	n-Hexane	**1.0**	0.69	**0.29**	0.20	
67-66-3	Chloroform	ND	0.69	ND	0.14	
109-99-9	Tetrahydrofuran (THF)	ND	0.70	ND	0.24	
107-06-2	1,2-Dichloroethane	ND	0.69	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.69	ND	0.13	
71-43-2	Benzene	ND	0.68	ND	0.21	
56-23-5	Carbon Tetrachloride	ND	0.68	ND	0.11	
110-82-7	Cyclohexane	ND	1.4	ND	0.41	
78-87-5	1,2-Dichloropropane	ND	0.69	ND	0.15	
75-27-4	Bromodichloromethane	ND	0.69	ND	0.10	
79-01-6	Trichloroethene	**5.4**	0.69	**1.0**	0.13	
123-91-1	1,4-Dioxane	ND	0.69	ND	0.19	
80-62-6	Methyl Methacrylate	ND	1.4	ND	0.34	
142-82-5	n-Heptane	ND	0.69	ND	0.17	
10061-01-5	cis-1,3-Dichloropropene	ND	0.67	ND	0.15	
108-10-1	4-Methyl-2-pentanone	ND	0.68	ND	0.17	
10061-02-6	trans-1,3-Dichloropropene	ND	0.68	ND	0.15	
79-00-5	1,1,2-Trichloroethane	ND	0.69	ND	0.13	
108-88-3	Toluene	**0.75**	0.69	**0.20**	0.18	
591-78-6	2-Hexanone	ND	0.69	ND	0.17	
124-48-1	Dibromochloromethane	ND	0.69	ND	0.081	
106-93-4	1,2-Dibromoethane	ND	0.69	ND	0.090	
123-86-4	n-Butyl Acetate	ND	0.70	ND	0.15	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_052720_GWTP** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P2003019-003

Test Code: EPA TO-15 Date Collected: 5/27/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/2/20
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00654

Initial Pressure (psig): -0.04 Final Pressure (psig): 4.08

Canister Dilution Factor: 1.28

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.69	ND	0.15	
127-18-4	Tetrachloroethene	ND	0.67	ND	0.098	
108-90-7	Chlorobenzene	ND	0.69	ND	0.15	
100-41-4	Ethylbenzene	ND	0.69	ND	0.16	
179601-23-1	m,p-Xylenes	ND	1.4	ND	0.32	
75-25-2	Bromoform	ND	0.69	ND	0.067	
100-42-5	Styrene	ND	0.68	ND	0.16	
95-47-6	o-Xylene	ND	0.69	ND	0.16	
111-84-2	n-Nonane	ND	0.69	ND	0.13	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.69	ND	0.10	
98-82-8	Cumene	ND	0.69	ND	0.14	
80-56-8	alpha-Pinene	**1.4**	0.69	**0.24**	0.12	
103-65-1	n-Propylbenzene	ND	0.69	ND	0.14	
622-96-8	4-Ethyltoluene	ND	0.69	ND	0.14	
108-67-8	1,3,5-Trimethylbenzene	ND	0.68	ND	0.14	
95-63-6	1,2,4-Trimethylbenzene	ND	0.69	ND	0.14	
100-44-7	Benzyl Chloride	ND	1.4	ND	0.27	
541-73-1	1,3-Dichlorobenzene	ND	0.69	ND	0.12	
106-46-7	1,4-Dichlorobenzene	ND	0.69	ND	0.12	
95-50-1	1,2-Dichlorobenzene	ND	0.69	ND	0.12	
5989-27-5	d-Limonene	ND	0.69	ND	0.12	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.68	ND	0.070	
120-82-1	1,2,4-Trichlorobenzene	ND	0.69	ND	0.093	
91-20-3	Naphthalene	ND	0.67	ND	0.13	
87-68-3	Hexachlorobutadiene	ND	0.68	ND	0.064	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_052720_Downwind_South** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P2003019-004

Test Code: EPA TO-15 Date Collected: 5/28/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/2/20
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS01257

Initial Pressure (psig): -1.35 Final Pressure (psig): 3.86

Canister Dilution Factor: 1.39

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.74	ND	0.43	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.4**	0.74	**0.48**	0.15	
74-87-3	Chloromethane	ND	0.74	ND	0.36	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.74	ND	0.11	
75-01-4	Vinyl Chloride	ND	0.75	ND	0.29	
106-99-0	1,3-Butadiene	ND	0.74	ND	0.33	
74-83-9	Bromomethane	ND	0.75	ND	0.19	
75-00-3	Chloroethane	ND	0.75	ND	0.28	
64-17-5	Ethanol	ND	7.2	ND	3.8	
75-05-8	Acetonitrile	ND	0.74	ND	0.44	
107-02-8	Acrolein	ND	1.4	ND	0.61	
67-64-1	Acetone	ND	7.4	ND	3.1	
75-69-4	Trichlorofluoromethane (CFC 11)	**1.3**	0.74	**0.24**	0.13	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	2.9	ND	1.2	
107-13-1	Acrylonitrile	ND	0.74	ND	0.34	
75-35-4	1,1-Dichloroethene	ND	0.75	ND	0.19	
75-09-2	Methylene Chloride	**0.94**	0.74	**0.27**	0.21	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.75	ND	0.24	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**4.5**	0.75	**0.59**	0.098	
75-15-0	Carbon Disulfide	ND	1.5	ND	0.49	
156-60-5	trans-1,2-Dichloroethene	ND	0.75	ND	0.19	
75-34-3	1,1-Dichloroethane	ND	0.76	ND	0.19	
1634-04-4	Methyl tert-Butyl Ether	ND	0.75	ND	0.21	
108-05-4	Vinyl Acetate	ND	7.5	ND	2.1	
78-93-3	2-Butanone (MEK)	ND	1.5	ND	0.52	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_052720_Downwind_South** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P2003019-004

Test Code: EPA TO-15 Date Collected: 5/28/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/2/20
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS01257

Initial Pressure (psig): -1.35 Final Pressure (psig): 3.86

Canister Dilution Factor: 1.39

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	**1.5**	0.74	**0.37**	0.19	
141-78-6	Ethyl Acetate	ND	1.5	ND	0.42	
110-54-3	n-Hexane	**1.3**	0.75	**0.36**	0.21	
67-66-3	Chloroform	ND	0.75	ND	0.15	
109-99-9	Tetrahydrofuran (THF)	**0.83**	0.76	**0.28**	0.26	
107-06-2	1,2-Dichloroethane	ND	0.75	ND	0.19	
71-55-6	1,1,1-Trichloroethane	ND	0.75	ND	0.14	
71-43-2	Benzene	ND	0.74	ND	0.23	
56-23-5	Carbon Tetrachloride	ND	0.74	ND	0.12	
110-82-7	Cyclohexane	ND	1.5	ND	0.44	
78-87-5	1,2-Dichloropropane	ND	0.75	ND	0.16	
75-27-4	Bromodichloromethane	ND	0.75	ND	0.11	
79-01-6	Trichloroethene	**3.2**	0.75	**0.59**	0.14	
123-91-1	1,4-Dioxane	ND	0.75	ND	0.21	
80-62-6	Methyl Methacrylate	ND	1.5	ND	0.37	
142-82-5	n-Heptane	ND	0.75	ND	0.18	
10061-01-5	cis-1,3-Dichloropropene	ND	0.72	ND	0.16	
108-10-1	4-Methyl-2-pentanone	ND	0.74	ND	0.18	
10061-02-6	trans-1,3-Dichloropropene	ND	0.74	ND	0.16	
79-00-5	1,1,2-Trichloroethane	ND	0.75	ND	0.14	
108-88-3	Toluene	ND	0.75	ND	0.20	
591-78-6	2-Hexanone	ND	0.75	ND	0.18	
124-48-1	Dibromochloromethane	ND	0.75	ND	0.088	
106-93-4	1,2-Dibromoethane	ND	0.75	ND	0.098	
123-86-4	n-Butyl Acetate	ND	0.76	ND	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_052720_Downwind_South** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P2003019-004

Test Code: EPA TO-15 Date Collected: 5/28/20
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/2/20
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS01257

Initial Pressure (psig): -1.35 Final Pressure (psig): 3.86

Canister Dilution Factor: 1.39

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.75	ND	0.16	
127-18-4	Tetrachloroethene	ND	0.72	ND	0.11	
108-90-7	Chlorobenzene	ND	0.75	ND	0.16	
100-41-4	Ethylbenzene	ND	0.75	ND	0.17	
179601-23-1	m,p-Xylenes	ND	1.5	ND	0.35	
75-25-2	Bromoform	ND	0.75	ND	0.073	
100-42-5	Styrene	ND	0.74	ND	0.17	
95-47-6	o-Xylene	ND	0.75	ND	0.17	
111-84-2	n-Nonane	ND	0.75	ND	0.14	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.75	ND	0.11	
98-82-8	Cumene	ND	0.75	ND	0.15	
80-56-8	alpha-Pinene	**0.98**	0.75	**0.18**	0.13	
103-65-1	n-Propylbenzene	ND	0.75	ND	0.15	
622-96-8	4-Ethyltoluene	ND	0.75	ND	0.15	
108-67-8	1,3,5-Trimethylbenzene	ND	0.74	ND	0.15	
95-63-6	1,2,4-Trimethylbenzene	ND	0.75	ND	0.15	
100-44-7	Benzyl Chloride	ND	1.5	ND	0.30	
541-73-1	1,3-Dichlorobenzene	ND	0.75	ND	0.12	
106-46-7	1,4-Dichlorobenzene	ND	0.75	ND	0.12	
95-50-1	1,2-Dichlorobenzene	ND	0.75	ND	0.12	
5989-27-5	d-Limonene	ND	0.75	ND	0.13	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.74	ND	0.076	
120-82-1	1,2,4-Trichlorobenzene	ND	0.75	ND	0.10	
91-20-3	Naphthalene	ND	0.72	ND	0.14	
87-68-3	Hexachlorobutadiene	ND	0.74	ND	0.069	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P200611-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.53	ND	0.31	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.53	ND	0.11	
74-87-3	Chloromethane	ND	0.53	ND	0.26	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.53	ND	0.076	
75-01-4	Vinyl Chloride	ND	0.54	ND	0.21	
106-99-0	1,3-Butadiene	ND	0.53	ND	0.24	
74-83-9	Bromomethane	ND	0.54	ND	0.14	
75-00-3	Chloroethane	ND	0.54	ND	0.20	
64-17-5	Ethanol	ND	5.2	ND	2.8	
75-05-8	Acetonitrile	ND	0.53	ND	0.32	
107-02-8	Acrolein	ND	1.0	ND	0.44	
67-64-1	Acetone	ND	5.3	ND	2.2	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	0.53	ND	0.094	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	2.1	ND	0.85	
107-13-1	Acrylonitrile	ND	0.53	ND	0.24	
75-35-4	1,1-Dichloroethene	ND	0.54	ND	0.14	
75-09-2	Methylene Chloride	ND	0.53	ND	0.15	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.54	ND	0.17	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	0.54	ND	0.070	
75-15-0	Carbon Disulfide	ND	1.1	ND	0.35	
156-60-5	trans-1,2-Dichloroethene	ND	0.54	ND	0.14	
75-34-3	1,1-Dichloroethane	ND	0.55	ND	0.14	
1634-04-4	Methyl tert-Butyl Ether	ND	0.54	ND	0.15	
108-05-4	Vinyl Acetate	ND	5.4	ND	1.5	
78-93-3	2-Butanone (MEK)	ND	1.1	ND	0.37	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P200611-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.53	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.1	ND	0.31	
110-54-3	n-Hexane	ND	0.54	ND	0.15	
67-66-3	Chloroform	ND	0.54	ND	0.11	
109-99-9	Tetrahydrofuran (THF)	ND	0.55	ND	0.19	
107-06-2	1,2-Dichloroethane	ND	0.54	ND	0.13	
71-55-6	1,1,1-Trichloroethane	ND	0.54	ND	0.099	
71-43-2	Benzene	ND	0.53	ND	0.17	
56-23-5	Carbon Tetrachloride	ND	0.53	ND	0.084	
110-82-7	Cyclohexane	ND	1.1	ND	0.32	
78-87-5	1,2-Dichloropropane	ND	0.54	ND	0.12	
75-27-4	Bromodichloromethane	ND	0.54	ND	0.081	
79-01-6	Trichloroethene	ND	0.54	ND	0.10	
123-91-1	1,4-Dioxane	ND	0.54	ND	0.15	
80-62-6	Methyl Methacrylate	ND	1.1	ND	0.27	
142-82-5	n-Heptane	ND	0.54	ND	0.13	
10061-01-5	cis-1,3-Dichloropropene	ND	0.52	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.53	ND	0.13	
10061-02-6	trans-1,3-Dichloropropene	ND	0.53	ND	0.12	
79-00-5	1,1,2-Trichloroethane	ND	0.54	ND	0.099	
108-88-3	Toluene	ND	0.54	ND	0.14	
591-78-6	2-Hexanone	ND	0.54	ND	0.13	
124-48-1	Dibromochloromethane	ND	0.54	ND	0.063	
106-93-4	1,2-Dibromoethane	ND	0.54	ND	0.070	
123-86-4	n-Butyl Acetate	ND	0.55	ND	0.12	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P200611-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.54	ND	0.12	
127-18-4	Tetrachloroethene	ND	0.52	ND	0.077	
108-90-7	Chlorobenzene	ND	0.54	ND	0.12	
100-41-4	Ethylbenzene	ND	0.54	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.1	ND	0.25	
75-25-2	Bromoform	ND	0.54	ND	0.052	
100-42-5	Styrene	ND	0.53	ND	0.12	
95-47-6	o-Xylene	ND	0.54	ND	0.12	
111-84-2	n-Nonane	ND	0.54	ND	0.10	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.54	ND	0.079	
98-82-8	Cumene	ND	0.54	ND	0.11	
80-56-8	alpha-Pinene	ND	0.54	ND	0.097	
103-65-1	n-Propylbenzene	ND	0.54	ND	0.11	
622-96-8	4-Ethyltoluene	ND	0.54	ND	0.11	
108-67-8	1,3,5-Trimethylbenzene	ND	0.53	ND	0.11	
95-63-6	1,2,4-Trimethylbenzene	ND	0.54	ND	0.11	
100-44-7	Benzyl Chloride	ND	1.1	ND	0.21	
541-73-1	1,3-Dichlorobenzene	ND	0.54	ND	0.090	
106-46-7	1,4-Dichlorobenzene	ND	0.54	ND	0.090	
95-50-1	1,2-Dichlorobenzene	ND	0.54	ND	0.090	
5989-27-5	d-Limonene	ND	0.54	ND	0.097	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.53	ND	0.055	
120-82-1	1,2,4-Trichlorobenzene	ND	0.54	ND	0.073	
91-20-3	Naphthalene	ND	0.52	ND	0.099	
87-68-3	Hexachlorobutadiene	ND	0.53	ND	0.050	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Bhate Environmental Associates, Inc.**
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Project ID: P2003019

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date(s) Collected: 5/27 - 5/28/20
Analyst: Lusine Hakobyan Date(s) Received: 6/2/20
Sample Type: 6.0 L Silonite Canister(s) Date(s) Analyzed: 6/11/20
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P200611-MB	**95**	**96**	**105**	70-130	
Lab Control Sample	P200611-LCS	**92**	**96**	**110**	70-130	
LH18/24-AIR_052720_Stripper	P2003019-001	**95**	**95**	**107**	70-130	
LH18/24-AIR_052720_Stripper_a	P2003019-002	**94**	**100**	**108**	70-130	
LH18/24-AIR_052720_GWTP	P2003019-003	**94**	**100**	**109**	70-130	
LH18/24-AIR_052720_Downwind_South	P2003019-004	**93**	**99**	**107**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P200611-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
115-07-1	Propene	210	**202**	**96**	51-133	
75-71-8	Dichlorodifluoromethane (CFC 12)	210	**189**	**90**	64-115	
74-87-3	Chloromethane	212	**182**	**86**	49-127	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	206	**171**	**83**	65-114	
75-01-4	Vinyl Chloride	212	**180**	**85**	61-129	
106-99-0	1,3-Butadiene	212	**184**	**87**	54-140	
74-83-9	Bromomethane	212	**183**	**86**	68-120	
75-00-3	Chloroethane	214	**188**	**88**	63-123	
64-17-5	Ethanol	1,060	**897**	**85**	49-134	
75-05-8	Acetonitrile	214	**183**	**86**	50-137	
107-02-8	Acrolein	206	**179**	**87**	62-128	
67-64-1	Acetone	1,070	**937**	**88**	56-125	
75-69-4	Trichlorofluoromethane (CFC 11)	212	**186**	**88**	64-115	
67-63-0	2-Propanol (Isopropyl Alcohol)	422	**379**	**90**	57-133	
107-13-1	Acrylonitrile	212	**185**	**87**	64-136	
75-35-4	1,1-Dichloroethene	214	**192**	**90**	67-115	
75-09-2	Methylene Chloride	210	**181**	**86**	68-114	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	214	**181**	**85**	55-139	
76-13-1	Trichlorotrifluoroethane (CFC 113)	216	**199**	**92**	65-115	
75-15-0	Carbon Disulfide	212	**186**	**88**	68-113	
156-60-5	trans-1,2-Dichloroethene	214	**185**	**86**	65-122	
75-34-3	1,1-Dichloroethane	212	**185**	**87**	63-118	
1634-04-4	Methyl tert-Butyl Ether	214	**190**	**89**	57-131	
108-05-4	Vinyl Acetate	1,070	**994**	**93**	71-128	
78-93-3	2-Butanone (MEK)	212	**186**	**88**	67-123	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P200611-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	**Result µg/m³**	**% Recovery**	ALS Acceptance Limits	**Data Qualifier**
156-59-2	cis-1,2-Dichloroethene	212	**185**	**87**	64-120	
141-78-6	Ethyl Acetate	432	**415**	**96**	64-131	
110-54-3	n-Hexane	216	**197**	**91**	58-125	
67-66-3	Chloroform	214	**190**	**89**	65-114	
109-99-9	Tetrahydrofuran (THF)	220	**188**	**85**	65-115	
107-06-2	1,2-Dichloroethane	214	**182**	**85**	59-119	
71-55-6	1,1,1-Trichloroethane	214	**200**	**93**	66-115	
71-43-2	Benzene	210	**189**	**90**	66-109	
56-23-5	Carbon Tetrachloride	208	**197**	**95**	66-119	
110-82-7	Cyclohexane	422	**393**	**93**	67-117	
78-87-5	1,2-Dichloropropane	214	**199**	**93**	66-119	
75-27-4	Bromodichloromethane	218	**202**	**93**	71-119	
79-01-6	Trichloroethene	216	**199**	**92**	70-114	
123-91-1	1,4-Dioxane	216	**202**	**94**	71-117	
80-62-6	Methyl Methacrylate	430	**409**	**95**	76-121	
142-82-5	n-Heptane	214	**194**	**91**	66-119	
10061-01-5	cis-1,3-Dichloropropene	214	**209**	**98**	72-125	
108-10-1	4-Methyl-2-pentanone	212	**201**	**95**	68-130	
10061-02-6	trans-1,3-Dichloropropene	212	**212**	**100**	71-132	
79-00-5	1,1,2-Trichloroethane	214	**203**	**95**	70-117	
108-88-3	Toluene	212	**197**	**93**	67-113	
591-78-6	2-Hexanone	216	**211**	**98**	62-135	
124-48-1	Dibromochloromethane	214	**214**	**100**	73-126	
106-93-4	1,2-Dibromoethane	214	**210**	**98**	71-122	
123-86-4	n-Butyl Acetate	218	**220**	**101**	65-134	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P2003019
Client Project ID: **LHAAP - GWTP / NW01312.0150** ALS Sample ID: P200611-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 6/11/20
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
111-65-9	n-Octane	216	**199**	**92**	63-120	
127-18-4	Tetrachloroethene	208	**204**	**98**	64-120	
108-90-7	Chlorobenzene	214	**194**	**91**	65-116	
100-41-4	Ethylbenzene	212	**207**	**98**	65-117	
179601-23-1	m,p-Xylenes	426	**415**	**97**	64-121	
75-25-2	Bromoform	214	**215**	**100**	72-130	
100-42-5	Styrene	212	**218**	**103**	72-126	
95-47-6	o-Xylene	214	**205**	**96**	64-120	
111-84-2	n-Nonane	214	**205**	**96**	56-132	
79-34-5	1,1,2,2-Tetrachloroethane	214	**212**	**99**	66-122	
98-82-8	Cumene	214	**210**	**98**	64-121	
80-56-8	alpha-Pinene	212	**205**	**97**	62-136	
103-65-1	n-Propylbenzene	214	**218**	**102**	65-123	
622-96-8	4-Ethyltoluene	210	**210**	**100**	71-126	
108-67-8	1,3,5-Trimethylbenzene	212	**214**	**101**	65-120	
95-63-6	1,2,4-Trimethylbenzene	212	**236**	**111**	63-129	
100-44-7	Benzyl Chloride	214	**216**	**101**	66-138	
541-73-1	1,3-Dichlorobenzene	214	**226**	**106**	65-127	
106-46-7	1,4-Dichlorobenzene	214	**230**	**107**	65-125	
95-50-1	1,2-Dichlorobenzene	214	**233**	**109**	67-128	
5989-27-5	d-Limonene	212	**217**	**102**	65-136	
96-12-8	1,2-Dibromo-3-chloropropane	214	**220**	**103**	73-133	
120-82-1	1,2,4-Trichlorobenzene	216	**249**	**115**	62-140	
91-20-3	Naphthalene	212	**265**	**125**	57-149	
87-68-3	Hexachlorobutadiene	214	**221**	**103**	57-129	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112008.D Vial: 10
Acq On : 11 Jun 2020 6:10 Operator: LH
Sample : P2003019-001 (1000mL) Inst : GCMS-16
Misc : S31-02112001

Quant Time: Jun 11 18:58:12 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020 LH 6/11/20
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.13	130	230284	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	13.26	114	988137	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	17.58	82	472730	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	11.99	65	370338	11.867	ng	-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.96%			
57) Toluene-d8 (SS2)	15.71	98	954976	11.918	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.36%			
73) Bromofluorobenzene (SS3)	18.97	174	385547	13.372	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.96%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	4.26	85	94874	1.819	ng	99
4) Chloromethane	4.53	50	11450	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	4.81	135	2195	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	5.22	54	609	N.D.		
8) Bromomethane	5.65	94	827	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	6.34	45	141998	6.895	ng	100
11) Acetonitrile	6.60	41	11924	N.D.		
12) Acrolein	6.79	56	4345	N.D.		
13) Acetone	6.99	58	160930	7.814	ng	94
14) Trichlorofluoromethane	7.23	101	46538	1.009	ng	100
15) 2-Propanol (Isopropanol)	7.52	45	16352	N.D.		
16) Acrylonitrile	7.76	53	3436	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	8.46	59	1219	N.D.		
19) Methylene Chloride	8.41	84	5359	N.D.		
20) 3-Chloro-1-propene (Al...	8.51	41	641	N.D.		
21) Trichlorotrifluoroethane	8.84	151	12436	0.571	ng	96
22) Carbon Disulfide	8.68	76	2705	N.D.		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D. d		
27) 2-Butanone (MEK)	10.45	72	23902	1.361	ng	95
28) cis-1,2-Dichloroethene	10.96	61	7770	N.D.		
29) Diisopropyl Ether	11.25	87	240	N.D.		
30) Ethyl Acetate	11.29	61	1455	N.D.		
31) n-Hexane	11.25	57	36865	0.839	ng	100
32) Chloroform	11.30	83	2422	N.D.		
34) Tetrahydrofuran (THF)	11.73	72	11346	0.662	ng	92
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	12.11	62	1824	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D. d		
41) Benzene	12.87	78	28431	N.D.		
42) Carbon Tetrachloride	13.03	117	10465	N.D.		
43) Cyclohexane	13.16	84	5494	N.D.		
44) tert-Amyl Methyl Ether	13.60	73	27943	N.D.		
45) 1,2-Dichloropropane	13.71	63	107	N.D.		
46) Bromodichloromethane	13.93	83	223	N.D.		
47) Trichloroethene	13.96	130	7386	N.D.		
48) 1,4-Dioxane	13.97	88	322	N.D.		
49) 2,2,4-Trimethylpentane...	14.03	57	8841	N.D.		
50) Methyl Methacrylate	14.31	100	1267	N.D.		

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Misc : S31-02112001

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Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
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DataAcq Meth:TO15.M

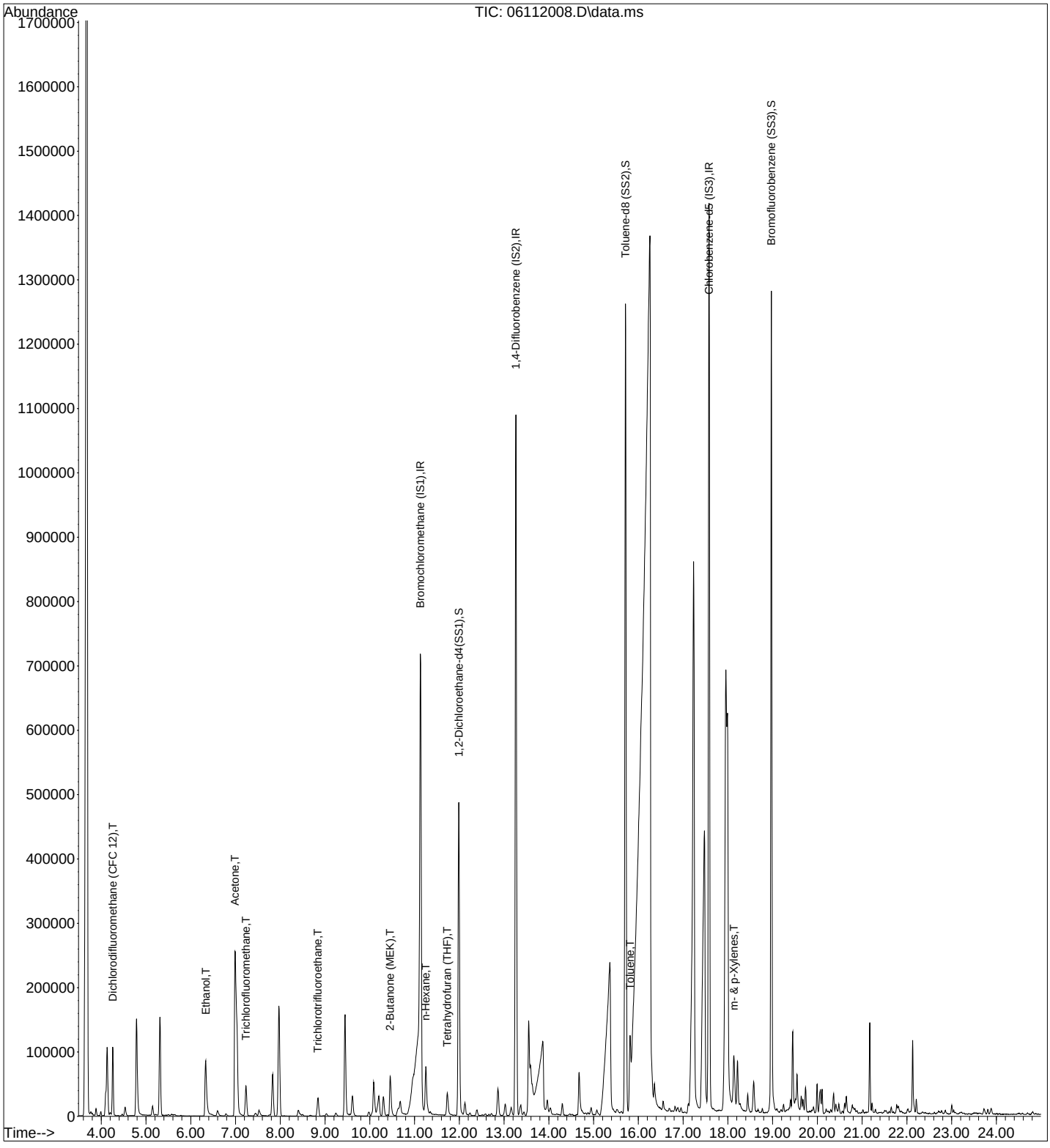
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.30	71	4557	N.D.		
52) cis-1,3-Dichloropropene	14.68	75	107	N.D.		
53) 4-Methyl-2-pentanone	14.88	58	778	N.D.		
54) trans-1,3-Dichloropropene	15.37	75	1475	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	15.82	91	83516	0.809	ng	98
59) 2-Hexanone	0.00	43	0	N.D.	d	
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.70	43	4312	N.D.		
63) n-Octane	16.82	57	2488	N.D.		
64) Tetrachloroethene	16.95	166	1940	N.D.		
65) Chlorobenzene	17.62	112	636	N.D.		
66) Ethylbenzene	17.98	91	17478	N.D.		
67) m- & p-Xylenes	18.14	91	47175	0.516	ng	99
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.47	104	1977	N.D.		
70) o-Xylene	18.57	91	19100	N.D.		
71) n-Nonane	18.77	43	2462	N.D.		
72) 1,1,2,2-Tetrachloroethane	18.59	83	667	N.D.		
74) Cumene	19.10	105	1784	N.D.		
75) alpha-Pinene	19.45	93	18648	N.D.		
76) n-Propylbenzene	19.55	91	6640	N.D.		
77) 3-Ethyltoluene	19.64	105	12104	N.D.		
78) 4-Ethyltoluene	19.68	105	6104	N.D.		
79) 1,3,5-Trimethylbenzene	19.74	105	5692	N.D.		
80) alpha-Methylstyrene	19.88	118	1068	N.D.		
81) 2-Ethyltoluene	19.91	105	4756	N.D.		
82) 1,2,4-Trimethylbenzene	20.10	105	19189	N.D.		
83) n-Decane	20.20	57	2200	N.D.		
84) Benzyl Chloride	20.22	91	1370	N.D.		
85) 1,3-Dichlorobenzene	20.24	146	1201	N.D.		
86) 1,4-Dichlorobenzene	20.30	146	2562	N.D.		
87) sec-Butylbenzene	20.35	105	1116	N.D.		
88) 4-Isopropyltoluene (p-...	20.48	119	3425	N.D.		
89) 1,2,3-Trimethylbenzene	20.48	105	4502	N.D.		
90) 1,2-Dichlorobenzene	20.59	146	940	N.D.		
91) d-Limonene	20.61	68	3379	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	21.30	57	1509	N.D.		
94) 1,2,4-Trichlorobenzene	22.11	180	1881	N.D.		
95) Naphthalene	22.21	128	12287	N.D.		
96) n-Dodecane	22.21	57	2033	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.28	55	4134	N.D.		
99) tert-Butylbenzene	20.10	119	3331	N.D.		
100) n-Butylbenzene	20.85	91	2877	N.D.		

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

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LH 6/11/20

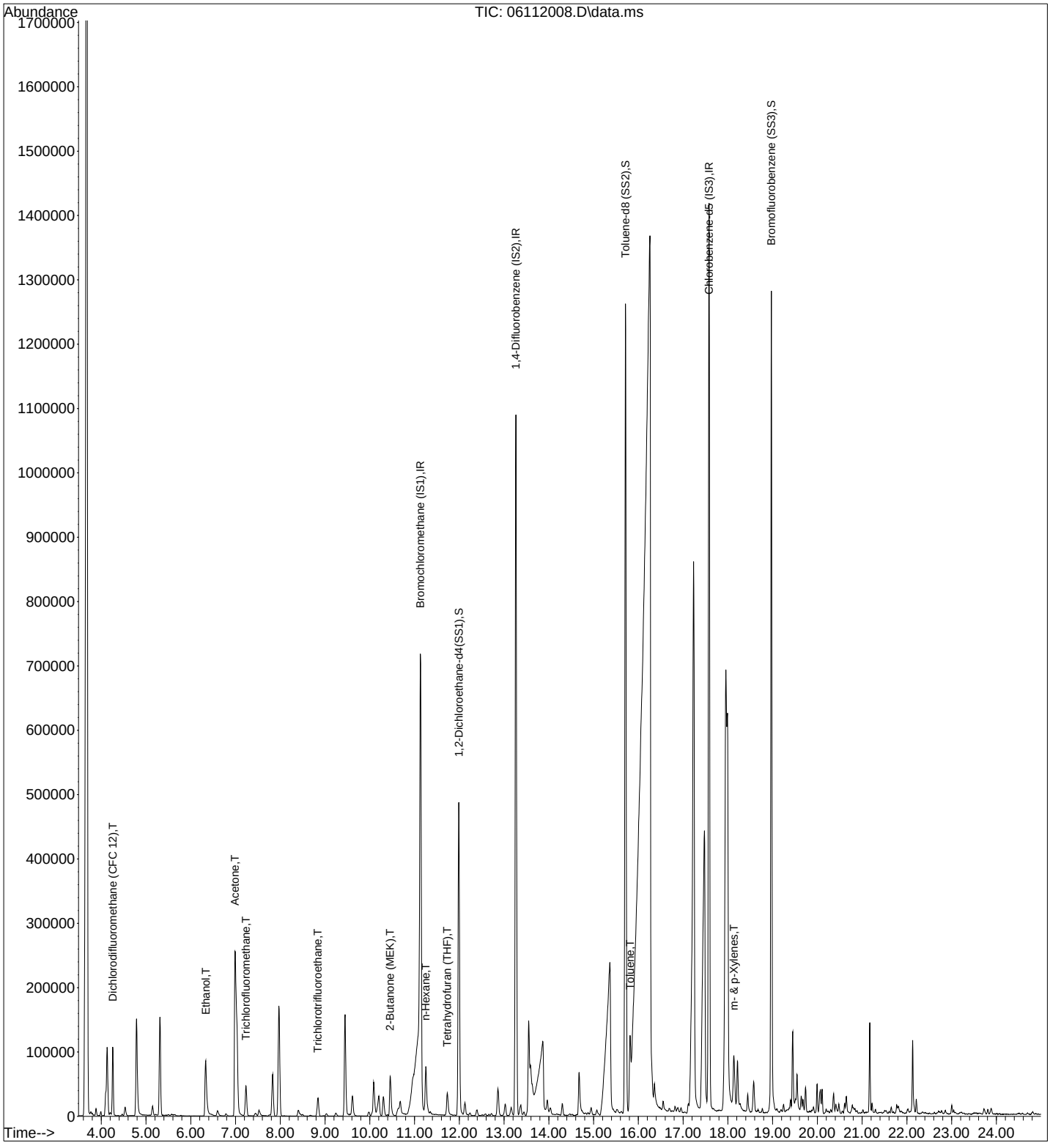
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.13	130	230284	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	13.26	114	988137	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	17.58	82	472730	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	11.99	65	370338	11.867	ng	-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.96%			
57) Toluene-d8 (SS2)	15.71	98	954976	11.918	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.36%			
73) Bromofluorobenzene (SS3)	18.97	174	385547	13.372	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.96%			
Target Compounds						Qvalue
3) Dichlorodifluoromethan...	4.26	85	94874	1.819	ng	99
10) Ethanol	6.34	45	141998	6.895	ng	100
13) Acetone	6.99	58	160930	7.814	ng	94
14) Trichlorofluoromethane	7.23	101	46538	1.009	ng	100
21) Trichlorotrifluoroethane	8.84	151	12436	0.571	ng	96
27) 2-Butanone (MEK)	10.45	72	23902	1.361	ng	95
31) n-Hexane	11.25	57	36865	0.839	ng	100
34) Tetrahydrofuran (THF)	11.73	72	11346	0.662	ng	92
58) Toluene	15.82	91	83516	0.809	ng	98
67) m- & p-Xylenes	18.14	91	47175	0.516	ng	99

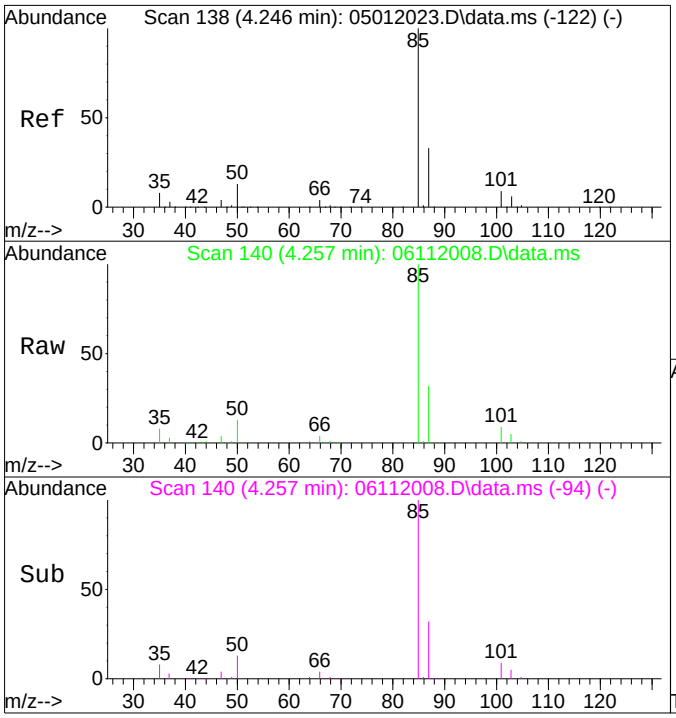
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Quantitation Report (QT Reviewed)

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Sample : P2003019-001 (1000mL) Inst : GCMS-16
Misc : S31-02112001

Quant Time: Jun 11 18:58:12 2020
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Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

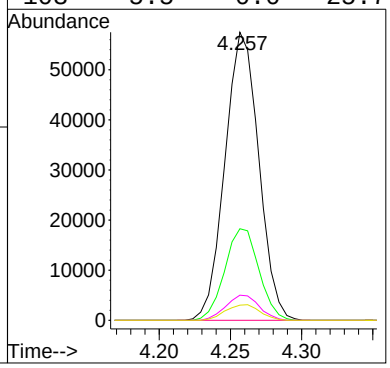


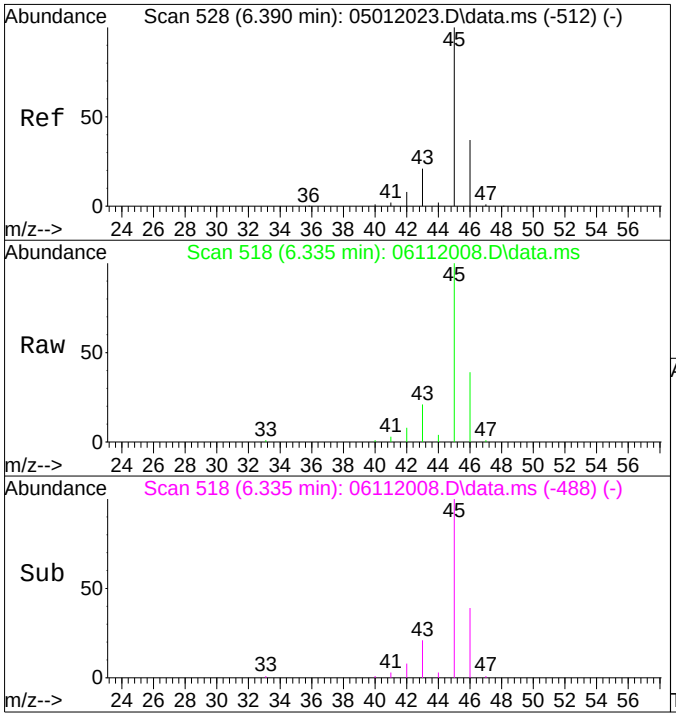


#3
Dichlorodifluoromethane (CFC 12)
Concen: 1.82 ng
RT: 4.26 min Scan# 140
Delta R.T. 0.005 min
Lab File: 06112008.D
Acq: 11 Jun 2020 6:10

Tgt Ion: 85 Resp: 94874

Ion	Ratio	Lower	Upper
85	100		
87	32.1	12.4	52.4
101	8.6	0.0	28.8
103	5.5	0.0	25.7

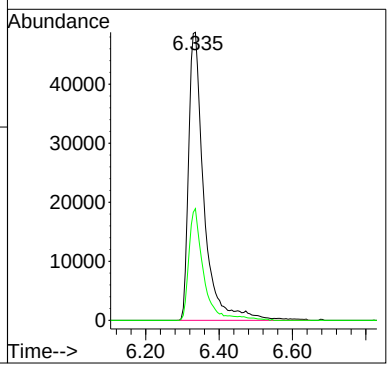


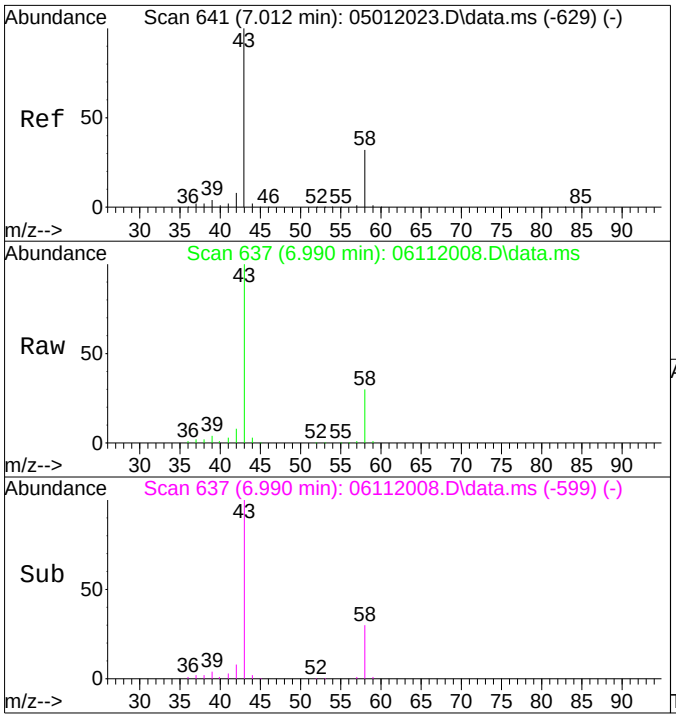


#10
Ethanol
Concen: 6.89 ng
RT: 6.34 min Scan# 518
Delta R.T. -0.083 min
Lab File: 06112008.D
Acq: 11 Jun 2020 6:10

Tgt Ion: 45 Resp: 141998

Ion	Ratio	Lower	Upper
45	100		
46	37.2	17.2	57.2

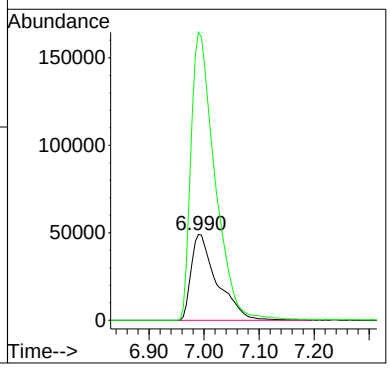


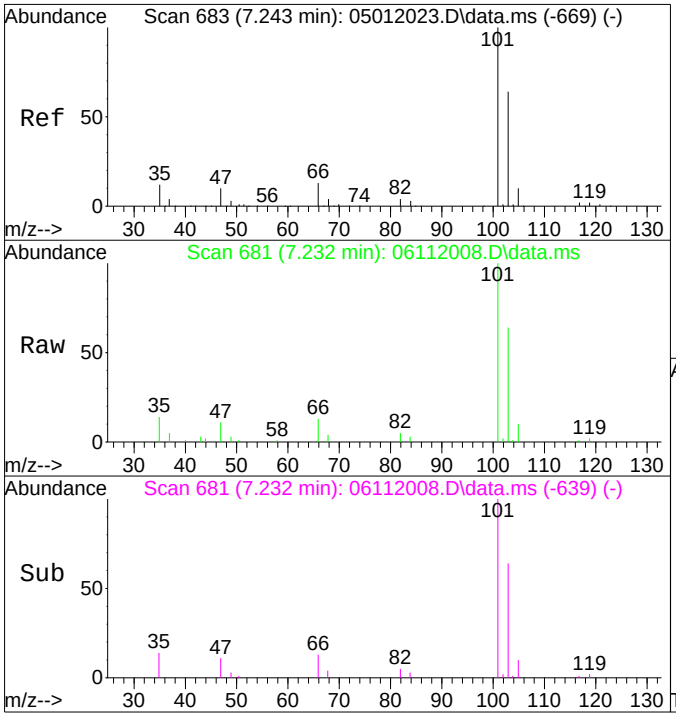


#13
Acetone
Concen: 7.81 ng
RT: 6.99 min Scan# 637
Delta R.T. -0.039 min
Lab File: 06112008.D
Acq: 11 Jun 2020 6:10

Tgt Ion: 58 Resp: 160930

Ion	Ratio	Lower	Upper
58	100		
43	311.2	294.4	354.4

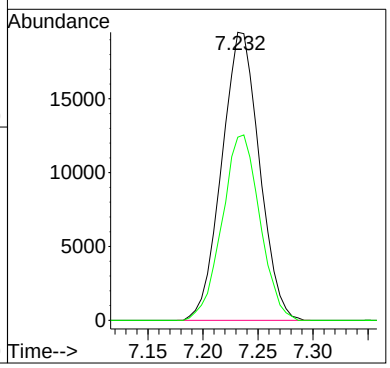


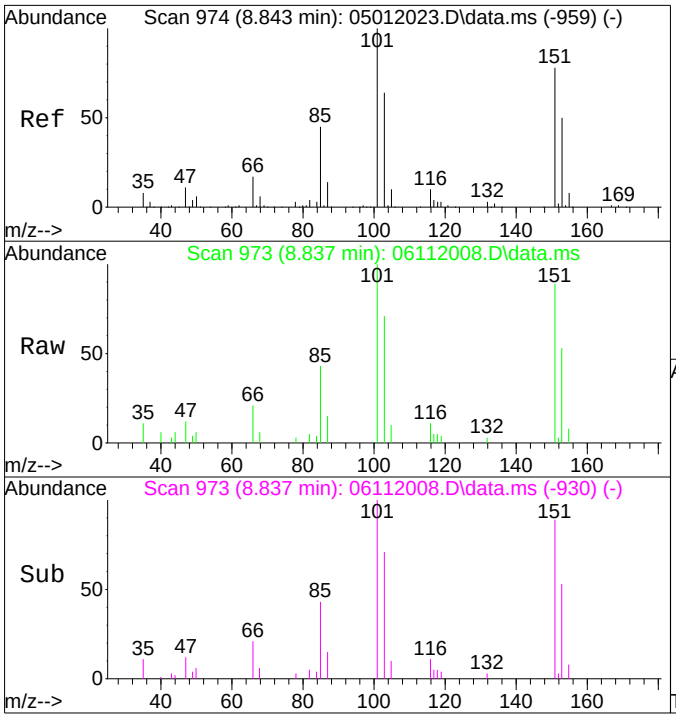


#14
Trichlorofluoromethane
Concen: 1.01 ng
RT: 7.23 min Scan# 681
Delta R.T. -0.017 min
Lab File: 06112008.D
Acq: 11 Jun 2020 6:10

Tgt Ion:101 Resp: 46538

Ion	Ratio	Lower	Upper
101	100		
103	64.4	44.4	84.4

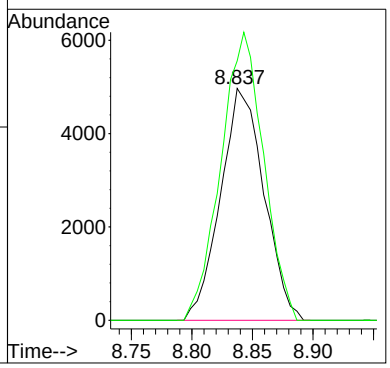


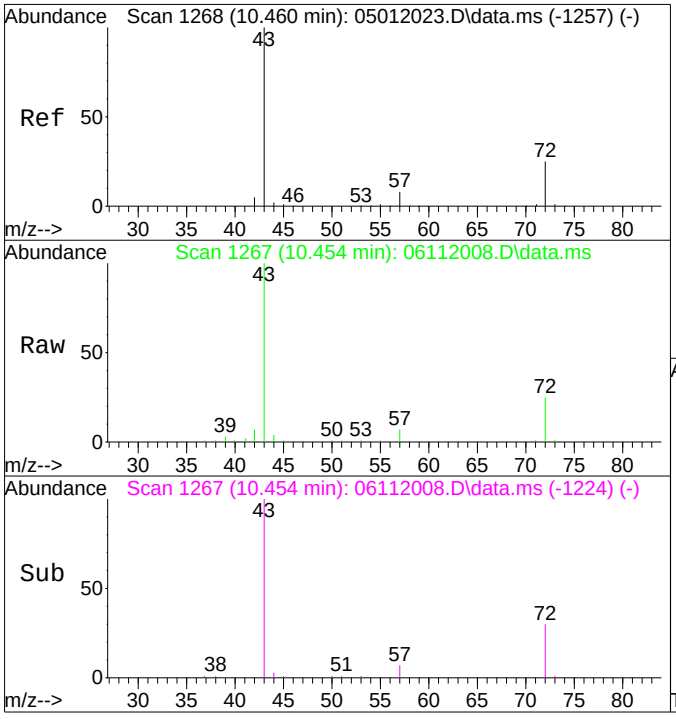


#21
Trichlorotrifluoroethane
Concen: 0.57 ng
RT: 8.84 min Scan# 973
Delta R.T. -0.011 min
Lab File: 06112008.D
Acq: 11 Jun 2020 6:10

Tgt Ion:151 Resp: 12436

Ion	Ratio	Lower	Upper
151	100		
101	122.5	107.3	147.3

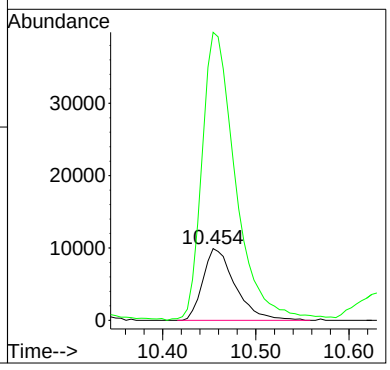


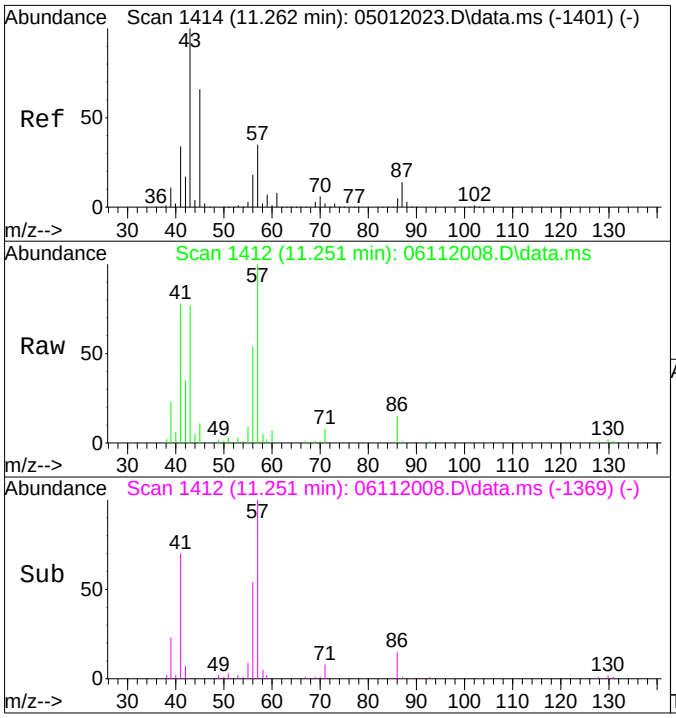


#27
2-Butanone (MEK)
Concen: 1.36 ng
RT: 10.45 min Scan# 1267
Delta R.T. -0.011 min
Lab File: 06112008.D
Acq: 11 Jun 2020 6:10

Tgt Ion: 72 Resp: 23902

Ion	Ratio	Lower	Upper
72	100		
43	421.0	389.7	429.7

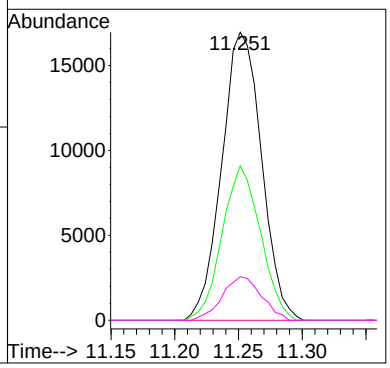


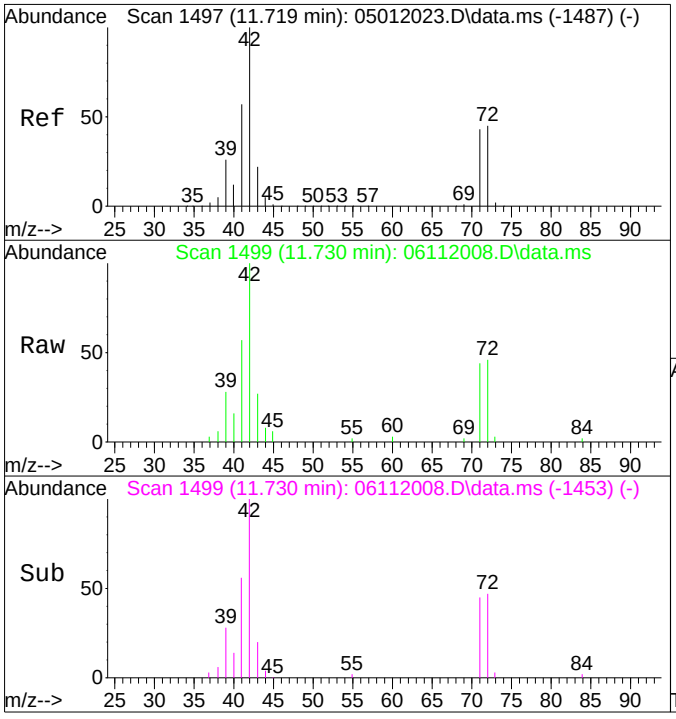


#31
n-Hexane
Concen: 0.84 ng
RT: 11.25 min Scan# 1412
Delta R.T. -0.011 min
Lab File: 06112008.D
Acq: 11 Jun 2020 6:10

Tgt Ion: 57 Resp: 36865

Ion	Ratio	Lower	Upper
57	100		
56	51.6	41.4	62.0
86	14.9	12.4	18.6

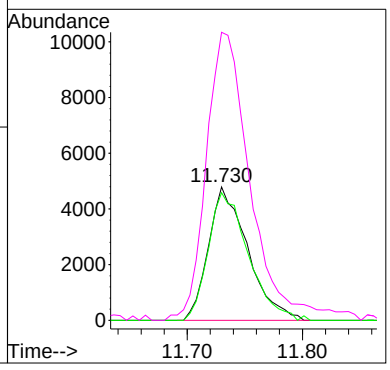


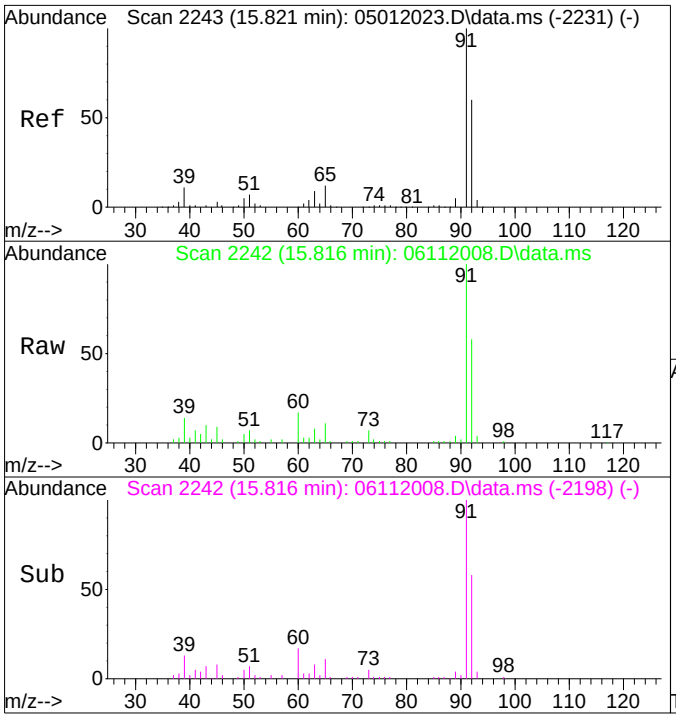


#34
Tetrahydrofuran (THF)
Concen: 0.66 ng
RT: 11.73 min Scan# 1499
Delta R.T. 0.005 min
Lab File: 06112008.D
Acq: 11 Jun 2020 6:10

Tgt Ion: 72 Resp: 11346

Ion	Ratio	Lower	Upper
72	100		
71	97.5	77.0	117.0
42	243.5	204.6	244.6

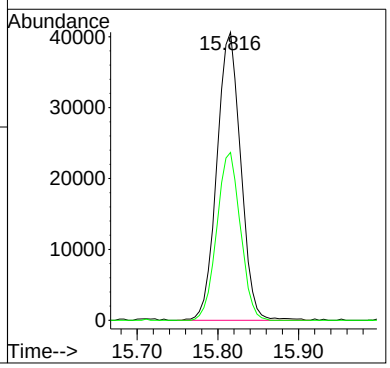


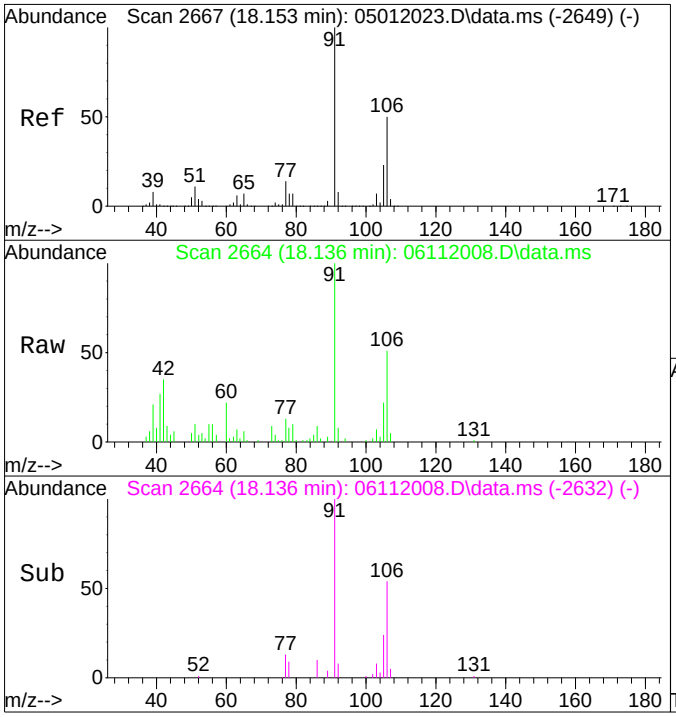


#58
Toluene
Concen: 0.81 ng
RT: 15.82 min Scan# 2242
Delta R.T. -0.006 min
Lab File: 06112008.D
Acq: 11 Jun 2020 6:10

Tgt Ion: 91 Resp: 83516

Ion	Ratio	Lower	Upper
91	100		
92	57.6	39.4	79.4

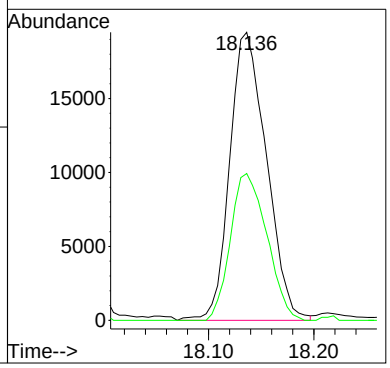




#67
m- & p-Xylenes
Concen: 0.52 ng
RT: 18.14 min Scan# 2664
Delta R.T. -0.022 min
Lab File: 06112008.D
Acq: 11 Jun 2020 6:10

Tgt Ion: 91 Resp: 47175

Ion	Ratio	Lower	Upper
91	100		
106	50.6	29.7	69.7



Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112009.D Vial: 11
Acq On : 11 Jun 2020 6:45 Operator: LH
Sample : P2003019-002 (1000mL) Inst : GCMS-16
Misc : S31-02112001

Quant Time: Jun 11 18:59:04 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

LH 6/11/20

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.14	130	229601	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	13.26	114	982270	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	17.58	82	438620	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.99	65	364193	11.704	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 93.60%				
57) Toluene-d8 (SS2)	15.71	98	931639	12.531	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.24%				
73) Bromofluorobenzene (SS3)	18.97	174	361012	13.495	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.00%				
Target Compounds							Qvalue
2) Propene	4.08	42	33869	1.274	ng		92
3) Dichlorodifluoromethan...	4.25	85	252732	4.859	ng		99
4) Chloromethane	4.52	50	12167	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	4.79	135	2344	N.D.			
6) Vinyl Chloride	4.94	62	765	N.D.			
7) 1,3-Butadiene	5.20	54	127	N.D.			
8) Bromomethane	5.64	94	1992	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	6.35	45	563903	27.462	ng		99
11) Acetonitrile	6.59	41	18300	N.D.			
12) Acrolein	6.78	56	6565	N.D.			
13) Acetone	6.98	58	354849	17.280	ng	#	66
14) Trichlorofluoromethane	7.23	101	306671	6.672	ng		100
15) 2-Propanol (Isopropanol)	7.50	45	260116	4.185	ng		98
16) Acrylonitrile	7.76	53	880	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	8.44	59	2603	N.D.			
19) Methylene Chloride	8.42	84	6224	N.D.			
20) 3-Chloro-1-propene (Al...	8.50	41	7040	N.D.			
21) Trichlorotrifluoroethane	8.84	151	14535	0.670	ng		97
22) Carbon Disulfide	8.68	76	8537	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	9.98	63	734	N.D.			
25) Methyl tert-Butyl Ether	10.09	73	582	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.	d		
27) 2-Butanone (MEK)	10.45	72	75249	4.297	ng		99
28) cis-1,2-Dichloroethene	10.97	61	7838	N.D.			
29) Diisopropyl Ether	11.25	87	7754	N.D.			
30) Ethyl Acetate	11.28	61	8260	0.818	ng	#	14
31) n-Hexane	11.26	57	744562	16.999	ng		100
32) Chloroform	11.31	83	5817	N.D.			
34) Tetrahydrofuran (THF)	11.71	72	358327	20.979	ng		98
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	12.11	62	4818	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	12.87	61	1763	N.D.			
40) 1-Butanol	0.00	56	0	N.D.	d		
41) Benzene	12.87	78	207763	1.972	ng		99
42) Carbon Tetrachloride	13.03	117	11589	N.D.			
43) Cyclohexane	13.17	84	21774	0.555	ng		95
44) tert-Amyl Methyl Ether	13.53	73	159	N.D.			
45) 1,2-Dichloropropane	13.52	63	3669	N.D.			
46) Bromodichloromethane	13.94	83	1899	N.D.			
47) Trichloroethene	13.97	130	10371	N.D.			
48) 1,4-Dioxane	13.97	88	127	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d		
50) Methyl Methacrylate	0.00	100	0	N.D.	d		

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112009.D Vial: 11
Acq On : 11 Jun 2020 6:45 Operator: LH
Sample : P2003019-002 (1000mL) Inst : GCMS-16
Misc : S31-02112001

Quant Time: Jun 11 18:59:04 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

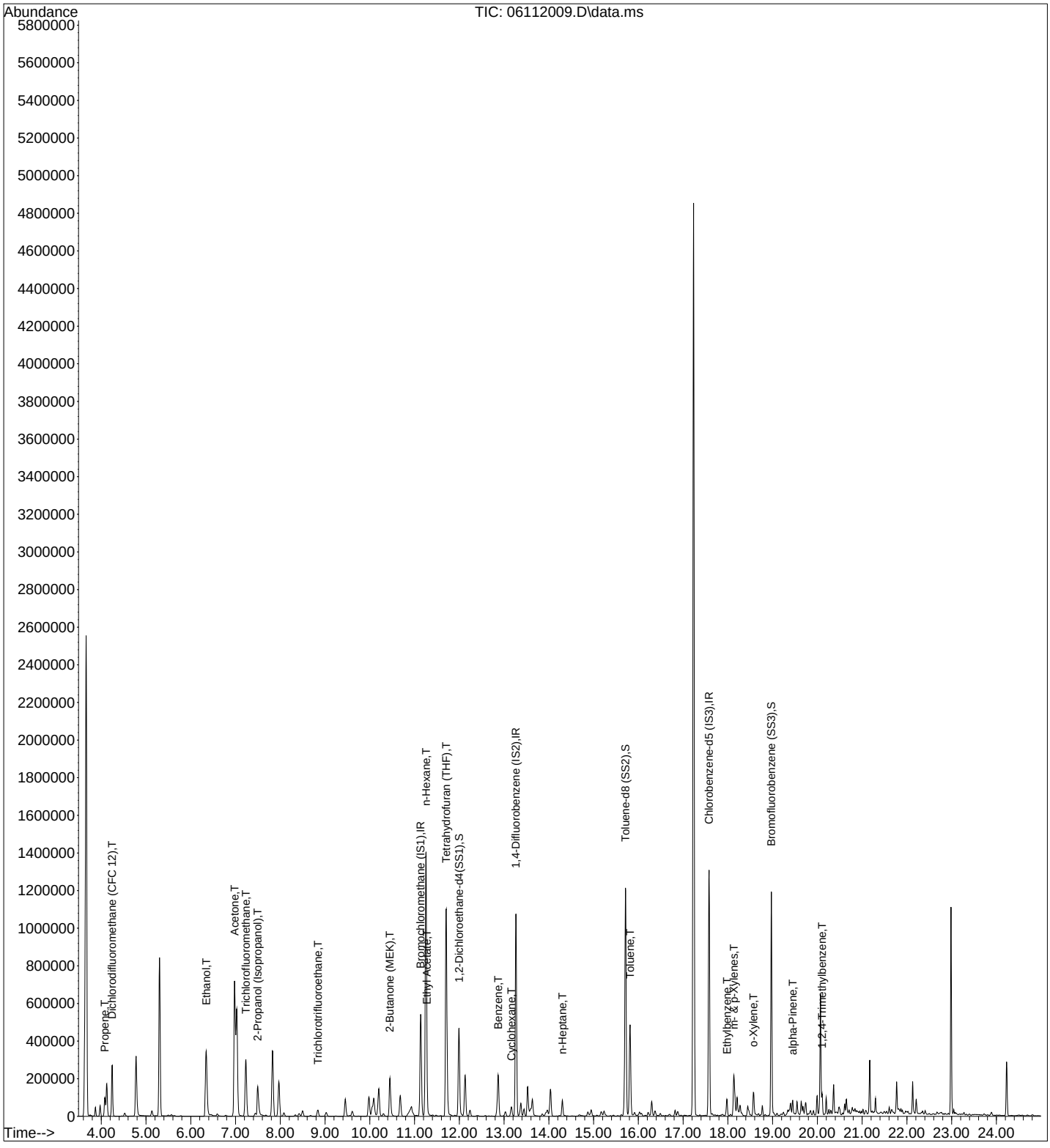
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	14.30	71	21469	0.872 ng	99
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	14.88	58	6714	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	15.82	91	345746	3.608 ng	100
59) 2-Hexanone	16.07	43	8527	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	16.70	43	6290	N.D.	
63) n-Octane	16.82	57	6032	N.D.	
64) Tetrachloroethene	16.95	166	1470	N.D.	
65) Chlorobenzene	17.62	112	1773	N.D.	
66) Ethylbenzene	17.98	91	65095	0.609 ng	100
67) m- & p-Xylenes	18.14	91	169616	2.001 ng	98
68) Bromoform	18.20	173	796	N.D.	
69) Styrene	18.47	104	11450	N.D.	
70) o-Xylene	18.57	91	59093	0.687 ng	99
71) n-Nonane	18.77	43	18566	N.D.	
72) 1,1,2,2-Tetrachloroethane	18.59	83	624	N.D.	
74) Cumene	19.10	105	5564	N.D.	
75) alpha-Pinene	19.45	93	30855	0.547 ng	95
76) n-Propylbenzene	19.55	91	18027	N.D.	
77) 3-Ethyltoluene	19.64	105	36737	N.D.	
78) 4-Ethyltoluene	19.68	105	18175	N.D.	
79) 1,3,5-Trimethylbenzene	19.74	105	13071	N.D.	
80) alpha-Methylstyrene	19.88	118	1186	N.D.	
81) 2-Ethyltoluene	19.91	105	14977	N.D.	
82) 1,2,4-Trimethylbenzene	20.10	105	54103	0.625 ng	90
83) n-Decane	0.00	57	0	N.D. d	
84) Benzyl Chloride	20.23	91	1405	N.D.	
85) 1,3-Dichlorobenzene	20.24	146	716	N.D.	
86) 1,4-Dichlorobenzene	20.30	146	8403	N.D.	
87) sec-Butylbenzene	20.34	105	3176	N.D.	
88) 4-Isopropyltoluene (p-...	20.48	119	7700	N.D.	
89) 1,2,3-Trimethylbenzene	20.48	105	13184	N.D.	
90) 1,2-Dichlorobenzene	20.60	146	637	N.D.	
91) d-Limonene	20.61	68	12757	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	57	0	N.D. d	
94) 1,2,4-Trichlorobenzene	22.11	180	1105	N.D.	
95) Naphthalene	22.22	128	10876	N.D.	
96) n-Dodecane	0.00	57	0	N.D. d	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D. d	
99) tert-Butylbenzene	20.10	119	6304	N.D.	
100) n-Butylbenzene	20.85	91	7741	N.D.	

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

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112009.D Vial: 11
Acq On : 11 Jun 2020 6:45 Operator: LH
Sample : P2003019-002 (1000mL) Inst : GCMS-16
Misc : S31-02112001

Quant Time: Jun 11 18:59:04 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112009.D Vial: 11
Acq On : 11 Jun 2020 6:45 Operator: LH
Sample : P2003019-002 (1000mL) Inst : GCMS-16
Misc : S31-02112001

Quant Time: Jun 11 18:59:04 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020 LH 6/11/20
Response via : Initial Calibration
DataAcq Meth:TO15.M

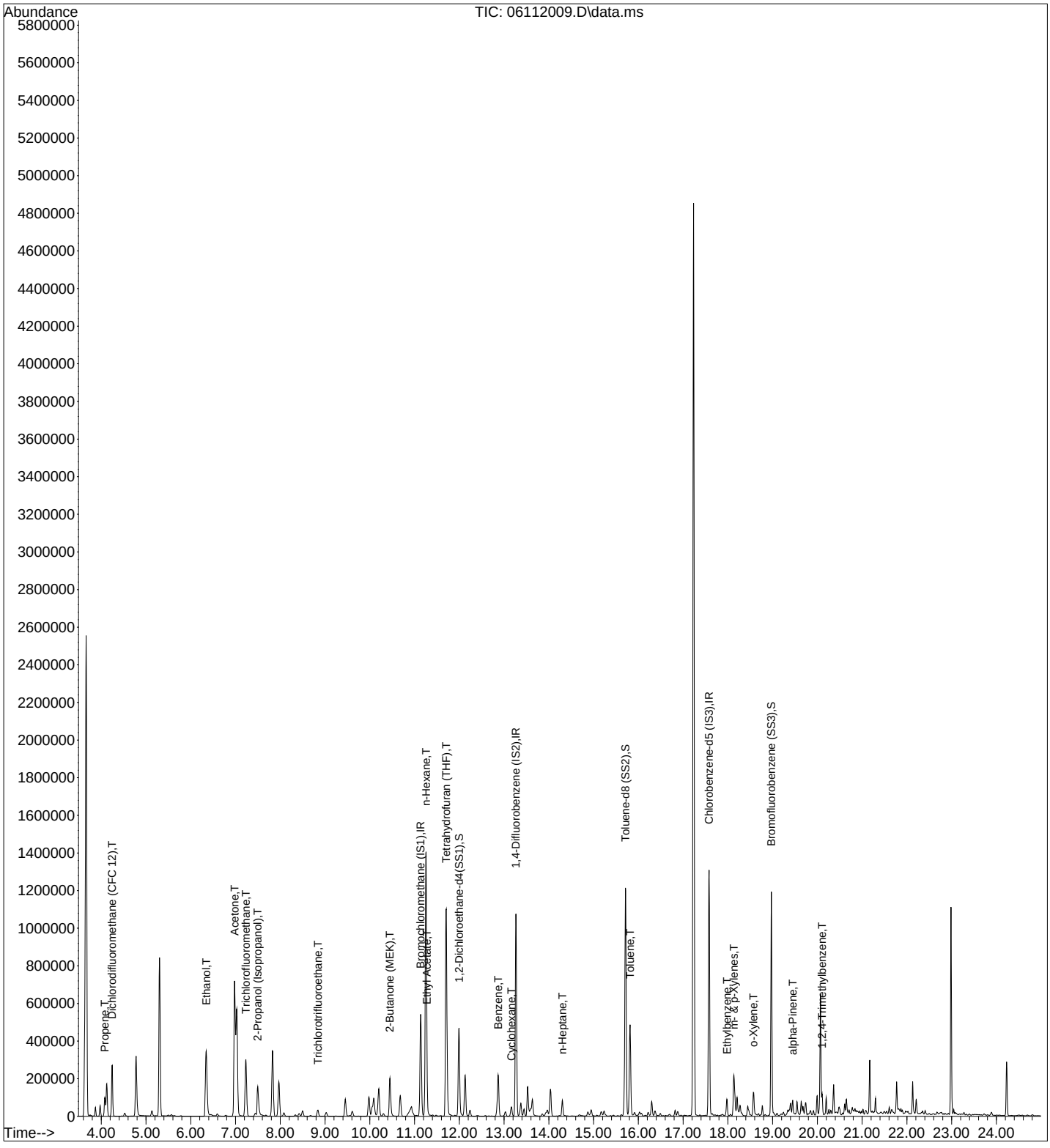
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.14	130	229601	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	13.26	114	982270	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	17.58	82	438620	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.99	65	364193	11.704	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 93.60%				
57) Toluene-d8 (SS2)	15.71	98	931639	12.531	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.24%				
73) Bromofluorobenzene (SS3)	18.97	174	361012	13.495	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.00%				
Target Compounds							Qvalue
2) Propene	4.08	42	33869	1.274	ng		92
3) Dichlorodifluoromethan...	4.25	85	252732	4.859	ng		99
10) Ethanol	6.35	45	563903	27.462	ng		99
13) Acetone	6.98	58	354849	17.280	ng	#	66
14) Trichlorofluoromethane	7.23	101	306671	6.672	ng		100
15) 2-Propanol (Isopropanol)	7.50	45	260116	4.185	ng		98
21) Trichlorotrifluoroethane	8.84	151	14535	0.670	ng		97
27) 2-Butanone (MEK)	10.45	72	75249	4.297	ng		99
30) Ethyl Acetate	11.28	61	8260	0.818	ng	#	14
31) n-Hexane	11.26	57	744562	16.999	ng		100
34) Tetrahydrofuran (THF)	11.71	72	358327	20.979	ng		98
41) Benzene	12.87	78	207763	1.972	ng		99
43) Cyclohexane	13.17	84	21774	0.555	ng		95
51) n-Heptane	14.30	71	21469	0.872	ng		99
58) Toluene	15.82	91	345746	3.608	ng		100
66) Ethylbenzene	17.98	91	65095	0.609	ng		100
67) m- & p-Xylenes	18.14	91	169616	2.001	ng		98
70) o-Xylene	18.57	91	59093	0.687	ng		99
75) alpha-Pinene	19.45	93	30855	0.547	ng		95
82) 1,2,4-Trimethylbenzene	20.10	105	54103	0.625	ng		90

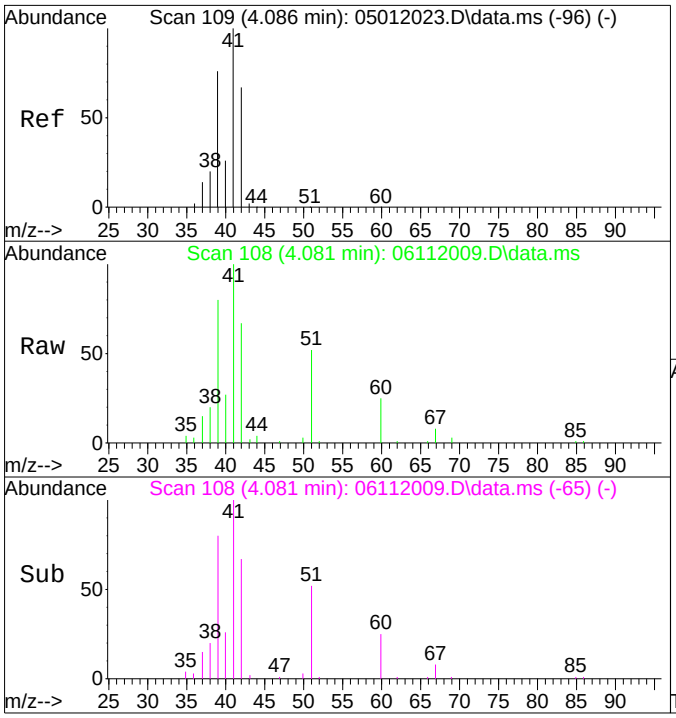
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112009.D Vial: 11
Acq On : 11 Jun 2020 6:45 Operator: LH
Sample : P2003019-002 (1000mL) Inst : GCMS-16
Misc : S31-02112001

Quant Time: Jun 11 18:59:04 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

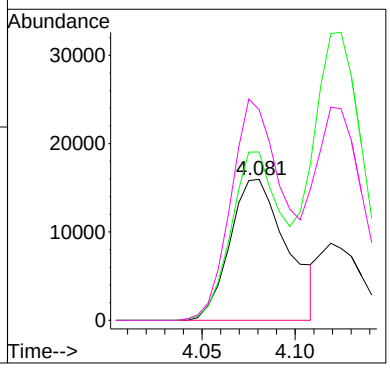


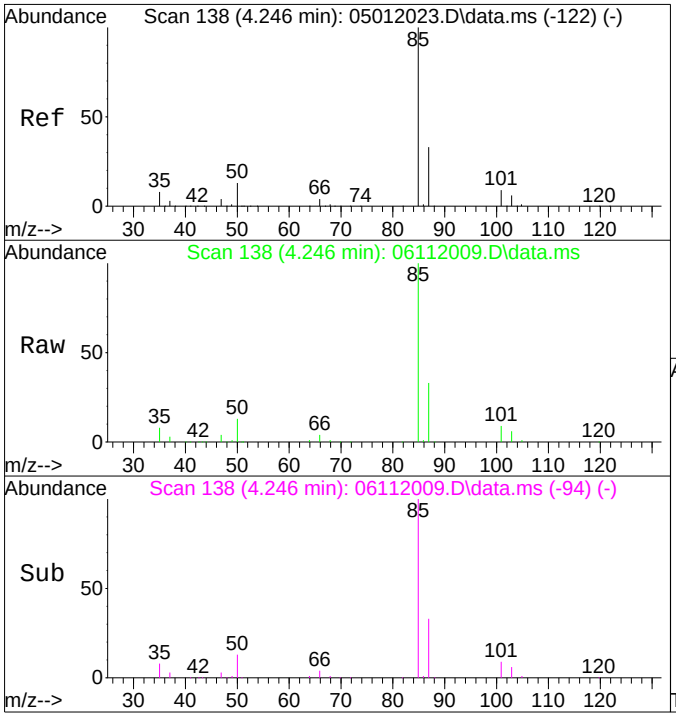


#2
Propene
Concen: 1.27 ng
RT: 4.08 min Scan# 108
Delta R.T. -0.011 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion: 42 Resp: 33869

Ion	Ratio	Lower	Upper
42	100		
39	103.4	96.1	136.1
41	144.4	131.9	171.9

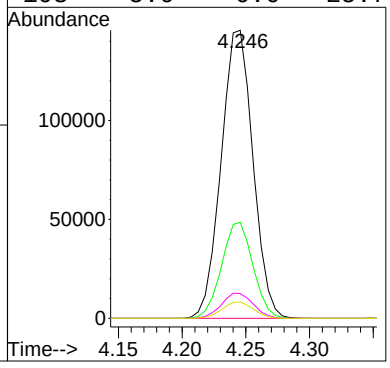


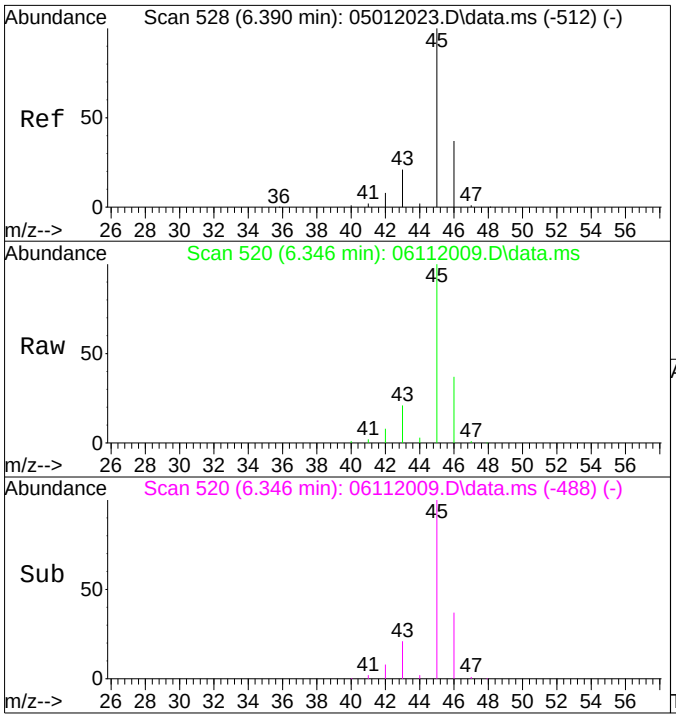


#3
Dichlorodifluoromethane (CFC 12)
Concen: 4.86 ng
RT: 4.25 min Scan# 138
Delta R.T. -0.006 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion: 85 Resp: 252732

Ion	Ratio	Lower	Upper
85	100		
87	32.8	12.4	52.4
101	8.7	0.0	28.8
103	5.6	0.0	25.7

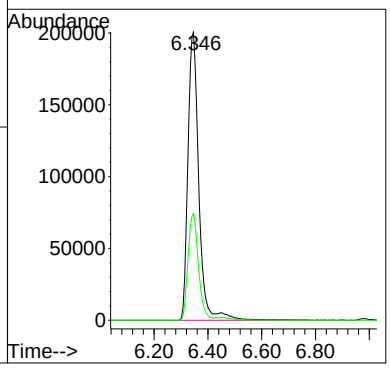


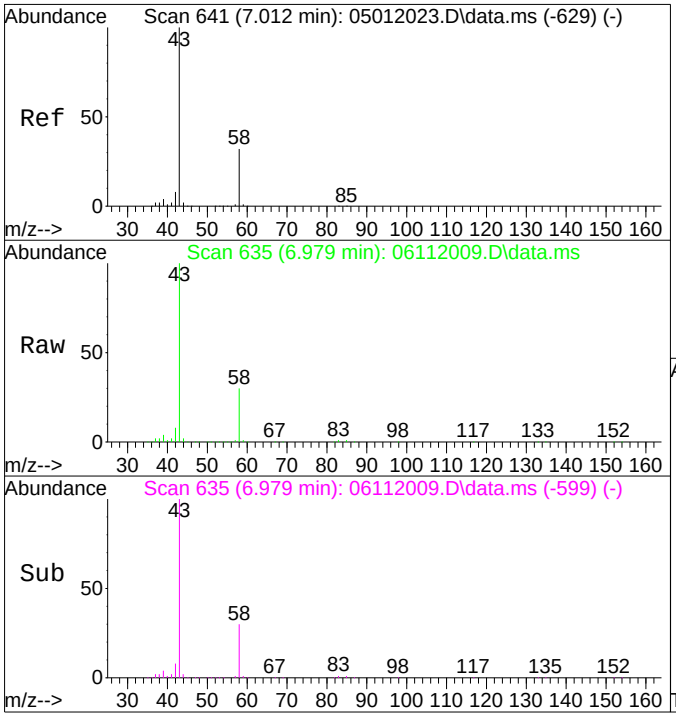


#10
Ethanol
Concen: 27.46 ng
RT: 6.35 min Scan# 520
Delta R.T. -0.072 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion: 45 Resp: 563903

Ion	Ratio	Lower	Upper
45	100		
46	36.9	17.2	57.2

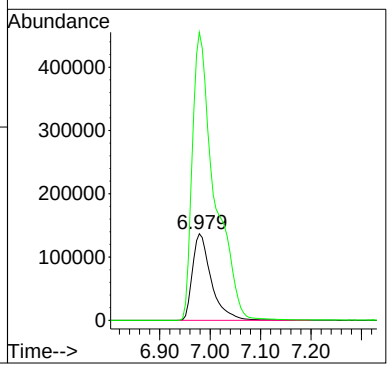


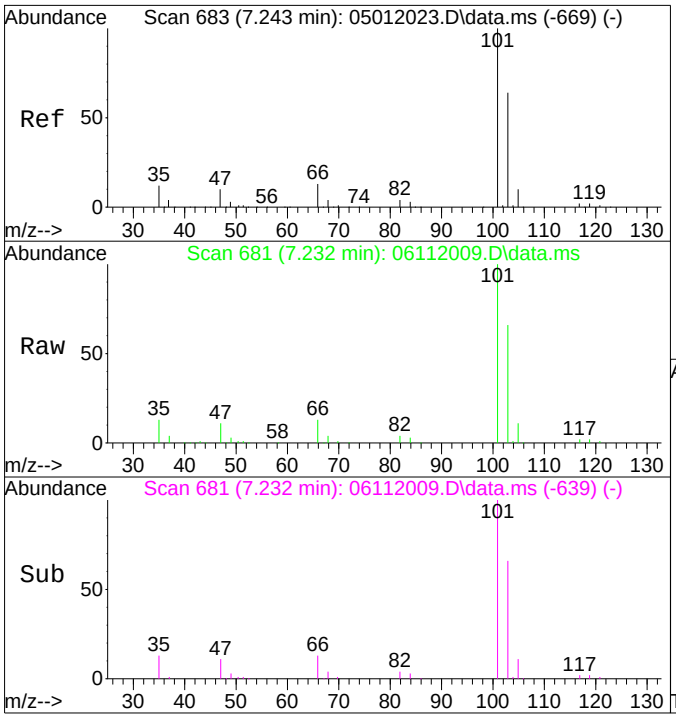


#13
Acetone
Concen: 17.28 ng
RT: 6.98 min Scan# 635
Delta R.T. -0.050 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion: 58 Resp: 354849

Ion	Ratio	Lower	Upper
58	100		
43	394.4	294.4	354.4#

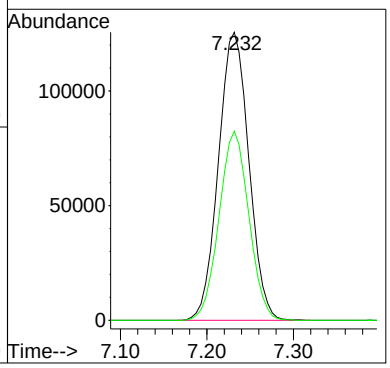


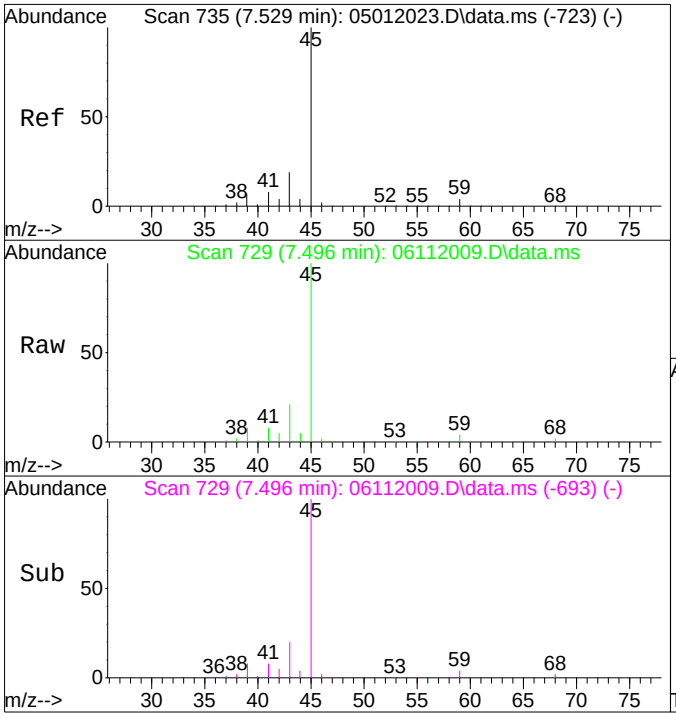


#14
Trichlorofluoromethane
Concen: 6.67 ng
RT: 7.23 min Scan# 681
Delta R.T. -0.017 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion:101 Resp: 306671

Ion	Ratio	Lower	Upper
101	100		
103	64.3	44.4	84.4

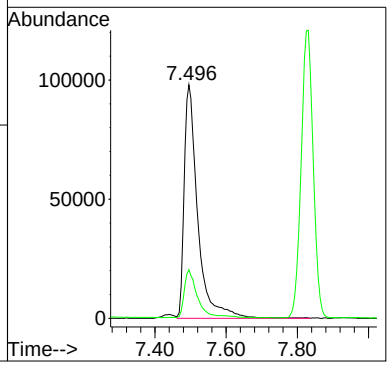


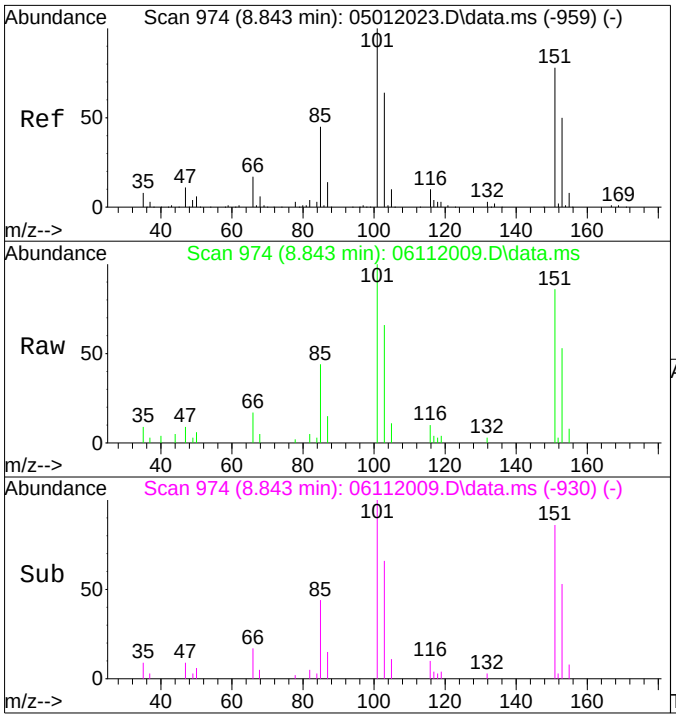


#15
2-Propanol (Isopropanol)
Concen: 4.19 ng
RT: 7.50 min Scan# 729
Delta R.T. -0.050 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion: 45 Resp: 260116

Ion	Ratio	Lower	Upper
45	100		
43	20.5	0.0	39.5

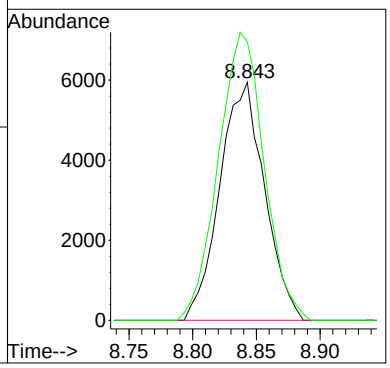


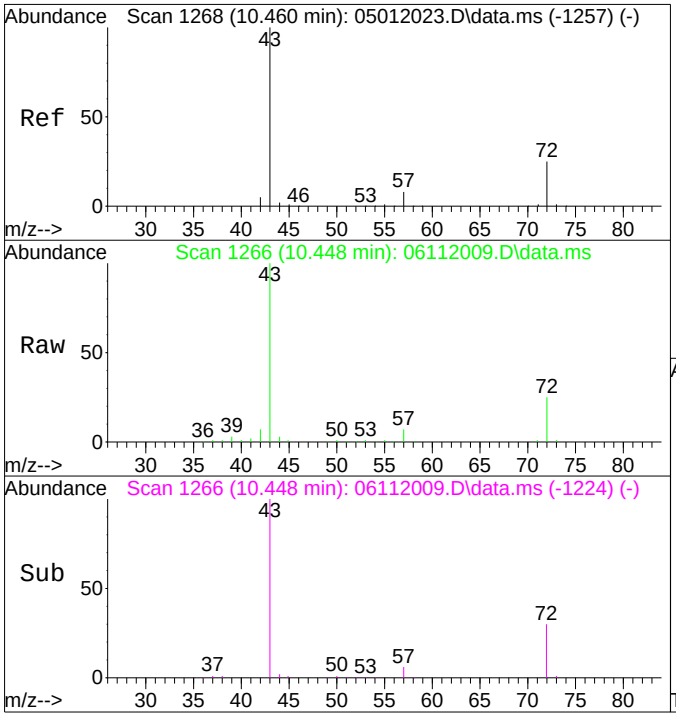


#21
Trichlorotrifluoroethane
Concen: 0.67 ng
RT: 8.84 min Scan# 974
Delta R.T. -0.006 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion:151 Resp: 14535

Ion	Ratio	Lower	Upper
151	100		
101	123.9	107.3	147.3

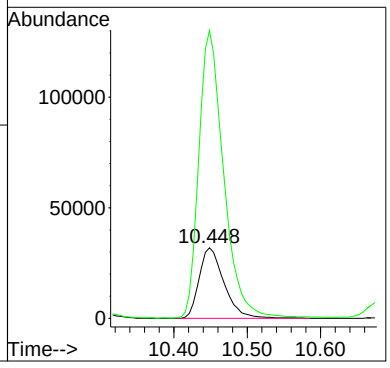


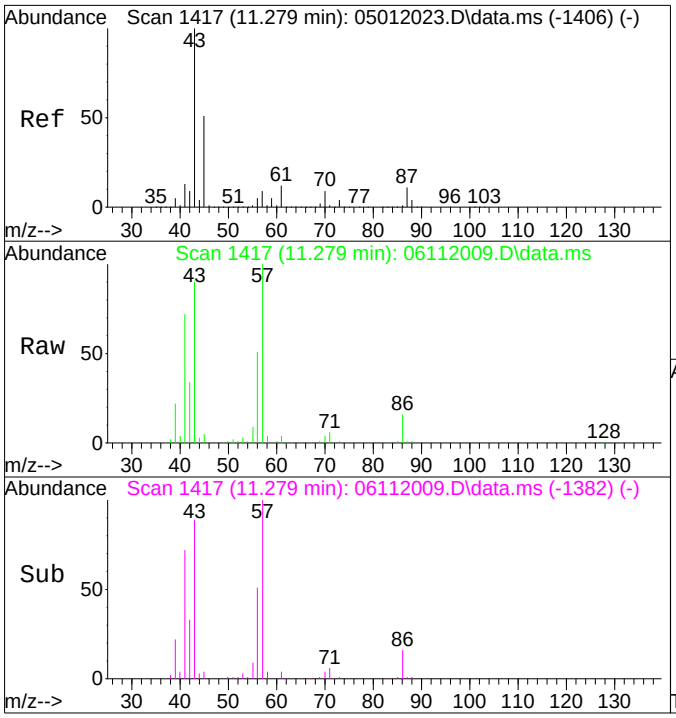


#27
2-Butanone (MEK)
Concen: 4.30 ng
RT: 10.45 min Scan# 1266
Delta R.T. -0.017 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion: 72 Resp: 75249

Ion	Ratio	Lower	Upper
72	100		
43	406.2	389.7	429.7

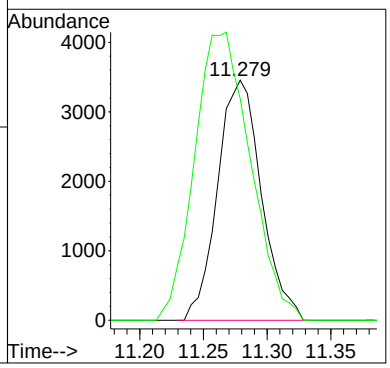


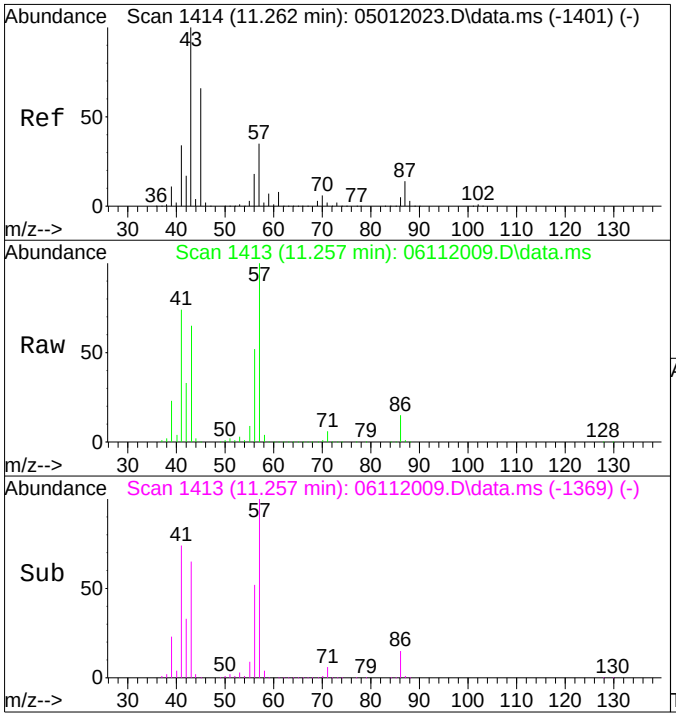


#30
Ethyl Acetate
Concen: 0.82 ng
RT: 11.28 min Scan# 1417
Delta R.T. -0.006 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion: 61 Resp: 8260

Ion	Ratio	Lower	Upper
61	100		
70	153.0	57.9	97.9#

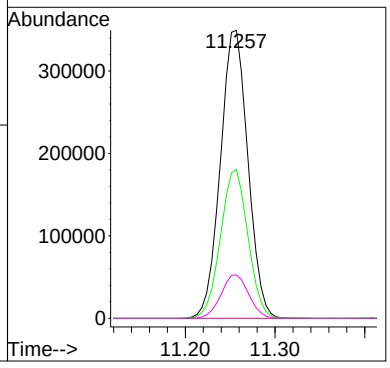


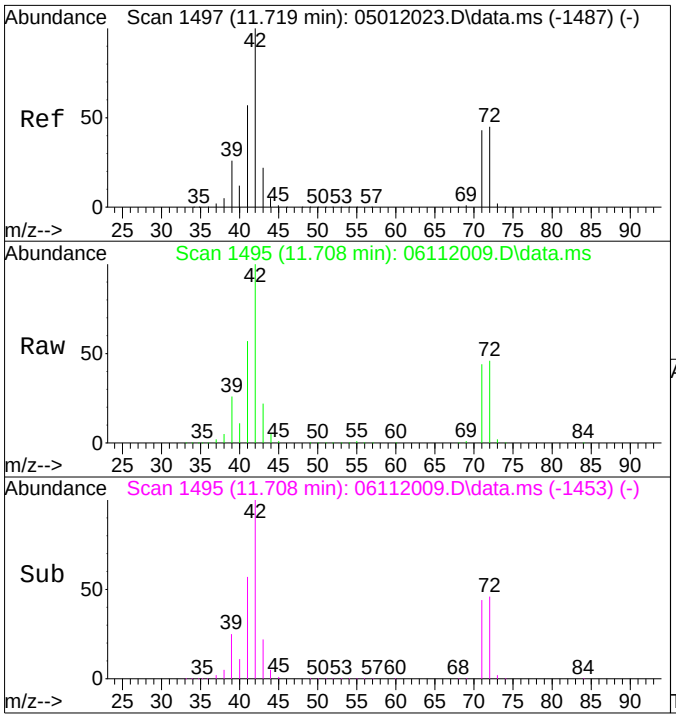


#31
n-Hexane
Concen: 17.00 ng
RT: 11.26 min Scan# 1413
Delta R.T. -0.006 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion: 57 Resp: 744562

Ion	Ratio	Lower	Upper
57	100		
56	51.6	41.4	62.0
86	15.2	12.4	18.6

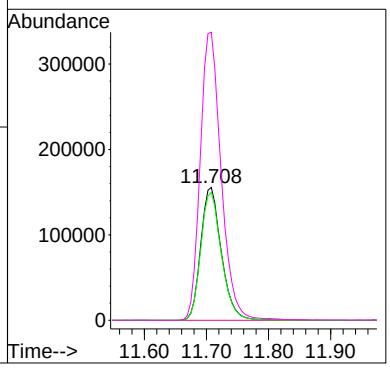


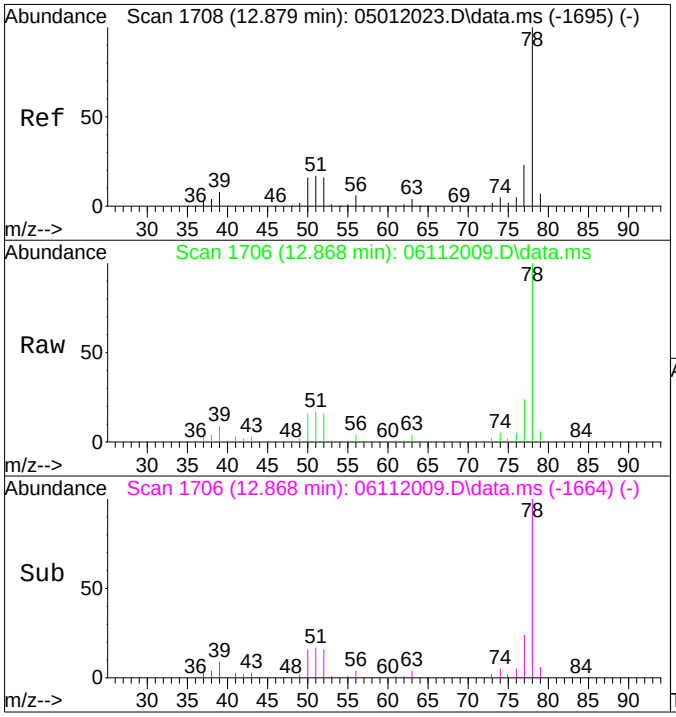


#34
Tetrahydrofuran (THF)
Concen: 20.98 ng
RT: 11.71 min Scan# 1495
Delta R.T. -0.017 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion: 72 Resp: 358327

Ion	Ratio	Lower	Upper
72	100		
71	96.6	77.0	117.0
42	221.4	204.6	244.6

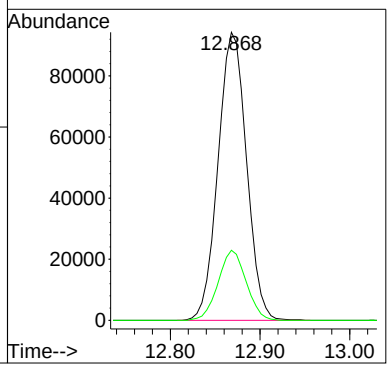


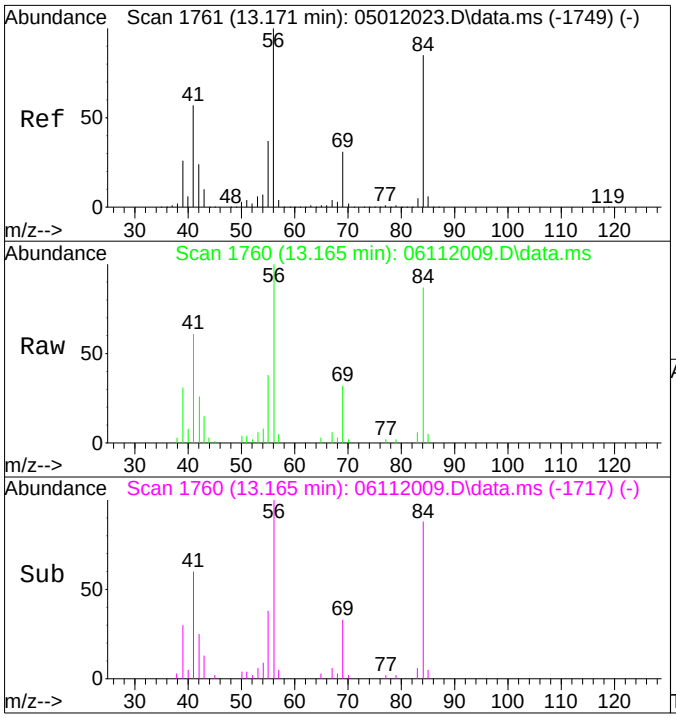


#41
Benzene
Concen: 1.97 ng
RT: 12.87 min Scan# 1706
Delta R.T. -0.017 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion: 78 Resp: 207763

Ion	Ratio	Lower	Upper
78	100		
77	23.9	3.4	43.4

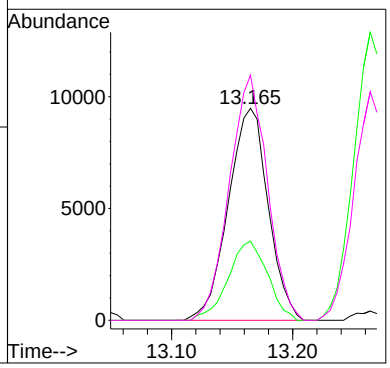


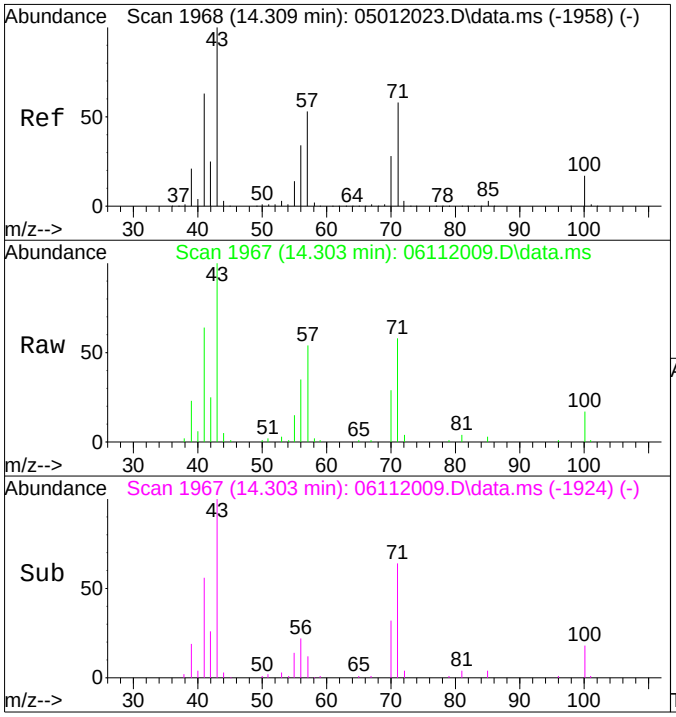


#43
Cyclohexane
Concen: 0.55 ng
RT: 13.17 min Scan# 1760
Delta R.T. -0.011 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion: 84 Resp: 21774

Ion	Ratio	Lower	Upper
84	100		
69	36.8	16.5	56.5
56	110.3	97.4	137.4

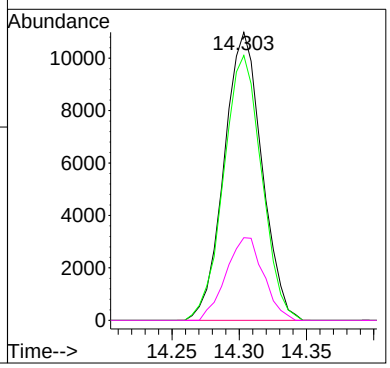


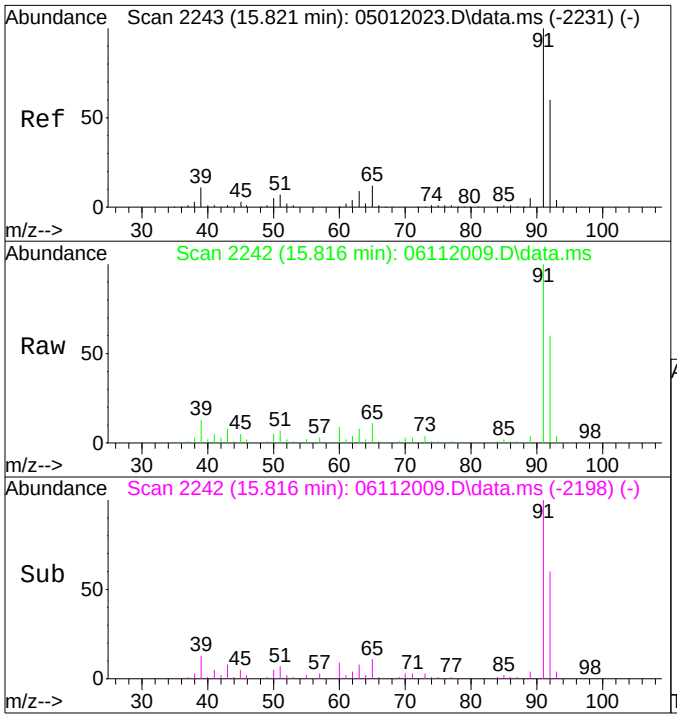


#51
n-Heptane
Concen: 0.87 ng
RT: 14.30 min Scan# 1967
Delta R.T. -0.011 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion: 71 Resp: 21469

Ion	Ratio	Lower	Upper
71	100		
57	92.5	71.0	111.0
100	28.5	8.4	48.4

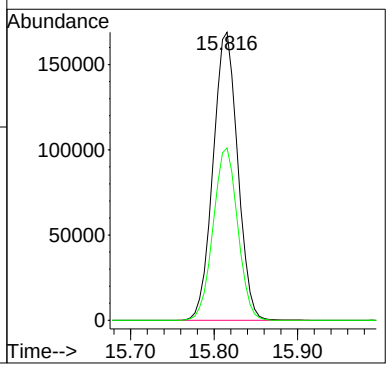


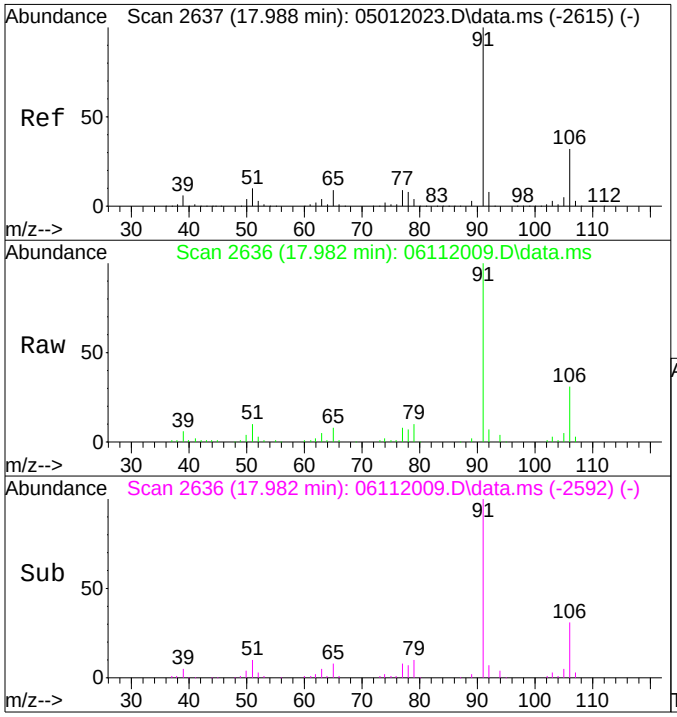


#58
Toluene
Concen: 3.61 ng
RT: 15.82 min Scan# 2242
Delta R.T. -0.006 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion: 91 Resp: 345746

Ion	Ratio	Lower	Upper
91	100		
92	59.6	39.4	79.4

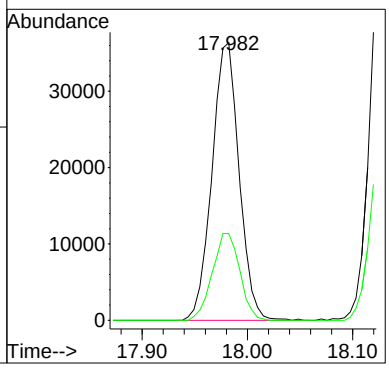


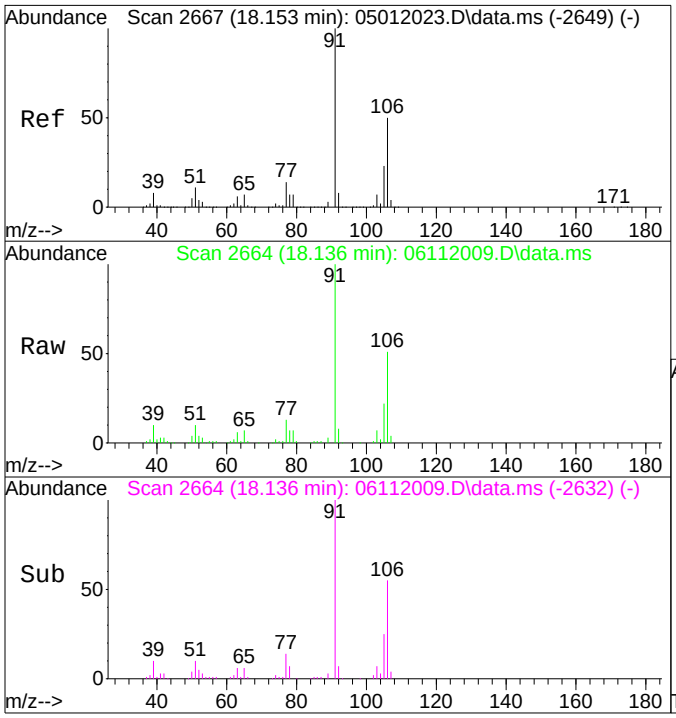


#66
Ethylbenzene
Concen: 0.61 ng
RT: 17.98 min Scan# 2636
Delta R.T. -0.006 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion: 91 Resp: 65095

Ion	Ratio	Lower	Upper
91	100		
106	31.6	11.6	51.6

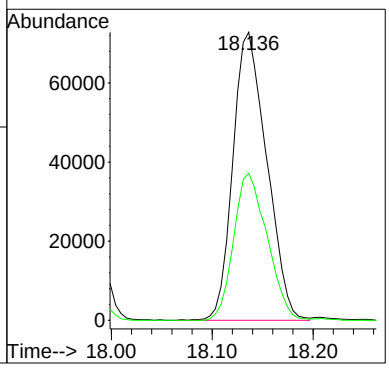


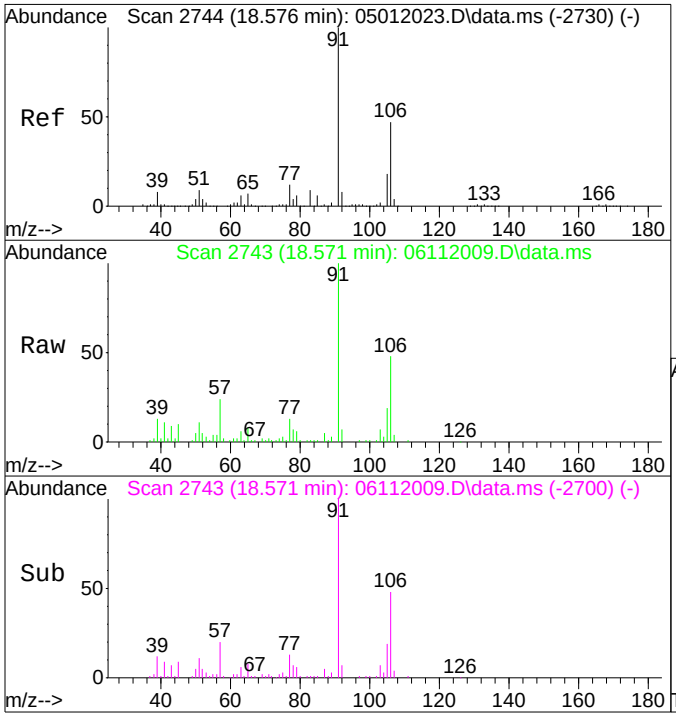


#67
m- & p-Xylenes
Concen: 2.00 ng
RT: 18.14 min Scan# 2664
Delta R.T. -0.022 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion: 91 Resp: 169616

Ion	Ratio	Lower	Upper
91	100		
106	50.9	29.7	69.7

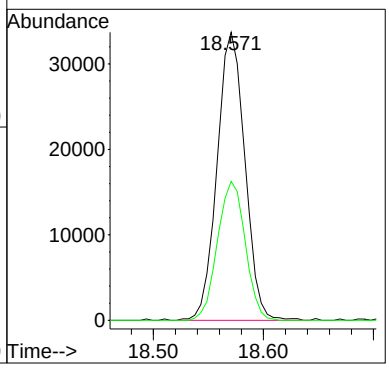


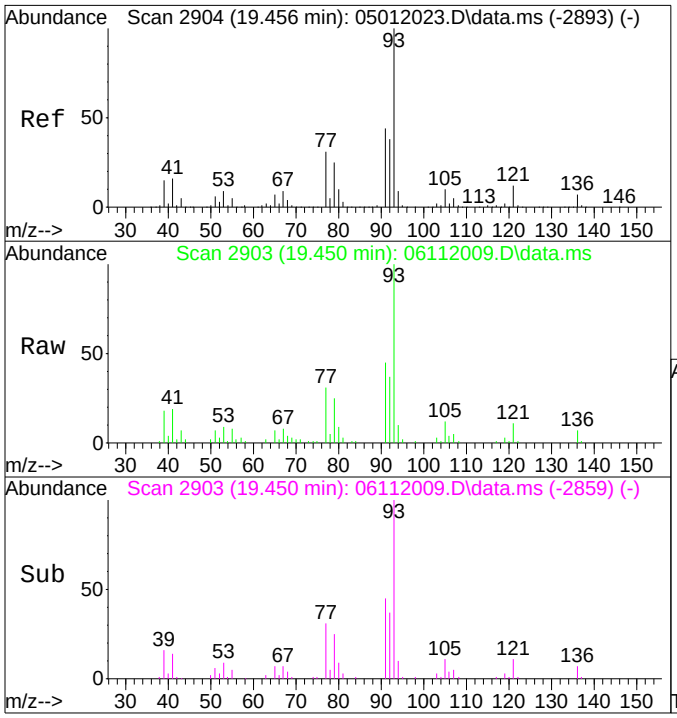


#70
o-Xylene
Concen: 0.69 ng
RT: 18.57 min Scan# 2743
Delta R.T. -0.011 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion: 91 Resp: 59093

Ion	Ratio	Lower	Upper
91	100		
106	48.1	27.5	67.5

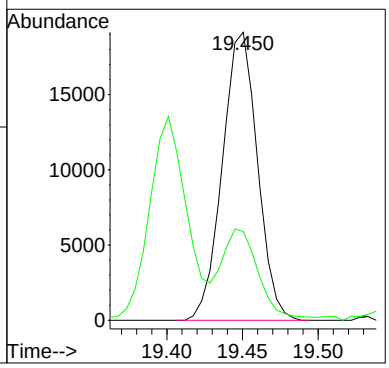


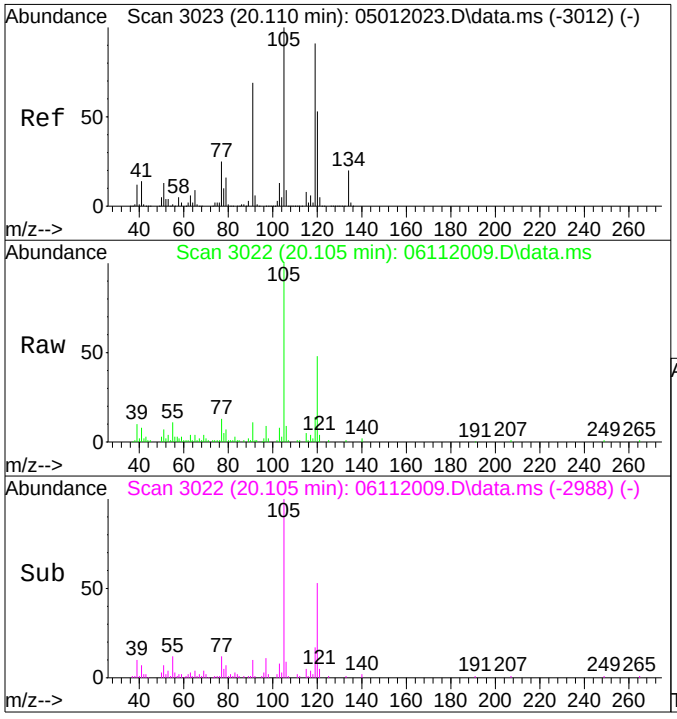


#75
alpha-Pinene
Concen: 0.55 ng
RT: 19.45 min Scan# 2903
Delta R.T. -0.006 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion: 93 Resp: 30855

Ion	Ratio	Lower	Upper
93	100		
77	33.8	11.2	51.2

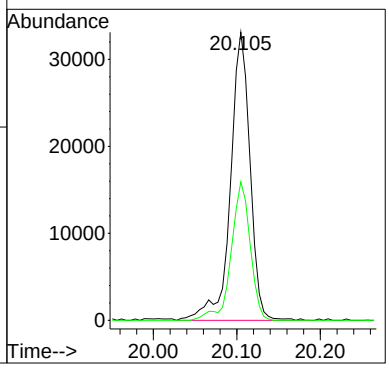




#82
1,2,4-Trimethylbenzene
Concen: 0.62 ng
RT: 20.10 min Scan# 3022
Delta R.T. -0.011 min
Lab File: 06112009.D
Acq: 11 Jun 2020 6:45

Tgt Ion:105 Resp: 54103

Ion	Ratio	Lower	Upper
105	100		
120	46.5	33.6	73.6



Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112010.D Vial: 12
Acq On : 11 Jun 2020 7:19 Operator: LH
Sample : P2003019-003 (1000mL) Inst : GCMS-16
Misc : S31-02112001

Quant Time: Jun 11 18:59:34 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

LH 6/11/20

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.13	130	231850	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	13.26	114	998411	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	17.58	82	447039	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.99	65	368881	11.740	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 93.92%				
57) Toluene-d8 (SS2)	15.71	98	945466	12.478	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.84%				
73) Bromofluorobenzene (SS3)	18.97	174	370149	13.576	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.64%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D.	d		
3) Dichlorodifluoromethan...	4.25	85	92503	1.761	ng		100
4) Chloromethane	4.52	50	13277	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	4.80	135	2410	N.D.			
6) Vinyl Chloride	4.94	62	2888	N.D.			
7) 1,3-Butadiene	5.21	54	502	N.D.			
8) Bromomethane	5.64	94	835	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	6.32	45	70469	3.399	ng		99
11) Acetonitrile	6.59	41	8865	N.D.			
12) Acrolein	6.78	56	5134	N.D.			
13) Acetone	6.99	58	132590	6.394	ng	#	74
14) Trichlorofluoromethane	7.23	101	42196	0.909	ng		99
15) 2-Propanol (Isopropanol)	7.52	45	15660	N.D.			
16) Acrylonitrile	7.76	53	437	N.D.			
17) 1,1-Dichloroethene	8.19	96	1327	N.D.			
18) 2-Methyl-2-Propanol (t...	8.40	59	11157	N.D.			
19) Methylene Chloride	8.40	84	20854	0.774	ng		97
20) 3-Chloro-1-propene (Al...	8.50	41	854	N.D.			
21) Trichlorotrifluoroethane	8.84	151	130692	5.964	ng		97
22) Carbon Disulfide	8.68	76	2137562	22.130	ng		100
23) trans-1,2-Dichloroethene	9.68	61	382	N.D.			
24) 1,1-Dichloroethane	9.94	63	339	N.D.			
25) Methyl tert-Butyl Ether	10.09	73	442	N.D.			
26) Vinyl Acetate	10.17	86	10509	1.627	ng	#	59
27) 2-Butanone (MEK)	10.46	72	11307	0.639	ng		100
28) cis-1,2-Dichloroethene	10.95	61	77550	2.140	ng		96
29) Diisopropyl Ether	11.25	87	252	N.D.			
30) Ethyl Acetate	11.29	61	5040	0.494	ng	#	70
31) n-Hexane	11.25	57	35047	0.792	ng		100
32) Chloroform	11.30	83	3073	N.D.			
34) Tetrahydrofuran (THF)	11.73	72	7625	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	12.10	62	2373	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	12.87	61	174	N.D.			
40) 1-Butanol	0.00	56	0	N.D.	d		
41) Benzene	12.87	78	47856	N.D.			
42) Carbon Tetrachloride	13.03	117	11118	N.D.			
43) Cyclohexane	13.15	84	7898	N.D.			
44) tert-Amyl Methyl Ether	13.68	73	21392	N.D.			
45) 1,2-Dichloropropane	13.54	63	2383	N.D.			
46) Bromodichloromethane	13.97	83	1985	N.D.			
47) Trichloroethene	13.96	130	115969	4.190	ng		98
48) 1,4-Dioxane	13.95	88	8128	N.D.			
49) 2,2,4-Trimethylpentane...	14.03	57	14840	N.D.			
50) Methyl Methacrylate	14.11	100	790	N.D.			

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112010.D Vial: 12
Acq On : 11 Jun 2020 7:19 Operator: LH
Sample : P2003019-003 (1000mL) Inst : GCMS-16
Misc : S31-02112001

Quant Time: Jun 11 18:59:34 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

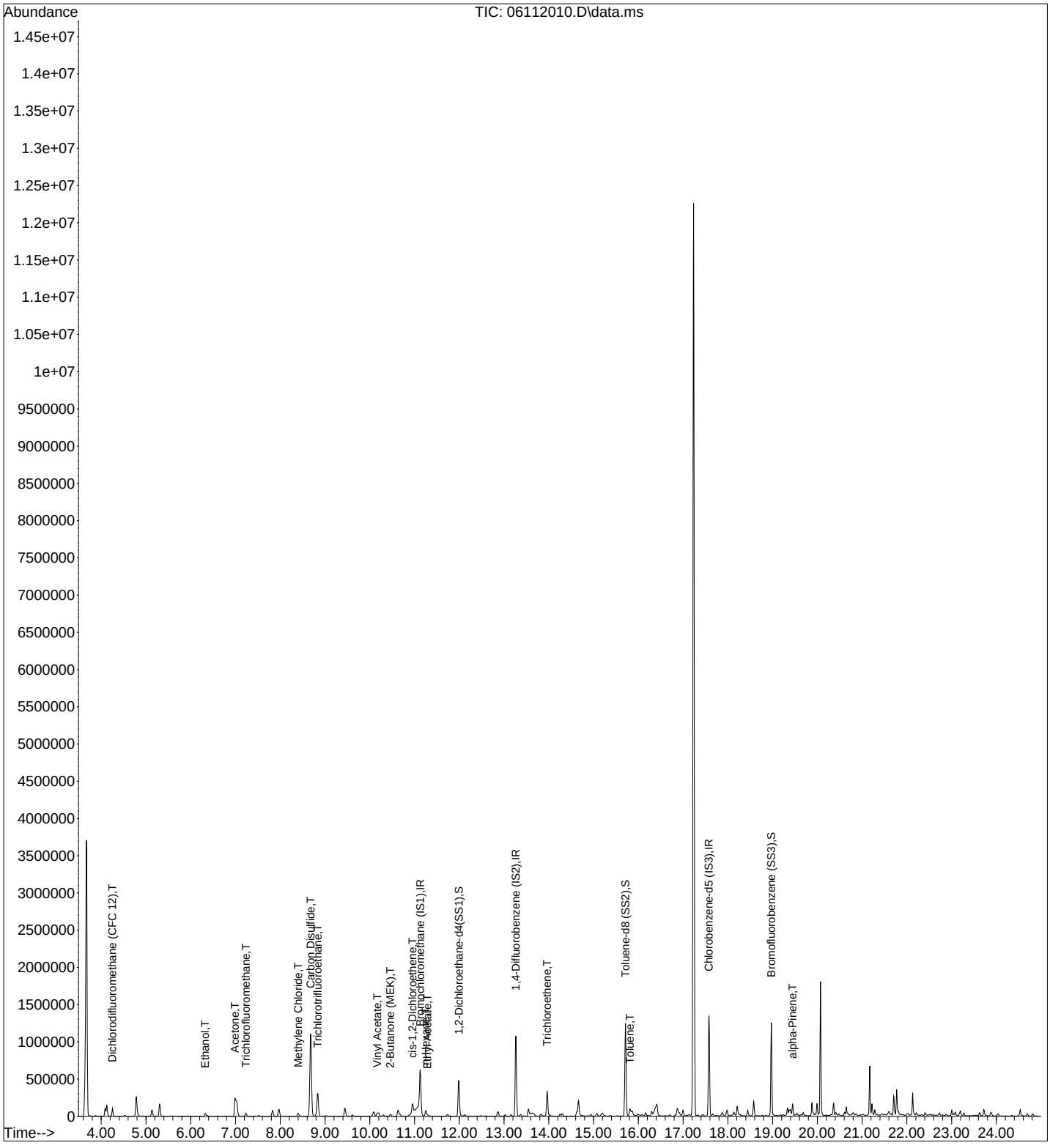
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.30	71	8359	N.D.		
52) cis-1,3-Dichloropropene	14.67	75	797	N.D.		
53) 4-Methyl-2-pentanone	14.88	58	1498	N.D.		
54) trans-1,3-Dichloropropene	15.38	75	448	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	15.81	91	57412	0.588	ng	99
59) 2-Hexanone	16.07	43	11650	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.70	43	5880	N.D.		
63) n-Octane	16.82	57	2944	N.D.		
64) Tetrachloroethene	16.95	166	2214	N.D.		
65) Chlorobenzene	17.62	112	627	N.D.		
66) Ethylbenzene	17.98	91	10131	N.D.		
67) m- & p-Xylenes	18.13	91	21478	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.47	104	4456	N.D.		
70) o-Xylene	18.57	91	7239	N.D.		
71) n-Nonane	18.77	43	4118	N.D.		
72) 1,1,2,2-Tetrachloroethane	18.59	83	1790	N.D.		
74) Cumene	19.09	105	1660	N.D.		
75) alpha-Pinene	19.45	93	61246	1.066	ng	100
76) n-Propylbenzene	19.55	91	4041	N.D.		
77) 3-Ethyltoluene	19.64	105	5114	N.D.		
78) 4-Ethyltoluene	19.68	105	2878	N.D.		
79) 1,3,5-Trimethylbenzene	19.74	105	2215	N.D.		
80) alpha-Methylstyrene	19.88	118	875	N.D.		
81) 2-Ethyltoluene	19.91	105	2978	N.D.		
82) 1,2,4-Trimethylbenzene	20.10	105	6830	N.D.		
83) n-Decane	20.19	57	3450	N.D.		
84) Benzyl Chloride	20.23	91	971	N.D.		
85) 1,3-Dichlorobenzene	20.24	146	457	N.D.		
86) 1,4-Dichlorobenzene	20.30	146	2200	N.D.		
87) sec-Butylbenzene	20.35	105	1342	N.D.		
88) 4-Isopropyltoluene (p-...	20.48	119	9027	N.D.		
89) 1,2,3-Trimethylbenzene	20.48	105	2559	N.D.		
90) 1,2-Dichlorobenzene	20.60	146	404	N.D.		
91) d-Limonene	20.61	68	6912	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	21.30	57	4798	N.D.		
94) 1,2,4-Trichlorobenzene	22.11	180	789	N.D.		
95) Naphthalene	22.21	128	11083	N.D.		
96) n-Dodecane	22.21	57	4780	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.27	55	6375	N.D.		
99) tert-Butylbenzene	20.07	119	30800	N.D.		
100) n-Butylbenzene	20.85	91	5237	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112010.D Vial: 12
Acq On : 11 Jun 2020 7:19 Operator: LH
Sample : P2003019-003 (1000mL) Inst : GCMS-16
Misc : S31-02112001

Quant Time: Jun 11 18:59:34 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112010.D Vial: 12
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DataAcq Meth:TO15.M

LH 6/11/20

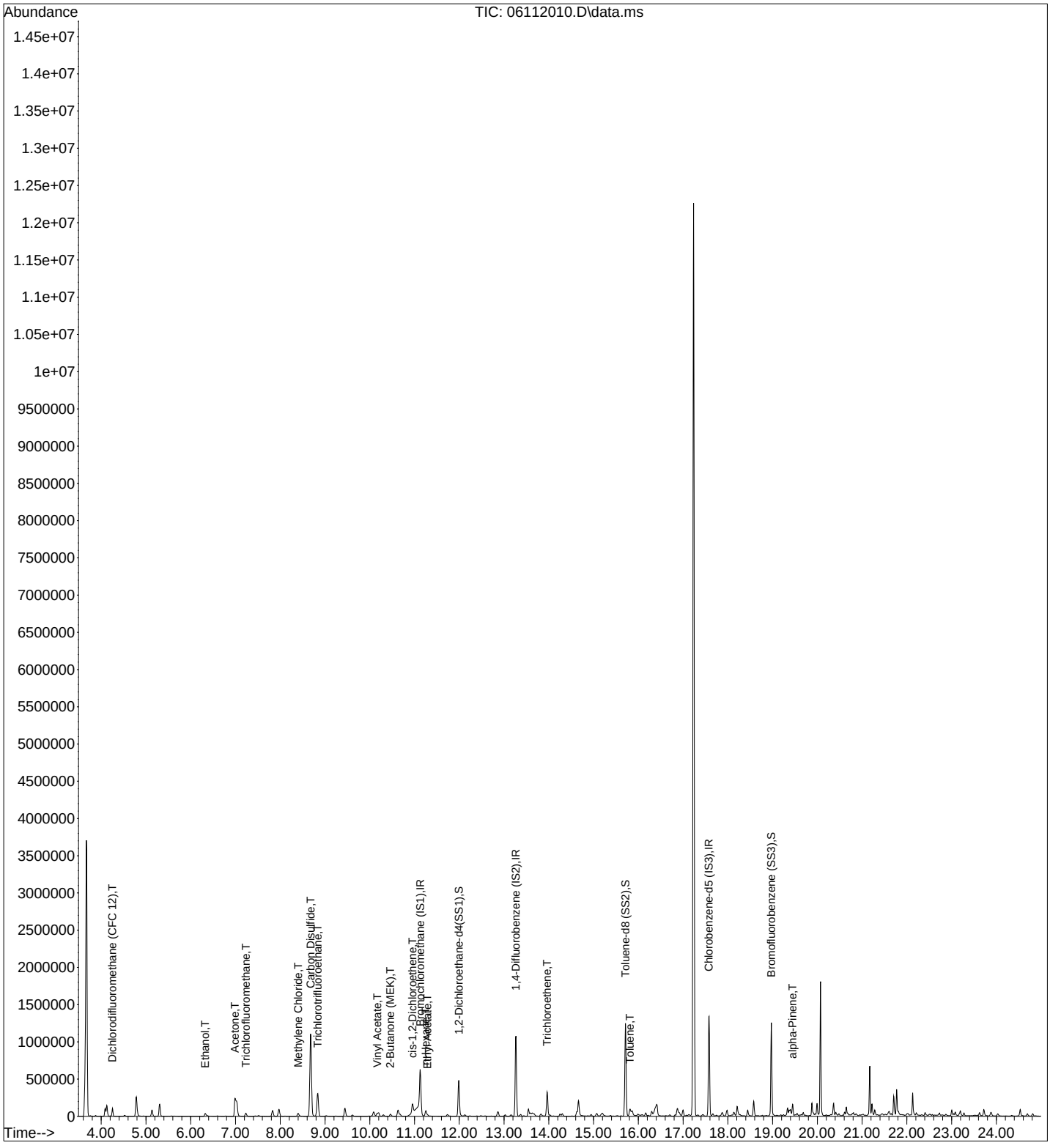
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.13	130	231850	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	13.26	114	998411	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	17.58	82	447039	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.99	65	368881	11.740	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 93.92%				
57) Toluene-d8 (SS2)	15.71	98	945466	12.478	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.84%				
73) Bromofluorobenzene (SS3)	18.97	174	370149	13.576	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.64%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	4.25	85	92503	1.761	ng		100
10) Ethanol	6.32	45	70469	3.399	ng		99
13) Acetone	6.99	58	132590	6.394	ng	#	74
14) Trichlorofluoromethane	7.23	101	42196	0.909	ng		99
19) Methylene Chloride	8.40	84	20854	0.774	ng		97
21) Trichlorotrifluoroethane	8.84	151	130692	5.964	ng		97
22) Carbon Disulfide	8.68	76	2137562	22.130	ng		100
26) Vinyl Acetate	10.17	86	10509	1.627	ng	#	59
27) 2-Butanone (MEK)	10.46	72	11307	0.639	ng		100
28) cis-1,2-Dichloroethene	10.95	61	77550	2.140	ng		96
30) Ethyl Acetate	11.29	61	5040	0.494	ng	#	70
31) n-Hexane	11.25	57	35047	0.792	ng		100
47) Trichloroethene	13.96	130	115969	4.190	ng		98
58) Toluene	15.81	91	57412	0.588	ng		99
75) alpha-Pinene	19.45	93	61246	1.066	ng		100

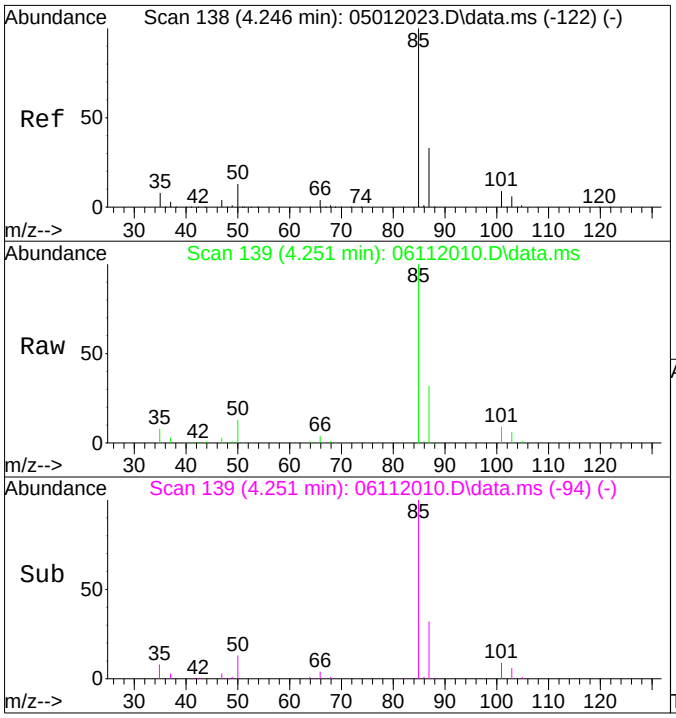
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112010.D Vial: 12
Acq On : 11 Jun 2020 7:19 Operator: LH
Sample : P2003019-003 (1000mL) Inst : GCMS-16
Misc : S31-02112001

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Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
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Response via : Initial Calibration
DataAcq Meth:TO15.M

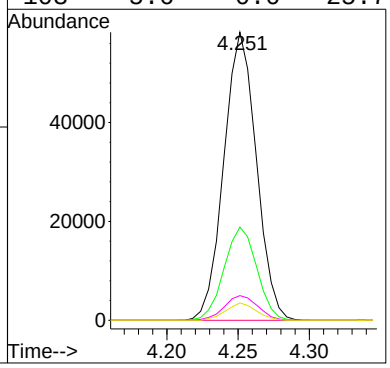


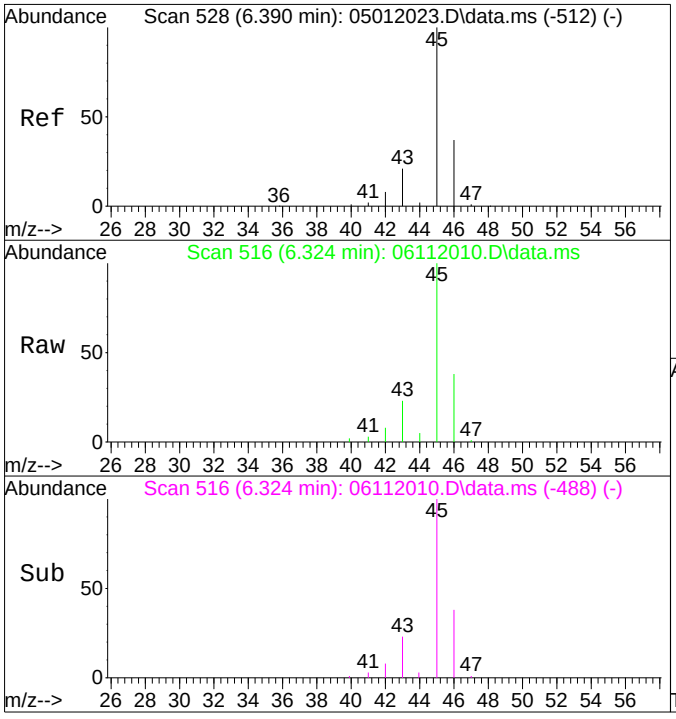


#3
Dichlorodifluoromethane (CFC 12)
Concen: 1.76 ng
RT: 4.25 min Scan# 139
Delta R.T. -0.000 min
Lab File: 06112010.D
Acq: 11 Jun 2020 7:19

Tgt Ion: 85 Resp: 92503

Ion	Ratio	Lower	Upper
85	100		
87	32.5	12.4	52.4
101	8.8	0.0	28.8
103	5.6	0.0	25.7

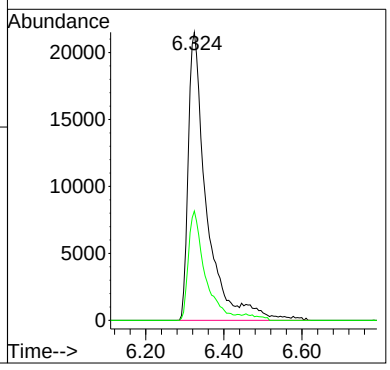


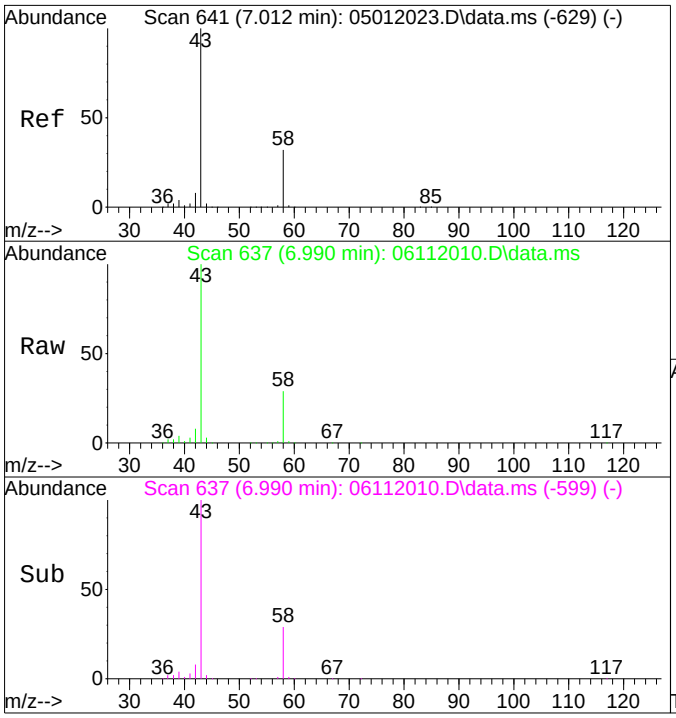


#10
Ethanol
Concen: 3.40 ng
RT: 6.32 min Scan# 516
Delta R.T. -0.094 min
Lab File: 06112010.D
Acq: 11 Jun 2020 7:19

Tgt Ion: 45 Resp: 70469

Ion	Ratio	Lower	Upper
45	100		
46	36.5	17.2	57.2

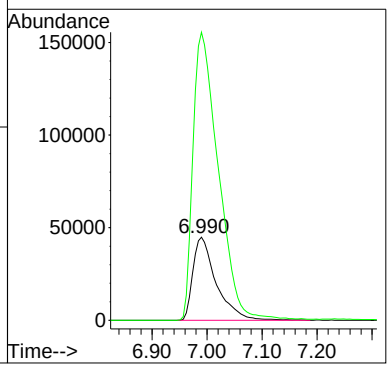


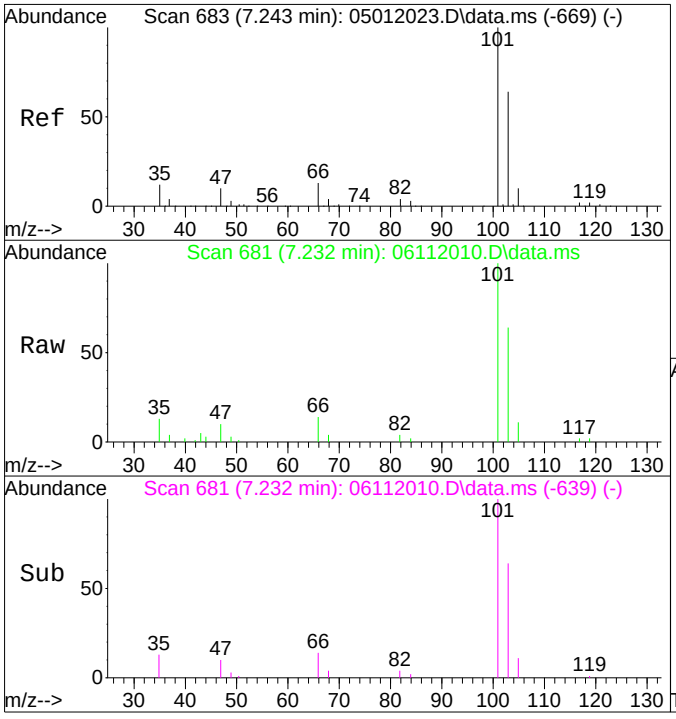


#13
Acetone
Concen: 6.39 ng
RT: 6.99 min Scan# 637
Delta R.T. -0.039 min
Lab File: 06112010.D
Acq: 11 Jun 2020 7:19

Tgt Ion: 58 Resp: 132590

Ion	Ratio	Lower	Upper
58	100		
43	378.0	294.4	354.4#

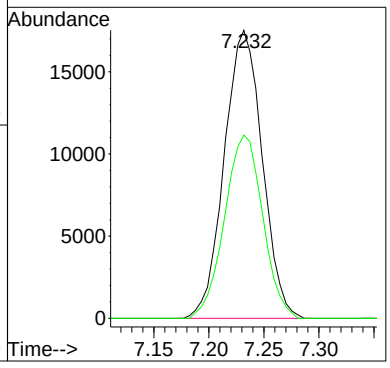


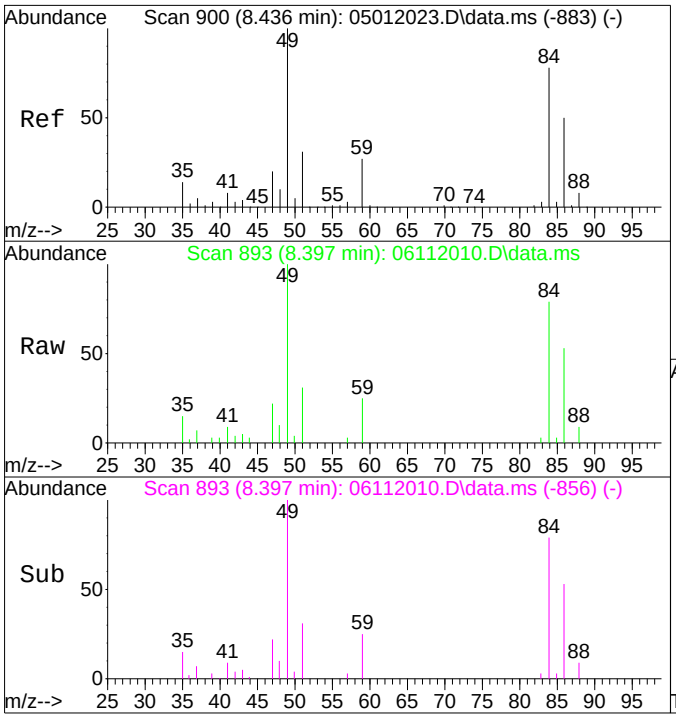


#14
Trichlorofluoromethane
Concen: 0.91 ng
RT: 7.23 min Scan# 681
Delta R.T. -0.017 min
Lab File: 06112010.D
Acq: 11 Jun 2020 7:19

Tgt Ion:101 Resp: 42196

Ion	Ratio	Lower	Upper
101	100		
103	63.8	44.4	84.4

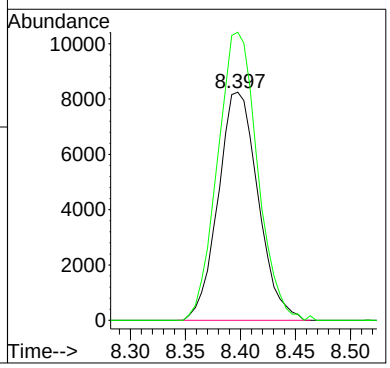


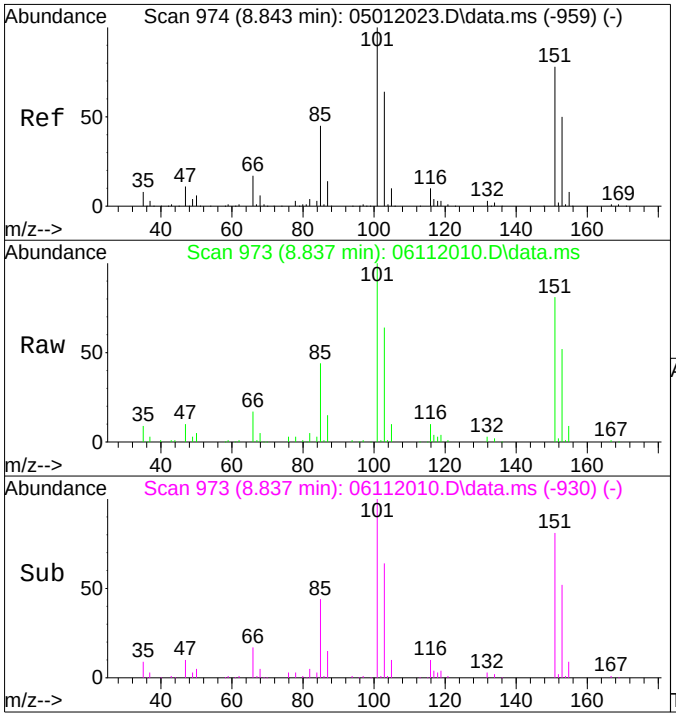


#19
Methylene Chloride
Concen: 0.77 ng
RT: 8.40 min Scan# 893
Delta R.T. -0.044 min
Lab File: 06112010.D
Acq: 11 Jun 2020 7:19

Tgt Ion: 84 Resp: 20854

Ion	Ratio	Lower	Upper
84	100		
49	126.4	104.8	154.8

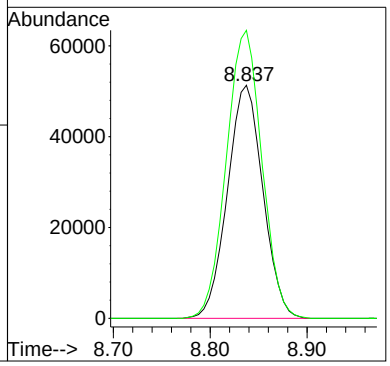


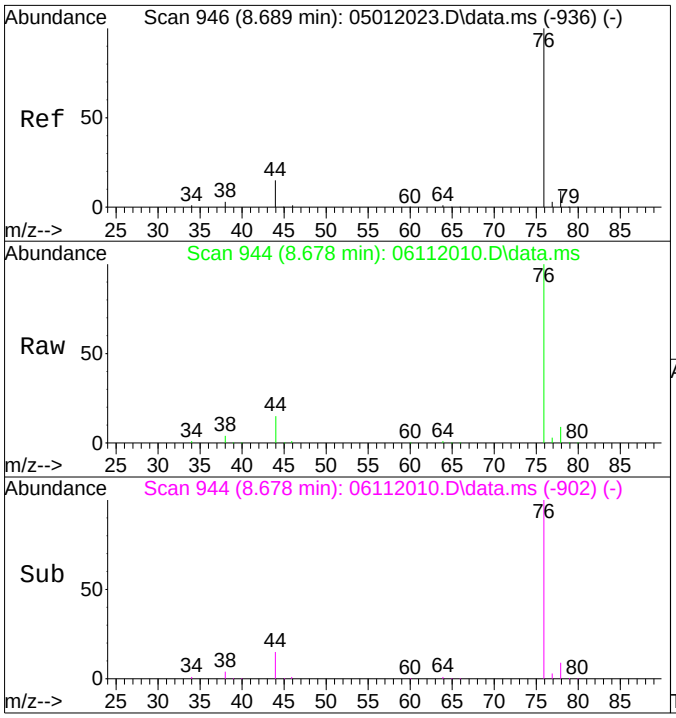


#21
Trichlorotrifluoroethane
Concen: 5.96 ng
RT: 8.84 min Scan# 973
Delta R.T. -0.011 min
Lab File: 06112010.D
Acq: 11 Jun 2020 7:19

Tgt Ion:151 Resp: 130692

Ion	Ratio	Lower	Upper
151	100		
101	123.8	107.3	147.3

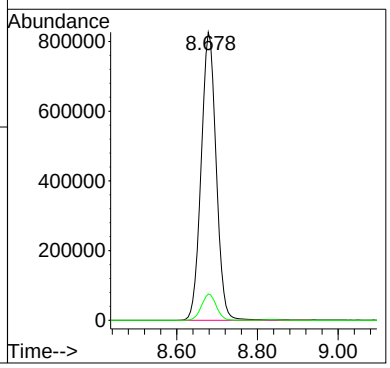


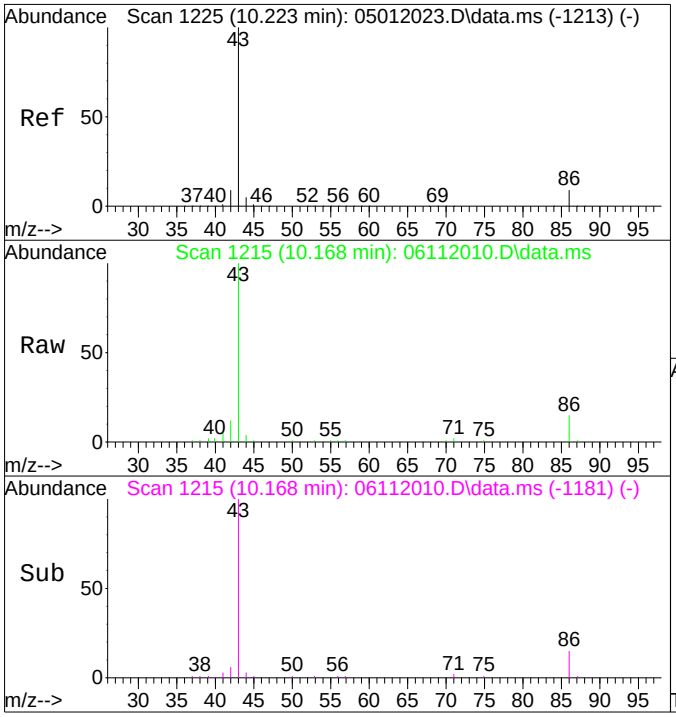


#22
Carbon Disulfide
Concen: 22.13 ng
RT: 8.68 min Scan# 944
Delta R.T. -0.017 min
Lab File: 06112010.D
Acq: 11 Jun 2020 7:19

Tgt Ion: 76 Resp: 2137562

Ion	Ratio	Lower	Upper
76	100		
78	9.0	0.0	29.2

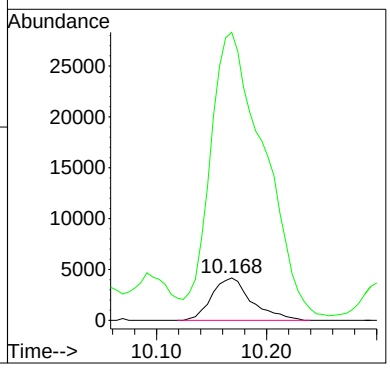


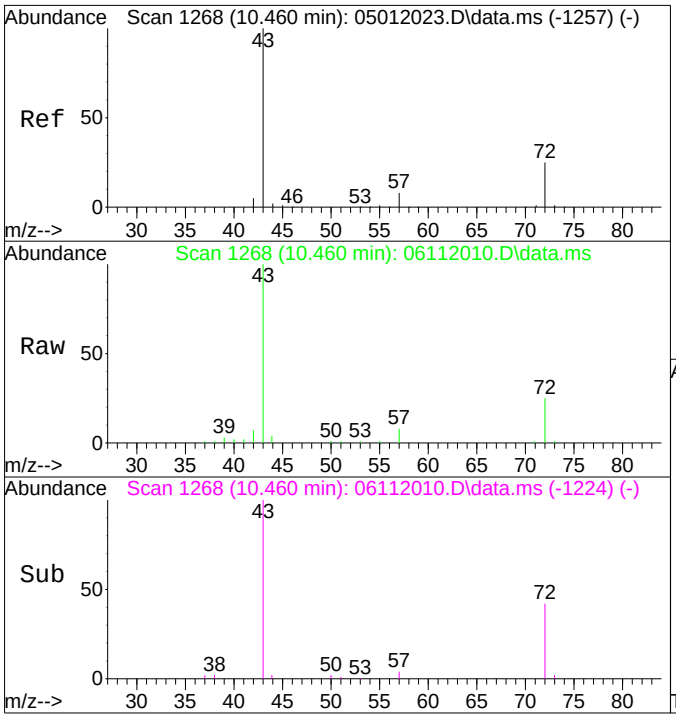


#26
Vinyl Acetate
Concen: 1.63 ng
RT: 10.17 min Scan# 1215
Delta R.T. -0.061 min
Lab File: 06112010.D
Acq: 11 Jun 2020 7:19

Tgt Ion: 86 Resp: 10509

Ion	Ratio	Lower	Upper
86	100		
43	922.2	1103.0	1143.0#

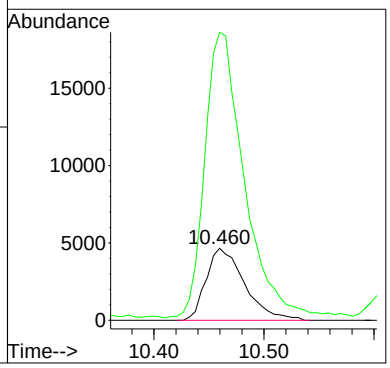


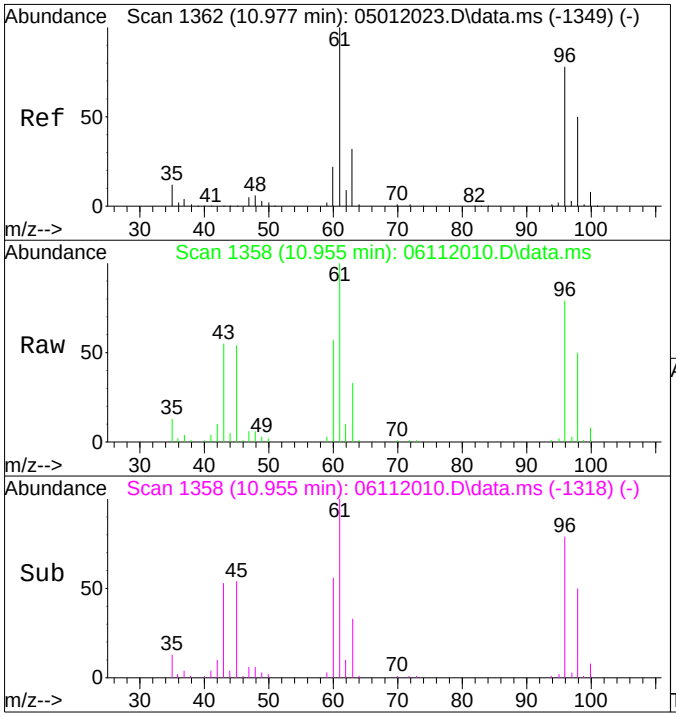


#27
2-Butanone (MEK)
Concen: 0.64 ng
RT: 10.46 min Scan# 1268
Delta R.T. -0.006 min
Lab File: 06112010.D
Acq: 11 Jun 2020 7:19

Tgt Ion: 72 Resp: 11307

Ion	Ratio	Lower	Upper
72	100		
43	409.3	389.7	429.7

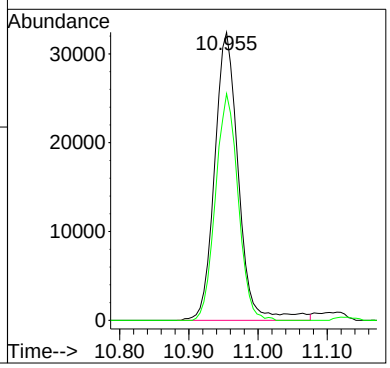


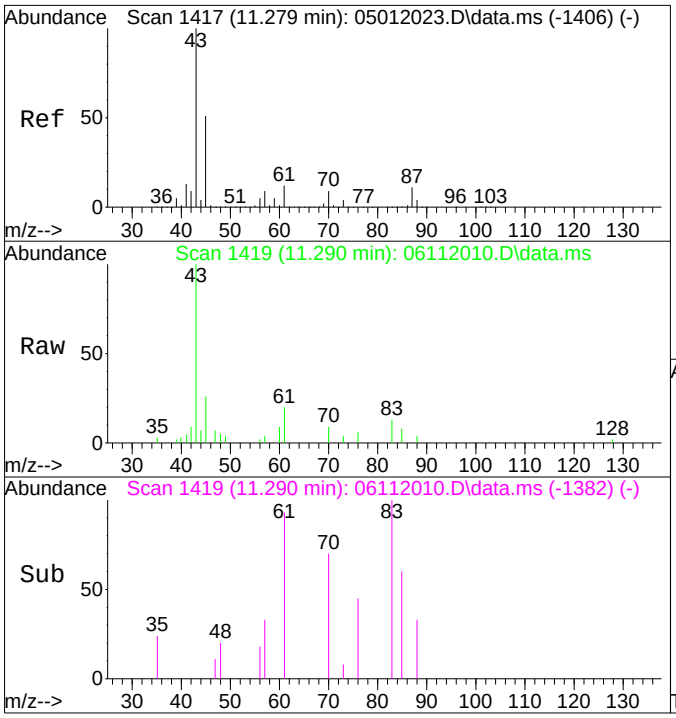


#28
cis-1,2-Dichloroethene
Concen: 2.14 ng
RT: 10.95 min Scan# 1358
Delta R.T. -0.027 min
Lab File: 06112010.D
Acq: 11 Jun 2020 7:19

Tgt Ion: 61 Resp: 77550

Ion	Ratio	Lower	Upper
61	100		
96	74.5	57.6	97.6

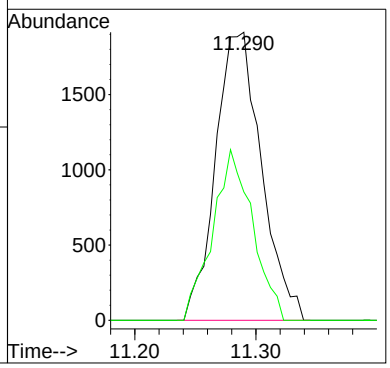


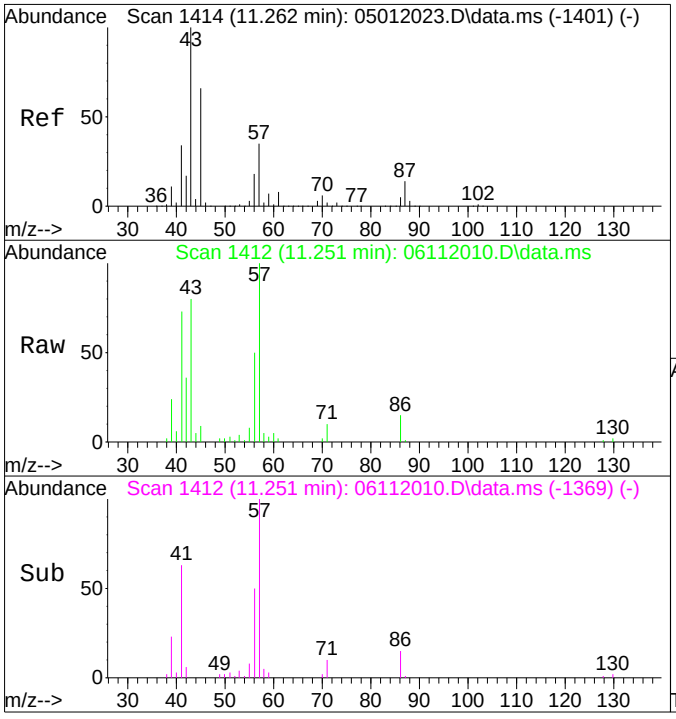


#30
Ethyl Acetate
Concen: 0.49 ng
RT: 11.29 min Scan# 1419
Delta R.T. 0.005 min
Lab File: 06112010.D
Acq: 11 Jun 2020 7:19

Tgt Ion: 61 Resp: 5040

Ion	Ratio	Lower	Upper
61	100		
70	51.6	57.9	97.9#

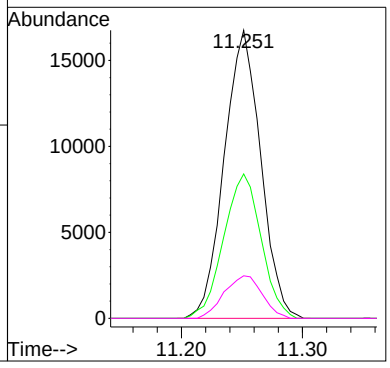


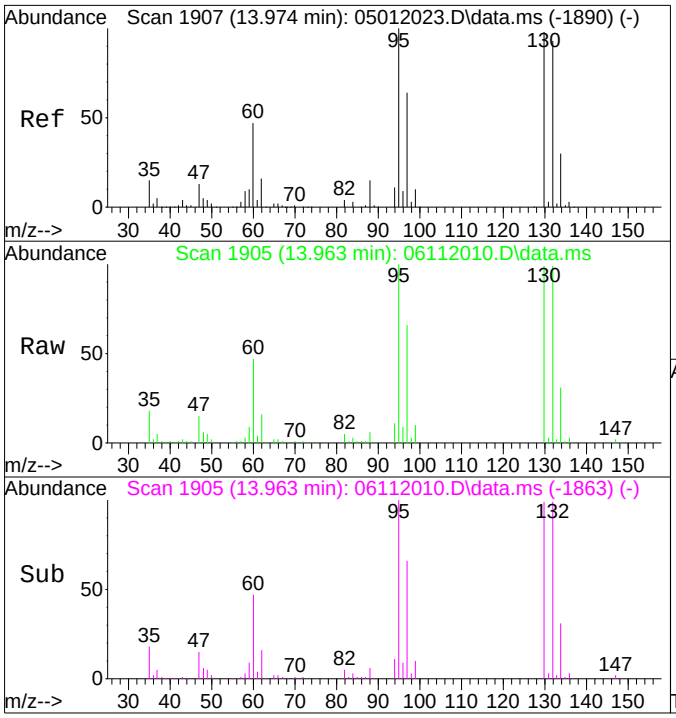


#31
n-Hexane
Concen: 0.79 ng
RT: 11.25 min Scan# 1412
Delta R.T. -0.011 min
Lab File: 06112010.D
Acq: 11 Jun 2020 7:19

Tgt Ion: 57 Resp: 35047

Ion	Ratio	Lower	Upper
57	100		
56	51.5	41.4	62.0
86	15.4	12.4	18.6

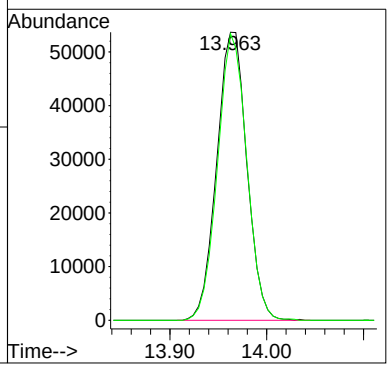


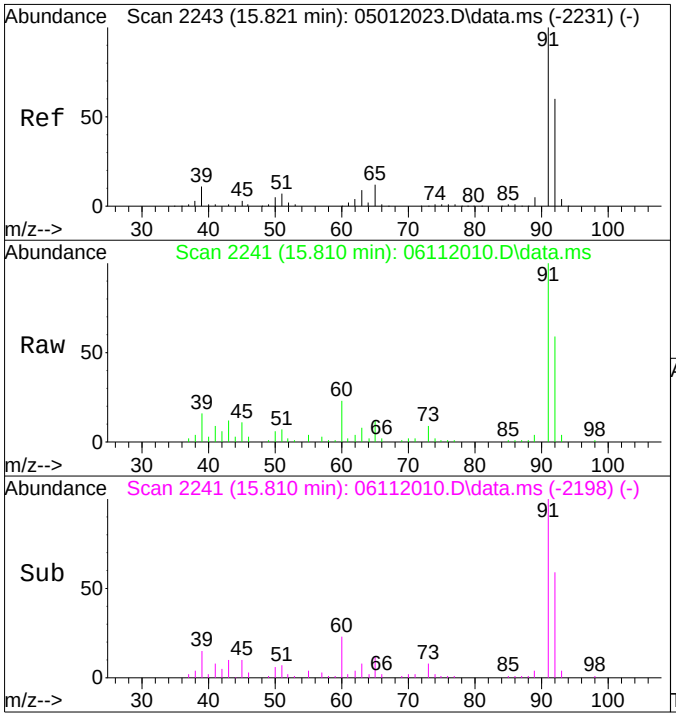


#47
Trichloroethene
Concen: 4.19 ng
RT: 13.96 min Scan# 1905
Delta R.T. -0.017 min
Lab File: 06112010.D
Acq: 11 Jun 2020 7:19

Tgt Ion:130 Resp: 115969

Ion	Ratio	Lower	Upper
130	100		
132	96.4	74.9	114.9

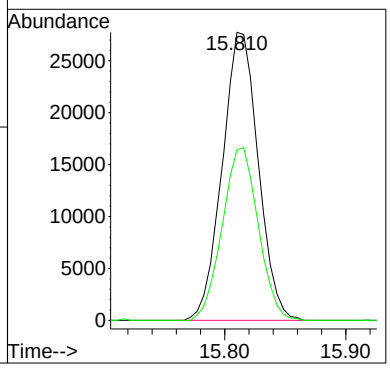


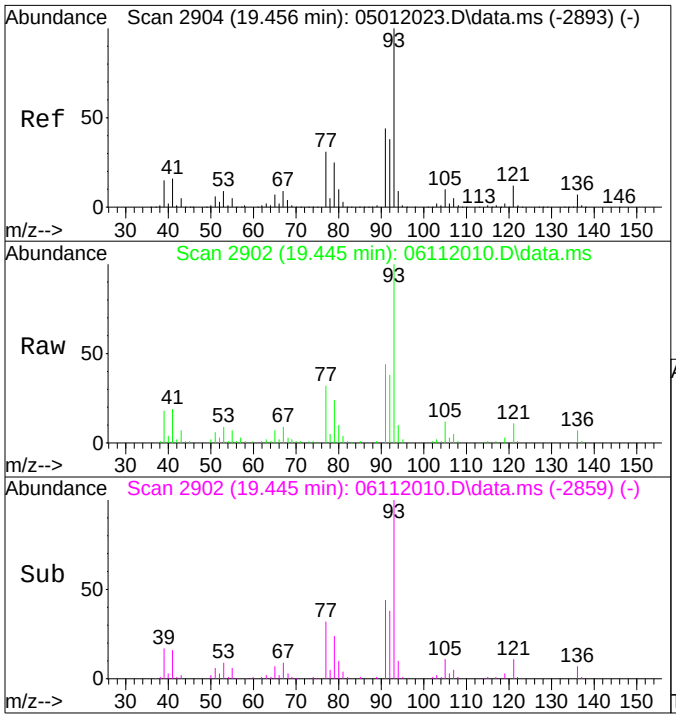


#58
Toluene
Concen: 0.59 ng
RT: 15.81 min Scan# 2241
Delta R.T. -0.011 min
Lab File: 06112010.D
Acq: 11 Jun 2020 7:19

Tgt Ion: 91 Resp: 57412

Ion	Ratio	Lower	Upper
91	100		
92	59.9	39.4	79.4

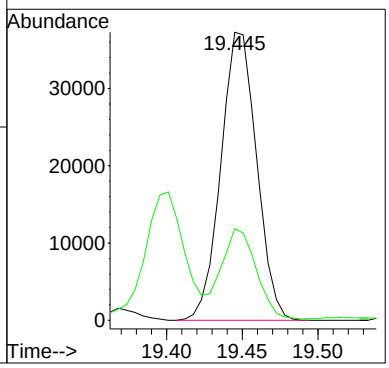




#75
alpha-Pinene
Concen: 1.07 ng
RT: 19.45 min Scan# 2902
Delta R.T. -0.011 min
Lab File: 06112010.D
Acq: 11 Jun 2020 7:19

Tgt Ion: 93 Resp: 61246

Ion	Ratio	Lower	Upper
93	100		
77	31.2	11.2	51.2



Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112011.D Vial: 13
Acq On : 11 Jun 2020 7:56 Operator: LH
Sample : P2003019-004 (1000mL) Inst : GCMS-16
Misc : S31-02112001

Quant Time: Jun 11 18:59:55 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS) LH 6/11/20
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.13	130	231804	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	13.26	114	991406	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	17.58	82	450314	12.500	ng	-0.01
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	11.99	65	365843	11.646	ng	-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 93.20%			
57) Toluene-d8 (SS2)	15.71	98	942740	12.351	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.80%			
73) Bromofluorobenzene (SS3)	18.97	174	366295	13.337	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.72%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	4.26	85	88985	1.695	ng	99
4) Chloromethane	4.53	50	9707	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	4.81	135	2156	N.D.		
6) Vinyl Chloride	4.95	62	1470	N.D.		
7) 1,3-Butadiene	5.22	54	162	N.D.		
8) Bromomethane	5.65	94	473	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	6.33	45	76914	3.710	ng	100
11) Acetonitrile	6.60	41	5612	N.D.		
12) Acrolein	6.79	56	1853	N.D.		
13) Acetone	7.00	58	78665	3.794	ng #	77
14) Trichlorofluoromethane	7.23	101	44224	0.953	ng	99
15) 2-Propanol (Isopropanol)	7.52	45	18881	N.D.		
16) Acrylonitrile	7.84	53	1053	N.D.		
17) 1,1-Dichloroethene	8.19	96	591	N.D.		
18) 2-Methyl-2-Propanol (t...	8.45	59	2659	N.D.		
19) Methylene Chloride	8.40	84	18236	0.677	ng	99
20) 3-Chloro-1-propene (Al...	8.50	41	804	N.D.		
21) Trichlorotrifluoroethane	8.84	151	70917	3.237	ng	97
22) Carbon Disulfide	8.68	76	5194	N.D.		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	10.20	86	1943	N.D.		
27) 2-Butanone (MEK)	10.46	72	9507	0.538	ng	98
28) cis-1,2-Dichloroethene	10.95	61	38699	1.068	ng	99
29) Diisopropyl Ether	11.26	87	241	N.D.		
30) Ethyl Acetate	11.28	61	3418	N.D.		
31) n-Hexane	11.25	57	40547	0.917	ng	99
32) Chloroform	11.30	83	2664	N.D.		
34) Tetrahydrofuran (THF)	11.74	72	10288	0.597	ng	98
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	12.11	62	2115	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	12.86	56	4695	N.D.		
41) Benzene	12.87	78	36274	N.D.		
42) Carbon Tetrachloride	13.03	117	10316	N.D.		
43) Cyclohexane	13.16	84	5734	N.D.		
44) tert-Amyl Methyl Ether	13.57	73	737	N.D.		
45) 1,2-Dichloropropane	13.52	63	905	N.D.		
46) Bromodichloromethane	13.96	83	1051	N.D.		
47) Trichloroethene	13.96	130	62508	2.275	ng	99
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	14.04	57	9889	N.D.		
50) Methyl Methacrylate	14.30	100	1523	N.D.		

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112011.D Vial: 13
Acq On : 11 Jun 2020 7:56 Operator: LH
Sample : P2003019-004 (1000mL) Inst : GCMS-16
Misc : S31-02112001

Quant Time: Jun 11 18:59:55 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

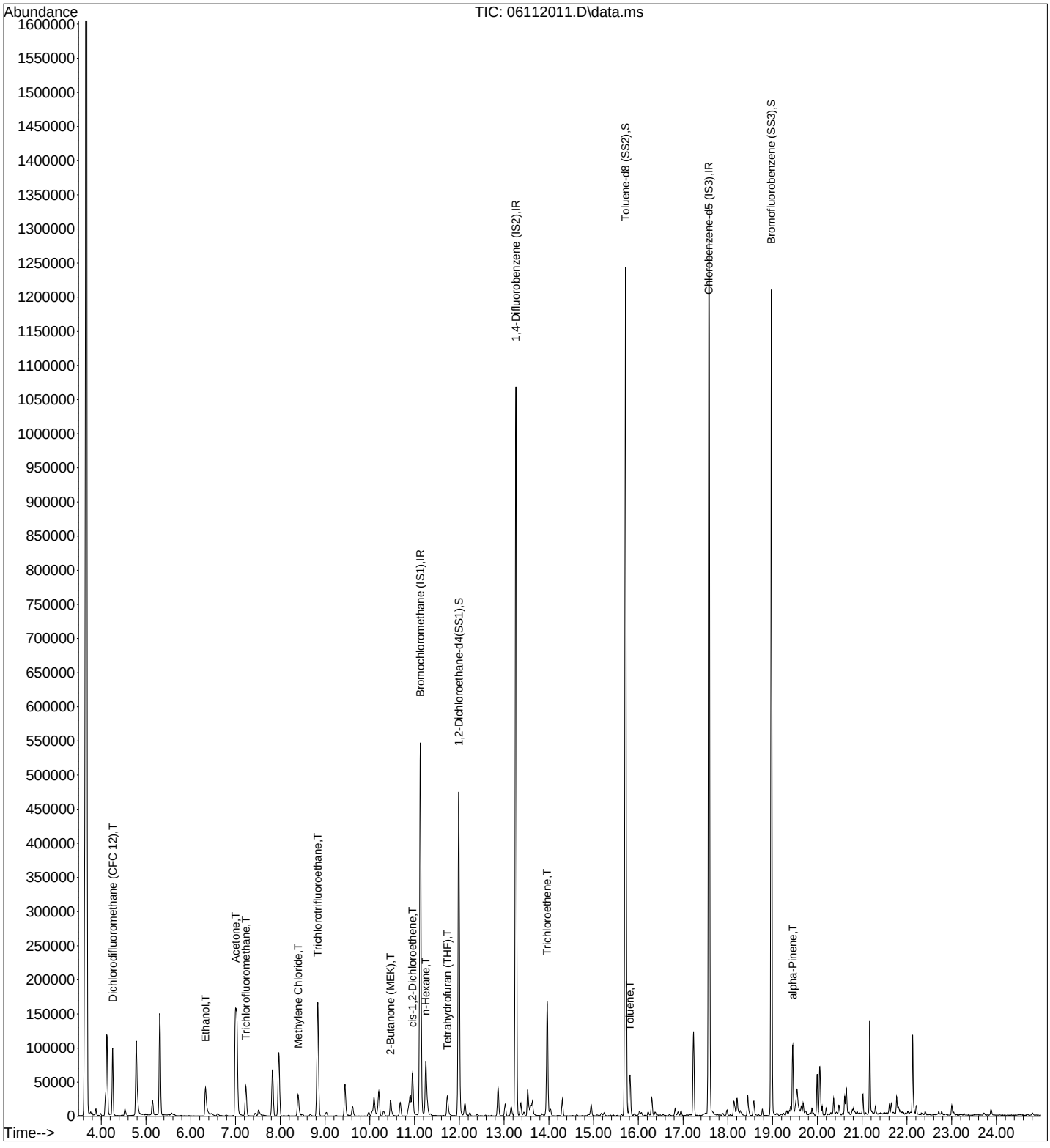
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.30	71	6236	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	14.89	58	519	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	15.81	91	46956	0.477	ng	100
59) 2-Hexanone	16.06	43	2848	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.70	43	2546	N.D.		
63) n-Octane	16.82	57	2236	N.D.		
64) Tetrachloroethene	16.95	166	2612	N.D.		
65) Chlorobenzene	17.62	112	495	N.D.		
66) Ethylbenzene	17.98	91	6914	N.D.		
67) m- & p-Xylenes	18.13	91	16418	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.47	104	2958	N.D.		
70) o-Xylene	18.57	91	6681	N.D.		
71) n-Nonane	18.77	43	4134	N.D.		
72) 1,1,2,2-Tetrachloroethane	18.59	83	770	N.D.		
74) Cumene	19.10	105	1046	N.D.		
75) alpha-Pinene	19.45	93	40764	0.705	ng	100
76) n-Propylbenzene	19.55	91	3183	N.D.		
77) 3-Ethyltoluene	19.64	105	4713	N.D.		
78) 4-Ethyltoluene	19.68	105	2333	N.D.		
79) 1,3,5-Trimethylbenzene	19.74	105	1835	N.D.		
80) alpha-Methylstyrene	19.88	118	2809	N.D.		
81) 2-Ethyltoluene	19.91	105	1915	N.D.		
82) 1,2,4-Trimethylbenzene	20.10	105	5853	N.D.		
83) n-Decane	20.19	57	3872	N.D.		
84) Benzyl Chloride	20.23	91	516	N.D.		
85) 1,3-Dichlorobenzene	20.24	146	442	N.D.		
86) 1,4-Dichlorobenzene	20.30	146	1523	N.D.		
87) sec-Butylbenzene	20.35	105	463	N.D.		
88) 4-Isopropyltoluene (p-...	20.48	119	6198	N.D.		
89) 1,2,3-Trimethylbenzene	20.48	105	1945	N.D.		
90) 1,2-Dichlorobenzene	20.60	146	354	N.D.		
91) d-Limonene	20.61	68	6859	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	21.30	57	3282	N.D.		
94) 1,2,4-Trichlorobenzene	22.11	180	599	N.D.		
95) Naphthalene	22.22	128	6018	N.D.		
96) n-Dodecane	22.21	57	2013	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.27	55	3863	N.D.		
99) tert-Butylbenzene	20.10	119	814	N.D.		
100) n-Butylbenzene	20.85	91	1952	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112011.D Vial: 13
Acq On : 11 Jun 2020 7:56 Operator: LH
Sample : P2003019-004 (1000mL) Inst : GCMS-16
Misc : S31-02112001

Quant Time: Jun 11 18:59:55 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112011.D Vial: 13
Acq On : 11 Jun 2020 7:56 Operator: LH
Sample : P2003019-004 (1000mL) Inst : GCMS-16
Misc : S31-02112001

Quant Time: Jun 11 18:59:55 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

LH 6/11/20

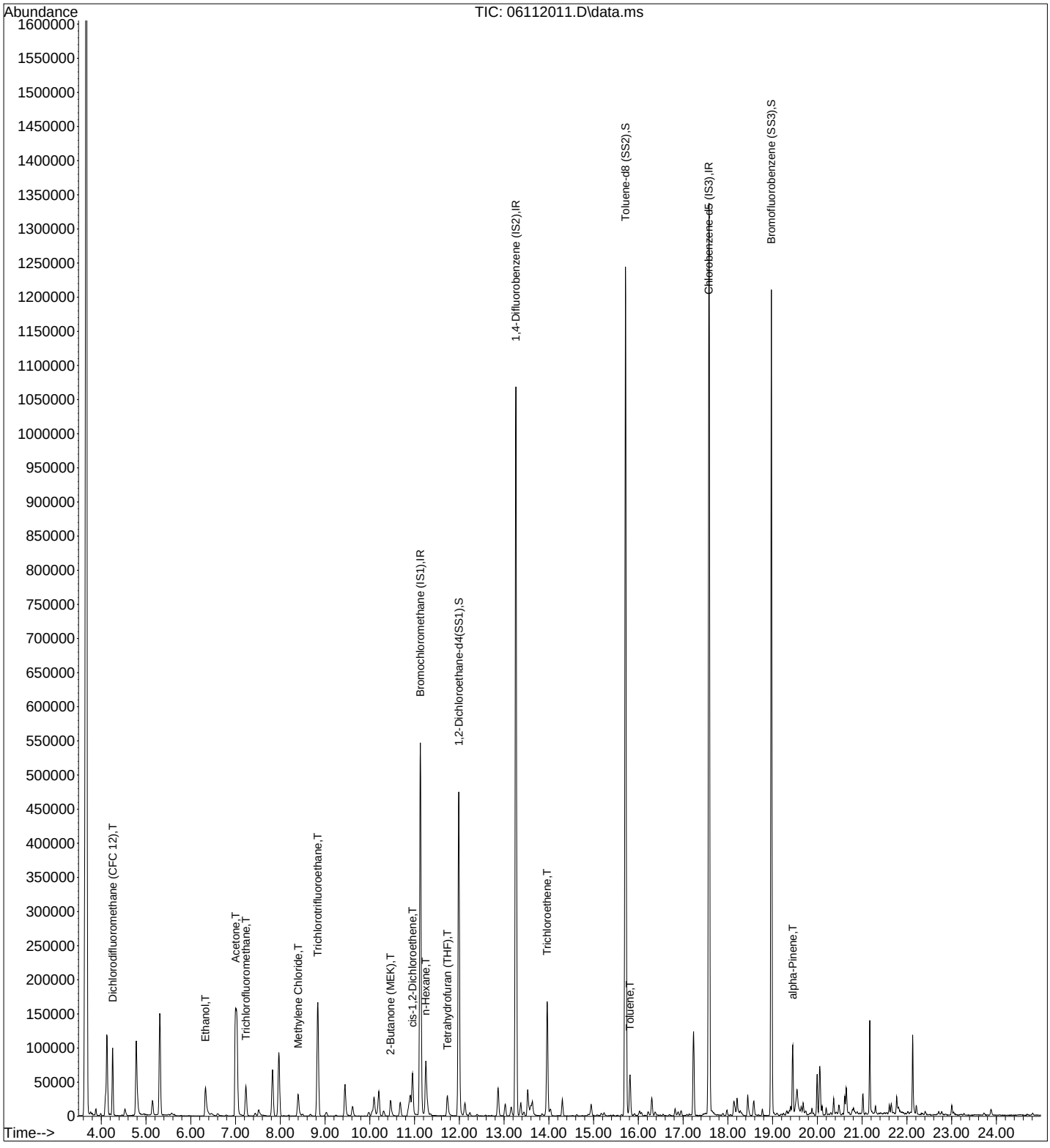
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.13	130	231804	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	13.26	114	991406	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	17.58	82	450314	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.99	65	365843	11.646	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 93.20%				
57) Toluene-d8 (SS2)	15.71	98	942740	12.351	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.80%				
73) Bromofluorobenzene (SS3)	18.97	174	366295	13.337	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.72%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	4.26	85	88985	1.695	ng		99
10) Ethanol	6.33	45	76914	3.710	ng		100
13) Acetone	7.00	58	78665	3.794	ng	#	77
14) Trichlorofluoromethane	7.23	101	44224	0.953	ng		99
19) Methylene Chloride	8.40	84	18236	0.677	ng		99
21) Trichlorotrifluoroethane	8.84	151	70917	3.237	ng		97
27) 2-Butanone (MEK)	10.46	72	9507	0.538	ng		98
28) cis-1,2-Dichloroethene	10.95	61	38699	1.068	ng		99
31) n-Hexane	11.25	57	40547	0.917	ng		99
34) Tetrahydrofuran (THF)	11.74	72	10288	0.597	ng		98
47) Trichloroethene	13.96	130	62508	2.275	ng		99
58) Toluene	15.81	91	46956	0.477	ng		100
75) alpha-Pinene	19.45	93	40764	0.705	ng		100

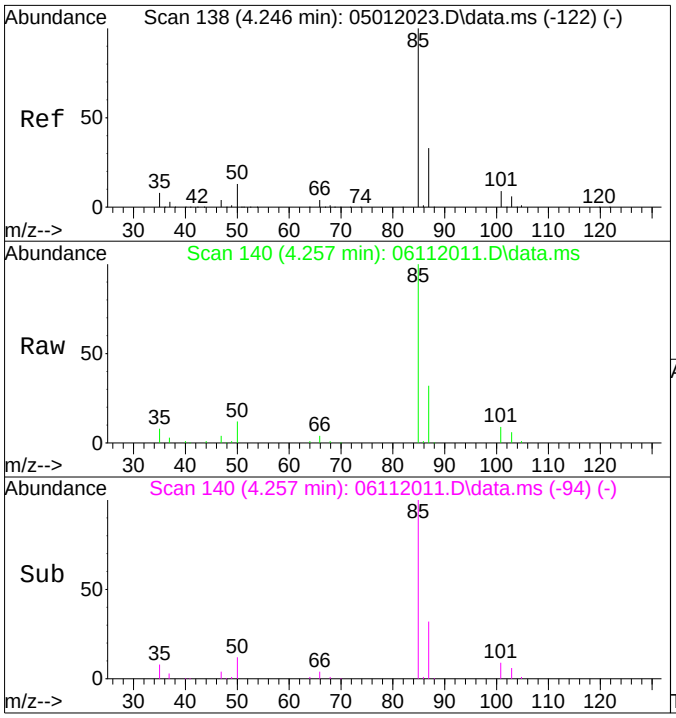
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112011.D Vial: 13
Acq On : 11 Jun 2020 7:56 Operator: LH
Sample : P2003019-004 (1000mL) Inst : GCMS-16
Misc : S31-02112001

Quant Time: Jun 11 18:59:55 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

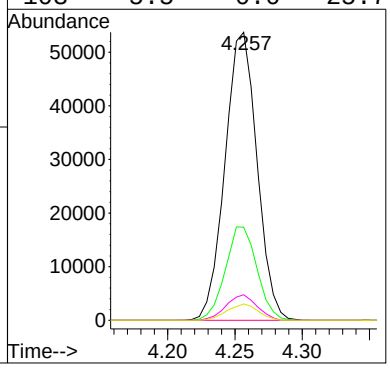


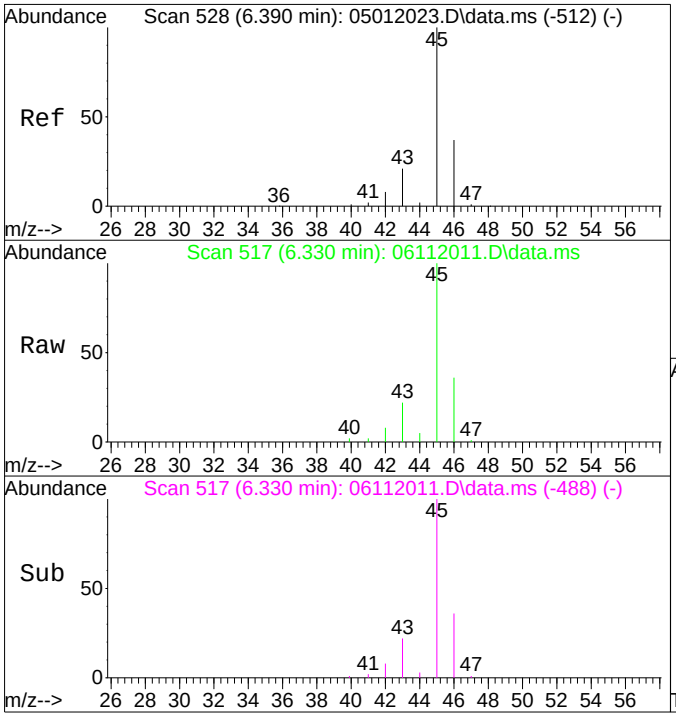


#3
Dichlorodifluoromethane (CFC 12)
Concen: 1.69 ng
RT: 4.26 min Scan# 140
Delta R.T. 0.005 min
Lab File: 06112011.D
Acq: 11 Jun 2020 7:56

Tgt Ion: 85 Resp: 88985

Ion	Ratio	Lower	Upper
85	100		
87	32.1	12.4	52.4
101	8.6	0.0	28.8
103	5.5	0.0	25.7

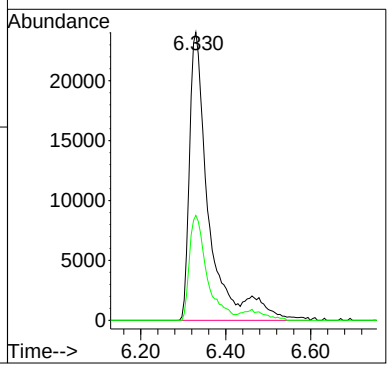


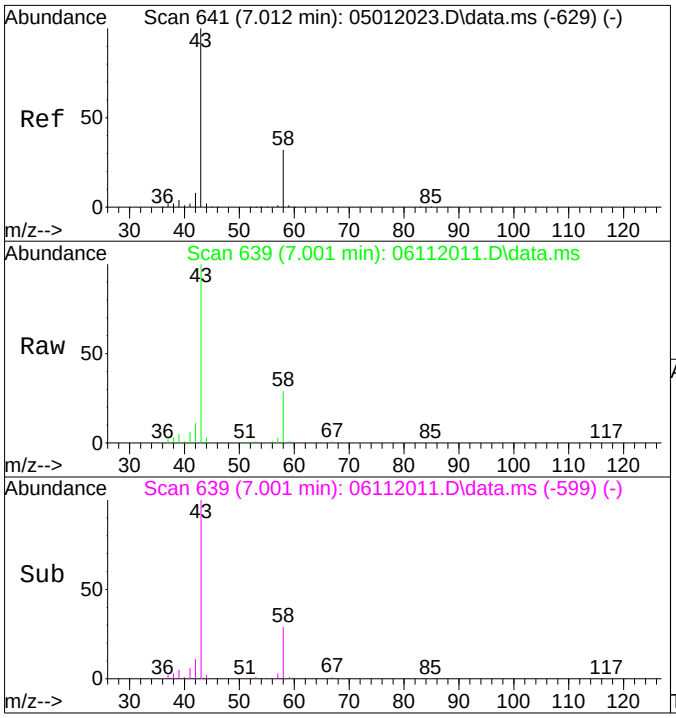


#10
Ethanol
Concen: 3.71 ng
RT: 6.33 min Scan# 517
Delta R.T. -0.088 min
Lab File: 06112011.D
Acq: 11 Jun 2020 7:56

Tgt Ion: 45 Resp: 76914

Ion	Ratio	Lower	Upper
45	100		
46	37.2	17.2	57.2

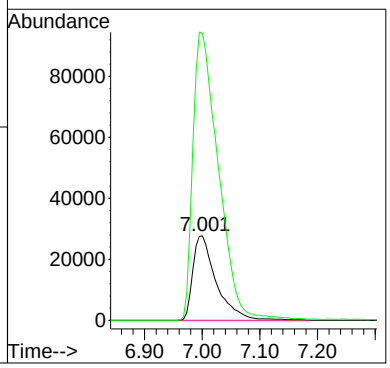


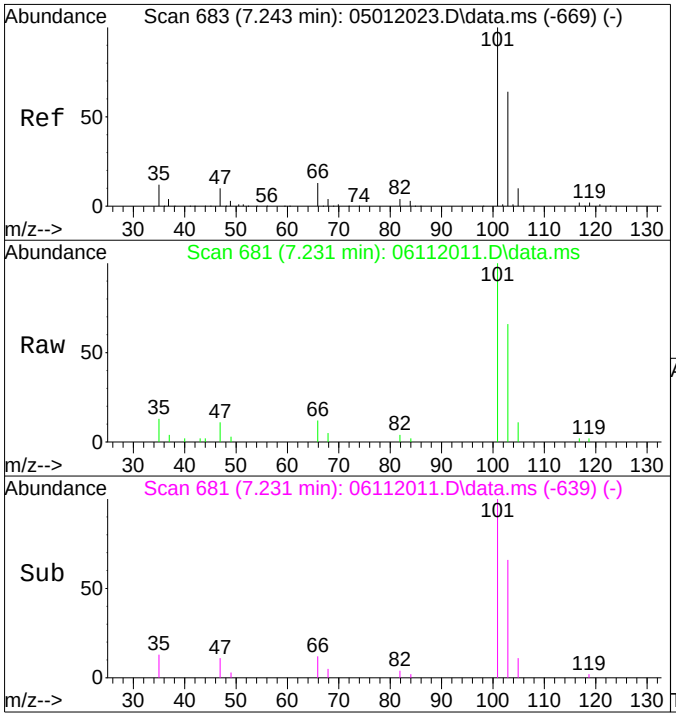


#13
Acetone
Concen: 3.79 ng
RT: 7.00 min Scan# 639
Delta R.T. -0.028 min
Lab File: 06112011.D
Acq: 11 Jun 2020 7:56

Tgt Ion: 58 Resp: 78665

Ion	Ratio	Lower	Upper
58	100		
43	371.1	294.4	354.4#

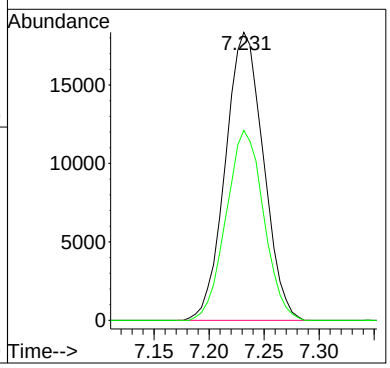


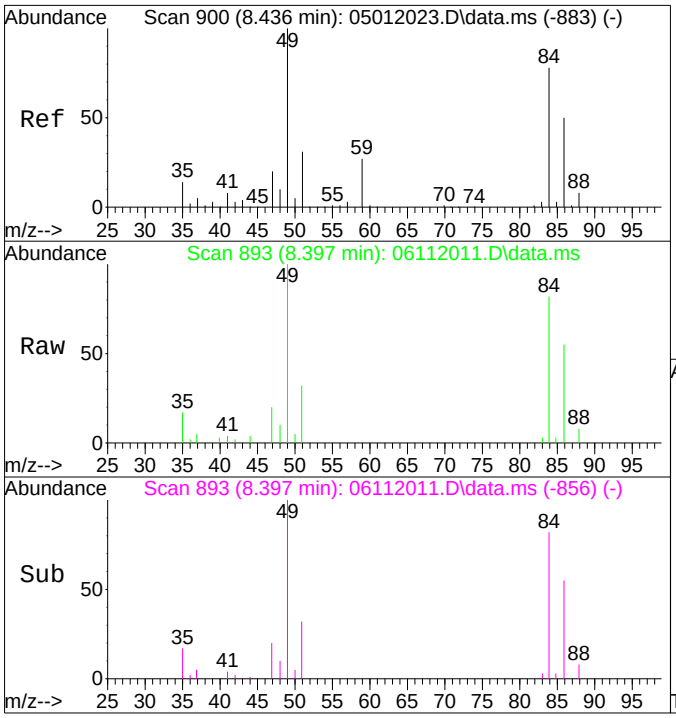


#14
Trichlorofluoromethane
Concen: 0.95 ng
RT: 7.23 min Scan# 681
Delta R.T. -0.017 min
Lab File: 06112011.D
Acq: 11 Jun 2020 7:56

Tgt Ion:101 Resp: 44224

Ion	Ratio	Lower	Upper
101	100		
103	65.0	44.4	84.4

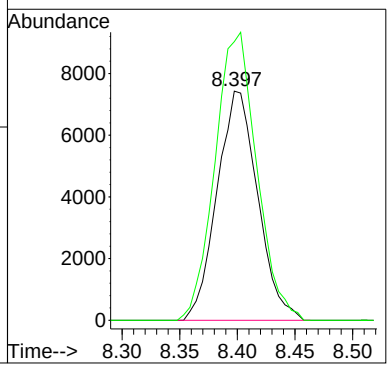


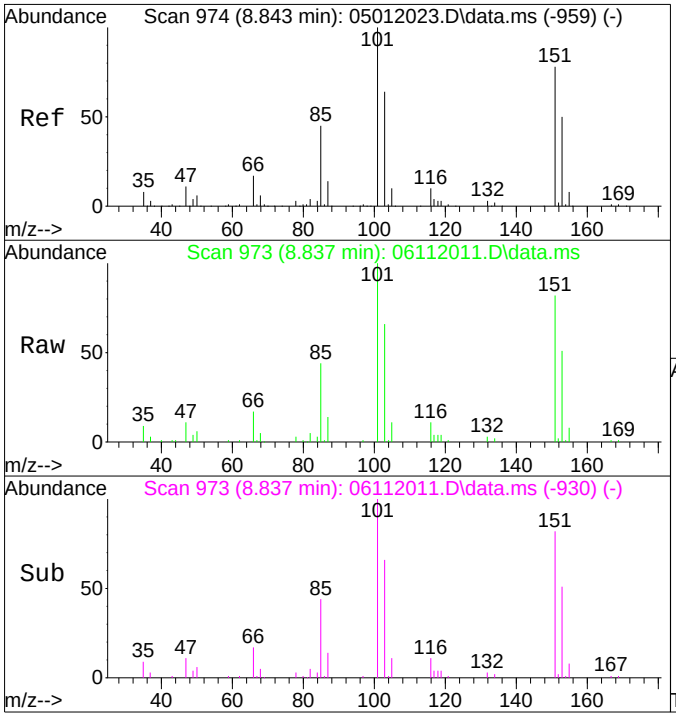


#19
Methylene Chloride
Concen: 0.68 ng
RT: 8.40 min Scan# 893
Delta R.T. -0.044 min
Lab File: 06112011.D
Acq: 11 Jun 2020 7:56

Tgt Ion: 84 Resp: 18236

Ion	Ratio	Lower	Upper
84	100		
49	129.0	104.8	154.8

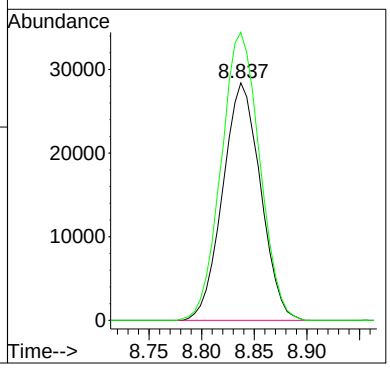


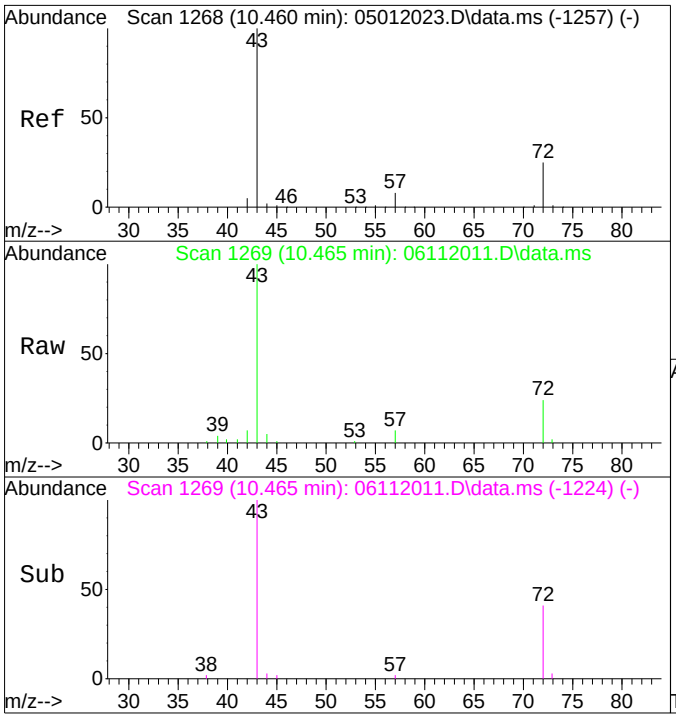


#21
Trichlorotrifluoroethane
Concen: 3.24 ng
RT: 8.84 min Scan# 973
Delta R.T. -0.011 min
Lab File: 06112011.D
Acq: 11 Jun 2020 7:56

Tgt Ion:151 Resp: 70917

Ion	Ratio	Lower	Upper
151	100		
101	123.6	107.3	147.3

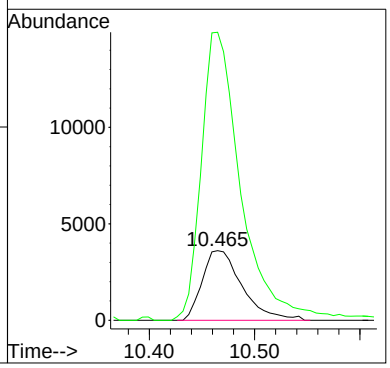


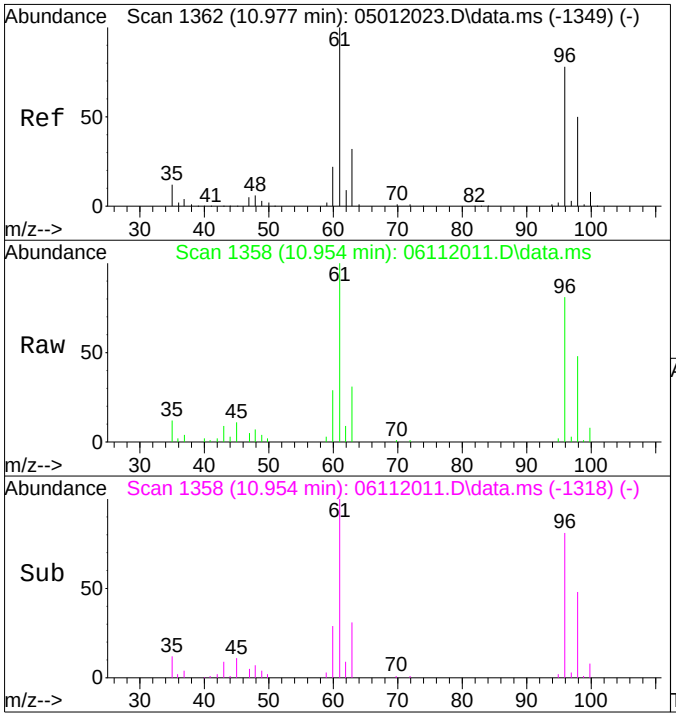


#27
2-Butanone (MEK)
Concen: 0.54 ng
RT: 10.46 min Scan# 1269
Delta R.T. -0.000 min
Lab File: 06112011.D
Acq: 11 Jun 2020 7:56

Tgt Ion: 72 Resp: 9507

Ion	Ratio	Lower	Upper
72	100		
43	414.4	389.7	429.7

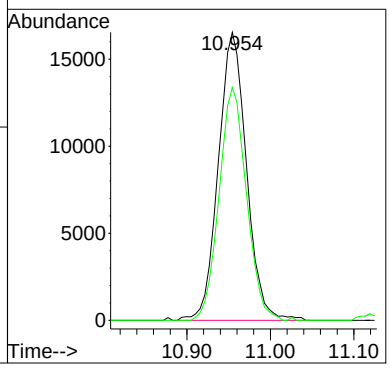


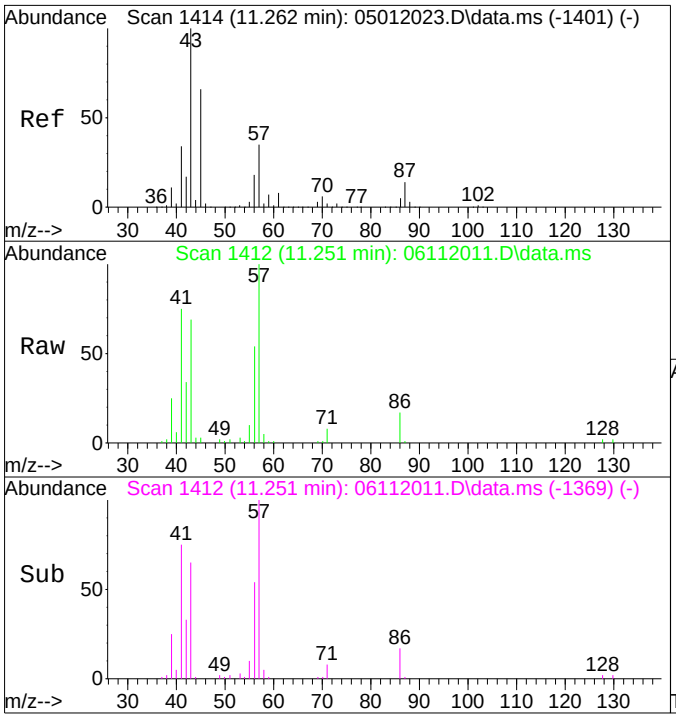


#28
cis-1,2-Dichloroethene
Concen: 1.07 ng
RT: 10.95 min Scan# 1358
Delta R.T. -0.028 min
Lab File: 06112011.D
Acq: 11 Jun 2020 7:56

Tgt Ion: 61 Resp: 38699

Ion	Ratio	Lower	Upper
61	100		
96	78.7	57.6	97.6

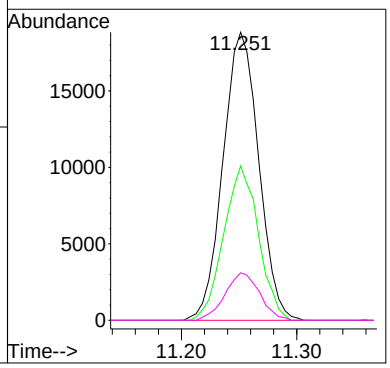


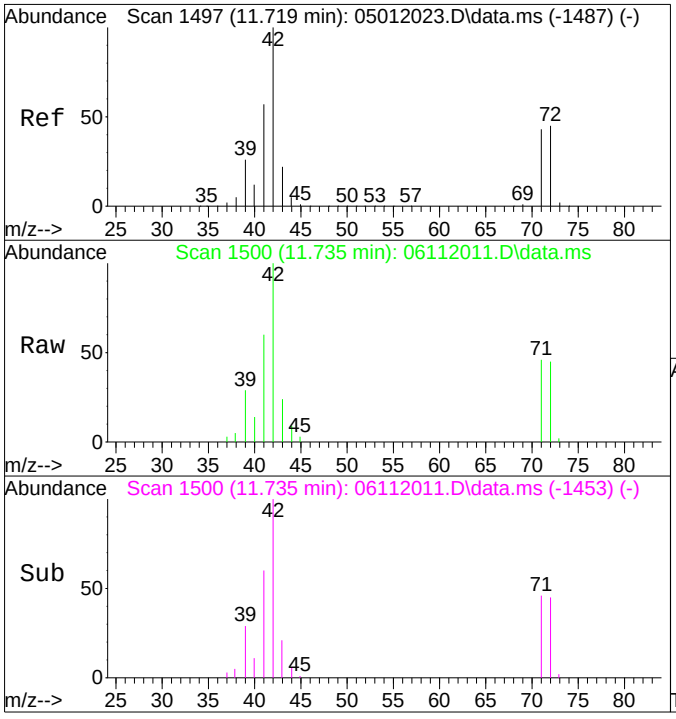


#31
n-Hexane
Concen: 0.92 ng
RT: 11.25 min Scan# 1412
Delta R.T. -0.011 min
Lab File: 06112011.D
Acq: 11 Jun 2020 7:56

Tgt Ion: 57 Resp: 40547

Ion	Ratio	Lower	Upper
57	100		
56	52.1	41.4	62.0
86	16.0	12.4	18.6

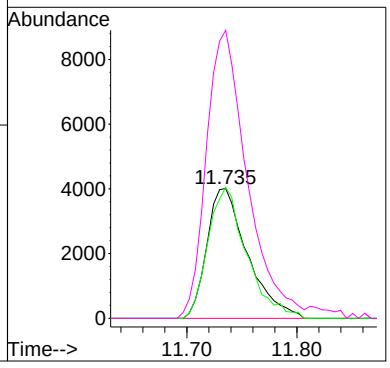


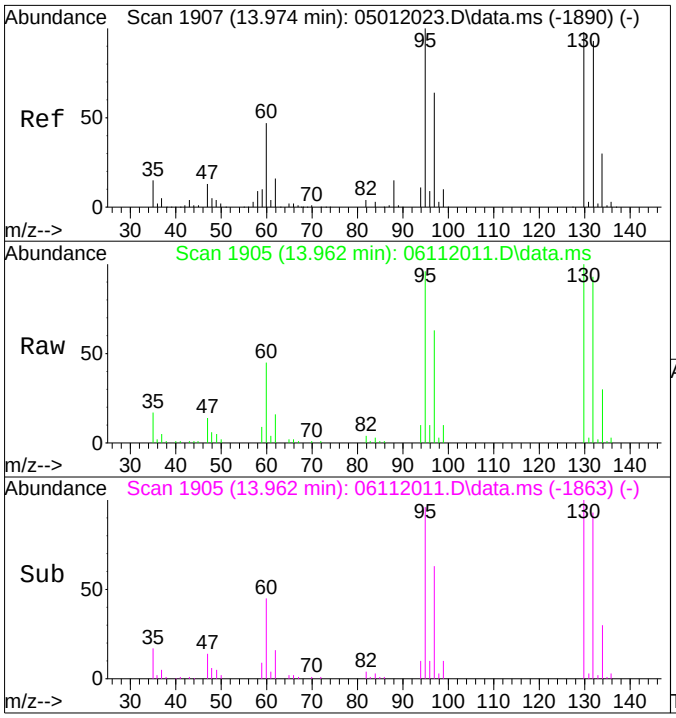


#34
Tetrahydrofuran (THF)
Concen: 0.60 ng
RT: 11.74 min Scan# 1500
Delta R.T. 0.011 min
Lab File: 06112011.D
Acq: 11 Jun 2020 7:56

Tgt Ion: 72 Resp: 10288

Ion	Ratio	Lower	Upper
72	100		
71	96.0	77.0	117.0
42	229.2	204.6	244.6

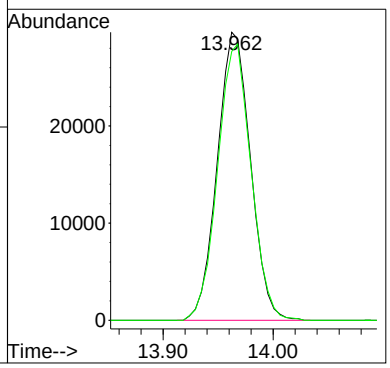


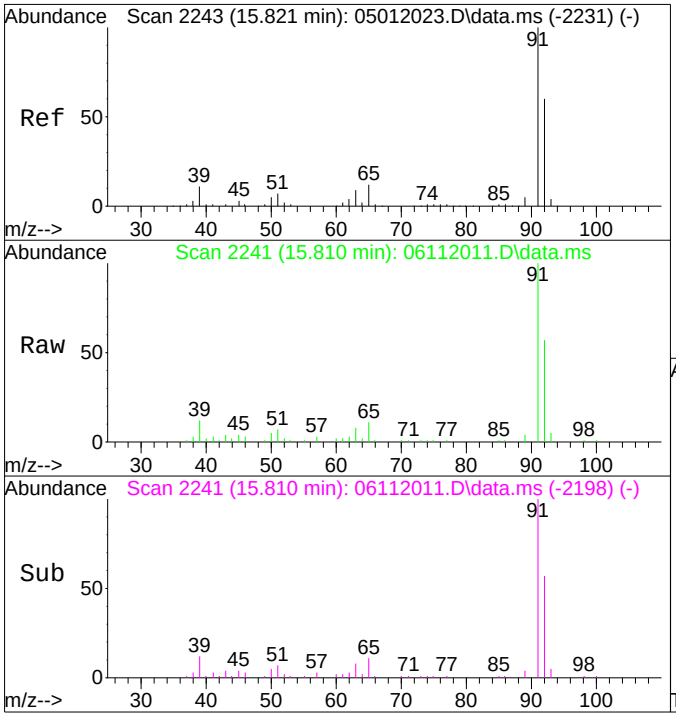


#47
Trichloroethene
Concen: 2.27 ng
RT: 13.96 min Scan# 1905
Delta R.T. -0.017 min
Lab File: 06112011.D
Acq: 11 Jun 2020 7:56

Tgt Ion:130 Resp: 62508

Ion	Ratio	Lower	Upper
130	100		
132	96.2	74.9	114.9

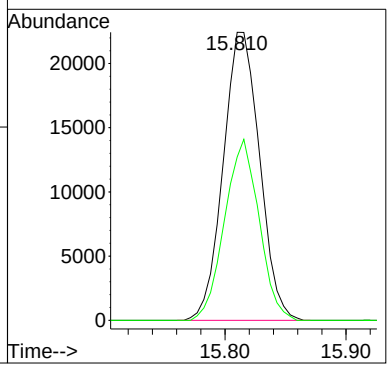


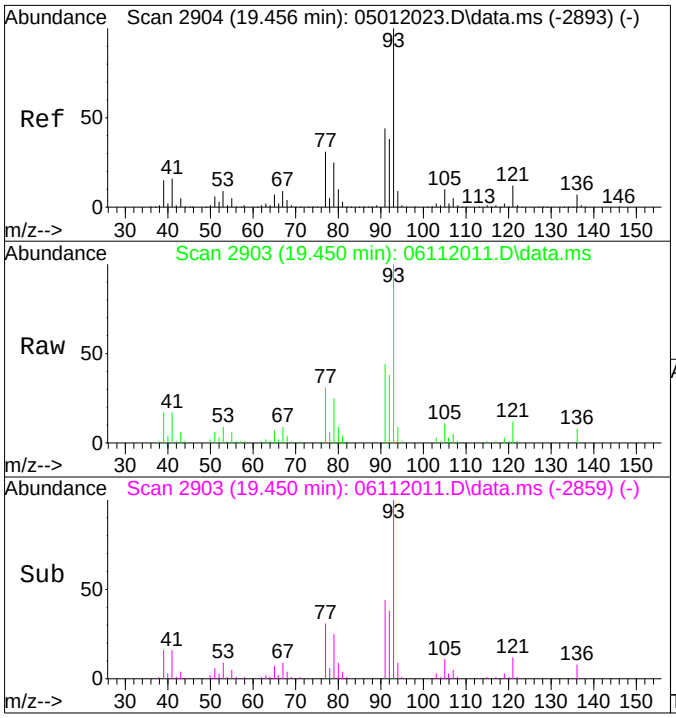


#58
Toluene
Concen: 0.48 ng
RT: 15.81 min Scan# 2241
Delta R.T. -0.011 min
Lab File: 06112011.D
Acq: 11 Jun 2020 7:56

Tgt Ion: 91 Resp: 46956

Ion	Ratio	Lower	Upper
91	100		
92	59.3	39.4	79.4

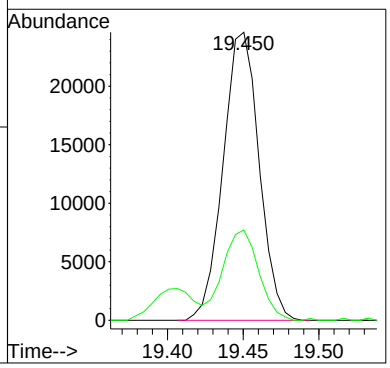




#75
alpha-Pinene
Concen: 0.70 ng
RT: 19.45 min Scan# 2903
Delta R.T. -0.006 min
Lab File: 06112011.D
Acq: 11 Jun 2020 7:56

Tgt Ion: 93 Resp: 40764

Ion	Ratio	Lower	Upper
93	100		
77	31.2	11.2	51.2



Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112004.D Vial: 2
Acq On : 11 Jun 2020 3:54 Operator: LH
Sample : MB R16061120_1000mL Inst : GCMS-16
Misc : S31-02112001/AS01319

Quant Time: Jun 11 08:58:48 2020
Quant Method : I:\MS16\METHODS\R16050120.M LH 6/11/20
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.13	130	226424	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	13.26	114	975349	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	17.58	82	459889	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.99	65	363829	11.857	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.88%				
57) Toluene-d8 (SS2)	15.71	98	938112	12.035	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.24%				
73) Bromofluorobenzene (SS3)	18.97	174	367166	13.090	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.72%				
Target Compounds							Qvalue
2) Propene	4.15	42	381	N.D.			
3) Dichlorodifluoromethan...	0.00	85	0	N.D.			
4) Chloromethane	0.00	50	0	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	6.47	45	952	N.D.			
11) Acetonitrile	6.62	41	3493	0.075	ng	#	27
12) Acrolein	6.82	56	256	N.D.			
13) Acetone	7.04	58	4049	0.200	ng		89
14) Trichlorofluoromethane	0.00	101	0	N.D.			
15) 2-Propanol (Isopropanol)	7.57	45	1130	N.D.			
16) Acrylonitrile	7.78	53	898	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	0.00	151	0	N.D.			
22) Carbon Disulfide	8.70	76	803	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	10.49	72	1023	0.059	ng	#	38
28) cis-1,2-Dichloroethene	10.96	61	307	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	0.00	83	0	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	12.88	56	2426	0.099	ng	#	70
41) Benzene	12.86	78	622	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	13.26	84	650	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.			
50) Methyl Methacrylate	0.00	100	0	N.D.			

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112004.D Vial: 2
Acq On : 11 Jun 2020 3:54 Operator: LH
Sample : MB R16061120_1000mL Inst : GCMS-16
Misc : S31-02112001/AS01319

Quant Time: Jun 11 08:58:48 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

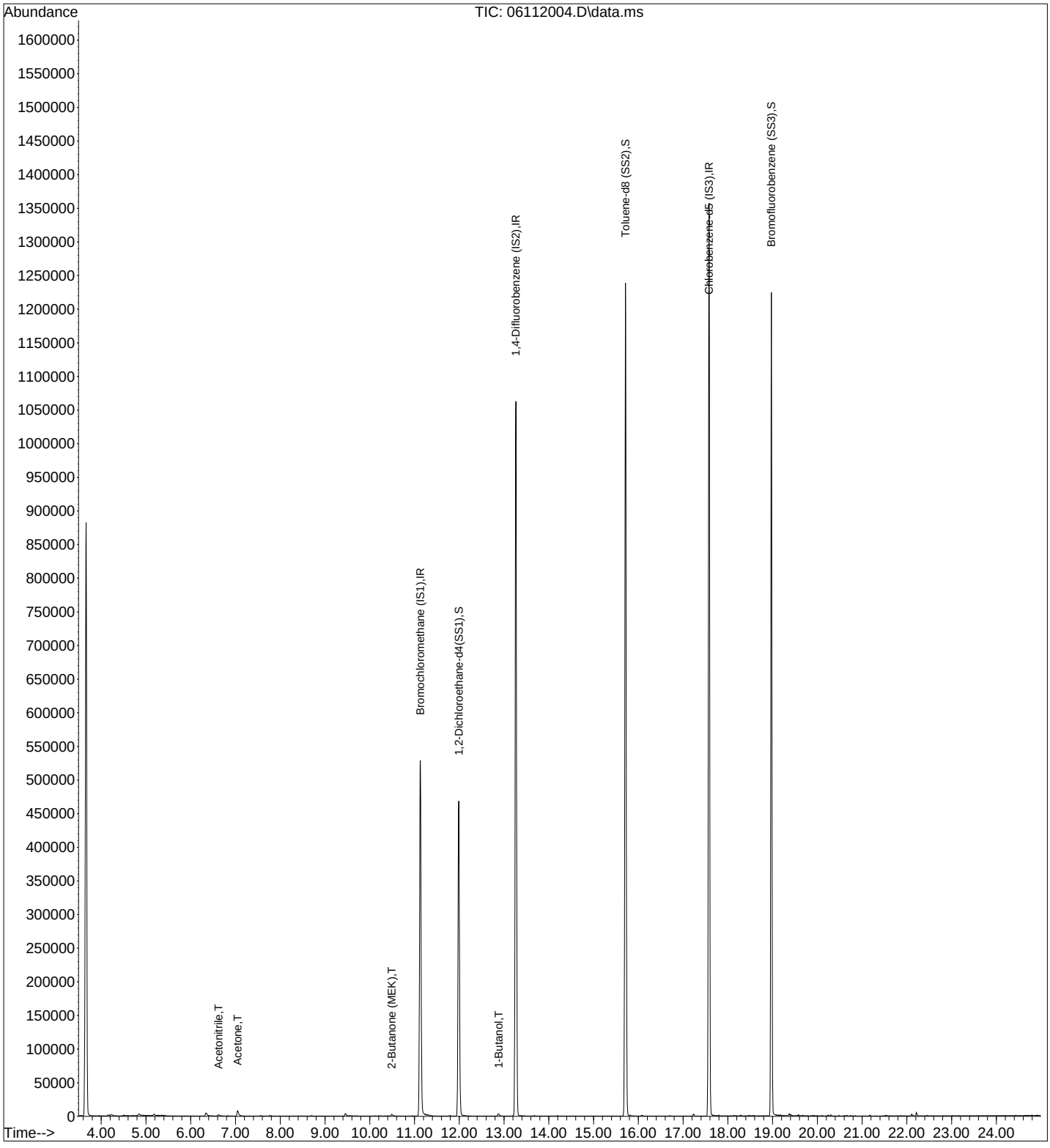
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	15.82	91	718	N.D.		
59) 2-Hexanone	16.08	43	1471	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.70	43	949	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	17.62	112	207	N.D.		
66) Ethylbenzene	17.98	91	1357	N.D.		
67) m- & p-Xylenes	18.14	91	1261	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.48	104	469	N.D.		
70) o-Xylene	18.57	91	528	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	19.10	105	361	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	19.52	91	605	N.D.		
77) 3-Ethyltoluene	19.65	105	786	N.D.		
78) 4-Ethyltoluene	19.68	105	747	N.D.		
79) 1,3,5-Trimethylbenzene	19.75	105	909	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	19.91	105	1059	N.D.		
82) 1,2,4-Trimethylbenzene	20.10	105	1092	N.D.		
83) n-Decane	20.37	57	159	N.D.		
84) Benzyl Chloride	20.22	91	580	N.D.		
85) 1,3-Dichlorobenzene	20.24	146	688	N.D.		
86) 1,4-Dichlorobenzene	20.30	146	1148	N.D.		
87) sec-Butylbenzene	20.22	105	161	N.D.		
88) 4-Isopropyltoluene (p-...	20.49	119	485	N.D.		
89) 1,2,3-Trimethylbenzene	20.49	105	199	N.D.		
90) 1,2-Dichlorobenzene	20.61	146	601	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	21.18	57	503	N.D.		
94) 1,2,4-Trichlorobenzene	22.12	180	1009	N.D.		
95) Naphthalene	22.22	128	4903	N.D.		
96) n-Dodecane	22.15	57	238	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.29	55	636	N.D.		
99) tert-Butylbenzene	20.10	119	113	N.D.		
100) n-Butylbenzene	20.85	91	487	N.D.		

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

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112004.D Vial: 2
Acq On : 11 Jun 2020 3:54 Operator: LH
Sample : MB R16061120_1000mL Inst : GCMS-16
Misc : S31-02112001/AS01319

Quant Time: Jun 11 08:58:48 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112005.D Vial: 2
Acq On : 11 Jun 2020 4:28 Operator: LH
Sample : LCS R16061120_25ng Inst : GCMS-16
Misc : S31-02112001/S34-05272002 (6/25)

Quant Time: Jun 11 08:58:50 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020 LH 6/11/20
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.15	130	237938	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	13.28	114	1002033	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.58	82	467866	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.00	65	372192	11.542	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 92.32%				
57) Toluene-d8 (SS2)	15.72	98	954916	12.041	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.32%				
73) Bromofluorobenzene (SS3)	18.97	174	393400	13.787	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 110.32%				
Target Compounds							Qvalue
2) Propene	4.08	42	694221	25.191	ng		99
3) Dichlorodifluoromethan...	4.23	85	1275803	23.669	ng		100
4) Chloromethane	4.52	50	958813	22.706	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.79	135	687275	21.342	ng		100
6) Vinyl Chloride	4.94	62	1040241	22.465	ng		99
7) 1,3-Butadiene	5.21	54	880533	22.982	ng		99
8) Bromomethane	5.65	94	559340	22.866	ng		99
9) Chloroethane	5.98	64	429518	23.480	ng		99
10) Ethanol	6.38	45	2386048	112.130	ng		100
11) Acetonitrile	6.62	41	1110487	22.836	ng		100
12) Acrolein	6.80	56	377012	22.423	ng		100
13) Acetone	7.01	58	2491715	117.087	ng		98
14) Trichlorofluoromethane	7.24	101	1106579	23.230	ng		100
15) 2-Propanol (Isopropanol)	7.52	45	3053762	47.411	ng		100
16) Acrylonitrile	7.77	53	806290	23.177	ng		100
17) 1,1-Dichloroethene	8.20	96	599223	23.996	ng		97
18) 2-Methyl-2-Propanol (t...	8.39	59	2699110	44.950	ng		100
19) Methylene Chloride	8.43	84	627433	22.680	ng		99
20) 3-Chloro-1-propene (Al...	8.58	41	861519	22.668	ng		97
21) Trichlorotrifluoroethane	8.84	151	558876	24.850	ng		98
22) Carbon Disulfide	8.68	76	2307665	23.280	ng		100
23) trans-1,2-Dichloroethene	9.70	61	878224	23.096	ng		97
24) 1,1-Dichloroethane	9.96	63	1041327	23.068	ng		100
25) Methyl tert-Butyl Ether	10.05	73	1687387	23.765	ng		100
26) Vinyl Acetate	10.22	86	823959	124.300	ng	#	93
27) 2-Butanone (MEK)	10.45	72	421656	23.234	ng		99
28) cis-1,2-Dichloroethene	10.98	61	858910	23.094	ng		98
29) Diisopropyl Ether	11.27	87	584492	22.767	ng	#	94
30) Ethyl Acetate	11.27	61	543304	51.917	ng		97
31) n-Hexane	11.26	57	1118833	24.649	ng		100
32) Chloroform	11.32	83	1127505	23.806	ng		100
34) Tetrahydrofuran (THF)	11.72	72	417047	23.561	ng		100
35) Ethyl tert-Butyl Ether	11.86	87	758926	24.462	ng		99
36) 1,2-Dichloroethane	12.12	62	852667	22.723	ng		100
38) 1,1,1-Trichloroethane	12.40	97	1011401	25.060	ng		99
39) Isopropyl Acetate	12.83	61	905690	51.303	ng		96
40) 1-Butanol	12.85	56	1358774	54.099	ng		98
41) Benzene	12.88	78	2545355	23.687	ng		100
42) Carbon Tetrachloride	13.03	117	900357	24.633	ng		100
43) Cyclohexane	13.17	84	1967088	49.124	ng		100
44) tert-Amyl Methyl Ether	13.51	73	1821277	25.275	ng		100
45) 1,2-Dichloropropane	13.73	63	619029	24.873	ng		99
46) Bromodichloromethane	13.92	83	916912	25.248	ng		100
47) Trichloroethene	13.97	130	692113	24.918	ng		100
48) 1,4-Dioxane	13.94	88	547547	25.300	ng		98
49) 2,2,4-Trimethylpentane...	14.04	57	2571502	24.593	ng		100
50) Methyl Methacrylate	14.18	100	544907	51.115	ng		99

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112005.D Vial: 2
Acq On : 11 Jun 2020 4:28 Operator: LH
Sample : LCS R16061120_25ng Inst : GCMS-16
Misc : S31-02112001/S34-05272002 (6/25)

Quant Time: Jun 11 08:58:50 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

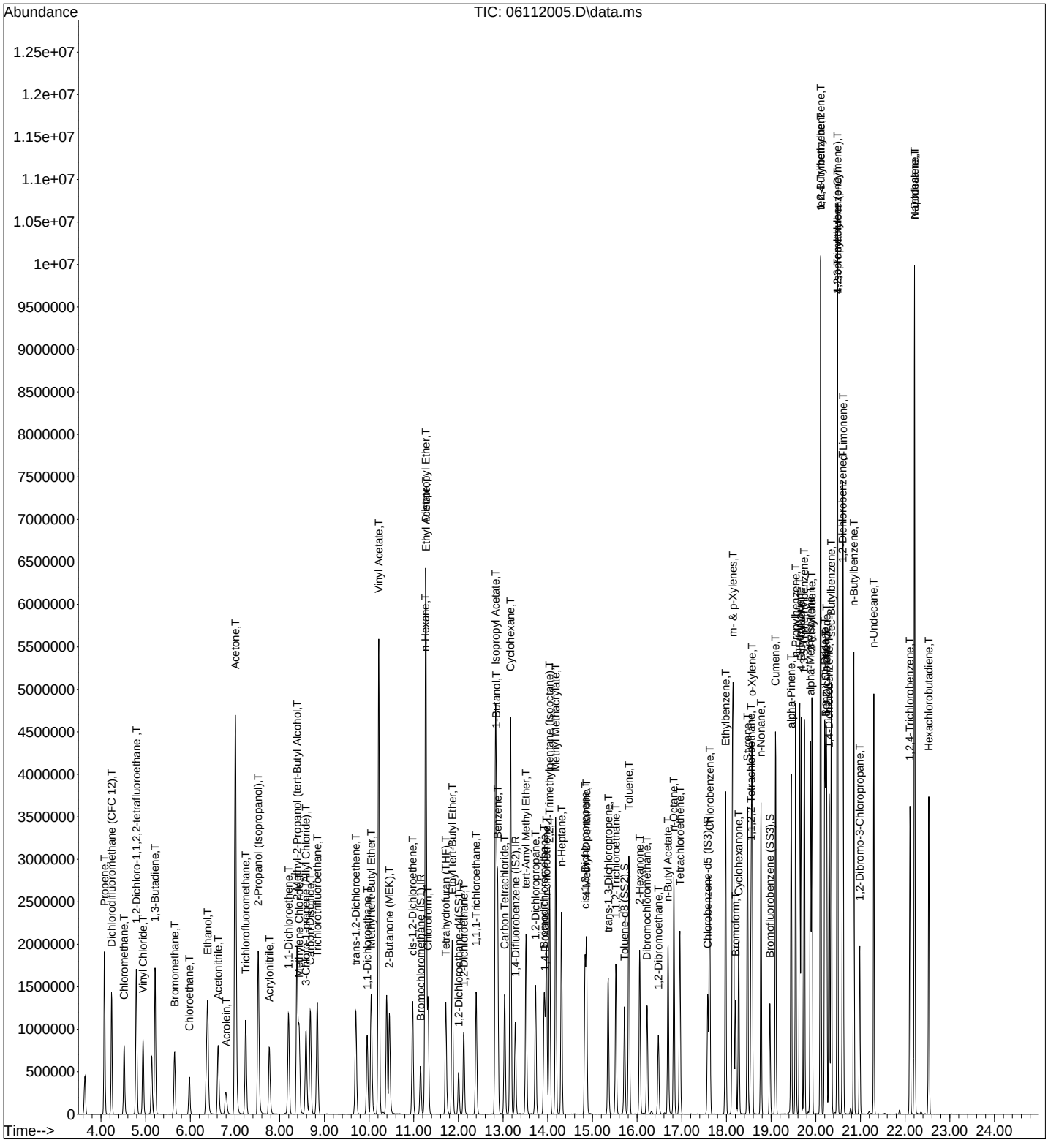
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.31	71	609996	24.275	ng	100
52) cis-1,3-Dichloropropene	14.84	75	1115200	26.101	ng	100
53) 4-Methyl-2-pentanone	14.87	58	601858	25.125	ng	99
54) trans-1,3-Dichloropropene	15.35	75	966778	26.445	ng	100
55) 1,1,2-Trichloroethane	15.52	97	627486	25.425	ng	100
58) Toluene	15.82	91	2522283	24.674	ng	100
59) 2-Hexanone	16.06	43	1478161	26.389	ng	100
60) Dibromochloromethane	16.22	129	782156	26.721	ng	100
61) 1,2-Dibromoethane	16.48	107	739202	26.275	ng	99
62) n-Butyl Acetate	16.69	43	1661509	27.461	ng	100
63) n-Octane	16.82	57	525623	24.837	ng	100
64) Tetrachloroethene	16.96	166	736902	25.522	ng	99
65) Chlorobenzene	17.62	112	1703763	24.223	ng	100
66) Ethylbenzene	17.98	91	2952126	25.899	ng	100
67) m- & p-Xylenes	18.15	91	4694329	51.913	ng	100
68) Bromoform	18.21	173	681170	26.843	ng	100
69) Styrene	18.47	104	1852206	27.233	ng	100
70) o-Xylene	18.57	91	2350048	25.599	ng	100
71) n-Nonane	18.77	43	1245945	25.579	ng	99
72) 1,1,2,2-Tetrachloroethane	18.55	83	1206312	26.487	ng	100
74) Cumene	19.10	105	2952135	26.203	ng	100
75) alpha-Pinene	19.45	93	1538054	25.585	ng	99
76) n-Propylbenzene	19.55	91	3640226	27.198	ng	100
77) 3-Ethyltoluene	19.64	105	3011108	27.613	ng	100
78) 4-Ethyltoluene	19.68	105	2783883	26.310	ng	100
79) 1,3,5-Trimethylbenzene	19.74	105	2460844	26.785	ng	100
80) alpha-Methylstyrene	19.88	118	1286856	24.850	ng	99
81) 2-Ethyltoluene	19.91	105	2922145	27.167	ng	100
82) 1,2,4-Trimethylbenzene	20.11	105	2720758	29.463	ng	100
83) n-Decane	20.20	57	1335086	25.845	ng	100
84) Benzyl Chloride	20.22	91	2325168	27.015	ng	100
85) 1,3-Dichlorobenzene	20.24	146	1514376	28.242	ng	99
86) 1,4-Dichlorobenzene	20.30	146	1503441	28.731	ng	100
87) sec-Butylbenzene	20.35	105	3266485	27.251	ng	100
88) 4-Isopropyltoluene (p-...	20.48	119	3183380	28.045	ng	100
89) 1,2,3-Trimethylbenzene	20.48	105	2678287	27.713	ng	99
90) 1,2-Dichlorobenzene	20.60	146	1496506	29.149	ng	100
91) d-Limonene	20.61	68	987285	27.070	ng	99
92) 1,2-Dibromo-3-Chloropr...	20.98	157	531490	27.456	ng	98
93) n-Undecane	21.30	57	1362976	28.508	ng	100
94) 1,2,4-Trichlorobenzene	22.11	180	1110056	31.175	ng	100
95) Naphthalene	22.21	128	3733217	33.126	ng	100
96) n-Dodecane	22.21	57	1399031	33.796	ng	100
97) Hexachlorobutadiene	22.53	225	681037	27.650	ng	99
98) Cyclohexanone	18.27	55	865776	24.196	ng	99
99) tert-Butylbenzene	20.11	119	2540577	27.953	ng	100
100) n-Butylbenzene	20.85	91	2730464	29.041	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112005.D Vial: 2
Acq On : 11 Jun 2020 4:28 Operator: LH
Sample : LCS R16061120_25ng Inst : GCMS-16
Misc : S31-02112001/S34-05272002 (6/25)

Quant Time: Jun 11 08:58:50 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Response Factor Report GCMS-16

Method Path : I:\MS16\METHODS\
Method File : R16050120.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri May 01 18:22:00 2020
Response Via : Initial Calibration

LH 5/1/20

Calibration Files
0.1 =05012018.D 0.2 =05012019.D 0.5 =05012020.D 1.0 =05012021.D 5.0 =05012022.D 25 =05012
100 =03112009.D

		Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------				ISTD				----------	
2)	T	Propene	1.611	1.539	1.503	1.380	1.499	1.474	1.430	1.147	1.448	9.66
3)	T	Dichlorodifluo...	3.202	3.003	3.068	2.842	3.010	2.737	2.537	2.254	2.832	11.03
4)	T	Chloromethane	2.604	2.435	2.388	2.238	2.356	2.193	2.172	1.361	2.218	16.88
5)	T	1,2-Dichloro-1...	1.897	1.683	1.822	1.625	1.745	1.600	1.555	1.607	1.692	7.08
6)	T	Vinyl Chloride	2.717	2.540	2.556	2.389	2.585	2.348	2.256	2.069	2.433	8.56
7)	T	1,3-Butadiene	2.247	2.061	2.143	1.977	2.145	1.964	1.905	1.660	2.013	9.02
8)	T	Bromomethane	1.419	1.343	1.315	1.211	1.293	1.245	1.264	1.190	1.285	5.79
9)	T	Chloroethane	1.050	0.952	0.985	0.919	0.990	0.943	0.960	0.887	0.961	5.13
10)	T	Ethanol	1.410	1.184	1.009	0.940	1.092	1.112	1.151	1.046	1.118	12.66
11)	T	Acetonitrile	3.482	2.840	2.383	2.251	2.529	2.471	2.438	2.042	2.555	17.16
12)	T	Acrolein	1.059	0.868	0.880	0.829	0.918	0.879	0.863	0.770	0.883	9.44
13)	T	Acetone	1.252	1.110	1.062	0.988	1.109	1.131	1.179	1.113	1.118	6.92
14)	T	Trichlorofluor...	2.713	2.523	2.575	2.359	2.565	2.454	2.411	2.421	2.503	4.58
15)	T	2-Propanol (Is...	3.870	3.534	3.450	3.257	3.738	3.508	3.156	2.557	3.384	12.00
16)	T	Acrylonitrile	2.202	1.897	1.701	1.617	1.893	1.829	1.828	1.654	1.828	10.12
17)	T	1,1-Dichloroet...	1.408	1.288	1.314	1.236	1.342	1.312	1.299	1.297	1.312	3.73
18)	T	2-Methyl-2-Pro...	3.534	3.198	3.325	3.089	3.578	3.200	2.158		3.155	15.06
19)	T	Methylene Chlo...	1.693	1.502	1.403	1.354	1.469	1.431	1.419	1.356	1.453	7.53
20)	T	3-Chloro-1-pro...	2.223	1.929	1.964	1.905	2.142	2.028	2.036	1.746	1.997	7.37
21)	T	Trichlorotrifl...	1.264	1.065	1.154	1.097	1.218	1.201	1.208	1.246	1.182	5.97
22)	T	Carbon Disulfide	6.112	5.388	5.148	4.831	5.368	5.134	5.024	4.656	5.208	8.48
23)	T	trans-1,2-Dich...	2.284	2.004	1.981	1.860	2.050	1.980	1.964	1.858	1.998	6.70
24)	T	1,1-Dichloroet...	2.569	2.334	2.469	2.238	2.450	2.380	2.330	2.202	2.371	5.15
25)	T	Methyl tert-Bu...	4.195	3.994	4.129	3.762	3.968	3.534	3.241	3.018	3.730	11.49
26)	T	Vinyl Acetate			0.280	0.275	0.355	0.375	0.393	0.412	0.348	16.73
27)	T	2-Butanone (MEK)	1.010	0.938	0.937	0.883	1.007	0.953	0.956	0.944	0.953	4.27
28)	T	cis-1,2-Dichlo...	2.186	1.950	1.950	1.831	2.014	1.928	1.927	1.846	1.954	5.66
29)	T	Diisopropyl Ether	1.400	1.264	1.362	1.283	1.461	1.320	1.346	1.353	1.349	4.68
30)	T	Ethyl Acetate	0.528	0.515	0.507	0.480	0.567	0.596	0.638	0.567	0.550	9.48
31)	T	n-Hexane	2.506	2.242	2.328	2.176	2.400	2.485	2.588	2.351	2.385	5.82
32)	T	Chloroform	2.635	2.393	2.541	2.359	2.618	2.470	2.464	2.425	2.488	4.07
33)	S	1,2-Dichloroet...	1.759	1.788	1.757	1.756	1.704	1.635	1.616	1.538	1.694	5.22
34)	T	Tetrahydrofura...	1.068	0.962	0.909	0.857	0.954	0.901	0.903	0.885	0.930	7.02
35)	T	Ethyl tert-But...	1.603	1.564	1.583	1.487	1.688	1.661	1.680	1.772	1.630	5.43
36)	T	1,2-Dichloroet...	2.204	2.065	2.007	1.843	2.020	1.911	1.892	1.830	1.971	6.45
37)	IR	1,4-Difluorobenzen...	----------				ISTD				----------	
38)	T	1,1,1-Trichlor...	0.520	0.477	0.504	0.469	0.521	0.513	0.513	0.511	0.503	3.91
39)	T	Isopropyl Acetate	0.217	0.187	0.204	0.189	0.226	0.238	0.254	0.247	0.220	11.50
40)	T	1-Butanol	0.335	0.286	0.247	0.231	0.307	0.333	0.362	0.405	0.313	18.51
41)	T	Benzene	1.454	1.263	1.288	1.194	1.366	1.343	1.417	1.400	1.340	6.50
42)	T	Carbon Tetrach...	0.446	0.414	0.449	0.410	0.482	0.473	0.477	0.496	0.456	6.99
43)	T	Cyclohexane	0.491	0.450	0.481	0.443	0.512	0.523	0.544	0.553	0.500	8.14
44)	T	tert-Amyl Meth...	0.895	0.829	0.881	0.824	0.950	0.934	0.955	0.923	0.899	5.70
45)	T	1,2-Dichloropr...	0.322	0.296	0.311	0.288	0.327	0.317	0.320	0.303	0.310	4.42
46)	T	Bromodichlorom...	0.443	0.421	0.437	0.406	0.477	0.479	0.482	0.480	0.453	6.69
47)	T	Trichloroethene	0.348	0.318	0.331	0.303	0.355	0.355	0.366	0.396	0.346	8.37
48)	T	1,4-Dioxane	0.278	0.250	0.253	0.238	0.274	0.278	0.286	0.303	0.270	7.97
49)	T	2,2,4-Trimethy...	1.365	1.266	1.317	1.213	1.370	1.328	1.346	1.231	1.304	4.63
50)	T	Methyl Methacr...	0.126	0.113	0.118	0.116	0.138	0.143	0.149	0.161	0.133	13.21
51)	T	n-Heptane	0.325	0.297	0.306	0.286	0.318	0.310	0.324	0.342	0.313	5.60
52)	T	cis-1,3-Dichlo...	0.535	0.486	0.494	0.468	0.562	0.566	0.581	0.572	0.533	8.30
53)	T	4-Methyl-2-pen...	0.303	0.265	0.287	0.272	0.314	0.311	0.319	0.318	0.299	7.10
54)	T	trans-1,3-Dich...	0.418	0.389	0.410	0.399	0.496	0.508	0.521	0.506	0.456	12.35

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56)	IR	Chlorobenzene-d5 (...	----------	----------	ISTD	----------	----------	----------	----------	----------	
57)	S	Toluene-d8 (SS2)	2.112	2.125	2.110	2.107	2.097	2.123	2.090	2.186	2.119	1.40
58)	T	Toluene	3.003	2.567	2.666	2.473	2.815	2.802	2.780	2.744	2.731	5.97
59)	T	2-Hexanone	1.547	1.361	1.410	1.339	1.614	1.583	1.602	1.515	1.497	7.42
60)	T	Dibromochlorom...	0.735	0.677	0.704	0.667	0.834	0.868	0.864	0.909	0.782	12.37
61)	T	1,2-Dibromoethane	0.757	0.686	0.705	0.663	0.792	0.804	0.797	0.809	0.752	7.82
62)	T	n-Butyl Acetate	1.611	1.401	1.545	1.456	1.756	1.742	1.751	1.671	1.616	8.55
63)	T	n-Octane	0.572	0.504	0.542	0.504	0.578	0.591	0.613	0.620	0.565	7.95
64)	T	Tetrachloroethene	0.764	0.679	0.700	0.653	0.778	0.829	0.838	0.931	0.771	12.10
65)	T	Chlorobenzene	1.873	1.701	1.737	1.609	1.870	1.882	2.340	2.020	1.879	12.02
66)	T	Ethylbenzene	3.030	2.763	2.965	2.768	3.264	3.313	3.301	2.958	3.045	7.41
67)	T	m- & p-Xylenes	2.416	2.101	2.285	2.203	2.562	2.656	2.741	2.363	2.416	9.24
68)	T	Bromoform			0.523	0.502	0.708	0.751	0.755	0.828	0.678	19.74
69)	T	Styrene	1.554	1.405	1.689	1.594	2.029	2.068	2.060	2.138	1.817	15.77
70)	T	o-Xylene	2.442	2.173	2.312	2.170	2.597	2.662	2.680	2.586	2.453	8.61
71)	T	n-Nonane	1.287	1.140	1.243	1.181	1.387	1.412	1.455	1.306	1.301	8.60
72)	T	1,1,2,2-Tetrac...	1.206	1.074	1.114	1.057	1.298	1.323	1.337	1.325	1.217	9.86
73)	S	Bromofluoroben...	0.715	0.714	0.725	0.724	0.787	0.802	0.783	0.849	0.762	6.56
74)	T	Cumene	3.035	2.729	2.906	2.711	3.284	3.320	3.265	2.830	3.010	8.41
75)	T	alpha-Pinene	1.511	1.362	1.446	1.393	1.701	1.785	1.795	1.856	1.606	12.43
76)	T	n-Propylbenzene	3.631	3.223	3.513	3.346	3.994	4.033	3.904	2.964	3.576	10.84
77)	T	3-Ethyltoluene	2.929	2.407	2.714	2.579	3.163	3.387	3.232	2.897	2.913	11.58
78)	T	4-Ethyltoluene	2.513	2.455	2.758	2.630	3.275	3.167	3.181	2.637	2.827	11.64
79)	T	1,3,5-Trimethy...	2.364	2.022	2.272	2.212	2.706	2.770	2.730	2.561	2.455	11.29
80)	T	alpha-Methylst...			1.138	1.116	1.443	1.485	1.469	1.649	1.384	15.29
81)	T	2-Ethyltoluene	2.821	2.480	2.756	2.582	3.185	3.223	3.148	2.796	2.874	9.82
82)	T	1,2,4-Trimethy...	2.215	1.944	2.255	2.185	2.813	3.050	2.878	2.397	2.467	16.03
83)	T	n-Decane			1.125	1.102	1.410	1.517	1.611	1.515	1.380	15.65
84)	T	Benzyl Chloride				1.519	2.279	2.600	2.687	2.413	2.300	20.21
85)	T	1,3-Dichlorobe...	1.252	1.034	1.264	1.221	1.626	1.660	1.639	1.766	1.433	18.79
86)	T	1,4-Dichlorobe...	1.206	1.004	1.283	1.196	1.601	1.620	1.581	1.693	1.398	18.29
87)	T	sec-Butylbenzene	3.179	2.829	3.093	2.947	3.632	3.636	3.486	2.818	3.203	10.67
88)	T	4-Isopropyltol...			2.761	2.656	3.414	3.547	3.227	2.590	3.033	13.68
89)	T	1,2,3-Trimethy...			2.234	2.175	2.830	3.061	2.870	2.323	2.582	14.77
90)	T	1,2-Dichlorobe...	1.199	1.054	1.223	1.173	1.569	1.646	1.594	1.513	1.372	16.90
91)	T	d-Limonene	0.811	0.750	0.867	0.867	1.070	1.169	1.205	1.057	0.974	17.65
92)	T	1,2-Dibromo-3-...			0.388	0.391	0.568	0.581	0.581	0.595	0.517	19.22
93)	T	n-Undecane			0.906	0.866	1.357	1.474	1.565	1.496	1.277	24.32
94)	T	1,2,4-Trichlor...			0.655	0.635	1.013	1.144	1.183	1.078	0.951	25.70
95)	T	Naphthalene			2.173	2.044	3.472	3.864	3.717	2.796	3.011	26.24
96)	T	n-Dodecane			0.500	0.482	1.251	1.474	1.554	1.375	1.106	44.05
97)	T	Hexachlorobuta...			0.463	0.446	0.622	0.725	0.766	0.927	0.658	28.24
98)	T	Cyclohexanone	1.048	0.943	0.832	0.804	0.983	0.979	0.980	1.079	0.956	10.00
99)	T	tert-Butylbenzene	2.363	2.071	2.240	2.164	2.722	2.855	2.658	2.351	2.428	11.70
100)	T	n-Butylbenzene	2.187	1.921	2.417	2.334	2.916	2.966	2.883	2.471	2.512	15.09

(#) = Out of Range

R16050120.M Fri May 01 18:44:38 2020

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Primary Source Standards Concentrations (Working & Initial Calibration)

LH 5/1/20

1ng/L Std. ID:		40ng/L Std. ID:	
4ng/L Std. ID:	S34-04272015	200ng/L Std. ID:	S31-04292003
20ng/L Std. ID:	S34-05012002	1000ng/L Std. ID:	

Dilution Factors:		1	5	25	50	250	1000	Working STD Conc.(ng/L):	4	4	20	20	200	200	200	200
	Source Std.		Primary Working Standards					Injection (L):	0.025	0.050	0.0250	0.050	0.025	0.125	0.25	0.50
Compounds	mg/m³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.1ng	0.2ng	0.5ng	1ng	5ng	25ng	50ng	100ng
Propene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Dichlorodifluoromethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Chloromethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Freon-114	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Vinyl Chloride	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,3-Butadiene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Bromomethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Chloroethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Ethanol	5.21	5210	1042	208.4	104.2	20.84	5.21		0.521	1.042	2.605	5.21	26.05	130.25	260.5	521
Acetonitrile	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Acrolein	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
Acetone	5.33	5330	1066	213.2	106.6	21.32	5.33		0.533	1.066	2.665	5.33	26.65	133.25	266.5	533
Trichlorofluoromethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Isopropanol	2.10	2100	420	84.0	42.0	8.40	2.10		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
Acrylonitrile	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
1,1-Dichloroethene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
tert-Butanol	2.16	2160	432	86.4	43.2	8.64	2.16		0.216	0.432	1.080	2.16	10.80	54.00	108.0	216
Methylene Chloride	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Allyl Chloride	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Trichlorotrifluoroethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Carbon Disulfide	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
trans-1,2-Dichloroethene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,1-Dichloroethane	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
Methyl tert-Butyl Ether	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Vinyl Acetate	5.35	5350	1070	214.0	107.0	21.40	5.35		0.535	1.070	2.675	5.35	26.75	133.75	267.5	535
2-Butanone	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
cis-1,2-Dichloroethene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Diisopropyl Ether	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Ethyl Acetate	2.17	2170	434	86.8	43.4	8.68	2.17		0.217	0.434	1.085	2.17	10.85	54.25	108.5	217
n-Hexane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Chloroform	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Tetrahydrofuran	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
Ethyl tert-Butyl Ether	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,2-Dichloroethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,1,1-Trichloroethane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Isopropyl Acetate	2.11	2110	422	84.4	42.2	8.44	2.11		0.211	0.422	1.055	2.11	10.55	52.75	105.5	211
1-Butanol	2.08	2080	416	83.2	41.6	8.32	2.08		0.208	0.416	1.040	2.08	10.40	52.00	104.0	208
Benzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Carbon Tetrachloride	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Cyclohexane	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
tert-Amyl Methyl Ether	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,2-Dichloropropane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Bromodichloromethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Trichloroethene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
1,4-Dioxane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Isooctane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Methyl Methacrylate	2.15	2150	430	86.0	43.0	8.60	2.15		0.215	0.430	1.075	2.15	10.75	53.75	107.5	215
n-Heptane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108

Q:\TO15 Std. Concentrations\MS16 Std. Conc\2020\R16050120\ICAL Conc. (Primary Source)

Date Updated: 04/22/20
Version: 3

LH 5/1/20

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID:		40ng/L Std. ID:	
4ng/L Std. ID:	S34-04272015	200ng/L Std. ID:	S31-04292003
20ng/L Std. ID:	S34-05012002	1000ng/L Std. ID:	

Dilution Factors:		1	5	25	50	250	1000	Working STD Conc.(ng/L):	4	4	20	20	200	200	200	200
	Source Std.		Primary Working Standards					Injection (L):	0.025	0.050	0.0250	0.050	0.025	0.125	0.25	0.50
Compounds	mg/m³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.1ng	0.2ng	0.5ng	1ng	5ng	25ng	50ng	100ng
cis-1,3-Dichloropropene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
4-Methyl-2-pentanone	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
trans-1,3-Dichloropropene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,1,2-Trichloroethane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Toluene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
2-Hexanone	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Dibromochloromethane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
1,2-Dibromoethane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
n-Butyl Acetate	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
n-Octane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Tetrachloroethene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Chlorobenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Ethylbenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
m-&p-Xylene	2.14	2140	428	85.6	42.8	8.56	2.14		0.214	0.428	1.070	2.14	10.70	53.50	107.0	214
Bromoform	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Styrene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
o-Xylene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
n-Nonane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
1,1,2,2-Tetrachloroethane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Cumene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
alpha-Pinene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
n-Propylbenzene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
3-Ethyltoluene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
4-Ethyltoluene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,3,5-Trimethylbenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
alpha-Methylstyrene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
2-Ethyltoluene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,2,4-Trimethylbenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
n-Decane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Benzyl Chloride	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,3-Dichlorobenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
1,4-Dichlorobenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
sec-Butylbenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
p-Isopropyltoluene	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
1,2,3-Trimethylbenzene	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
1,2-Dichlorobenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
d-Limonene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,2-Dibromo-3-chloropropane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
n-Undecane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,2,4-Trichlorobenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Naphthalene	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
n-Dodecane	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Hexachloro-1,3-butadiene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Methacrylonitrile	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Cyclohexanone	1.00	1000	200	40.0	20.0	4.00	1.00		0.100	0.200	0.500	1.00	5.00	25.00	50.0	100
tert-Butylbenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
n-Butylbenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107

Do Not Scale

Calibration Status Report GCMS-16

Method : I:\MS16\METHODS\R16050120.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	0.1	0	13	I:\MS16\DATA\2020_05\01\05012018.D
2	0.2	0	13	I:\MS16\DATA\2020_05\01\05012019.D
3	0.5	1	13	I:\MS16\DATA\2020_05\01\05012020.D
4	1.0	1	13	I:\MS16\DATA\2020_05\01\05012021.D
5	5.0	5	13	I:\MS16\DATA\2020_05\01\05012022.D
6	25	27	13	I:\MS16\DATA\2020_05\01\05012023.D
7	50	53	13	I:\MS16\DATA\2020_05\01\05012024.D
8	100	106	13	I:\MS16\DATA\2020_03\11\03112009.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.1	May 01 17:28 2020	May 01 17:26 2020	1 May 2020 14:09
2	0.2	May 01 17:28 2020	May 01 17:26 2020	1 May 2020 14:42
3	0.5	May 01 17:28 2020	May 01 17:26 2020	1 May 2020 15:16
4	1.0	May 01 17:29 2020	May 01 17:26 2020	1 May 2020 15:51
5	5.0	May 01 17:29 2020	May 01 17:26 2020	1 May 2020 16:25
6	25	May 01 17:29 2020	May 01 17:26 2020	1 May 2020 16:59
7	50	May 01 18:22 2020	May 01 18:21 2020	1 May 2020 17:33
8	100	May 01 17:01 2020	Mar 11 10:34 2020	11 Mar 2020 4:52

R16050120.M Fri May 01 18:52:03 2020

LH 5/1/20

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012018.D Vial: 6
Acq On : 1 May 2020 14:09 Operator: LH
Sample : 0.1ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04272015 (5/26)

Quant Time: May 01 17:26:08 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

LH 5/1/20

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.13	130	289278	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	13.26	114	1281029	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.58	82	612084	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.99	65	508980	12.744	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.92%				
57) Toluene-d8 (SS2)	15.72	98	1292505	11.971	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.76%				
73) Bromofluorobenzene (SS3)	18.98	174	437866	11.415	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 91.28%				
Target Compounds							Qvalue
2) Propene	4.13	42	3951	0.128	ng		96
3) Dichlorodifluoromethan...	4.28	85	7854	0.120	ng		99
4) Chloromethane	4.55	50	6389	0.124	ng		98
5) 1,2-Dichloro-1,1,2,2-t...	4.83	135	4609	0.112	ng		98
6) Vinyl Chloride	4.97	62	6791	0.124	ng		98
7) 1,3-Butadiene	5.24	54	5512	0.135	ng		93
8) Bromomethane	5.66	94	3547	0.129	ng		100
9) Chloroethane	5.99	64	2625	0.124	ng		97
10) Ethanol	6.32	45	16999	0.700	ng		96
11) Acetonitrile	6.59	41	8460	0.157	ng		84
12) Acrolein	6.79	56	2525	0.141	ng		97
13) Acetone	7.01	58	15440	0.650	ng	#	85
14) Trichlorofluoromethane	7.25	101	6656	0.116	ng		97
15) 2-Propanol (Isopropanol)	7.50	45	18806	0.266	ng		91
16) Acrylonitrile	7.74	53	5351	0.149	ng		99
17) 1,1-Dichloroethene	8.21	96	3518	0.123	ng		97
18) 2-Methyl-2-Propanol (t...	8.40	59	17666	0.282	ng		93
19) Methylene Chloride	8.40	84	4154	0.134	ng		94
20) 3-Chloro-1-propene (Al...	8.58	41	5555	0.137	ng		88
21) Trichlorotrifluoroethane	8.84	151	3158	0.114	ng		96
22) Carbon Disulfide	8.69	76	15135	0.136	ng		97
23) trans-1,2-Dichloroethene	9.68	61	5709	0.137	ng		99
24) 1,1-Dichloroethane	9.93	63	6480	0.122	ng		98
25) Methyl tert-Butyl Ether	10.09	73	10484	0.124	ng		100
26) Vinyl Acetate	10.21	86	3501	0.438	ng	#	69
27) 2-Butanone (MEK)	10.48	72	2477	0.126	ng	#	74
28) cis-1,2-Dichloroethene	10.95	61	5362	0.125	ng		95
29) Diisopropyl Ether	11.29	87	3500	0.113	ng	#	86
30) Ethyl Acetate	11.28	61	2653	0.229	ng		98
31) n-Hexane	11.26	57	6264	0.117	ng		97
32) Chloroform	11.30	83	6525	0.114	ng		100
34) Tetrahydrofuran (THF)	11.75	72	2693	0.133	ng		91
35) Ethyl tert-Butyl Ether	11.87	87	4007	0.109	ng		93
36) 1,2-Dichloroethane	12.11	62	5509	0.123	ng		98
38) 1,1,1-Trichloroethane	12.39	97	5705	0.113	ng		98
39) Isopropyl Acetate	12.84	61	4697	0.226	ng	#	91
40) 1-Butanol	12.85	56	7144	0.220	ng		93
41) Benzene	12.87	78	15792	0.120	ng		98
42) Carbon Tetrachloride	13.03	117	4803	0.106	ng		98
43) Cyclohexane	13.17	84	10671	0.211	ng		98
44) tert-Amyl Methyl Ether	13.53	73	9904	0.115	ng		97
45) 1,2-Dichloropropane	13.72	63	3569	0.117	ng		99
46) Bromodichloromethane	13.91	83	4900	0.109	ng		98
47) Trichloroethene	13.96	130	3818	0.102	ng		96
48) 1,4-Dioxane	13.96	88	3076	0.120	ng		99
49) 2,2,4-Trimethylpentane...	14.05	57	14967	0.118	ng		97
50) Methyl Methacrylate	14.18	100	2774	0.218	ng		96

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012018.D Vial: 6
Acq On : 1 May 2020 14:09 Operator: LH
Sample : 0.1ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04272015 (5/26)

Quant Time: May 01 17:26:08 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

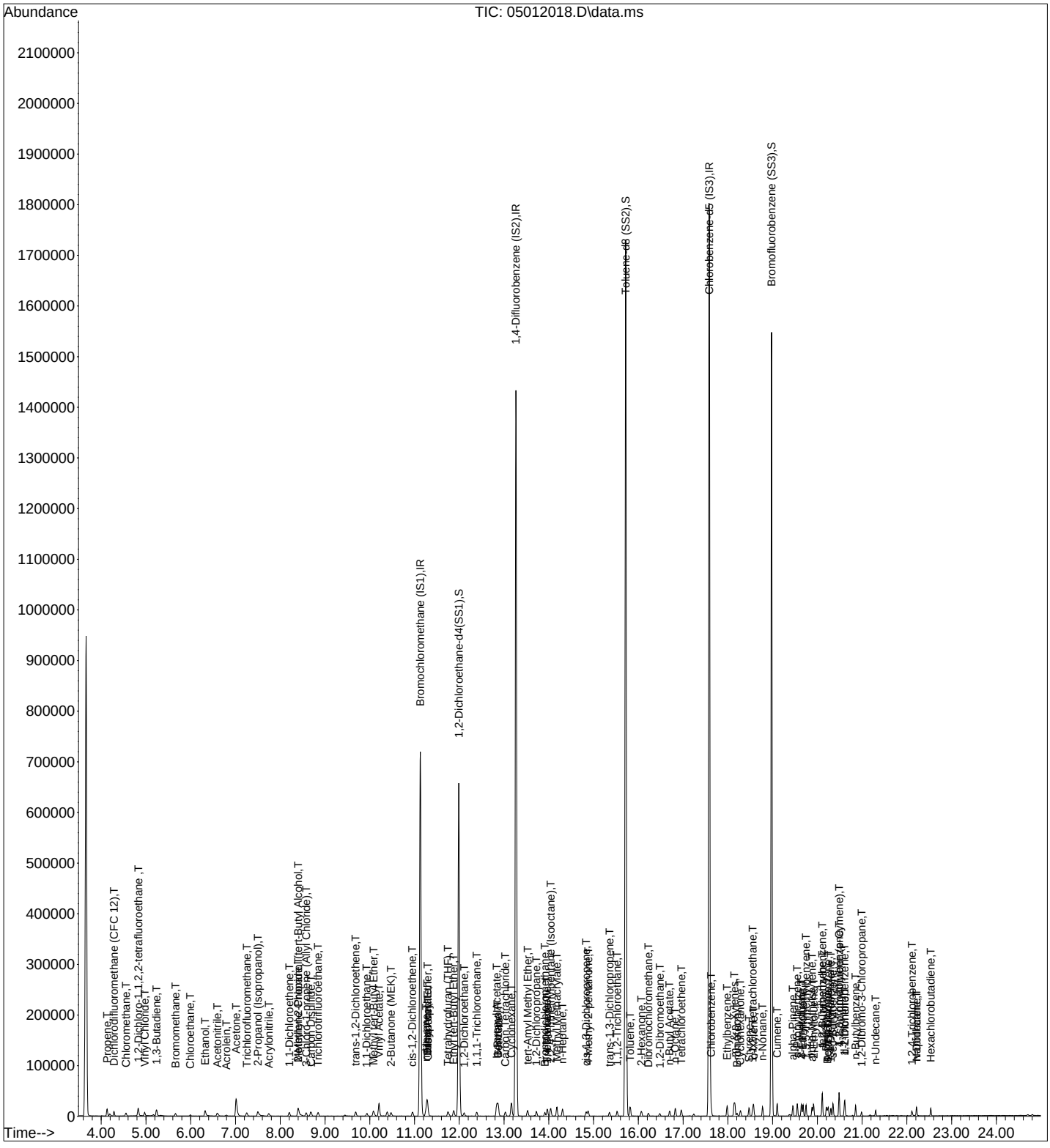
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	14.30	71	3595	0.117	ng		97
52) cis-1,3-Dichloropropene	14.83	75	5704	0.116	ng		96
53) 4-Methyl-2-pentanone	14.88	58	3296	0.119	ng		93
54) trans-1,3-Dichloropropene	15.35	75	4544	0.099	ng		98
55) 1,1,2-Trichloroethane	15.52	97	3290	0.107	ng		92
58) Toluene	15.82	91	15732	0.118	ng		98
59) 2-Hexanone	16.07	43	8108	0.120	ng		95
60) Dibromochloromethane	16.23	129	3850	0.107	ng		98
61) 1,2-Dibromoethane	16.48	107	3967	0.115	ng		99
62) n-Butyl Acetate	16.70	43	8599	0.119	ng		100
63) n-Octane	16.82	57	3026	0.113	ng		95
64) Tetrachloroethene	16.96	166	3889	0.104	ng		96
65) Chlorobenzene	17.62	112	9815	0.109	ng		97
66) Ethylbenzene	17.98	91	15876	0.108	ng		99
67) m- & p-Xylenes	18.15	91	25313	0.213	ng		97
68) Bromoform	18.21	173	2794	0.087	ng		97
69) Styrene	18.47	104	8068	0.087	ng		98
70) o-Xylene	18.58	91	12796	0.107	ng		97
71) n-Nonane	18.77	43	6742	0.112	ng		94
72) 1,1,2,2-Tetrachloroethane	18.55	83	6321	0.110	ng		99
74) Cumene	19.10	105	16051	0.107	ng		99
75) alpha-Pinene	19.45	93	7915	0.104	ng		98
76) n-Propylbenzene	19.55	91	19200	0.109	ng		96
77) 3-Ethyltoluene	19.64	105	15205	0.102	ng		95
78) 4-Ethyltoluene	19.68	105	13291	0.094	ng		97
79) 1,3,5-Trimethylbenzene	19.75	105	12270	0.097	ng		98
80) alpha-Methylstyrene	19.88	118	5286	0.077	ng		90
81) 2-Ethyltoluene	19.92	105	14918	0.102	ng		98
82) 1,2,4-Trimethylbenzene	20.11	105	11607	0.089	ng		98
83) n-Decane	20.20	57	5622	0.088	ng		96
84) Benzyl Chloride	20.23	91	6198	0.059	ng		94
85) 1,3-Dichlorobenzene	20.24	146	6559	0.093	ng		97
86) 1,4-Dichlorobenzene	20.30	146	6317	0.090	ng		95
87) sec-Butylbenzene	20.35	105	16656	0.102	ng		97
88) 4-Isopropyltoluene (p-...	20.48	119	14335	0.094	ng		98
89) 1,2,3-Trimethylbenzene	20.48	105	11912	0.091	ng		98
90) 1,2-Dichlorobenzene	20.61	146	6284	0.088	ng		97
91) d-Limonene	20.61	68	4287	0.084	ng		100
92) 1,2-Dibromo-3-Chloropr...	20.99	157	1904	0.078	ng	#	68
93) n-Undecane	21.30	57	3299	0.050	ng		96
94) 1,2,4-Trichlorobenzene	22.11	180	2902	0.065	ng		95
95) Naphthalene	22.22	128	9207	0.061	ng		99
96) n-Dodecane	22.22	57	1759	0.027	ng		84
97) Hexachlorobutadiene	22.54	225	2672	0.079	ng		98
98) Cyclohexanone	18.28	55	5130	0.112	ng		96
99) tert-Butylbenzene	20.11	119	12381	0.098	ng		100
100) n-Butylbenzene	20.85	91	11459	0.087	ng		96

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

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012018.D Vial: 6
Acq On : 1 May 2020 14:09 Operator: LH
Sample : 0.1ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04272015 (5/26)

Quant Time: May 01 17:26:08 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012019.D Vial: 6
Acq On : 1 May 2020 14:42 Operator: LH
Sample : 0.2ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04272015 (5/26)

Quant Time: May 01 17:26:10 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020 LH 5/1/20
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.13	130	281203	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	13.26	114	1265644	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.58	82	605249	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.99	65	502682	12.948	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.60%				
57) Toluene-d8 (SS2)	15.72	98	1286177	12.047	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.40%				
73) Bromofluorobenzene (SS3)	18.98	174	432138	11.393	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 91.12%				
Target Compounds							Qvalue
2) Propene	4.12	42	7340	0.244	ng		98
3) Dichlorodifluoromethan...	4.28	85	14321	0.225	ng		98
4) Chloromethane	4.54	50	11611	0.231	ng		98
5) 1,2-Dichloro-1,1,2,2-t...	4.82	135	7949	0.198	ng		100
6) Vinyl Chloride	4.97	62	12344	0.232	ng		98
7) 1,3-Butadiene	5.22	54	9830	0.247	ng		96
8) Bromomethane	5.65	94	6528	0.244	ng		95
9) Chloroethane	5.98	64	4628	0.226	ng		98
10) Ethanol	6.31	45	27749	1.175	ng		96
11) Acetonitrile	6.59	41	13417	0.257	ng		87
12) Acrolein	6.79	56	4024	0.232	ng		98
13) Acetone	7.01	58	26616	1.152	ng		88
14) Trichlorofluoromethane	7.25	101	12031	0.215	ng		96
15) 2-Propanol (Isopropanol)	7.48	45	33389	0.485	ng		93
16) Acrylonitrile	7.74	53	8962	0.257	ng		98
17) 1,1-Dichloroethene	8.20	96	6259	0.225	ng		97
18) 2-Methyl-2-Propanol (t...	8.39	59	31078	0.511	ng		95
19) Methylene Chloride	8.40	84	7162	0.238	ng		95
20) 3-Chloro-1-propene (Al...	8.57	41	9375	0.238	ng		97
21) Trichlorotrifluoroethane	8.85	151	5174	0.193	ng		91
22) Carbon Disulfide	8.68	76	25939	0.240	ng		98
23) trans-1,2-Dichloroethene	9.69	61	9736	0.240	ng		99
24) 1,1-Dichloroethane	9.93	63	11448	0.222	ng		100
25) Methyl tert-Butyl Ether	10.07	73	19408	0.236	ng		100
26) Vinyl Acetate	10.20	86	6257	0.806	ng	#	65
27) 2-Butanone (MEK)	10.47	72	4473	0.235	ng	#	85
28) cis-1,2-Dichloroethene	10.95	61	9299	0.222	ng		95
29) Diisopropyl Ether	11.27	87	6141	0.203	ng	#	89
30) Ethyl Acetate	11.28	61	5026	0.447	ng		94
31) n-Hexane	11.26	57	10892	0.209	ng		100
32) Chloroform	11.30	83	11522	0.207	ng		100
34) Tetrahydrofuran (THF)	11.74	72	4717	0.239	ng		96
35) Ethyl tert-Butyl Ether	11.87	87	7599	0.213	ng		99
36) 1,2-Dichloroethane	12.11	62	10033	0.231	ng		97
38) 1,1,1-Trichloroethane	12.39	97	10336	0.208	ng		99
39) Isopropyl Acetate	12.84	61	8005	0.390	ng	#	82
40) 1-Butanol	12.85	56	12049	0.376	ng		93
41) Benzene	12.87	78	27102	0.208	ng		100
42) Carbon Tetrachloride	13.03	117	8801	0.196	ng		99
43) Cyclohexane	13.17	84	19302	0.386	ng		99
44) tert-Amyl Methyl Ether	13.52	73	18140	0.213	ng		97
45) 1,2-Dichloropropane	13.72	63	6464	0.215	ng		100
46) Bromodichloromethane	13.91	83	9202	0.208	ng		97
47) Trichloroethene	13.97	130	6883	0.185	ng		99
48) 1,4-Dioxane	13.96	88	5469	0.215	ng		98
49) 2,2,4-Trimethylpentane...	14.04	57	27442	0.219	ng		99
50) Methyl Methacrylate	14.18	100	4902	0.390	ng		92

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012019.D Vial: 6
Acq On : 1 May 2020 14:42 Operator: LH
Sample : 0.2ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04272015 (5/26)

Quant Time: May 01 17:26:10 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

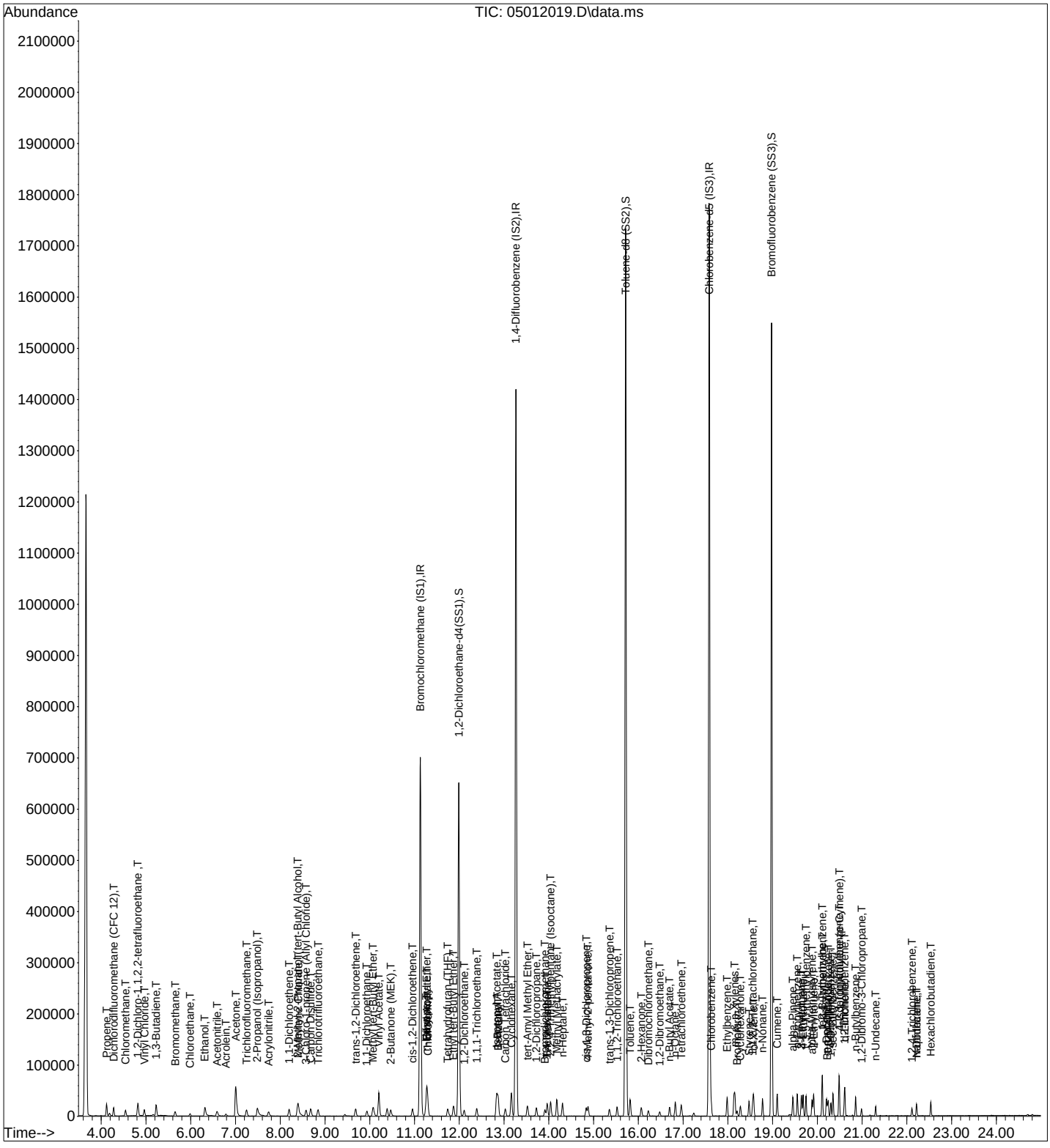
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	14.31	71	6485	0.213	ng		99
52) cis-1,3-Dichloropropene	14.84	75	10229	0.211	ng		99
53) 4-Methyl-2-pentanone	14.88	58	5691	0.207	ng		91
54) trans-1,3-Dichloropropene	15.35	75	8360	0.185	ng		96
55) 1,1,2-Trichloroethane	15.52	97	6328	0.209	ng		98
58) Toluene	15.82	91	26600	0.201	ng		99
59) 2-Hexanone	16.06	43	14103	0.211	ng		96
60) Dibromochloromethane	16.23	129	7014	0.198	ng		97
61) 1,2-Dibromoethane	16.48	107	7112	0.208	ng		98
62) n-Butyl Acetate	16.70	43	14786	0.207	ng		99
63) n-Octane	16.82	57	5273	0.199	ng		99
64) Tetrachloroethene	16.96	166	6836	0.184	ng		98
65) Chlorobenzene	17.62	112	17628	0.198	ng		99
66) Ethylbenzene	17.98	91	28627	0.197	ng		98
67) m- & p-Xylenes	18.15	91	43549	0.370	ng		100
68) Bromoform	18.21	173	4948	0.156	ng		97
69) Styrene	18.47	104	14427	0.157	ng		98
70) o-Xylene	18.58	91	22519	0.191	ng		99
71) n-Nonane	18.77	43	11811	0.198	ng		96
72) 1,1,2,2-Tetrachloroethane	18.55	83	11124	0.196	ng		98
74) Cumene	19.10	105	28539	0.192	ng		97
75) alpha-Pinene	19.45	93	14109	0.187	ng		97
76) n-Propylbenzene	19.55	91	33704	0.194	ng		96
77) 3-Ethyltoluene	19.64	105	24706	0.167	ng		95
78) 4-Ethyltoluene	19.68	105	25673	0.184	ng		92
79) 1,3,5-Trimethylbenzene	19.75	105	20755	0.166	ng		100
80) alpha-Methylstyrene	19.88	118	9566	0.141	ng		98
81) 2-Ethyltoluene	19.92	105	25934	0.179	ng		98
82) 1,2,4-Trimethylbenzene	20.11	105	20144	0.156	ng		100
83) n-Decane	20.20	57	9540	0.150	ng		99
84) Benzyl Chloride	20.22	91	10864	0.105	ng		96
85) 1,3-Dichlorobenzene	20.24	146	10709	0.154	ng		98
86) 1,4-Dichlorobenzene	20.30	146	10405	0.150	ng		99
87) sec-Butylbenzene	20.35	105	29313	0.182	ng		98
88) 4-Isopropyltoluene (p-...	20.49	119	25509	0.168	ng		98
89) 1,2,3-Trimethylbenzene	20.48	105	20308	0.157	ng		97
90) 1,2-Dichlorobenzene	20.61	146	10926	0.154	ng		99
91) d-Limonene	20.61	68	7844	0.156	ng		98
92) 1,2-Dibromo-3-Chloropr...	20.99	157	3246	0.134	ng	#	68
93) n-Undecane	21.30	57	5419	0.083	ng		99
94) 1,2,4-Trichlorobenzene	22.11	180	4530	0.103	ng		98
95) Naphthalene	22.22	128	12645	0.085	ng		100
96) n-Dodecane	22.22	57	2203	0.035	ng		95
97) Hexachlorobutadiene	22.54	225	4472	0.134	ng		100
98) Cyclohexanone	18.28	55	9134	0.201	ng		98
99) tert-Butylbenzene	20.11	119	21458	0.172	ng		100
100) n-Butylbenzene	20.85	91	19904	0.152	ng		98

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

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012019.D Vial: 6
Acq On : 1 May 2020 14:42 Operator: LH
Sample : 0.2ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04272015 (5/26)

Quant Time: May 01 17:26:10 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012020.D Vial: 13
Acq On : 1 May 2020 15:16 Operator: LH
Sample : 0.5ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-05012002 (5/30)

Quant Time: May 01 17:26:12 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020 LH 5/1/20
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.13	130	282762	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	13.26	114	1246042	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.58	82	597894	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.99	65	496699	12.724	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.76%				
57) Toluene-d8 (SS2)	15.72	98	1261623	11.962	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.68%				
73) Bromofluorobenzene (SS3)	18.98	174	433440	11.568	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 92.56%				
Target Compounds							Qvalue
2) Propene	4.12	42	18019	0.595	ng		100
3) Dichlorodifluoromethan...	4.27	85	36783	0.574	ng		100
4) Chloromethane	4.54	50	28625	0.567	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.82	135	21643	0.536	ng		98
6) Vinyl Chloride	4.96	62	31225	0.584	ng		99
7) 1,3-Butadiene	5.22	54	25691	0.642	ng		97
8) Bromomethane	5.65	94	16060	0.596	ng		100
9) Chloroethane	5.98	64	12037	0.584	ng		100
10) Ethanol	6.32	45	59441	2.504	ng		99
11) Acetonitrile	6.58	41	28303	0.538	ng		92
12) Acrolein	6.78	56	10249	0.587	ng		99
13) Acetone	7.00	58	64034	2.757	ng		90
14) Trichlorofluoromethane	7.24	101	30869	0.549	ng		99
15) 2-Propanol (Isopropanol)	7.49	45	81950	1.184	ng		94
16) Acrylonitrile	7.74	53	20199	0.576	ng		99
17) 1,1-Dichloroethene	8.19	96	16045	0.574	ng		99
18) 2-Methyl-2-Propanol (t...	8.38	59	81236	1.327	ng		97
19) Methylene Chloride	8.40	84	16818	0.555	ng		93
20) 3-Chloro-1-propene (Al...	8.57	41	23985	0.605	ng		100
21) Trichlorotrifluoroethane	8.84	151	14094	0.522	ng		90
22) Carbon Disulfide	8.68	76	62306	0.573	ng		100
23) trans-1,2-Dichloroethene	9.68	61	24198	0.594	ng		98
24) 1,1-Dichloroethane	9.94	63	30445	0.588	ng		98
25) Methyl tert-Butyl Ether	10.06	73	50440	0.609	ng		100
26) Vinyl Acetate	10.20	86	16921	2.167	ng	#	71
27) 2-Butanone (MEK)	10.46	72	11237	0.586	ng	#	91
28) cis-1,2-Dichloroethene	10.95	61	23378	0.555	ng		97
29) Diisopropyl Ether	11.27	87	16633	0.547	ng	#	80
30) Ethyl Acetate	11.28	61	12444	1.100	ng		99
31) n-Hexane	11.26	57	28441	0.542	ng		99
32) Chloroform	11.30	83	30757	0.550	ng		100
34) Tetrahydrofuran (THF)	11.74	72	11211	0.565	ng		97
35) Ethyl tert-Butyl Ether	11.87	87	19341	0.539	ng		95
36) 1,2-Dichloroethane	12.11	62	24513	0.560	ng		98
38) 1,1,1-Trichloroethane	12.39	97	26870	0.549	ng		98
39) Isopropyl Acetate	12.83	61	21414	1.060	ng		94
40) 1-Butanol	12.85	56	25610	0.811	ng		84
41) Benzene	12.87	78	68060	0.531	ng		99
42) Carbon Tetrachloride	13.03	117	23499	0.531	ng		100
43) Cyclohexane	13.17	84	50782	1.030	ng		99
44) tert-Amyl Methyl Ether	13.52	73	47408	0.566	ng		98
45) 1,2-Dichloropropane	13.73	63	16720	0.564	ng		98
46) Bromodichloromethane	13.91	83	23539	0.540	ng		99
47) Trichloroethene	13.97	130	17666	0.483	ng		98
48) 1,4-Dioxane	13.95	88	13607	0.544	ng		98
49) 2,2,4-Trimethylpentane...	14.04	57	70232	0.570	ng		98
50) Methyl Methacrylate	14.18	100	12679	1.026	ng		89

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012020.D Vial: 13
Acq On : 1 May 2020 15:16 Operator: LH
Sample : 0.5ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-05012002 (5/30)

Quant Time: May 01 17:26:12 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

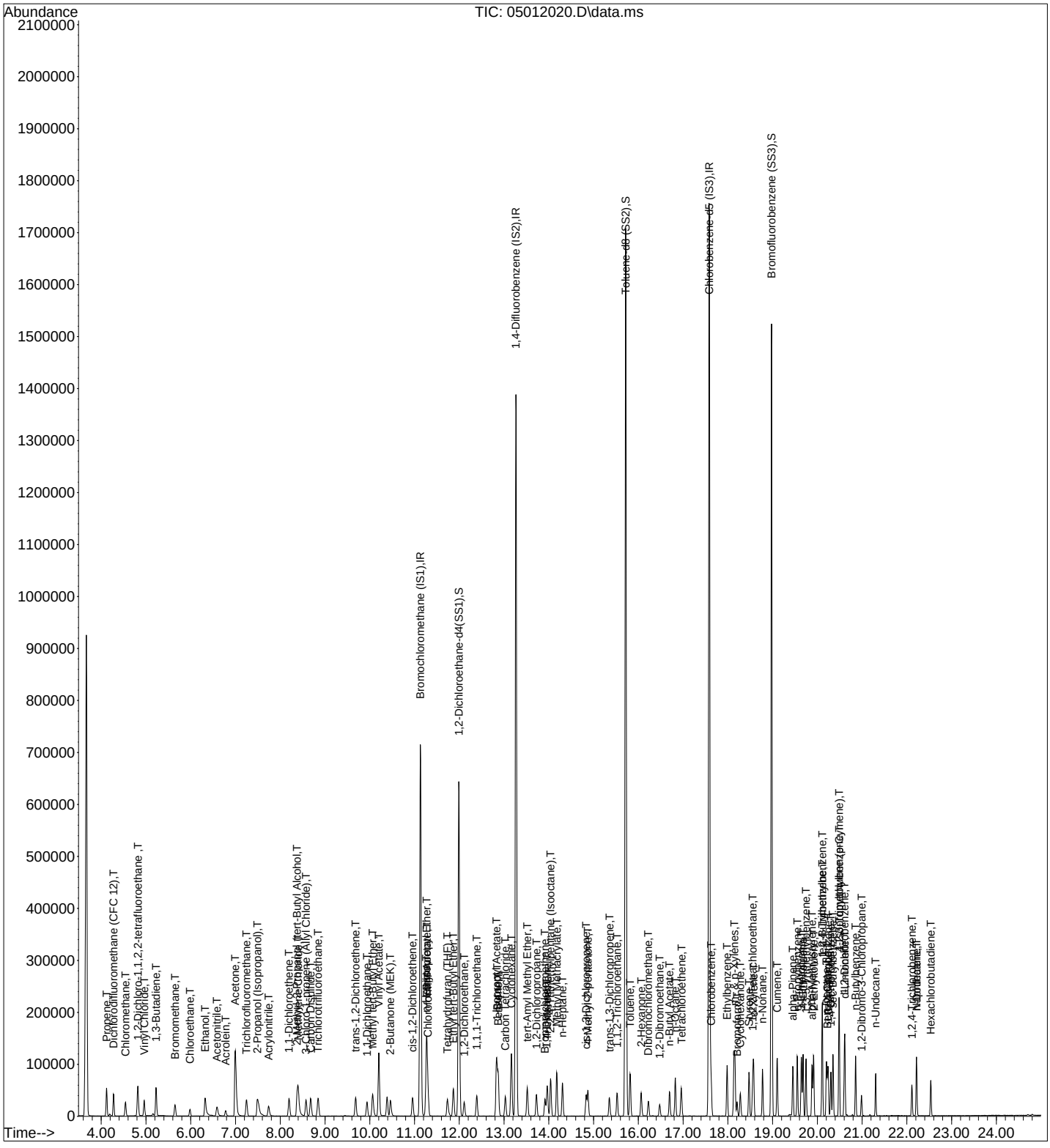
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	14.30	71	16470	0.549	ng		99
52) cis-1,3-Dichloropropene	14.83	75	25622	0.537	ng		100
53) 4-Methyl-2-pentanone	14.88	58	15185	0.562	ng		96
54) trans-1,3-Dichloropropene	15.35	75	21678	0.488	ng		100
55) 1,1,2-Trichloroethane	15.52	97	16061	0.538	ng		99
58) Toluene	15.82	91	68212	0.522	ng		99
59) 2-Hexanone	16.06	43	36076	0.547	ng		97
60) Dibromochloromethane	16.22	129	18007	0.513	ng		100
61) 1,2-Dibromoethane	16.48	107	18032	0.535	ng		99
62) n-Butyl Acetate	16.70	43	40268	0.571	ng		99
63) n-Octane	16.83	57	14009	0.536	ng		98
64) Tetrachloroethene	16.96	166	17406	0.474	ng		98
65) Chlorobenzene	17.62	112	44455	0.505	ng		99
66) Ethylbenzene	17.98	91	75877	0.529	ng		99
67) m- & p-Xylenes	18.15	91	116955	1.007	ng		99
68) Bromoform	18.21	173	13392	0.426	ng		100
69) Styrene	18.47	104	42807	0.472	ng		99
70) o-Xylene	18.58	91	59151	0.509	ng		98
71) n-Nonane	18.77	43	31809	0.539	ng		98
72) 1,1,2,2-Tetrachloroethane	18.55	83	28515	0.507	ng		100
74) Cumene	19.10	105	75062	0.513	ng		98
75) alpha-Pinene	19.45	93	36992	0.496	ng		98
76) n-Propylbenzene	19.56	91	90744	0.529	ng		97
77) 3-Ethyltoluene	19.64	105	68792	0.472	ng		99
78) 4-Ethyltoluene	19.68	105	71240	0.516	ng		99
79) 1,3,5-Trimethylbenzene	19.75	105	57590	0.466	ng		100
80) alpha-Methylstyrene	19.88	118	29121	0.435	ng		98
81) 2-Ethyltoluene	19.92	105	71176	0.498	ng		98
82) 1,2,4-Trimethylbenzene	20.11	105	57697	0.454	ng		98
83) n-Decane	20.20	57	28801	0.460	ng		98
84) Benzyl Chloride	20.23	91	38679	0.379	ng		97
85) 1,3-Dichlorobenzene	20.24	146	32341	0.470	ng		99
86) 1,4-Dichlorobenzene	20.30	146	32829	0.480	ng		98
87) sec-Butylbenzene	20.35	105	79152	0.499	ng		98
88) 4-Isopropyltoluene (p-...	20.48	119	71971	0.481	ng		98
89) 1,2,3-Trimethylbenzene	20.48	105	58236	0.457	ng		97
90) 1,2-Dichlorobenzene	20.61	146	31295	0.447	ng		100
91) d-Limonene	20.62	68	22394	0.451	ng		99
92) 1,2-Dibromo-3-Chloropr...	20.99	157	9748	0.406	ng	#	80
93) n-Undecane	21.30	57	23411	0.364	ng		98
94) 1,2,4-Trichlorobenzene	22.11	180	16758	0.385	ng		99
95) Naphthalene	22.22	128	53528	0.365	ng		100
96) n-Dodecane	22.22	57	12440	0.198	ng		98
97) Hexachlorobutadiene	22.54	225	11744	0.356	ng		99
98) Cyclohexanone	18.28	55	19899	0.444	ng		97
99) tert-Butylbenzene	20.11	119	57329	0.464	ng		99
100) n-Butylbenzene	20.85	91	61839	0.478	ng		98

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

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012020.D Vial: 13
Acq On : 1 May 2020 15:16 Operator: LH
Sample : 0.5ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-05012002 (5/30)

Quant Time: May 01 17:26:12 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012021.D Vial: 13
Acq On : 1 May 2020 15:51 Operator: LH
Sample : 1.0ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-05012002 (5/30)

Quant Time: May 01 17:26:14 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020 LH 5/1/20
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.13	130	283099	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	13.26	114	1255557	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	17.58	82	599231	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	11.99	65	497020	12.717	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.76%				
57) Toluene-d8 (SS2)	15.72	98	1262658	11.945	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.60%				
73) Bromofluorobenzene (SS3)	18.98	174	433746	11.550	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 92.40%				
Target Compounds							Qvalue
2) Propene	4.11	42	33126	1.093	ng		99
3) Dichlorodifluoromethan...	4.27	85	68235	1.064	ng		99
4) Chloromethane	4.53	50	53718	1.062	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.81	135	38642	0.956	ng		99
6) Vinyl Chloride	4.96	62	58432	1.092	ng		100
7) 1,3-Butadiene	5.22	54	47465	1.185	ng		98
8) Bromomethane	5.64	94	29630	1.099	ng		100
9) Chloroethane	5.98	64	22473	1.088	ng		99
10) Ethanol	6.32	45	110869	4.665	ng		99
11) Acetonitrile	6.58	41	53541	1.017	ng		100
12) Acrolein	6.78	56	19340	1.106	ng		100
13) Acetone	6.98	58	119315	5.130	ng		90
14) Trichlorofluoromethane	7.24	101	56632	1.006	ng		99
15) 2-Propanol (Isopropanol)	7.48	45	154892	2.235	ng		96
16) Acrylonitrile	7.74	53	38461	1.095	ng		99
17) 1,1-Dichloroethene	8.19	96	30236	1.080	ng		97
18) 2-Methyl-2-Propanol (t...	8.36	59	151128	2.466	ng		98
19) Methylene Chloride	8.40	84	32502	1.072	ng		97
20) 3-Chloro-1-propene (Al...	8.57	41	46601	1.174	ng		98
21) Trichlorotrifluoroethane	8.84	151	26828	0.993	ng		96
22) Carbon Disulfide	8.68	76	117066	1.075	ng		99
23) trans-1,2-Dichloroethene	9.68	61	45490	1.115	ng		97
24) 1,1-Dichloroethane	9.94	63	55243	1.065	ng		99
25) Methyl tert-Butyl Ether	10.06	73	92006	1.109	ng		99
26) Vinyl Acetate	10.20	86	33295	4.258	ng	#	76
27) 2-Butanone (MEK)	10.46	72	21197	1.105	ng		96
28) cis-1,2-Dichloroethene	10.96	61	43960	1.043	ng		97
29) Diisopropyl Ether	11.27	87	31384	1.031	ng	#	79
30) Ethyl Acetate	11.27	61	23578	2.083	ng		97
31) n-Hexane	11.26	57	53227	1.014	ng		99
32) Chloroform	11.30	83	57167	1.020	ng		98
34) Tetrahydrofuran (THF)	11.73	72	21166	1.066	ng		97
35) Ethyl tert-Butyl Ether	11.87	87	36365	1.013	ng		97
36) 1,2-Dichloroethane	12.11	62	45068	1.029	ng		100
38) 1,1,1-Trichloroethane	12.39	97	50409	1.021	ng		98
39) Isopropyl Acetate	12.83	61	40161	1.973	ng	#	92
40) 1-Butanol	12.84	56	48310	1.519	ng		82
41) Benzene	12.87	78	127091	0.984	ng		100
42) Carbon Tetrachloride	13.03	117	43210	0.970	ng		98
43) Cyclohexane	13.17	84	94431	1.902	ng		98
44) tert-Amyl Methyl Ether	13.52	73	89386	1.060	ng		98
45) 1,2-Dichloropropane	13.73	63	31276	1.047	ng		99
46) Bromodichloromethane	13.91	83	44019	1.002	ng		99
47) Trichloroethene	13.97	130	32599	0.885	ng		100
48) 1,4-Dioxane	13.95	88	25788	1.023	ng		99
49) 2,2,4-Trimethylpentane...	14.04	57	130371	1.050	ng		98
50) Methyl Methacrylate	14.18	100	24994	2.007	ng		96

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012021.D Vial: 13
Acq On : 1 May 2020 15:51 Operator: LH
Sample : 1.0ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-05012002 (5/30)

Quant Time: May 01 17:26:14 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

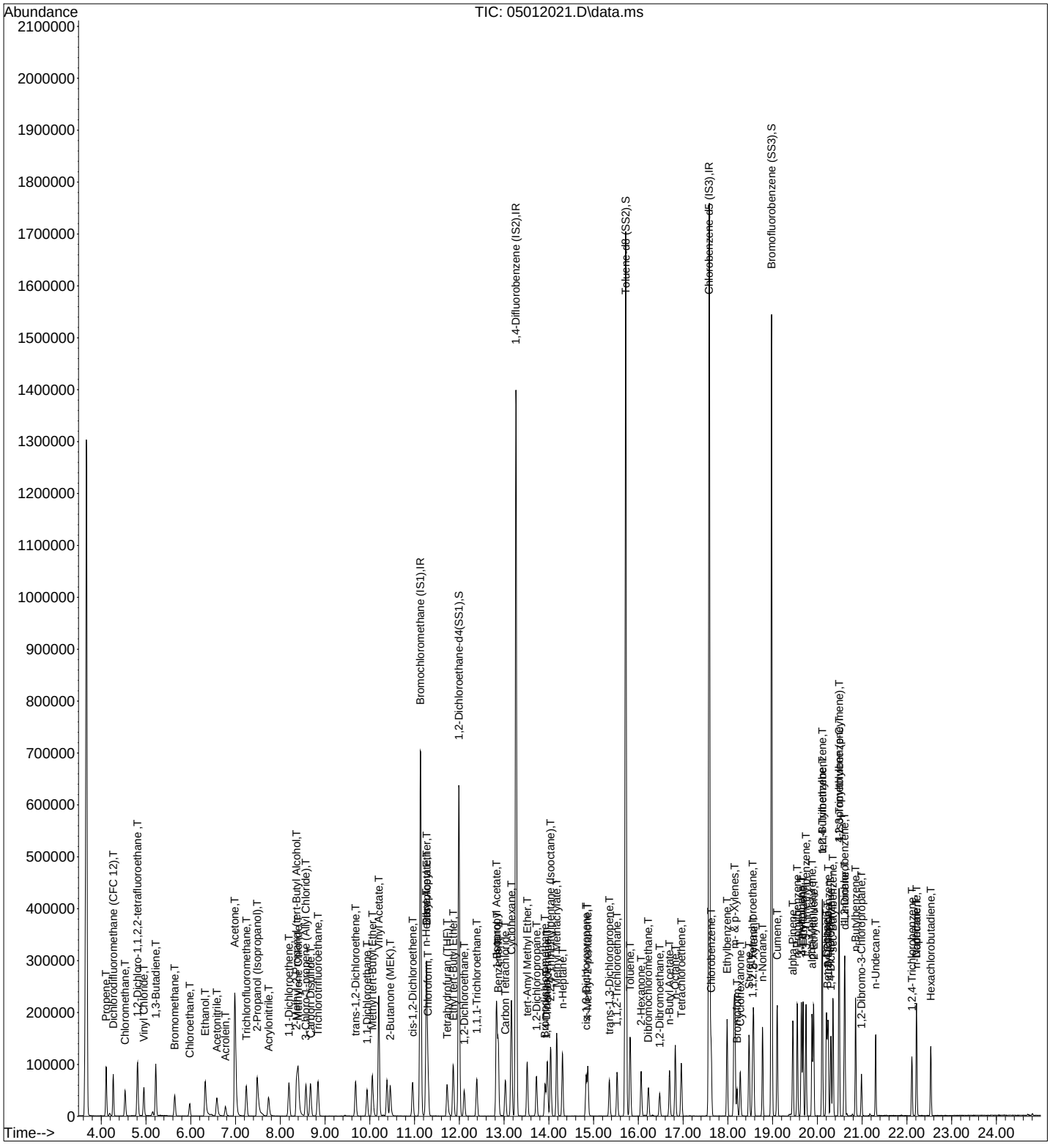
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.31	71	31052	1.028	ng	99
52) cis-1,3-Dichloropropene	14.83	75	48884	1.016	ng	100
53) 4-Methyl-2-pentanone	14.87	58	28992	1.064	ng	98
54) trans-1,3-Dichloropropene	15.35	75	42499	0.949	ng	99
55) 1,1,2-Trichloroethane	15.52	97	29976	0.997	ng	99
58) Toluene	15.82	91	126852	0.968	ng	100
59) 2-Hexanone	16.06	43	68688	1.039	ng	98
60) Dibromochloromethane	16.22	129	34198	0.973	ng	100
61) 1,2-Dibromoethane	16.48	107	33986	1.006	ng	99
62) n-Butyl Acetate	16.70	43	76066	1.076	ng	98
63) n-Octane	16.83	57	26077	0.995	ng	99
64) Tetrachloroethene	16.96	166	32577	0.886	ng	100
65) Chlorobenzene	17.62	112	82545	0.935	ng	98
66) Ethylbenzene	17.98	91	142006	0.988	ng	99
67) m- & p-Xylenes	18.15	91	225991	1.941	ng	98
68) Bromoform	18.21	173	25763	0.818	ng	100
69) Styrene	18.47	104	80976	0.891	ng	99
70) o-Xylene	18.58	91	111310	0.955	ng	99
71) n-Nonane	18.77	43	60557	1.023	ng	97
72) 1,1,2,2-Tetrachloroethane	18.55	83	54222	0.963	ng	99
74) Cumene	19.10	105	140371	0.956	ng	99
75) alpha-Pinene	19.45	93	71471	0.956	ng	99
76) n-Propylbenzene	19.55	91	173225	1.008	ng	98
77) 3-Ethyltoluene	19.64	105	131045	0.897	ng	99
78) 4-Ethyltoluene	19.68	105	136161	0.983	ng	99
79) 1,3,5-Trimethylbenzene	19.75	105	112385	0.908	ng	99
80) alpha-Methylstyrene	19.88	118	57239	0.853	ng	99
81) 2-Ethyltoluene	19.92	105	133665	0.933	ng	99
82) 1,2,4-Trimethylbenzene	20.11	105	112073	0.879	ng	99
83) n-Decane	20.20	57	56537	0.900	ng	99
84) Benzyl Chloride	20.23	91	78621	0.769	ng	97
85) 1,3-Dichlorobenzene	20.24	146	62650	0.909	ng	99
86) 1,4-Dichlorobenzene	20.30	146	61324	0.895	ng	100
87) sec-Butylbenzene	20.35	105	151180	0.950	ng	98
88) 4-Isopropyltoluene (p-...	20.48	119	138806	0.925	ng	99
89) 1,2,3-Trimethylbenzene	20.48	105	113653	0.890	ng	99
90) 1,2-Dichlorobenzene	20.61	146	60175	0.857	ng	99
91) d-Limonene	20.62	68	44904	0.903	ng	98
92) 1,2-Dibromo-3-Chloropr...	20.98	157	19657	0.817	ng	85
93) n-Undecane	21.30	57	44833	0.696	ng	99
94) 1,2,4-Trichlorobenzene	22.11	180	32560	0.746	ng	100
95) Naphthalene	22.22	128	100929	0.687	ng	100
96) n-Dodecane	22.21	57	24009	0.380	ng	99
97) Hexachlorobutadiene	22.54	225	22641	0.684	ng	99
98) Cyclohexanone	18.28	55	38554	0.858	ng	99
99) tert-Butylbenzene	20.11	119	111007	0.897	ng	99
100) n-Butylbenzene	20.85	91	119734	0.924	ng	98

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

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012021.D Vial: 13
Acq On : 1 May 2020 15:51 Operator: LH
Sample : 1.0ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-05012002 (5/30)

Quant Time: May 01 17:26:14 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012022.D Vial: 2
Acq On : 1 May 2020 16:25 Operator: LH
Sample : 5.0ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04292003 (5/28)

Quant Time: May 01 17:26:16 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020 LH 5/1/20
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.14	130	303798	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	13.27	114	1318017	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.59	82	623963	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.00	65	517657	12.342	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.72%				
57) Toluene-d8 (SS2)	15.72	98	1308528	11.889	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.12%				
73) Bromofluorobenzene (SS3)	18.98	174	490919	12.554	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.40%				
Target Compounds							Qvalue
2) Propene	4.09	42	193048	5.934	ng		100
3) Dichlorodifluoromethan...	4.25	85	387745	5.637	ng		100
4) Chloromethane	4.52	50	303525	5.594	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.80	135	222610	5.132	ng		100
6) Vinyl Chloride	4.94	62	339270	5.907	ng		100
7) 1,3-Butadiene	5.21	54	276281	6.430	ng		99
8) Bromomethane	5.64	94	169682	5.863	ng		98
9) Chloroethane	5.97	64	129957	5.865	ng		100
10) Ethanol	6.35	45	691643	27.117	ng		100
11) Acetonitrile	6.60	41	322707	5.712	ng		100
12) Acrolein	6.78	56	114887	6.125	ng		99
13) Acetone	6.99	58	718205	28.778	ng		93
14) Trichlorofluoromethane	7.24	101	330361	5.469	ng		100
15) 2-Propanol (Isopropanol)	7.50	45	953934	12.829	ng		99
16) Acrylonitrile	7.75	53	241513	6.410	ng		100
17) 1,1-Dichloroethene	8.19	96	176135	5.860	ng		97
18) 2-Methyl-2-Propanol (t...	8.36	59	939029	14.278	ng		99
19) Methylene Chloride	8.42	84	189273	5.818	ng		97
20) 3-Chloro-1-propene (Al...	8.58	41	281181	6.602	ng		99
21) Trichlorotrifluoroethane	8.84	151	159827	5.511	ng		97
22) Carbon Disulfide	8.68	76	697922	5.971	ng		100
23) trans-1,2-Dichloroethene	9.70	61	269106	6.148	ng		99
24) 1,1-Dichloroethane	9.95	63	324467	5.829	ng		100
25) Methyl tert-Butyl Ether	10.05	73	520731	5.850	ng		100
26) Vinyl Acetate	10.21	86	230843	27.513	ng	#	86
27) 2-Butanone (MEK)	10.45	72	129697	6.298	ng		97
28) cis-1,2-Dichloroethene	10.97	61	259456	5.737	ng		98
29) Diisopropyl Ether	11.27	87	191800	5.871	ng	#	79
30) Ethyl Acetate	11.27	61	149560	12.310	ng		98
31) n-Hexane	11.26	57	314981	5.592	ng		99
32) Chloroform	11.31	83	340357	5.661	ng		99
34) Tetrahydrofuran (THF)	11.72	72	126370	5.930	ng		99
35) Ethyl tert-Butyl Ether	11.86	87	221593	5.751	ng		97
36) 1,2-Dichloroethane	12.11	62	265122	5.640	ng		100
38) 1,1,1-Trichloroethane	12.40	97	293872	5.672	ng		100
39) Isopropyl Acetate	12.83	61	250912	11.741	ng	#	94
40) 1-Butanol	12.84	56	336318	10.073	ng		93
41) Benzene	12.87	78	763486	5.631	ng		100
42) Carbon Tetrachloride	13.03	117	266893	5.707	ng		100
43) Cyclohexane	13.17	84	572113	10.975	ng		100
44) tert-Amyl Methyl Ether	13.52	73	541195	6.112	ng		99
45) 1,2-Dichloropropane	13.73	63	186128	5.938	ng		99
46) Bromodichloromethane	13.92	83	271708	5.892	ng		100
47) Trichloroethene	13.97	130	200472	5.185	ng		100
48) 1,4-Dioxane	13.95	88	156033	5.899	ng		100
49) 2,2,4-Trimethylpentane...	14.04	57	772648	5.931	ng		99
50) Methyl Methacrylate	14.18	100	156609	11.977	ng		97

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012022.D Vial: 2
Acq On : 1 May 2020 16:25 Operator: LH
Sample : 5.0ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04292003 (5/28)

Quant Time: May 01 17:26:16 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

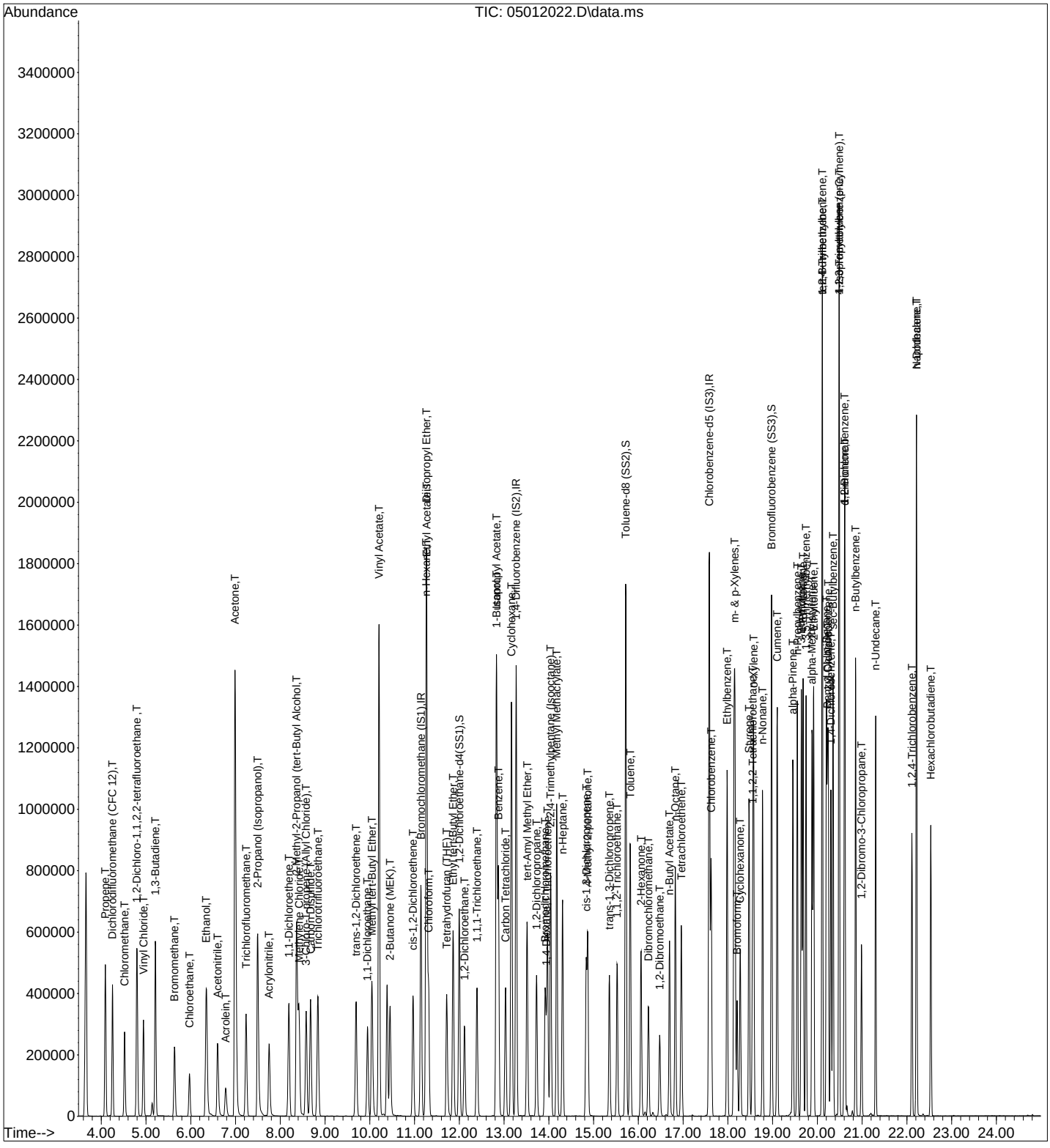
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.31	71	180946	5.706	ng	99
52) cis-1,3-Dichloropropene	14.84	75	308293	6.105	ng	100
53) 4-Methyl-2-pentanone	14.87	58	175513	6.138	ng	97
54) trans-1,3-Dichloropropene	15.35	75	277438	5.899	ng	100
55) 1,1,2-Trichloroethane	15.52	97	182608	5.786	ng	99
58) Toluene	15.82	91	751701	5.508	ng	100
59) 2-Hexanone	16.06	43	431067	6.262	ng	99
60) Dibromochloromethane	16.23	129	222764	6.086	ng	99
61) 1,2-Dibromoethane	16.48	107	211443	6.008	ng	100
62) n-Butyl Acetate	16.70	43	477782	6.493	ng	100
63) n-Octane	16.83	57	155673	5.704	ng	100
64) Tetrachloroethene	16.96	166	201840	5.271	ng	100
65) Chlorobenzene	17.62	112	499525	5.435	ng	100
66) Ethylbenzene	17.98	91	871724	5.827	ng	99
67) m- & p-Xylenes	18.15	91	1368621	11.288	ng	100
68) Bromoform	18.21	173	189068	5.768	ng	100
69) Styrene	18.47	104	536906	5.670	ng	100
70) o-Xylene	18.58	91	693423	5.713	ng	100
71) n-Nonane	18.77	43	370451	6.012	ng	98
72) 1,1,2,2-Tetrachloroethane	18.55	83	346585	5.910	ng	100
74) Cumene	19.10	105	885174	5.792	ng	99
75) alpha-Pinene	19.45	93	454351	5.834	ng	100
76) n-Propylbenzene	19.55	91	1076654	6.015	ng	99
77) 3-Ethyltoluene	19.64	105	836770	5.500	ng	95
78) 4-Ethyltoluene	19.68	105	882656	6.121	ng	95
79) 1,3,5-Trimethylbenzene	19.75	105	715909	5.552	ng	99
80) alpha-Methylstyrene	19.88	118	385478	5.515	ng	100
81) 2-Ethyltoluene	19.92	105	858573	5.755	ng	100
82) 1,2,4-Trimethylbenzene	20.11	105	751354	5.662	ng	98
83) n-Decane	20.20	57	376639	5.759	ng	99
84) Benzyl Chloride	20.23	91	614231	5.773	ng	99
85) 1,3-Dichlorobenzene	20.24	146	434270	6.049	ng	100
86) 1,4-Dichlorobenzene	20.30	146	427551	5.990	ng	100
87) sec-Butylbenzene	20.35	105	969884	5.855	ng	99
88) 4-Isopropyltoluene (p-...	20.48	119	928906	5.944	ng	98
89) 1,2,3-Trimethylbenzene	20.48	105	769774	5.787	ng	98
90) 1,2-Dichlorobenzene	20.61	146	419115	5.732	ng	100
91) d-Limonene	20.62	68	288464	5.570	ng	99
92) 1,2-Dibromo-3-Chloropr...	20.98	157	148727	5.940	ng	97
93) n-Undecane	21.30	57	365721	5.450	ng	100
94) 1,2,4-Trichlorobenzene	22.11	180	270469	5.951	ng	99
95) Naphthalene	22.22	128	892593	5.833	ng	100
96) n-Dodecane	22.22	57	324655	4.939	ng	99
97) Hexachlorobutadiene	22.54	225	164461	4.774	ng	100
98) Cyclohexanone	18.27	55	245365	5.243	ng	99
99) tert-Butylbenzene	20.11	119	727041	5.643	ng	100
100) n-Butylbenzene	20.85	91	778801	5.771	ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012022.D Vial: 2
Acq On : 1 May 2020 16:25 Operator: LH
Sample : 5.0ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04292003 (5/28)

Quant Time: May 01 17:26:16 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012023.D Vial: 2
Acq On : 1 May 2020 16:59 Operator: LH
Sample : 25ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04292003 (5/28)

Quant Time: May 01 17:26:18 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020 LH 5/1/20
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.16	130	286303	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.28	114	1228912	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.59	82	571123	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	12.01	65	468097	11.843	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.72%			
57) Toluene-d8 (SS2)	15.72	98	1212242	12.033	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.24%			
73) Bromofluorobenzene (SS3)	18.98	174	458310	12.805	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.40%			
Target Compounds						Qvalue
2) Propene	4.09	42	894762	29.187	ng	100
3) Dichlorodifluoromethan...	4.25	85	1661240	25.625	ng	100
4) Chloromethane	4.53	50	1331334	26.035	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.80	135	962170	23.538	ng	100
6) Vinyl Chloride	4.94	62	1452200	26.828	ng	100
7) 1,3-Butadiene	5.21	54	1192249	29.444	ng	100
8) Bromomethane	5.65	94	769909	28.228	ng	100
9) Chloroethane	5.98	64	583429	27.941	ng	100
10) Ethanol	6.39	45	3316498	137.974	ng	100
11) Acetonitrile	6.63	41	1485800	27.907	ng	100
12) Acrolein	6.80	56	518321	29.321	ng	100
13) Acetone	7.01	58	3451253	146.739	ng	100
14) Trichlorofluoromethane	7.24	101	1489634	26.165	ng	100
15) 2-Propanol (Isopropanol)	7.53	45	4218436	60.200	ng	100
16) Acrylonitrile	7.77	53	1099575	30.969	ng	100
17) 1,1-Dichloroethene	8.20	96	811190	28.639	ng	100
18) 2-Methyl-2-Propanol (t...	8.39	59	3958148	63.861	ng	100
19) Methylene Chloride	8.44	84	868569	28.330	ng	100
20) 3-Chloro-1-propene (Al...	8.59	41	1253954	31.243	ng	100
21) Trichlorotrifluoroethane	8.84	151	743004	27.185	ng	100
22) Carbon Disulfide	8.69	76	3145335	28.555	ng	100
23) trans-1,2-Dichloroethene	9.71	61	1224632	29.687	ng	100
24) 1,1-Dichloroethane	9.96	63	1485162	28.313	ng	100
25) Methyl tert-Butyl Ether	10.05	73	2185564	26.052	ng	100
26) Vinyl Acetate	10.22	86	1147538	145.128	ng	100
27) 2-Butanone (MEK)	10.46	72	578422	29.805	ng	100
28) cis-1,2-Dichloroethene	10.98	61	1170190	27.455	ng	100
29) Diisopropyl Ether	11.27	87	816119	26.509	ng	100
30) Ethyl Acetate	11.28	61	740753	64.696	ng	100
31) n-Hexane	11.26	57	1536846	28.951	ng	100
32) Chloroform	11.32	83	1513438	26.712	ng	100
34) Tetrahydrofuran (THF)	11.72	72	562319	27.999	ng	100
35) Ethyl tert-Butyl Ether	11.87	87	1027494	28.295	ng	100
36) 1,2-Dichloroethane	12.12	62	1181488	26.670	ng	100
38) 1,1,1-Trichloroethane	12.40	97	1349990	27.947	ng	100
39) Isopropyl Acetate	12.84	61	1233560	61.905	ng	100
40) 1-Butanol	12.85	56	1704801	54.762	ng	100
41) Benzene	12.88	78	3498072	27.670	ng	100
42) Carbon Tetrachloride	13.04	117	1221860	28.021	ng	100
43) Cyclohexane	13.17	84	2724355	56.049	ng	100
44) tert-Amyl Methyl Ether	13.52	73	2480433	30.042	ng	100
45) 1,2-Dichloropropane	13.73	63	842781	28.835	ng	100
46) Bromodichloromethane	13.92	83	1270274	29.545	ng	100
47) Trichloroethene	13.97	130	932766	25.873	ng	100
48) 1,4-Dioxane	13.95	88	738598	29.950	ng	100
49) 2,2,4-Trimethylpentane...	14.05	57	3492402	28.751	ng	100
50) Methyl Methacrylate	14.18	100	756519	62.050	ng	100

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012023.D Vial: 2
Acq On : 1 May 2020 16:59 Operator: LH
Sample : 25ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04292003 (5/28)

Quant Time: May 01 17:26:18 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

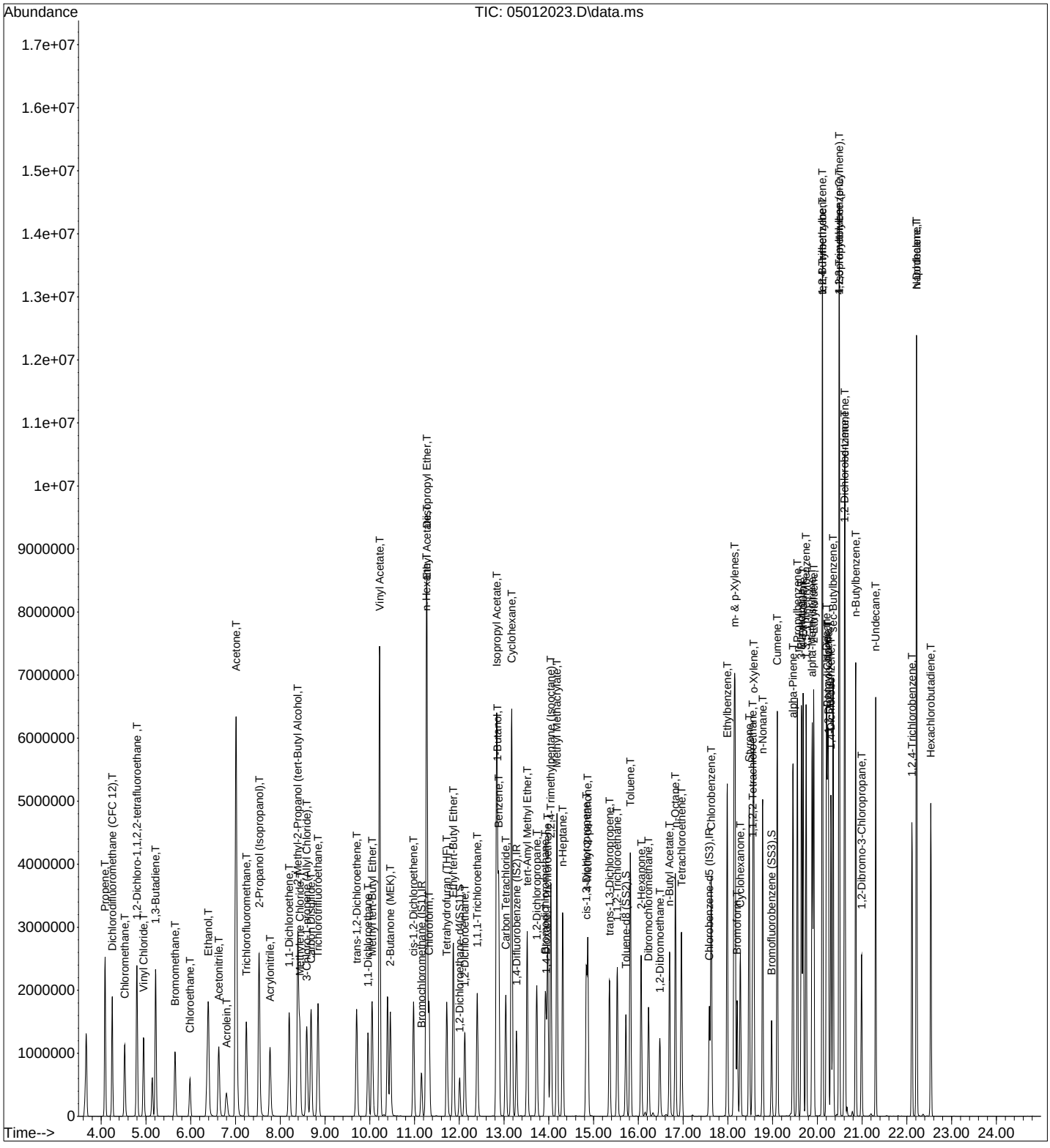
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.31	71	823934	27.865	ng	100
52) cis-1,3-Dichloropropene	14.84	75	1447687	30.747	ng	100
53) 4-Methyl-2-pentanone	14.87	58	811075	30.423	ng	100
54) trans-1,3-Dichloropropene	15.36	75	1324553	30.205	ng	100
55) 1,1,2-Trichloroethane	15.53	97	843984	28.682	ng	100
58) Toluene	15.82	91	3424256	27.410	ng	100
59) 2-Hexanone	16.06	43	1935226	30.714	ng	100
60) Dibromochloromethane	16.23	129	1060385	31.652	ng	100
61) 1,2-Dibromoethane	16.48	107	982343	30.496	ng	100
62) n-Butyl Acetate	16.70	43	2168912	32.203	ng	100
63) n-Octane	16.83	57	728475	29.163	ng	100
64) Tetrachloroethene	16.96	166	984776	28.099	ng	100
65) Chlorobenzene	17.63	112	2300188	27.341	ng	100
66) Ethylbenzene	17.99	91	4049520	29.572	ng	100
67) m- & p-Xylenes	18.15	91	6491657	58.495	ng	100
68) Bromoform	18.21	173	917591	30.583	ng	100
69) Styrene	18.48	104	2503836	28.891	ng	100
70) o-Xylene	18.58	91	3253541	29.284	ng	100
71) n-Nonane	18.78	43	1726340	30.608	ng	100
72) 1,1,2,2-Tetrachloroethane	18.55	83	1616722	30.117	ng	100
74) Cumene	19.10	105	4096128	29.280	ng	100
75) alpha-Pinene	19.46	93	2182133	30.613	ng	100
76) n-Propylbenzene	19.56	91	4975591	30.367	ng	100
77) 3-Ethyltoluene	19.64	105	4101218	29.451	ng	100
78) 4-Ethyltoluene	19.68	105	3906607	29.596	ng	100
79) 1,3,5-Trimethylbenzene	19.75	105	3353822	28.417	ng	100
80) alpha-Methylstyrene	19.88	118	1815476	28.379	ng	100
81) 2-Ethyltoluene	19.92	105	3976342	29.119	ng	100
82) 1,2,4-Trimethylbenzene	20.11	105	3727437	30.689	ng	100
83) n-Decane	20.20	57	1854354	30.977	ng	100
84) Benzyl Chloride	20.23	91	3206821	32.930	ng	100
85) 1,3-Dichlorobenzene	20.25	146	2028248	30.866	ng	100
86) 1,4-Dichlorobenzene	20.30	146	1980369	30.311	ng	100
87) sec-Butylbenzene	20.35	105	4443941	29.308	ng	100
88) 4-Isopropyltoluene (p-...	20.49	119	4416603	30.875	ng	100
89) 1,2,3-Trimethylbenzene	20.49	105	3810515	31.296	ng	100
90) 1,2-Dichlorobenzene	20.61	146	2012317	30.068	ng	100
91) d-Limonene	20.62	68	1441613	30.414	ng	100
92) 1,2-Dibromo-3-Chloropr...	20.99	157	697199	30.419	ng	100
93) n-Undecane	21.30	57	1818070	29.597	ng	100
94) 1,2,4-Trichlorobenzene	22.11	180	1398370	33.614	ng	100
95) Naphthalene	22.22	128	4546028	32.455	ng	100
96) n-Dodecane	22.22	57	1750966	29.104	ng	100
97) Hexachlorobutadiene	22.54	225	878145	27.851	ng	100
98) Cyclohexanone	18.28	55	1117925	26.097	ng	100
99) tert-Butylbenzene	20.11	119	3489996	29.594	ng	100
100) n-Butylbenzene	20.86	91	3625532	29.353	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012023.D Vial: 2
Acq On : 1 May 2020 16:59 Operator: LH
Sample : 25ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04292003 (5/28)

Quant Time: May 01 17:26:18 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:25:50 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012024.D Vial: 2
Acq On : 1 May 2020 17:33 Operator: LH
Sample : 50ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04292003 (5/28)

Quant Time: May 01 18:21:41 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:29:13 2020 LH 5/1/20
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.16	130	296329	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	13.28	114	1261474	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.59	82	593519	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.01	65	478735	11.900	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.20%				
57) Toluene-d8 (SS2)	15.72	98	1240425	12.243	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.92%				
73) Bromofluorobenzene (SS3)	18.98	174	464734	12.717	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.76%				
Target Compounds							Qvalue
2) Propene	4.09	42	1796953	52.860	ng		99
3) Dichlorodifluoromethan...	4.25	85	3187990	47.567	ng		100
4) Chloromethane	4.53	50	2729050	52.530	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.81	135	1935925	47.940	ng		100
6) Vinyl Chloride	4.96	62	2887895	50.326	ng		100
7) 1,3-Butadiene	5.22	54	2393303	50.778	ng		99
8) Bromomethane	5.66	94	1618002	53.561	ng		100
9) Chloroethane	5.99	64	1229227	54.539	ng		99
10) Ethanol	6.42	45	7106079	270.958	ng		100
11) Acetonitrile	6.64	41	3034898	50.934	ng		100
12) Acrolein	6.81	56	1054165	50.758	ng		100
13) Acetone	7.03	58	7450473	282.417	ng	#	85
14) Trichlorofluoromethane	7.25	101	3028815	50.994	ng		100
15) 2-Propanol (Isopropanol)	7.55	45	7855441	98.616	ng		99
16) Acrylonitrile	7.78	53	2274854	52.994	ng		100
17) 1,1-Dichloroethene	8.21	96	1662670	53.624	ng		99
18) 2-Methyl-2-Propanol (t...	8.41	59	5524708	78.677	ng		100
19) Methylene Chloride	8.44	84	1782729	52.018	ng		100
20) 3-Chloro-1-propene (Al...	8.60	41	2606826	55.998	ng		100
21) Trichlorotrifluoroethane	8.85	151	1546599	55.362	ng		98
22) Carbon Disulfide	8.69	76	6372275	51.854	ng		100
23) trans-1,2-Dichloroethene	9.71	61	2513808	53.485	ng		99
24) 1,1-Dichloroethane	9.96	63	3010944	53.864	ng		100
25) Methyl tert-Butyl Ether	10.05	73	4149230	46.527	ng		100
26) Vinyl Acetate	10.23	86	2491407	314.423	ng	#	57
27) 2-Butanone (MEK)	10.47	72	1200800	53.091	ng		100
28) cis-1,2-Dichloroethene	10.98	61	2420682	52.524	ng		99
29) Diisopropyl Ether	11.27	87	1723473	53.021	ng	#	93
30) Ethyl Acetate	11.28	61	1642236	125.490	ng		100
31) n-Hexane	11.26	57	3312834	58.268	ng		100
32) Chloroform	11.33	83	3125242	52.888	ng		100
34) Tetrahydrofuran (THF)	11.72	72	1166647	53.025	ng		100
35) Ethyl tert-Butyl Ether	11.87	87	2150206	55.497	ng		100
36) 1,2-Dichloroethane	12.13	62	2421427	51.847	ng		100
38) 1,1,1-Trichloroethane	12.40	97	2767260	54.541	ng		100
39) Isopropyl Acetate	12.84	61	2703577	121.791	ng	#	89
40) 1-Butanol	12.86	56	3801241	117.283	ng		94
41) Benzene	12.88	78	7578608	55.786	ng		100
42) Carbon Tetrachloride	13.04	117	2525594	54.795	ng		100
43) Cyclohexane	13.18	84	5820559	114.692	ng		99
44) tert-Amyl Methyl Ether	13.52	73	5201775	57.533	ng		99
45) 1,2-Dichloropropane	13.73	63	1741280	55.926	ng		99
46) Bromodichloromethane	13.92	83	2627252	57.456	ng		100
47) Trichloroethene	13.98	130	1973429	56.342	ng		100
48) 1,4-Dioxane	13.95	88	1556720	57.092	ng		99
49) 2,2,4-Trimethylpentane...	14.05	57	7264805	55.532	ng		98
50) Methyl Methacrylate	14.19	100	1612357	118.946	ng		99

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012024.D Vial: 2
Acq On : 1 May 2020 17:33 Operator: LH
Sample : 50ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04292003 (5/28)

Quant Time: May 01 18:21:41 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:29:13 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

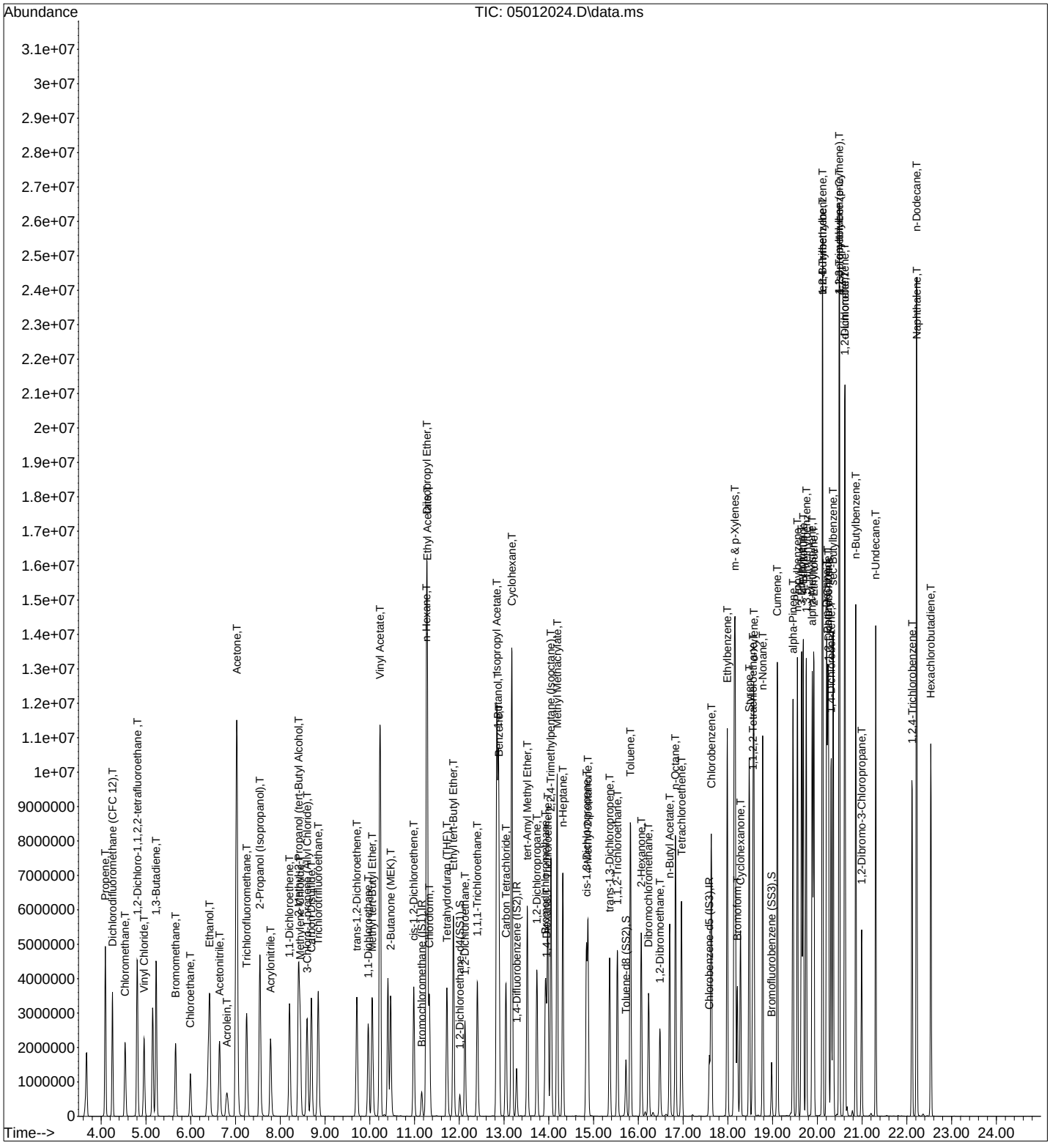
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.31	71	1767254	55.726	ng	100
52) cis-1,3-Dichloropropene	14.84	75	3046439	56.787	ng	100
53) 4-Methyl-2-pentanone	14.88	58	1706203	56.697	ng	99
54) trans-1,3-Dichloropropene	15.36	75	2784226	60.799	ng	100
55) 1,1,2-Trichloroethane	15.53	97	1746966	56.334	ng	99
58) Toluene	15.82	91	7061705	54.313	ng	99
59) 2-Hexanone	16.06	43	4070739	57.784	ng	99
60) Dibromochloromethane	16.23	129	2194267	59.071	ng	100
61) 1,2-Dibromoethane	16.48	107	2025699	56.837	ng	100
62) n-Butyl Acetate	16.70	43	4530163	59.421	ng	99
63) n-Octane	16.83	57	1570654	58.903	ng	100
64) Tetrachloroethene	16.97	166	2068921	56.346	ng	100
65) Chlorobenzene	17.63	112	4832830	53.780	ng	100
66) Ethylbenzene	17.99	91	8386382	57.841	ng	99
67) m- & p-Xylenes	18.16	91	13925432	121.021	ng	98
68) Bromoform	18.21	173	1918060	63.108	ng	100
69) Styrene	18.48	104	5183954	59.571	ng	99
70) o-Xylene	18.58	91	6807386	58.156	ng	100
71) n-Nonane	18.78	43	3697140	60.502	ng	98
72) 1,1,2,2-Tetrachloroethane	18.56	83	3397226	58.901	ng	100
74) Cumene	19.10	105	8370559	58.039	ng	99
75) alpha-Pinene	19.46	93	4559119	59.324	ng	99
76) n-Propylbenzene	19.56	91	10009459	58.692	ng	98
77) 3-Ethyltoluene	19.65	105	8132559	58.352	ng	99
78) 4-Ethyltoluene	19.69	105	8156559	59.940	ng	99
79) 1,3,5-Trimethylbenzene	19.75	105	6870991	58.237	ng	99
80) alpha-Methylstyrene	19.89	118	3732298	60.194	ng	98
81) 2-Ethyltoluene	19.92	105	8070320	58.450	ng	99
82) 1,2,4-Trimethylbenzene	20.12	105	7311702	61.264	ng	100
83) n-Decane	20.20	57	4092282	67.333	ng	100
84) Benzyl Chloride	20.23	91	6890327	76.746	ng	99
85) 1,3-Dichlorobenzene	20.25	146	4163439	60.293	ng	100
86) 1,4-Dichlorobenzene	20.31	146	4017198	59.763	ng	100
87) sec-Butylbenzene	20.35	105	8855378	57.530	ng	98
88) 4-Isopropyltoluene (p-...	20.49	119	8351171	59.057	ng	98
89) 1,2,3-Trimethylbenzene	20.49	105	7426933	62.512	ng	99
90) 1,2-Dichlorobenzene	20.61	146	4049033	60.984	ng	100
91) d-Limonene	20.62	68	3089607	66.195	ng	98
92) 1,2-Dibromo-3-Chloropr...	20.99	157	1448206	64.485	ng	98
93) n-Undecane	21.30	57	4012904	76.685	ng	100
94) 1,2,4-Trichlorobenzene	22.12	180	3005308	77.697	ng	99
95) Naphthalene	22.22	128	9089253	72.417	ng	99
96) n-Dodecane	22.22	57	3837089	87.820	ng	99
97) Hexachlorobutadiene	22.54	225	1927632	64.992	ng	100
98) Cyclohexanone	18.28	55	2325790	50.761	ng	99
99) tert-Butylbenzene	20.12	119	6753035	57.139	ng	100
100) n-Butylbenzene	20.86	91	7324522	61.000	ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012024.D Vial: 2
Acq On : 1 May 2020 17:33 Operator: LH
Sample : 50ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04292003 (5/28)

Quant Time: May 01 18:21:41 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 17:29:13 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012025.D Vial: 2
Acq On : 1 May 2020 18:07 Operator: LH
Sample : 100ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04292003 (5/28)

Quant Time: May 01 18:32:42 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020 LH 5/1/20
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.17	130	307101	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	13.29	114	1302649	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.59	82	623928	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.02	65	496605	11.932	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.44%				
57) Toluene-d8 (SS2)	15.73	98	1277690	12.082	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.64%				
73) Bromofluorobenzene (SS3)	18.98	174	482815	12.688	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.52%				
Target Compounds							Qvalue
2) Propene	4.09	42	2805564	78.878	ng		99
3) Dichlorodifluoromethan...	4.25	85	5430136	78.055	ng		99
4) Chloromethane	4.53	50	5012802	91.976	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.81	135	3608284	86.813	ng		100
6) Vinyl Chloride	4.96	62	5582487	93.407	ng		100
7) 1,3-Butadiene	5.24	54	4618053	93.386	ng		97
8) Bromomethane	5.67	94	3307082	104.747	ng		100
9) Chloroethane	6.00	64	2534746	107.357	ng		100
10) Ethanol	6.47	45	15131456	550.944	ng		99
11) Acetonitrile	6.67	41	6424952	102.369	ng		100
12) Acrolein	6.82	56	2202179	101.477	ng		100
13) Acetone	7.05	58	15042025	547.644	ng	#	56
14) Trichlorofluoromethane	7.25	101	6310121	102.633	ng		100
15) 2-Propanol (Isopropanol)	7.58	45	15078880	181.384	ng		98
16) Acrylonitrile	7.80	53	4844904	107.901	ng		100
17) 1,1-Dichloroethene	8.22	96	3526226	109.408	ng		99
18) 2-Methyl-2-Propanol (t...	8.43	59	5971963	83.578	ng		99
19) Methylene Chloride	8.45	84	3794776	106.281	ng		99
20) 3-Chloro-1-propene (Al...	8.61	41	5538474	112.906	ng		99
21) Trichlorotrifluoroethane	8.85	151	3229354	111.251	ng		98
22) Carbon Disulfide	8.71	76	13073755	102.186	ng		99
23) trans-1,2-Dichloroethene	9.72	61	5348726	108.987	ng		100
24) 1,1-Dichloroethane	9.97	63	6355885	109.091	ng		100
25) Methyl tert-Butyl Ether	10.06	73	6522340	71.172	ng		99
26) Vinyl Acetate	10.25	86	4839363	598.679	ng	#	3
27) 2-Butanone (MEK)	10.48	72	2544981	108.649	ng		97
28) cis-1,2-Dichloroethene	10.99	61	5160701	107.507	ng		99
29) Diisopropyl Ether	11.28	87	3334523	100.633	ng	#	74
30) Ethyl Acetate	11.30	61	3181460	235.544	ng		97
31) n-Hexane	11.26	57	6466041	110.371	ng		100
32) Chloroform	11.34	83	6496904	106.280	ng		100
34) Tetrahydrofuran (THF)	11.73	72	2481850	108.635	ng		99
35) Ethyl tert-Butyl Ether	11.87	87	4598768	114.847	ng		98
36) 1,2-Dichloroethane	12.13	62	5046702	104.202	ng		100
38) 1,1,1-Trichloroethane	12.41	97	5801042	110.565	ng		100
39) Isopropyl Acetate	12.85	61	5612819	244.569	ng	#	65
40) 1-Butanol	12.88	56	7686632	235.415	ng		89
41) Benzene	12.89	78	15377837	110.081	ng		99
42) Carbon Tetrachloride	13.04	117	5341272	112.408	ng		99
43) Cyclohexane	13.18	84	11703238	224.817	ng		99
44) tert-Amyl Methyl Ether	13.52	73	10906653	116.431	ng		98
45) 1,2-Dichloropropane	13.74	63	3747744	115.837	ng		100
46) Bromodichloromethane	13.93	83	5488917	116.263	ng		100
47) Trichloroethene	13.98	130	4190784	116.061	ng		99
48) 1,4-Dioxane	13.96	88	3428858	121.871	ng		97
49) 2,2,4-Trimethylpentane...	14.05	57	14950897	109.987	ng		97
50) Methyl Methacrylate	14.19	100	3386785	244.382	ng		98

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012025.D Vial: 2
Acq On : 1 May 2020 18:07 Operator: LH
Sample : 100ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04292003 (5/28)

Quant Time: May 01 18:32:42 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

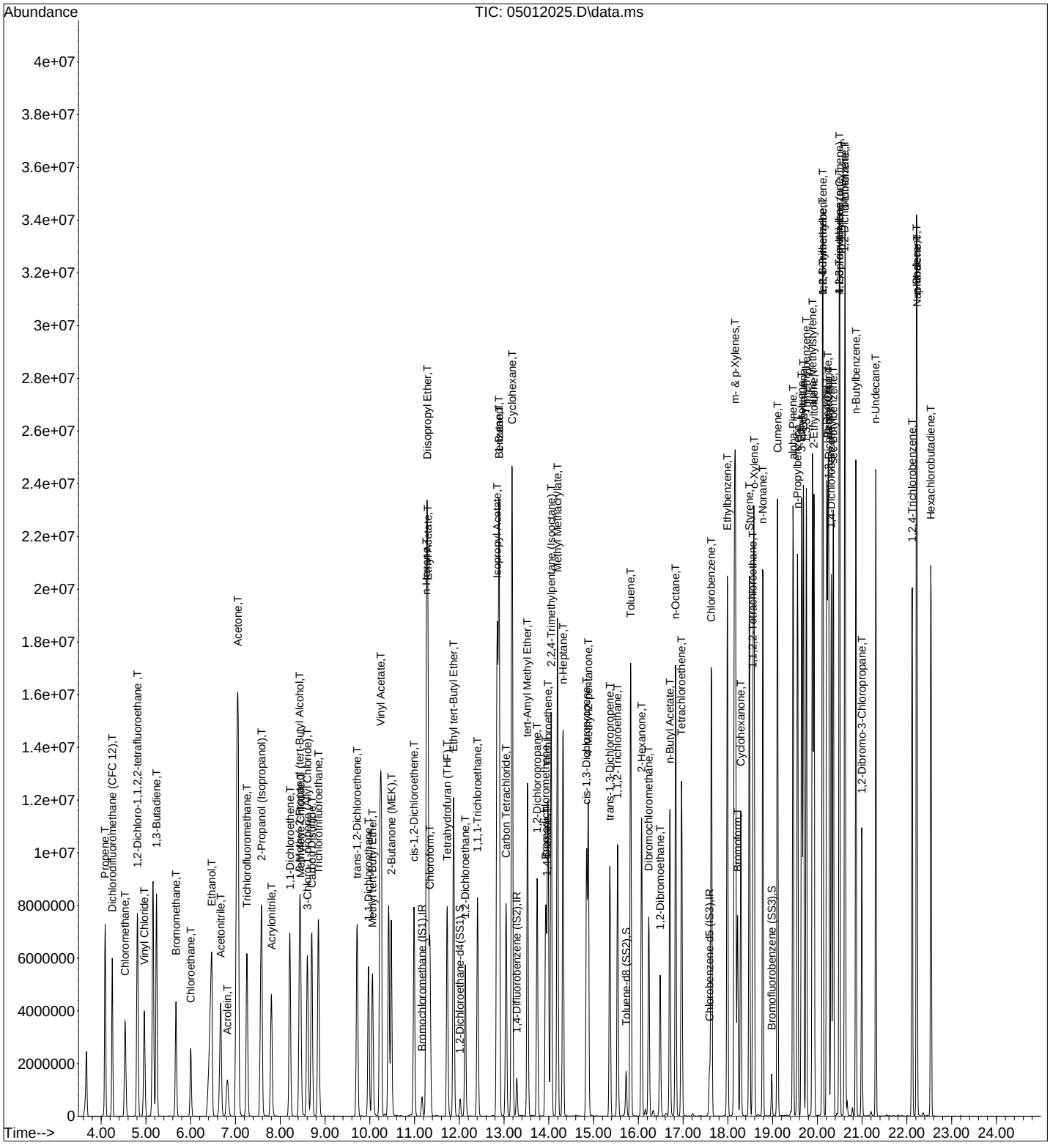
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.32	71	3860770	118.183	ng	99
52) cis-1,3-Dichloropropene	14.84	75	6512364	117.244	ng	99
53) 4-Methyl-2-pentanone	14.88	58	3720592	119.475	ng	94
54) trans-1,3-Dichloropropene	15.36	75	5980136	125.830	ng	100
55) 1,1,2-Trichloroethane	15.54	97	3694486	115.151	ng	98
58) Toluene	15.83	91	14122055	103.594	ng	97
59) 2-Hexanone	16.07	43	8538604	114.309	ng	97
60) Dibromochloromethane	16.23	129	4599117	117.821	ng	98
61) 1,2-Dibromoethane	16.49	107	4236452	112.921	ng	99
62) n-Butyl Acetate	16.71	43	9464801	117.306	ng	97
63) n-Octane	16.83	57	3422153	121.258	ng	99
64) Tetrachloroethene	16.96	166	4251324	110.411	ng	98
65) Chlorobenzene	17.63	112	10058959	107.240	ng	99
66) Ethylbenzene	17.99	91	15775647	103.782	ng	94
67) m- & p-Xylenes	18.16	91	24994911	207.270	ng	97
68) Bromoform	18.22	173	4017610	126.792	ng	100
69) Styrene	18.48	104	10371248	114.347	ng	96
70) o-Xylene	18.59	91	13044798	106.553	ng	98
71) n-Nonane	18.78	43	7415015	114.154	ng	95
72) 1,1,2,2-Tetrachloroethane	18.56	83	6995233	115.177	ng	100
74) Cumene	19.11	105	14928599	99.362	ng	93
75) alpha-Pinene	19.46	93	9103677	113.559	ng	97
76) n-Propylbenzene	19.56	91	16348034	91.592	ng	88
77) 3-Ethyltoluene	19.65	105	15320091	105.349	ng	94
78) 4-Ethyltoluene	19.69	105	13577066	96.220	ng	91
79) 1,3,5-Trimethylbenzene	19.75	105	12866248	105.014	ng	96
80) alpha-Methylstyrene	19.89	118	7332836	114.848	ng	89
81) 2-Ethyltoluene	19.92	105	14549504	101.431	ng	94
82) 1,2,4-Trimethylbenzene	20.12	105	11677289	94.825	ng	99
83) n-Decane	20.21	57	7901549	123.258	ng	99
84) Benzyl Chloride	20.24	91	12745970	134.347	ng	96
85) 1,3-Dichlorobenzene	20.25	146	7870539	110.067	ng	99
86) 1,4-Dichlorobenzene	20.31	146	7896122	113.154	ng	100
87) sec-Butylbenzene	20.36	105	15000490	93.840	ng	91
88) 4-Isopropyltoluene (p-...	20.50	119	12758034	87.765	ng	95
89) 1,2,3-Trimethylbenzene	20.49	105	11655993	95.082	ng	99
90) 1,2-Dichlorobenzene	20.61	146	7018237	102.510	ng	100
91) d-Limonene	20.62	68	5329834	109.584	ng	99
92) 1,2-Dibromo-3-Chloropr...	21.00	157	2996254	126.618	ng	94
93) n-Undecane	21.30	57	7881239	143.443	ng	98
94) 1,2,4-Trichlorobenzene	22.12	180	6156917	147.306	ng	99
95) Naphthalene	22.23	128	14689712	111.271	ng	97
96) n-Dodecane	22.22	57	6472005	144.069	ng	99
97) Hexachlorobutadiene	22.54	225	3985864	130.408	ng	100
98) Cyclohexanone	18.29	55	4951545	103.767	ng	97
99) tert-Butylbenzene	20.12	119	10982141	90.608	ng	99
100) n-Butylbenzene	20.86	91	12973286	103.470	ng	92

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

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012025.D Vial: 2
Acq On : 1 May 2020 18:07 Operator: LH
Sample : 100ng TO15 ICAL STD Inst : GCMS-16
Misc : S31-02112001/S34-04292003 (5/28)

Quant Time: May 01 18:32:42 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012026.D Vial: 2
Acq On : 1 May 2020 18:41 Operator: LH
Sample : 25ng TO15 ICV STD Inst : GCMS-16
Misc : S31-02112001/S34-04302003 (5/29)

Quant Time: May 01 19:07:38 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020 LH 5/1/20
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.15	130	306012	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	13.28	114	1305280	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.59	82	605237	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.00	65	502495	12.117	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.96%				
57) Toluene-d8 (SS2)	15.72	98	1272559	12.405	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.20%				
73) Bromofluorobenzene (SS3)	18.98	174	479316	12.985	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.84%				
Target Compounds							Qvalue
2) Propene	4.08	42	966787	27.278	ng		100
3) Dichlorodifluoromethan...	4.23	85	1760370	25.394	ng		100
4) Chloromethane	4.52	50	1357331	24.993	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.79	135	976267	23.572	ng		100
6) Vinyl Chloride	4.94	62	1467519	24.642	ng		99
7) 1,3-Butadiene	5.21	54	1260843	25.588	ng		100
8) Bromomethane	5.64	94	787063	25.018	ng		99
9) Chloroethane	5.97	64	602406	25.605	ng		99
10) Ethanol	6.38	45	3553289	129.837	ng		100
11) Acetonitrile	6.62	41	1622424	25.942	ng		100
12) Acrolein	6.79	56	555653	25.696	ng		100
13) Acetone	7.01	58	3611891	131.968	ng		99
14) Trichlorofluoromethane	7.24	101	1552897	25.347	ng		100
15) 2-Propanol (Isopropanol)	7.52	45	4510536	54.450	ng		99
16) Acrylonitrile	7.77	53	1180769	26.391	ng		100
17) 1,1-Dichloroethene	8.19	96	847883	26.401	ng		100
18) 2-Methyl-2-Propanol (t...	8.39	59	4343249	56.240	ng		99
19) Methylene Chloride	8.43	84	892462	25.084	ng		99
20) 3-Chloro-1-propene (Al...	8.58	41	1276351	26.112	ng		100
21) Trichlorotrifluoroethane	8.84	151	781006	27.001	ng		99
22) Carbon Disulfide	8.68	76	3274656	25.686	ng		100
23) trans-1,2-Dichloroethene	9.70	61	1280278	26.180	ng		100
24) 1,1-Dichloroethane	9.96	63	1484365	25.568	ng		100
25) Methyl tert-Butyl Ether	10.05	73	2264086	24.794	ng		100
26) Vinyl Acetate	10.22	86	1192344	139.859	ng		100
27) 2-Butanone (MEK)	10.45	72	609878	26.129	ng		99
28) cis-1,2-Dichloroethene	10.98	61	1232559	25.768	ng		100
29) Diisopropyl Ether	11.27	87	824575	24.973	ng	#	95
30) Ethyl Acetate	11.27	61	776633	57.704	ng		100
31) n-Hexane	11.26	57	1581365	27.089	ng		100
32) Chloroform	11.32	83	1591321	26.124	ng		100
34) Tetrahydrofuran (THF)	11.72	72	595371	26.153	ng		100
35) Ethyl tert-Butyl Ether	11.86	87	1068978	26.791	ng		99
36) 1,2-Dichloroethane	12.12	62	1234056	25.571	ng		100
38) 1,1,1-Trichloroethane	12.40	97	1423725	27.081	ng		100
39) Isopropyl Acetate	12.83	61	1293737	56.259	ng		97
40) 1-Butanol	12.85	56	2086238	63.765	ng		94
41) Benzene	12.88	78	3590944	25.654	ng		100
42) Carbon Tetrachloride	13.04	117	1259961	26.463	ng		100
43) Cyclohexane	13.17	84	2795016	53.584	ng		99
44) tert-Amyl Methyl Ether	13.52	73	2599327	27.692	ng		100
45) 1,2-Dichloropropane	13.73	63	867296	26.753	ng		99
46) Bromodichloromethane	13.92	83	1295074	27.376	ng		100
47) Trichloroethene	13.97	130	967338	26.736	ng		100
48) 1,4-Dioxane	13.95	88	775383	27.504	ng		100
49) 2,2,4-Trimethylpentane...	14.04	57	3603157	26.453	ng		100
50) Methyl Methacrylate	14.18	100	775781	55.866	ng		99

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012026.D Vial: 2
Acq On : 1 May 2020 18:41 Operator: LH
Sample : 25ng TO15 ICV STD Inst : GCMS-16
Misc : S31-02112001/S34-04302003 (5/29)

Quant Time: May 01 19:07:38 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

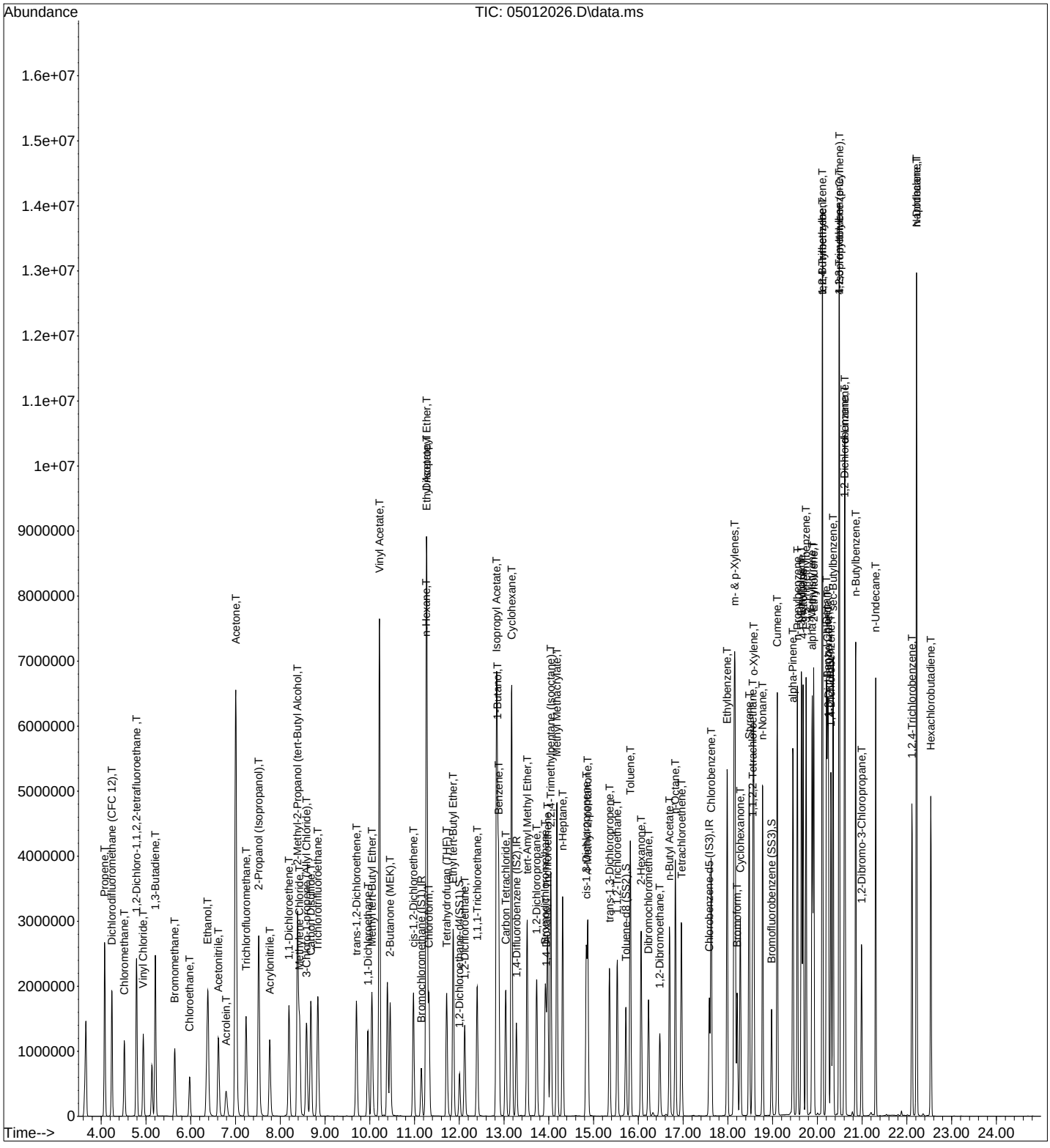
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.31	71	851667	26.018	ng	100
52) cis-1,3-Dichloropropene	14.84	75	1585771	28.492	ng	100
53) 4-Methyl-2-pentanone	14.87	58	872253	27.953	ng	100
54) trans-1,3-Dichloropropene	15.35	75	1387054	29.127	ng	100
55) 1,1,2-Trichloroethane	15.53	97	867139	26.973	ng	100
58) Toluene	15.82	91	3509323	26.538	ng	100
59) 2-Hexanone	16.06	43	2142962	29.574	ng	100
60) Dibromochloromethane	16.23	129	1094576	28.907	ng	100
61) 1,2-Dibromoethane	16.48	107	1019112	28.003	ng	100
62) n-Butyl Acetate	16.70	43	2398863	30.649	ng	100
63) n-Octane	16.83	57	741607	27.089	ng	100
64) Tetrachloroethene	16.96	166	1010020	27.041	ng	99
65) Chlorobenzene	17.62	112	2369161	26.038	ng	100
66) Ethylbenzene	17.98	91	4140285	28.079	ng	100
67) m- & p-Xylenes	18.15	91	6646028	56.814	ng	100
68) Bromoform	18.21	173	952116	29.005	ng	100
69) Styrene	18.48	104	2615334	29.726	ng	100
70) o-Xylene	18.58	91	3318680	27.945	ng	100
71) n-Nonane	18.77	43	1768593	28.068	ng	100
72) 1,1,2,2-Tetrachloroethane	18.55	83	1670094	28.347	ng	100
74) Cumene	19.10	105	4140007	28.406	ng	100
75) alpha-Pinene	19.45	93	2192080	28.188	ng	99
76) n-Propylbenzene	19.55	91	5034559	29.078	ng	100
77) 3-Ethyltoluene	19.64	105	4294103	30.440	ng	100
78) 4-Ethyltoluene	19.68	105	3790629	27.694	ng	100
79) 1,3,5-Trimethylbenzene	19.75	105	3430468	28.864	ng	100
80) alpha-Methylstyrene	19.88	118	1874877	27.988	ng	100
81) 2-Ethyltoluene	19.92	105	4065181	29.215	ng	99
82) 1,2,4-Trimethylbenzene	20.11	105	3770591	31.564	ng	100
83) n-Decane	20.20	57	1887277	28.242	ng	100
84) Benzyl Chloride	20.23	91	3366173	30.233	ng	100
85) 1,3-Dichlorobenzene	20.25	146	2073075	29.887	ng	100
86) 1,4-Dichlorobenzene	20.30	146	2047327	30.245	ng	100
87) sec-Butylbenzene	20.35	105	4505729	29.057	ng	100
88) 4-Isopropyltoluene (p-...	20.49	119	4352844	29.644	ng	100
89) 1,2,3-Trimethylbenzene	20.48	105	3682695	29.457	ng	100
90) 1,2-Dichlorobenzene	20.61	146	2035560	30.650	ng	100
91) d-Limonene	20.62	68	1446579	30.661	ng	100
92) 1,2-Dibromo-3-Chloropr...	20.99	157	709248	28.322	ng	99
93) n-Undecane	21.30	57	1877490	30.357	ng	99
94) 1,2,4-Trichlorobenzene	22.11	180	1445626	31.384	ng	100
95) Naphthalene	22.22	128	4860431	33.339	ng	100
96) n-Dodecane	22.22	57	1815131	33.896	ng	100
97) Hexachlorobutadiene	22.54	225	900762	28.271	ng	99
98) Cyclohexanone	18.28	55	1308763	28.274	ng	99
99) tert-Butylbenzene	20.11	119	3490399	29.687	ng	100
100) n-Butylbenzene	20.86	91	3725548	30.631	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_05\01\05012026.D Vial: 2
Acq On : 1 May 2020 18:41 Operator: LH
Sample : 25ng TO15 ICV STD Inst : GCMS-16
Misc : S31-02112001/S34-04302003 (5/29)

Quant Time: May 01 19:07:38 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M



LH 5/1/20

Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

Data File Name: **05012026.D** Acq. Method File: **TO15.M**
Data File Path: **I:\MS16\DATA\2020_05\01** Sample Name: **25ng TO15 ICV STD**
Operator: **LH** Misc Info: **S31-02112001/S34-04302003 (**
Date Acquired: **5/1/2020 18:41** Instrument Name: **GCMS-16**

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
2)	**Propene**	**4.08**	**27.3**	26.25	104	**51**	**133**	*	*
3)	**Dichlorodifluoromethane (CFC 1**	**4.23**	**25.4**	**26.25**	97	**64**	**115**	*	*
4)	**Chloromethane**	**4.52**	**25.0**	**26.50**	94	**49**	**127**	*	*
5)	**1,2-Dichloro-1,1,2,2-tetrafluoroetl**	**4.79**	**23.6**	**25.75**	92	**65**	**114**	*	*
6)	**Vinyl Chloride**	**4.94**	**24.6**	**26.50**	93	**61**	**129**	*	*
7)	**1,3-Butadiene**	**5.21**	**25.6**	**26.50**	97	**54**	**140**	*	*
8)	**Bromomethane**	**5.64**	**25.0**	**26.50**	94	**68**	**120**	*	*
9)	**Chloroethane**	**5.97**	**25.6**	**26.75**	96	**63**	**123**	*	*
10)	**Ethanol**	**6.38**	**130**	**132.50**	98	**49**	**134**	*	*
11)	**Acetonitrile**	**6.62**	**25.9**	**26.75**	97	**50**	**137**	*	*
12)	**Acrolein**	**6.79**	**25.7**	**25.75**	100	**62**	**128**	*	*
13)	**Acetone**	**7.01**	**132**	**133.50**	99	**56**	**125**	*	*
14)	**Trichlorofluoromethane**	**7.24**	**25.3**	**26.50**	95	**64**	**115**	*	*
15)	**2-Propanol (Isopropanol)**	**7.52**	**54.5**	**52.75**	103	**57**	**133**	*	*
16)	**Acrylonitrile**	**7.77**	**26.4**	**26.50**	100	**64**	**136**	*	*
17)	**1,1-Dichloroethene**	**8.19**	**26.4**	**26.75**	99	**68**	**115**	*	*
18)	2-Methyl-2-Propanol (tert-Butyl Alc	8.39	56.2	53.75	105	56	132	*	*
19)	**Methylene Chloride**	**8.43**	**25.1**	**26.25**	96	**68**	**114**	*	*
20)	**3-Chloro-1-propene (Allyl Chloric**	**8.58**	**26.1**	**26.75**	98	**55**	**139**	*	*
21)	**Trichlorotrifluoroethane**	**8.84**	**27.0**	**27.00**	100	**65**	**115**	*	*
22)	**Carbon Disulfide**	**8.68**	**25.7**	**26.50**	97	**68**	**113**	*	*
23)	**trans-1,2-Dichloroethene**	**9.70**	**26.2**	**26.75**	98	**65**	**122**	*	*
24)	**1,1-Dichloroethane**	**9.96**	**25.6**	**26.50**	97	**63**	**118**	*	*
25)	**Methyl tert-Butyl Ether**	**10.05**	**24.8**	**26.75**	93	**57**	**131**	*	*
26)	**Vinyl Acetate**	**10.22**	**140**	**133.25**	105	**71**	**128**	*	*
27)	**2-Butanone (MEK)**	**10.45**	**26.1**	**26.50**	98	**67**	**123**	*	*
28)	**cis-1,2-Dichloroethene**	**10.98**	**25.8**	**26.50**	97	**64**	**120**	*	*
29)	Diisopropyl Ether	11.27	25.0	27.00	93	62	121	*	*
30)	**Ethyl Acetate**	**11.27**	**57.7**	**54.00**	107	**64**	**131**	*	*
31)	**n-Hexane**	**11.26**	**27.1**	**27.00**	100	**58**	**125**	*	*
32)	**Chloroform**	**11.32**	**26.1**	**26.75**	98	**65**	**114**	*	*
34)	**Tetrahydrofuran (THF)**	**11.72**	**26.2**	**27.50**	95	**65**	**115**	*	*
35)	Ethyl tert-Butyl Ether	11.86	26.8	26.75	100	61	130	*	*
36)	**1,2-Dichloroethane**	**12.12**	**25.6**	**26.75**	96	**59**	**120**	*	*
38)	**1,1,1-Trichloroethane**	**12.40**	**27.1**	**26.75**	101	**66**	**115**	*	*
39)	Isopropyl Acetate	12.83	56.3	52.50	107	65	129	*	*
40)	1-Butanol	12.85	63.8	53.25	120	58	140	*	*
41)	**Benzene**	**12.88**	**25.7**	**26.25**	98	**66**	**109**	*	*
42)	**Carbon Tetrachloride**	**13.04**	**26.5**	**26.00**	102	**66**	**119**	*	*
43)	**Cyclohexane**	**13.17**	**53.6**	**52.75**	102	**67**	**117**	*	*
44)	tert-Amyl Methyl Ether	13.52	27.7	**26.75**	104	62	133	*	*
45)	**1,2-Dichloropropane**	**13.73**	**26.8**	**26.75**	100	**66**	**119**	*	*
46)	**Bromodichloromethane**	**13.92**	**27.4**	**27.25**	101	**71**	**119**	*	*
47)	**Trichloroethene**	**13.97**	**26.7**	**27.00**	99	**70**	**114**	*	*
48)	**1,4-Dioxane**	**13.95**	**27.5**	**27.00**	102	**71**	**117**	*	*
49)	2,2,4-Trimethylpentane (Isooctane)	14.04	26.5	26.75	99	61	122	*	*

Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

Data File Name: **05012026.D** **TO15.M**
Data File Path: **I:\MS16\DATA\2020_05\01** Sample Name: **25ng TO15 ICV STD**
Operator: **LH** Misc Info: **S31-02112001/S34-04302003 (**
Date Acquired: **5/1/2020** **18:41** Instrument Name: **GCMS-16**

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
50)	**Methyl Methacrylate**	**14.18**	**55.9**	**53.75**	104	**76**	**121**	*	*
51)	**n-Heptane**	**14.31**	**26.0**	**26.75**	97	**66**	**119**	*	*
52)	**cis-1,3-Dichloropropene**	**14.84**	**28.5**	**26.75**	107	**72**	**125**	*	*
53)	**4-Methyl-2-pentanone**	**14.87**	**28.0**	**26.50**	106	**68**	**130**	*	*
54)	**trans-1,3-Dichloropropene**	**15.35**	**29.1**	**26.50**	110	**71**	**132**	*	*
55)	**1,1,2-Trichloroethane**	**15.53**	**27.0**	**26.75**	101	**70**	**117**	*	*
58)	**Toluene**	**15.82**	**26.5**	**26.50**	100	**67**	**113**	*	*
59)	**2-Hexanone**	**16.06**	**29.6**	**27.00**	110	**62**	**135**	*	*
60)	**Dibromochloromethane**	**16.23**	**28.9**	**26.75**	108	**73**	**126**	*	*
61)	**1,2-Dibromoethane**	**16.48**	**28.0**	**26.75**	105	**71**	**122**	*	*
62)	**n-Butyl Acetate**	**16.70**	**30.6**	**27.25**	112	**65**	**134**	*	*
63)	**n-Octane**	**16.83**	**27.1**	**27.00**	100	**63**	**120**	*	*
64)	**Tetrachloroethene**	**16.96**	**27.0**	**26.00**	104	**64**	**120**	*	*
65)	**Chlorobenzene**	**17.62**	**26.0**	**26.75**	97	**65**	**116**	*	*
66)	**Ethylbenzene**	**17.98**	**28.1**	**26.50**	106	**65**	**117**	*	*
67)	**m- & p-Xylenes**	**18.15**	**56.8**	**53.25**	107	**64**	**121**	*	*
68)	**Bromoform**	**18.21**	**29.0**	**26.75**	108	**72**	**130**	*	*
69)	**Styrene**	**18.48**	**29.7**	**26.50**	112	**72**	**126**	*	*
70)	**o-Xylene**	**18.58**	**27.9**	**26.75**	104	**64**	**120**	*	*
71)	**n-Nonane**	**18.77**	**28.1**	**26.75**	105	**56**	**132**	*	*
72)	**1,1,2,2-Tetrachloroethane**	**18.55**	**28.3**	**26.75**	106	**66**	**122**	*	*
74)	**Cumene**	**19.10**	**28.4**	**26.75**	106	**64**	**121**	*	*
75)	**alpha-Pinene**	**19.45**	**28.2**	**26.50**	106	**62**	**136**	*	*
76)	**n-Propylbenzene**	**19.55**	**29.1**	**26.75**	109	**65**	**123**	*	*
77)	3-Ethyltoluene	19.64	30.4	26.75	114	62	123	*	*
78)	**4-Ethyltoluene**	**19.68**	**27.7**	**26.25**	**106**	**71**	**126**	*	*
79)	**1,3,5-Trimethylbenzene**	**19.75**	**28.9**	**26.50**	**109**	**65**	**120**	*	*
80)	alpha-Methylstyrene	19.88	28.0	26.50	**106**	70	132	*	*
81)	2-Ethyltoluene	19.92	29.2	26.75	**109**	66	121	*	*
82)	**1,2,4-Trimethylbenzene**	**20.11**	**31.6**	**26.50**	**119**	**63**	**129**	*	*
83)	n-Decane	20.20	28.2	26.75	**105**	61	131	*	*
84)	**Benzyl Chloride**	**20.23**	**30.2**	**26.75**	**113**	**66**	**138**	*	*
85)	**1,3-Dichlorobenzene**	**20.25**	**29.9**	**26.75**	**112**	**65**	**127**	*	*
86)	**1,4-Dichlorobenzene**	**20.30**	**30.2**	**26.75**	**113**	**66**	**125**	*	*
87)	sec-Butylbenzene	20.35	29.1	26.50	**110**	68	123	*	*
88)	4-Isopropyltoluene (p-Cymene)	20.49	29.6	27.25	**109**	61	129	*	*
89)	1,2,3-Trimethylbenzene	20.48	29.5	27.00	**109**	60	134	*	*
90)	**1,2-Dichlorobenzene**	**20.61**	**30.6**	**26.75**	**114**	**67**	**128**	*	*
91)	**d-Limonene**	**20.62**	**30.7**	**26.50**	**116**	**65**	**136**	*	*
92)	**1,2-Dibromo-3-Chloropropane**	**20.99**	**28.3**	**26.75**	**106**	**73**	**133**	*	*
93)	n-Undecane	21.30	30.4	27.00	**113**	64	131	*	*
94)	**1,2,4-Trichlorobenzene**	**22.11**	**31.4**	**27.00**	**116**	**62**	**140**	*	*
95)	**Naphthalene**	**22.22**	**33.3**	**26.50**	**126**	**57**	**149**	*	*
96)	n-Dodecane	22.22	33.9	26.50	**128**	41	181	*	*
97)	**Hexachlorobutadiene**	**22.54**	**28.3**	**26.75**	**106**	57	129	*	*
98)	Cyclohexanone	18.28	28.3	25.25	112	61	131	*	*
99)	tert-Butylbenzene	20.11	29.7	26.50	112	62	130	*	*
100)	n-Butylbenzene	20.86	30.6	26.75	114	67	124	*	*

Bold = 75 Compound List

 *** = Pass** **I:\MS16\0-Instrument Info\0-Security Certificates\ICV_LCS_2019_10111902.CRT** 5/1/2020 7:08 PM

Evaluate Continuing Calibration Report

Data File : I:\MS16\DATA\2020_06\11\06112002.D Vial: 2
Acq On : 11 Jun 2020 2:46 Operator: LH
Sample : CCV R16061120_25ng Inst : GCMS-16
Misc : S31-02112001/S34-05202002 (6/18)

Quant Time: Jun 11 08:58:44 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

LH 6/11/20

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	84	-0.01
2	T	Propene	1.448	1.383	4.5	79	-0.02
3	T	Dichlorodifluoromethane (CF	2.832	2.521	11.0	78	-0.02
4	T	Chloromethane	2.218	1.977	10.9	76	-0.02
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.692	1.453	14.1	77	-0.02
6	T	Vinyl Chloride	2.433	2.086	14.3	75	-0.02
7	T	1,3-Butadiene	2.013	1.725	14.3	74	-0.02
8	T	Bromomethane	1.285	1.163	9.5	79	-0.02
9	T	Chloroethane	0.961	0.870	9.5	78	-0.01
10	T	Ethanol	1.118	0.988	11.6	75	-0.03
11	T	Acetonitrile	2.555	2.187	14.4	75	-0.02
12	T	Acrolein	0.883	0.780	11.7	75	-0.02
13	T	Acetone	1.118	1.001	10.5	75	-0.02
14	T	Trichlorofluoromethane	2.503	2.242	10.4	77	-0.01
15	T	2-Propanol (Isopropanol)	3.384	3.122	7.7	75	-0.03
16	T	Acrylonitrile	1.828	1.626	11.1	75	-0.02
17	T	1,1-Dichloroethene	1.312	1.188	9.5	77	-0.01
18	T	2-Methyl-2-Propanol (tert-B	3.155	2.883	8.6	76	-0.02
19	T	Methylene Chloride	1.453	1.271	12.5	75	-0.01
20	T	3-Chloro-1-propene (Allyl C	1.997	1.772	11.3	74	-0.01
21	T	Trichlorotrifluoroethane	1.182	1.104	6.6	78	0.00
22	T	Carbon Disulfide	5.208	4.602	11.6	76	-0.01
23	T	trans-1,2-Dichloroethene	1.998	1.750	12.4	75	0.00
24	T	1,1-Dichloroethane	2.371	2.123	10.5	75	0.00
25	T	Methyl tert-Butyl Ether	3.730	3.309	11.3	79	0.00
26	T	Vinyl Acetate	0.348	0.327	6.0	74	-0.01
27	T	2-Butanone (MEK)	0.953	0.855	10.3	76	-0.01
28	T	cis-1,2-Dichloroethene	1.954	1.716	12.2	75	0.00
29	T	Diisopropyl Ether	1.349	1.137	15.7	73	0.00
30	T	Ethyl Acetate	0.550	0.526	4.4	75	-0.01
31	T	n-Hexane	2.385	2.194	8.0	75	0.00
32	T	Chloroform	2.488	2.206	11.3	75	0.00
33	S	1,2-Dichloroethane-d4(SS1)	1.694	1.590	6.1	82	0.00
34	T	Tetrahydrofuran (THF)	0.930	0.804	13.5	75	0.00
35	T	Ethyl tert-Butyl Ether	1.630	1.477	9.4	75	0.00
36	T	1,2-Dichloroethane	1.971	1.689	14.3	75	0.00
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	84	0.00
38	T	1,1,1-Trichloroethane	0.503	0.460	8.5	75	0.00
39	T	Isopropyl Acetate	0.220	0.212	3.6	75	0.00
40	T	1-Butanol	0.313	0.330	-5.4	83	-0.02
41	T	Benzene	1.340	1.190	11.2	75	0.00
42	T	Carbon Tetrachloride	0.456	0.425	6.8	75	-0.01
43	T	Cyclohexane	0.500	0.462	7.6	74	-0.01
44	T	tert-Amyl Methyl Ether	0.899	0.841	6.5	76	0.00
45	T	1,2-Dichloropropane	0.310	0.285	8.1	75	0.00
46	T	Bromodichloromethane	0.453	0.424	6.4	75	0.00
47	T	Trichloroethene	0.346	0.321	7.2	76	0.00
48	T	1,4-Dioxane	0.270	0.250	7.4	76	-0.01
49	T	2,2,4-Trimethylpentane (Iso	1.304	1.181	9.4	75	0.00
50	T	Methyl Methacrylate	0.133	0.126	5.3	74	-0.01
51	T	n-Heptane	0.313	0.278	11.2	75	0.00
52	T	cis-1,3-Dichloropropene	0.533	0.503	5.6	75	0.00
53	T	4-Methyl-2-pentanone	0.299	0.285	4.7	77	0.00
54	T	trans-1,3-Dichloropropene	0.456	0.453	0.7	75	0.00
55	T	1,1,2-Trichloroethane	0.308	0.290	5.8	76	0.00

Evaluate Continuing Calibration Report

Data File : I:\MS16\DATA\2020_06\11\06112002.D Vial: 2
Acq On : 11 Jun 2020 2:46 Operator: LH
Sample : CCV R16061120_25ng Inst : GCMS-16
Misc : S31-02112001/S34-05202002 (6/18)

Quant Time: Jun 11 08:58:44 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	85	0.00
57	S	Toluene-d8 (SS2)	2.119	2.017	4.8	81	0.00
58	T	Toluene	2.731	2.465	9.7	75	0.00
59	T	2-Hexanone	1.497	1.475	1.5	79	0.00
60	T	Dibromochloromethane	0.782	0.770	1.5	76	0.00
61	T	1,2-Dibromoethane	0.752	0.719	4.4	76	0.00
62	T	n-Butyl Acetate	1.616	1.629	-0.8	80	0.00
63	T	n-Octane	0.565	0.515	8.8	74	0.00
64	T	Tetrachloroethene	0.771	0.741	3.9	76	0.00
65	T	Chlorobenzene	1.879	1.676	10.8	76	0.00
66	T	Ethylbenzene	3.045	2.903	4.7	75	0.00
67	T	m- & p-Xylenes	2.416	2.366	2.1	76	-0.01
68	T	Bromoform	0.678	0.664	2.1	75	0.00
69	T	Styrene	1.817	1.798	1.0	74	0.00
70	T	o-Xylene	2.453	2.311	5.8	74	-0.01
71	T	n-Nonane	1.301	1.237	4.9	75	0.00
72	T	1,1,2,2-Tetrachloroethane	1.217	1.171	3.8	76	0.00
73	S	Bromofluorobenzene (SS3)	0.762	0.841	-10.4	89	0.00
74	T	Cumene	3.010	2.875	4.5	74	0.00
75	T	alpha-Pinene	1.606	1.525	5.0	73	0.00
76	T	n-Propylbenzene	3.576	3.538	1.1	75	0.00
77	T	3-Ethyltoluene	2.913	2.915	-0.1	73	0.00
78	T	4-Ethyltoluene	2.827	2.827	0.0	76	-0.01
79	T	1,3,5-Trimethylbenzene	2.455	2.415	1.6	74	0.00
80	T	alpha-Methylstyrene	1.384	1.249	9.8	72	0.00
81	T	2-Ethyltoluene	2.874	2.840	1.2	75	0.00
82	T	1,2,4-Trimethylbenzene	2.467	2.673	-8.4	75	0.00
83	T	n-Decane	1.380	1.328	3.8	75	0.00
84	T	Benzyl Chloride	2.300	2.244	2.4	74	-0.01
85	T	1,3-Dichlorobenzene	1.433	1.455	-1.5	75	0.00
86	T	1,4-Dichlorobenzene	1.398	1.434	-2.6	75	0.00
87	T	sec-Butylbenzene	3.203	3.222	-0.6	76	0.00
88	T	4-Isopropyltoluene (p-Cymen	3.033	3.139	-3.5	75	0.00
89	T	1,2,3-Trimethylbenzene	2.582	2.695	-4.4	75	0.00
90	T	1,2-Dichlorobenzene	1.372	1.454	-6.0	75	-0.01
91	T	d-Limonene	0.974	0.960	1.4	70	0.00
92	T	1,2-Dibromo-3-Chloropropane	0.517	0.535	-3.5	79	0.00
93	T	n-Undecane	1.277	1.332	-4.3	77	0.00
94	T	1,2,4-Trichlorobenzene	0.951	1.057	-11.1	79	-0.01
95	T	Naphthalene	3.011	3.539	-17.5	78	-0.01
96	T	n-Dodecane	1.106	1.429	-29.2	83	0.00
97	T	Hexachlorobutadiene	0.658	0.685	-4.1	81	0.00
98	T	Cyclohexanone	0.956	0.946	1.0	83	-0.01
99	T	tert-Butylbenzene	2.428	2.519	-3.7	75	0.00
100	T	n-Butylbenzene	2.512	2.663	-6.0	77	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112002.D Vial: 2
Acq On : 11 Jun 2020 2:46 Operator: LH
Sample : CCV R16061120_25ng Inst : GCMS-16
Misc : S31-02112001/S34-05202002 (6/18)

Quant Time: Jun 11 08:58:44 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

LH 6/11/20

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	11.15	130	241898	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	13.28	114	1033588	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	17.58	82	487225	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	12.00	65	384500	11.729	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 93.84%				
57) Toluene-d8 (SS2)	15.72	98	982891	11.902	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.20%				
73) Bromofluorobenzene (SS3)	18.98	174	409809	13.791	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 110.32%				
Target Compounds							Qvalue
2) Propene	4.08	42	709090	25.309	ng		100
3) Dichlorodifluoromethan...	4.23	85	1292646	23.589	ng		100
4) Chloromethane	4.52	50	1013723	23.614	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.79	135	738290	22.551	ng		100
6) Vinyl Chloride	4.94	62	1090107	23.156	ng		100
7) 1,3-Butadiene	5.21	54	884558	22.709	ng		99
8) Bromomethane	5.64	94	607797	24.440	ng		99
9) Chloroethane	5.98	64	454477	24.438	ng		100
10) Ethanol	6.38	45	2489595	115.081	ng		100
11) Acetonitrile	6.62	41	1110838	22.470	ng		100
12) Acrolein	6.79	56	388639	22.736	ng		100
13) Acetone	7.01	58	2581459	119.318	ng		98
14) Trichlorofluoromethane	7.24	101	1149531	23.737	ng		100
15) 2-Propanol (Isopropanol)	7.52	45	3171719	48.437	ng		100
16) Acrylonitrile	7.76	53	826169	23.359	ng		100
17) 1,1-Dichloroethene	8.19	96	620784	24.453	ng		98
18) 2-Methyl-2-Propanol (t...	8.39	59	3013188	49.359	ng		99
19) Methylene Chloride	8.43	84	651840	23.177	ng		99
20) 3-Chloro-1-propene (Al...	8.59	41	925922	23.963	ng		98
21) Trichlorotrifluoroethane	8.84	151	576605	25.218	ng		98
22) Carbon Disulfide	8.68	76	2382192	23.638	ng		100
23) trans-1,2-Dichloroethene	9.71	61	914196	23.649	ng		98
24) 1,1-Dichloroethane	9.96	63	1119370	24.391	ng		100
25) Methyl tert-Butyl Ether	10.05	73	1728751	23.949	ng		100
26) Vinyl Acetate	10.22	86	845550	125.469	ng	#	93
27) 2-Butanone (MEK)	10.45	72	438699	23.777	ng		99
28) cis-1,2-Dichloroethene	10.98	61	880229	23.279	ng		99
29) Diisopropyl Ether	11.27	87	594086	22.762	ng	#	93
30) Ethyl Acetate	11.27	61	552398	51.921	ng		98
31) n-Hexane	11.26	57	1146239	24.839	ng		100
32) Chloroform	11.32	83	1141748	23.712	ng		100
34) Tetrahydrofuran (THF)	11.72	72	424177	23.572	ng		99
35) Ethyl tert-Butyl Ether	11.86	87	771849	24.472	ng		100
36) 1,2-Dichloroethane	12.12	62	882567	23.135	ng		100
38) 1,1,1-Trichloroethane	12.40	97	1018157	24.457	ng		100
39) Isopropyl Acetate	12.83	61	924741	50.783	ng		95
40) 1-Butanol	12.85	56	1419270	54.783	ng		97
41) Benzene	12.88	78	2608570	23.534	ng		100
42) Carbon Tetrachloride	13.03	117	922369	24.465	ng		100
43) Cyclohexane	13.17	84	2025074	49.028	ng		99
44) tert-Amyl Methyl Ether	13.51	73	1877912	25.266	ng		99
45) 1,2-Dichloropropane	13.73	63	636062	24.778	ng		100
46) Bromodichloromethane	13.92	83	946697	25.272	ng		100
47) Trichloroethene	13.97	130	710130	24.786	ng		100
48) 1,4-Dioxane	13.94	88	559113	25.046	ng		99
49) 2,2,4-Trimethylpentane...	14.04	57	2612354	24.221	ng		100
50) Methyl Methacrylate	14.18	100	559728	50.902	ng		100

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112002.D Vial: 2
Acq On : 11 Jun 2020 2:46 Operator: LH
Sample : CCV R16061120_25ng Inst : GCMS-16
Misc : S31-02112001/S34-05202002 (6/18)

Quant Time: Jun 11 08:58:44 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

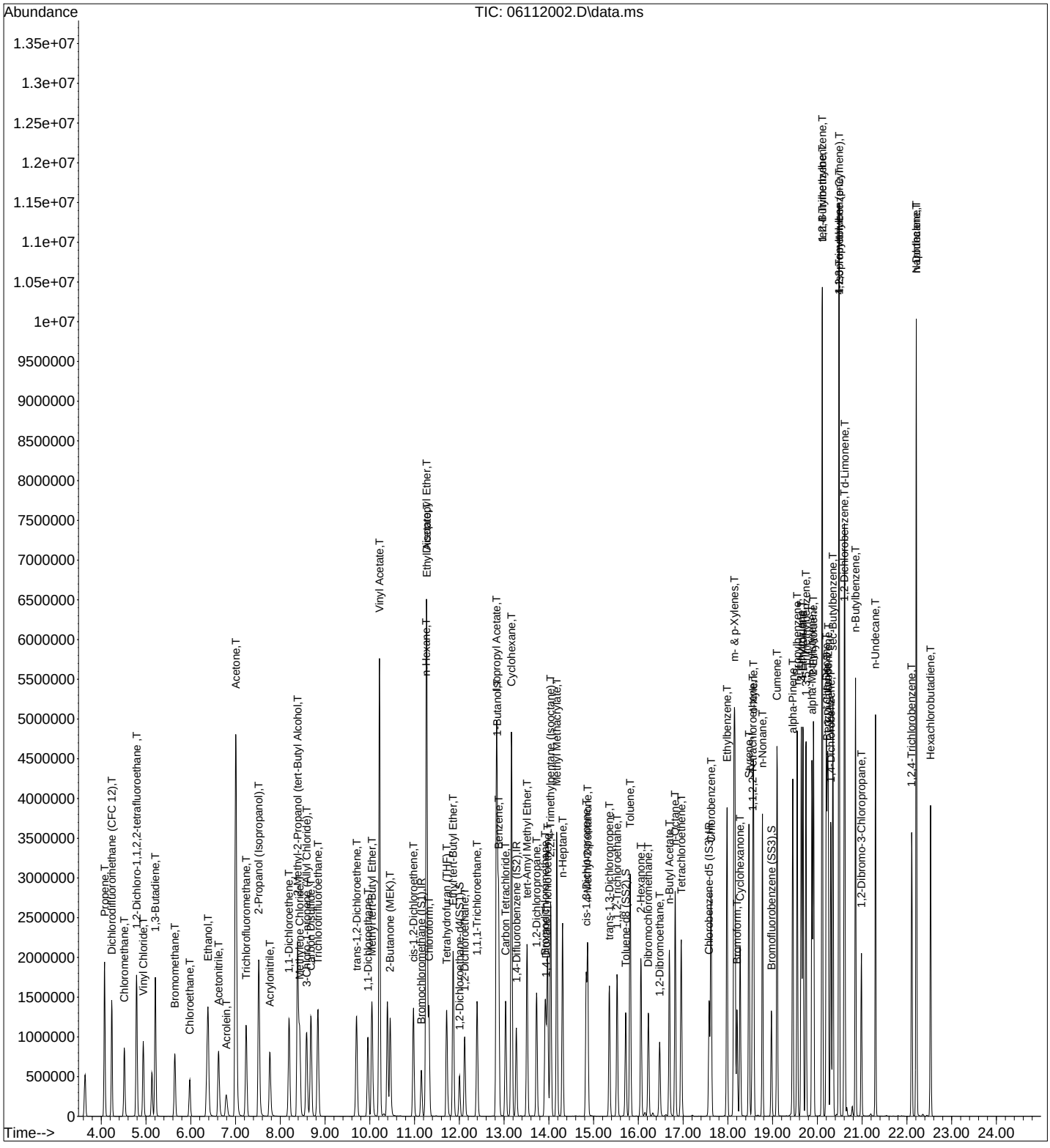
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.31	71	621550	23.979	ng	99
52) cis-1,3-Dichloropropene	14.84	75	1080689	24.521	ng	99
53) 4-Methyl-2-pentanone	14.87	58	624898	25.290	ng	99
54) trans-1,3-Dichloropropene	15.35	75	991875	26.303	ng	100
55) 1,1,2-Trichloroethane	15.52	97	642019	25.220	ng	100
58) Toluene	15.82	91	2569751	24.140	ng	100
59) 2-Hexanone	16.06	43	1538015	26.367	ng	100
60) Dibromochloromethane	16.22	129	802336	26.321	ng	100
61) 1,2-Dibromoethane	16.48	107	749535	25.584	ng	100
62) n-Butyl Acetate	16.70	43	1730259	27.461	ng	100
63) n-Octane	16.82	57	542502	24.616	ng	100
64) Tetrachloroethene	16.96	166	750517	24.960	ng	100
65) Chlorobenzene	17.62	112	1747728	23.861	ng	99
66) Ethylbenzene	17.98	91	3026577	25.497	ng	100
67) m- & p-Xylenes	18.15	91	4933691	52.392	ng	98
68) Bromoform	18.21	173	692384	26.201	ng	100
69) Styrene	18.47	104	1857553	26.227	ng	100
70) o-Xylene	18.57	91	2409868	25.207	ng	100
71) n-Nonane	18.77	43	1289844	25.428	ng	99
72) 1,1,2,2-Tetrachloroethane	18.55	83	1220771	25.740	ng	100
74) Cumene	19.10	105	3025645	25.788	ng	100
75) alpha-Pinene	19.45	93	1590382	25.404	ng	99
76) n-Propylbenzene	19.55	91	3723764	26.716	ng	100
77) 3-Ethyltoluene	19.64	105	3011388	26.518	ng	100
78) 4-Ethyltoluene	19.68	105	2975565	27.004	ng	100
79) 1,3,5-Trimethylbenzene	19.75	105	2494066	26.068	ng	99
80) alpha-Methylstyrene	19.88	118	1302419	24.151	ng	98
81) 2-Ethyltoluene	19.91	105	2988809	26.682	ng	100
82) 1,2,4-Trimethylbenzene	20.11	105	2787007	28.982	ng	100
83) n-Decane	20.20	57	1384142	25.730	ng	100
84) Benzyl Chloride	20.22	91	2361873	26.351	ng	100
85) 1,3-Dichlorobenzene	20.24	146	1517191	27.170	ng	100
86) 1,4-Dichlorobenzene	20.30	146	1494681	27.429	ng	100
87) sec-Butylbenzene	20.35	105	3359244	26.911	ng	100
88) 4-Isopropyltoluene (p-...	20.48	119	3334202	28.206	ng	100
89) 1,2,3-Trimethylbenzene	20.48	105	2862466	28.442	ng	100
90) 1,2-Dichlorobenzene	20.60	146	1516506	28.365	ng	100
91) d-Limonene	20.61	68	1009915	26.590	ng	100
92) 1,2-Dibromo-3-Chloropr...	20.98	157	547855	27.177	ng	99
93) n-Undecane	21.30	57	1402062	28.160	ng	100
94) 1,2,4-Trichlorobenzene	22.11	180	1102490	29.732	ng	100
95) Naphthalene	22.21	128	3551867	30.264	ng	100
96) n-Dodecane	22.21	57	1448265	33.596	ng	99
97) Hexachlorobutadiene	22.53	225	707429	27.581	ng	99
98) Cyclohexanone	18.27	55	922300	24.751	ng	100
99) tert-Butylbenzene	20.11	119	2626742	27.753	ng	100
100) n-Butylbenzene	20.85	91	2776715	28.360	ng	100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS16\DATA\2020_06\11\06112002.D Vial: 2
Acq On : 11 Jun 2020 2:46 Operator: LH
Sample : CCV R16061120_25ng Inst : GCMS-16
Misc : S31-02112001/S34-05202002 (6/18)

Quant Time: Jun 11 08:58:44 2020
Quant Method : I:\MS16\METHODS\R16050120.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 01 18:22:00 2020
Response via : Initial Calibration
DataAcq Meth:TO15.M

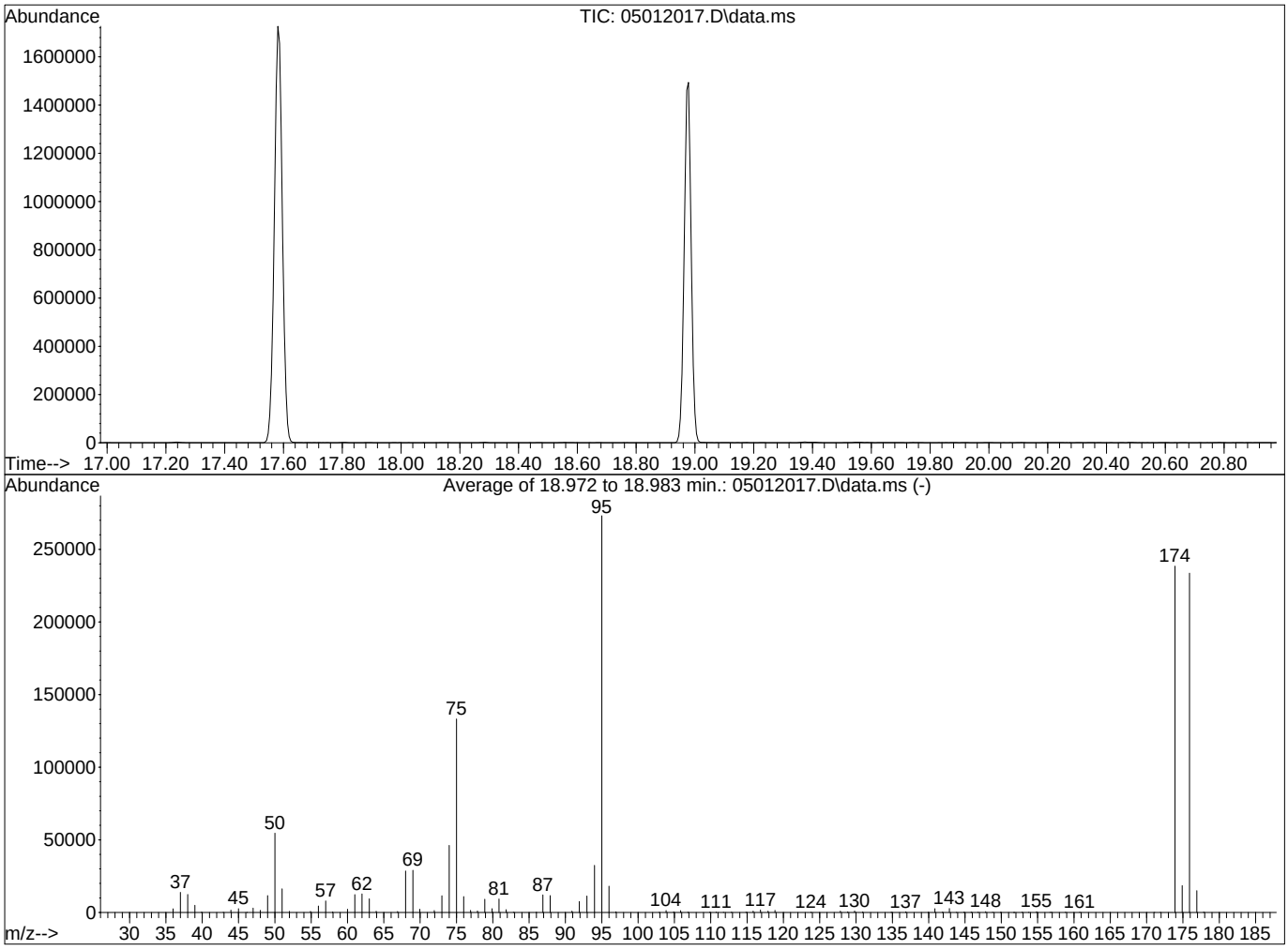


BFB

Data Path : I:\MS16\DATA\2020_05\01\
Data File : 05012017.D
Acq On : 1 May 2020 13:35
Operator : LH
Sample : 12.5ng TO15 BFB
Misc : S31-02112001
ALS Vial : 2 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS16\METHODS\R16050120.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri May 01 17:25:50 2020



AutoFind: Scans 2816, 2817, 2818; Background Corrected with Scan 2808

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.0	54576	PASS
75	95	30	66	48.8	133227	PASS
95	95	100	100	100.0	273088	PASS
96	95	5	9	6.6	18099	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	87.3	238485	PASS
175	174	4	9	7.8	18527	PASS
176	174	93	101	98.0	233621	PASS
177	176	5	9	6.4	15004	PASS

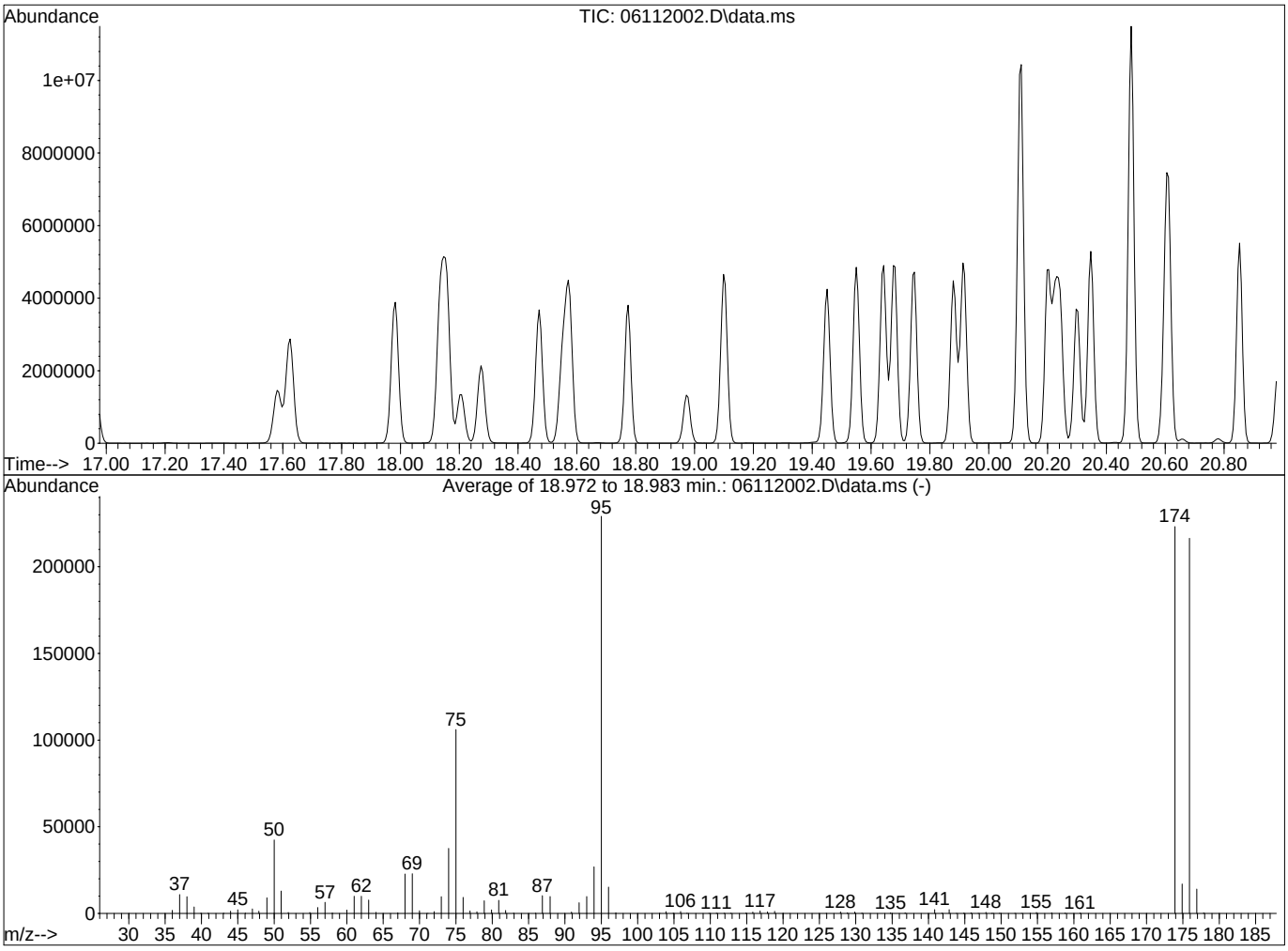
LH 5/1/20

BFB

Data Path : I:\MS16\DATA\2020_06\11\
Data File : 06112002.D
Acq On : 11 Jun 2020 2:46
Operator : LH
Sample : CCV R16061120_25ng
Misc : S31-02112001/S34-05202002 (6/18)
ALS Vial : 2 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS16\METHODS\R16050120.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri May 01 18:22:00 2020



AutoFind: Scans 2816, 2817, 2818; Background Corrected with Scan 2807

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.5	42387	PASS
75	95	30	66	46.3	106045	PASS
95	95	100	100	100.0	229077	PASS
96	95	5	9	6.6	15161	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	97.4	223168	PASS
175	174	4	9	7.6	16972	PASS
176	174	93	101	97.0	216405	PASS
177	176	5	9	6.5	14053	PASS

LH 6/11/20

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
17	5/1/20 13:35	05012017.D	12.5ng TO15 BFB	S31-02112001	LH	2	
18	5/1/20 14:09	05012018.D	0.1ng TO15 ICAL STD	S31-02112001/S34-04272015 (5/26)	LH	6	
19	5/1/20 14:42	05012019.D	0.2ng TO15 ICAL STD	S31-02112001/S34-04272015 (5/26)	LH	6	
20	5/1/20 15:16	05012020.D	0.5ng TO15 ICAL STD	S31-02112001/S34-05012002 (5/30)	LH	13	
21	5/1/20 15:51	05012021.D	1.0ng TO15 ICAL STD	S31-02112001/S34-05012002 (5/30)	LH	13	
22	5/1/20 16:25	05012022.D	5.0ng TO15 ICAL STD	S31-02112001/S34-04292003 (5/28)	LH	2	
23	5/1/20 16:59	05012023.D	25ng TO15 ICAL STD	S31-02112001/S34-04292003 (5/28)	LH	2	
24	5/1/20 17:33	05012024.D	50ng TO15 ICAL STD	S31-02112001/S34-04292003 (5/28)	LH	2	
25	5/1/20 18:07	05012025.D	100ng TO15 ICAL STD	S31-02112001/S34-04292003 (5/28)	LH	2	
26	5/1/20 18:41	05012026.D	25ng TO15 ICV STD	S31-02112001/S34-04302003 (5/29)	LH	2	
	ICAL R16050120.M passed for all compounds 0.1ng-100ng, except: tert butanol 0.1ng-50ng, vinyl acetate 2.5ng-500ng, bromoform,						
	alpha-methylstyrene, n-decane, 4-isopropyltolune, 1,2,3-trtimethylbenzene, 1,2-dibromo-3-chloropropane, n-undecane, 1,2,4-trichlorobenzene,						
	naphthalene, n-dodecane, hexachlorobutadiene 0.5ng-100ng, benzyl chloride 1.0ng-100ng.						

LH 5/4/20

Injection Log

Directory: I:\MS16\DATA\2020_06\11\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	6/11/20 2:12	06112001.D	CCV C16061120_25ng	S31-02112001/S34-05292004 (6/27)	LH	3	passed
2	6/11/20 2:46	06112002.D	CCV R16061120_25ng	S31-02112001/S34-05202002 (6/18)	LH	2	passed
3	6/11/20 3:20	06112003.D	Blank (100mL)	S31-02112001	LH	2	
4	6/11/20 3:54	06112004.D	MB R16061120_1000mL	S31-02112001/AS01319	LH	2	passed
5	6/11/20 4:28	06112005.D	LCS R16061120_25ng	S31-02112001/S34-05272002 (6/25)	LH	2	passed
6	6/11/20 5:02	06112006.D	LCSD R16061120_25ng	S31-02112001/S34-05272002 (6/25)	LH	2	passed
7	6/11/20 5:36	06112007.D	Blank (100mL)	S31-02112001	LH	2	
8	6/11/20 6:10	06112008.D	P2003019-001 (1000mL)	S31-02112001	LH	10	
9	6/11/20 6:45	06112009.D	P2003019-002 (1000mL)	S31-02112001	LH	11	
10	6/11/20 7:19	06112010.D	P2003019-003 (1000mL)	S31-02112001	LH	12	
11	6/11/20 7:56	06112011.D	P2003019-004 (1000mL)	S31-02112001	LH	13	
12	6/11/20 8:30	06112012.D	P2003049-001 (1000mL)	S31-02112001	LH	14	
13	6/11/20 9:04	06112013.D	P2003049-002 (1000mL)	S31-02112001	LH	15	
14	6/11/20 9:40	06112014.D	P2003049-002dup (1000mL)	S31-02112001	LH	15	passed
15	6/11/20 10:14	06112015.D	P2003049-003 (1000mL)	S31-02112001	LH	16	
16	6/11/20 10:48	06112016.D	P2003049-004 (1000mL)	S31-02112001	LH	1	
17	6/11/20 11:22	06112017.D	P2003050-001 (1000mL)	S31-02112001	LH	4	
18	6/11/20 11:57	06112018.D	P2003050-002 (1000mL)	S31-02112001	LH	5	
19	6/11/20 12:30	06112019.D	P2003050-003 (1000mL)	S31-02112001	LH	6	
20	6/11/20 13:14	06112020.D	P2003050-004 (1000mL)	S31-02112001	LH	5	
21	6/11/20 15:06	06112021.D	P2003145-001 (1.0mL)	S31-02112001	LH	1	screen
22	6/11/20 15:39	06112022.D	P2003144-001 (400mL)	S31-02112001	LH	5	
23	6/11/20 16:25	06112023.D	P2003145-001 (50mL)	S31-02112001	LH	6	
24	6/11/20 16:59	06112024.D	P2003146-001 (400mL)	S31-02112001	LH	7	
25	6/11/20 17:33	06112025.D	P2003147-001 (400mL)	S31-02112001	LH	8	
26	6/11/20 18:07	06112026.D	P2003148-001 (400mL)	S31-02112001	LH	9	
27	6/11/20 18:41	06112027.D	P2003149-001 (400mL)	S31-02112001	LH	10	
28	6/11/20 19:15	06112028.D	P2003150-001 (400mL)	S31-02112001	LH	11	
29	6/11/20 19:49	06112029.D	P2003149-001dil (40mL)	S31-02112001	LH	10	
				LH 6/12/20			

APPENDIX I
PROTOCOL FOR DISCHARGING GWTP EFFLUENT

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MEMORANDUM

DATE: August 28, 2017

PROJECT NAME: Remediation of Multiple Sites, Longhorn Army Ammunition Plant, Karnack, TX

TO:	Richard Mayer	Senior Project Engineer US Environmental Protection Agency Federal Facilities Section (6PD-F)
	April Palmie	Project and Grant Manager Superfund Section, Remediation Division Texas Commission on Environmental Quality
FROM:	Rose M. Zeiler, Ph.D.	Longhorn AAP Site Manager

SUBJECT: **Protocol for Discharging GWTP Effluent**
Longhorn Army Ammunition Plant, Karnack, TX
(Contract: W912DY-09-D-0059, Task Order DS01)

INTRODUCTION

The purpose of this memo is to document the protocol for discharging Longhorn Army Ammunition Plant groundwater treatment plant (GWTP) effluent to Harrison Bayou, the INF-Pond, or LHAAP-18/24.

The GWTP is designed to:

- Extract groundwater from LHAAP-18/24 and LHAAP-16 for hydraulic control;
- Remove metals by pH adjustment, polymer addition, and gravity separation;
- Remove volatile organic compounds (VOCs) by air stripping;
- Remove perchlorate in a fluidized bed reactor (FBR) and an ion exchange scavenger system; and
- Discharge the effluent continuously.

DISCHARGE CRITERIA

The discharge criteria established for discharge to Harrison Bayou are:

Parameter	Discharge Criteria (µg/L)	
	Daily Average	Daily Maximum
Volatiles		
1,1,1-Trichloroethane	3,417	7,230
1,1,2-Trichloroethane	102.5	216.9
1,1-Dichloroethane	6,633	14,032
1,1-Dichloroethene	119	253
1,2-Dichloroethane	85	181
Acetone	1,132	2,395
Benzene	85	181
Carbon Tetrachloride	85	181
Chlorobenzene	22,300	47,180
Chloroform	1,708	3,615
Ethylbenzene	26,954	57,025
Xylenes	39.5	83.6
Methylene Chloride	803	1,699
Styrene	2,829	5,987
Tetrachloroethene	85.4	180.7
Toluene	1,980	4,189
Trichloroethene	85	181
Vinyl Chloride	34	72
Anions		
Chloride	*	*
Sulfate	*	*
Perchlorate**	278	589
Metals		
Aluminum	777	1,644
Arsenic	365	772
Barium	1,000	2,000
Cadmium	1.6	3.4
Chromium, Total	355	752
Chromium, Hexavalent	58	124
Cobalt	5,433	11,495
Iron	1,132	2,395
Lead	2.2	4.6
Nickel	87	184
Manganese	7,323	15,494
Silver	1.4	3
Selenium	5.7	12
Vanadium	1,698	3,592
Zinc	146	310
Other		
Hexachlorobenzene	0.22	0.47
1,4-Dioxane		134.2
Oil and Grease		15
Chemical Oxygen Demand		200

* - Based upon flow in Harrison Bayou

** - Discharge criteria, when diverted to the INF Pond, is 17 µg/L

PROTOCOL FOR DISCHARGING GWTP EFFLUENT

In accordance with the *Sampling and Analysis Plan, Groundwater Treatment Plant and Well Fields* (SAP) Table 2-2, indicator parameters for the FBR, such as temperature, pH and oxidation reduction potential (ORP), are monitored in real time to predict FBR performance and perchlorate removal. Based upon these indicator parameters, the operator of the GWTP can make adjustments such as:

- Bring the ion exchange system online;
- Increase or decrease the addition rate of electron donor (acetic acid);
- Increase or decrease the nutrient addition rate (urea or phosphoric acid); or
- Increase or decrease the FBR recirculation rate

Samples of the GWTP effluent are collected weekly, analyzed for perchlorate, nutrients (ammonia-nitrogen and ortho-phosphate), total organic carbon (TOC), chloride, and sulfate, with the results received from the laboratory 14 days later. Other parameters (e.g. Record of Decision metals and volatiles) are collected and analyzed in GWTP effluent samples according to the frequencies listed in Table 2-1 of the SAP.

As shown in Figure 1, groundwater is continuously extracted, treated, and discharged. If Harrison Bayou is flowing and indicator parameters are within their historical optimal ranges, then the ion exchange vessels can be bypassed and the GWTP effluent sample will be collected after the FBR. If Harrison Bayou is not flowing or the indicator parameters are not within historical optimal ranges, then the ion exchange vessels will be put on line, and the GWTP effluent sample will be collected between the lead and lag ion exchange vessel. Professional judgement may also be used as to when to bring the ion exchange vessels online, such as after a power outage or during anticipated cold temperatures when the FBR has historically not performed optimally.

If a parameter is measured in the effluent at a concentration above the discharge criteria, then a confirmation sample and an effluent sample after the lag ion exchange vessel will be collected and analyzed for the parameter with a 24-hour turnaround time. Corrective measures (e.g. increased nutrient or electron donor addition rates, bring ion exchange vessels on line) will be implemented as appropriate to bring the parameter back within the discharge criteria. ***If an upset condition in the FBR leads to high concentrations of perchlorate going into the lead ion exchange vessel and breaking through at the sample location between the vessels, the lag vessel will still remove perchlorate before it is discharged to Harrison Bayou, the INF Pond, or LHAAP-18/24.*** It is estimated that the lag ion exchange vessel can remove all of the perchlorate from two weeks of typical groundwater extraction at a concentration of 920 µg/L. If the residual perchlorate concentration after the FBR and lead ion exchange vessel is only 600 µg/L, the lag ion exchange vessel could last almost 2.5 years before perchlorate would be detected in the discharged effluent.

If a parameter exceeds the discharge criteria by more than 40% (see Appendix A-2, SAP, Section 7c of Monitoring and Reporting Requirements) or reaches 920 µg/L of perchlorate, then the GWTP will be put into full recycle mode (no discharge) until the parameter is below the discharge criteria again. Appendix A-2 of the SAP requires GWTP data to be provided to TCEQ monthly including a list of noncompliance(s), if applicable.

Discharge to Harrison Bayou

As shown in Figure 1, the GWTP effluent will be discharged to Harrison Bayou as long as it has a measurable flow. The flowrate in Harrison Bayou is estimated by measuring the height of water with a staff gauge and velocity in feet/sec at intervals along the width as described in the Installation-Wide Work Plan, Standard Operating Procedures, Attachment 18 – Water Depth and Velocity Measurements (AECOM, July 2014).

The allowable flow rate of GWTP effluent that can be discharged to Harrison Bayou is given by:

$$QE \leq \frac{QS\ (CC - CA)}{(CE - CC)}$$

where Q_E = GWTP effluent flow Q_S = Harrison Bayou flow

C_C = Criteria concentration (100 mg/L for chloride, 50 mg/L for sulfate)

C_A = Ambient concentration = 10 mg/L

C_E = Chloride or sulfate concentration in GWTP effluent

The allowable GWTP effluent flow will be the lower of the calculated values given the measured concentrations of chloride and sulfate in the discharge stream. For each day that GWTP effluent is discharged to Harrison Bayou, the measured Harrison Bayou flow, the allowable effluent flow, and the actual effluent flow are recorded.

Discharge to INF Pond

If Harrison Bayou is not flowing, then GWTP effluent will be discharged to the Intermediate-Range Nuclear Forces (INF) Pond for temporary storage until Harrison Bayou flow resumes. Perchlorate concentration detected in the effluent must be 17 µg/L or less, when this occurs.

The INF Pond has a flexible membrane liner protected by a soil cover with a gravity discharge pipe (and valve) to Harrison Bayou. The INF Pond has a nominal capacity of 3 million gallons with a staff gage to measure the height of water stored in the pond. The GWTP operator maintains the INF Pond by visually inspecting for erosion, vegetative growth including tree growth along the anchor trench, and liner integrity and making necessary repairs. Periodically, accumulated debris must be removed from the influent and effluent piping to the INF Pond.

Prior to discharging to the INF Pond, a lead and lag ion exchange vessel will be brought online. The GWTP Operator will also confirm that the discharge valve is closed, will record the reading on the effluent totalizer, and will record the height of water using the staff gage. The GWTP Operator will then configure valves and pumps to direct GWTP effluent to the INF Pond. The height of water in the INF Pond and totalizer reading will be recorded at the beginning and end of each shift for the duration of active discharge. When the height of water in the pond reaches 3 feet below the height of the berm (freeboard), the GWTP Operator will stop discharging to the INF Pond and TCEQ will be notified. After the TCEQ acknowledges the INF Pond level, GWTP effluent may be discharged to the INF Pond again until 2 feet of freeboard is reached. The GWTP Operator will stop discharging to the INF Pond and TCEQ will be notified again. After the TCEQ acknowledges 2 feet of freeboard in the INF Pond,GWTP effluent may be discharged again until 1 foot of freeboard remains. No additional GWTP effluent can be accepted at the INF Pond until greater than 1 foot of freeboard is measured.

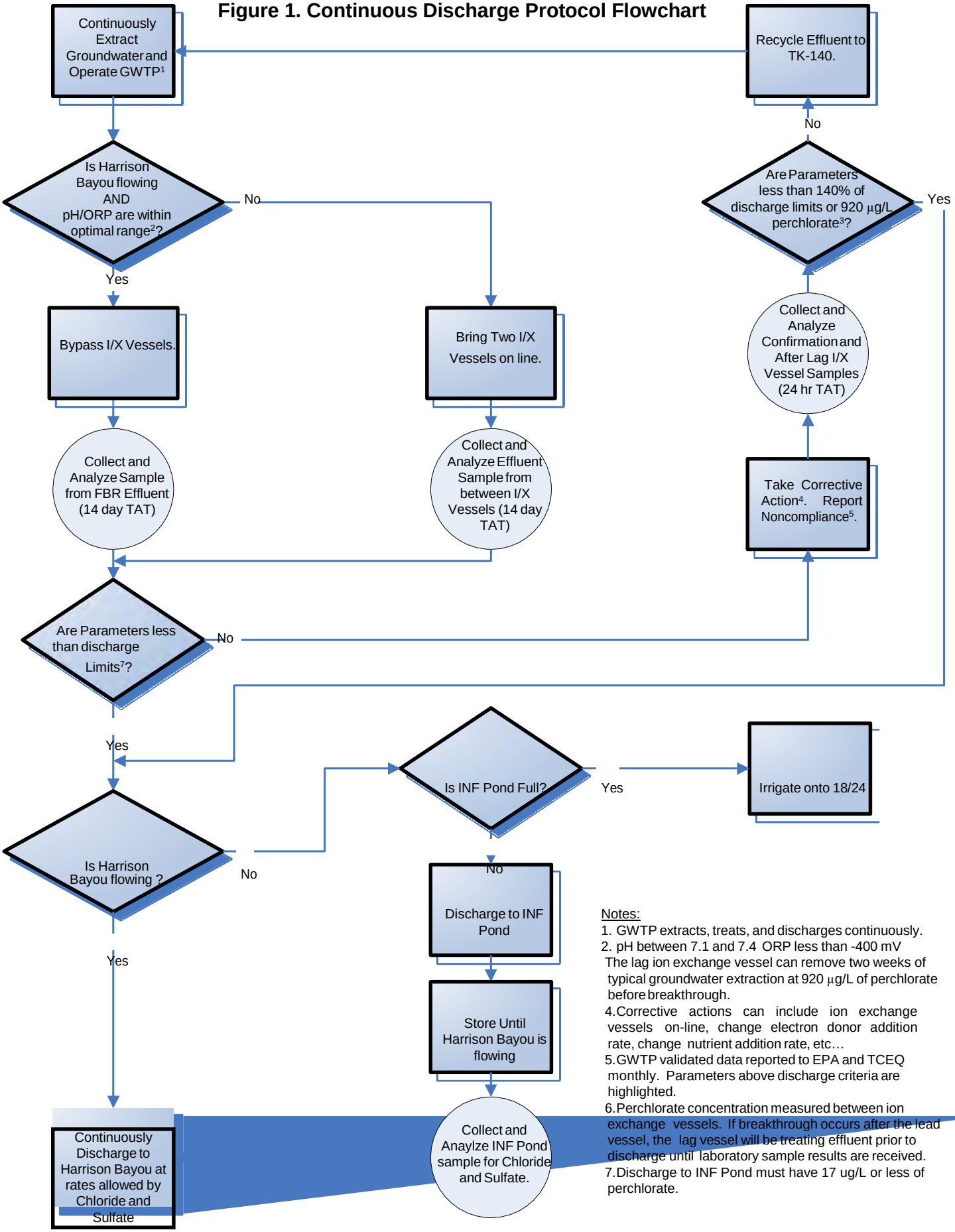
As soon as flow in Harrison Bayou returns, stored GWTP effluent from the INF Pond will be discharged. As with direct discharges from the GWTP to Harrison Bayou, the allowable flowrate of effluent from the INF Pond is calculated based upon the chloride and sulfate concentrations in the pond and the flow in Harrison Bayou. If effluent from the INF Pond and the GWTP are discharged simultaneously, total flow of both streams together should not exceed the calculated discharge level for either discharge location. For each day that INF Pond contents are discharged to Harrison Bayou, the measured Harrison Bayou flow, the allowable effluent flow, and the actual effluent flow are recorded.

Irrigation onto LHAAP-18/24

If Harrison Bayou is not flowing and the INF Pond has less than 1 foot of freeboard, then GWTP effluent will be irrigated onto LHAAP-18/24 using one of the three main sprinkler lines. To avoid pooling and runoff of irrigation water, only one line will be used for half a day at a time, with a separate line being used the second half of the day. If needed, the irrigation will occur 5 days a week for 8 hours each day (using 3 sprinklers in each line). If conditions are wet due to rain events, irrigation will not be conducted to avoid ponding and potential runoff, the GWTP will be put into recycle mode, and groundwater extraction will be interrupted if storage space is not available.

While irrigating, site inspections will be performed to ensure pooling and runoff are not occurring. During the irrigation activities, inspections will be performed twice a day, once approximately three hours and again approximately six hours into the 8-hour irrigation shift. The system will be inspected to ensure that the sprinkler heads are operating properly and not leaking large amounts of water. If ponding or runoff is observed, irrigation at that sprinkler line will cease, and irrigation at another sprinkler line will be started if possible. Volumes of GWTP effluent and twice daily inspections will be recorded daily and reported monthly until flow resumes in Harrison Bayou or greater than 1 foot of freeboard is available in the INF Pond.

Figure 1. Continuous Discharge Protocol Flowchart



Notes:

1. GWTP extracts, treats, and discharges continuously.
2. pH between 7.1 and 7.4 ORP less than -400 mV
   The lag ion exchange vessel can remove two weeks of typical groundwater extraction at 920 µg/L of perchlorate before breakthrough.
4. Corrective actions can include ion exchange vessels on-line, change electron donor addition rate, change nutrient addition rate, etc…
5. GWTP validated data reported to EPA and TCEQ monthly. Parameters above discharge criteria are highlighted.
6. Perchlorate concentration measured between ion exchange vessels. If breakthrough occurs after the lead vessel, the lag vessel will be treating effluent prior to discharge until laboratory sample results are received.
7. Discharge to INF Pond must have 17 ug/L or less of perchlorate.

APPENDIX J
AIR DATA TABLES, PID READINGS, AND CALIBRATION LOGS

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Appendix J Table 1. Ambient Air Data - May 2020
Longhorn Army Ammunition Plant
Groundwater Treatment Plant

Pollutant	CAS #	Short Term ESL March 2012	AMCVs (ST Health)	GWTP Ambient Air Concentrations (1)		Status (3)	Downwind Ambient Air Concentrations (2)		Status (3)
		µg/m^3	µg/m^3	µg/m^3			µg/m^3		
1,1-Dichloroethane	75-34-3	4,000	4,047	0.70	U	PASS	0.76	U	PASS
1,1-Dichloroethene	75-35-4	210	714	0.69	U	PASS	0.75	U	PASS
1,2-Dichloroethane	107-06-2	160	162	0.69	U	PASS	0.75	U	PASS
Acetone	67-64-1	5,900	NA	**8.2**		PASS	7.4	U	PASS
Benzene	71-43-2	170	575	0.68	U	PASS	0.74	U	PASS
Carbon disulfide	75-15-0	30	NA	**28.0**		PASS	1.5	U	PASS
Chloroform	67-66-3	100	98	0.69	U	PASS	0.75	U	PASS
cis-1,2-Dichloroethene	156-59-2	7,900	NA	**2.7**		PASS	**1.50**		PASS
Methylene chloride	75-09-2	3,600	12,158	**0.99**		PASS	**0.94**		PASS
Tetrachloroethene	127-18-4	2,000	6,782	0.67	U	PASS	0.72	U	PASS
trans-1,2-Dichloroethene	156-60-5	7,900	NA	0.69	U	PASS	0.75	U	PASS
Trichloroethene	79-01-6	540	537	**5.4**		PASS	**3.20**		PASS
Vinyl chloride	75-01-4	20,000	66,460	0.69	U	PASS	0.75	U	PASS
n-Hexane	110-54-3	5,300	6,336	**1.00**		PASS	**1.30**		PASS
Styrene	100-42-5	110	21,725	0.68	U	PASS	0.74	U	PASS
Toluene	108-88-3	640	15,074	**0.75**		PASS	0.75	U	PASS
Ethylbenzene	100-41-4	740	86,844	0.69	U	PASS	0.75	U	PASS
m,p-Xylenes	179601-23-1	180	7,382	1.4	U	PASS	1.5	U	PASS
o-Xylene	95-47-6	1,600	7,382	0.69	U	PASS	0.75	U	PASS
1,3-Dichlorobenzene	541-73-1	720	NA	0.69	U	PASS	0.75	U	PASS
Propene (C3 H6)	115-07-1	Asphyxiant	Asphyxiant	0.68	U	NA	0.74	U	NA
Dichlorodifluoromethane (CFC 12)	75-71-8	50,000	49,452	**2.3**		PASS	**2.4**		PASS
Ethanol	64-17-5	18,800	NA	6.7	U	PASS	7.2	U	PASS
Trichlorofluoromethane (CFC 11)	75-69-4	28,000	56,184	**1.2**		PASS	**1.3**		PASS
Trichlorotrifluoroethane (CFC 113)	76-13-1	38,000	NA	**7.6**		PASS	**4.5**		PASS
alpha-Pinene	80-56-8	60	3,499	**1.40**		PASS	**0.98**		PASS
d-Limonene	5989-27-5	1,100	NA	0.69	U	PASS	0.75	U	PASS

Notes:

(1) Sample collected over an 8-hour period on May 27, 2020, between 8 AM and 4 PM

(2) Sample collected over a 24-hour period beginning on May 27, 2020, at 7:00 AM and ending on May 28, 2020 at 7:00 AM

(3) Status based on comparison of air sample result to Air Monitoring Comparison Values (AMCVs). When there is no AMCV value for a chemical, the air sample concentration is compared to the short-term Effects Screening Level (ESL).

CAS # = Chemcial Abstracts Service Number

GWTP = Groundwater Treatment Plant

U = non-detect

µg/m^3 = micrograms per cubic meter

Appendix J Table 2. Emission Stack Air Data - May 2020
Longhorn Army Ammunition Plant
Groundwater Treatment Plant

Pollutant	CAS #	Measured Air Stripper Stack Concentrations (1)		Air Stripper Emission Rates (2)		Air Stripper Emission Rates (2a)		Allowable Annual Emission (3)	Status (4)	TLV (L)	TLV Reference	Compliance section	Distance Downwind to nearest off-site Receptor (D)	(K) conversion value	Allowable Maximum Hourly Emission Limit at Nearest off-site Receptor [6][7] (E) = L/K	Status (8)
		µg/m^3		lb/hr		tpy		tpy		mg/m^3			feet		lb/hr	
1,1-Dichloroethane	75-34-3	0.71	U	5.82E-06	U	3.78E-06	U	5	PASS	405	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
1,1-Dichloroethene	75-35-4	0.70	U	5.74E-06	U	3.73E-06	U	5	PASS	20	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.4	PASS
1,2-Dichloroethane	107-06-2	0.70	U	5.74E-06	U	3.73E-06	U	5	PASS	40	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	2.9	PASS
Acetone	67-64-1	**21**	J	3.44E-04		2.24E-04		5	PASS	590	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Benzene	71-43-2	**2.4**		3.93E-05		2.56E-05		5	PASS	3	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	0.21	PASS
Carbon disulfide	75-15-0	1	U	1.15E-05	U	7.46E-06	U	5	PASS	31	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	2.2	PASS
Chloroform	67-66-3	0.70	U	5.74E-06	U	3.73E-06	U	5	PASS	10	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	0.71	PASS
cis-1,2-Dichloroethene	156-59-2	0.68	U	5.57E-06	U	3.62E-06	U	5	PASS	793	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Methylene chloride	75-09-2	0.68	U	5.57E-06	U	3.62E-06	U	5	PASS	26	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.9	PASS
Tetrachloroethene	127-18-4	0.67	U	5.49E-06	U	3.57E-06	U	5	PASS	33.5	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	2.4	PASS
trans-1,2-Dichloroethene	156-60-5	0.70	U	5.74E-06	U	3.73E-06	U	5	PASS	793	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Trichloroethene	79-01-6	0.70	U	5.74E-06	U	3.73E-06	U	5	PASS	135	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	6.0	PASS
Vinyl chloride	75-01-4	0.70	U	5.74E-06	U	3.73E-06	U	5	PASS	2	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	0.14	PASS
n-Hexane	110-54-3	**21**	J	3.44E-04		2.24E-04		5	PASS	1,800	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Styrene	100-42-5	0.68	U	5.57E-06	U	3.62E-06	U	5	PASS	21	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.5	PASS
Toluene	108-88-3	**4.5**	J	7.38E-05		4.80E-05		5	PASS	188	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	6.0	PASS
Ethylbenzene	100-41-4	**0.76**		1.25E-05		8.10E-06		5	PASS	434	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
m,p-Xylenes	179601-23-1	**2.5**		4.10E-05		2.66E-05		5	PASS	434	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
o-Xylene	95-47-6	**0.85**		1.39E-05		9.06E-06		5	PASS	434	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
1,3-Dichlorobenzene	541-73-1	0.70	U	5.74E-06	U	3.73E-06	U	5	PASS	(5)	--	30 TAC 106.533(f)(1)(A)(i)	2,000	14	1.0	PASS
Propene (C3 H6)	115-07-1	**1.6**		2.62E-05		1.71E-05		5	PASS	(5)	--	30 TAC 106.533(f)(1)(A)(i)	2,000	14	6.0	PASS
Dichlorodifluoromethane (CFC 12)	75-71-8	**6**	J	9.84E-05		6.39E-05		5	PASS	4,950	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Ethanol	64-17-5	**34**	J	5.57E-04		3.62E-04		5	PASS	1,880	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Trichlorofluoromethane (CFC 11)	75-69-4	**8.3**	J	1.36E-04		8.84E-05		5	PASS	5,620	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Trichlorotrifluoroethane (CFC 113)	76-13-1	**0.83**		1.36E-05		8.84E-06		5	PASS	7,670	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
alpha-Pinene	80-56-8	**0.68**		1.11E-05		7.25E-06		5	PASS	(5)	--	30 TAC 106.533(f)(1)(A)(i)	2,000	14	1.0	PASS
d-Limonene	5989-27-5	0.70	U	5.74E-06	U	3.73E-06	U	5	PASS	(5)	--	30 TAC 106.533(f)(1)(A)(i)	2,000	14	1.0	PASS
	TOTAL			0.002												

Notes:

(1) Sample collected on May 27, 2020. The higher value of the sample or duplicate is reported.

(2) Based on a blower flow rate of 4,390 cubic feet per minute (cfm). Note that plant operations is less than or equal to 25 hours per week. 1/2 of detection limit was used for estimating mass rate

(2a) Based on operation of 25 hours per week, 52 weeks per year.

(3) Per 30TAC 106.533(f)(1)(B)

(4) Based on comparing the calculated air stripper stack sample emission rate in tons per year (tpy) to the allowable annual emission limit per chemical of 5 tpy.

(5) No Threshold Limit Values (TLVs) for these chemicals

(6) The maximum hourly limit allowed by 30 Texas Administrative Code (TAC) 106.262, per pollutant, is 6 pounds per hour (lb/hr) per "Figure 1: 30 TAC 106.262(a)". The E value was overridden with 6 lb/hr when the calculated E was higher.

(7) The maximum hourly emission rate allowed by 30 TAC 106.261(a)(3) for chemicals with a limit value (L) greater than 200 mg/m^3 is 1 lb/hr.

(8) Based on comparing the calculated air stripper stack sample emission rate in lb/hr to the allowable maximum emission limit per chemical based on distance downwind to nearest off-site receptor.

CAS # = Chemical Abstracts Service Number

mg/m^3 = milligrams per cubic meter

µg/m^3 = micrograms per cubic meter

U = non-detect

Appendix J Table 3. PID Readings - 2nd Quarter 2020
Longhorn Army Ammunition Plant
Groundwater Treatment Plant

Date	Time	Location	Air Flow Rate at Blower	Instrument ID	Person Collecting	PID Reading	Weather Conditions
4/2/2020	8:00	Outside GWTP Office	3702 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 54°F
4/2/2020	8:00	Downwind	3702 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 54°F
4/2/2020	8:00	Stripper	3702 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.3 ppm Steady State 6.2 ppm	Clear 54°F
4/2/2020	13:00	Outside GWTP Office	3549 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 71°F
4/2/2020	13:00	Downwind	3549 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 71°F
4/2/2020	13:00	Stripper	3549 ACFM	MiniRAE 3000	Scott Beesinger	Max. 22.8 ppm Steady State 6.0 ppm	Clear 71°F
4/6/2020	8:00	Outside GWTP Office	3597 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 59°F
4/6/2020	8:00	Downwind	3597 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 59°F
4/6/2020	8:00	Stripper	3597 ACFM	MiniRAE 3000	Kennie Moore	Max. 24.6 ppm Steady State 8.3 ppm	Cloudy 59°F
4/6/2020	14:00	Outside GWTP Office	3449 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Cloudy 75°F
4/6/2020	14:00	Downwind	3449 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Cloudy 75°F
4/6/2020	14:00	Stripper	3449 ACFM	MiniRAE 3000	Scott Beesinger	Max. 22.7 ppm Steady State 7.2 ppm	Cloudy 75°F
4/9/2020	8:00	Outside GWTP Office	3518 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 70°F
4/9/2020	8:00	Downwind	3518 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 70°F
4/9/2020	8:00	Stripper	3518 ACFM	MiniRAE 3000	Kennie Moore	Max. 21.5 ppm Steady State 5.8 ppm	Clear 70°F
4/9/2020	13:00	Outside GWTP Office	3390 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 76°F
4/9/2020	13:00	Downwind	3390 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 76°F
4/9/2020	13:00	Stripper	3390 ACFM	MiniRAE 3000	Scott Beesinger	Max. 22.8 ppm Steady State 6.5 ppm	Clear 76°F
4/15/2020	8:00	Outside GWTP Office	3852 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 42°F
4/15/2020	8:00	Downwind	3852 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 42°F
4/15/2020	8:00	Stripper	3852 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.3 ppm Steady State 5.5 ppm	Clear 42°F
4/15/2020	14:00	Outside GWTP Office	3653 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 62°F
4/15/2020	14:00	Downwind	3653 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 62°F
4/15/2020	14:00	Stripper	3653 ACFM	MiniRAE 3000	Scott Beesinger	Max. 22.1 ppm Steady State 5.0 ppm	Clear 62°F
4/20/2020	8:00	Outside GWTP Office	3613 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 58°F
4/20/2020	8:00	Downwind	3613 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 58°F
4/20/2020	8:00	Stripper	3613 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.9 ppm Steady State 5.8 ppm	Clear 58°F
4/20/2020	14:00	Outside GWTP Office	3509 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 67°F
4/20/2020	14:00	Downwind	3509 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 67°F
4/20/2020	14:00	Stripper	3509 ACFM	MiniRAE 3000	Scott Beesinger	Max. 24.1 ppm Steady State 7.0 ppm	Clear 67°F
4/23/2020	8:00	Outside GWTP Office	3780 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 61°F
4/23/2020	8:00	Downwind	3780 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 61°F
4/23/2020	8:00	Stripper	3780 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.9 ppm Steady State 6.3 ppm	Clear 61°F
4/23/2020	13:00	Outside GWTP Office	3595 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 72°F
4/23/2020	13:00	Downwind	3595 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 72°F
4/23/2020	13:00	Stripper	3595 ACFM	MiniRAE 3000	Kennie Moore	Max. 21.4 ppm Steady State 5.6 ppm	Clear 72°F

Appendix J Table 3. PID Readings - 2nd Quarter 2020
Longhorn Army Ammunition Plant
Groundwater Treatment Plant

Date	Time	Location	Air Flow Rate at Blower	Instrument ID	Person Collecting	PID Reading	Weather Conditions
4/27/2020	8:00	Outside GWTP Office	3663 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 54°F
4/27/2020	8:00	Downwind	3663 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 54°F
4/27/2020	8:00	Stripper	3663 ACFM	MiniRAE 3000	Kennie Moore	Max. 24.0 ppm Steady State 7.9 ppm	Clear 54°F
4/27/2020	14:00	Outside GWTP Office	3414 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 81°F
4/27/2020	14:00	Downwind	3414 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 81°F
4/27/2020	14:00	Stripper	3414 ACFM	MiniRAE 3000	Scott Beesinger	Max. 21.4 ppm Steady State 6.2 ppm	Clear 81°F
4/30/2020	8:00	Outside GWTP Office	3607 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 63°F
4/30/2020	8:00	Downwind	3607 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 63°F
4/30/2020	8:00	Stripper	3607 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.5 ppm Steady State 6.4 ppm	Clear 63°F
4/30/2020	13:00	Outside GWTP Office	3533 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 78°F
4/30/2020	13:00	Downwind	3533 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 78°F
4/30/2020	13:00	Stripper	3533 ACFM	MiniRAE 3000	Scott Beesinger	Max. 21.1 ppm Steady State 5.9 ppm	Clear 78°F
5/4/2020	8:00	Outside GWTP Office	3960 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 71°F
5/4/2020	8:00	Downwind	3960 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 71°F
5/4/2020	8:00	Stripper	3960 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.7 ppm Steady State 6.9 ppm	Clear 71°F
5/4/2020	14:00	Outside GWTP Office	3401 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 88°F
5/4/2020	14:00	Downwind	3401 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 88°F
5/4/2020	14:00	Stripper	3401 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.9 ppm Steady State 7.5 ppm	Clear 88°F
5/7/2020	8:00	Outside GWTP Office	3765 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 58°F
5/7/2020	8:00	Downwind	3765 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 58°F
5/7/2020	8:00	Stripper	3765 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.6 ppm Steady State 6.5 ppm	Clear 58°F
5/7/2020	13:00	Outside GWTP Office	3515 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 73°F
5/7/2020	13:00	Downwind	3515 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 73°F
5/7/2020	13:00	Stripper	3515 ACFM	MiniRAE 3000	Kennie Moore	Max. 21.7 ppm Steady State 5.3 ppm	Clear 73°F
5/11/2020	8:00	Outside GWTP Office	3740 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 64°F
5/11/2020	8:00	Downwind	3740 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 64°F
5/11/2020	8:00	Stripper	3740 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.9 ppm Steady State 6.3 ppm	Clear 64°F
5/11/2020	14:00	Outside GWTP Office	3445 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 76°F
5/11/2020	14:00	Downwind	3445 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 76°F
5/11/2020	14:00	Stripper	3445 ACFM	MiniRAE 3000	Kennie Moore	Max. 20.3 ppm Steady State 5.1 ppm	Clear 76°F
5/14/2020	8:00	Outside GWTP Office	3473 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 73°F
5/14/2020	8:00	Downwind	3473 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 73°F
5/14/2020	8:00	Stripper	3473 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.2 ppm Steady State 4.9 ppm	Cloudy 73°F
5/14/2020	12:30	Outside GWTP Office	3301 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Cloudy 81°F
5/14/2020	12:30	Downwind	3301 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Cloudy 81°F
5/14/2020	12:30	Stripper	3301 ACFM	MiniRAE 3000	Scott Beesinger	Max. 24.6 ppm Steady State 6.5 ppm	Cloudy 81°F

Appendix J Table 3. PID Readings - 2nd Quarter 2020
Longhorn Army Ammunition Plant
Groundwater Treatment Plant

Date	Time	Location	Air Flow Rate at Blower	Instrument ID	Person Collecting	PID Reading	Weather Conditions
5/18/2020	8:00	Outside GWTP Office	3488 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 67°F
5/18/2020	8:00	Downwind	3488 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 67°F
5/18/2020	8:00	Stripper	3488 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.1 ppm Steady State 5.2 ppm	Clear 67°F
5/18/2020	14:00	Outside GWTP Office	3409 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 84°F
5/18/2020	14:00	Downwind	3409 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 84°F
5/18/2020	14:00	Stripper	3409 ACFM	MiniRAE 3000	Scott Beesinger	Max. 23.9 ppm Steady State 6.5 ppm	Clear 84°F
5/21/2020	8:00	Outside GWTP Office	3483 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 68°F
5/21/2020	8:00	Downwind	3483 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 68°F
5/21/2020	8:00	Stripper	3483 ACFM	MiniRAE 3000	Kennie Moore	Max. 21.1 ppm Steady State 4.7 ppm	Cloudy 68°F
5/21/2020	12:30	Outside GWTP Office	3339 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Cloudy 83°F
5/21/2020	12:30	Downwind	3339 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Cloudy 83°F
5/21/2020	12:30	Stripper	3339 ACFM	MiniRAE 3000	Scott Beesinger	Max. 24.2 ppm Steady State 6.8 ppm	Cloudy 83°F
5/27/2020	8:00	Outside GWTP Office	3548 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 68°F
5/27/2020	8:00	Downwind	3548 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 68°F
5/27/2020	8:00	Stripper	3548 ACFM	MiniRAE 3000	Scott Beesinger	Max. 24.9 ppm Steady State 7.7 ppm	Clear 68°F
5/27/2020	14:00	Outside GWTP Office	3356 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 80°F
5/27/2020	14:00	Downwind	3356 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 80°F
5/27/2020	14:00	Stripper	3356 ACFM	MiniRAE 3000	Scott Beesinger	Max. 22.1 ppm Steady State 6.8 ppm	Clear 80°F
6/1/2020	8:00	Outside GWTP Office	3855 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 70°F
6/1/2020	8:00	Downwind	3855 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 70°F
6/1/2020	8:00	Stripper	3855 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.1 ppm Steady State 6.7 ppm	Clear 70°F
6/1/2020	14:00	Outside GWTP Office	3460 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 83°F
6/1/2020	14:00	Downwind	3460 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 83°F
6/1/2020	14:00	Stripper	3460 ACFM	MiniRAE 3000	Kennie Moore	Max. 21.6 ppm Steady State 5.2 ppm	Clear 83°F
6/4/2020	8:00	Outside GWTP Office	3765 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 74°F
6/4/2020	8:00	Downwind	3765 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 74°F
6/4/2020	8:00	Stripper	3765 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.7 ppm Steady State 6.6 ppm	Clear 74°F
6/4/2020	12:30	Outside GWTP Office	3540 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 86°F
6/4/2020	12:30	Downwind	3540 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 86°F
6/4/2020	12:30	Stripper	3540 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.1 ppm Steady State 5.3 ppm	Clear 86°F
6/8/2020	8:00	Outside GWTP Office	3511 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 76°F
6/8/2020	8:00	Downwind	3511 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 76°F
6/8/2020	8:00	Stripper	3511 ACFM	MiniRAE 3000	Kennie Moore	Max. 24.9 ppm Steady State 8.1 ppm	Clear 76°F
6/8/2020	14:00	Outside GWTP Office	3371 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 86°F
6/8/2020	14:00	Downwind	3371 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 86°F
6/8/2020	14:00	Stripper	3371 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.5 ppm Steady State 6.9 ppm	Clear 86°F

Appendix J Table 3. PID Readings - 2nd Quarter 2020
Longhorn Army Ammunition Plant
Groundwater Treatment Plant

Date	Time	Location	Air Flow Rate at Blower	Instrument ID	Person Collecting	PID Reading	Weather Conditions
6/11/2020	8:00	Outside GWTP Office	3740 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 57°F
6/11/2020	8:00	Downwind	3740 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 57°F
6/11/2020	8:00	Stripper	3740 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.6 ppm Steady State 6.9 ppm	Clear 57°F
6/11/2020	12:00	Outside GWTP Office	3570 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 83°F
6/11/2020	12:00	Downwind	3570 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 83°F
6/11/2020	12:00	Stripper	3570 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.4 ppm Steady State 5.3 ppm	Clear 83°F
6/15/2020	8:00	Outside GWTP Office	3780 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 74°F
6/15/2020	8:00	Downwind	3780 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 74°F
6/15/2020	8:00	Stripper	3780 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.9 ppm Steady State 6.3 ppm	Clear 74°F
6/15/2020	14:00	Outside GWTP Office	3439 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 93°F
6/15/2020	14:00	Downwind	3439 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 93°F
6/15/2020	14:00	Stripper	3439 ACFM	MiniRAE 3000	Kennie Moore	Max. 24.2 ppm Steady State 7.4 ppm	Clear 93°F
6/18/2020	8:00	Outside GWTP Office	3347 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 74°F
6/18/2020	8:00	Downwind	3347 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 74°F
6/18/2020	8:00	Stripper	3347 ACFM	MiniRAE 3000	Scott Beesinger	Max. 23.3 ppm Steady State 5.6 ppm	Clear 74°F
6/18/2020	12:00	Outside GWTP Office	3246 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 89°F
6/18/2020	12:00	Downwind	3246 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 89°F
6/18/2020	12:00	Stripper	3246 ACFM	MiniRAE 3000	Scott Beesinger	Max. 21.1 ppm Steady State 5.0 ppm	Clear 89°F
6/22/2020	8:00	Outside GWTP Office	3870 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 78°F
6/22/2020	8:00	Downwind	3870 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 78°F
6/22/2020	8:00	Stripper	3870 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.1 ppm Steady State 7.3 ppm	Clear 78°F
6/22/2020	14:00	Outside GWTP Office	3355 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 89°F
6/22/2020	14:00	Downwind	3355 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 89°F
6/22/2020	14:00	Stripper	3355 ACFM	MiniRAE 3000	Kennie Moore	Max. 20.6 ppm Steady State 5.2 ppm	Clear 89°F
6/25/2020	8:00	Outside GWTP Office	3795 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 75°F
6/25/2020	8:00	Downwind	3795 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 75°F
6/25/2020	8:00	Stripper	3795 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.4 ppm Steady State 6.7 ppm	Clear 75°F
6/25/2020	12:00	Outside GWTP Office	3640 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 82°F
6/25/2020	12:00	Downwind	3640 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 82°F
6/25/2020	12:00	Stripper	3640 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.7 ppm Steady State 5.6 ppm	Cloudy 82°F
6/29/2020	8:00	Outside GWTP Office	3870 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 81°F
6/29/2020	8:00	Downwind	3870 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 81°F
6/29/2020	8:00	Stripper	3870 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.9 ppm Steady State 7.6 ppm	Clear 81°F
6/29/2020	14:00	Outside GWTP Office	3371 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 88°F
6/29/2020	14:00	Downwind	3371 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 88°F
6/29/2020	14:00	Stripper	3371 ACFM	MiniRAE 3000	Kennie Moore	Max. 24.5 ppm Steady State 8.7 ppm	Clear 88°F

00974757

EQUIPMENT CALIBRATION DAILY LOG

Date: 4/2/20

Project Number: NW 01312.0150

Project Name: LHAAP - GWTP

Recorded By: Scott Beesinger

PID

Model: MiniRAE 3000 Bulb: 10.7 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time: 0730	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 4/6/20 | Project Name: LHAAP - GWTP

Project Number: NW0 1312.0150 | Recorded By: Scott Beasinger

PID

Model: MiniRAE 3000 | Bulb: 10.6 eV | Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time: 0620	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	UBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model: | Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model: | Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974759

EQUIPMENT CALIBRATION DAILY LOG

Date: 4/9/20 | Project Name: LHAAP - GWTP

Project Number: NW013312.0150 | Recorded By: SCOTT BEESINGER

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
PID	Model: MiniRAE 3000 Bulb: 10.6 eV Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot#	Time: 0735 Initials: SB	Time: Initials:	Time: Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	UBH-248-100-19	Value: SB	Value:	Value:

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
COMB. GAS/O_2 METER	Model: Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot#	Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

					Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
WATER QUALITY METER	Model: Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot#	Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration (Alsto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974760

EQUIPMENT CALIBRATION DAILY LOG

Date: 4/15/20

Project Number: NW013312.0150

Project Name: LHAAP - GWTP

Recorded By: SCOTT BEGGINGER

PID

Model: MINI RAE 3000 Bulb: 10.6 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time: 0625	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974761

EQUIPMENT CALIBRATION DAILY LOG

Date: 4/20/20

Project Number: NW 0 1312.0150

Project Name: LHAAP - GWTP

Recorded By: Scott Beasinger

PID	Model: MiniRAE 3000 Bulb: 10.6 eV Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot#	Time: 0640	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER	Model: Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot#	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER	Model: Equipment ID #:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot#	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date:	4/23/20	Project Name:	LHAAP - GWTP
Project Number:	NW 01312.0150	Recorded By:	Scott Beasinger

PID

Model: MiniRAE 3000 Bulb: 10.6 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time: 0700	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974763

EQUIPMENT CALIBRATION DAILY LOG

Date: 4/27/20 | Project Name: LHAAP-GWTP

Project Number: NW013121.0158 | Recorded By: SCOTT BEESINGER

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
PID	Model: MINI RAE 3000 Bulb: 10.6 eV						
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot#	Time: 0630	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
COMB. GAS/O_2 METER	Model:						
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot#	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

					Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
WATER QUALITY METER	Model:						
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot#	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date:	4/30/20	Project Name:	LHAAP - GWTP
Project Number:	NW01312.0158	Recorded By:	Scott Boessinger

PID

Model: MiniRAE 3000 Bulb: 10.7 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time: 0655	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974765

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/4/20

Project Number: NW 013 12.0150

Project Name: LHAAP - GWTP

Recorded By: SCOTT BEGGS / NGA

PID

Model: MINI RAE 3000 Bulb: 10.6 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time: 0640	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	59.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974766

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/7/20 | Project Name: LHAAP - GWTP

Project Number: NW0 1312.0158 | Recorded By: Scott Beasinger

PID

Model: MiniRAE 3000 | Bulb: 10.7 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time: 0710	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974767

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/11/20 | Project Name: LHAAP - GWTP

Project Number: NW 0 1312.0150 | Recorded By: Scott Beasinger

PID

Model: MiniRAE 3000 | Bulb: 10.6 eV | Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time: 0645	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model: | Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model: | Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/14/20

Project Number: NW01312.0150

Project Name: LHAAP - GWTP

Recorded By: Scott Baggenger

PID

Model: MiniRAE 3000 Bulb: 10.6 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time: 0710	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974769

EQUIPMENT CALIBRATION DAILY LOG

Date:	5/18/20	Project Name:	LHAAP - GWTP
Project Number:	NW01312.0150	Recorded By:	SCOTT BOESINGER

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
PID	Model: MINI RAE 3000 Bulb: 10.7 eV Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time: 0620 Initials: SB	Time: Initials:	Time: Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO 2980 SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
COMB. GAS/O_2 METER	Model: Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

					Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
WATER QUALITY METER	Model: Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974770

EQUIPMENT CALIBRATION DAILY LOG

Date:	5/21/20	Project Name:	LHAAP - GWTP
Project Number:	NW 01312.0150	Recorded By:	Scott Boesinger

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
PID	Model: MiniRAE 3000 Bulb: 10.7 eV Equipment ID #:				Time: 0700 Initials: SB	Time: Initials:	Time: Initials:
First Point Calibration	Parameter: Vapor conc. (ppm)	Standard: 0.0 (ambient air)	Exp. Date: NA	Lot#: NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Parameter: Vapor conc. (ppm)	Standard: 100 ppm (isobutylene)	Exp. Date: 10/5/21	Lot#: JBH-248-100-19	Value: SB	Value:	Value:

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
COMB. GAS/O_2 METER	Model: Equipment ID #:				Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration	Parameter: O2 (%)	Standard:	Exp. Date:	Lot#:	Value:	Value:	Value:
	Parameter: % LEL Pentane	Standard:	Exp. Date:	Lot#:	Value:	Value:	Value:

					Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
WATER QUALITY METER	Model: Equipment ID #:				Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974771

EQUIPMENT CALIBRATION DAILY LOG

Date:	5/27/20	Project Name:	LHAAP - GWTP
Project Number:	NW 0 1312.0150	Recorded By:	Scott Bassinger

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
PID	Model: MiniRAE 3000	Bulb: 10.7 eV					
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot#	Time: 0615	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-ZAP-100-19	Value: SB	Value:	Value:

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
COMB. GAS/O_2 METER	Model:						
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot#	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

					Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
WATER QUALITY METER	Model:						
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot#	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date:	6/1/20	Project Name:	LHAAP - GWTP
Project Number:	NW01312.0150	Recorded By:	SCOTT BEGGS / NGEA

PID

Model: MINI RAE 3000 Bulb: 10.6 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time: 0640	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974773

EQUIPMENT CALIBRATION DAILY LOG

Date:	6/4/20	Project Name:	LHAAP - GWTP
Project Number:	NW0 1312.0150	Recorded By:	Scott Beesinger

PID

Model: MiniRAE 3000 Bulb: 10.7 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time: 0650	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974774

EQUIPMENT CALIBRATION DAILY LOG

Date: 6/8/20

Project Number: NW01312.0158

Project Name: LHAAP-GWTP

Recorded By: Scott Boggs/NGP

PID	Model: MiniRAE 3000		Bulb: 10.7 eV		Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:				Time: 0625	Time:	Time:
	Parameter	Standard	Exp. Date	Lot #	Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	UBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER	Model:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:				Time:	Time:	Time:
	Parameter	Standard	Exp. Date	Lot #	Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:				Time:	Time:	Time:
	Parameter	Standard	Exp. Date	Lot #	Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date:	6/11/20	Project Name:	LHAAP - GWTP
Project Number:	NW01312.0158	Recorded By:	SCOTT BEGSINGER

PID

Model: MINI RAE 3000 Bulb: 10.6 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time: 0630	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/24	JBH-2AP-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974776

EQUIPMENT CALIBRATION DAILY LOG

Date:	6/15/20	Project Name:	LHAAP - GWTP
Project Number:	NW01312.0150	Recorded By:	Scott Beesinger

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
PID	Model: MiniRAE 3000	Bulb: 10.6 eV					
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot#	Time: 0625	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
COMB. GAS/O_2 METER	Model:						
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot#	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

					Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
WATER QUALITY METER	Model:						
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot#	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date:	6/18/20	Project Name:	LHAAP - GWTP
Project Number:	NW01312.0150	Recorded By:	Scott Boeslinger

PID					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
Model: MiniRAE 3000			Bulb: 10.6 eV		Time: 0645	Time:	Time:
Equipment ID #:					Initials: SB	Initials:	Initials:
	Parameter	Standard	Exp. Date	Lot#			
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	UBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
Model:					Time:	Time:	Time:
Equipment ID #:					Initials:	Initials:	Initials:
	Parameter	Standard	Exp. Date	Lot#			
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER					Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
Model:					Time:	Time:	Time:
Equipment ID #:					Initials:	Initials:	Initials:
	Parameter	Standard	Exp. Date	Lot#			
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date:	6/22/20	Project Name:	LHAAP - GWTP
Project Number:	NW01312.0150	Recorded By:	Scott Boessinger

PID

Model: MiniRAE 3000 Bulb: 10.7 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time: 0630	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	UBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date:	6/25/20	Project Name:	LHAAP-GWTP
Project Number:	NW01312.0150	Recorded By:	SCOTT BEGSINGER

PID

Model: MINI RAE 3000 Bulb: 10.6 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time: 0620	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974780

EQUIPMENT CALIBRATION DAILY LOG

Date:	6/29/20	Project Name:	LHAAP - GWTP
Project Number:	NW01312.0150	Recorded By:	Scott Beesinger

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
PID	Model: MiniRAE 3000 Bulb: 10.6 eV Equipment ID #:				Time: 0650 Initials: SB	Time: Initials:	Time: Initials:
First Point Calibration	Parameter: Vapor conc. (ppm)	Standard: 0.0 (ambient air)	Exp. Date: NA	Lot#: NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Parameter: Vapor conc. (ppm)	Standard: 100 ppm (isobutylene)	Exp. Date: 10/5/24	Lot#: UBH-248-100-19	Value: SB	Value:	Value:

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
COMB. GAS/O_2 METER	Model: Equipment ID #:				Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration	Parameter: O2 (%)	Standard:	Exp. Date:	Lot#:	Value:	Value:	Value:
	Parameter: % LEL Pentane	Standard:	Exp. Date:	Lot#:	Value:	Value:	Value:

					Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
WATER QUALITY METER	Model: Equipment ID #:				Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974781

EQUIPMENT CALIBRATION DAILY LOG

Date:	6/1/20	Project Name:	LHAAP - GWTP
Project Number:	NW01312.0150	Recorded By:	SCOTT BEGGS / NGA

						Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
PID	Model: MINI RAE 3000	Bulb: 10.6 eV						
	Equipment ID #:							
	Parameter	Standard	Exp. Date	Lot#		Time: 0640	Time:	Time:
						Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA		Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19		Value: SB	Value:	Value:

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
COMB. GAS/O_2 METER	Model:						
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot#	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

					Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
WATER QUALITY METER	Model:						
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot#	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974782

EQUIPMENT CALIBRATION DAILY LOG

Date:	6/4/20	Project Name:	LHAAP - GWTP
Project Number:	NW 0 1312.0150	Recorded By:	Scott Beesinger

						Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
PID	Model: MiniRAE 3000		Bulb: 10.7 eV					
	Equipment ID #:							
	Parameter	Standard	Exp. Date	Lot#		Time: 0650	Time:	Time:
						Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA		Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19		Value: SB	Value:	Value:

						Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
COMB. GAS/O_2 METER	Model:							
	Equipment ID #:							
	Parameter	Standard	Exp. Date	Lot#		Time:	Time:	Time:
						Initials:	Initials:	Initials:
First Point Calibration	O2 (%)					Value:	Value:	Value:
	% LEL Pentane					Value:	Value:	Value:

						Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
WATER QUALITY METER	Model:							
	Equipment ID #:							
	Parameter	Standard	Exp. Date	Lot#		Time:	Time:	Time:
						Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00				Value:	Value:	Value:
	Conductivity (mS/cm)	4.49				Value:	Value:	Value:
	Turbidity (NTU)	0				Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	Value:	Value:
Second Point Calibration	pH	6.86				Value:	Value:	Value:
	Conductivity (mS/cm)	53.7				Value:	Value:	Value:
	Turbidity (NTU)	100				Value:	Value:	Value:
Third Point Calibration	pH	9.18				Value:	Value:	Value:
	Conductivity (mS/cm)	53.7				Value:	Value:	Value:
	Turbidity (NTU)	100				Value:	Value:	Value:

Additional Remarks:

00974783

EQUIPMENT CALIBRATION DAILY LOG

Date:	6/8/20	Project Name:	LHAAP - GWTP
Project Number:	NW0/312.0158	Recorded By:	Scott Boggs/NGE

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
PID	Model: MiniRAE 3000 Bulb: 10.7 eV Equipment ID #:				Time: 0625	Time:	Time:
	Parameter	Standard	Exp. Date	Lot #	Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
COMB. GAS/O_2 METER	Model: Equipment ID #:				Time:	Time:	Time:
	Parameter	Standard	Exp. Date	Lot #	Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

					Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
WATER QUALITY METER	Model: Equipment ID #:				Time:	Time:	Time:
	Parameter	Standard	Exp. Date	Lot #	Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date:	6/11/20	Project Name:	LHAAP - GWTP
Project Number:	NW01312.0158	Recorded By:	Scott Baggenger

PID

Model: MiniRAE 3000 Bulb: 10.7 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time: 0630	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/24	JBH-2AP-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974785

EQUIPMENT CALIBRATION DAILY LOG

Date: 6/15/20 | Project Name: LHAAP - GWTP

Project Number: NW01312.0150 | Recorded By: Scott Beesinger

PID

Model: MiniRAE 3000 | Bulb: 10.6 eV | Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time: 0625	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model: | Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model: | Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date:	6/18/20	Project Name:	LHAAP - GWTP
Project Number:	NW01312.0150	Recorded By:	Scott Baesinger

PID					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
Model: MiniRAE 3000			Bulb: 10.6 eV				
Equipment ID #:							
	Parameter	Standard	Exp. Date	Lot#	Time: 0645	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	UBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
Model:							
Equipment ID #:							
	Parameter	Standard	Exp. Date	Lot#	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER					Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
Model:							
Equipment ID #:							
	Parameter	Standard	Exp. Date	Lot#	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date:	6/22/20	Project Name:	LHAAP - GWTP
Project Number:	NW0 1312.0150	Recorded By:	Scott Boesinger

PID	Model: MiniRAE 3000	Bulb: 10.7 eV			Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot#	Time: 0630	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	UBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER	Model:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot#	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot#	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

00974788

EQUIPMENT CALIBRATION DAILY LOG

Date:	6/25/20	Project Name:	LHAAP-GWTP
Project Number:	NW01312.0150	Recorded By:	SCOTT BEGSINGER

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
PID	Model: MINI RAE 3000	Bulb: 10.6 eV					
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time: 0620	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	JBH-248-100-19	Value: SB	Value:	Value:

					Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
COMB. GAS/O_2 METER	Model:						
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

					Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
WATER QUALITY METER	Model:						
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date:	6/29/20	Project Name:	LHAAP - GWTP
Project Number:	NW01312.0150	Recorded By:	Scott Beesinger

PID	Model: MiniRAE 3000	Bulb: 10.6 eV			Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time: 0650	Time:	Time:
					Initials: SB	Initials:	Initials:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	10/5/21	UBH-248-100-19	Value: SB	Value:	Value:

COMB. GAS/O_2 METER	Model:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

April 23, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20040284**

Laboratory Results for: **Longhorn GW Treatment Plant Monthly Effluent Samples**

Dear Marcia,

ALS Environmental received 3 sample(s) on Apr 08, 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: 23-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
Work Order: HS20040284

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20040284-01	LH18/24-SP650_040720	Water		07-Apr-2020 14:00	08-Apr-2020 08:22	☐
HS20040284-02	LH18/24-SP650_040720_BIX	Water		07-Apr-2020 14:00	08-Apr-2020 08:22	☐
HS20040284-03	Trip Blank	Water	CG-011520-99	07-Apr-2020 14:00	08-Apr-2020 08:22	☐

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
Work Order: HS20040284

Work Order Comments

• The analysis for Perchlorate was subcontracted to ALS High Resolution Lab in Houston, TX. Final report attached.

GCMS Semivolatiles by Method SW8270SIM

Batch ID: 152586

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

GCMS Volatiles by Method SW8260

Batch ID: R359664

Sample ID: LH18/24-SP650_040720 (HS20040284-01MSD)

• The RPD between the MS and MSD was outside of the control limit. Bromomethane

Sample ID: LH18/24-SP650_040720(HS20040284-01MS)

• The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MS may be due to sample matrix interference. 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene

Metals by Method SW6020

Batch ID: 152654

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

WetChemistry by Method SW7196

Batch ID: R359757

Sample ID: HS20040287-01MS

• MS and MSD are for an unrelated sample (Chromium, Hexavalent)

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS20040284

Sample ID: LH18/24-SP650_040720 Lab ID:HS20040284-01

Collection Date: 07-Apr-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 12:18
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Apr-2020 12:18
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 12:18
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 12:18
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	08-Apr-2020 12:18
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Apr-2020 12:18
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Apr-2020 12:18
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Apr-2020 12:18
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 12:18
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 12:18
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Apr-2020 12:18
1,2-Dichloroethane	**1.0**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Apr-2020 12:18
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Apr-2020 12:18
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Apr-2020 12:18
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Apr-2020 12:18
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 12:18
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	08-Apr-2020 12:18
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	08-Apr-2020 12:18
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Apr-2020 12:18
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	08-Apr-2020 12:18
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	08-Apr-2020 12:18
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 12:18
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Apr-2020 12:18
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 12:18
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 12:18
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	08-Apr-2020 12:18
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	08-Apr-2020 12:18
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	08-Apr-2020 12:18
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	08-Apr-2020 12:18
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 12:18

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

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS20040284

Sample ID: LH18/24-SP650_040720 Lab ID:HS20040284-01

Collection Date: 07-Apr-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 12:18
cis-1,2-Dichloroethene	**23**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Apr-2020 12:18
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	08-Apr-2020 12:18
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 12:18
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	08-Apr-2020 12:18
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	08-Apr-2020 12:18
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	08-Apr-2020 12:18
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Apr-2020 12:18
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 12:18
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 12:18
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 12:18
Trichloroethene	**4.4**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Apr-2020 12:18
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 12:18
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 12:18
Surr: 1,2-Dichloroethane-d4	*88.1*			**0**	*81-118*	*%REC*	*1*	*08-Apr-2020 12:18*
Surr: 4-Bromofluorobenzene	*94.7*			**0**	*85-114*	*%REC*	*1*	*08-Apr-2020 12:18*
Surr: Dibromofluoromethane	*93.7*			**0**	*80-119*	*%REC*	*1*	*08-Apr-2020 12:18*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*1*	*08-Apr-2020 12:18*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 09-Apr-2020		Analyst: LG
1,4-Dioxane	**33**	a	**1.0**	**1.0**	**1.0**	**ug/L**	100	15-Apr-2020 10:02
Surr: 2-Fluorobiphenyl	*119*			**0**	*40-140*	*%REC*	*100*	*15-Apr-2020 10:02*
Surr: 4-Terphenyl-d14	*98.2*			**0**	*40-140*	*%REC*	*100*	*15-Apr-2020 10:02*
Surr: Nitrobenzene-d5	*106*			**0**	*40-140*	*%REC*	*100*	*15-Apr-2020 10:02*
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Apr-2020		Analyst: JHD
Barium	**0.0926**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	14-Apr-2020 22:26
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	14-Apr-2020 22:26
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	14-Apr-2020 22:26
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	14-Apr-2020 22:26

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

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS20040284

Sample ID: LH18/24-SP650_040720 Lab ID:HS20040284-01

Collection Date: 07-Apr-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
HEXAVALENT CHROMIUM BY SW7196A		**Method:SW7196**						Analyst: KVL
Chromium, Hexavalent	0.0100	U	0.00600	0.0100	0.0100	mg/L	1	08-Apr-2020 13:00

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

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS20040284

Sample ID: LH18/24-SP650_040720_BIX Lab ID:HS20040284-02

Collection Date: 07-Apr-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: CGG
Subcontract Analysis	**0**		**0**	**0**	**0**	**NA**	1	22-Apr-2020 15:35

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

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS20040284

Sample ID: Trip Blank Lab ID:HS20040284-03

Collection Date: 07-Apr-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Apr-2020 11:54
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	08-Apr-2020 11:54
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Apr-2020 11:54
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Apr-2020 11:54
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Apr-2020 11:54
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Apr-2020 11:54
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Apr-2020 11:54
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Apr-2020 11:54
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Apr-2020 11:54
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	08-Apr-2020 11:54
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	08-Apr-2020 11:54
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Apr-2020 11:54
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	08-Apr-2020 11:54
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	08-Apr-2020 11:54
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Apr-2020 11:54
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	08-Apr-2020 11:54
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	08-Apr-2020 11:54
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	08-Apr-2020 11:54
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	08-Apr-2020 11:54
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54

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

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS20040284

Sample ID: Trip Blank Lab ID:HS20040284-03

Collection Date: 07-Apr-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	08-Apr-2020 11:54
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	08-Apr-2020 11:54
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	08-Apr-2020 11:54
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	08-Apr-2020 11:54
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Apr-2020 11:54
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Apr-2020 11:54
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	08-Apr-2020 11:54
Surr: 1,2-Dichloroethane-d4	*86.2*			**0**	*81-118*	*%REC*	*1*	*08-Apr-2020 11:54*
Surr: 4-Bromofluorobenzene	*97.7*			**0**	*85-114*	*%REC*	*1*	*08-Apr-2020 11:54*
Surr: Dibromofluoromethane	*92.7*			**0**	*80-119*	*%REC*	*1*	*08-Apr-2020 11:54*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*1*	*08-Apr-2020 11:54*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20040284

Batch ID: 152586 **Start Date:** 09 Apr 2020 08:59 **End Date:** 09 Apr 2020 15:00
Method: SV AQ SEP FUN EXTRACT-LOWLEV - 3510C **Prep Code:** 3510_B_SIM

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20040284-01	1	1000 (mL)	1 (mL)	0.001

Batch ID: 152654 **Start Date:** 13 Apr 2020 08:00 **End Date:** 13 Apr 2020 12:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20040284-01		10 (mL)	10 (mL)	1

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20040284

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 152586 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Water	
HS20040284-01	LH18/24-SP650_040720	07 Apr 2020 14:00		09 Apr 2020 08:59	15 Apr 2020 10:02	100
Batch ID: 152654 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Water	
HS20040284-01	LH18/24-SP650_040720	07 Apr 2020 14:00		13 Apr 2020 12:00	14 Apr 2020 22:26	1
Batch ID: R359664 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20040284-01	LH18/24-SP650_040720	07 Apr 2020 14:00			08 Apr 2020 12:18	1
HS20040284-03	Trip Blank	07 Apr 2020 14:00			08 Apr 2020 11:54	1
Batch ID: R359757 (0)	**Test Name :** HEXAVALENT CHROMIUM BY SW7196A				**Matrix:** Water	
HS20040284-01	LH18/24-SP650_040720	07 Apr 2020 14:00			08 Apr 2020 13:00	1
Batch ID: R360393 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS20040284-02	LH18/24-SP650_040720_BIX	07 Apr 2020 14:00			22 Apr 2020 15:35	1

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20040284

QC BATCH REPORT

Batch ID: 152654 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-152654** Units: **mg/L** Analysis Date: **14-Apr-2020 22:22**
Client ID: Run ID: **ICPMS06_359908** SeqNo: **5554534** PrepDate: **13-Apr-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.00250	0.00500								U
Lead	0.00100	0.00500								U
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U

LCS Sample ID: **LCS-152654** Units: **mg/L** Analysis Date: **14-Apr-2020 22:24**
Client ID: Run ID: **ICPMS06_359908** SeqNo: **5554535** PrepDate: **13-Apr-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.0444	0.00500	0.05	0	88.8	86 - 114				
Lead	0.04745	0.00500	0.05	0	94.9	88 - 115				
Selenium	0.04924	0.00500	0.05	0	98.5	80 - 120				
Silver	0.04991	0.00500	0.05	0	99.8	85 - 116				

MS Sample ID: **HS20040284-01MS** Units: **mg/L** Analysis Date: **14-Apr-2020 22:30**
Client ID: **LH18/24-SP650_040720** Run ID: **ICPMS06_359908** SeqNo: **5554538** PrepDate: **13-Apr-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.1467	0.00500	0.05	0.0926	108	86 - 114				
Lead	0.04767	0.00500	0.05	0.000112	95.1	88 - 115				
Selenium	0.04839	0.00500	0.05	0.000472	95.8	80 - 120				
Silver	0.04859	0.00500	0.05	0.00001	97.2	85 - 116				

MSD Sample ID: **HS20040284-01MSD** Units: **mg/L** Analysis Date: **14-Apr-2020 22:31**
Client ID: **LH18/24-SP650_040720** Run ID: **ICPMS06_359908** SeqNo: **5554539** PrepDate: **13-Apr-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.1459	0.00500	0.05	0.0926	107	86 - 114	0.1467	0.551	20	
Lead	0.04695	0.00500	0.05	0.000112	93.7	88 - 115	0.04767	1.51	20	
Selenium	0.04864	0.00500	0.05	0.000472	96.3	80 - 120	0.04839	0.501	20	
Silver	0.04748	0.00500	0.05	0.00001	94.9	85 - 116	0.04859	2.31	20	

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20040284

QC BATCH REPORT

Batch ID: 152654 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS20040284-01PDS** Units: **mg/L** Analysis Date: **14-Apr-2020 22:33**
Client ID: **LH18/24-SP650_040720** Run ID: **ICPMS06_359908** SeqNo: **5554540** PrepDate: **13-Apr-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.1983	0.00500	0.1	0.0926	106	80 - 120				
Lead	0.1037	0.00500	0.1	0.000112	104	80 - 120				
Selenium	0.1063	0.00500	0.1	0.000472	106	80 - 120				
Silver	0.08769	0.00500	0.1	0.00001	87.7	80 - 120				

SD Sample ID: **HS20040284-01SD** Units: **mg/L** Analysis Date: **14-Apr-2020 22:28**
Client ID: **LH18/24-SP650_040720** Run ID: **ICPMS06_359908** SeqNo: **5554537** PrepDate: **13-Apr-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Barium	0.09081	0.0250					0.0926	1.93	10	
Lead	0.00500	0.0250					0.000112	0	10	U
Selenium	0.0125	0.0250					0.000472	0	10	U
Silver	0.00250	0.0250					0.00001	0	10	U

The following samples were analyzed in this batch: HS20040284-01

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20040284

QC BATCH REPORT

Batch ID: 152586 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-152586** Units: **ug/L** Analysis Date: **15-Apr-2020 08:46**
Client ID: Run ID: **SV-6_359980** SeqNo: **5554903** PrepDate: **09-Apr-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0	0.010								U
Surr: 2-Fluorobiphenyl	*0.08784*	*0*	*0.08*	*0*	*110*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.1047*	*0*	*0.08*	*0*	*131*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.08097*	*0*	*0.08*	*0*	*101*	*40 - 140*				

LCS Sample ID: **LCS-152586** Units: **ug/L** Analysis Date: **15-Apr-2020 09:05**
Client ID: Run ID: **SV-6_359980** SeqNo: **5554904** PrepDate: **09-Apr-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.08403	0.010	0.08	0	105	40 - 140				
Surr: 2-Fluorobiphenyl	*0.08779*	*0*	*0.08*	*0*	*110*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.09546*	*0*	*0.08*	*0*	*119*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.08257*	*0*	*0.08*	*0*	*103*	*40 - 140*				

LCSD Sample ID: **LCSD-152586** Units: **ug/L** Analysis Date: **15-Apr-2020 09:24**
Client ID: Run ID: **SV-6_359980** SeqNo: **5554905** PrepDate: **09-Apr-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.08173	0.010	0.08	0	102	40 - 140	0.08403	2.77	20	
Surr: 2-Fluorobiphenyl	*0.08523*	*0*	*0.08*	*0*	*107*	*40 - 140*	*0.08779*	*2.96*	*20*	
Surr: 4-Terphenyl-d14	*0.1012*	*0*	*0.08*	*0*	*127*	*40 - 140*	*0.09546*	*5.85*	*20*	
Surr: Nitrobenzene-d5	*0.08076*	*0*	*0.08*	*0*	*101*	*40 - 140*	*0.08257*	*2.22*	*20*	

The following samples were analyzed in this batch: HS20040284-01

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20040284

QC BATCH REPORT

Batch ID: R359664 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200408** Units: **UG/L** Analysis Date: **08-Apr-2020 11:30**
Client ID: Run ID: **VOA6_359664** SeqNo: **5548777** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20040284

QC BATCH REPORT

Batch ID: R359664 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200408** Units: **UG/L** Analysis Date: **08-Apr-2020 11:30**
Client ID: Run ID: **VOA6_359664** SeqNo: **5548777** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*43.53*	*1.0*	*50*	*0*	*87.1*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.56*	*1.0*	*50*	*0*	*97.1*	*85 - 114*				
Surr: Dibromofluoromethane	*47.4*	*1.0*	*50*	*0*	*94.8*	*80 - 119*				
Surr: Toluene-d8	*51.72*	*1.0*	*50*	*0*	*103*	*89 - 112*				

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20040284

QC BATCH REPORT

Batch ID: R359664 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200408** Units: **UG/L** Analysis Date: **08-Apr-2020 14:22**
Client ID: Run ID: **VOA6_359664** SeqNo: **5548782** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.29	1.0	20	0	101	78 - 124				
1,1,1-Trichloroethane	19	1.0	20	0	95.0	74 - 131				
1,1,2,2-Tetrachloroethane	19.67	1.0	20	0	98.4	71 - 121				
1,1,2-Trichloroethane	19.7	1.0	20	0	98.5	80 - 119				
1,1-Dichloroethane	19.35	1.0	20	0	96.7	77 - 125				
1,1-Dichloroethene	17.16	1.0	20	0	85.8	71 - 131				
1,1-Dichloropropene	17.2	1.0	20	0	86.0	78 - 125				
1,2,3-Trichlorobenzene	18.78	1.0	20	0	93.9	69 - 129				
1,2,3-Trichloropropane	19.84	1.0	20	0	99.2	73 - 122				
1,2,4-Trichlorobenzene	17.47	1.0	20	0	87.3	69 - 130				
1,2,4-Trimethylbenzene	19.71	1.0	20	0	98.5	76 - 124				
1,2-Dibromo-3-chloropropane	19.62	1.0	20	0	98.1	62 - 128				
1,2-Dibromoethane	20.45	1.0	20	0	102	77 - 121				
1,2-Dichlorobenzene	20.38	1.0	20	0	102	80 - 119				
1,2-Dichloroethane	20.37	1.0	20	0	102	73 - 128				
1,2-Dichloropropane	19.62	1.0	20	0	98.1	78 - 122				
1,3,5-Trimethylbenzene	19.07	1.0	20	0	95.4	75 - 124				
1,3-Dichlorobenzene	20.37	1.0	20	0	102	80 - 119				
1,3-Dichloropropane	19.4	1.0	20	0	97.0	80 - 119				
1,4-Dichlorobenzene	19.66	1.0	20	0	98.3	79 - 118				
2,2-Dichloropropane	19.82	1.0	20	0	99.1	60 - 139				
2-Butanone	38.15	2.0	40	0	95.4	56 - 143				
2-Chlorotoluene	19.69	1.0	20	0	98.4	79 - 122				
2-Hexanone	41.1	2.0	40	0	103	57 - 139				
4-Chlorotoluene	19.73	1.0	20	0	98.7	78 - 122				
4-Isopropyltoluene	19.05	1.0	20	0	95.2	77 - 127				
4-Methyl-2-pentanone	39.34	2.0	40	0	98.3	67 - 130				
Acetone	29	2.0	40	0	72.5	39 - 160				
Benzene	19.3	1.0	20	0	96.5	79 - 120				
Bromobenzene	20.77	1.0	20	0	104	80 - 120				
Bromochloromethane	20.6	1.0	20	0	103	78 - 123				
Bromodichloromethane	19.54	1.0	20	0	97.7	79 - 125				
Bromoform	21.51	1.0	20	0	108	66 - 130				
Bromomethane	21.78	1.0	20	0	109	53 - 141				

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20040284

QC BATCH REPORT

Batch ID: R359664 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200408** Units: **UG/L** Analysis Date: **08-Apr-2020 14:22**
Client ID: Run ID: **VOA6_359664** SeqNo: **5548782** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	35.27	2.0	40	0	88.2	64 - 133				
Carbon tetrachloride	17.29	1.0	20	0	86.5	72 - 136				
Chlorobenzene	20.08	1.0	20	0	100	82 - 118				
Chloroethane	17.12	1.0	20	0	85.6	60 - 138				
Chloroform	19.74	1.0	20	0	98.7	79 - 124				
Chloromethane	16.87	1.0	20	0	84.4	50 - 139				
cis-1,2-Dichloroethene	19.49	1.0	20	0	97.4	78 - 123				
cis-1,3-Dichloropropene	19.37	1.0	20	0	96.8	75 - 124				
Dibromochloromethane	20.44	1.0	20	0	102	74 - 126				
Dibromomethane	20.2	1.0	20	0	101	79 - 123				
Dichlorodifluoromethane	14.89	1.0	20	0	74.4	32 - 152				
Ethylbenzene	19.18	1.0	20	0	95.9	79 - 121				
Hexachlorobutadiene	15.81	1.0	20	0	79.0	66 - 134				
Isopropylbenzene	18.84	1.0	20	0	94.2	72 - 131				
m,p-Xylene	39.52	2.0	40	0	98.8	80 - 121				
Methylene chloride	18.68	2.0	20	0	93.4	74 - 124				
Naphthalene	18.13	1.0	20	0	90.7	61 - 128				
n-Butylbenzene	18.78	1.0	20	0	93.9	75 - 128				
n-Propylbenzene	19.02	1.0	20	0	95.1	76 - 126				
o-Xylene	19.94	1.0	20	0	99.7	78 - 122				
sec-Butylbenzene	18.16	1.0	20	0	90.8	77 - 126				
Styrene	20.09	1.0	20	0	100	78 - 123				
tert-Butylbenzene	18.5	1.0	20	0	92.5	78 - 124				
Tetrachloroethene	18.85	1.0	20	0	94.3	74 - 129				
Toluene	19.62	1.0	20	0	98.1	80 - 121				
trans-1,2-Dichloroethene	19.05	1.0	20	0	95.2	75 - 124				
trans-1,3-Dichloropropene	20.08	1.0	20	0	100	73 - 127				
Trichloroethene	19.44	1.0	20	0	97.2	79 - 123				
Trichlorofluoromethane	17.51	1.0	20	0	87.5	65 - 141				
Vinyl chloride	15.19	1.0	20	0	75.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*48.49*	*1.0*	*50*	*0*	*97.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.97*	*1.0*	*50*	*0*	*99.9*	*85 - 114*				
Surr: Dibromofluoromethane	*50.73*	*1.0*	*50*	*0*	*101*	*80 - 119*				
Surr: Toluene-d8	*49.46*	*1.0*	*50*	*0*	*98.9*	*89 - 112*				

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20040284

QC BATCH REPORT

Batch ID: R359664 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20040284-01MS** Units: **UG/L** Analysis Date: **08-Apr-2020 12:42**
Client ID: **LH18/24-SP650_040720** Run ID: **VOA6_359664** SeqNo: **5548780** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	22.85	1.0	20	0	114	78 - 124				
1,1,1-Trichloroethane	22.05	1.0	20	0	110	74 - 131				
1,1,2,2-Tetrachloroethane	20.6	1.0	20	0	103	71 - 121				
1,1,2-Trichloroethane	21.69	1.0	20	0	108	80 - 119				
1,1-Dichloroethane	21.08	1.0	20	0	105	77 - 125				
1,1-Dichloroethene	20	1.0	20	0	100	71 - 131				
1,1-Dichloropropene	21.05	1.0	20	0	105	78 - 125				
1,2,3-Trichlorobenzene	12.27	1.0	20	0	61.4	69 - 129				S
1,2,3-Trichloropropane	21.24	1.0	20	0	106	73 - 122				
1,2,4-Trichlorobenzene	12.85	1.0	20	0	64.2	69 - 130				S
1,2,4-Trimethylbenzene	23.3	1.0	20	0	117	76 - 124				
1,2-Dibromo-3-chloropropane	18.95	1.0	20	0	94.7	62 - 128				
1,2-Dibromoethane	22.46	1.0	20	0	112	77 - 121				
1,2-Dichlorobenzene	22.89	1.0	20	0	114	80 - 119				
1,2-Dichloroethane	22.23	1.0	20	1.016	106	73 - 128				
1,2-Dichloropropane	21.18	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	23.43	1.0	20	0	117	75 - 124				
1,3-Dichlorobenzene	22.93	1.0	20	0	115	80 - 119				
1,3-Dichloropropane	21.34	1.0	20	0	107	80 - 119				
1,4-Dichlorobenzene	22.13	1.0	20	0	111	79 - 118				
2,2-Dichloropropane	21.87	1.0	20	0	109	60 - 139				
2-Butanone	34.68	2.0	40	0	86.7	56 - 143				
2-Chlorotoluene	23.22	1.0	20	0	116	79 - 122				
2-Hexanone	40.15	2.0	40	0	100	57 - 139				
4-Chlorotoluene	23.33	1.0	20	0	117	78 - 122				
4-Isopropyltoluene	23.97	1.0	20	0	120	77 - 127				
4-Methyl-2-pentanone	40.63	2.0	40	0	102	67 - 130				
Acetone	25.48	2.0	40	0	63.7	39 - 160				
Benzene	21.67	1.0	20	0	108	79 - 120				
Bromobenzene	23.47	1.0	20	0	117	80 - 120				
Bromochloromethane	20.58	1.0	20	0	103	78 - 123				
Bromodichloromethane	21.14	1.0	20	0	106	79 - 125				
Bromoform	22.66	1.0	20	0	113	66 - 130				
Bromomethane	23.23	1.0	20	0	116	53 - 141				

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20040284

QC BATCH REPORT

Batch ID: R359664 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20040284-01MS** Units: **UG/L** Analysis Date: **08-Apr-2020 12:42**
Client ID: **LH18/24-SP650_040720** Run ID: **VOA6_359664** SeqNo: **5548780** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	42.76	2.0	40	0	107	64 - 133				
Carbon tetrachloride	21.86	1.0	20	0	109	72 - 136				
Chlorobenzene	22.56	1.0	20	0	113	82 - 118				
Chloroethane	20.43	1.0	20	0	102	60 - 138				
Chloroform	20.74	1.0	20	0	104	79 - 124				
Chloromethane	19.84	1.0	20	0	99.2	50 - 139				
cis-1,2-Dichloroethene	43.9	1.0	20	22.55	107	78 - 123				
cis-1,3-Dichloropropene	20.68	1.0	20	0	103	75 - 124				
Dibromochloromethane	22.19	1.0	20	0	111	74 - 126				
Dibromomethane	21.68	1.0	20	0	108	79 - 123				
Dichlorodifluoromethane	19.18	1.0	20	0	95.9	32 - 152				
Ethylbenzene	22.98	1.0	20	0	115	79 - 121				
Hexachlorobutadiene	15.34	1.0	20	0	76.7	66 - 134				
Isopropylbenzene	23.37	1.0	20	0	117	72 - 131				
m,p-Xylene	45.72	2.0	40	0	114	80 - 121				
Methylene chloride	19.76	2.0	20	0	98.8	74 - 124				
Naphthalene	13.91	1.0	20	0	69.5	61 - 128				
n-Butylbenzene	23.4	1.0	20	0	117	75 - 128				
n-Propylbenzene	24.17	1.0	20	0	121	76 - 126				
o-Xylene	22.98	1.0	20	0	115	78 - 122				
sec-Butylbenzene	23.85	1.0	20	0	119	77 - 126				
Styrene	22.38	1.0	20	0	112	78 - 123				
tert-Butylbenzene	23.41	1.0	20	0	117	78 - 124				
Tetrachloroethene	24.16	1.0	20	0	121	74 - 129				
Toluene	22.55	1.0	20	0	113	80 - 121				
trans-1,2-Dichloroethene	21.14	1.0	20	0	106	75 - 124				
trans-1,3-Dichloropropene	21.25	1.0	20	0	106	73 - 127				
Trichloroethene	27.18	1.0	20	4.422	114	79 - 123				
Trichlorofluoromethane	21.94	1.0	20	0	110	65 - 141				
Vinyl chloride	19.18	1.0	20	0	95.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*44.5*	*1.0*	*50*	*0*	*89.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.26*	*1.0*	*50*	*0*	*96.5*	*85 - 114*				
Surr: Dibromofluoromethane	*47.74*	*1.0*	*50*	*0*	*95.5*	*80 - 119*				
Surr: Toluene-d8	*51.5*	*1.0*	*50*	*0*	*103*	*89 - 112*				

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20040284

QC BATCH REPORT

Batch ID: R359664 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20040284-01MSD** Units: **UG/L** Analysis Date: **08-Apr-2020 13:06**
Client ID: **LH18/24-SP650_040720** Run ID: **VOA6_359664** SeqNo: **5548781** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.94	1.0	20	0	105	78 - 124	22.85	8.7	20	
1,1,1-Trichloroethane	19.52	1.0	20	0	97.6	74 - 131	22.05	12.2	20	
1,1,2,2-Tetrachloroethane	18.58	1.0	20	0	92.9	71 - 121	20.6	10.3	20	
1,1,2-Trichloroethane	19.55	1.0	20	0	97.7	80 - 119	21.69	10.4	20	
1,1-Dichloroethane	18.58	1.0	20	0	92.9	77 - 125	21.08	12.7	20	
1,1-Dichloroethene	17.79	1.0	20	0	89.0	71 - 131	20	11.7	20	
1,1-Dichloropropene	18.86	1.0	20	0	94.3	78 - 125	21.05	11	20	
1,2,3-Trichlorobenzene	14.56	1.0	20	0	72.8	69 - 129	12.27	17.1	20	
1,2,3-Trichloropropane	18.93	1.0	20	0	94.7	73 - 122	21.24	11.5	20	
1,2,4-Trichlorobenzene	14.12	1.0	20	0	70.6	69 - 130	12.85	9.41	20	
1,2,4-Trimethylbenzene	20.88	1.0	20	0	104	76 - 124	23.3	11	20	
1,2-Dibromo-3-chloropropane	19.15	1.0	20	0	95.7	62 - 128	18.95	1.07	20	
1,2-Dibromoethane	20.25	1.0	20	0	101	77 - 121	22.46	10.3	20	
1,2-Dichlorobenzene	20.19	1.0	20	0	101	80 - 119	22.89	12.6	20	
1,2-Dichloroethane	20.2	1.0	20	1.016	95.9	73 - 128	22.23	9.56	20	
1,2-Dichloropropane	19.34	1.0	20	0	96.7	78 - 122	21.18	9.09	20	
1,3,5-Trimethylbenzene	20.47	1.0	20	0	102	75 - 124	23.43	13.5	20	
1,3-Dichlorobenzene	20.35	1.0	20	0	102	80 - 119	22.93	11.9	20	
1,3-Dichloropropane	19.54	1.0	20	0	97.7	80 - 119	21.34	8.81	20	
1,4-Dichlorobenzene	19.82	1.0	20	0	99.1	79 - 118	22.13	11	20	
2,2-Dichloropropane	19.04	1.0	20	0	95.2	60 - 139	21.87	13.8	20	
2-Butanone	32.55	2.0	40	0	81.4	56 - 143	34.68	6.32	20	
2-Chlorotoluene	20.32	1.0	20	0	102	79 - 122	23.22	13.3	20	
2-Hexanone	38.1	2.0	40	0	95.2	57 - 139	40.15	5.24	20	
4-Chlorotoluene	20.66	1.0	20	0	103	78 - 122	23.33	12.1	20	
4-Isopropyltoluene	21.41	1.0	20	0	107	77 - 127	23.97	11.3	20	
4-Methyl-2-pentanone	37.95	2.0	40	0	94.9	67 - 130	40.63	6.81	20	
Acetone	21.26	2.0	40	0	53.1	39 - 160	25.48	18.1	20	
Benzene	19.43	1.0	20	0	97.1	79 - 120	21.67	10.9	20	
Bromobenzene	20.61	1.0	20	0	103	80 - 120	23.47	13	20	
Bromochloromethane	18.68	1.0	20	0	93.4	78 - 123	20.58	9.7	20	
Bromodichloromethane	19.26	1.0	20	0	96.3	79 - 125	21.14	9.33	20	
Bromoform	20.8	1.0	20	0	104	66 - 130	22.66	8.55	20	
Bromomethane	18.9	1.0	20	0	94.5	53 - 141	23.23	20.6	20	R

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20040284

QC BATCH REPORT

Batch ID: R359664 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20040284-01MSD** Units: **UG/L** Analysis Date: **08-Apr-2020 13:06**
Client ID: **LH18/24-SP650_040720** Run ID: **VOA6_359664** SeqNo: **5548781** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	37.65	2.0	40	0	94.1	64 - 133	42.76	12.7	20	
Carbon tetrachloride	19.52	1.0	20	0	97.6	72 - 136	21.86	11.4	20	
Chlorobenzene	20.25	1.0	20	0	101	82 - 118	22.56	10.8	20	
Chloroethane	16.76	1.0	20	0	83.8	60 - 138	20.43	19.7	20	
Chloroform	18.57	1.0	20	0	92.9	79 - 124	20.74	11	20	
Chloromethane	17	1.0	20	0	85.0	50 - 139	19.84	15.4	20	
cis-1,2-Dichloroethene	39.86	1.0	20	22.55	86.5	78 - 123	43.9	9.65	20	
cis-1,3-Dichloropropene	19.37	1.0	20	0	96.9	75 - 124	20.68	6.54	20	
Dibromochloromethane	20.48	1.0	20	0	102	74 - 126	22.19	8.03	20	
Dibromomethane	19.8	1.0	20	0	99.0	79 - 123	21.68	9.08	20	
Dichlorodifluoromethane	16.42	1.0	20	0	82.1	32 - 152	19.18	15.5	20	
Ethylbenzene	20.8	1.0	20	0	104	79 - 121	22.98	9.96	20	
Hexachlorobutadiene	15.66	1.0	20	0	78.3	66 - 134	15.34	2.04	20	
Isopropylbenzene	21.25	1.0	20	0	106	72 - 131	23.37	9.51	20	
m,p-Xylene	41.53	2.0	40	0	104	80 - 121	45.72	9.6	20	
Methylene chloride	17.7	2.0	20	0	88.5	74 - 124	19.76	11	20	
Naphthalene	14.84	1.0	20	0	74.2	61 - 128	13.91	6.49	20	
n-Butylbenzene	21.08	1.0	20	0	105	75 - 128	23.4	10.4	20	
n-Propylbenzene	21.36	1.0	20	0	107	76 - 126	24.17	12.3	20	
o-Xylene	20.54	1.0	20	0	103	78 - 122	22.98	11.2	20	
sec-Butylbenzene	21.19	1.0	20	0	106	77 - 126	23.85	11.8	20	
Styrene	19.8	1.0	20	0	99.0	78 - 123	22.38	12.2	20	
tert-Butylbenzene	20.89	1.0	20	0	104	78 - 124	23.41	11.4	20	
Tetrachloroethene	21.98	1.0	20	0	110	74 - 129	24.16	9.48	20	
Toluene	20.41	1.0	20	0	102	80 - 121	22.55	9.94	20	
trans-1,2-Dichloroethene	19.07	1.0	20	0	95.4	75 - 124	21.14	10.3	20	
trans-1,3-Dichloropropene	19.52	1.0	20	0	97.6	73 - 127	21.25	8.45	20	
Trichloroethene	24.84	1.0	20	4.422	102	79 - 123	27.18	8.98	20	
Trichlorofluoromethane	19.03	1.0	20	0	95.2	65 - 141	21.94	14.2	20	
Vinyl chloride	16.47	1.0	20	0	82.4	58 - 137	19.18	15.2	20	
Surr: 1,2-Dichloroethane-d4	*43.18*	*1.0*	*50*	*0*	*86.4*	*81 - 118*	*44.5*	*3.01*	*20*	
Surr: 4-Bromofluorobenzene	*49.07*	*1.0*	*50*	*0*	*98.1*	*85 - 114*	*48.26*	*1.66*	*20*	
Surr: Dibromofluoromethane	*47.01*	*1.0*	*50*	*0*	*94.0*	*80 - 119*	*47.74*	*1.56*	*20*	
Surr: Toluene-d8	*51.23*	*1.0*	*50*	*0*	*102*	*89 - 112*	*51.5*	*0.528*	*20*	

ALS Houston, US Date: 23-Apr-20

Client:	Bhate Environmental Associates, Inc.
Project:	Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder:	HS20040284

QC BATCH REPORT

Batch ID:	**R359664 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch: HS20040284-01 HS20040284-03

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20040284

QC BATCH REPORT

Batch ID: R359757 (0) **Instrument: UV-2450** **Method: HEXAVALENT CHROMIUM BY SW7196A**

MBLK Sample ID: **MBLK-R359757** Units: **mg/L** Analysis Date: **08-Apr-2020 13:00**
Client ID: Run ID: **UV-2450_359757** SeqNo: **5549696** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.0100	0.0100								U

LCS Sample ID: **LCS-R359757** Units: **mg/L** Analysis Date: **08-Apr-2020 13:00**
Client ID: Run ID: **UV-2450_359757** SeqNo: **5549695** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.271	0.0100	0.25	0	108	90 - 111				

LCSD Sample ID: **LCSD-R359757** Units: **mg/L** Analysis Date: **08-Apr-2020 13:00**
Client ID: Run ID: **UV-2450_359757** SeqNo: **5549694** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.272	0.0100	0.25	0	109	90 - 111	0.271	0.368	20	

MS Sample ID: **HS20040287-01MS** Units: **mg/L** Analysis Date: **08-Apr-2020 13:00**
Client ID: Run ID: **UV-2450_359757** SeqNo: **5549698** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.219	0.0100	0.25	-0.001	88.0	90 - 111				S

MSD Sample ID: **HS20040287-01MSD** Units: **mg/L** Analysis Date: **08-Apr-2020 13:00**
Client ID: Run ID: **UV-2450_359757** SeqNo: **5549697** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.209	0.0100	0.25	-0.001	84.0	90 - 111	0.219	4.67	20	S

The following samples were analyzed in this batch: HS20040284-01

ALS Houston, US Date: 23-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: **HS20040284**

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: 23-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
Work Order: HS20040284

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20040284-01	LH18/24-SP650_040720	Login	4/8/2020 9:26:18 AM	PMG	EXT047
HS20040284-01	LH18/24-SP650_040720	Login	4/8/2020 9:26:18 AM	PMG	WET293
HS20040284-01	LH18/24-SP650_040720	Login	4/8/2020 9:26:18 AM	PMG	MET031
HS20040284-01	LH18/24-SP650_040720	Login	4/8/2020 9:26:18 AM	PMG	VOA122
HS20040284-02	LH18/24-SP650_040720_BIX	Login	4/8/2020 9:26:18 AM	PMG	Sub
HS20040284-03	Trip Blank	Login	4/8/2020 9:26:18 AM	PMG	VOA122

ALS Houston, US Date: 23-Apr-20

Sample Receipt Checklist

Client Name: Bhate Environmental
Work Order: HS20040284
Date/Time Received: **08-Apr-2020 08:22**
Received by: **AC**

Checklist completed by: *Paresh M. Giga* eSignature 8-Apr-2020 Date
Reviewed by: *RJ Modashia* eSignature 8-Apr-2020 Date

Matrices: **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):	2.5C U/C	IR25
Cooler(s)/Kit(s):	2759	
Date/Time sample(s) sent to storage:	4/8/2020 09:45	

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:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd., Suite 210 Houston, TX 77099 (281) 530 – 5656 ATTN: RJ Modashia

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.: NWO1312.0150.0 16.0001

Job:
GROUNDWATER TREATMENT PLANT MONTHLY EFFLUENT SAMPLES

Prepared By: Scott Beesinger

P.O. Number

HS20040284
Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Monthly Effluent Sample

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: VOLATILES	SILVER, SELENIUM, LEAD, BARIUM	HEXAVALENT CHROMIUM	1, 4 - DIOXANE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_040720	Water	04/07/20 / 14:00		3	X					HCL	
LH18/24-SP650_040720	Water	04/07/20 / 14:00		2			X	X		NONE	
LH18/24-SP650_040720_BIX	Water	04/07/20 / 14:00		1					X	NONE	
LH18/24-SP650_040720	Water	04/07/20 / 14:00		1		X				HNO3	
Trip Blank	Water	04/07/20		2	X					HCL	

Additional Remarks: **24 HR TAT on VOC's. Standard TAT on all other parameters**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	04/07/20	14:30	AC	4/8/2020	08:22						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

c/c 2.5 IR#25 cf0.0 2759

(Word) S:\1-ces\Forms\Chain of Custody - 16Weekly

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

CUSTODY SEAL

Date: 4/7/20 Time: 1430
Name: Scott Buechler
Company: ALS

Seal Broken By:
4/8/20

TRK# 4380 9533 6806
0221

WED - 08 APR 10:30A
PRIORITY OVERNIGHT

AB SGRA 2759 77099
TX-US
IAH

3B53255 08Apr 00

April 22, 2020 Service Request No:E2000304

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

Laboratory Results for: HS20040284

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory April 07, 2020
For your reference, these analyses have been assigned our service request number **E2000304.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2000304
Project:	HS20040284	**Date Received:**	04/08/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 04/08/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000143: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2000304
Project: HS20040284

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000304-001	LH18/24-SP650_040720_BIX	4/7/2020	1400

Service Request Summary

Folder #: **E2000304**
Client Name: ALS Environmental - US
Project Name: HS20040284
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 04/07/20
Internal Due Date: 4/22/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20040284
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000304-001	LH18/24-SP650_040720_BIX	Water	04/07/20 1400	**IV**

Service Request Summary

Folder #:	**E2000304**
Client Name:	ALS Environmental - US
Project Name:	HS20040284
Project Number:	

Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	04/07/20
Internal Due Date:	4/22/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20040284
EDD:	No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-WIC 10B

Pressure Gas:

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2020
California Department of Health Services	2919	4/30/2020
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	TX02694	4/30/2020
Illinois Environmental Protection Agency	2000322019-2	5/9/2020
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2020
Nevada Department of Concervation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209419	4/24/2020
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Concervation	04016	6/30/2020
Texas Commision on Environmental Quality	TX104704231-19-25	4/30/2020
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

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:** **13658**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

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:	HS20040284
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20040284-02**	**LH18/24-SP650_040720_BIX**	**Water**	**07 Apr 2020 14:00**
	SUB_Perch-6850			22 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: _____ Date/Time: 4/8/2020 11:42.

Received By: _____ Date/Time: 4/8/2020 11:42

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

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project Air-4

Thermometer ID 9MM4

Date/Time Received: 4/8/20 Initials: CH Date/Time Logged in: 4/8/20 Initials CH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ ALS Courier ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No
   Were they intact? ○ Yes ○ No ✓ N/A
   Were they signed and dated? ○ Yes ○ No ✓ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
~		4/8/20	1442	CH	2.6 H.O	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 357146 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/DBOTROS **Prep Method:** Method **Prep Date/Time:** 4/20/20 09:32

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000275-001	M1Q2014	.01	6850/ClO4 DOD			Water	10mL	
2	E2000275-002	PZ-373-NS	.01	6850/ClO4 DOD			Water	10mL	
3	E2000275-003	PZ-489-NS	.01	6850/ClO4 DOD			Water	10mL	
4	E2000287-001	LH18/24-SP650_033120_BIX	.01	6850/ClO4 DOD			Water	10mL	
5	E2000303-001	LH18/24-SP650_040720_BIX	.01	6850/ClO4 DOD			Water	10mL	
6	E2000304-001	LH18/24-SP650_040720_BIX	.01	6850/ClO4 DOD			Water	10mL	
7	E2000305-001	LH18/24-SP140_040720	.01	6850/ClO4 DOD			Water	10mL	
8	EQ2000143-01	MB		6850/ClO4 DOD			Liquid	10mL	
9	EQ2000143-02	LCS		6850/ClO4 DOD			Liquid	10mL	
10	EQ2000143-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 202037 Logbook Ref: Sodium Perchlorate Expires On: 05/22/2021

E2000275-001	100.00µL	E2000275-002	100.00µL	E2000275-003	100.00µL	E2000287-001	100.00µL	E2000303-001	100.00µL	E2000304-001	100.00µL
E2000305-001	100.00µL	EQ2000143-01	100.00µL	EQ2000143-02	100.00µL	EQ2000143-03	100.00µL				

Name: Perchlorate Intermediate Stock1 Inventory ID 204799 Logbook Ref: 200657 1.0ug/mL KN Expires On: 05/15/2020

EQ2000143-02	1.00µL	EQ2000143-03	1.00µL

Preparation Steps

Step: Preparation
Started: 4/20/20 09:32
Finished: 4/20/20 10:00
By: KBROWN
Comments

Comments: _____

Reviewed By: kn Date: 04/20/2020

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

ALS Environmental - Houston HRMS
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Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000304
Project:	HS20040284	**Date Collected:**	4/ 7/20 1400
Sample Matrix:	Water	**Date Received:**	4/ 7/20
Sample Name:	LH18/24-SP650_040720_BIX	**Units:**	µg/L
Lab Code:	E2000304-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	4/20/20	4/22/20 13:24	357146	677638	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000304
Project:	HS20040284	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000143-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	4/20/20	4/20/20 15:10	357146	677504	

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000304
Project:	HS20040284	**Date Analyzed:**	4/20/20
Sample Matrix:	Water		

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	357146

	Lab Control Sample EQ2000143-02			Duplicate Lab Control Sample EQ2000143-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.112	0.100	112	0.113	0.100	113	84 - 119	1	15

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

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000304
Project:	HS20040284	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000143-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.112**		0.100	0.0500	0.0250	1	4/20/20	4/20/20 15:18	357146	677504	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000304
Project:	HS20040284	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000143-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.113**		0.100	0.0500	0.0250	1	4/20/20	4/20/20 15:26	357146	677504	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200420

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200420_001	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:01
	null		20200420_002	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:06
	DIBLK		20200420_003	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:11
	IB		20200420_004	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:19
	PERCHLORATE7		20200420_005	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 13:27
	LODV		20200420_006	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:35
	PERCHLORATE1		20200420_007	Perchlorate6850b.lcm	1x	☒	3100804-05	4/20/2020 13:43
	PERCHLORATE2		20200420_008	Perchlorate6850b.lcm	1x	☒	3100804-06	4/20/2020 13:51
	PERCHLORATE3		20200420_009	Perchlorate6850b.lcm	1x	☒	3100804-07	4/20/2020 13:58
	PERCHLORATE4		20200420_010	Perchlorate6850b.lcm	1x	☒	3100804-08	4/20/2020 14:06
	PERCHLORATE5		20200420_011	Perchlorate6850b.lcm	1x	☒	3100804-09	4/20/2020 14:14
	PERCHLORATE6		20200420_012	Perchlorate6850b.lcm	1x	☒	3100805-01	4/20/2020 14:22
	PERCHLORATE8		20200420_013	Perchlorate6850b.lcm	1x	☒	3100805-03	4/20/2020 14:30
	PERCHLORATE9		20200420_014	Perchlorate6850b.lcm	1x	☒	3100805-04	4/20/2020 14:38
	PERCHLORATE10		20200420_015	Perchlorate6850b.lcm	1x	☒	3100805-05	4/20/2020 14:46
	ICV		20200420_016	Perchlorate6850b.lcm	1x	☒	3100805-06	4/20/2020 14:54
	LODV		20200420_017	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:02
	EQ2000143-01		20200420_018	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:10
	EQ2000143-02		20200420_019	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:18
	EQ2000143-03		20200420_020	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:26
	E2000275-001		20200420_021	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:33
	E2000275-002		20200420_022	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:41
	E2000275-003		20200420_023	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:49
	E2000287-001		20200420_024	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:57
	E2000303-001		20200420_025	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:05
	E2000304-001		20200420_026	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:13
	E2000305-001		20200420_027	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:21
	PERCHLORATE7		20200420_028	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 16:29
	E2000303-001		20200420_029	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:47
	E2000304-001		20200420_030	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:55
	PERCHLORATE7		20200420_031	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 17:02

Initial Calibration - Detailed Report

Calibration ID: EC2000003 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
08	EC2000003-08	PERCHLORATE7	20200420_005	04/20/2020 13:27
01	EC2000003-01	PERCHLORATE1	20200420_007	04/20/2020 13:43
02	EC2000003-02	PERCHLORATE2	20200420_008	04/20/2020 13:51
03	EC2000003-03	PERCHLORATE3	20200420_009	04/20/2020 13:58
04	EC2000003-04	PERCHLORATE4	20200420_010	04/20/2020 14:06
05	EC2000003-05	PERCHLORATE5	20200420_011	04/20/2020 14:14
06	EC2000003-06	PERCHLORATE6	20200420_012	04/20/2020 14:22
07	EC2000003-07	PERCHLORATE8	20200420_013	04/20/2020 14:30
09	EC2000003-09	PERCHLORATE9	20200420_014	04/20/2020 14:38
10	EC2000003-10	PERCHLORATE10	20200420_015	04/20/2020 14:46

Analyte | **Curve Fit** | **Weighting**

Perchlorate | **Average RF** | **RSD = 8.066** | **Average RF = 0.1368**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1558	02	0.5000	0.1297	03	0.7000	0.1277	04	1.0000	0.1397
05	2.0000	0.1298	06	5.0000	0.1245	07	20.0000	0.1341	08	10.0000	0.1562
09	30.0000	0.1365	10	50.0000	0.1345						

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.114	13.9	02	0.5000	0.474	-5.2	03	0.7000	0.653	-6.7
04	1.0000	1.02	2.1	05	2.0000	1.90	-5.1	06	5.0000	4.55	-9.0
07	20.0000	19.6	-2.0	08	10.0000	11.4	14.2	09	30.0000	29.9	-0.2
10	50.0000	49.1	-1.7								

Initial Calibration Verification Summary Report

Calibration ID:	EC2000003	**Instrument ID:**	E-LCMS-01
Datafile ID:	20200420_016	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000003-11	T	Average RF	10	11.345	ng/mL	13.4	<= 15

ALS Group Houston

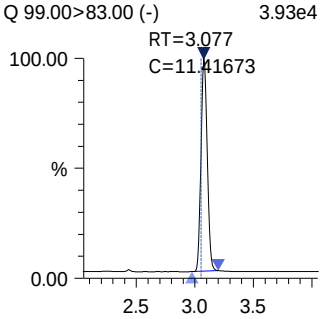
PERCHLORATE7

Date acquired: 4/20/2020 1:27:21 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_005.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/20/2020 1:27:21 PM	144494	11.41673	20200420_005	3.077	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/20/2020 1:27:21 PM	92497	1.00000	20200420_005	3.076	25.0000	1.0000	3

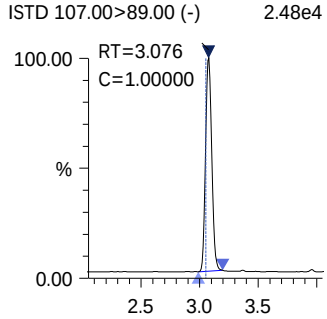
Perchlorate

Conc 11.41673
Area 144494



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 92497



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PERCHLORATE1

Date acquired: 4/20/2020 1:43:09 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_007.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

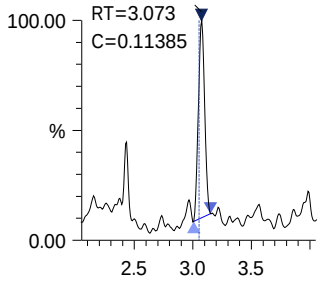
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	4/20/2020 1:43:09 PM	1840	0.11385	20200420_007	3.073	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	4/20/2020 1:43:09 PM	118078	1.00000	20200420_007	3.073	25.0000	1.0000	5

Perchlorate

Conc 0.11385

Area 1840

Q 99.00>83.00 (-) 5.37e2

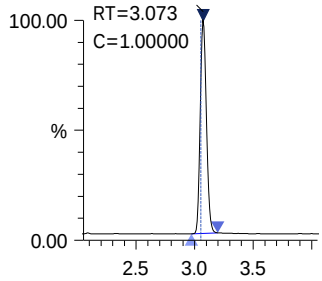


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 118078

ISTD 107.00>89.00 (-) 3.18e4



ALS Group Houston

PERCHLORATE2

Date acquired: 4/20/2020 1:51:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_008.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

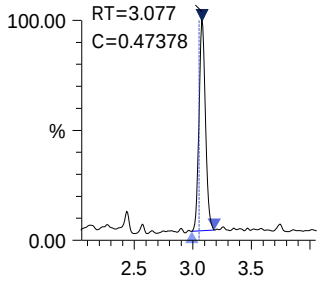
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	4/20/2020 1:51:02 PM	7551	0.47378	20200420_008	3.077	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	PERCHLORATE2	4/20/2020 1:51:02 PM	116479	1.00000	20200420_008	3.075	25.0000	1.0000	6

Perchlorate

Conc 0.47378

Area 7551

Q 99.00>83.00 (-) 2.00e3

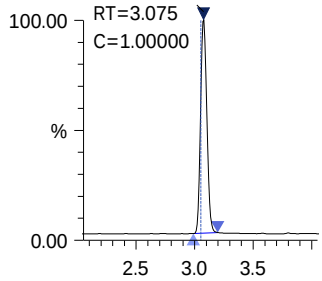


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 116479

ISTD 107.00>89.00 (-) 3.08e4



ALS Group Houston

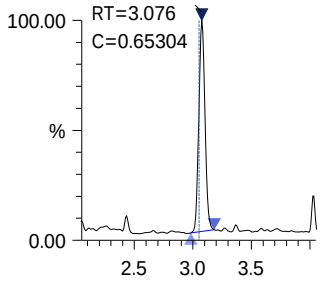
PERCHLORATE3

Date acquired: 4/20/2020 1:58:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_009.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	4/20/2020 1:58:56 PM	11235	0.65304	20200420_009	3.076	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE3	4/20/2020 1:58:56 PM	125731	1.00000	20200420_009	3.073	25.0000	1.0000	7

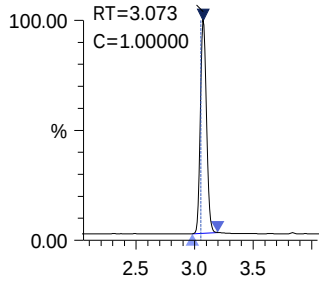
Perchlorate

Conc 0.65304
Area 11235
Q 99.00>83.00 (-) 3.12e3



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 125731
ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

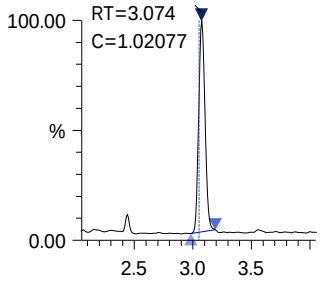
PERCHLORATE4

Date acquired: 4/20/2020 2:06:51 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_010.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	4/20/2020 2:06:51 PM	16670	1.02077	20200420_010	3.074	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE4	4/20/2020 2:06:51 PM	119354	1.00000	20200420_010	3.074	25.0000	1.0000	8

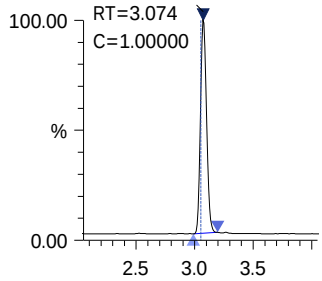
Perchlorate

Conc 1.02077
Area 16670
Q 99.00>83.00 (-) 4.51e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 119354
ISTD 107.00>89.00 (-) 3.26e4



ALS Group Houston

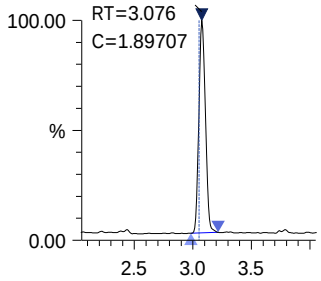
PERCHLORATE5

Date acquired: 4/20/2020 2:14:45 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_011.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	4/20/2020 2:14:45 PM	33786	1.89707	20200420_011	3.076	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE5	4/20/2020 2:14:45 PM	130159	1.00000	20200420_011	3.075	25.0000	1.0000	9

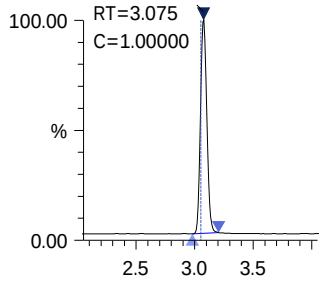
Perchlorate

Conc 1.89707
Area 33786
Q 99.00>83.00 (-) 8.73e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 130159
ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

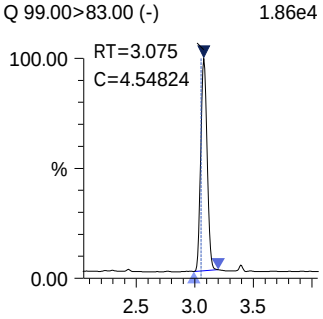
PERCHLORATE6

Date acquired: 4/20/2020 2:22:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_012.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	4/20/2020 2:22:39 PM	69848	4.54824	20200420_012	3.075	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE6	4/20/2020 2:22:39 PM	112235	1.00000	20200420_012	3.074	25.0000	1.0000	10

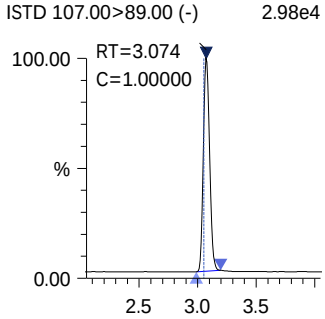
Perchlorate

Conc 4.54824
Area 69848



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 112235



ALS Group Houston

PERCHLORATE8

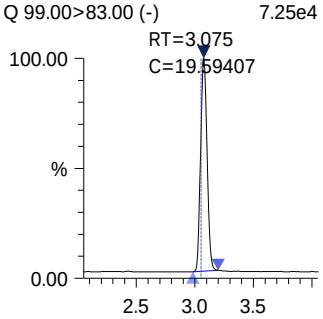
Date acquired: 4/20/2020 2:30:36 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_013.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	4/20/2020 2:30:36 PM	275854	19.59407	20200420_013	3.075	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE8	4/20/2020 2:30:36 PM	102890	1.00000	20200420_013	3.072	25.0000	1.0000	11

Perchlorate

Conc 19.59407

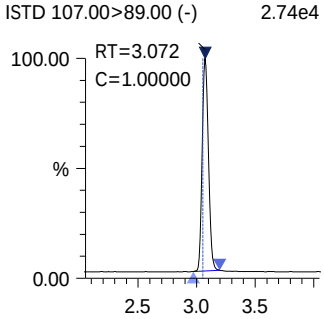
Area 275854



Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 102890



ALS Group Houston

PERCHLORATE9

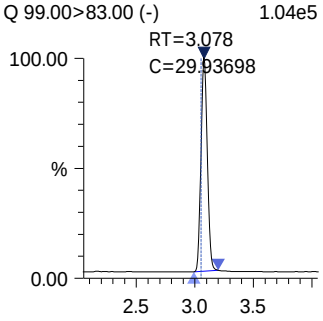
Date acquired: 4/20/2020 2:38:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_014.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	4/20/2020 2:38:33 PM	390068	29.93698	20200420_014	3.078	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE9	4/20/2020 2:38:33 PM	95225	1.00000	20200420_014	3.075	25.0000	1.0000	12

Perchlorate

Conc 29.93698

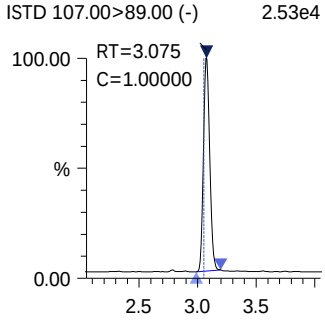
Area 390068



Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 95225



ALS Group Houston

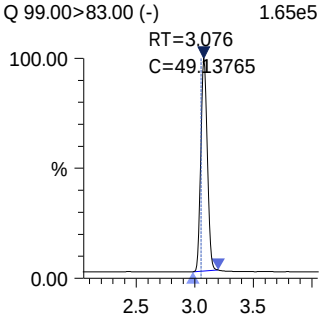
PERCHLORATE10

Date acquired: 4/20/2020 2:46:25 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_015.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE10	4/20/2020 2:46:25 PM	632804	49.13765	20200420_015	3.076	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE10	4/20/2020 2:46:25 PM	94118	1.00000	20200420_015	3.075	25.0000	1.0000	13

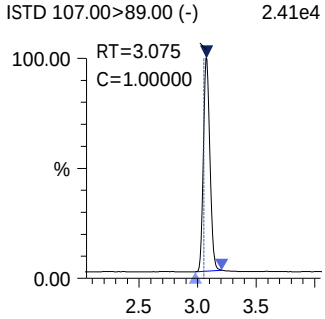
Perchlorate

Conc 49.13765
Area 632804



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 94118



ALS Group Houston

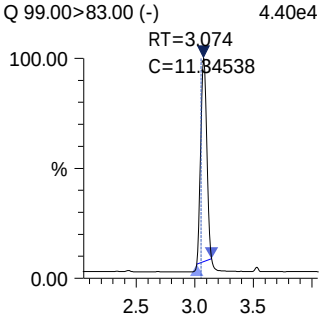
PERCHLORATEICV

Date acquired: 4/20/2020 2:54:20 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_016.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	4/20/2020 2:54:20 PM	149807	11.34538	20200420_016	3.074	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	4/20/2020 2:54:20 PM	96501	1.00000	20200420_016	3.072	25.0000	1.0000	14

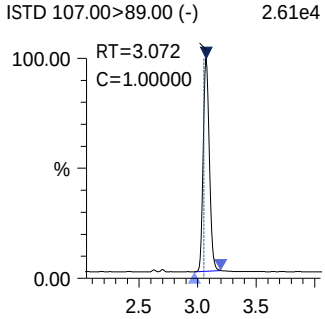
Perchlorate

Conc 11.34538
Area 149807



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 96501



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200420

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200420_001	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:01
	null		20200420_002	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:06
	DIBLK		20200420_003	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:11
	IB		20200420_004	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:19
	PERCHLORATE7		20200420_005	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 13:27
	LODV		20200420_006	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:35
	PERCHLORATE1		20200420_007	Perchlorate6850b.lcm	1x	☒	3100804-05	4/20/2020 13:43
	PERCHLORATE2		20200420_008	Perchlorate6850b.lcm	1x	☒	3100804-06	4/20/2020 13:51
	PERCHLORATE3		20200420_009	Perchlorate6850b.lcm	1x	☒	3100804-07	4/20/2020 13:58
	PERCHLORATE4		20200420_010	Perchlorate6850b.lcm	1x	☒	3100804-08	4/20/2020 14:06
	PERCHLORATE5		20200420_011	Perchlorate6850b.lcm	1x	☒	3100804-09	4/20/2020 14:14
	PERCHLORATE6		20200420_012	Perchlorate6850b.lcm	1x	☒	3100805-01	4/20/2020 14:22
	PERCHLORATE8		20200420_013	Perchlorate6850b.lcm	1x	☒	3100805-03	4/20/2020 14:30
	PERCHLORATE9		20200420_014	Perchlorate6850b.lcm	1x	☒	3100805-04	4/20/2020 14:38
	PERCHLORATE10		20200420_015	Perchlorate6850b.lcm	1x	☒	3100805-05	4/20/2020 14:46
	ICV		20200420_016	Perchlorate6850b.lcm	1x	☒	3100805-06	4/20/2020 14:54
	LODV		20200420_017	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:02
	EQ2000143-01		20200420_018	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:10
	EQ2000143-02		20200420_019	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:18
	EQ2000143-03		20200420_020	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:26
	E2000275-001		20200420_021	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:33
	E2000275-002		20200420_022	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:41
	E2000275-003		20200420_023	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:49
	E2000287-001		20200420_024	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:57
	E2000303-001		20200420_025	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:05
	E2000304-001		20200420_026	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:13
	E2000305-001		20200420_027	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:21
	PERCHLORATE7		20200420_028	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 16:29
	E2000303-001		20200420_029	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:47
	E2000304-001		20200420_030	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:55
	PERCHLORATE7		20200420_031	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 17:02

20200422

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200422_001	Perchlorate6850b.lcm	1x	☒		4/22/2020 12:55
	IB		20200422_002	Perchlorate6850b.lcm	1x	☒		4/22/2020 13:00
	PERCHLORATE7		20200422_003	Perchlorate6850b.lcm	1x	☒	3100805-02	4/22/2020 13:08
	E2000303-001		20200422_004	Perchlorate6850b.lcm	1x	☒		4/22/2020 13:16
	E2000304-001		20200422_005	Perchlorate6850b.lcm	1x	☒		4/22/2020 13:24
	E2000305-001X250		20200422_006	Perchlorate6850b.lcm	250x	☒		4/22/2020 13:32
	PERCHLORATE7		20200422_007	Perchlorate6850b.lcm	1x	☒	3100805-02	4/22/2020 13:40

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000304
Project:	HS20040284	**Date Analyzed:**	4/20/20 14:54

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200420\20200420_016	**Lab Code:**	EQ2000148-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	677504
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000148-01	96,501	3.07
Method Blank	EQ2000143-01	113,200	3.08
Lab Control Sample	EQ2000143-02	84,678	3.07
Duplicate Lab Control Sample	EQ2000143-03	108,366	3.07

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000304
Project:	HS20040284	**Date Analyzed:**	4/20/20 16:29

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200420\20200420_028	**Lab Code:**	EQ2000148-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	677504
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000148-02	97,156	3.07

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000304
Project:	HS20040284	**Date Analyzed:**	4/22/20 13:08

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200422\20200422_003	**Lab Code:**	EQ2000153-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	677638
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000153-01	76,714	3.08
LH18/24-SP650_040720_BIX	E2000304-001	118,676	3.06

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000304
Project:	HS20040284	**Date Analyzed:**	4/22/20 13:40

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200422\20200422_007	**Lab Code:**	EQ2000153-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	677638
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000153-02	93,873	3.02

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000304
Project:	HS20040284	**Date Analyzed:**	4/20/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200420\20200420_016	**Calibration ID:**	EC2000003
		Analysis Lot:	677504
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.3	0.1368	0.1552	13.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000304
Project:	HS20040284	**Date Analyzed:**	4/20/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200420\20200420_028	**Calibration ID:**	EC2000003
		Analysis Lot:	677504
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.3	0.1368	0.1543	12.7	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000304
Project:	HS20040284	**Date Analyzed:**	4/22/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200422\20200422_003	**Calibration ID:**	EC2000003
		Analysis Lot:	677638
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.3	0.1368	0.1546	13.0	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000304
Project:	HS20040284	**Date Analyzed:**	4/22/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200422\20200422_007	**Calibration ID:**	EC2000003
		Analysis Lot:	677638
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.8	0.1368	0.1481	8.3	NA	± 15 %	Average RF

ALS Group Houston

EQ2000143-01

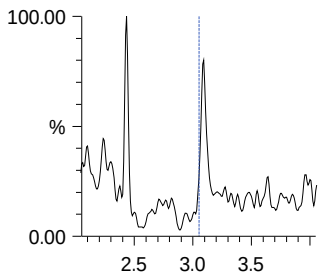
Date acquired: 4/20/2020 3:10:11 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_018.lcd
Vial: 15 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000143-01	4/20/2020 3:10:11 PM	----	----	20200420_018	----	25.0000	1.0000	15
Sodium Perchlorate-18O4_IS	EQ2000143-01	4/20/2020 3:10:11 PM	113200	1.00000	20200420_018	3.076	25.0000	1.0000	15

Perchlorate

Conc ----
Area ----

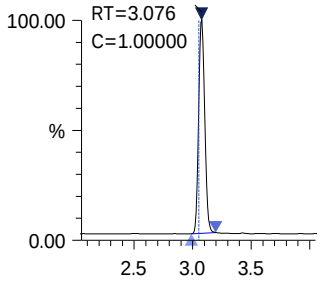
Q 99.00>83.00 (-) 2.29e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 113200

ISTD 107.00>89.00 (-) 3.08e4



ALS Group Houston

EQ2000143-02

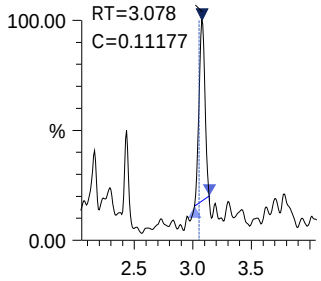
Date acquired: 4/20/2020 3:18:04 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_019.lcd
Vial: 16 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000143-02	4/20/2020 3:18:04 PM	1295	0.11177	20200420_019	3.078	25.0000	1.0000	16
Sodium Perchlorate-18O4_IS	EQ2000143-02	4/20/2020 3:18:04 PM	84678	1.00000	20200420_019	3.072	25.0000	1.0000	16

Perchlorate

Conc 0.11177
Area 1295

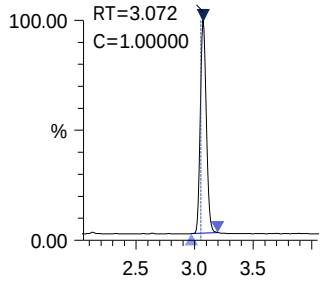
Q 99.00>83.00 (-) 4.36e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 84678

ISTD 107.00>89.00 (-) 2.35e4



ALS Group Houston

EQ2000143-03

Date acquired: 4/20/2020 3:26:00 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_020.lcd
Vial: 17 | Inj. Volume: 25.0000uL | Tray: 1

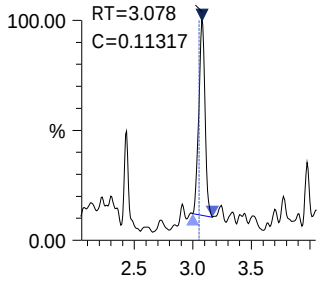
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000143-03	4/20/2020 3:26:00 PM	1678	0.11317	20200420_020	3.078	25.0000	1.0000	17
Sodium Perchlorate-18O4_IS	EQ2000143-03	4/20/2020 3:26:00 PM	108366	1.00000	20200420_020	3.072	25.0000	1.0000	17

Perchlorate

Conc 0.11317

Area 1678

Q 99.00>83.00 (-) 4.97e2

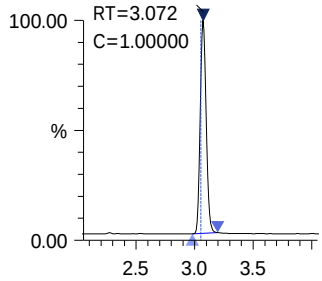


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 108366

ISTD 107.00>89.00 (-) 3.03e4



ALS Group Houston

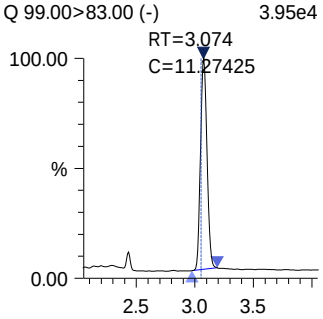
PERCHLORATE7

Date acquired: 4/20/2020 4:29:14 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_028.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/20/2020 4:29:14 PM	149879	11.27425	20200420_028	3.074	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/20/2020 4:29:14 PM	97156	1.00000	20200420_028	3.073	25.0000	1.0000	3

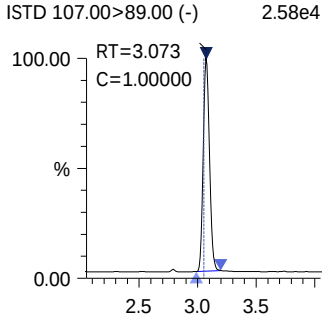
Perchlorate

Conc 11.27425
Area 149879



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 97156



ALS Group Houston

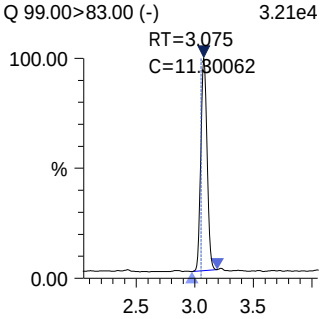
PERCHLORATE7

Date acquired: 4/22/2020 1:08:31 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200422\20200422_003.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/22/2020 1:08:31 PM	118621	11.30062	20200422_003	3.075	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/22/2020 1:08:31 PM	76714	1.00000	20200422_003	3.075	25.0000	1.0000	3

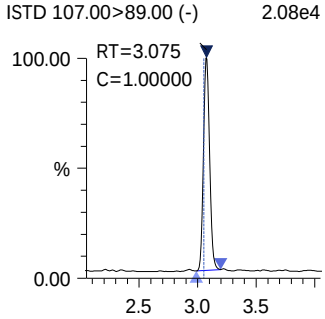
Perchlorate

Conc 11.30062
Area 118621



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 76714



ALS Group Houston

E2000304-001

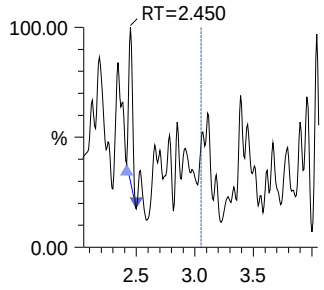
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Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200422\20200422_005.lcd
Vial: 23 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	E2000304-001	4/22/2020 1:24:19 PM	----	----	20200422_005	----	25.0000	1.0000	23
Sodium Perchlorate-18O4_IS	E2000304-001	4/22/2020 1:24:19 PM	118676	1.00000	20200422_005	3.062	25.0000	1.0000	23

Perchlorate

Conc ----
Area ----

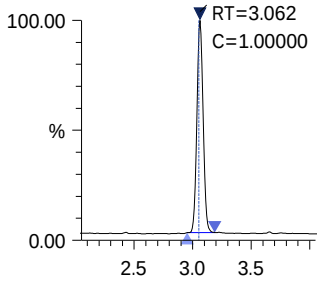
Q 99.00>83.00 (-) 1.94e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 118676

ISTD 107.00>89.00 (-) 3.19e4



ALS Group Houston

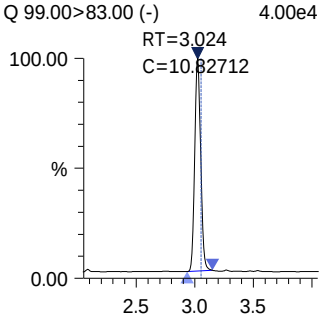
PERCHLORATE7

Date acquired: 4/22/2020 1:40:14 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200422\20200422_007.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/22/2020 1:40:14 PM	139071	10.82712	20200422_007	3.024	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/22/2020 1:40:14 PM	93873	1.00000	20200422_007	3.021	25.0000	1.0000	3

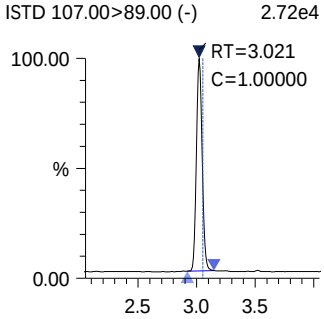
Perchlorate

Conc 10.82712
Area 139071



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 93873



10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

April 22, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20040287**

Laboratory Results for: **Longhorn GW Treatment Plant Monthly Influent Samples**

Dear Marcia,

ALS Environmental received 1 sample(s) on Apr 08, 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: 22-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
Work Order: HS20040287

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20040287-01	LH18/24-SP140_040720	Water		07-Apr-2020 14:00	08-Apr-2020 08:22	☐

ALS Houston, US Date: 22-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
Work Order: HS20040287

CASE NARRATIVE

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS High Resolution Lab in Houston, TX. Final report attached.

Metals by Method SW6020

Batch ID: 152654

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

WetChemistry by Method SW7196

Batch ID: R359757

Sample ID: LH18/24-SP140_040720 (HS20040287-01MS)

- 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. (Chromium, Hexavalent)

ALS Houston, US

Date: 22-Apr-20

Client: Bhate Environmental Associates, Inc.

ANALYTICAL REPORT

Project: Longhorn GW Treatment Plant Monthly Influent Samples

WorkOrder:HS20040287

Sample ID: LH18/24-SP140_040720

Lab ID:HS20040287-01

Collection Date: 07-Apr-2020 14:00

Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 13-Apr-2020		Analyst: JHD
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	14-Apr-2020 22:45
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	14-Apr-2020 22:45
HEXAVALENT CHROMIUM BY SW7196A		**Method:SW7196**						Analyst: KVL
Chromium, Hexavalent	0.0100	U	0.00600	0.0100	0.0100	mg/L	1	08-Apr-2020 13:00
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: CGG
Subcontract Analysis	**0**		**0**	**0**	**0**	**NA**	1	22-Apr-2020 15:35

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

ALS Houston, US Date: 22-Apr-20

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS20040287

Batch ID: 152654 **Start Date:** 13 Apr 2020 08:00 **End Date:** 13 Apr 2020 12:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20040287-01		10 (mL)	10 (mL)	1

ALS Houston, US Date: 22-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS20040287

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 152654 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Water	
HS20040287-01	LH18/24-SP140_040720	07 Apr 2020 14:00		13 Apr 2020 12:00	14 Apr 2020 22:45	1
Batch ID: R359757 (0)	**Test Name :** HEXAVALENT CHROMIUM BY SW7196A				**Matrix:** Water	
HS20040287-01	LH18/24-SP140_040720	07 Apr 2020 14:00			08 Apr 2020 13:00	1
Batch ID: R360393 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS20040287-01	LH18/24-SP140_040720	07 Apr 2020 14:00			22 Apr 2020 15:35	1

ALS Houston, US Date: 22-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS20040287

QC BATCH REPORT

Batch ID: 152654 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-152654** Units: **mg/L** Analysis Date: **14-Apr-2020 22:22**
Client ID: Run ID: **ICPMS06_359908** SeqNo: **5554534** PrepDate: **13-Apr-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U

LCS Sample ID: **LCS-152654** Units: **mg/L** Analysis Date: **14-Apr-2020 22:24**
Client ID: Run ID: **ICPMS06_359908** SeqNo: **5554535** PrepDate: **13-Apr-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.04924	0.00500	0.05	0	98.5	80 - 120				
Silver	0.04991	0.00500	0.05	0	99.8	85 - 116				

MS Sample ID: **HS20040284-01MS** Units: **mg/L** Analysis Date: **14-Apr-2020 22:30**
Client ID: Run ID: **ICPMS06_359908** SeqNo: **5554538** PrepDate: **13-Apr-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.04839	0.00500	0.05	0.000472	95.8	80 - 120				
Silver	0.04859	0.00500	0.05	0.00001	97.2	85 - 116				

MSD Sample ID: **HS20040284-01MSD** Units: **mg/L** Analysis Date: **14-Apr-2020 22:31**
Client ID: Run ID: **ICPMS06_359908** SeqNo: **5554539** PrepDate: **13-Apr-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.04864	0.00500	0.05	0.000472	96.3	80 - 120	0.04839	0.501	20	
Silver	0.04748	0.00500	0.05	0.00001	94.9	85 - 116	0.04859	2.31	20	

PDS Sample ID: **HS20040284-01PDS** Units: **mg/L** Analysis Date: **14-Apr-2020 22:33**
Client ID: Run ID: **ICPMS06_359908** SeqNo: **5554540** PrepDate: **13-Apr-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.1063	0.00500	0.1	0.000472	106	80 - 120				
Silver	0.08769	0.00500	0.1	0.00001	87.7	80 - 120				

ALS Houston, US Date: 22-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS20040287

QC BATCH REPORT

Batch ID: 152654 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS20040284-01SD** Units: **mg/L** Analysis Date: **14-Apr-2020 22:28**
Client ID: Run ID: **ICPMS06_359908** SeqNo: **5554537** PrepDate: **13-Apr-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Selenium	0.0125	0.0250					0.000472	0	10	U
Silver	0.00250	0.0250					0.00001	0	10	U

The following samples were analyzed in this batch: HS20040287-01

ALS Houston, US Date: 22-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS20040287

QC BATCH REPORT

Batch ID: R359757 (0) **Instrument: UV-2450** **Method: HEXAVALENT CHROMIUM BY SW7196A**

MBLK Sample ID: **MBLK-R359757** Units: **mg/L** Analysis Date: **08-Apr-2020 13:00**
Client ID: Run ID: **UV-2450_359757** SeqNo: **5549696** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.0100	0.0100								U

LCS Sample ID: **LCS-R359757** Units: **mg/L** Analysis Date: **08-Apr-2020 13:00**
Client ID: Run ID: **UV-2450_359757** SeqNo: **5549695** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.271	0.0100	0.25	0	108	90 - 111				

LCSD Sample ID: **LCSD-R359757** Units: **mg/L** Analysis Date: **08-Apr-2020 13:00**
Client ID: Run ID: **UV-2450_359757** SeqNo: **5549694** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.272	0.0100	0.25	0	109	90 - 111	0.271	0.368	20	

MS Sample ID: **HS20040287-01MS** Units: **mg/L** Analysis Date: **08-Apr-2020 13:00**
Client ID: **LH18/24-SP140_040720** Run ID: **UV-2450_359757** SeqNo: **5549698** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.219	0.0100	0.25	-0.001	88.0	90 - 111				S

MSD Sample ID: **HS20040287-01MSD** Units: **mg/L** Analysis Date: **08-Apr-2020 13:00**
Client ID: **LH18/24-SP140_040720** Run ID: **UV-2450_359757** SeqNo: **5549697** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.209	0.0100	0.25	-0.001	84.0	90 - 111	0.219	4.67	20	S

The following samples were analyzed in this batch: HS20040287-01

ALS Houston, US Date: 22-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: **HS20040287**

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

ALS Houston, US Date: 22-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: 22-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
Work Order: HS20040287

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20040287-01	LH18/24-SP140_040720	Login	4/8/2020 9:49:40 AM	PMG	MET031
HS20040287-01	LH18/24-SP140_040720	Login	4/8/2020 9:49:40 AM	PMG	Sub
HS20040287-01	LH18/24-SP140_040720	Login	4/8/2020 9:49:40 AM	PMG	WET293

00974888

ALS Houston, US Date: 22-Apr-20

Sample Receipt Checklist

Client Name: Bhate Environmental
Work Order: HS20040287
Date/Time Received: **08-Apr-2020 08:22**
Received by: **AC**

Checklist completed by: *Paresh M. Giga* 8-Apr-2020
eSignature | Date

Reviewed by: *RJ Modashia* 8-Apr-2020
eSignature | Date

Matrices: **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):	2.5C U/c	IR25	
Cooler(s)/Kit(s):	2759		
Date/Time sample(s) sent to storage:	4/8/2020 10:00		
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:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd., Suite 210 Houston, TX. 77099 (281) 530-5656 ATTN: RJ Modashia

Page 1 of 1

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT
MONTHLY INFLUENT SAMPLES

Prepared By:
Scott Beesinger

P.O. Number

HS20040287

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Monthly Influent Sample

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: SILVER & SELENIUM	HEXAVALENT CHROMIUM	PERCHLORATE								Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP140_040720	Water	04/07/20 / 14:00		1	X										HNO3	
LH18/24-SP140_040720	Water	04/07/20 / 14:00		2		X	X								NONE	

Additional Remarks: **STANDARD TURN AROUND TIME**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
	04/07/20	14:30	AC	4/8/2020	08:33						

For Lab Use Only

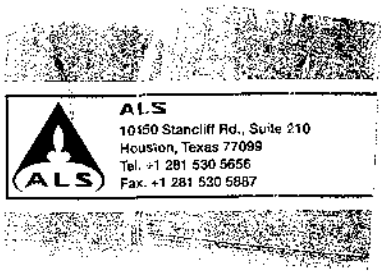
Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

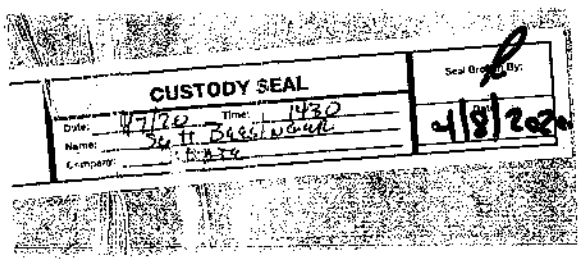
Remarks:

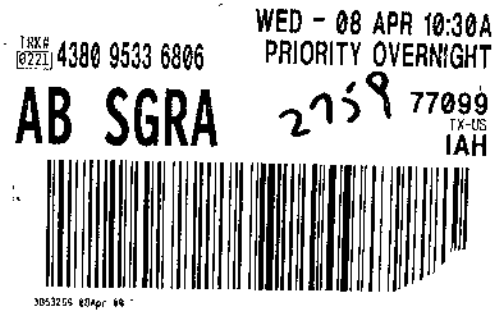
VIC 2.5 IR#35 CF0.0 2759

(Word) S:\I-ces\Forms\Chain of Custody - BiWeekly

00974890


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


CUSTODY SEAL
Date: 4/7/20
Time: 1430
Name: Scott Bagwell
Company: ALS
Seal Originated By:
4/8/2020


TRK# 0221 4380 9533 6806
WED - 08 APR 10:30A
PRIORITY OVERNIGHT
AB SGRA
2759
77099
TX-US
IAH
3053255 08Apr 00

April 22, 2020 Service Request No:E2000305

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

Laboratory Results for: HS20040287

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory April 08, 2020
For your reference, these analyses have been assigned our service request number **E2000305.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2000305
Project:	HS20040287	**Date Received:**	04/08/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 04/08/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000143: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2000305
Project: HS20040287

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000305-001	LH18/24-SP140_040720	4/7/2020	1400

Service Request Summary

Folder #: **E2000305**
Client Name: ALS Environmental - US
Project Name: HS20040287
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 04/08/20
Internal Due Date: 4/22/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20040287
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000305-001	LH18/24-SP140_040720	Water	04/07/20 1400	**IV**

Service Request Summary

Folder #:	**E2000305**
Client Name:	ALS Environmental - US
Project Name:	HS20040287
Project Number:	

Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	04/08/20
Internal Due Date:	4/22/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20040287
EDD:	No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-WIC 10B

Pressure Gas:

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2020
California Department of Health Services	2919	4/30/2020
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	TX02694	4/30/2020
Illinois Environmental Protection Agency	2000322019-2	5/9/2020
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2020
Nevada Department of Concervation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209419	4/24/2020
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Concervation	04016	6/30/2020
Texas Commision on Environmental Quality	TX104704231-19-25	4/30/2020
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

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:** **13659**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084 **Phone:** +1 281 530 5656

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:	HS20040287
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20040287-01**	**LH18/24-SP140_040720**	**Water**	**07 Apr 2020 14:00**
	SUB_Perch-6850			22 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: _____ Date/Time: 4/8/2020 11:42.

Received By: _____ Date/Time: 4/8/2020 11:42

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

ALS Environmental

Cooler Receipt Form

Project Chemist CA

Client/Project Air-H

Thermometer ID 9MM4

Date/Time Received: 4/8/2026 Initials: CA

Date/Time Logged in: 4/8/2026 Initials CA

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ Courier (ALS) ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No

Were they intact? ○ Yes ○ No ✓ N/A

Were they signed and dated? ○ Yes ○ No ✓ N/A

If yes, how many and where?

4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		4/8/26	1442	CA	2.6 R 0	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No

9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No

10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 357146 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/DBOTROS **Prep Method:** Method **Prep Date/Time:** 4/20/20 09:32

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000275-001	M1Q2014	.01	6850/ClO4 DOD			Water	10mL	
2	E2000275-002	PZ-373-NS	.01	6850/ClO4 DOD			Water	10mL	
3	E2000275-003	PZ-489-NS	.01	6850/ClO4 DOD			Water	10mL	
4	E2000287-001	LH18/24-SP650_033120_BIX	.01	6850/ClO4 DOD			Water	10mL	
5	E2000303-001	LH18/24-SP650_040720_BIX	.01	6850/ClO4 DOD			Water	10mL	
6	E2000304-001	LH18/24-SP650_040720_BIX	.01	6850/ClO4 DOD			Water	10mL	
7	E2000305-001	LH18/24-SP140_040720	.01	6850/ClO4 DOD			Water	10mL	
8	EQ2000143-01	MB		6850/ClO4 DOD			Liquid	10mL	
9	EQ2000143-02	LCS		6850/ClO4 DOD			Liquid	10mL	
10	EQ2000143-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 202037 Logbook Ref: Sodium Perchlorate Expires On: 05/22/2021

E2000275-001	100.00µL	E2000275-002	100.00µL	E2000275-003	100.00µL	E2000287-001	100.00µL	E2000303-001	100.00µL	E2000304-001	100.00µL
E2000305-001	100.00µL	EQ2000143-01	100.00µL	EQ2000143-02	100.00µL	EQ2000143-03	100.00µL				

Name: Perchlorate Intermediate Stock1 Inventory ID 204799 Logbook Ref: 200657 1.0ug/mL KN Expires On: 05/15/2020

EQ2000143-02	1.00µL	EQ2000143-03	1.00µL

Preparation Steps

Step: Preparation
Started: 4/20/20 09:32
Finished: 4/20/20 10:00
By: KBROWN
Comments

Comments: _____

Reviewed By: kn Date: 04/20/2020

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000305
Project:	HS20040287	**Date Collected:**	4/ 7/20 1400
Sample Matrix:	Water	**Date Received:**	4/ 8/20
Sample Name:	LH18/24-SP140_040720	**Units:**	µg/L
Lab Code:	E2000305-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**10600**		25.0	12.5	6.25	250	4/20/20	4/22/20 13:32	357146	677638	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000305
Project:	HS20040287	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000143-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	4/20/20	4/20/20 15:10	357146	677504	

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000305
Project:	HS20040287	**Date Analyzed:**	4/20/20
Sample Matrix:	Water		

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	357146

	Lab Control Sample EQ2000143-02			Duplicate Lab Control Sample EQ2000143-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.112	0.100	112	0.113	0.100	113	84 - 119	1	15

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

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000305
Project:	HS20040287	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000143-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.112**		0.100	0.0500	0.0250	1	4/20/20	4/20/20 15:18	357146	677504	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000305
Project:	HS20040287	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000143-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.113**		0.100	0.0500	0.0250	1	4/20/20	4/20/20 15:26	357146	677504	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
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www.alsglobal.com

20200420

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200420_001	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:01
	null		20200420_002	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:06
	DIBLK		20200420_003	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:11
	IB		20200420_004	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:19
	PERCHLORATE7		20200420_005	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 13:27
	LODV		20200420_006	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:35
	PERCHLORATE1		20200420_007	Perchlorate6850b.lcm	1x	☒	3100804-05	4/20/2020 13:43
	PERCHLORATE2		20200420_008	Perchlorate6850b.lcm	1x	☒	3100804-06	4/20/2020 13:51
	PERCHLORATE3		20200420_009	Perchlorate6850b.lcm	1x	☒	3100804-07	4/20/2020 13:58
	PERCHLORATE4		20200420_010	Perchlorate6850b.lcm	1x	☒	3100804-08	4/20/2020 14:06
	PERCHLORATE5		20200420_011	Perchlorate6850b.lcm	1x	☒	3100804-09	4/20/2020 14:14
	PERCHLORATE6		20200420_012	Perchlorate6850b.lcm	1x	☒	3100805-01	4/20/2020 14:22
	PERCHLORATE8		20200420_013	Perchlorate6850b.lcm	1x	☒	3100805-03	4/20/2020 14:30
	PERCHLORATE9		20200420_014	Perchlorate6850b.lcm	1x	☒	3100805-04	4/20/2020 14:38
	PERCHLORATE10		20200420_015	Perchlorate6850b.lcm	1x	☒	3100805-05	4/20/2020 14:46
	ICV		20200420_016	Perchlorate6850b.lcm	1x	☒	3100805-06	4/20/2020 14:54
	LODV		20200420_017	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:02
	EQ2000143-01		20200420_018	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:10
	EQ2000143-02		20200420_019	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:18
	EQ2000143-03		20200420_020	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:26
	E2000275-001		20200420_021	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:33
	E2000275-002		20200420_022	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:41
	E2000275-003		20200420_023	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:49
	E2000287-001		20200420_024	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:57
	E2000303-001		20200420_025	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:05
	E2000304-001		20200420_026	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:13
	E2000305-001		20200420_027	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:21
	PERCHLORATE7		20200420_028	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 16:29
	E2000303-001		20200420_029	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:47
	E2000304-001		20200420_030	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:55
	PERCHLORATE7		20200420_031	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 17:02

Initial Calibration - Detailed Report

Calibration ID: EC2000003 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
08	EC2000003-08	PERCHLORATE7	20200420_005	04/20/2020 13:27
01	EC2000003-01	PERCHLORATE1	20200420_007	04/20/2020 13:43
02	EC2000003-02	PERCHLORATE2	20200420_008	04/20/2020 13:51
03	EC2000003-03	PERCHLORATE3	20200420_009	04/20/2020 13:58
04	EC2000003-04	PERCHLORATE4	20200420_010	04/20/2020 14:06
05	EC2000003-05	PERCHLORATE5	20200420_011	04/20/2020 14:14
06	EC2000003-06	PERCHLORATE6	20200420_012	04/20/2020 14:22
07	EC2000003-07	PERCHLORATE8	20200420_013	04/20/2020 14:30
09	EC2000003-09	PERCHLORATE9	20200420_014	04/20/2020 14:38
10	EC2000003-10	PERCHLORATE10	20200420_015	04/20/2020 14:46

Analyte | **Curve Fit** | **Weighting**

Perchlorate | **Average RF** | **RSD = 8.066** | **Average RF = 0.1368**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1558	02	0.5000	0.1297	03	0.7000	0.1277	04	1.0000	0.1397
05	2.0000	0.1298	06	5.0000	0.1245	07	20.0000	0.1341	08	10.0000	0.1562
09	30.0000	0.1365	10	50.0000	0.1345						

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.114	13.9	02	0.5000	0.474	-5.2	03	0.7000	0.653	-6.7
04	1.0000	1.02	2.1	05	2.0000	1.90	-5.1	06	5.0000	4.55	-9.0
07	20.0000	19.6	-2.0	08	10.0000	11.4	14.2	09	30.0000	29.9	-0.2
10	50.0000	49.1	-1.7								

Initial Calibration Verification Summary Report

Calibration ID:	EC2000003	**Instrument ID:**	E-LCMS-01
Datafile ID:	20200420_016	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000003-11	T	Average RF	10	11.345	ng/mL	13.4	<= 15

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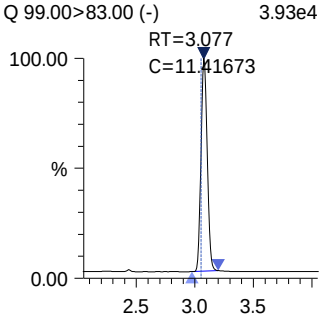
PERCHLORATE7

Date acquired: 4/20/2020 1:27:21 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_005.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/20/2020 1:27:21 PM	144494	11.41673	20200420_005	3.077	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/20/2020 1:27:21 PM	92497	1.00000	20200420_005	3.076	25.0000	1.0000	3

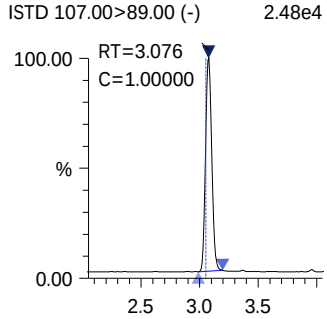
Perchlorate

Conc 11.41673
Area 144494



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 92497



ALS Group Houston

PERCHLORATE1

Date acquired: 4/20/2020 1:43:09 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_007.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

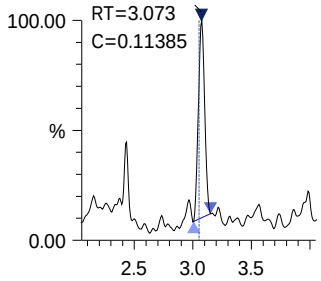
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	4/20/2020 1:43:09 PM	1840	0.11385	20200420_007	3.073	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	4/20/2020 1:43:09 PM	118078	1.00000	20200420_007	3.073	25.0000	1.0000	5

Perchlorate

Conc 0.11385

Area 1840

Q 99.00>83.00 (-) 5.37e2

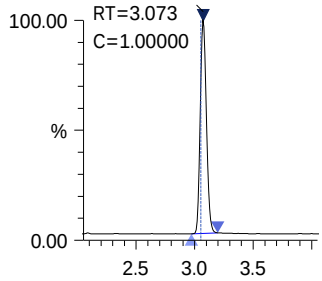


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 118078

ISTD 107.00>89.00 (-) 3.18e4



ALS Group Houston

PERCHLORATE2

Date acquired: 4/20/2020 1:51:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_008.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

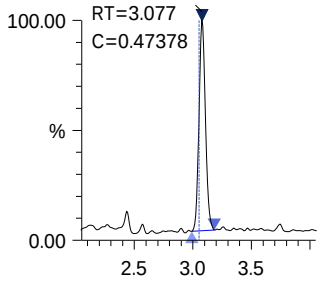
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	4/20/2020 1:51:02 PM	7551	0.47378	20200420_008	3.077	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	PERCHLORATE2	4/20/2020 1:51:02 PM	116479	1.00000	20200420_008	3.075	25.0000	1.0000	6

Perchlorate

Conc 0.47378

Area 7551

Q 99.00>83.00 (-) 2.00e3

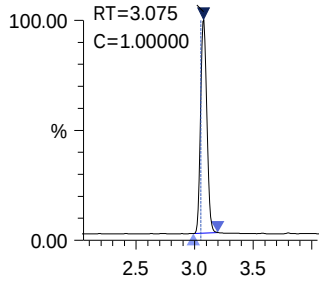


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 116479

ISTD 107.00>89.00 (-) 3.08e4



ALS Group Houston

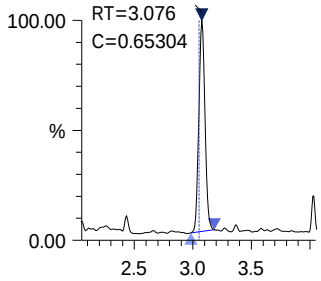
PERCHLORATE3

Date acquired: 4/20/2020 1:58:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_009.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	4/20/2020 1:58:56 PM	11235	0.65304	20200420_009	3.076	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE3	4/20/2020 1:58:56 PM	125731	1.00000	20200420_009	3.073	25.0000	1.0000	7

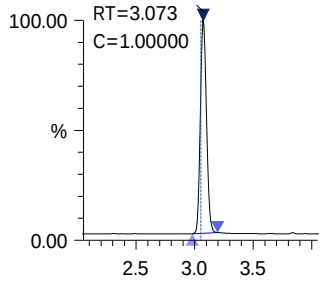
Perchlorate

Conc 0.65304
Area 11235
Q 99.00>83.00 (-) 3.12e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 125731
ISTD 107.00>89.00 (-) 3.41e4



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PERCHLORATE4

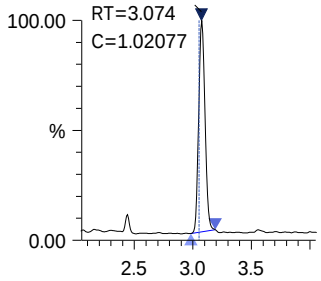
Date acquired: 4/20/2020 2:06:51 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_010.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	4/20/2020 2:06:51 PM	16670	1.02077	20200420_010	3.074	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE4	4/20/2020 2:06:51 PM	119354	1.00000	20200420_010	3.074	25.0000	1.0000	8

Perchlorate

Conc 1.02077
Area 16670

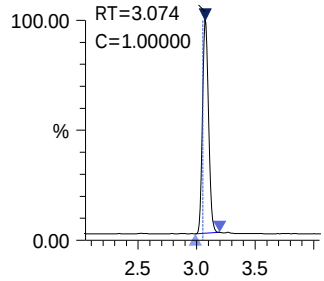
Q 99.00>83.00 (-) 4.51e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 119354

ISTD 107.00>89.00 (-) 3.26e4



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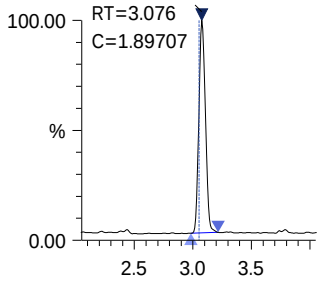
PERCHLORATE5

Date acquired: 4/20/2020 2:14:45 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_011.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	4/20/2020 2:14:45 PM	33786	1.89707	20200420_011	3.076	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE5	4/20/2020 2:14:45 PM	130159	1.00000	20200420_011	3.075	25.0000	1.0000	9

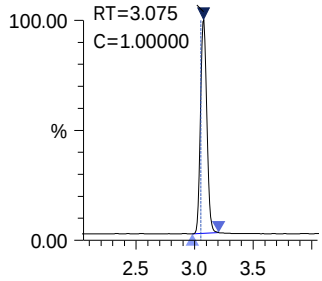
Perchlorate

Conc 1.89707
Area 33786
Q 99.00>83.00 (-) 8.73e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 130159
ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

PERCHLORATE6

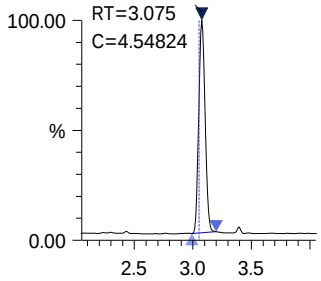
Date acquired: 4/20/2020 2:22:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_012.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	4/20/2020 2:22:39 PM	69848	4.54824	20200420_012	3.075	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE6	4/20/2020 2:22:39 PM	112235	1.00000	20200420_012	3.074	25.0000	1.0000	10

Perchlorate

Conc 4.54824
Area 69848

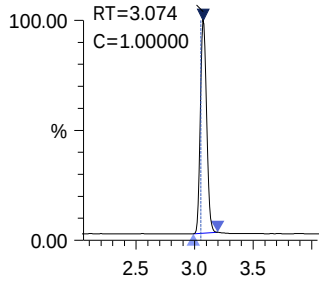
Q 99.00>83.00 (-) 1.86e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 112235

ISTD 107.00>89.00 (-) 2.98e4



ALS Group Houston

PERCHLORATE8

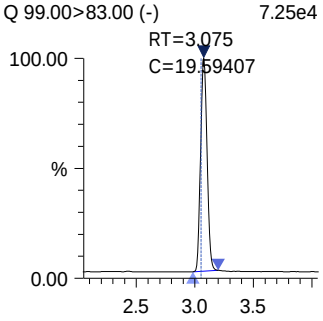
Date acquired: 4/20/2020 2:30:36 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_013.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	4/20/2020 2:30:36 PM	275854	19.59407	20200420_013	3.075	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE8	4/20/2020 2:30:36 PM	102890	1.00000	20200420_013	3.072	25.0000	1.0000	11

Perchlorate

Conc 19.59407

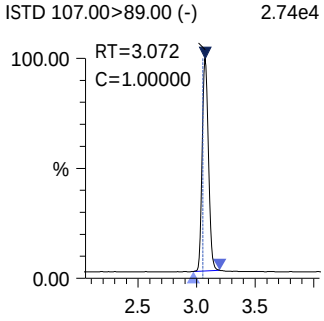
Area 275854



Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 102890



ALS Group Houston

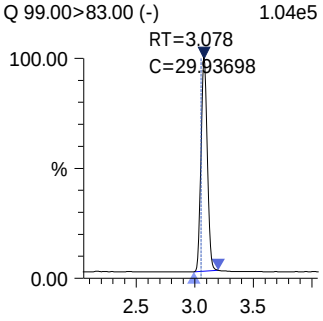
PERCHLORATE9

Date acquired: 4/20/2020 2:38:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_014.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	4/20/2020 2:38:33 PM	390068	29.93698	20200420_014	3.078	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE9	4/20/2020 2:38:33 PM	95225	1.00000	20200420_014	3.075	25.0000	1.0000	12

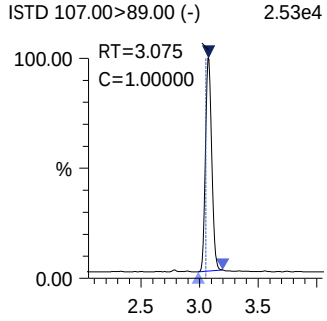
Perchlorate

Conc 29.93698
Area 390068



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 95225



ALS Group Houston

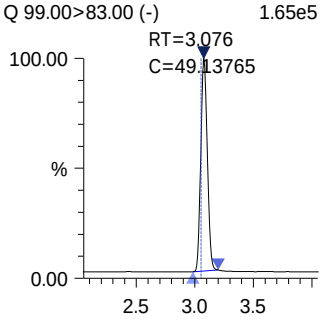
PERCHLORATE10

Date acquired: 4/20/2020 2:46:25 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_015.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE10	4/20/2020 2:46:25 PM	632804	49.13765	20200420_015	3.076	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE10	4/20/2020 2:46:25 PM	94118	1.00000	20200420_015	3.075	25.0000	1.0000	13

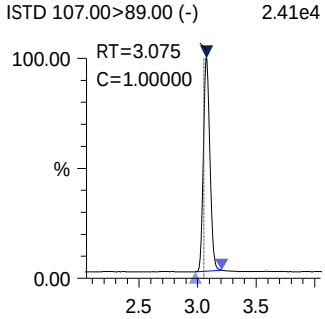
Perchlorate

Conc 49.13765
Area 632804



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 94118



ALS Group Houston

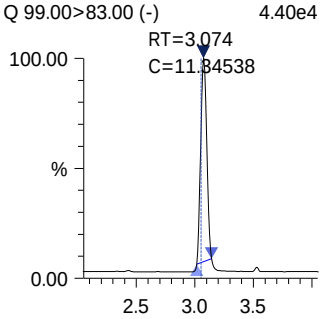
PERCHLORATEICV

Date acquired: 4/20/2020 2:54:20 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_016.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	4/20/2020 2:54:20 PM	149807	11.34538	20200420_016	3.074	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	4/20/2020 2:54:20 PM	96501	1.00000	20200420_016	3.072	25.0000	1.0000	14

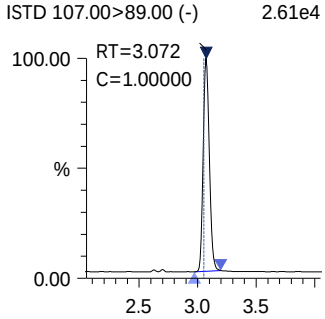
Perchlorate

Conc 11.34538
Area 149807



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 96501



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200420

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200420_001	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:01
	null		20200420_002	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:06
	DIBLK		20200420_003	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:11
	IB		20200420_004	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:19
	PERCHLORATE7		20200420_005	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 13:27
	LODV		20200420_006	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:35
	PERCHLORATE1		20200420_007	Perchlorate6850b.lcm	1x	☒	3100804-05	4/20/2020 13:43
	PERCHLORATE2		20200420_008	Perchlorate6850b.lcm	1x	☒	3100804-06	4/20/2020 13:51
	PERCHLORATE3		20200420_009	Perchlorate6850b.lcm	1x	☒	3100804-07	4/20/2020 13:58
	PERCHLORATE4		20200420_010	Perchlorate6850b.lcm	1x	☒	3100804-08	4/20/2020 14:06
	PERCHLORATE5		20200420_011	Perchlorate6850b.lcm	1x	☒	3100804-09	4/20/2020 14:14
	PERCHLORATE6		20200420_012	Perchlorate6850b.lcm	1x	☒	3100805-01	4/20/2020 14:22
	PERCHLORATE8		20200420_013	Perchlorate6850b.lcm	1x	☒	3100805-03	4/20/2020 14:30
	PERCHLORATE9		20200420_014	Perchlorate6850b.lcm	1x	☒	3100805-04	4/20/2020 14:38
	PERCHLORATE10		20200420_015	Perchlorate6850b.lcm	1x	☒	3100805-05	4/20/2020 14:46
	ICV		20200420_016	Perchlorate6850b.lcm	1x	☒	3100805-06	4/20/2020 14:54
	LODV		20200420_017	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:02
	EQ2000143-01		20200420_018	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:10
	EQ2000143-02		20200420_019	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:18
	EQ2000143-03		20200420_020	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:26
	E2000275-001		20200420_021	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:33
	E2000275-002		20200420_022	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:41
	E2000275-003		20200420_023	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:49
	E2000287-001		20200420_024	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:57
	E2000303-001		20200420_025	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:05
	E2000304-001		20200420_026	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:13
	E2000305-001		20200420_027	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:21
	PERCHLORATE7		20200420_028	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 16:29
	E2000303-001		20200420_029	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:47
	E2000304-001		20200420_030	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:55
	PERCHLORATE7		20200420_031	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 17:02

20200422

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200422_001	Perchlorate6850b.lcm	1x	☒		4/22/2020 12:55
	IB		20200422_002	Perchlorate6850b.lcm	1x	☒		4/22/2020 13:00
	PERCHLORATE7		20200422_003	Perchlorate6850b.lcm	1x	☒	3100805-02	4/22/2020 13:08
	E2000303-001		20200422_004	Perchlorate6850b.lcm	1x	☒		4/22/2020 13:16
	E2000304-001		20200422_005	Perchlorate6850b.lcm	1x	☒		4/22/2020 13:24
	E2000305-001X250		20200422_006	Perchlorate6850b.lcm	250x	☒		4/22/2020 13:32
	PERCHLORATE7		20200422_007	Perchlorate6850b.lcm	1x	☒	3100805-02	4/22/2020 13:40

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000305
Project:	HS20040287	**Date Analyzed:**	4/20/20 14:54

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200420\20200420_016	**Lab Code:**	EQ2000148-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	677504
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000148-01	96,501	3.07
Method Blank	EQ2000143-01	113,200	3.08
Lab Control Sample	EQ2000143-02	84,678	3.07
Duplicate Lab Control Sample	EQ2000143-03	108,366	3.07

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000305
Project:	HS20040287	**Date Analyzed:**	4/20/20 16:29

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200420\20200420_028	**Lab Code:**	EQ2000148-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	677504
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000148-02	97,156	3.07

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000305
Project:	HS20040287	**Date Analyzed:**	4/22/20 13:08

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200422\20200422_003	**Lab Code:**	EQ2000153-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	677638
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000153-01	76,714	3.08
LH18/24-SP140_040720	E2000305-001	67,470	3.08

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000305
Project:	HS20040287	**Date Analyzed:**	4/22/20 13:40

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200422\20200422_007	**Lab Code:**	EQ2000153-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	677638
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000153-02	93,873	3.02

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000305
Project:	HS20040287	**Date Analyzed:**	4/20/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200420\20200420_016	**Calibration ID:**	EC2000003
		Analysis Lot:	677504
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.3	0.1368	0.1552	13.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000305
Project:	HS20040287	**Date Analyzed:**	4/20/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200420\20200420_028	**Calibration ID:**	EC2000003
		Analysis Lot:	677504
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.3	0.1368	0.1543	12.7	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000305
Project:	HS20040287	**Date Analyzed:**	4/22/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200422\20200422_003	**Calibration ID:**	EC2000003
		Analysis Lot:	677638
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.3	0.1368	0.1546	13.0	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000305
Project:	HS20040287	**Date Analyzed:**	4/22/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200422\20200422_007	**Calibration ID:**	EC2000003
		Analysis Lot:	677638
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.8	0.1368	0.1481	8.3	NA	± 15 %	Average RF

ALS Group Houston

EQ2000143-01

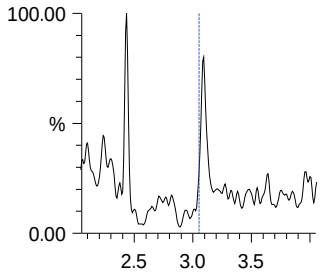
Date acquired: 4/20/2020 3:10:11 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_018.lcd
Vial: 15 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000143-01	4/20/2020 3:10:11 PM	----	----	20200420_018	----	25.0000	1.0000	15
Sodium Perchlorate-18O4_IS	EQ2000143-01	4/20/2020 3:10:11 PM	113200	1.00000	20200420_018	3.076	25.0000	1.0000	15

Perchlorate

Conc ----
Area ----

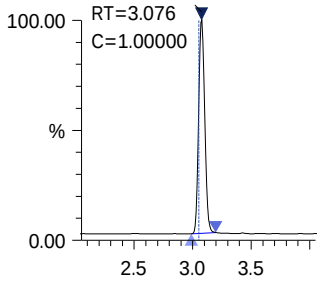
Q 99.00>83.00 (-) 2.29e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 113200

ISTD 107.00>89.00 (-) 3.08e4



ALS Group Houston

EQ2000143-02

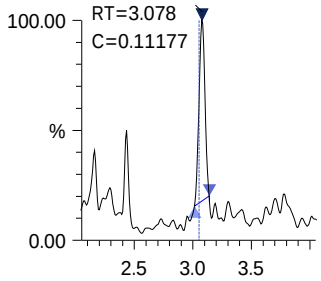
Date acquired: 4/20/2020 3:18:04 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_019.lcd
Vial: 16 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000143-02	4/20/2020 3:18:04 PM	1295	0.11177	20200420_019	3.078	25.0000	1.0000	16
Sodium Perchlorate-18O4_IS	EQ2000143-02	4/20/2020 3:18:04 PM	84678	1.00000	20200420_019	3.072	25.0000	1.0000	16

Perchlorate

Conc 0.11177
Area 1295

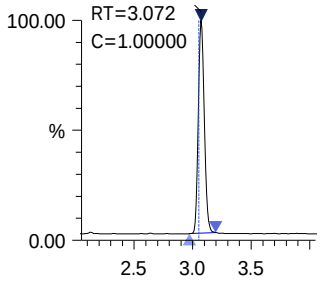
Q 99.00>83.00 (-) 4.36e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 84678

ISTD 107.00>89.00 (-) 2.35e4



ALS Group Houston

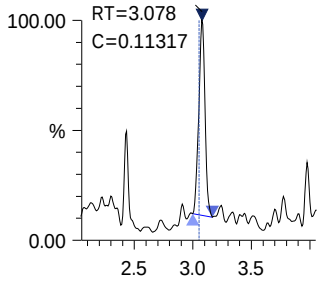
EQ2000143-03

Date acquired: 4/20/2020 3:26:00 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_020.lcd
Vial: 17 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000143-03	4/20/2020 3:26:00 PM	1678	0.11317	20200420_020	3.078	25.0000	1.0000	17
Sodium Perchlorate-18O4_IS	EQ2000143-03	4/20/2020 3:26:00 PM	108366	1.00000	20200420_020	3.072	25.0000	1.0000	17

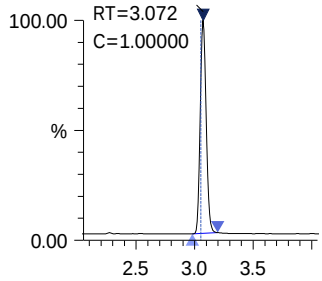
Perchlorate

Conc 0.11317
Area 1678
Q 99.00>83.00 (-) 4.97e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 108366
ISTD 107.00>89.00 (-) 3.03e4



ALS Group Houston

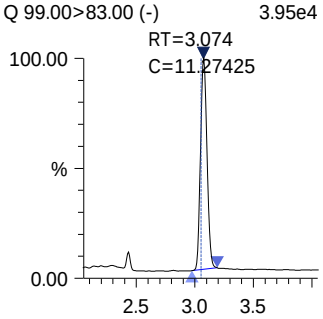
PERCHLORATE7

Date acquired: 4/20/2020 4:29:14 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_028.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/20/2020 4:29:14 PM	149879	11.27425	20200420_028	3.074	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/20/2020 4:29:14 PM	97156	1.00000	20200420_028	3.073	25.0000	1.0000	3

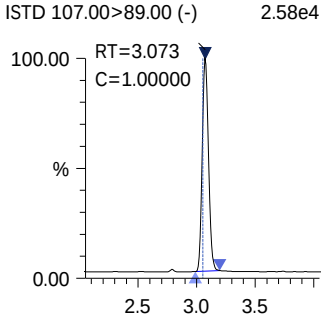
Perchlorate

Conc 11.27425
Area 149879



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 97156



ALS Group Houston

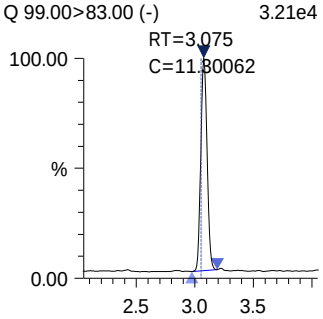
PERCHLORATE7

Date acquired: 4/22/2020 1:08:31 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200422\20200422_003.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/22/2020 1:08:31 PM	118621	11.30062	20200422_003	3.075	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/22/2020 1:08:31 PM	76714	1.00000	20200422_003	3.075	25.0000	1.0000	3

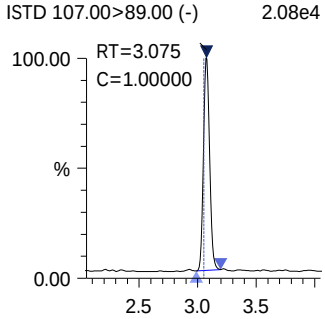
Perchlorate

Conc 11.30062
Area 118621



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 76714



ALS Group Houston

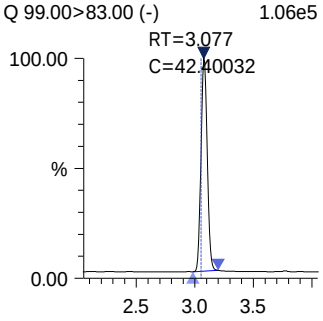
E2000305-001X250

Date acquired: 4/22/2020 1:32:14 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200422\20200422_006.lcd
Vial: 24 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	E2000305-001X250	4/22/2020 1:32:14 PM	391434	42.40032	20200422_006	3.077	25.0000	1.0000	24
Sodium Perchlorate-18O4_IS	E2000305-001X250	4/22/2020 1:32:14 PM	67470	1.00000	20200422_006	3.075	25.0000	1.0000	24

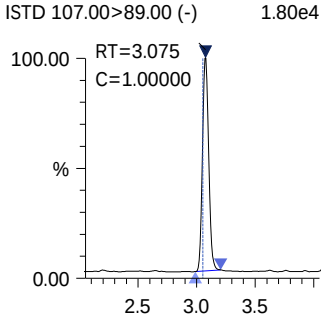
Perchlorate

Conc 42.40032
Area 391434



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 67470



ALS Group Houston

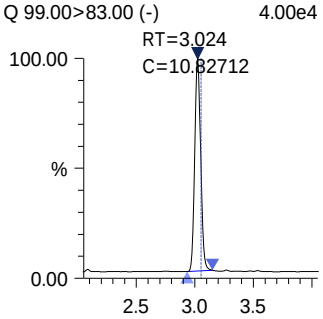
PERCHLORATE7

Date acquired: 4/22/2020 1:40:14 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200422\20200422_007.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/22/2020 1:40:14 PM	139071	10.82712	20200422_007	3.024	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/22/2020 1:40:14 PM	93873	1.00000	20200422_007	3.021	25.0000	1.0000	3

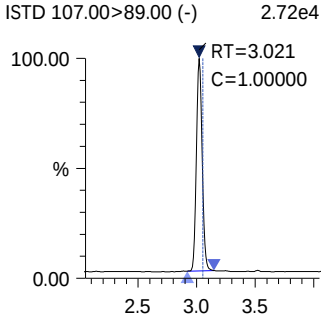
Perchlorate

Conc 10.82712
Area 139071



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 93873



10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

April 22, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20040289**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on Apr 08, 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: 22-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20040289

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20040289-01	LH18/24-SP650_040720	Water		07-Apr-2020 14:00	08-Apr-2020 08:22	☐
HS20040289-02	LH18/24-SP650_040720_BIX	Water		07-Apr-2020 14:00	08-Apr-2020 08:22	☐

ALS Houston, US Date: 22-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20040289

CASE NARRATIVE

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS High Resolution Lab in Houston, TX. Final report attached.

  The analysis for TOC was subcontracted to ALS Environmental in Kelso, WA. Final Report attached.

WetChemistry by Method E350.3

Batch ID: R359941

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

WetChemistry by Method E365.3

Batch ID: R359818

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

ALS Houston, US

Date: 22-Apr-20

Client: Bhate Environmental Associates, Inc.

ANALYTICAL REPORT

Project: Longhorn GW Treatment Plant Weekly Samples

WorkOrder:HS20040289

Sample ID: LH18/24-SP650_040720

Lab ID:HS20040289-01

Collection Date: 07-Apr-2020 14:00

Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: YP
Nitrogen, Ammonia (As N)	**1.6**	a	**0.20**	**0.10**	**0.20**	**mg/L**	1	14-Apr-2020 12:00
ORTHO PHOSPHATE (PO4) AS P BY E365.3		**Method:E365.3**						Analyst: KVL
Phosphorus, Total Orthophosphate (As P)	**0.125**	a	**0.0100**	**0.0250**	**0.0250**	**mg/L**	1	09-Apr-2020 12:00
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	20-Apr-2020 14:06

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

ALS Houston, US

Date: 22-Apr-20

Client: Bhate Environmental Associates, Inc.

ANALYTICAL REPORT

Project: Longhorn GW Treatment Plant Weekly Samples

WorkOrder:HS20040289

Sample ID: LH18/24-SP650_040720_BIX

Lab ID:HS20040289-02

Collection Date: 07-Apr-2020 14:00

Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: CGG
Subcontract Analysis	**0**		**0**	**0**	**0**	**NA**	1	22-Apr-2020 15:35

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

ALS Houston, US Date: 22-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20040289

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R359818 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3				**Matrix:** Water	
HS20040289-01	LH18/24-SP650_040720	07 Apr 2020 14:00			09 Apr 2020 12:00	1
Batch ID: R359941 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS20040289-01	LH18/24-SP650_040720	07 Apr 2020 14:00			14 Apr 2020 12:00	1
Batch ID: R360237 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Water	
HS20040289-01	LH18/24-SP650_040720	07 Apr 2020 14:00			20 Apr 2020 14:06	1
Batch ID: R360393 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS20040289-02	LH18/24-SP650_040720_BIX	07 Apr 2020 14:00			22 Apr 2020 15:35	1

ALS Houston, US Date: 22-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20040289

QC BATCH REPORT

Batch ID: R359818 (0) **Instrument: UV-2450** **Method: ORTHO PHOSPHATE (PO4) AS P BY E365.3**

MBLK Sample ID: **MBLK-R359818** Units: **mg/L** Analysis Date: **09-Apr-2020 12:00**
Client ID: Run ID: **UV-2450_359818** SeqNo: **5550917** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0250	0.0250								U

LCS Sample ID: **LCS-R359818** Units: **mg/L** Analysis Date: **09-Apr-2020 12:00**
Client ID: Run ID: **UV-2450_359818** SeqNo: **5550916** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.24	0.0250	0.25	0	96.0	85 - 115				

LCSD Sample ID: **LCSD-R359818** Units: **mg/L** Analysis Date: **09-Apr-2020 12:00**
Client ID: Run ID: **UV-2450_359818** SeqNo: **5550915** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.245	0.0250	0.25	0	98.0	85 - 115	0.24	2.06	20	

MS Sample ID: **HS20040289-01MS** Units: **mg/L** Analysis Date: **09-Apr-2020 12:00**
Client ID: **LH18/24-SP650_040720** Run ID: **UV-2450_359818** SeqNo: **5550919** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.364	0.0250	0.25	0.125	95.6	80 - 120				

MSD Sample ID: **HS20040289-01MSD** Units: **mg/L** Analysis Date: **09-Apr-2020 12:00**
Client ID: **LH18/24-SP650_040720** Run ID: **UV-2450_359818** SeqNo: **5550918** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.365	0.0250	0.25	0.125	96.0	80 - 120	0.364	0.274	20	

The following samples were analyzed in this batch: HS20040289-01

ALS Houston, US Date: 22-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20040289

QC BATCH REPORT

Batch ID: R359941 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK Sample ID: **MBLK-R359941** Units: **mg/L** Analysis Date: **14-Apr-2020 12:00**
Client ID: Run ID: **WetChem_HS_359941** SeqNo: **5553741** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.10	0.20								U

LCS Sample ID: **LCS-R359941** Units: **mg/L** Analysis Date: **14-Apr-2020 12:00**
Client ID: Run ID: **WetChem_HS_359941** SeqNo: **5553740** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.19	0.20	10	0	102	80 - 120				

MS Sample ID: **HS20040205-01MS** Units: **mg/L** Analysis Date: **14-Apr-2020 12:00**
Client ID: Run ID: **WetChem_HS_359941** SeqNo: **5559334** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.75	0.20	10	0.134	106	80 - 120				

MSD Sample ID: **HS20040205-01MSD** Units: **mg/L** Analysis Date: **14-Apr-2020 12:00**
Client ID: Run ID: **WetChem_HS_359941** SeqNo: **5559335** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.75	0.20	10	0.134	106	80 - 120	10.75	0.0279	20	

The following samples were analyzed in this batch: HS20040289-01

ALS Houston, US Date: 22-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS20040289**

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

ALS Houston, US Date: 22-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: 22-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20040289

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20040289-01	LH18/24-SP650_040720	Login	4/8/2020 10:05:13 AM	PMG	WET005
HS20040289-01	LH18/24-SP650_040720	Login	4/8/2020 10:05:13 AM	PMG	WET005
HS20040289-01	LH18/24-SP650_040720	Login	4/8/2020 10:05:13 AM	PMG	Sub
HS20040289-02	LH18/24-SP650_040720_BIX	Login	4/8/2020 10:05:13 AM	PMG	Sub

00974958

ALS Houston, US Date: 22-Apr-20

Sample Receipt Checklist

Client Name: Bhate Environmental
Work Order: HS20040289
Date/Time Received: **08-Apr-2020 08:22**
Received by: **AC**

Checklist completed by: *Paresh M. Giga* 8-Apr-2020
eSignature | Date

Reviewed by: *RJ Modashia* 8-Apr-2020
eSignature | Date

Matrices: **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):	2.5C U/C	IR25	
Cooler(s)/Kit(s):	2759		
Date/Time sample(s) sent to storage:	4/8/2020 10:15		
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:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281) 530-5656 ATTN: R.J Modashia

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

Prepared By:
Scott Beesinger

P.O. Number

HS20040289
Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_040720	Water	04/07/20 / 14:00		3	X	X			H2SO4	
LH18/24-SP650_040720	Water	04/07/20 / 14:00		1			X		NONE	
LH18/24–SP650_040720_BIX	Water	04/07/20 / 14:00		1				X	NONE	

Additional Remarks: **Standard TAT on all parameters**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	04/07/20	14:30	AL	04/8/2020	08:32						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

U/C 2.5 IR#35 CF0.0 2759

(Word) S:\Forms\Chain of Custody - BiWeekly

00974960

ALS
10150 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL

Date: 4/7/22 Time: 1430
Name: Scott Baglin
Company: BGE

Seal Broken By:
Date: 4/8/22

TRK# 4380 9533 6806

WED - 08 APR 10:30A
PRIORITY OVERNIGHT

AB SGRA 2759 77099
TX-US
IAH

3053259 86Apr 96

April 22, 2020 Service Request No:E2000303

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

Laboratory Results for: HS20040289

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory April 08, 2020
For your reference, these analyses have been assigned our service request number **E2000303.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2000303
Project:	HS20040289	**Date Received:**	04/08/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 04/08/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000143: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2000303
Project: HS20040289

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000303-001	LH18/24-SP650_040720_BIX	4/7/2020	1400

Service Request Summary

Folder #: **E2000303**
Client Name: ALS Environmental - US
Project Name: HS20040289
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 04/08/20
Internal Due Date: 4/22/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20040289
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000303-001	LH18/24-SP650_040720_BIX	Water	04/07/20 1400	**IV**

Service Request Summary

Folder #:	**E2000303**
Client Name:	ALS Environmental - US
Project Name:	HS20040289
Project Number:	

Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	04/08/20
Internal Due Date:	4/22/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20040289
EDD:	No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-WIC 10B

Pressure Gas:

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2020
California Department of Health Services	2919	4/30/2020
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	TX02694	4/30/2020
Illinois Environmental Protection Agency	2000322019-2	5/9/2020
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2020
Nevada Department of Concervation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209419	4/24/2020
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Concervation	04016	6/30/2020
Texas Commision on Environmental Quality	TX104704231-19-25	4/30/2020
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020

Chain of Custody

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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:** **13661**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

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: HS20040289
TSR: Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20040289-02**	**LH18/24-SP650_040720_BIX**	**Water**	**07 Apr 2020 14:00**
	SUB_Perch-6850			22 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: _____ Date/Time: 4/8/2020 11:42.

Received By: _____ Date/Time: 4/8/2020 11:42

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

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ΔLS-H

Thermometer ID 5M04

Date/Time Received: 4/8/2026 Initials: CH Date/Time Logged in: 4/8/2026 Initials CH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ⊘ ALS Courier ○ Client

2. Samples received in: ⊘ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ⊘ No
   Were they intact? ○ Yes ○ No ⊘ N/A
   Were they signed and dated? ○ Yes ○ No ⊘ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ⊘ Baggies ○ Bubble Wrap ○ Gel Packs ⊘ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		4/8/26	1142	CH	2.6 1.0	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ⊘ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ⊘ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ⊘ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ⊘ Yes ○ No
10. Did sample labels and tags agree with custody documents? ⊘ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

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F: +1 713 266 1599
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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

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Preparation Information Benchsheet

Prep Run#: 357146 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/DBOTROS **Prep Method:** Method **Prep Date/Time:** 4/20/20 09:32

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000275-001	M1Q2014	.01	6850/ClO4 DOD			Water	10mL	
2	E2000275-002	PZ-373-NS	.01	6850/ClO4 DOD			Water	10mL	
3	E2000275-003	PZ-489-NS	.01	6850/ClO4 DOD			Water	10mL	
4	E2000287-001	LH18/24-SP650_033120_BIX	.01	6850/ClO4 DOD			Water	10mL	
5	E2000303-001	LH18/24-SP650_040720_BIX	.01	6850/ClO4 DOD			Water	10mL	
6	E2000304-001	LH18/24-SP650_040720_BIX	.01	6850/ClO4 DOD			Water	10mL	
7	E2000305-001	LH18/24-SP140_040720	.01	6850/ClO4 DOD			Water	10mL	
8	EQ2000143-01	MB		6850/ClO4 DOD			Liquid	10mL	
9	EQ2000143-02	LCS		6850/ClO4 DOD			Liquid	10mL	
10	EQ2000143-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 202037 Logbook Ref: Sodium Perchlorate Expires On: 05/22/2021

E2000275-001	100.00µL	E2000275-002	100.00µL	E2000275-003	100.00µL	E2000287-001	100.00µL	E2000303-001	100.00µL	E2000304-001	100.00µL
E2000305-001	100.00µL	EQ2000143-01	100.00µL	EQ2000143-02	100.00µL	EQ2000143-03	100.00µL				

Name: Perchlorate Intermediate Stock1 Inventory ID 204799 Logbook Ref: 200657 1.0ug/mL KN Expires On: 05/15/2020

EQ2000143-02	1.00µL	EQ2000143-03	1.00µL

Preparation Steps

Step: Preparation
Started: 4/20/20 09:32
Finished: 4/20/20 10:00
By: KBROWN
Comments

Comments: _____

Reviewed By: kn Date: 04/20/2020

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000303
Project:	HS20040289	**Date Collected:**	4/ 7/20 1400
Sample Matrix:	Water	**Date Received:**	4/ 8/20
Sample Name:	LH18/24-SP650_040720_BIX	**Units:**	µg/L
Lab Code:	E2000303-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	4/20/20	4/22/20 13:16	357146	677638	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000303
Project:	HS20040289	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000143-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	4/20/20	4/20/20 15:10	357146	677504	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000303
Project:	HS20040289	**Date Analyzed:**	4/20/20
Sample Matrix:	Water		

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	357146

	Lab Control Sample EQ2000143-02			Duplicate Lab Control Sample EQ2000143-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.112	0.100	112	0.113	0.100	113	84 - 119	1	15

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

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000303
Project:	HS20040289	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000143-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.112**		0.100	0.0500	0.0250	1	4/20/20	4/20/20 15:18	357146	677504	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000303
Project:	HS20040289	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000143-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.113**		0.100	0.0500	0.0250	1	4/20/20	4/20/20 15:26	357146	677504	

Initial Calibration

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20200420

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200420_001	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:01
	null		20200420_002	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:06
	DIBLK		20200420_003	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:11
	IB		20200420_004	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:19
	PERCHLORATE7		20200420_005	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 13:27
	LODV		20200420_006	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:35
	PERCHLORATE1		20200420_007	Perchlorate6850b.lcm	1x	☒	3100804-05	4/20/2020 13:43
	PERCHLORATE2		20200420_008	Perchlorate6850b.lcm	1x	☒	3100804-06	4/20/2020 13:51
	PERCHLORATE3		20200420_009	Perchlorate6850b.lcm	1x	☒	3100804-07	4/20/2020 13:58
	PERCHLORATE4		20200420_010	Perchlorate6850b.lcm	1x	☒	3100804-08	4/20/2020 14:06
	PERCHLORATE5		20200420_011	Perchlorate6850b.lcm	1x	☒	3100804-09	4/20/2020 14:14
	PERCHLORATE6		20200420_012	Perchlorate6850b.lcm	1x	☒	3100805-01	4/20/2020 14:22
	PERCHLORATE8		20200420_013	Perchlorate6850b.lcm	1x	☒	3100805-03	4/20/2020 14:30
	PERCHLORATE9		20200420_014	Perchlorate6850b.lcm	1x	☒	3100805-04	4/20/2020 14:38
	PERCHLORATE10		20200420_015	Perchlorate6850b.lcm	1x	☒	3100805-05	4/20/2020 14:46
	ICV		20200420_016	Perchlorate6850b.lcm	1x	☒	3100805-06	4/20/2020 14:54
	LODV		20200420_017	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:02
	EQ2000143-01		20200420_018	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:10
	EQ2000143-02		20200420_019	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:18
	EQ2000143-03		20200420_020	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:26
	E2000275-001		20200420_021	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:33
	E2000275-002		20200420_022	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:41
	E2000275-003		20200420_023	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:49
	E2000287-001		20200420_024	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:57
	E2000303-001		20200420_025	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:05
	E2000304-001		20200420_026	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:13
	E2000305-001		20200420_027	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:21
	PERCHLORATE7		20200420_028	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 16:29
	E2000303-001		20200420_029	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:47
	E2000304-001		20200420_030	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:55
	PERCHLORATE7		20200420_031	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 17:02

Initial Calibration - Detailed Report

Calibration ID: EC2000003 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
08	EC2000003-08	PERCHLORATE7	20200420_005	04/20/2020 13:27
01	EC2000003-01	PERCHLORATE1	20200420_007	04/20/2020 13:43
02	EC2000003-02	PERCHLORATE2	20200420_008	04/20/2020 13:51
03	EC2000003-03	PERCHLORATE3	20200420_009	04/20/2020 13:58
04	EC2000003-04	PERCHLORATE4	20200420_010	04/20/2020 14:06
05	EC2000003-05	PERCHLORATE5	20200420_011	04/20/2020 14:14
06	EC2000003-06	PERCHLORATE6	20200420_012	04/20/2020 14:22
07	EC2000003-07	PERCHLORATE8	20200420_013	04/20/2020 14:30
09	EC2000003-09	PERCHLORATE9	20200420_014	04/20/2020 14:38
10	EC2000003-10	PERCHLORATE10	20200420_015	04/20/2020 14:46

Analyte | **Curve Fit** | **Weighting**

Perchlorate | **Average RF** | **RSD = 8.066** | **Average RF = 0.1368**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1558	02	0.5000	0.1297	03	0.7000	0.1277	04	1.0000	0.1397
05	2.0000	0.1298	06	5.0000	0.1245	07	20.0000	0.1341	08	10.0000	0.1562
09	30.0000	0.1365	10	50.0000	0.1345						

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.114	13.9	02	0.5000	0.474	-5.2	03	0.7000	0.653	-6.7
04	1.0000	1.02	2.1	05	2.0000	1.90	-5.1	06	5.0000	4.55	-9.0
07	20.0000	19.6	-2.0	08	10.0000	11.4	14.2	09	30.0000	29.9	-0.2
10	50.0000	49.1	-1.7								

Initial Calibration Verification Summary Report

Calibration ID:	EC2000003	**Instrument ID:**	E-LCMS-01
Datafile ID:	20200420_016	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000003-11	T	Average RF	10	11.345	ng/mL	13.4	<= 15

ALS Group Houston

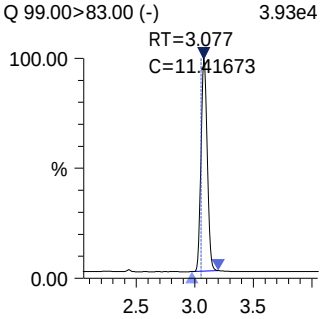
PERCHLORATE7

Date acquired: 4/20/2020 1:27:21 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_005.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/20/2020 1:27:21 PM	144494	11.41673	20200420_005	3.077	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/20/2020 1:27:21 PM	92497	1.00000	20200420_005	3.076	25.0000	1.0000	3

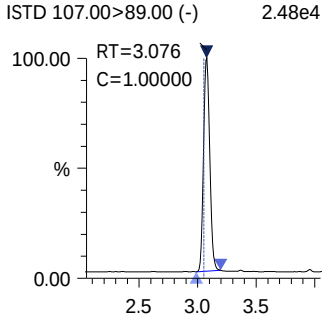
Perchlorate

Conc 11.41673
Area 144494



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 92497



ALS Group Houston

PERCHLORATE1

Date acquired: 4/20/2020 1:43:09 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_007.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

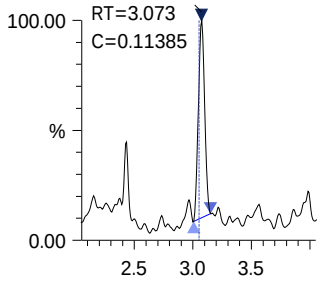
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	4/20/2020 1:43:09 PM	1840	0.11385	20200420_007	3.073	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	4/20/2020 1:43:09 PM	118078	1.00000	20200420_007	3.073	25.0000	1.0000	5

Perchlorate

Conc 0.11385

Area 1840

Q 99.00>83.00 (-) 5.37e2

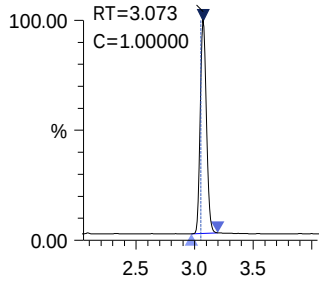


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 118078

ISTD 107.00>89.00 (-) 3.18e4



ALS Group Houston

PERCHLORATE2

Date acquired: 4/20/2020 1:51:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_008.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

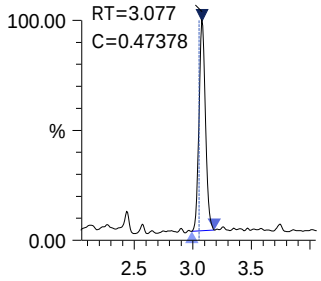
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	4/20/2020 1:51:02 PM	7551	0.47378	20200420_008	3.077	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	PERCHLORATE2	4/20/2020 1:51:02 PM	116479	1.00000	20200420_008	3.075	25.0000	1.0000	6

Perchlorate

Conc 0.47378

Area 7551

Q 99.00>83.00 (-) 2.00e3

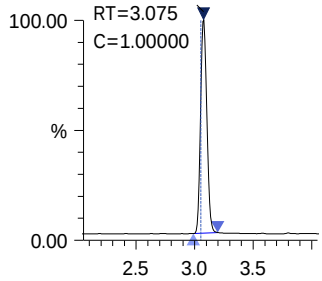


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 116479

ISTD 107.00>89.00 (-) 3.08e4



ALS Group Houston

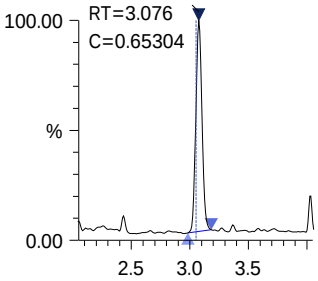
PERCHLORATE3

Date acquired: 4/20/2020 1:58:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_009.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	4/20/2020 1:58:56 PM	11235	0.65304	20200420_009	3.076	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE3	4/20/2020 1:58:56 PM	125731	1.00000	20200420_009	3.073	25.0000	1.0000	7

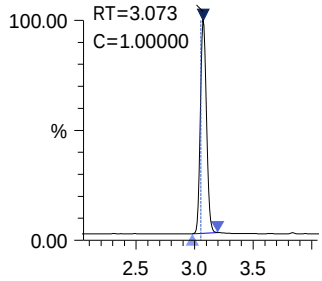
Perchlorate

Conc 0.65304
Area 11235
Q 99.00>83.00 (-) 3.12e3



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 125731
ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

PERCHLORATE4

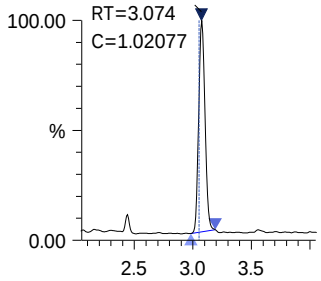
Date acquired: 4/20/2020 2:06:51 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_010.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	4/20/2020 2:06:51 PM	16670	1.02077	20200420_010	3.074	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE4	4/20/2020 2:06:51 PM	119354	1.00000	20200420_010	3.074	25.0000	1.0000	8

Perchlorate

Conc 1.02077
Area 16670

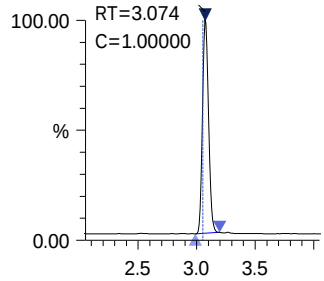
Q 99.00>83.00 (-) 4.51e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 119354

ISTD 107.00>89.00 (-) 3.26e4



ALS Group Houston

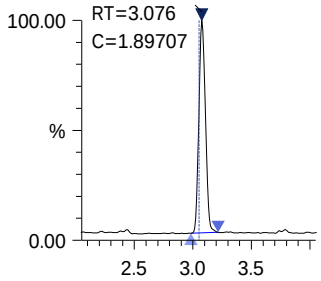
PERCHLORATE5

Date acquired: 4/20/2020 2:14:45 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_011.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	4/20/2020 2:14:45 PM	33786	1.89707	20200420_011	3.076	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE5	4/20/2020 2:14:45 PM	130159	1.00000	20200420_011	3.075	25.0000	1.0000	9

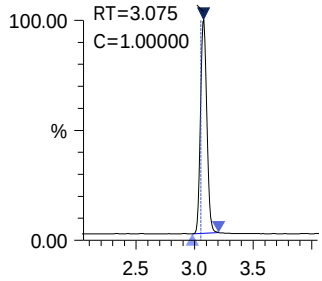
Perchlorate

Conc 1.89707
Area 33786
Q 99.00>83.00 (-) 8.73e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 130159
ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

PERCHLORATE6

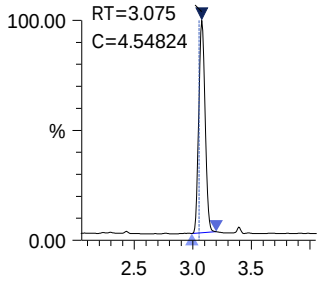
Date acquired: 4/20/2020 2:22:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_012.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	4/20/2020 2:22:39 PM	69848	4.54824	20200420_012	3.075	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE6	4/20/2020 2:22:39 PM	112235	1.00000	20200420_012	3.074	25.0000	1.0000	10

Perchlorate

Conc 4.54824
Area 69848

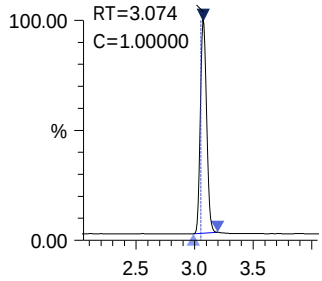
Q 99.00>83.00 (-) 1.86e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 112235

ISTD 107.00>89.00 (-) 2.98e4



ALS Group Houston

PERCHLORATE8

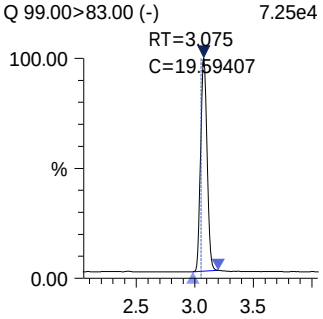
Date acquired: 4/20/2020 2:30:36 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_013.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	4/20/2020 2:30:36 PM	275854	19.59407	20200420_013	3.075	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE8	4/20/2020 2:30:36 PM	102890	1.00000	20200420_013	3.072	25.0000	1.0000	11

Perchlorate

Conc 19.59407

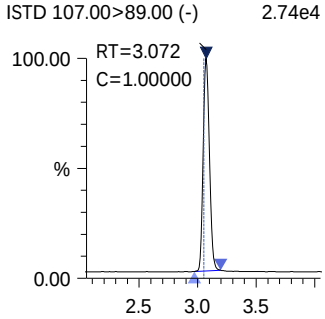
Area 275854



Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 102890



ALS Group Houston

PERCHLORATE9

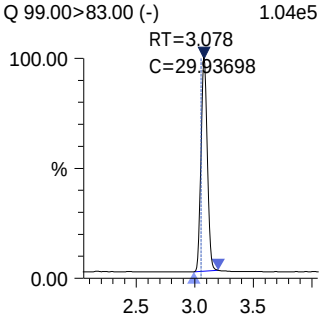
Date acquired: 4/20/2020 2:38:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_014.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	4/20/2020 2:38:33 PM	390068	29.93698	20200420_014	3.078	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE9	4/20/2020 2:38:33 PM	95225	1.00000	20200420_014	3.075	25.0000	1.0000	12

Perchlorate

Conc 29.93698

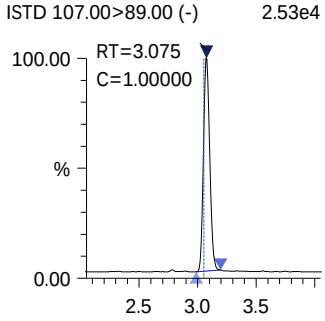
Area 390068



Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 95225



ALS Group Houston

PERCHLORATE10

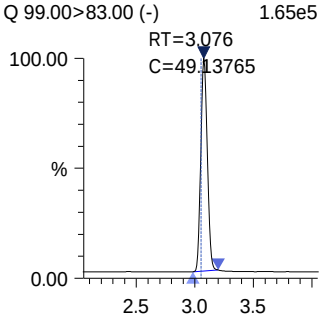
Date acquired: 4/20/2020 2:46:25 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_015.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE10	4/20/2020 2:46:25 PM	632804	49.13765	20200420_015	3.076	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE10	4/20/2020 2:46:25 PM	94118	1.00000	20200420_015	3.075	25.0000	1.0000	13

Perchlorate

Conc 49.13765

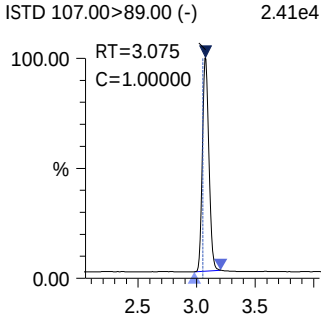
Area 632804



Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 94118



ALS Group Houston

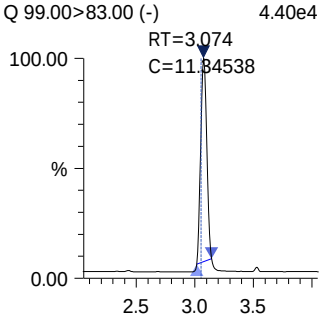
PERCHLORATEICV

Date acquired: 4/20/2020 2:54:20 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_016.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	4/20/2020 2:54:20 PM	149807	11.34538	20200420_016	3.074	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	4/20/2020 2:54:20 PM	96501	1.00000	20200420_016	3.072	25.0000	1.0000	14

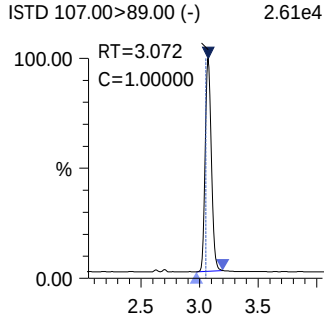
Perchlorate

Conc 11.34538
Area 149807



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 96501



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200420

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200420_001	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:01
	null		20200420_002	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:06
	DIBLK		20200420_003	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:11
	IB		20200420_004	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:19
	PERCHLORATE7		20200420_005	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 13:27
	LODV		20200420_006	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:35
	PERCHLORATE1		20200420_007	Perchlorate6850b.lcm	1x	☒	3100804-05	4/20/2020 13:43
	PERCHLORATE2		20200420_008	Perchlorate6850b.lcm	1x	☒	3100804-06	4/20/2020 13:51
	PERCHLORATE3		20200420_009	Perchlorate6850b.lcm	1x	☒	3100804-07	4/20/2020 13:58
	PERCHLORATE4		20200420_010	Perchlorate6850b.lcm	1x	☒	3100804-08	4/20/2020 14:06
	PERCHLORATE5		20200420_011	Perchlorate6850b.lcm	1x	☒	3100804-09	4/20/2020 14:14
	PERCHLORATE6		20200420_012	Perchlorate6850b.lcm	1x	☒	3100805-01	4/20/2020 14:22
	PERCHLORATE8		20200420_013	Perchlorate6850b.lcm	1x	☒	3100805-03	4/20/2020 14:30
	PERCHLORATE9		20200420_014	Perchlorate6850b.lcm	1x	☒	3100805-04	4/20/2020 14:38
	PERCHLORATE10		20200420_015	Perchlorate6850b.lcm	1x	☒	3100805-05	4/20/2020 14:46
	ICV		20200420_016	Perchlorate6850b.lcm	1x	☒	3100805-06	4/20/2020 14:54
	LODV		20200420_017	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:02
	EQ2000143-01		20200420_018	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:10
	EQ2000143-02		20200420_019	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:18
	EQ2000143-03		20200420_020	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:26
	E2000275-001		20200420_021	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:33
	E2000275-002		20200420_022	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:41
	E2000275-003		20200420_023	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:49
	E2000287-001		20200420_024	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:57
	E2000303-001		20200420_025	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:05
	E2000304-001		20200420_026	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:13
	E2000305-001		20200420_027	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:21
	PERCHLORATE7		20200420_028	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 16:29
	E2000303-001		20200420_029	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:47
	E2000304-001		20200420_030	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:55
	PERCHLORATE7		20200420_031	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 17:02

20200422

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200422_001	Perchlorate6850b.lcm	1x	☒		4/22/2020 12:55
	IB		20200422_002	Perchlorate6850b.lcm	1x	☒		4/22/2020 13:00
	PERCHLORATE7		20200422_003	Perchlorate6850b.lcm	1x	☒	3100805-02	4/22/2020 13:08
	E2000303-001		20200422_004	Perchlorate6850b.lcm	1x	☒		4/22/2020 13:16
	E2000304-001		20200422_005	Perchlorate6850b.lcm	1x	☒		4/22/2020 13:24
	E2000305-001X250		20200422_006	Perchlorate6850b.lcm	250x	☒		4/22/2020 13:32
	PERCHLORATE7		20200422_007	Perchlorate6850b.lcm	1x	☒	3100805-02	4/22/2020 13:40

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000303
Project:	HS20040289	**Date Analyzed:**	4/20/20 14:54

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200420\20200420_016	**Lab Code:**	EQ2000148-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	677504
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000148-01	96,501	3.07
Method Blank	EQ2000143-01	113,200	3.08
Lab Control Sample	EQ2000143-02	84,678	3.07
Duplicate Lab Control Sample	EQ2000143-03	108,366	3.07

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000303
Project:	HS20040289	**Date Analyzed:**	4/20/20 16:29

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200420\20200420_028	**Lab Code:**	EQ2000148-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	677504
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000148-02	97,156	3.07

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000303
Project:	HS20040289	**Date Analyzed:**	4/22/20 13:08

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200422\20200422_003	**Lab Code:**	EQ2000153-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	677638
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000153-01	76,714	3.08
LH18/24-SP650_040720_BIX	E2000303-001	103,138	3.07

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000303
Project:	HS20040289	**Date Analyzed:**	4/22/20 13:40

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200422\20200422_007	**Lab Code:**	EQ2000153-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	677638
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000153-02	93,873	3.02

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000303
Project:	HS20040289	**Date Analyzed:**	4/20/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200420\20200420_016	**Calibration ID:**	EC2000003
		Analysis Lot:	677504
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.3	0.1368	0.1552	13.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000303
Project:	HS20040289	**Date Analyzed:**	4/20/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200420\20200420_028	**Calibration ID:**	EC2000003
		Analysis Lot:	677504
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.3	0.1368	0.1543	12.7	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000303
Project:	HS20040289	**Date Analyzed:**	4/22/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200422\20200422_003	**Calibration ID:**	EC2000003
		Analysis Lot:	677638
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.3	0.1368	0.1546	13.0	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000303
Project:	HS20040289	**Date Analyzed:**	4/22/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200422\20200422_007	**Calibration ID:**	EC2000003
		Analysis Lot:	677638
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.8	0.1368	0.1481	8.3	NA	± 15 %	Average RF

ALS Group Houston

EQ2000143-01

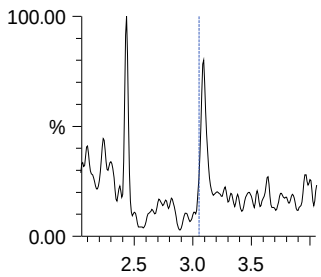
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Sodium Perchlorate-18O4_IS	EQ2000143-01	4/20/2020 3:10:11 PM	113200	1.00000	20200420_018	3.076	25.0000	1.0000	15

Perchlorate

Conc ----
Area ----

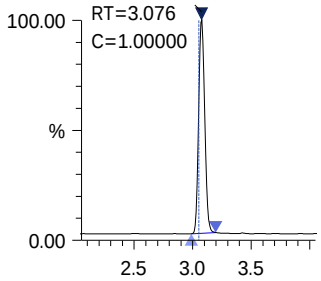
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Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 113200

ISTD 107.00>89.00 (-) 3.08e4



ALS Group Houston

EQ2000143-02

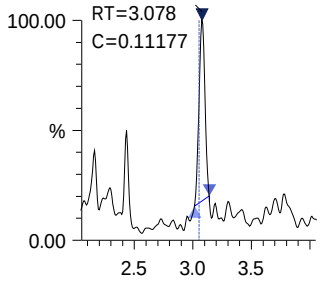
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Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000143-02	4/20/2020 3:18:04 PM	1295	0.11177	20200420_019	3.078	25.0000	1.0000	16
Sodium Perchlorate-18O4_IS	EQ2000143-02	4/20/2020 3:18:04 PM	84678	1.00000	20200420_019	3.072	25.0000	1.0000	16

Perchlorate

Conc 0.11177
Area 1295

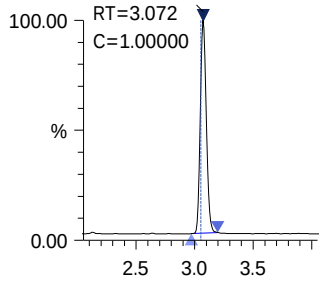
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Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 84678

ISTD 107.00>89.00 (-) 2.35e4



ALS Group Houston

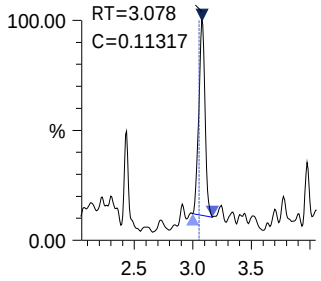
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Perchlorate	EQ2000143-03	4/20/2020 3:26:00 PM	1678	0.11317	20200420_020	3.078	25.0000	1.0000	17
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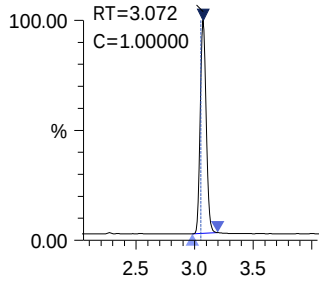
Perchlorate

Conc 0.11317
Area 1678
Q 99.00>83.00 (-) 4.97e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 108366
ISTD 107.00>89.00 (-) 3.03e4



ALS Group Houston

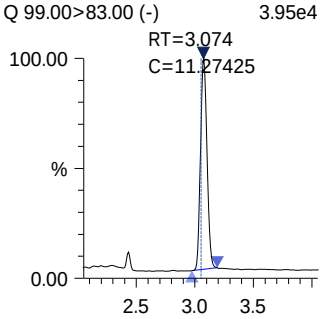
PERCHLORATE7

Date acquired: 4/20/2020 4:29:14 PM
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Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/20/2020 4:29:14 PM	149879	11.27425	20200420_028	3.074	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/20/2020 4:29:14 PM	97156	1.00000	20200420_028	3.073	25.0000	1.0000	3

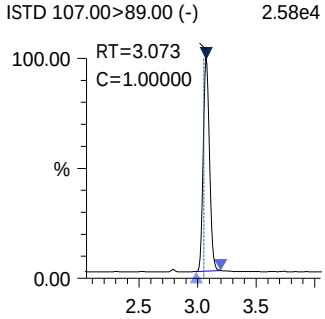
Perchlorate

Conc 11.27425
Area 149879



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 97156



ALS Group Houston

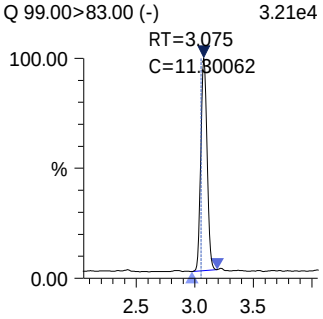
PERCHLORATE7

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Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/22/2020 1:08:31 PM	118621	11.30062	20200422_003	3.075	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/22/2020 1:08:31 PM	76714	1.00000	20200422_003	3.075	25.0000	1.0000	3

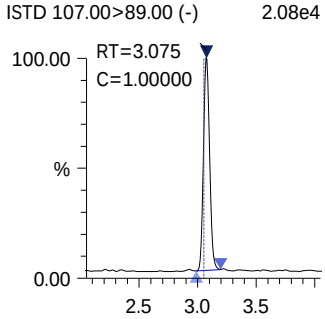
Perchlorate

Conc 11.30062
Area 118621



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 76714



ALS Group Houston

E2000303-001

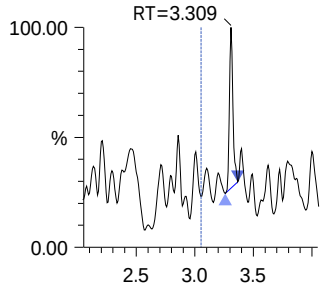
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Vial: 22 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	E2000303-001	4/22/2020 1:16:27 PM	----	----	20200422_004	----	25.0000	1.0000	22
Sodium Perchlorate-18O4_IS	E2000303-001	4/22/2020 1:16:27 PM	103138	1.00000	20200422_004	3.067	25.0000	1.0000	22

Perchlorate

Conc ----
Area ----

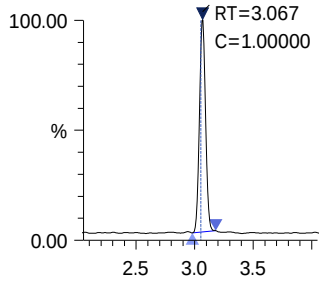
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Sodium Perchlorate-18O4_IS

Conc 1.00000
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ISTD 107.00>89.00 (-) 2.82e4



ALS Group Houston

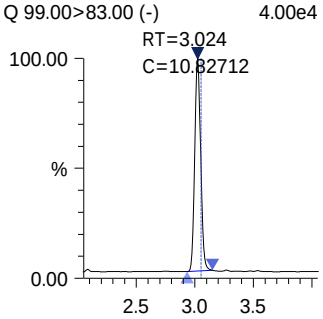
PERCHLORATE7

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Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/22/2020 1:40:14 PM	139071	10.82712	20200422_007	3.024	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/22/2020 1:40:14 PM	93873	1.00000	20200422_007	3.021	25.0000	1.0000	3

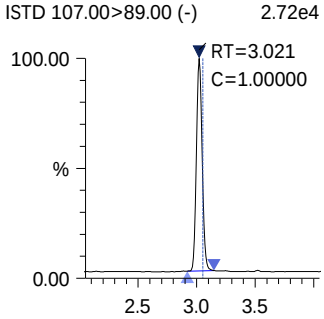
Perchlorate

Conc 10.82712
Area 139071



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 93873



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April 20, 2020

Analytical Report for Service Request No: K2003075

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

RE: HS20040289

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory April 10, 2020
For your reference, these analyses have been assigned our service request number **K2003075.**

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: HS20040289
Sample Matrix: Water

Service Request: K2003075
Date Received: 04/10/2020

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 water sample was received for analysis at ALS Environmental on 04/10/2020. 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 04/20/2020

Chain of Custody

ALS Environmental—Kelso Laboratory
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K2003075

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:** **13660**

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:	HS20040289
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20040289-01**	**LH18/24-SP650_040720**	**Water**	**07 Apr 2020 14:00**
	TOC Analysis for DOD Level IV			22 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. Myers Date/Time: 4/9/20 18:00

Received By: Date/Time: 4/10/20 1000

Cooler ID(s): Temperature(s):

PC KL

Cooler Receipt and Preservation Form

Client ALS / Houston Service Request K20 030775

Received: 4/10/20 Opened: 4/10/20 By: [signature] Unloaded: 4/10/20 By: [signature]

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
0.0	—	—	—	—	39800488WS	13660	1251 0796 7862	
						13688		

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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www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2003075
Project:	HS20040289	**Date Collected:**	04/7/20
Sample Matrix:	Water	**Date Received:**	04/10/20
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
LH18/24-SP650_040720	K2003075-001	**2.72**	0.50	0.20	0.07	1	04/15/20 02:59	
Method Blank	K2003075-MB	ND U	0.50	0.20	0.07	1	04/15/20 07:41	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2003075
Project	HS20040289	**Date Collected:**	04/07/20
Sample Matrix:	Water	**Date Received:**	04/10/20
		Date Analyzed:	04/15/20

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	LH18/24-SP650_040720	**Units:**	mg/L
Lab Code:	K2003075-001	**Basis:**	NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K2003075-001DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	2.72	2.63	2.68	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:**	K2003075
Project:	HS20040289	**Date Analyzed:**	04/15/20
Sample Matrix:	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:	676812

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2003075-LCS	22.0	25.0	88	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2003075
Project: HS20040289

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	676812	KQ2005208-01	04/14/20 19:55	25.0	24.0	96	90-110
CCV2	676812	KQ2005208-02	04/15/20 02:01	25.0	23.2	93	90-110
CCV3	676812	KQ2005208-03	04/15/20 07:12	25.0	22.8	91	90-110
CCV4	676812	KQ2005208-04	04/15/20 11:28	25.0	26.3	105	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2003075
Project: HS20040289

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	676812	KQ2005208-05	04/14/20 20:09	0.50	0.20	0.07	ND	U
CCB2	676812	KQ2005208-06	04/15/20 02:16	0.50	0.20	0.07	ND	U
CCB3	676812	KQ2005208-07	04/15/20 07:26	0.50	0.20	0.07	ND	U
CCB4	676812	KQ2005208-08	04/15/20 11:43	0.50	0.20	0.07	ND	U

Raw Data

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General Chemistry

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Work Request # Original ( ) K2002978, 3062, 3066, 3070, 3075, 3109, 3122

Tier: I I II II IV II II

Date Analyzed: 4/14/20

Analyst: SCP

Analysis: TOC

TOC: 676812, 676813

Run #

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: K2003122-1/1d, 3122-5/5d report a high %RSD. However, these samples are less than 5x the MRL.

Final Approved by: JC Date: 4/16/20

DQREPORT

C:\Documents and Settings\adam.bradbury\My Documents\DATAQUAL.DOC

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 676812 **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
K2002978-001	Carbon, Total Organic	N/A		Water	11.15 mg/L	10 mL	223 mg/L	20	2	10			4/15/20 00:51:00	N	I
K2002978-002	Carbon, Total Organic	N/A		Water	2.33 mg/L	10 mL	2.33 mg/L	1	0.07	0.50			4/15/20 01:19:00	N	I
K2003062-001	Carbon, Total Organic	N/A		Drinking Water	0.80 mg/L	10 mL	0.80 mg/L	1	0.07	0.50			4/15/20 03:27:00	N	I
K2003066-001	Carbon, Total Organic	N/A		Water	0.99 mg/L	10 mL	0.99 mg/L	1	0.07	0.50			4/15/20 02:31:00	N	II
K2003070-002	Carbon, Total Organic	N/A		Water	18.03 mg/L	10 mL	18.0 mg/L	1	0.07	0.50			4/15/20 03:55:00	N	II
K2003075-001	Carbon, Total Organic	N/A		Water	2.72 mg/L	10 mL	2.72 mg/L	1	0.07	0.50			4/15/20 02:59:00	N	IV
K2003109-001	Carbon, Total Organic	N/A		Water	4.50 mg/L	10 mL	4.50 mg/L	1	0.07	0.50			4/15/20 04:23:00	N	II
K2003109-002	Carbon, Total Organic	N/A		Water	14.97 mg/L	10 mL	15.0 mg/L	1	0.07	0.50			4/15/20 04:51:00	N	II
K2003109-003	Carbon, Total Organic	N/A		Water	27.84 mg/L	10 mL	27.8 mg/L	1	0.07	0.50			4/15/20 05:19:00	N	II
K2003109-004	Carbon, Total Organic	N/A		Water	18.81 mg/L	10 mL	18.8 mg/L	1	0.07	0.50			4/15/20 05:47:00	N	II
K2003109-005	Carbon, Total Organic	N/A		Water	11.57 mg/L	10 mL	11.6 mg/L	1	0.07	0.50			4/15/20 06:15:00	N	II
K2003109-006	Carbon, Total Organic	N/A		Water	14.49 mg/L	10 mL	14.5 mg/L	1	0.07	0.50			4/15/20 06:43:00	N	II
K2003109-007	Carbon, Total Organic	N/A		Water	5.62 mg/L	10 mL	28.1 mg/L	5	0.4	2.5			4/15/20 08:11:00	N	II
K2003109-008	Carbon, Total Organic	N/A		Water	13.88 mg/L	10 mL	13.9 mg/L	1	0.07	0.50			4/15/20 08:39:00	N	II
KQ2005208-01	Carbon, Total Organic	CCV		Water	24.05 mg/L	10 mL	24.0 mg/L	1					4/14/20 19:55:00	N	I
KQ2005208-02	Carbon, Total Organic	CCV		Water	23.16 mg/L	10 mL	23.2 mg/L	1					4/15/20 02:01:00	N	I
KQ2005208-03	Carbon, Total Organic	CCV		Water	22.83 mg/L	10 mL	22.8 mg/L	1					4/15/20 07:12:00	N	I
KQ2005208-04	Carbon, Total Organic	CCV		Water	26.26 mg/L	10 mL	26.3 mg/L	1					4/15/20 11:28:00	N	I
KQ2005208-05	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/14/20 20:09:00	N	I
KQ2005208-06	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/15/20 02:16:00	N	I
KQ2005208-07	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/15/20 07:26:00	N	I
KQ2005208-08	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/15/20 11:43:00	N	I
KQ2005208-09	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/15/20 07:41:00	N	I
KQ2005208-10	Carbon, Total Organic	LCS		Water	21.97 mg/L	10 mL	22.0 mg/L	1	0.07	0.50	88		4/15/20 07:56:00	N	I
KQ2005208-11	Carbon, Total Organic	MS	K2002978-002	Water	29.48 mg/L	10 mL	29.5 mg/L	1	0.07	0.50	109		4/15/20 01:47:00	N	I
KQ2005208-12	Carbon, Total Organic	DUP	K2002978-001	Water	11.37 mg/L	10 mL	227 mg/L	20	2	10		2	4/15/20 00:51:00	N	I
KQ2005208-13	Carbon, Total Organic	DUP	K2002978-002	Water	2.15 mg/L	10 mL	2.15 mg/L	1	0.07	0.50		8	4/15/20 01:19:00	N	I
KQ2005208-14	Carbon, Total Organic	DUP	K2003062-001	Drinking Water	0.75 mg/L	10 mL	0.75 mg/L	1	0.07	0.50		7	4/15/20 03:27:00	N	I
KQ2005208-15	Carbon, Total Organic	DUP	K2003066-001	Water	0.99 mg/L	10 mL	0.99 mg/L	1	0.07	0.50		<1	4/15/20 02:31:00	N	II
KQ2005208-16	Carbon, Total Organic	DUP	K2003075-001	Water	2.63 mg/L	10 mL	2.63 mg/L	1	0.07	0.50		3	4/15/20 02:59:00	N	IV
KQ2005208-17	Carbon, Total Organic	DUP	K2003070-002	Water	17.87 mg/L	10 mL	17.9 mg/L	1	0.07	0.50		<1	4/15/20 03:55:00	N	II
KQ2005208-18	Carbon, Total Organic	DUP	K2003109-003	Water	27.70 mg/L	10 mL	27.7 mg/L	1	0.07	0.50		<1	4/15/20 05:19:00	N	II
KQ2005208-19	Carbon, Total Organic	DUP	K2003109-004	Water	18.68 mg/L	10 mL	18.7 mg/L	1	0.07	0.50		<1	4/15/20 05:47:00	N	II
KQ2005208-20	Carbon, Total Organic	DUP	K2003109-005	Water	11.40 mg/L	10 mL	11.4 mg/L	1	0.07	0.50		1	4/15/20 06:15:00	N	II
KQ2005208-21	Carbon, Total Organic	DUP	K2003109-006	Water	14.37 mg/L	10 mL	14.4 mg/L	1	0.07	0.50		<1	4/15/20 06:43:00	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:** 676812 **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
KQ2005208-22	Carbon, Total Organic	DUP	K2003109-007	Water	5.50 mg/L	10 mL	27.5 mg/L	5	0.4	2.5		2	4/15/20 08:11:00	N	II
KQ2005208-23	Carbon, Total Organic	DUP	K2003109-008	Water	13.73 mg/L	10 mL	13.7 mg/L	1	0.07	0.50		1	4/15/20 08:39:00	N	II
KQ2005208-24	Carbon, Total Organic	DUP	K2003109-001	Water	4.43 mg/L	10 mL	4.43 mg/L	1	0.07	0.50		2	4/15/20 04:23:00	N	II
KQ2005208-25	Carbon, Total Organic	DUP	K2003109-002	Water	14.67 mg/L	10 mL	14.7 mg/L	1	0.07	0.50		2	4/15/20 04:51:00	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:** 676813 **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
K2003109-009	Carbon, Total Organic	N/A		Water	7.76 mg/L	10 mL	7.76 mg/L	1	0.07	0.50			4/15/20 09:07:00	N	II
K2003109-010	Carbon, Total Organic	N/A		Water	8.07 mg/L	10 mL	8.07 mg/L	1	0.07	0.50			4/15/20 10:04:00	N	II
K2003109-011	Carbon, Total Organic	N/A		Water	7.04 mg/L	10 mL	7.04 mg/L	1	0.07	0.50			4/15/20 10:32:00	N	II
K2003109-012	Carbon, Total Organic	N/A		Water	14.28 mg/L	10 mL	14.3 mg/L	1	0.07	0.50			4/15/20 11:00:00	N	II
K2003109-013	Carbon, Total Organic	N/A		Water	14.11 mg/L	10 mL	14.1 mg/L	1	0.07	0.50			4/15/20 11:58:00	N	II
K2003109-016	Carbon, Total Organic	N/A		Water	19.11 mg/L	10 mL	19.1 mg/L	1	0.07	0.50			4/15/20 12:26:00	N	II
K2003109-017	Carbon, Total Organic	N/A		Water	2.27 mg/L	10 mL	227 mg/L	100	7	50			4/15/20 12:54:00	N	II
K2003109-018	Carbon, Total Organic	N/A		Water	3.22 mg/L	10 mL	322 mg/L	100	7	50			4/15/20 13:22:00	N	II
K2003122-001	Carbon, Total Organic	N/A		Water	0.41 mg/L	10 mL	0.41 mg/L J	1	0.07	0.50			4/15/20 14:47:00	N	II
K2003122-002	Carbon, Total Organic	N/A		Water	0.44 mg/L	10 mL	0.44 mg/L J	1	0.07	0.50			4/15/20 15:15:00	N	II
K2003122-003	Carbon, Total Organic	N/A		Water	0.42 mg/L	10 mL	0.42 mg/L J	1	0.07	0.50			4/15/20 15:43:00	N	II
K2003122-004	Carbon, Total Organic	N/A		Water	0.37 mg/L	10 mL	0.37 mg/L J	1	0.07	0.50			4/15/20 16:11:00	N	II
K2003122-005	Carbon, Total Organic	N/A		Water	0.26 mg/L	10 mL	0.26 mg/L J	1	0.07	0.50			4/15/20 17:38:00	N	II
K2003122-006	Carbon, Total Organic	N/A		Water	0.34 mg/L	10 mL	0.34 mg/L J	1	0.07	0.50			4/15/20 18:06:00	N	II
K2003122-007	Carbon, Total Organic	N/A		Water	1.02 mg/L	10 mL	1.02 mg/L	1	0.07	0.50			4/15/20 18:34:00	N	II
K2003122-008	Carbon, Total Organic	N/A		Water	0.33 mg/L	10 mL	0.33 mg/L J	1	0.07	0.50			4/15/20 19:02:00	N	II
KQ2005210-01	Carbon, Total Organic	CCV		Water	22.83 mg/L	10 mL	22.8274 mg/L	1					4/15/20 07:12:00	N	II
KQ2005210-02	Carbon, Total Organic	CCV		Water	26.26 mg/L	10 mL	26.2577 mg/L	1					4/15/20 11:28:00	N	II
KQ2005210-03	Carbon, Total Organic	CCV		Water	25.78 mg/L	10 mL	25.7832 mg/L	1					4/15/20 16:39:00	N	II
KQ2005210-04	Carbon, Total Organic	CCV		Water	26.02 mg/L	10 mL	26.0179 mg/L	1					4/15/20 21:22:00	N	II
KQ2005210-05	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/15/20 07:26:00	N	II
KQ2005210-06	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/15/20 11:43:00	N	II
KQ2005210-07	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/15/20 16:53:00	N	II
KQ2005210-08	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/15/20 21:37:00	N	II
KQ2005210-09	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/15/20 17:08:00	N	II
KQ2005210-10	Carbon, Total Organic	LCS		Water	25.92 mg/L	10 mL	25.9 mg/L	1	0.07	0.50			4/15/20 17:23:00	N	II
KQ2005210-11	Carbon, Total Organic	MS	K2003109-009	Water	34.79 mg/L	10 mL	34.8 mg/L	1	0.07	0.50			4/15/20 09:35:00	N	II
KQ2005210-12	Carbon, Total Organic	DUP	K2003109-016	Water	19.18 mg/L	10 mL	19.2 mg/L	1	0.07	0.50		<1	4/15/20 12:26:00	N	II
KQ2005210-13	Carbon, Total Organic	DUP	K2003109-017	Water	2.19 mg/L	10 mL	219 mg/L	100	7	50		4	4/15/20 12:54:00	N	II
KQ2005210-14	Carbon, Total Organic	DUP	K2003109-018	Water	3.27 mg/L	10 mL	327 mg/L	100	7	50		1	4/15/20 13:22:00	N	II
KQ2005210-15	Carbon, Total Organic	DUP	K2003109-009	Water	7.75 mg/L	10 mL	7.75 mg/L	1	0.07	0.50		<1	4/15/20 09:07:00	N	II
KQ2005210-16	Carbon, Total Organic	DUP	K2003109-010	Water	8.03 mg/L	10 mL	8.03 mg/L	1	0.07	0.50		<1	4/15/20 10:04:00	N	II
KQ2005210-17	Carbon, Total Organic	DUP	K2003109-011	Water	6.88 mg/L	10 mL	6.88 mg/L	1	0.07	0.50		2	4/15/20 10:32:00	N	II
KQ2005210-18	Carbon, Total Organic	DUP	K2003109-012	Water	14.19 mg/L	10 mL	14.2 mg/L	1	0.07	0.50		<1	4/15/20 11:00:00	N	II
KQ2005210-19	Carbon, Total Organic	DUP	K2003109-013	Water	13.97 mg/L	10 mL	14.0 mg/L	1	0.07	0.50		<1	4/15/20 11:58:00	N	II
KQ2005210-20	Carbon, Total Organic	DUP	K2003122-001	Water	0.47 mg/L	10 mL	0.47 mg/L J	1	0.07	0.50		13*	4/15/20 14:47:00	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:** 676813 **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
KQ2005210-21	Carbon, Total Organic	DUP	K2003122-002	Water	0.43 mg/L	10 mL	0.43 mg/L J	1	0.07	0.50		2	4/15/20 15:15:00	N	II
KQ2005210-22	Carbon, Total Organic	DUP	K2003122-003	Water	0.44 mg/L	10 mL	0.44 mg/L J	1	0.07	0.50		5	4/15/20 15:43:00	N	II
KQ2005210-23	Carbon, Total Organic	DUP	K2003122-004	Water	0.38 mg/L	10 mL	0.38 mg/L J	1	0.07	0.50		2	4/15/20 16:11:00	N	II
KQ2005210-24	Carbon, Total Organic	DUP	K2003122-005	Water	0.20 mg/L	10 mL	0.20 mg/L J	1	0.07	0.50		25*	4/15/20 17:38:00	N	II
KQ2005210-25	Carbon, Total Organic	DUP	K2003122-006	Water	0.31 mg/L	10 mL	0.31 mg/L J	1	0.07	0.50		8	4/15/20 18:06:00	N	II
KQ2005210-26	Carbon, Total Organic	DUP	K2003122-007	Water	1.05 mg/L	10 mL	1.05 mg/L	1	0.07	0.50		3	4/15/20 18:34:00	N	II
KQ2005210-27	Carbon, Total Organic	DUP	K2003122-008	Water	0.30 mg/L	10 mL	0.30 mg/L J	1	0.07	0.50		10	4/15/20 19:02:00	N	II

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

TOC: 676811, 676812, 676813
DOC: 676814

Schedule: 04142020

Version: 4
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2020/04/14 17:26 - Tuesday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Blank)	Blank	Reagent/Acid Blank		1	True	Ready
D	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
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	LOD	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
4	Sample	LOQ	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
5	Sample	LOD	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
6	Sample	LOQ	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
7	Sample	K2002978-001.03 20x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
8	Sample	K2002978-002.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
9	Sample	K2002978-002.03 ms	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
10	Sample	K2003066-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	K2003075-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	K2003062-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	K2003070-002.05	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
14	Sample	K2003109-001.05	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
15	Sample	K2003109-002.05	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
16	Sample	K2003109-003.05	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
17	Sample	K2003109-004.05	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
18	Sample	K2003109-005.05	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
19	Sample	K2003109-006.05	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	K2003109-007.05 5x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K2003109-008.05	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
23	Sample	K2003109-009.05	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
24	Sample	K2003109-009.05 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
25	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
26	Sample	K2003109-010.05	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K2003109-011.05	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K2003109-012.05	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	K2003109-013.05	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
30	Sample	K2003109-016.11	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
31	Sample	K2003109-017.11 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
32	Sample	K2003109-018.11 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
33	Sample	K2003004-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
34	Sample	K2003004-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
35	Sample	K2003122-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
36	Sample	K2003122-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
37	Sample	K2003122-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
38	Sample	K2003122-004.01	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

Schedule: 04142020

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	K2003122-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
41	Sample	K2003122-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
42	Sample	K2003122-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
43	Sample	K2003122-008.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
44	Sample	K2003024-001.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
45	Sample	K2003024-002.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
46	Sample	K2003024-003.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
47	Sample	K2003024-004.01 doc	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
48	Sample	K2003024-005.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
49	Sample	K2003024-006.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
50	Sample	K2003024-007.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
51	Sample	K2003024-008.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
52	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)	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 - 04142020
Tuesday, April 14, 2020 05:06 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/04/16 09:05 - Thursday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	04142020	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) (v4)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◈	(clean)		Clean	2020/04/14 17:06

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	13.56	21.82	8.27	49.67	07:58
2	TC Clean	44.26	48.10	3.84	49.39	07:18
3	TC Clean	7.99	11.97	3.99	49.39	07:03
4	TC Clean	4.66	8.60	3.95	49.37	07:01

Sample Type: Clean — From Schedule Version 4

	Pos	Analysis Type	Sample ID	Start Time
◈	(clean)		Clean	2020/04/14 17:40

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.79	5.60	3.81	49.62	08:01
2	TC Clean	11.01	14.89	3.88	49.39	07:18
3	TC Clean	3.23	7.09	3.86	49.39	07:00
4	TC Clean	2.58	6.25	3.67	49.40	07:01

Sample Type: Clean From Schedule Version 4

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/04/14 18:14

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.30	5.01	3.70	49.63	07:59
2	TC Clean	7.70	11.46	3.77	49.41	07:19
3	TC Clean	3.07	6.83	3.76	49.45	07:03
4	TC Clean	2.39	6.25	3.86	49.46	07:04

Sample Type: Blank (Creating v1373) From Schedule Version 4

	Pos	Analysis Type	Sample ID	Start Time
◆	(blank)		Reagent/Acid Blank	2020/04/14 18:48

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.10	4.96	3.85	49.68	07:59
2	TC Clean	10.21	14.00	3.79	49.49	07:18
3	TC Clean	4.66	8.44	3.78	49.53	07:02
4	TC Clean	3.18	6.90	3.71	49.55	07:02
5	Reagent Blank	4.38	8.28	3.89	49.58	08:12
6	Acid Blank	1.48	5.25	3.77	49.81	08:03

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	D	TOC	RB	0.6779 ppm	0.0000 ppm	0.0000%	2020/04/14 19:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6779	6.7790	11.89	15.75	3.86	49.58	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	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)	24.0488 ppm (PASS)	0.0000 ppm	0%	2020/04/14 19:55

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.0488	240.4879	169.54	173.41	3.87	49.63	10:31

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%	2020/04/14 20:09

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.88	10.77	3.88	49.66	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

Sample Type: Sample From Schedule Version 4

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	1	TOC	MB1	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/14 20:24

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.17	9.99	3.82	49.69	10:26
2	TOC	0.0000	0.0000	5.99	9.79	3.80	49.68	10:29
3	TOC	0.0000	0.0000	5.96	9.70	3.74	49.69	10:25
4	TOC	0.0000	0.0000	5.73	9.52	3.79	49.71	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	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)	21.9873 ppm	0.0951 ppm	0.43%	2020/04/14 21:20

							(PASS)			

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	22.0581	220.5815	156.16	159.79	3.63	49.72	10:27
C	TOC	25.0 ppm	2	21.9853	219.8528	155.67	159.43	3.76	49.75	10:27
C	TOC	25.0 ppm	3	21.8535	218.5354	154.78	158.78	4.00	49.77	10:27
C	TOC	25.0 ppm	4	22.0521	220.5205	156.12	159.98	3.86	49.78	10:28

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
◆	2	TOC	ICS	0.2333 ppm	0.0000 ppm	0.0000%	2020/04/14 22:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2333	2.3329	8.90	12.85	3.95	49.78	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	3	TOC	LOD	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/14 22:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.64	10.56	3.92	49.80	10:27
2	TOC	0.0000	0.0000	6.56	10.50	3.95	49.80	10:24
3	TOC	0.0000	0.0000	6.57	10.43	3.86	49.83	10:32
4	TOC	0.0000	0.0000	6.71	10.45	3.74	49.85	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	4	TOC	LOQ	0.2083 ppm	0.0288 ppm	13.8100%	2020/04/14 23:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2256	2.2555	8.84	12.65	3.81	49.85	10:32
2	TOC	0.2086	2.0860	8.73	12.65	3.92	49.84	10:25
3	TOC	0.2315	2.3150	8.88	12.67	3.78	49.86	10:27
4	TOC	0.1677	1.6771	8.46	12.29	3.84	49.87	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC)	CAS_salt_010711	CAS_salt_010711

(v1373) (v4) (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	5	TOC	LOD	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/15 00:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.78	10.48	3.69	49.86	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	6	TOC	LOQ	0.2201 ppm	0.0000 ppm	0.0000%	2020/04/15 00:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2201	2.2005	8.81	12.60	3.80	49.86	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	7	TOC	K2002978-001.03 20x	11.2568 ppm	0.1560 ppm	1.3900%	2020/04/15 00:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	11.1465	111.4649	82.29	86.08	3.79	49.87	10:27
2	TOC	11.3672	113.6716	83.77	87.57	3.80	49.88	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	8	TOC	K2002978-002.03	2.2402 ppm	0.1208 ppm	5.3900%	2020/04/15 01:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.3256	23.2564	22.97	26.80	3.83	49.88	10:27
2	TOC	2.1548	21.5478	21.82	25.57	3.75	49.88	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	9	TOC	K2002978-002.03 ms	29.4825 ppm	0.0000 ppm	0.0000%	2020/04/15 01:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	29.4825	294.8248	205.60	209.48	3.88	49.89	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	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)	23.1637 ppm (PASS)	0.0000 ppm	0%	2020/04/15 02:01

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	23.1637	231.6373	163.59	167.25	3.66	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%	2020/04/15 02:16

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.96	9.87	3.91	49.90	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
◈	10	TOC	K2003066-001.01	0.9916 ppm	0.0035 ppm	0.3500%	2020/04/15 02:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9940	9.9403	14.01	17.82	3.81	49.88	10:30
2	TOC	0.9891	9.8913	13.98	17.77	3.79	49.91	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

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

◈	11	TOC	K2003075-001.01	2.6777 ppm	0.0651 ppm	2.4300%	2020/04/15 02:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.7237	27.2371	25.64	29.47	3.82	49.89	10:26
2	TOC	2.6317	26.3166	25.03	29.01	3.99	49.90	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	12	TOC	K2003062-001.01	0.7718 ppm	0.0369 ppm	4.7800%	2020/04/15 03:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7979	7.9790	12.69	16.46	3.77	49.91	10:29
2	TOC	0.7457	7.4570	12.34	16.21	3.86	49.93	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	13	TOC	K2003070-002.05	17.9494 ppm	0.1181 ppm	0.6600%	2020/04/15 03:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	18.0329	180.3291	128.60	132.42	3.82	49.95	10:27
2	TOC	17.8659	178.6592	127.48	131.45	3.98	49.94	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	14	TOC	K2003109-001.05	4.4648 ppm	0.0520 ppm	1.1700%	2020/04/15 04:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.5016	45.0156	37.60	41.42	3.82	49.91	10:30
2	TOC	4.4280	44.2795	37.11	40.91	3.80	49.92	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	15	TOC	K2003109-002.05	14.8171 ppm	0.2109 ppm	1.4200%	2020/04/15 04:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.9663	149.6628	107.98	111.64	3.66	49.92	10:27
2	TOC	14.6680	146.6799	105.97	109.80	3.83	49.91	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	16	TOC	K2003109-003.05	27.7730 ppm	0.0992 ppm	0.3600%	2020/04/15 05:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.8431	278.4307	194.57	198.48	3.91	49.95	10:30
2	TOC	27.7028	277.0284	193.63	197.39	3.76	49.92	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	17	TOC	K2003109-004.05	18.7460 ppm	0.0884 ppm	0.4700%	2020/04/15 05:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	18.8085	188.0853	133.82	137.65	3.83	49.91	10:28
2	TOC	18.6835	186.8347	132.97	136.79	3.81	49.92	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	18	TOC	K2003109-005.05	11.4844 ppm	0.1156 ppm	1.0100%	2020/04/15 06:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	11.5661	115.6612	85.11	89.00	3.89	49.95	10:28
2	TOC	11.4027	114.0270	84.01	87.91	3.90	49.91	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	19	TOC	K2003109-006.05	14.4296 ppm	0.0874 ppm	0.6100%	2020/04/15 06:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.4913	144.9134	104.78	108.69	3.90	49.92	10:29
2	TOC	14.3678	143.6777	103.95	107.72	3.77	49.93	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	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)	22.8274 ppm (PASS)	0.0000 ppm	0%	2020/04/15 07:12

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	22.8274	228.2737	161.33	165.30	3.97	49.92	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)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/04/15 07:26

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.43	11.26	3.83	49.93	10:34

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	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/15 07:41

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.61	10.52	3.91	49.95	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	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)	21.9746 ppm (PASS)	0.0000 ppm	0%	2020/04/15 07:56

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

	Type									
C	TOC	25.0 ppm	1	21.9746	219.7458	155.60	159.39	3.79	49.91	10:32

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	K2003109-007.05 5x	5.5597 ppm	0.0843 ppm	1.5200%	2020/04/15 08:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.6193	56.1933	45.12	48.99	3.87	49.93	10:27
2	TOC	5.5001	55.0007	44.32	48.13	3.81	49.91	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	22	TOC	K2003109-008.05	13.8040 ppm	0.1027 ppm	0.7400%	2020/04/15 08:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	13.8766	138.7661	100.65	104.46	3.82	49.92	10:26
2	TOC	13.7313	137.3134	99.67	103.48	3.81	49.91	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	23	TOC	K2003109-009.05	7.7571 ppm	0.0068 ppm	0.0900%	2020/04/15 09:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.7619	77.6194	59.53	63.53	4.00	49.91	10:25
2	TOC	7.7523	77.5228	59.46	63.26	3.80	49.91	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	24	TOC	K2003109-009.05 ms	34.7861 ppm	0.0000 ppm	0.0000%	2020/04/15 09:35

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	34.7861	347.8614	241.26	245.18	3.91	49.90	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC)	CAS_salt_010711	CAS_salt_010711

(v1373) (v4) (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	25	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/15 09:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.43	10.25	3.82	49.91	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	26	TOC	K2003109-010.05	8.0474 ppm	0.0291 ppm	0.3600%	2020/04/15 10:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.0680	80.6797	61.58	65.54	3.95	49.88	10:29
2	TOC	8.0268	80.2678	61.31	65.19	3.89	49.87	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	27	TOC	K2003109-011.05	6.9590 ppm	0.1144 ppm	1.6400%	2020/04/15 10:32

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.0399	70.3986	54.67	58.54	3.87	49.88	10:28
2	TOC	6.8781	68.7807	53.58	57.54	3.96	49.87	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	28	TOC	K2003109-012.05	14.2356 ppm	0.0676 ppm	0.4700%	2020/04/15 11:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.2835	142.8346	103.38	107.26	3.87	49.84	10:28
2	TOC	14.1878	141.8784	102.74	106.45	3.71	49.83	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	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	26.2577	0.0000	0%	2020/04/15 11:28

					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	26.2577	262.5772	184.40	188.22	3.82	49.82	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%	2020/04/15 11:43

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.89	9.66	3.77	49.81	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
◆	29	TOC	K2003109-013.05	14.0367 ppm	0.0979 ppm	0.7000%	2020/04/15 11:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.1059	141.0591	102.19	106.09	3.90	49.79	10:29
2	TOC	13.9675	139.6747	101.26	105.15	3.89	49.80	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	30	TOC	K2003109-016.11	19.1449 ppm	0.0465 ppm	0.2400%	2020/04/15 12:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	19.1120	191.1203	135.86	139.59	3.74	49.76	10:29
2	TOC	19.1778	191.7775	136.30	140.00	3.71	49.76	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	31	TOC	K2003109-017.11 100x	2.2280 ppm	0.0607 ppm	2.7200%	2020/04/15 12:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.2709	22.7092	22.60	26.46	3.86	49.74	10:28
2	TOC	2.1851	21.8512	22.02	25.88	3.86	49.73	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	32	TOC	K2003109-018.11 100x	3.2463 ppm	0.0319 ppm	0.9800%	2020/04/15 13:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.2238	32.2378	29.01	32.76	3.75	49.72	10:25
2	TOC	3.2688	32.6884	29.31	33.16	3.85	49.70	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	33	TOC	K2003004-002.01	0.2715 ppm	0.0025 ppm	0.9300%	2020/04/15 13:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2733	2.7329	9.17	12.86	3.70	49.69	10:31
2	TOC	0.2697	2.6972	9.14	12.88	3.73	49.65	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	34	TOC	K2003004-003.01	0.3504 ppm	0.0256 ppm	7.2900%	2020/04/15 14:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3323	3.3232	9.56	13.30	3.74	49.65	10:27
2	TOC	0.3685	3.6845	9.81	13.48	3.67	49.70	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	35	TOC	K2003122-001.01	0.4391 ppm	0.0397 ppm	9.0500%	2020/04/15 14:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4110	4.1098	10.09	13.84	3.75	49.78	10:28

2	TOC	0.4672	4.6719	10.47	14.11	3.64	49.82	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	36	TOC	K2003122-002.01	0.4314 ppm	0.0074 ppm	1.7100%	2020/04/15 15:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4366	4.3656	10.26	14.01	3.75	49.80	10:25
2	TOC	0.4261	4.2615	10.19	13.93	3.74	49.86	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	37	TOC	K2003122-003.01	0.4319 ppm	0.0138 ppm	3.1900%	2020/04/15 15:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4221	4.2213	10.17	13.83	3.66	49.89	10:29
2	TOC	0.4416	4.4161	10.30	14.09	3.80	49.87	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	38	TOC	K2003122-004.01	0.3793 ppm	0.0065 ppm	1.7200%	2020/04/15 16:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3747	3.7470	9.85	13.88	4.03	49.89	10:29
2	TOC	0.3839	3.8392	9.91	13.86	3.95	49.91	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	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)	25.7832 ppm (PASS)	0.0000 ppm	0%	2020/04/15 16:39

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.7832	257.8322	181.21	185.16	3.95	49.89	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%	2020/04/15 16:53

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.32	9.26	3.93	49.87	10:35

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%	2020/04/15 17:08

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	4.66	8.43	3.77	49.92	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	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)	25.9157 ppm (PASS)	0.0000 ppm	0%	2020/04/15 17:23

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	25.9157	259.1571	182.10	185.88	3.78	49.91	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
◈	40	TOC	K2003122-005.01	0.2270 ppm	0.0395 ppm	17.4100%	2020/04/15 17:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2550	2.5500	9.04	13.05	4.01	49.89	10:30
2	TOC	0.1991	1.9909	8.67	12.53	3.86	49.84	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	41	TOC	K2003122-006.01	0.3261 ppm	0.0176 ppm	5.3800%	2020/04/15 18:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3386	3.3857	9.60	13.41	3.80	49.79	10:32
2	TOC	0.3137	3.1373	9.44	13.27	3.83	49.75	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	42	TOC	K2003122-007.01	1.0386 ppm	0.0210 ppm	2.0200%	2020/04/15 18:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0238	10.2377	14.21	18.08	3.87	49.71	10:26
2	TOC	1.0535	10.5351	14.41	18.42	4.01	49.72	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	43	TOC	K2003122-008.01	0.3172 ppm	0.0216 ppm	6.7900%	2020/04/15 19:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3325	3.3247	9.56	13.29	3.73	49.68	10:26
2	TOC	0.3020	3.0199	9.36	13.04	3.68	49.66	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	44	TOC	K2003024-001.01 doc	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/15 19:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	-3.91	0.00	3.91	49.63	10:25

2	TOC	0.0000	0.0000	-4.93	0.00	4.93	49.63	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	45	TOC	K2003024-002.01 doc	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/15 19:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	-4.72	0.00	4.72	49.62	10:28
2	TOC	0.0000	0.0000	-5.27	0.00	5.27	49.61	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	46	TOC	K2003024-003.01 doc	14.0438 ppm	1.5793 ppm	11.2500%	2020/04/15 20:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	15.1605	151.6049	109.28	114.32	5.04	49.61	10:27
2	TOC	12.9270	129.2702	94.26	98.37	4.11	49.63	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	47	TOC	K2003024-004.01 doc	15.5456 ppm	0.1306 ppm	0.8400%	2020/04/15 20:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	15.6380	156.3796	112.49	116.69	4.20	49.64	10:27
2	TOC	15.4533	154.5328	111.25	115.19	3.94	49.67	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	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)	26.0179 ppm (PASS)	0.0000 ppm	0%	2020/04/15 21:22

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.0179	260.1787	182.79	186.89	4.10	49.70	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%	2020/04/15 21:37

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.60	10.63	4.03	49.71	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
◈	48	TOC	K2003024-005.01 doc	28.8889 ppm	0.0166 ppm	0.0600%	2020/04/15 21:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	28.9006	289.0062	201.68	205.65	3.97	49.71	10:26
2	TOC	28.8771	288.7712	201.53	205.59	4.07	49.71	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	49	TOC	K2003024-006.01 doc	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/15 22:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	-3.97	0.00	3.97	49.75	10:29
2	TOC	0.0000	0.0000	-4.62	0.00	4.62	49.76	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	50	TOC	K2003024-007.01 doc	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/15 22:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	-4.61	0.00	4.61	49.77	10:29

2	TOC	0.0000	0.0000	-4.68	0.00	4.68	49.79	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	51	TOC	K2003024-008.01 doc	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/15 23:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	-4.51	0.00	4.51	49.80	10:27
2	TOC	0.0000	0.0000	-4.77	0.00	4.77	49.80	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	52	TOC	MB4	1.6331 ppm	0.0000 ppm	0.0000%	2020/04/15 23:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6331	16.3314	18.31	23.08	4.77	49.86	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.3282 (IC) (v1373)	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)	25.8625 ppm (PASS)	0.3700 ppm	1.43%	2020/04/15 23:59

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	26.1242	261.2419	183.50	187.47	3.97	49.85	10:26
C	TOC	25.0 ppm	2	25.6009	256.0091	179.98	184.05	4.07	49.89	10:27

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: 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)	25.9791 ppm (PASS)	0.0000 ppm	0%	2020/04/16 00:27

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.9791	259.7906	182.53	186.44	3.92	49.89	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%	2020/04/16 00:42

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.72	10.77	4.04	49.92	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

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1372	1.3817	1.0480	0.0000	0.0000	0.0000	2020/04/09 13:40	Fusion1 (Fusion1)
v1373	1.4617	1.4750	0.0000	0.0000	0.0000	2020/04/14 19:40	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	2020/04/16 00:57

ALS Environmental

StarLIMS Run: 676812, 676813

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: 19-GEN-8-4-G

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-08-11-J

21 % H3PO4: 19-GEN-08-12-A

Equipment ID: K-TOC-03

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

FILTER ID: 16967789

Analyzed By: KD	Date Analyzed: 4/14/20
Reviewed By: JC	Date Reviewed: 4/16/20

10450 Stancliff Rd. Suite 210
Houston, TX 77099
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April 27, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20040699**

Laboratory Results for: **Longhorn GW Treatment Plant Bi Weekly Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on Apr 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: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
Work Order: HS20040699

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20040699-01	LH18/24-SP650_041620	Water		16-Apr-2020 14:00	17-Apr-2020 09:06	☐
HS20040699-02	Trip Blank	Water	CG 032420 -139	16-Apr-2020 00:00	17-Apr-2020 09:06	☐

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Bi Weekly Samples
Work Order: HS20040699

GCMS Volatiles by Method SW8260

Batch ID: R360241

Sample ID: CCV

• Hexachlorobutadiene and n-Butylbenzene excceded %D limits fro CCV. Samples are ND for these compounds.

Sample ID: HS20040654-01MS

• MS and MSD are for an unrelated sample

Sample ID: VLCSW-200419

• 1,3_Dichloropropane exceeded QC limits for LCS. CCV is OK. Samples are ND for this compound.

WetChemistry by Method SW9056

Batch ID: R360508

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

Batch ID: R360574

Sample ID: HS20040989-06MS

• MS and MSD are for an unrelated sample

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Bi Weekly Samples WorkOrder:HS20040699

Sample ID: LH18/24-SP650_041620 Lab ID:HS20040699-01

Collection Date: 16-Apr-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:30
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Apr-2020 13:30
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:30
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:30
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	19-Apr-2020 13:30
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Apr-2020 13:30
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Apr-2020 13:30
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	19-Apr-2020 13:30
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:30
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:30
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	19-Apr-2020 13:30
1,2-Dichloroethane	**0.73**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	19-Apr-2020 13:30
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Apr-2020 13:30
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Apr-2020 13:30
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Apr-2020 13:30
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:30
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	19-Apr-2020 13:30
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	19-Apr-2020 13:30
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Apr-2020 13:30
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	19-Apr-2020 13:30
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	19-Apr-2020 13:30
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:30
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Apr-2020 13:30
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:30
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:30
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	19-Apr-2020 13:30
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	19-Apr-2020 13:30
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	19-Apr-2020 13:30
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	19-Apr-2020 13:30
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:30

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

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Bi Weekly Samples WorkOrder:HS20040699

Sample ID: LH18/24-SP650_041620 Lab ID:HS20040699-01

Collection Date: 16-Apr-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:30
cis-1,2-Dichloroethene	**21**		**0.20**	**0.50**	**1.0**	**UG/L**	1	19-Apr-2020 13:30
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	19-Apr-2020 13:30
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:30
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	19-Apr-2020 13:30
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	19-Apr-2020 13:30
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	19-Apr-2020 13:30
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Apr-2020 13:30
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:30
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:30
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:30
Trichloroethene	**3.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	19-Apr-2020 13:30
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:30
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:30
Surr: 1,2-Dichloroethane-d4	*93.5*			**0**	*81-118*	*%REC*	*1*	*19-Apr-2020 13:30*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*19-Apr-2020 13:30*
Surr: Dibromofluoromethane	*88.4*			**0**	*80-119*	*%REC*	*1*	*19-Apr-2020 13:30*
Surr: Toluene-d8	*112*			**0**	*89-112*	*%REC*	*1*	*19-Apr-2020 13:30*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: JHD
Chloride	**295**		**2.00**	**5.00**	**5.00**	**mg/L**	10	23-Apr-2020 21:21
Sulfate	**37.1**		**0.200**	**0.500**	**0.500**	**mg/L**	1	25-Apr-2020 04:03

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

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Bi Weekly Samples WorkOrder:HS20040699

Sample ID: Trip Blank Lab ID:HS20040699-02

Collection Date: 16-Apr-2020 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Apr-2020 13:54
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	19-Apr-2020 13:54
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Apr-2020 13:54
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Apr-2020 13:54
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	19-Apr-2020 13:54
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	19-Apr-2020 13:54
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Apr-2020 13:54
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Apr-2020 13:54
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Apr-2020 13:54
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	19-Apr-2020 13:54
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	19-Apr-2020 13:54
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Apr-2020 13:54
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	19-Apr-2020 13:54
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	19-Apr-2020 13:54
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Apr-2020 13:54
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	19-Apr-2020 13:54
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	19-Apr-2020 13:54
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	19-Apr-2020 13:54
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	19-Apr-2020 13:54
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54

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

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Bi Weekly Samples WorkOrder:HS20040699

Sample ID: Trip Blank Lab ID:HS20040699-02

Collection Date: 16-Apr-2020 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	19-Apr-2020 13:54
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	19-Apr-2020 13:54
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	19-Apr-2020 13:54
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	19-Apr-2020 13:54
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Apr-2020 13:54
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Apr-2020 13:54
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	19-Apr-2020 13:54
Surr: 1,2-Dichloroethane-d4	*98.1*			**0**	*81-118*	*%REC*	*1*	*19-Apr-2020 13:54*
Surr: 4-Bromofluorobenzene	*91.1*			**0**	*85-114*	*%REC*	*1*	*19-Apr-2020 13:54*
Surr: Dibromofluoromethane	*96.1*			**0**	*80-119*	*%REC*	*1*	*19-Apr-2020 13:54*
Surr: Toluene-d8	*112*			**0**	*89-112*	*%REC*	*1*	*19-Apr-2020 13:54*

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

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040699

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R360241 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20040699-01	LH18/24-SP650_041620	16 Apr 2020 14:00			19 Apr 2020 13:30	1
HS20040699-02	Trip Blank	16 Apr 2020 00:00			19 Apr 2020 13:54	1
Batch ID: R360508 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS20040699-01	LH18/24-SP650_041620	16 Apr 2020 14:00			23 Apr 2020 21:21	10
Batch ID: R360574 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS20040699-01	LH18/24-SP650_041620	16 Apr 2020 14:00			25 Apr 2020 04:03	1

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040699

QC BATCH REPORT

Batch ID: R360241 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200419** Units: **UG/L** Analysis Date: **19-Apr-2020 12:42**
Client ID: Run ID: **VOA6_360241** SeqNo: **5559872** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040699

QC BATCH REPORT

Batch ID: R360241 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200419** Units: **UG/L** Analysis Date: **19-Apr-2020 12:42**
Client ID: Run ID: **VOA6_360241** SeqNo: **5559872** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*56.7*	*1.0*	*50*	*0*	*113*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.4*	*1.0*	*50*	*0*	*98.8*	*85 - 114*				
Surr: Dibromofluoromethane	*48.84*	*1.0*	*50*	*0*	*97.7*	*80 - 119*				
Surr: Toluene-d8	*53.69*	*1.0*	*50*	*0*	*107*	*89 - 112*				

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040699

QC BATCH REPORT

Batch ID: R360241 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200419** Units: **UG/L** Analysis Date: **19-Apr-2020 11:54**
Client ID: Run ID: **VOA6_360241** SeqNo: **5559871** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.5	1.0	20	0	102	78 - 124				
1,1,1-Trichloroethane	19.65	1.0	20	0	98.3	74 - 131				
1,1,2,2-Tetrachloroethane	18.88	1.0	20	0	94.4	71 - 121				
1,1,2-Trichloroethane	22.51	1.0	20	0	113	80 - 119				
1,1-Dichloroethane	23.5	1.0	20	0	117	77 - 125				
1,1-Dichloroethene	19.29	1.0	20	0	96.4	71 - 131				
1,1-Dichloropropene	18.38	1.0	20	0	91.9	78 - 125				
1,2,3-Trichlorobenzene	22.48	1.0	20	0	112	69 - 129				
1,2,3-Trichloropropane	19.75	1.0	20	0	98.7	73 - 122				
1,2,4-Trichlorobenzene	22.33	1.0	20	0	112	69 - 130				
1,2,4-Trimethylbenzene	19.32	1.0	20	0	96.6	76 - 124				
1,2-Dibromo-3-chloropropane	20.94	1.0	20	0	105	62 - 128				
1,2-Dibromoethane	21.97	1.0	20	0	110	77 - 121				
1,2-Dichlorobenzene	19.93	1.0	20	0	99.7	80 - 119				
1,2-Dichloroethane	17.57	1.0	20	0	87.9	73 - 128				
1,2-Dichloropropane	19.13	1.0	20	0	95.7	78 - 122				
1,3,5-Trimethylbenzene	21.69	1.0	20	0	108	75 - 124				
1,3-Dichlorobenzene	19.09	1.0	20	0	95.5	80 - 119				
1,3-Dichloropropane	24.17	1.0	20	0	121	80 - 119				S
1,4-Dichlorobenzene	18.3	1.0	20	0	91.5	79 - 118				
2,2-Dichloropropane	22.92	1.0	20	0	115	60 - 139				
2-Butanone	39.94	2.0	40	0	99.8	56 - 143				
2-Chlorotoluene	21.53	1.0	20	0	108	79 - 122				
2-Hexanone	49.97	2.0	40	0	125	57 - 139				
4-Chlorotoluene	21.88	1.0	20	0	109	78 - 122				
4-Isopropyltoluene	17.97	1.0	20	0	89.9	77 - 127				
4-Methyl-2-pentanone	47.1	2.0	40	0	118	67 - 130				
Acetone	49.01	2.0	40	0	123	39 - 160				
Benzene	17.5	1.0	20	0	87.5	79 - 120				
Bromobenzene	19.39	1.0	20	0	96.9	80 - 120				
Bromochloromethane	19.57	1.0	20	0	97.9	78 - 123				
Bromodichloromethane	20.44	1.0	20	0	102	79 - 125				
Bromoform	21.4	1.0	20	0	107	66 - 130				
Bromomethane	22.05	1.0	20	0	110	53 - 141				

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040699

QC BATCH REPORT

Batch ID: R360241 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200419** Units: **UG/L** Analysis Date: **19-Apr-2020 11:54**
Client ID: Run ID: **VOA6_360241** SeqNo: **5559871** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	38.32	2.0	40	0	95.8	64 - 133				
Carbon tetrachloride	18.6	1.0	20	0	93.0	72 - 136				
Chlorobenzene	19.39	1.0	20	0	97.0	82 - 118				
Chloroethane	18.13	1.0	20	0	90.7	60 - 138				
Chloroform	21.25	1.0	20	0	106	79 - 124				
Chloromethane	18.46	1.0	20	0	92.3	50 - 139				
cis-1,2-Dichloroethene	21.33	1.0	20	0	107	78 - 123				
cis-1,3-Dichloropropene	19.61	1.0	20	0	98.0	75 - 124				
Dibromochloromethane	23.25	1.0	20	0	116	74 - 126				
Dibromomethane	20.17	1.0	20	0	101	79 - 123				
Dichlorodifluoromethane	18.76	1.0	20	0	93.8	32 - 152				
Ethylbenzene	19.08	1.0	20	0	95.4	79 - 121				
Hexachlorobutadiene	25.4	1.0	20	0	127	66 - 134				
Isopropylbenzene	18.67	1.0	20	0	93.3	72 - 131				
m,p-Xylene	38.44	2.0	40	0	96.1	80 - 121				
Methylene chloride	20.18	2.0	20	0	101	74 - 124				
Naphthalene	21.62	1.0	20	0	108	61 - 128				
n-Butylbenzene	18.46	1.0	20	0	92.3	75 - 128				
n-Propylbenzene	21.33	1.0	20	0	107	76 - 126				
o-Xylene	20.29	1.0	20	0	101	78 - 122				
sec-Butylbenzene	17.34	1.0	20	0	86.7	77 - 126				
Styrene	20.18	1.0	20	0	101	78 - 123				
tert-Butylbenzene	18.85	1.0	20	0	94.2	78 - 124				
Tetrachloroethene	20.91	1.0	20	0	105	74 - 129				
Toluene	20.45	1.0	20	0	102	80 - 121				
trans-1,2-Dichloroethene	22.99	1.0	20	0	115	75 - 124				
trans-1,3-Dichloropropene	19.91	1.0	20	0	99.6	73 - 127				
Trichloroethene	18.59	1.0	20	0	93.0	79 - 123				
Trichlorofluoromethane	18.67	1.0	20	0	93.4	65 - 141				
Vinyl chloride	18.77	1.0	20	0	93.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*46.05*	*1.0*	*50*	*0*	*92.1*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.37*	*1.0*	*50*	*0*	*96.7*	*85 - 114*				
Surr: Dibromofluoromethane	*47.97*	*1.0*	*50*	*0*	*95.9*	*80 - 119*				
Surr: Toluene-d8	*48.82*	*1.0*	*50*	*0*	*97.6*	*89 - 112*				

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040699

QC BATCH REPORT

Batch ID: R360241 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20040654-01MS** Units: **UG/L** Analysis Date: **19-Apr-2020 14:42**
Client ID: Run ID: **VOA6_360241** SeqNo: **5559876** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	21.16	1.0	20	0	106	78 - 124				
1,1,1-Trichloroethane	20.45	1.0	20	0	102	74 - 131				
1,1,2,2-Tetrachloroethane	20.6	1.0	20	0	103	71 - 121				
1,1,2-Trichloroethane	20.08	1.0	20	0	100	80 - 119				
1,1-Dichloroethane	19.57	1.0	20	0	97.9	77 - 125				
1,1-Dichloroethene	20.95	1.0	20	0	105	71 - 131				
1,1-Dichloropropene	24.16	1.0	20	0	121	78 - 125				
1,2,3-Trichlorobenzene	13.89	1.0	20	0	69.5	69 - 129				
1,2,3-Trichloropropane	19.85	1.0	20	0	99.2	73 - 122				
1,2,4-Trichlorobenzene	17.16	1.0	20	0	85.8	69 - 130				
1,2,4-Trimethylbenzene	20.84	1.0	20	0	104	76 - 124				
1,2-Dibromo-3-chloropropane	19.47	1.0	20	0	97.4	62 - 128				
1,2-Dibromoethane	21.06	1.0	20	0	105	77 - 121				
1,2-Dichlorobenzene	20.69	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	23.95	1.0	20	0	120	73 - 128				
1,2-Dichloropropane	21.1	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	21.16	1.0	20	0	106	75 - 124				
1,3-Dichlorobenzene	20.31	1.0	20	0	102	80 - 119				
1,3-Dichloropropane	20.17	1.0	20	0	101	80 - 119				
1,4-Dichlorobenzene	19.51	1.0	20	0	97.6	79 - 118				
2,2-Dichloropropane	18.45	1.0	20	0	92.3	60 - 139				
2-Butanone	31.19	2.0	40	0	78.0	56 - 143				
2-Chlorotoluene	20.44	1.0	20	0	102	79 - 122				
2-Hexanone	40.42	2.0	40	0	101	57 - 139				
4-Chlorotoluene	20.12	1.0	20	0	101	78 - 122				
4-Isopropyltoluene	21.2	1.0	20	0	106	77 - 127				
4-Methyl-2-pentanone	55.34	2.0	40	0	138	67 - 130				S
Acetone	46.28	2.0	40	0	116	39 - 160				
Benzene	23.56	1.0	20	0	118	79 - 120				
Bromobenzene	22.61	1.0	20	0	113	80 - 120				
Bromochloromethane	17.79	1.0	20	0	89.0	78 - 123				
Bromodichloromethane	31.35	1.0	20	0	157	79 - 125				S
Bromoform	25.31	1.0	20	1.307	120	66 - 130				
Bromomethane	20.9	1.0	20	0	104	53 - 141				

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040699

QC BATCH REPORT

Batch ID: R360241 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20040654-01MS** Units: **UG/L** Analysis Date: **19-Apr-2020 14:42**
Client ID: Run ID: **VOA6_360241** SeqNo: **5559876** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	37.63	2.0	40	0	94.1	64 - 133				
Carbon tetrachloride	23.44	1.0	20	0	117	72 - 136				
Chlorobenzene	20.52	1.0	20	0	103	82 - 118				
Chloroethane	18.62	1.0	20	0	93.1	60 - 138				
Chloroform	27.46	1.0	20	12.44	75.1	79 - 124				S
Chloromethane	17.71	1.0	20	0	88.5	50 - 139				
cis-1,2-Dichloroethene	18.21	1.0	20	0	91.0	78 - 123				
cis-1,3-Dichloropropene	24.97	1.0	20	0	125	75 - 124				S
Dibromochloromethane	29.05	1.0	20	7.836	106	74 - 126				
Dibromomethane	20.4	1.0	20	0	102	79 - 123				
Dichlorodifluoromethane	14.1	1.0	20	0	70.5	32 - 152				
Ethylbenzene	21.3	1.0	20	0	106	79 - 121				
Hexachlorobutadiene	20.64	1.0	20	0	103	66 - 134				
Isopropylbenzene	25.3	1.0	20	0	127	72 - 131				
m,p-Xylene	42.48	2.0	40	0	106	80 - 121				
Methylene chloride	17.32	2.0	20	0	86.6	74 - 124				
Naphthalene	15.23	1.0	20	0	76.2	61 - 128				
n-Butylbenzene	22.08	1.0	20	0	110	75 - 128				
n-Propylbenzene	20.85	1.0	20	0	104	76 - 126				
o-Xylene	25	1.0	20	0	125	78 - 122				S
sec-Butylbenzene	20.71	1.0	20	0	104	77 - 126				
Styrene	24.86	1.0	20	0	124	78 - 123				S
tert-Butylbenzene	21.42	1.0	20	0	107	78 - 124				
Tetrachloroethene	22.81	1.0	20	0	114	74 - 129				
Toluene	25.48	1.0	20	0	127	80 - 121				S
trans-1,2-Dichloroethene	21.46	1.0	20	0	107	75 - 124				
trans-1,3-Dichloropropene	20.98	1.0	20	0	105	73 - 127				
Trichloroethene	21.09	1.0	20	0	105	79 - 123				
Trichlorofluoromethane	20.99	1.0	20	0	105	65 - 141				
Vinyl chloride	19.19	1.0	20	0	95.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*54.44*	*1.0*	*50*	*0*	*109*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*60.56*	*1.0*	*50*	*0*	*121*	*85 - 114*				S
Surr: Dibromofluoromethane	*47.04*	*1.0*	*50*	*0*	*94.1*	*80 - 119*				
Surr: Toluene-d8	*61.69*	*1.0*	*50*	*0*	*123*	*89 - 112*				S

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040699

QC BATCH REPORT

Batch ID: R360241 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20040654-01MSD** Units: **UG/L** Analysis Date: **19-Apr-2020 15:06**
Client ID: Run ID: **VOA6_360241** SeqNo: **5559877** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.94	1.0	20	0	105	78 - 124	21.16	1.05	20	
1,1,1-Trichloroethane	18.57	1.0	20	0	92.9	74 - 131	20.45	9.6	20	
1,1,2,2-Tetrachloroethane	19.46	1.0	20	0	97.3	71 - 121	20.6	5.72	20	
1,1,2-Trichloroethane	24.99	1.0	20	0	125	80 - 119	20.08	21.8	20	SR
1,1-Dichloroethane	20.28	1.0	20	0	101	77 - 125	19.57	3.56	20	
1,1-Dichloroethene	21.66	1.0	20	0	108	71 - 131	20.95	3.34	20	
1,1-Dichloropropene	18.22	1.0	20	0	91.1	78 - 125	24.16	28	20	R
1,2,3-Trichlorobenzene	21.87	1.0	20	0	109	69 - 129	13.89	44.6	20	R
1,2,3-Trichloropropane	20.15	1.0	20	0	101	73 - 122	19.85	1.5	20	
1,2,4-Trichlorobenzene	22.37	1.0	20	0	112	69 - 130	17.16	26.3	20	R
1,2,4-Trimethylbenzene	21.2	1.0	20	0	106	76 - 124	20.84	1.7	20	
1,2-Dibromo-3-chloropropane	20.03	1.0	20	0	100	62 - 128	19.47	2.85	20	
1,2-Dibromoethane	20.89	1.0	20	0	104	77 - 121	21.06	0.818	20	
1,2-Dichlorobenzene	21.3	1.0	20	0	106	80 - 119	20.69	2.89	20	
1,2-Dichloroethane	19.95	1.0	20	0	99.7	73 - 128	23.95	18.3	20	
1,2-Dichloropropane	20.52	1.0	20	0	103	78 - 122	21.1	2.8	20	
1,3,5-Trimethylbenzene	21.46	1.0	20	0	107	75 - 124	21.16	1.45	20	
1,3-Dichlorobenzene	22.05	1.0	20	0	110	80 - 119	20.31	8.21	20	
1,3-Dichloropropane	23.95	1.0	20	0	120	80 - 119	20.17	17.1	20	S
1,4-Dichlorobenzene	20	1.0	20	0	100.0	79 - 118	19.51	2.44	20	
2,2-Dichloropropane	20.16	1.0	20	0	101	60 - 139	18.45	8.82	20	
2-Butanone	37.09	2.0	40	0	92.7	56 - 143	31.19	17.3	20	
2-Chlorotoluene	20.39	1.0	20	0	102	79 - 122	20.44	0.229	20	
2-Hexanone	44.52	2.0	40	0	111	57 - 139	40.42	9.66	20	
4-Chlorotoluene	20.06	1.0	20	0	100	78 - 122	20.12	0.297	20	
4-Isopropyltoluene	22.23	1.0	20	0	111	77 - 127	21.2	4.76	20	
4-Methyl-2-pentanone	56.16	2.0	40	0	140	67 - 130	55.34	1.47	20	S
Acetone	53.26	2.0	40	0	133	39 - 160	46.28	14	20	
Benzene	20.99	1.0	20	0	105	79 - 120	23.56	11.5	20	
Bromobenzene	20.44	1.0	20	0	102	80 - 120	22.61	10.1	20	
Bromochloromethane	19.29	1.0	20	0	96.4	78 - 123	17.79	8.08	20	
Bromodichloromethane	31.34	1.0	20	0	157	79 - 125	31.35	0.0237	20	S
Bromoform	23.07	1.0	20	1.307	109	66 - 130	25.31	9.27	20	
Bromomethane	21.24	1.0	20	0	106	53 - 141	20.9	1.62	20	

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040699

QC BATCH REPORT

Batch ID: R360241 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20040654-01MSD** Units: **UG/L** Analysis Date: **19-Apr-2020 15:06**
Client ID: Run ID: **VOA6_360241** SeqNo: **5559877** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	39.6	2.0	40	0	99.0	64 - 133	37.63	5.1	20	
Carbon tetrachloride	19.28	1.0	20	0	96.4	72 - 136	23.44	19.4	20	
Chlorobenzene	20.42	1.0	20	0	102	82 - 118	20.52	0.47	20	
Chloroethane	19.3	1.0	20	0	96.5	60 - 138	18.62	3.58	20	
Chloroform	28.74	1.0	20	12.44	81.5	79 - 124	27.46	4.58	20	
Chloromethane	18.25	1.0	20	0	91.2	50 - 139	17.71	2.99	20	
cis-1,2-Dichloroethene	19.55	1.0	20	0	97.7	78 - 123	18.21	7.11	20	
cis-1,3-Dichloropropene	24.35	1.0	20	0	122	75 - 124	24.97	2.51	20	
Dibromochloromethane	29.52	1.0	20	7.836	108	74 - 126	29.05	1.62	20	
Dibromomethane	20.58	1.0	20	0	103	79 - 123	20.4	0.889	20	
Dichlorodifluoromethane	14.19	1.0	20	0	71.0	32 - 152	14.1	0.661	20	
Ethylbenzene	21.2	1.0	20	0	106	79 - 121	21.3	0.476	20	
Hexachlorobutadiene	25.15	1.0	20	0	126	66 - 134	20.64	19.7	20	
Isopropylbenzene	23.06	1.0	20	0	115	72 - 131	25.3	9.29	20	
m,p-Xylene	42.36	2.0	40	0	106	80 - 121	42.48	0.274	20	
Methylene chloride	21.4	2.0	20	0	107	74 - 124	17.32	21.1	20	R
Naphthalene	23.01	1.0	20	0	115	61 - 128	15.23	40.7	20	R
n-Butylbenzene	22.63	1.0	20	0	113	75 - 128	22.08	2.44	20	
n-Propylbenzene	20.94	1.0	20	0	105	76 - 126	20.85	0.402	20	
o-Xylene	21.52	1.0	20	0	108	78 - 122	25	15	20	
sec-Butylbenzene	22.71	1.0	20	0	114	77 - 126	20.71	9.19	20	
Styrene	21.01	1.0	20	0	105	78 - 123	24.86	16.8	20	
tert-Butylbenzene	21.54	1.0	20	0	108	78 - 124	21.42	0.583	20	
Tetrachloroethene	24.52	1.0	20	0	123	74 - 129	22.81	7.21	20	
Toluene	25.98	1.0	20	0	130	80 - 121	25.48	1.96	20	S
trans-1,2-Dichloroethene	25.77	1.0	20	0	129	75 - 124	21.46	18.2	20	S
trans-1,3-Dichloropropene	25.44	1.0	20	0	127	73 - 127	20.98	19.2	20	S
Trichloroethene	20.37	1.0	20	0	102	79 - 123	21.09	3.47	20	
Trichlorofluoromethane	21.76	1.0	20	0	109	65 - 141	20.99	3.58	20	
Vinyl chloride	19.51	1.0	20	0	97.6	58 - 137	19.19	1.68	20	
Surr: 1,2-Dichloroethane-d4	*56.22*	*1.0*	*50*	*0*	*112*	*81 - 118*	*54.44*	*3.21*	*20*	
Surr: 4-Bromofluorobenzene	*50.63*	*1.0*	*50*	*0*	*101*	*85 - 114*	*60.56*	*17.9*	*20*	
Surr: Dibromofluoromethane	*44.85*	*1.0*	*50*	*0*	*89.7*	*80 - 119*	*47.04*	*4.77*	*20*	
Surr: Toluene-d8	*62.37*	*1.0*	*50*	*0*	*125*	*89 - 112*	*61.69*	*1.1*	*20*	S

ALS Houston, US Date: 27-Apr-20

Client:	Bhate Environmental Associates, Inc.
Project:	Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder:	HS20040699

QC BATCH REPORT

Batch ID:	**R360241 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch: HS20040699-01 HS20040699-02

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040699

QC BATCH REPORT

Batch ID: R360508 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK042320** Units: **mg/L** Analysis Date: **23-Apr-2020 19:14**
Client ID: Run ID: **ICS-Integrion_360508** SeqNo: **5564647** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.500	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **23-Apr-2020 19:32**
Client ID: Run ID: **ICS-Integrion_360508** SeqNo: **5564648** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.9	0.500	20	0	99.5	80 - 120				

MS Sample ID: **HS20040845-09MS** Units: **mg/L** Analysis Date: **24-Apr-2020 00:04**
Client ID: Run ID: **ICS-Integrion_360508** SeqNo: **5564659** PrepDate: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	3296	50.0	1000	2332	96.5	80 - 120				

MSD Sample ID: **HS20040845-09MSD** Units: **mg/L** Analysis Date: **24-Apr-2020 00:22**
Client ID: Run ID: **ICS-Integrion_360508** SeqNo: **5564660** PrepDate: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	3325	50.0	1000	2332	99.3	80 - 120	3296	0.861	20	

The following samples were analyzed in this batch: HS20040699-01

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20040699

QC BATCH REPORT

Batch ID: R360574 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK042420** Units: **mg/L** Analysis Date: **25-Apr-2020 08:35**
Client ID: Run ID: **ICS-Integrion_360574** SeqNo: **5565997** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **25-Apr-2020 08:53**
Client ID: Run ID: **ICS-Integrion_360574** SeqNo: **5565998** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	19.73	0.500	20	0	98.6	80 - 120				

LCSD Sample ID: **LCSD** Units: **mg/L** Analysis Date: **25-Apr-2020 09:11**
Client ID: Run ID: **ICS-Integrion_360574** SeqNo: **5565999** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	19.6	0.500	20	0	98.0	80 - 120	19.73	0.665	20	

MS Sample ID: **HS20040989-06MS** Units: **mg/L** Analysis Date: **25-Apr-2020 06:10**
Client ID: Run ID: **ICS-Integrion_360574** SeqNo: **5565989** PrepDate: DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	8025	10.0	200	8176	-75.7	80 - 120				SEO

MSD Sample ID: **HS20040989-06MSD** Units: **mg/L** Analysis Date: **25-Apr-2020 06:28**
Client ID: Run ID: **ICS-Integrion_360574** SeqNo: **5565990** PrepDate: DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	8083	10.0	200	8176	-46.4	80 - 120	8025	0.726	20	SEO

The following samples were analyzed in this batch: HS20040699-01

ALS Houston, US Date: 27-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: **HS20040699**

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: 27-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
Work Order: HS20040699

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20040699-01	LH18/24-SP650_041620	Login	4/17/2020 9:59:59 AM	JRM	WET005
HS20040699-01	LH18/24-SP650_041620	Login	4/17/2020 9:59:59 AM	JRM	VOA014
HS20040699-02	Trip Blank	Login	4/17/2020 9:59:59 AM	JRM	VOA014

ALS Houston, US Date: 27-Apr-20

Sample Receipt Checklist

Client Name: Bhate Environmental
Work Order: HS20040699
Date/Time Received: **17-Apr-2020 09:06**
Received by: **JRM**

Checklist completed by: *Jared R. Makan* eSignature 17-Apr-2020 Date
Reviewed by: *RJ Modashia* eSignature 17-Apr-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):	1.3°C/1.3°C UC/C	IR11
Cooler(s)/Kit(s):	43535	
Date/Time sample(s) sent to storage:	04/17/2020 10:05	

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:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210, Houston, Tx. 77099 ATTN: R.J. Mudashia

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT
BI-WEEKLY SAMPLES

Prepared By:
Scott Beesinger

P.O Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: VOC	Analyses: CHLORIDE, SULFATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_041620	Water	04/16/20 / 14:00		3	3		HCL	
LH18/24-SP650_041620	Water	04/16/20 / 14:00		1		1	NONE	
Trip Blank	Water	04/16/20		2	2		HCL	

HS20040699
Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Bi Weekly Samples

Additional Remarks: **Standard TAT on Chloride & Sulfate. 24 Hour TAT on VOC**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	04/16/20	14:30									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
J. Maumm	4/17/20	09:06							

Remarks
Cooler 43535 IR11
Temp 1.3°C COC

(Word) S:\Forms\Chain of Custody - BiWeekly

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

CUSTODY SEAL
Date: 4/17/20 Time: 1730
Name: Scott Breslin
Company: BHATE
Seal Broken By: IM
Date: 4/17/20

FedEx
TRK# 0221 1251 0294 9692

FRI - 17 APR 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

66

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

April 30, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20040700**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on Apr 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: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US Date: 30-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20040700

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20040700-01	LH18/24-SP650_041620	Water		16-Apr-2020 14:00	17-Apr-2020 09:06	☐
HS20040700-02	LH18/24-SP650_041620_BIX	Water		16-Apr-2020 14:00	17-Apr-2020 09:06	☐

ALS Houston, US Date: 30-Apr-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20040700

Work Order Comments

• Analysis of Perchlorate was performed by ALS Houston TX, High Resolution. Laboratory. Final report attached.

The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.

WetChemistry by Method E350.3

Batch ID: R360222

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

WetChemistry by Method E365.3

Batch ID: R360171

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

ALS Houston, US Date: 30-Apr-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Weekly Samples WorkOrder:HS20040700

Sample ID: LH18/24-SP650_041620 Lab ID:HS20040700-01

Collection Date: 16-Apr-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: YP
Nitrogen, Ammonia (As N)	**20**	a	**0.20**	**0.10**	**0.20**	**mg/L**	1	17-Apr-2020 13:15
ORTHO PHOSPHATE (PO4) AS P BY E365.3		**Method:E365.3**						Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	**1.11**	a	**0.100**	**0.250**	**0.250**	**mg/L**	10	17-Apr-2020 13:00
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	30-Apr-2020 10:45

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

ALS Houston, US Date: 30-Apr-20

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS20040700
Sample ID: LH18/24-SP650_041620_BIX
Lab ID:HS20040700-02
Collection Date: 16-Apr-2020 14:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	30-Apr-2020 15:22

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

ALS Houston, US Date: 30-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20040700

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R360171 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3				**Matrix:** Water	
HS20040700-01	LH18/24-SP650_041620	16 Apr 2020 14:00			17 Apr 2020 13:00	10
Batch ID: R360222 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS20040700-01	LH18/24-SP650_041620	16 Apr 2020 14:00			17 Apr 2020 13:15	1
Batch ID: R360818 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Water	
HS20040700-01	LH18/24-SP650_041620	16 Apr 2020 14:00			30 Apr 2020 10:45	1
Batch ID: R360870 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS20040700-02	LH18/24-SP650_041620_BIX	16 Apr 2020 14:00			30 Apr 2020 15:22	1

ALS Houston, US Date: 30-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20040700

QC BATCH REPORT

Batch ID: R360171 (0) **Instrument:** UV-2450 **Method:** ORTHO PHOSPHATE (PO4) AS P BY E365.3

MBLK Sample ID: **MBLK-360171** Units: **mg/L** Analysis Date: **17-Apr-2020 13:00**
Client ID: Run ID: **UV-2450_360171** SeqNo: **5558412** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0250	0.0250								U

LCS Sample ID: **LCS-360171** Units: **mg/L** Analysis Date: **17-Apr-2020 13:00**
Client ID: Run ID: **UV-2450_360171** SeqNo: **5558413** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.233	0.0250	0.25	0	93.2	85 - 115				

MS Sample ID: **HS20040700-01MS** Units: **mg/L** Analysis Date: **17-Apr-2020 13:00**
Client ID: **LH18/24-SP650_041620** Run ID: **UV-2450_360171** SeqNo: **5558415** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	3.33	0.250	2.5	1.11	88.8	80 - 120				

MSD Sample ID: **HS20040700-01MSD** Units: **mg/L** Analysis Date: **17-Apr-2020 13:00**
Client ID: **LH18/24-SP650_041620** Run ID: **UV-2450_360171** SeqNo: **5558416** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	3.38	0.250	2.5	1.11	90.8	80 - 120	3.33	1.49	20	

The following samples were analyzed in this batch: HS20040700-01

ALS Houston, US Date: 30-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20040700

QC BATCH REPORT

Batch ID: R360222 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK Sample ID: **MBLK-R360222** Units: **mg/L** Analysis Date: **17-Apr-2020 13:15**
Client ID: Run ID: **WetChem_HS_360222** SeqNo: **5559446** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.10	0.20								U

LCS Sample ID: **LCS-R360222** Units: **mg/L** Analysis Date: **17-Apr-2020 13:15**
Client ID: Run ID: **WetChem_HS_360222** SeqNo: **5559445** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.04	0.20	10	0	100	80 - 120				

MS Sample ID: **HS20040490-02MS** Units: **mg/L** Analysis Date: **17-Apr-2020 13:15**
Client ID: Run ID: **WetChem_HS_360222** SeqNo: **5559448** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	11.15	0.20	10	0.039	111	80 - 120				

MSD Sample ID: **HS20040490-02MSD** Units: **mg/L** Analysis Date: **17-Apr-2020 13:15**
Client ID: Run ID: **WetChem_HS_360222** SeqNo: **5559447** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	11.18	0.20	10	0.039	111	80 - 120	11.15	0.242	20	

The following samples were analyzed in this batch: HS20040700-01

ALS Houston, US Date: 30-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS20040700**

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
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
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
Oklahoma	2019-067	31-Aug-2020

ALS Houston, US Date: 30-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20040700

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20040700-01	LH18/24-SP650_041620	Login	4/17/2020 10:11:35 AM	JRM	WET134
HS20040700-01	LH18/24-SP650_041620	Login	4/17/2020 10:11:35 AM	JRM	WET134
HS20040700-01	LH18/24-SP650_041620	Login	4/17/2020 10:11:35 AM	JRM	Sub
HS20040700-02	LH18/24-SP650_041620_BIX	Login	4/17/2020 10:11:35 AM	JRM	Sub

ALS Houston, US Date: 30-Apr-20

Sample Receipt Checklist

Client Name: Bhate Environmental
Work Order: HS20040700
Date/Time Received: **17-Apr-2020 09:06**
Received by: **JRM**

Checklist completed by: *Jared R. Makan* eSignature 17-Apr-2020 Date
Reviewed by: *RJ Modashia* eSignature 17-Apr-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):	1.3°C/1.3°C UC/C	IR11
Cooler(s)/Kit(s):	43535	
Date/Time sample(s) sent to storage:	04/17/2020 10:13	

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:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd, Suite 210 Houston, TX, 77099 (281) 530-5656 ATTN: R.J Modashia

Page 1 of 1

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

Prepared By:
Scott Beesinger

P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_041620	Water	04/16/20 / 14:00		3	X	X			H2SO4	
LH18/24-SP650_041620	Water	04/16/20 / 14:00		1			X		NONE	
LH18/24–SP650_041620_BIX	Water	04/16/20 / 14:00		1				X	NONE	

Additional Remarks: **Standard TAT on all parameters**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	04/16/20	14:30									

For Lab Use Only

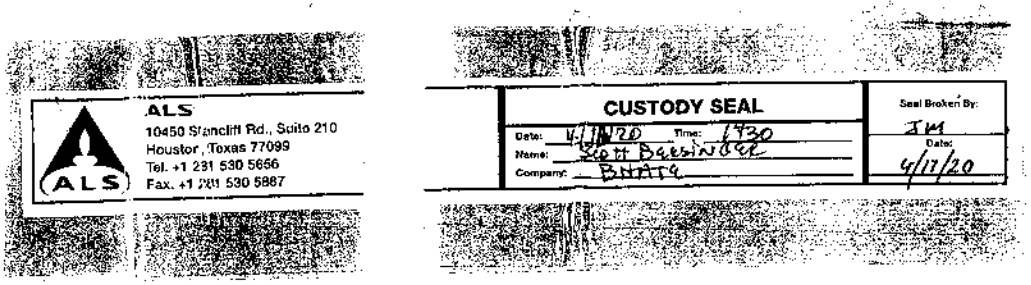
Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
J. Hammond	4/17/20	09:06							

Remarks: Cooler-43535 1211
Temp 1.3°C CF0.0

HS20040700

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

(Word) S:\I-ces\Forms\Chain of Custody - JhWeekly


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
CUSTODY SEAL
Date: 4/17/20 Time: 1430
Name: Scott Beesinger
Company: BNMTG
Seal Broken By:
JM
Date:
4/17/20


FedEx.
TRK# 8221 1251 0294 9692
FRI - 17 APR 10:30A
PRIORITY OVERNIGHT
77099
TX-US
IAH
AB SGRA
6E

ALS Environmental
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April 29, 2020

Analytical Report for Service Request No: K2003345

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

RE: HS20040700

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory April 23, 2020
For your reference, these analyses have been assigned our service request number **K2003345.**

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

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

Client: ALS Environmental - US
Project: HS20040700
Sample Matrix: Water

Service Request: K2003345
Date Received: 04/23/2020

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 water sample was received for analysis at ALS Environmental on 04/23/2020. 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 _____ Date 04/29/2020

Chain of Custody

ALS Environmental—Kelso Laboratory
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K2003345

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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13738**

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:	HS20040700
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20040700-01**	**LH18/24-SP650_041620**	**Water**	**16 Apr 2020 14:00**
	TOC Analysis for DOD Level IV			01 May 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. Mmmm Date/Time: 4/22/20 18:00

Received By: Date/Time: 4/23/2020 1030

Cooler ID(s): Temperature(s):

PC KL

Cooler Receipt and Preservation Form

Client ALS Houston Service Request K20 03345

Received: 4/23/2020 Opened: 4/23/2020 By: CG Unloaded: 4/23/2020 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
1.2					3980H88WS	13738	1251 0296 5563	

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:**	K2003345
Project:	HS20040700	**Date Collected:**	04/16/20
Sample Matrix:	Water	**Date Received:**	04/23/20
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
LH18/24-SP650_041620	K2003345-001	**3.12**	0.50	0.20	0.07	1	04/26/20 16:27	
Method Blank	K2003345-MB	ND U	0.50	0.20	0.07	1	04/26/20 15:58	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2003345
Project	HS20040700	**Date Collected:**	04/16/20
Sample Matrix:	Water	**Date Received:**	04/23/20
		Date Analyzed:	04/26/20

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	LH18/24-SP650_041620	**Units:**	mg/L
Lab Code:	K2003345-001	**Basis:**	NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K2003345-001DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	3.12	2.99	3.05	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:**	K2003345
Project:	HS20040700	**Date Analyzed:**	04/26/20
Sample Matrix:	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:	678054

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2003345-LCS	24.8	25.0	99	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2003345
Project: HS20040700

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	678054	KQ2005604-01	04/26/20 00:45	25.0	24.9	100	90-110
CCV2	678054	KQ2005604-02	04/26/20 09:22	25.0	24.7	99	90-110
CCV3	678054	KQ2005604-03	04/26/20 15:01	25.0	24.7	99	90-110
CCV4	678054	KQ2005604-04	04/26/20 17:24	25.0	24.7	99	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2003345
Project: HS20040700

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	678054	KQ2005604-05	04/26/20 00:59	0.50	0.20	0.07	ND	U
CCB2	678054	KQ2005604-06	04/26/20 09:37	0.50	0.20	0.07	ND	U
CCB3	678054	KQ2005604-07	04/26/20 15:15	0.50	0.20	0.07	ND	U
CCB4	678054	KQ2005604-08	04/26/20 17:38	0.50	0.20	0.07	ND	U

Raw Data

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General Chemistry

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Work Request # Original ( ) K2003360, 3344, 3345, 3384, 3388
IV IV IV II II

Tier:

Date Analyzed: 4/25/20

Analyst: BDP

Analysis: TOC/DOC

TOC: 678052, 678054

Run # DOC: 678053

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: K2003360-21/21d/21h/21q, 3360-23/23d/23h/23q, 3360-21DOC/21dDOC/21hDOC/21qDOC K2003360-23DOC/23dDOC/23hDOC/23qDOC, 3384-1 Id report a high %RSD. However, these samples are less than 5x the MRL.

Final Approved by: _____ Date: 4/27/20

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 678052 **Method/Testcode:** 9060/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
K2003360-016	Carbon, Total Organic	N/A		Water	0.57 mg/L	10 mL	0.57 mg/L	1	0.07	0.50			4/25/20 18:56:00	Y	IV
K2003360-019	Carbon, Total Organic	N/A		Water	5.81 mg/L	10 mL	5.81 mg/L	1	0.07	0.50			4/25/20 21:02:00	N	IV
K2003360-021	Carbon, Total Organic	N/A		Water	1.08 mg/L	10 mL	1.08 mg/L	1	0.07	0.50			4/25/20 21:58:00	N	IV
K2003360-022	Carbon, Total Organic	N/A		Water	33.86 mg/L	10 mL	677 mg/L	20	2	10			4/25/20 22:53:00	N	IV
K2003360-023	Carbon, Total Organic	N/A		Water	0.62 mg/L	10 mL	0.62 mg/L	1	0.07	0.50			4/25/20 23:49:00	N	IV
K2003360-024	Carbon, Total Organic	N/A		Water	0.47 mg/L	10 mL	0.47 mg/L J	1	0.07	0.50			4/26/20 07:59:00	N	IV
KQ2005602-01	Carbon, Total Organic	CCV		Water	25.95 mg/L	10 mL	25.9 mg/L	1					4/25/20 16:20:00	N	IV
KQ2005602-02	Carbon, Total Organic	CCV		Water	24.88 mg/L	10 mL	24.9 mg/L	1					4/26/20 00:45:00	N	IV
KQ2005602-03	Carbon, Total Organic	CCV		Water	24.69 mg/L	10 mL	24.7 mg/L	1					4/26/20 09:22:00	N	IV
KQ2005602-04	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/25/20 16:35:00	N	IV
KQ2005602-05	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 00:59:00	N	IV
KQ2005602-06	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 09:37:00	N	IV
KQ2005602-07	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/25/20 16:50:00	N	IV
KQ2005602-08	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/25/20 16:50:00	N	IV
KQ2005602-09	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/25/20 16:50:00	N	IV
KQ2005602-10	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/25/20 16:50:00	N	IV
KQ2005602-11	Carbon, Total Organic	LCS		Water	25.04 mg/L	10 mL	25.0 mg/L	1	0.07	0.50	100		4/25/20 17:46:00	N	IV
KQ2005602-12	Carbon, Total Organic	LCS		Water	24.91 mg/L	10 mL	24.9 mg/L	1	0.07	0.50	100		4/25/20 17:46:00	N	IV
KQ2005602-13	Carbon, Total Organic	LCS		Water	24.66 mg/L	10 mL	24.7 mg/L	1	0.07	0.50	99		4/25/20 17:46:00	N	IV
KQ2005602-14	Carbon, Total Organic	LCS		Water	25.04 mg/L	10 mL	25.0 mg/L	1	0.07	0.50	100		4/25/20 17:46:00	N	IV
KQ2005602-15	Carbon, Total Organic	MS	K2003360-016	Water	27.85 mg/L	10 mL	27.9 mg/L	1	0.07	0.50	109		4/25/20 19:52:00	N	IV
KQ2005602-16	Carbon, Total Organic	MS	K2003360-016	Water	27.85 mg/L	10 mL	27.9 mg/L	1	0.07	0.50	109		4/25/20 19:52:00	N	IV
KQ2005602-17	Carbon, Total Organic	MS	K2003360-016	Water	27.96 mg/L	10 mL	28.0 mg/L	1	0.07	0.50	110		4/25/20 19:52:00	N	IV
KQ2005602-18	Carbon, Total Organic	MS	K2003360-016	Water	27.56 mg/L	10 mL	27.6 mg/L	1	0.07	0.50	108		4/25/20 19:52:00	N	IV
KQ2005602-19	Carbon, Total Organic	DUP	K2003360-016	Water	0.57 mg/L	10 mL	0.57 mg/L	1	0.07	0.50		<1	4/25/20 18:56:00	N	IV
KQ2005602-20	Carbon, Total Organic	TRP	K2003360-016	Water	0.59 mg/L	10 mL	0.59 mg/L	1	0.07	0.50		2	4/25/20 18:56:00	N	IV
KQ2005602-21	Carbon, Total Organic	QUAD	K2003360-016	Water	0.55 mg/L	10 mL	0.55 mg/L	1	0.07	0.50		3	4/25/20 18:56:00	N	IV
KQ2005602-22	Carbon, Total Organic	DUP	K2003360-019	Water	5.93 mg/L	10 mL	5.93 mg/L	1	0.07	0.50		2	4/25/20 21:02:00	N	IV
KQ2005602-23	Carbon, Total Organic	TRP	K2003360-019	Water	5.99 mg/L	10 mL	5.99 mg/L	1	0.07	0.50		2	4/25/20 21:02:00	N	IV
KQ2005602-24	Carbon, Total Organic	QUAD	K2003360-019	Water	6.13 mg/L	10 mL	6.13 mg/L	1	0.07	0.50		2	4/25/20 21:02:00	N	IV
KQ2005602-25	Carbon, Total Organic	DUP	K2003360-021	Water	0.70 mg/L	10 mL	0.70 mg/L	1	0.07	0.50		43*	4/25/20 21:58:00	N	IV
KQ2005602-26	Carbon, Total Organic	TRP	K2003360-021	Water	0.61 mg/L	10 mL	0.61 mg/L	1	0.07	0.50		31*	4/25/20 21:58:00	N	IV
KQ2005602-27	Carbon, Total Organic	QUAD	K2003360-021	Water	0.60 mg/L	10 mL	0.60 mg/L	1	0.07	0.50		30*	4/25/20 21:58:00	N	IV
KQ2005602-28	Carbon, Total Organic	DUP	K2003360-022	Water	33.21 mg/L	10 mL	664 mg/L	20	2	10		2	4/25/20 22:53:00	N	IV
KQ2005602-29	Carbon, Total Organic	TRP	K2003360-022	Water	33.29 mg/L	10 mL	666 mg/L	20	2	10		1	4/25/20 22:53:00	N	IV
KQ2005602-30	Carbon, Total Organic	QUAD	K2003360-022	Water	33.46 mg/L	10 mL	669 mg/L	20	2	10		<1	4/25/20 22:53:00	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:** 678052 **Method/Testcode:** 9060/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
KQ2005602-31	Carbon, Total Organic	DUP	K2003360-023	Water	0.47 mg/L	10 mL	0.47 mg/L J	1	0.07	0.50		28*	4/25/20 23:49:00	N	IV
KQ2005602-32	Carbon, Total Organic	TRP	K2003360-023	Water	0.37 mg/L	10 mL	0.37 mg/L J	1	0.07	0.50		26*	4/25/20 23:49:00	N	IV
KQ2005602-33	Carbon, Total Organic	QUAD	K2003360-023	Water	0.36 mg/L	10 mL	0.36 mg/L J	1	0.07	0.50		27*	4/25/20 23:49:00	N	IV
KQ2005602-34	Carbon, Total Organic	DUP	K2003360-024	Water	0.43 mg/L	10 mL	0.43 mg/L J	1	0.07	0.50		10	4/26/20 07:59:00	N	IV
KQ2005602-35	Carbon, Total Organic	TRP	K2003360-024	Water	0.43 mg/L	10 mL	0.43 mg/L J	1	0.07	0.50		6	4/26/20 07:59:00	N	IV
KQ2005602-36	Carbon, Total Organic	QUAD	K2003360-024	Water	0.45 mg/L	10 mL	0.45 mg/L J	1	0.07	0.50		5	4/26/20 07:59:00	N	IV

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Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 678053 **Method/Testcode:** 9060/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
K2003360-016	Carbon, Dissolved Organic (DOC)	N/A		Water	0.48 mg/L	10 mL	0.48 mg/L J	1	0.07	0.50			4/26/20 01:14:00	Y	IV
K2003360-019	Carbon, Dissolved Organic (DOC)	N/A		Water	4.75 mg/L	10 mL	4.75 mg/L	1	0.07	0.50			4/26/20 03:21:00	N	IV
K2003360-021	Carbon, Dissolved Organic (DOC)	N/A		Water	0.86 mg/L	10 mL	0.86 mg/L	1	0.07	0.50			4/26/20 04:16:00	N	IV
K2003360-022	Carbon, Dissolved Organic (DOC)	N/A		Water	33.39 mg/L	10 mL	668 mg/L	20	2	10			4/26/20 05:12:00	N	IV
K2003360-023	Carbon, Dissolved Organic (DOC)	N/A		Water	0.57 mg/L	10 mL	0.57 mg/L	1	0.07	0.50			4/26/20 06:08:00	N	IV
K2003360-024	Carbon, Dissolved Organic (DOC)	N/A		Water	0.51 mg/L	10 mL	0.51 mg/L	1	0.07	0.50			4/26/20 07:03:00	N	IV
KQ2005603-01	Carbon, Dissolved Organic (DOC)	CCV		Water	24.88 mg/L	10 mL	24.9 mg/L	1					4/26/20 00:45:00	N	IV
KQ2005603-02	Carbon, Dissolved Organic (DOC)	CCV		Water	24.69 mg/L	10 mL	24.7 mg/L	1					4/26/20 09:22:00	N	IV
KQ2005603-03	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 00:59:00	N	IV
KQ2005603-04	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 09:37:00	N	IV
KQ2005603-05	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 09:52:00	N	IV
KQ2005603-06	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 09:52:00	N	IV
KQ2005603-07	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 09:52:00	N	IV
KQ2005603-08	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 09:52:00	N	IV
KQ2005603-09	Carbon, Dissolved Organic (DOC)	LCS		Water	23.93 mg/L	10 mL	23.9 mg/L	1	0.07	0.50	96		4/26/20 10:48:00	N	IV
KQ2005603-10	Carbon, Dissolved Organic (DOC)	LCS		Water	24.18 mg/L	10 mL	24.2 mg/L	1	0.07	0.50	97		4/26/20 10:48:00	N	IV
KQ2005603-11	Carbon, Dissolved Organic (DOC)	LCS		Water	24.09 mg/L	10 mL	24.1 mg/L	1	0.07	0.50	96		4/26/20 10:48:00	N	IV
KQ2005603-12	Carbon, Dissolved Organic (DOC)	LCS		Water	24.08 mg/L	10 mL	24.1 mg/L	1	0.07	0.50	96		4/26/20 10:48:00	N	IV
KQ2005603-13	Carbon, Dissolved Organic (DOC)	MS	K2003360-016	Water	27.59 mg/L	10 mL	27.6 mg/L	1	0.07	0.50	108		4/26/20 02:10:00	N	IV
KQ2005603-14	Carbon, Dissolved Organic (DOC)	MS	K2003360-016	Water	27.41 mg/L	10 mL	27.4 mg/L	1	0.07	0.50	108		4/26/20 02:10:00	N	IV
KQ2005603-15	Carbon, Dissolved Organic (DOC)	MS	K2003360-016	Water	27.25 mg/L	10 mL	27.2 mg/L	1	0.07	0.50	107		4/26/20 02:10:00	N	IV
KQ2005603-16	Carbon, Dissolved Organic (DOC)	MS	K2003360-016	Water	27.76 mg/L	10 mL	27.8 mg/L	1	0.07	0.50	109		4/26/20 02:10:00	N	IV
KQ2005603-17	Carbon, Dissolved Organic (DOC)	DUP	K2003360-016	Water	0.51 mg/L	10 mL	0.51 mg/L	1	0.07	0.50		5	4/26/20 01:14:00	N	IV

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

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Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 678053 **Method/Testcode:** 9060/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
KQ2005603-18	Carbon, Dissolved Organic (DOC)	TRP	K2003360-016	Water	0.49 mg/L	10 mL	0.49 mg/L J	1	0.07	0.50		3	4/26/20 01:14:00	N	IV
KQ2005603-19	Carbon, Dissolved Organic (DOC)	QUAD	K2003360-016	Water	0.48 mg/L	10 mL	0.48 mg/L J	1	0.07	0.50		3	4/26/20 01:14:00	N	IV
KQ2005603-20	Carbon, Dissolved Organic (DOC)	DUP	K2003360-019	Water	4.96 mg/L	10 mL	4.96 mg/L	1	0.07	0.50		4	4/26/20 03:21:00	N	IV
KQ2005603-21	Carbon, Dissolved Organic (DOC)	TRP	K2003360-019	Water	5.03 mg/L	10 mL	5.03 mg/L	1	0.07	0.50		3	4/26/20 03:21:00	N	IV
KQ2005603-22	Carbon, Dissolved Organic (DOC)	QUAD	K2003360-019	Water	5.18 mg/L	10 mL	5.18 mg/L	1	0.07	0.50		4	4/26/20 03:21:00	N	IV
KQ2005603-23	Carbon, Dissolved Organic (DOC)	DUP	K2003360-021	Water	0.61 mg/L	10 mL	0.61 mg/L	1	0.07	0.50		34*	4/26/20 04:16:00	N	IV
KQ2005603-24	Carbon, Dissolved Organic (DOC)	TRP	K2003360-021	Water	0.54 mg/L	10 mL	0.54 mg/L	1	0.07	0.50		25*	4/26/20 04:16:00	N	IV
KQ2005603-25	Carbon, Dissolved Organic (DOC)	QUAD	K2003360-021	Water	0.51 mg/L	10 mL	0.51 mg/L	1	0.07	0.50		25*	4/26/20 04:16:00	N	IV
KQ2005603-26	Carbon, Dissolved Organic (DOC)	DUP	K2003360-022	Water	33.04 mg/L	10 mL	661 mg/L	20	2	10		1	4/26/20 05:12:00	N	IV
KQ2005603-27	Carbon, Dissolved Organic (DOC)	TRP	K2003360-022	Water	33.03 mg/L	10 mL	661 mg/L	20	2	10		<1	4/26/20 05:12:00	N	IV
KQ2005603-28	Carbon, Dissolved Organic (DOC)	QUAD	K2003360-022	Water	33.42 mg/L	10 mL	668 mg/L	20	2	10		<1	4/26/20 05:12:00	N	IV
KQ2005603-29	Carbon, Dissolved Organic (DOC)	DUP	K2003360-023	Water	0.38 mg/L	10 mL	0.38 mg/L J	1	0.07	0.50		41*	4/26/20 06:08:00	N	IV
KQ2005603-30	Carbon, Dissolved Organic (DOC)	TRP	K2003360-023	Water	0.32 mg/L	10 mL	0.32 mg/L J	1	0.07	0.50		31*	4/26/20 06:08:00	N	IV
KQ2005603-31	Carbon, Dissolved Organic (DOC)	QUAD	K2003360-023	Water	0.29 mg/L	10 mL	0.29 mg/L J	1	0.07	0.50		32*	4/26/20 06:08:00	N	IV
KQ2005603-32	Carbon, Dissolved Organic (DOC)	DUP	K2003360-024	Water	0.47 mg/L	10 mL	0.47 mg/L J	1	0.07	0.50		8	4/26/20 07:03:00	N	IV
KQ2005603-33	Carbon, Dissolved Organic (DOC)	TRP	K2003360-024	Water	0.49 mg/L	10 mL	0.49 mg/L J	1	0.07	0.50		4	4/26/20 07:03:00	N	IV
KQ2005603-34	Carbon, Dissolved Organic (DOC)	QUAD	K2003360-024	Water	0.47 mg/L	10 mL	0.47 mg/L J	1	0.07	0.50		4	4/26/20 07:03:00	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:** 678054 **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
K2003344-001	Carbon, Total Organic	N/A		Water	2.41 mg/L	10 mL	2.41 mg/L	1	0.07	0.50			4/26/20 08:54:00	N	IV
K2003345-001	Carbon, Total Organic	N/A		Water	3.12 mg/L	10 mL	3.12 mg/L	1	0.07	0.50			4/26/20 16:27:00	N	IV
K2003384-001	Carbon, Total Organic	N/A		Water	1.50 mg/L	10 mL	1.50 mg/L	1	0.07	0.50			4/26/20 11:43:00	N	II
K2003384-002	Carbon, Total Organic	N/A		Water	1.52 mg/L	10 mL	1.52 mg/L	1	0.07	0.50			4/26/20 12:11:00	Y	II
K2003384-003	Carbon, Total Organic	N/A		Water	1.31 mg/L	10 mL	1.31 mg/L	1	0.07	0.50			4/26/20 13:09:00	N	II
K2003384-004	Carbon, Total Organic	N/A		Water	1.38 mg/L	10 mL	1.38 mg/L	1	0.07	0.50			4/26/20 13:37:00	N	II
K2003384-005	Carbon, Total Organic	N/A		Water	1.28 mg/L	10 mL	1.28 mg/L	1	0.07	0.50			4/26/20 14:05:00	N	II
K2003384-006	Carbon, Total Organic	N/A		Water	1.56 mg/L	10 mL	1.56 mg/L	1	0.07	0.50			4/26/20 14:33:00	N	II
K2003384-007	Carbon, Total Organic	N/A		Water	1.27 mg/L	10 mL	1.27 mg/L	1	0.07	0.50			4/26/20 15:30:00	N	II
K2003388-001	Carbon, Total Organic	N/A		Water	1.09 mg/L	10 mL	1.09 mg/L	1	0.07	0.50			4/26/20 16:56:00	N	II
KQ2005604-01	Carbon, Total Organic	CCV		Water	24.88 mg/L	10 mL	24.9 mg/L	1					4/26/20 00:45:00	N	IV
KQ2005604-02	Carbon, Total Organic	CCV		Water	24.69 mg/L	10 mL	24.7 mg/L	1					4/26/20 09:22:00	N	IV
KQ2005604-03	Carbon, Total Organic	CCV		Water	24.71 mg/L	10 mL	24.7 mg/L	1					4/26/20 15:01:00	N	IV
KQ2005604-04	Carbon, Total Organic	CCV		Water	24.70 mg/L	10 mL	24.7 mg/L	1					4/26/20 17:24:00	N	IV
KQ2005604-05	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 00:59:00	N	IV
KQ2005604-06	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 09:37:00	N	IV
KQ2005604-07	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 15:15:00	N	IV
KQ2005604-08	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 17:38:00	N	IV
KQ2005604-09	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 15:58:00	N	IV
KQ2005604-10	Carbon, Total Organic	LCS		Water	24.80 mg/L	10 mL	24.8 mg/L	1	0.07	0.50	99		4/26/20 16:13:00	N	IV
KQ2005604-11	Carbon, Total Organic	MS	K2003384-002	Water	28.99 mg/L	10 mL	29.0 mg/L	1	0.07	0.50	110		4/26/20 12:39:00	N	II
KQ2005604-12	Carbon, Total Organic	DUP	K2003344-001	Water	2.42 mg/L	10 mL	2.42 mg/L	1	0.07	0.50		<1	4/26/20 08:54:00	N	IV
KQ2005604-13	Carbon, Total Organic	DUP	K2003345-001	Water	2.99 mg/L	10 mL	2.99 mg/L	1	0.07	0.50		4	4/26/20 16:27:00	N	IV
KQ2005604-14	Carbon, Total Organic	DUP	K2003384-007	Water	1.24 mg/L	10 mL	1.24 mg/L	1	0.07	0.50		2	4/26/20 15:30:00	N	II
KQ2005604-15	Carbon, Total Organic	DUP	K2003384-001	Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50		11*	4/26/20 11:43:00	N	II
KQ2005604-16	Carbon, Total Organic	DUP	K2003384-002	Water	1.48 mg/L	10 mL	1.48 mg/L	1	0.07	0.50		3	4/26/20 12:11:00	N	II
KQ2005604-17	Carbon, Total Organic	DUP	K2003384-003	Water	1.30 mg/L	10 mL	1.30 mg/L	1	0.07	0.50		<1	4/26/20 13:09:00	N	II
KQ2005604-18	Carbon, Total Organic	DUP	K2003384-004	Water	1.33 mg/L	10 mL	1.33 mg/L	1	0.07	0.50		4	4/26/20 13:37:00	N	II
KQ2005604-19	Carbon, Total Organic	DUP	K2003384-005	Water	1.30 mg/L	10 mL	1.30 mg/L	1	0.07	0.50		1	4/26/20 14:05:00	N	II
KQ2005604-20	Carbon, Total Organic	DUP	K2003384-006	Water	1.51 mg/L	10 mL	1.51 mg/L	1	0.07	0.50		4	4/26/20 14:33:00	N	II
KQ2005604-21	Carbon, Total Organic	DUP	K2003388-001	Water	1.08 mg/L	10 mL	1.08 mg/L	1	0.07	0.50		<1	4/26/20 16:56:00	N	II

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

TOC: 678052, 678054
DOC: 678053

Schedule: 04252020

Version: 3
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2020/04/25 20:02 - Saturday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Blank)	Blank	Reagent/Acid Blank		1	True	Ready
D	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
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K2003360-016.10	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
4	Sample	K2003360-016.10 ms	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
5	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
6	Sample	K2003360-019.10	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
7	Sample	K2003360-021.10	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
8	Sample	K2003360-022.10 20x	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
9	Sample	K2003360-023.10	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
10	Sample	K2003360-016.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
11	Sample	K2003360-016.09 ms doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
12	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
13	Sample	K2003360-019.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
14	Sample	K2003360-021.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
15	Sample	K2003360-022.09 20x doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
16	Sample	K2003360-023.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
17	Sample	K2003360-024.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
18	Sample	K2003360-024.10	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
19	Sample	K2003344-001.01	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)	4	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
21	Sample	K2003384-001.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K2003384-002.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
23	Sample	K2003384-002.06 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
24	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
25	Sample	K2003384-003.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K2003384-004.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K2003384-005.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K2003384-006.06	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	K2003384-007.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
30	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
35	Sample	K2003345-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
36	Sample	K2003388-001.01	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
					False	

Fusion Report - 04252020
Saturday, April 25, 2020 01:31 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/04/28 09:20 - Tuesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	04252020	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)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◈	(clean)		Clean	2020/04/25 13:31

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	16.08	20.68	4.60	49.89	08:01
2	TC Clean	11.76	15.96	4.20	49.65	07:17
3	TC Clean	3.20	7.29	4.08	49.65	07:00
4	TC Clean	2.46	6.46	4.00	49.65	07:02

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◈	(clean)		Clean	2020/04/25 14:06

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.18	5.25	4.07	49.87	08:00
2	TC Clean	5.86	9.90	4.05	49.62	07:19
3	TC Clean	1.96	6.12	4.16	49.64	07:02
4	TC Clean	1.73	5.57	3.84	49.64	07:02

Sample Type: Clean From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◈	(clean)		Clean	2020/04/25 14:40

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.97	4.88	3.91	49.83	08:00
2	TC Clean	5.05	8.90	3.85	49.60	07:15
3	TC Clean	2.10	5.91	3.81	49.66	07:01
4	TC Clean	1.80	5.62	3.83	49.67	07:03

Sample Type: Blank (Creating v1377) From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◈	(blank)		Reagent/Acid Blank	2020/04/25 15:14

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.09	4.83	3.74	49.80	07:57
2	TC Clean	5.09	9.10	4.01	49.59	07:17
3	TC Clean	2.15	6.16	4.01	49.64	07:04
4	TC Clean	2.07	5.96	3.90	49.63	07:01
5	Reagent Blank	5.61	9.55	3.94	49.58	08:11
6	Acid Blank	1.18	5.13	3.95	49.75	08:01

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	D	TOC	RB	0.2482 ppm	0.0000 ppm	0.0000%	2020/04/25 16:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2482	2.4819	9.08	12.74	3.66	49.63	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	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)	25.9487 ppm (PASS)	0.0000 ppm	0%	2020/04/25 16:20

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.9487	259.4872	182.32	186.34	4.02	49.65	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 2

	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%	2020/04/25 16:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.74	11.55	3.81	49.64	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

Sample Type: Sample

From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	1	TOC	MB1	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/25 16:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.80	10.67	3.87	49.68	10:30
2	TOC	0.0000	0.0000	6.73	10.68	3.95	49.63	10:29
3	TOC	0.0000	0.0000	6.67	10.55	3.88	49.64	10:28
4	TOC	0.0000	0.0000	6.52	10.49	3.97	49.59	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS

From Schedule Version 2

	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)	24.9130 ppm	0.1765 ppm	0.71%	2020/04/25 17:46

						(PASS)				

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	25.0430	250.4299	176.23	180.02	3.79	49.59	10:27
C	TOC	25.0 ppm	2	24.9089	249.0887	175.33	179.27	3.94	49.61	10:30
C	TOC	25.0 ppm	3	24.6648	246.6485	173.69	177.69	4.00	49.60	10:26
C	TOC	25.0 ppm	4	25.0351	250.3511	176.18	180.13	3.95	49.62	10:27

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 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	2	TOC	ICS	0.3286 ppm	0.0000 ppm	0.0000%	2020/04/25 18:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3286	3.2863	9.62	13.55	3.93	49.64	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	3	TOC	K2003360-016.10	0.5670 ppm	0.0157 ppm	2.7600%	2020/04/25 18:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5661	5.6611	11.22	15.17	3.95	49.64	10:28
2	TOC	0.5701	5.7012	11.24	15.12	3.87	49.63	10:30
3	TOC	0.5850	5.8499	11.34	15.14	3.80	49.64	10:29
4	TOC	0.5469	5.4692	11.09	15.00	3.92	49.68	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	4	TOC	K2003360-016.10 ms	27.8067 ppm	0.1740 ppm	0.6300%	2020/04/25 19:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.5573	275.5730	192.73	196.58	3.85	49.69	10:28
2	TOC	27.9625	279.6250	195.46	199.30	3.84	49.72	10:28
3	TOC	27.8535	278.5351	194.72	198.73	4.01	49.73	10:26
4	TOC	27.8537	278.5365	194.73	198.87	4.14	49.76	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC)	CAS_salt_010711	CAS_salt_010711

(v1377) (v4) (v32)

Sample Type: Sample From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	5	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/25 20:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.24	11.19	3.96	49.80	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	6	TOC	K2003360-019.10	5.9654 ppm	0.1342 ppm	2.2500%	2020/04/25 21:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.8106	58.1059	46.49	50.41	3.92	49.80	10:28
2	TOC	5.9316	59.3163	47.30	51.22	3.92	49.83	10:28
3	TOC	5.9850	59.8501	47.66	51.66	4.00	49.85	10:25
4	TOC	6.1343	61.3431	48.66	52.53	3.87	49.87	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	7	TOC	K2003360-021.10	0.7482 ppm	0.2263 ppm	30.2500%	2020/04/25 21:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0813	10.8135	14.68	18.55	3.86	49.91	10:31
2	TOC	0.6980	6.9800	12.10	16.14	4.04	49.93	10:28
3	TOC	0.6126	6.1265	11.53	15.54	4.01	49.96	10:26
4	TOC	0.6006	6.0060	11.45	15.33	3.89	49.99	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	8	TOC	K2003360-022.10 20x	33.4542 ppm	0.2906 ppm	0.8700%	2020/04/25 22:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	33.8590	338.5903	235.11	239.05	3.94	49.96	10:27
2	TOC	33.2067	332.0669	230.72	234.65	3.93	50.00	10:24
3	TOC	33.2867	332.8669	231.26	235.26	4.00	50.00	10:29
4	TOC	33.4644	334.6438	232.46	236.56	4.10	50.01	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	9	TOC	K2003360-023.10	0.4520 ppm	0.1210 ppm	26.7800%	2020/04/25 23:49

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6180	6.1800	11.57	15.43	3.87	49.96	10:28
2	TOC	0.4656	4.6558	10.54	14.35	3.81	49.99	10:30
3	TOC	0.3683	3.6834	9.89	13.97	4.09	49.98	10:30
4	TOC	0.3560	3.5599	9.80	13.81	4.01	49.97	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

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)	24.8751 ppm (PASS)	0.0000 ppm	0%	2020/04/26 00:45

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.8751	248.7511	175.10	179.08	3.98	49.96	10:35

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 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)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/04/26 00:59

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.78	10.67	3.88	49.96	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

Sample Type: Sample From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	10	TOC	K2003360-016.09 doc	0.4906 ppm	0.0136 ppm	2.7700%	2020/04/26 01:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4836	4.8358	10.66	14.49	3.83	49.97	10:28
2	TOC	0.5083	5.0826	10.83	14.87	4.04	49.96	10:27
3	TOC	0.4934	4.9339	10.73	14.69	3.96	49.95	10:29
4	TOC	0.4770	4.7703	10.62	14.53	3.91	49.95	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	11	TOC	K2003360-016.09 ms doc	27.5036 ppm	0.2214 ppm	0.8000%	2020/04/26 02:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.7594	277.5938	194.09	198.00	3.91	49.90	10:30
2	TOC	27.2487	272.4874	190.66	194.58	3.92	49.91	10:28
3	TOC	27.4119	274.1187	191.75	195.76	4.01	49.87	10:29
4	TOC	27.5943	275.9432	192.98	196.94	3.96	49.91	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	12	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/26 03:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.84	10.70	3.86	49.87	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	13	TOC	K2003360-019.09 doc	4.9782 ppm	0.1798 ppm	3.6100%	2020/04/26 03:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.7458	47.4575	39.33	43.21	3.88	49.88	10:27
2	TOC	4.9593	49.5928	40.76	44.68	3.92	49.88	10:25
3	TOC	5.0298	50.2977	41.24	45.19	3.95	49.88	10:29
4	TOC	5.1780	51.7802	42.23	46.20	3.97	49.89	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	14	TOC	K2003360-021.09 doc	0.6314 ppm	0.1590 ppm	25.1800%	2020/04/26 04:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8620	8.6202	13.21	17.11	3.90	49.90	10:28
2	TOC	0.6088	6.0878	11.50	15.44	3.94	49.90	10:30
3	TOC	0.5425	5.4246	11.06	14.99	3.93	49.95	10:24
4	TOC	0.5123	5.1228	10.86	14.76	3.90	49.90	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	15	TOC	K2003360-022.09 20x doc	33.2197 ppm	0.2141 ppm	0.6400%	2020/04/26 05:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	33.3918	333.9182	231.97	235.78	3.81	49.92	10:28
2	TOC	33.0393	330.3925	229.60	233.62	4.02	49.95	10:27
3	TOC	33.0297	330.2974	229.53	233.48	3.95	49.96	10:24
4	TOC	33.4178	334.1784	232.14	236.13	3.98	49.96	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	16	TOC	K2003360-023.09 doc	0.3916 ppm	0.1264 ppm	32.2700%	2020/04/26 06:08

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5732	5.7324	11.26	15.24	3.98	49.99	10:28
2	TOC	0.3786	3.7860	9.96	13.78	3.83	49.98	10:26
3	TOC	0.3236	3.2358	9.59	13.37	3.78	49.98	10:28
4	TOC	0.2910	2.9101	9.37	13.10	3.74	49.97	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	17	TOC	K2003360-024.09 doc	0.4842 ppm	0.0191 ppm	3.9500%	2020/04/26 07:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5105	5.1049	10.84	14.65	3.81	50.00	10:30
2	TOC	0.4692	4.6915	10.57	14.61	4.05	50.00	10:28
3	TOC	0.4863	4.8625	10.68	14.67	3.99	49.99	10:25
4	TOC	0.4709	4.7094	10.58	14.44	3.86	49.97	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	18	TOC	K2003360-024.10	0.4447 ppm	0.0222 ppm	4.9800%	2020/04/26 07:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4730	4.7302	10.59	14.51	3.92	49.99	10:26
2	TOC	0.4272	4.2722	10.28	14.34	4.05	49.97	10:27
3	TOC	0.4269	4.2692	10.28	14.18	3.90	49.98	10:28
4	TOC	0.4518	4.5176	10.45	14.22	3.77	49.99	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	19	TOC	K2003344-001.01	2.4158 ppm	0.0013 ppm	0.0500%	2020/04/26 08:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4149	24.1489	23.65	27.50	3.85	49.96	10:27
2	TOC	2.4167	24.1667	23.66	27.39	3.73	49.96	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

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)	24.6873 ppm (PASS)	0.0000 ppm	0%	2020/04/26 09:22

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.6873	246.8730	173.84	177.71	3.87	49.97	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 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)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/04/26 09:37

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.31	10.25	3.94	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

Sample Type: Sample From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	20	TOC	MB2	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/26 09:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.76	9.78	4.02	49.93	10:30
2	TOC	0.0000	0.0000	5.62	9.61	3.99	49.96	10:30
3	TOC	0.0000	0.0000	5.30	9.23	3.93	49.92	10:25
4	TOC	0.0000	0.0000	5.31	9.09	3.78	49.97	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	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)	24.0702 ppm (PASS)	0.1034 ppm	0.43%	2020/04/26 10:48

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	23.9318	239.3176	168.76	172.66	3.90	49.92	10:29
C	TOC	25.0 ppm	2	24.1816	241.8158	170.44	174.30	3.86	49.96	10:26
C	TOC	25.0 ppm	3	24.0915	240.9146	169.83	174.09	4.26	49.93	10:27
C	TOC	25.0 ppm	4	24.0761	240.7615	169.73	173.65	3.92	49.91	10:28

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
◆	21	TOC	K2003384-001.06	1.4273 ppm	0.1086 ppm	7.6100%	2020/04/26 11:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

1	TOC	1.5041	15.0410	17.53	21.44	3.92	49.92	10:24
2	TOC	1.3505	13.5050	16.49	20.55	4.06	49.94	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	22	TOC	K2003384-002.06	1.4993 ppm	0.0342 ppm	2.2800%	2020/04/26 12:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.5234	15.2343	17.66	21.54	3.88	49.90	10:28
2	TOC	1.4751	14.7511	17.33	21.35	4.02	49.90	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	23	TOC	K2003384-002.06 ms	28.9878 ppm	0.0000 ppm	0.0000%	2020/04/26 12:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	28.9878	289.8779	202.35	206.24	3.89	49.91	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	24	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/26 12:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.27	10.32	4.05	49.88	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	25	TOC	K2003384-003.06	1.3051 ppm	0.0036 ppm	0.2700%	2020/04/26 13:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3077	13.0767	16.20	20.19	3.98	49.86	10:26
2	TOC	1.3026	13.0261	16.17	20.12	3.95	49.87	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	26	TOC	K2003384-004.06	1.3537 ppm	0.0340 ppm	2.5100%	2020/04/26 13:37

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	27	TOC	K2003384-005.06	1.2927 ppm	0.0119 ppm	0.9200%	2020/04/26 14:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2843	12.8432	16.05	19.83	3.78	49.85	10:26
2	TOC	1.3011	13.0113	16.16	19.92	3.76	49.84	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	28	TOC	K2003384-006.06	1.5339 ppm	0.0392 ppm	2.5600%	2020/04/26 14:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.5616	15.6165	17.91	21.76	3.85	49.82	10:30
2	TOC	1.5062	15.0618	17.54	21.39	3.85	49.79	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

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)	24.7074 ppm (PASS)	0.0000 ppm	0%	2020/04/26 15:01

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.7074	247.0738	173.97	177.98	4.00	49.80	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 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)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/04/26 15:15

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.93	9.81	3.88	49.81	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 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	29	TOC	K2003384-007.06	1.2585 ppm	0.0201 ppm	1.6000%	2020/04/26 15:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2727	12.7273	15.97	19.91	3.94	49.81	10:31
2	TOC	1.2443	12.4432	15.78	19.64	3.86	49.79	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	30	TOC	MB3	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/26 15:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.26	9.09	3.83	49.80	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	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 [25.0 ppm]	0 / infinity (NA / NA)	24.8014 ppm (PASS)	0.0000 ppm	0%	2020/04/26 16:13

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.8014	248.0136	174.61	178.55	3.95	49.77	10:30

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
◆	35	TOC	K2003345-001.01	3.0542 ppm	0.0939 ppm	3.0700%	2020/04/26 16:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.1206	31.2061	28.40	32.23	3.83	49.76	10:27
2	TOC	2.9878	29.8783	27.50	31.52	4.02	49.74	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	36	TOC	K2003388-001.01	1.0842 ppm	0.0064 ppm	0.5900%	2020/04/26 16:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0888	10.8878	14.73	18.65	3.92	49.79	10:29
2	TOC	1.0797	10.7971	14.67	18.63	3.96	49.76	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

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)	24.6955 ppm (PASS)	0.0000 ppm	0%	2020/04/26 17:24

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.6955	246.9548	173.89	177.80	3.90	49.76	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 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)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/04/26 17:38

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

D	TOC	0 ppm	1	0.0000	0.0000	5.61	9.55	3.94	49.74	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

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1376	2.4970	1.4280	0.0000	0.0000	0.0000	2020/04/23 15:09	Fusion1 (Fusion1)
v1377	1.8707	1.1800	0.0000	0.0000	0.0000	2020/04/25 16:05	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	Advanced Parameter	Value

SampleVolume	10.0 mL	NeedleRinseVolume	5.0 ml
Dilution	1:10	VialPrimeVolume	2.0 ml
AcidVolume	0.5 ml	ICSamplePrimeVolume	2.0 ml
ReagentVolume	2.0 ml	ICSpargeRinseVolume	12.0 ml
UVReactorPrerinse	Off	BaselineStabilizeTime	0.70 min
UVReactorPrerinseVolume	5.0	DetectorPressureFlow	150 ml/min
NumberOfUVReactorPrerinses	1	SyringeSpeedWaste	10
ICSpargeTime	1.00 mins	SyringeSpeedAcid	7
DetectorSweepFlow	500 ml/min	SyringeSpeedReagent	7
PreSpargeTime	2.00 mins	SyringeSpeedDIWater	7
SystemFlow	500 ml/min	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	2020/04/26 17:53

ALS Environmental

StarLIMS Run: 678052, 678054, 678053

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: 19-GEN-8-4-G

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-08-14-N

21 % H3PO4: 19-GEN-08-12-A

Equipment ID: K-TOC-03

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

FILTER ID: 16967789

Analyzed By: BCP	Date Analyzed: 25 per analyst 4/28/20
Reviewed By: JC	Date Reviewed: 4/29/20

April 30, 2020 Service Request No:E2000352

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

Laboratory Results for: HS20040700

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory April 17, 2020
For your reference, these analyses have been assigned our service request number **E2000352.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Corey Grandits
Project Manager

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ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
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Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2000352
Project:	HS20040700	**Date Received:**	04/17/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 04/17/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000162: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2000352
Project: HS20040700

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000352-001	LH18/24-SP650_041620_BIX	4/16/2020	1400

Service Request Summary

Folder #: **E2000352**
Client Name: ALS Environmental - US
Project Name: HS20040700
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 04/17/20
Internal Due Date: 5/1/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20040700
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000352-001	LH18/24-SP650_041620_BIX	Water	04/16/20 1400	**IV**

Service Request Summary

Folder #:	**E2000352**
Client Name:	ALS Environmental - US
Project Name:	HS20040700
Project Number:	

Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	04/17/20
Internal Due Date:	5/1/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20040700
EDD:	No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-WIC 7B

Pressure Gas:

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2020
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Illinois Environmental Protection Agency	2000322019-2	5/9/2020
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nevada Department of Concervation and Natural Resources	TX026932019-1	7/31/2020
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Concervation	04016	6/30/2020
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020

Chain of Custody

ALS Environmental - Houston HRMS
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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13737**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

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:	HS20040700
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20040700-02**	**LH18/24-SP650_041620_BIX**	**Water**	**16 Apr 2020 14:00**
	SUB_Perch-6850			01 May 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. [illegible] Date/Time: 4/17/20 10:30

Received By: [illegible] Date/Time: 4/17/20 10:30

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist CA

Client/Project ALS-H

Thermometer ID 6MOH

Date/Time Received: 4/17/20 Initials: CA Date/Time Logged in: 4/17/20 Initials CA

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ Courier (ALS) ○ Client
2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other
3. Were custody seals on coolers? ○ Yes ✓ No
   Were they intact? ○ Yes ○ No ✓ N/A
   Were they signed and dated? ○ Yes ○ No ✓ N/A
   If yes, how many and where?
4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other
5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		4/17/20	1040	CA	1.7/2.1	☐
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

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Houston, TX 77099
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www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

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Preparation Information Benchsheet

Prep Run#: 357602 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/KBROWN **Prep Method:** Method **Prep Date/Time:** 4/29/20 09:00

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000352-001	LH18/24-SP650_041620_BIX	.01	6850/ClO4 DOD			Water	10mL	
2	E2000362-001	LH18/24-SP650_042120_BIX	.01	6850/ClO4 DOD			Water	10mL	
3	E2000363-001	HBW7_042020	.01	6850/ClO4 DOD			Water	10mL	
4	E2000363-002	HBW10_042020	.01	6850/ClO4 DOD			Water	10mL	
5	E2000363-003	HBW1_042020	.01	6850/ClO4 DOD			Water	10mL	
6	E2000363-004	GPW1_042020	.01	6850/ClO4 DOD			Water	10mL	
7	E2000363-005	GPW3_042020	.01	6850/ClO4 DOD			Water	10mL	
8	E2000363-006	GPW3_042020_a	.01	6850/ClO4 DOD			Water	10mL	
9	E2000376-001	GM-MW-29D-20200423-01	.01	6850/ClO4			Ground Water	10mL	
10	E2000376-002	GM-MW-66D2-20200423-01	.01	6850/ClO4			Ground Water	10mL	
11	E2000376-003	GM-MW-89D-20200423-01	.01	6850/ClO4			Ground Water	10mL	
12	E2000376-004	GM-MW-98D-20200423-01	.01	6850/ClO4			Ground Water	10mL	
13	EQ2000162-01	MB		6850/ClO4 DOD			Liquid	10mL	
14	EQ2000162-02	LCS		6850/ClO4 DOD			Liquid	10mL	
15	EQ2000162-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 202037 Logbook Ref: Sodium Perchlorate Expires On: 05/22/2021

E2000352-001	100.00µL	E2000362-001	100.00µL	E2000363-001	100.00µL	E2000363-002	100.00µL	E2000363-003	100.00µL	E2000363-004	100.00µL
E2000363-005	100.00µL	E2000363-006	100.00µL	E2000376-001	100.00µL	E2000376-002	100.00µL	E2000376-003	100.00µL	E2000376-004	100.00µL
EQ2000162-01	100.00µL	EQ2000162-01	100.00µL	EQ2000162-02	100.00µL	EQ2000162-02	100.00µL	EQ2000162-03	100.00µL	EQ2000162-03	100.00µL

Name: Perchlorate Intermediate Stock1 Inventory ID 204799 Logbook Ref: 200657 1.0ug/mL KN Expires On: 05/15/2020

EQ2000162-02	1.00µL	EQ2000162-02	1.00µL	EQ2000162-03	1.00µL	EQ2000162-03	1.00µL

Preparation Steps

Step: Preparation
Started: 4/29/20 09:00
Finished: 4/29/20 10:00
By: KBROWN
Comments

Comments:

Preparation Information Benchsheet

Prep Run#: 357602
Team: Semivoa GCMS/KBROWN

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 4/29/20 09:00

Reviewed By: KN Date: 04/29/20

Chain of Custody

Relinquished By:		Date:		Extracts Examined
Received By:		Date:		Yes No

Analytical Results

ALS Environmental - Houston HRMS
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Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000352
Project:	HS20040700	**Date Collected:**	4/16/20 1400
Sample Matrix:	Water	**Date Received:**	4/17/20
Sample Name:	LH18/24-SP650_041620_BIX	**Units:**	µg/L
Lab Code:	E2000352-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	4/29/20	4/29/20 13:29	357602	678630	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000352
Project:	HS20040700	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000162-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	4/29/20	4/29/20 13:05	357602	678630	

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000352
Project:	HS20040700	**Date Analyzed:**	4/29/20
Sample Matrix:	Water		

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	357602

	Lab Control Sample EQ2000162-02			Duplicate Lab Control Sample EQ2000162-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.115	0.100	115	0.118	0.100	118	84 - 119	2	15

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

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000352
Project:	HS20040700	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000162-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.115**		0.100	0.0500	0.0250	1	4/29/20	4/29/20 13:13	357602	678630	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000352
Project:	HS20040700	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000162-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.118**		0.100	0.0500	0.0250	1	4/29/20	4/29/20 15:11	357602	678630	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200420

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200420_001	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:01
	null		20200420_002	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:06
	DIBLK		20200420_003	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:11
	IB		20200420_004	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:19
	PERCHLORATE7		20200420_005	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 13:27
	LODV		20200420_006	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:35
	PERCHLORATE1		20200420_007	Perchlorate6850b.lcm	1x	☒	3100804-05	4/20/2020 13:43
	PERCHLORATE2		20200420_008	Perchlorate6850b.lcm	1x	☒	3100804-06	4/20/2020 13:51
	PERCHLORATE3		20200420_009	Perchlorate6850b.lcm	1x	☒	3100804-07	4/20/2020 13:58
	PERCHLORATE4		20200420_010	Perchlorate6850b.lcm	1x	☒	3100804-08	4/20/2020 14:06
	PERCHLORATE5		20200420_011	Perchlorate6850b.lcm	1x	☒	3100804-09	4/20/2020 14:14
	PERCHLORATE6		20200420_012	Perchlorate6850b.lcm	1x	☒	3100805-01	4/20/2020 14:22
	PERCHLORATE8		20200420_013	Perchlorate6850b.lcm	1x	☒	3100805-03	4/20/2020 14:30
	PERCHLORATE9		20200420_014	Perchlorate6850b.lcm	1x	☒	3100805-04	4/20/2020 14:38
	PERCHLORATE10		20200420_015	Perchlorate6850b.lcm	1x	☒	3100805-05	4/20/2020 14:46
	ICV		20200420_016	Perchlorate6850b.lcm	1x	☒	3100805-06	4/20/2020 14:54
	LODV		20200420_017	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:02
	EQ2000143-01		20200420_018	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:10
	EQ2000143-02		20200420_019	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:18
	EQ2000143-03		20200420_020	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:26
	E2000275-001		20200420_021	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:33
	E2000275-002		20200420_022	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:41
	E2000275-003		20200420_023	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:49
	E2000287-001		20200420_024	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:57
	E2000303-001		20200420_025	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:05
	E2000304-001		20200420_026	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:13
	E2000305-001		20200420_027	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:21
	PERCHLORATE7		20200420_028	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 16:29
	E2000303-001		20200420_029	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:47
	E2000304-001		20200420_030	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:55
	PERCHLORATE7		20200420_031	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 17:02

Initial Calibration - Detailed Report

Calibration ID: EC2000003 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
08	EC2000003-08	PERCHLORATE7	20200420_005	04/20/2020 13:27
01	EC2000003-01	PERCHLORATE1	20200420_007	04/20/2020 13:43
02	EC2000003-02	PERCHLORATE2	20200420_008	04/20/2020 13:51
03	EC2000003-03	PERCHLORATE3	20200420_009	04/20/2020 13:58
04	EC2000003-04	PERCHLORATE4	20200420_010	04/20/2020 14:06
05	EC2000003-05	PERCHLORATE5	20200420_011	04/20/2020 14:14
06	EC2000003-06	PERCHLORATE6	20200420_012	04/20/2020 14:22
07	EC2000003-07	PERCHLORATE8	20200420_013	04/20/2020 14:30
09	EC2000003-09	PERCHLORATE9	20200420_014	04/20/2020 14:38
10	EC2000003-10	PERCHLORATE10	20200420_015	04/20/2020 14:46

Analyte | **Curve Fit** | **Weighting**

Perchlorate | **Average RF** | **RSD = 8.066** | **Average RF = 0.1368**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1558	02	0.5000	0.1297	03	0.7000	0.1277	04	1.0000	0.1397
05	2.0000	0.1298	06	5.0000	0.1245	07	20.0000	0.1341	08	10.0000	0.1562
09	30.0000	0.1365	10	50.0000	0.1345						

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.114	13.9	02	0.5000	0.474	-5.2	03	0.7000	0.653	-6.7
04	1.0000	1.02	2.1	05	2.0000	1.90	-5.1	06	5.0000	4.55	-9.0
07	20.0000	19.6	-2.0	08	10.0000	11.4	14.2	09	30.0000	29.9	-0.2
10	50.0000	49.1	-1.7								

Initial Calibration Verification Summary Report

Calibration ID:	EC2000003	**Instrument ID:**	E-LCMS-01
Datafile ID:	20200420_016	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000003-11	T	Average RF	10	11.345	ng/mL	13.4	<= 15

ALS Group Houston

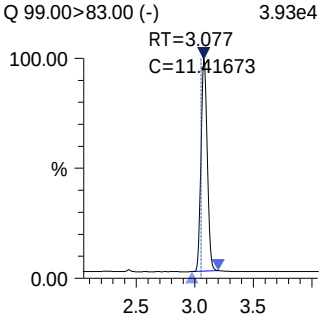
PERCHLORATE7

Date acquired: 4/20/2020 1:27:21 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_005.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/20/2020 1:27:21 PM	144494	11.41673	20200420_005	3.077	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/20/2020 1:27:21 PM	92497	1.00000	20200420_005	3.076	25.0000	1.0000	3

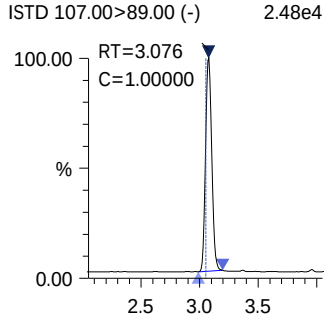
Perchlorate

Conc 11.41673
Area 144494



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 92497



ALS Group Houston

PERCHLORATE1

Date acquired: 4/20/2020 1:43:09 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_007.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

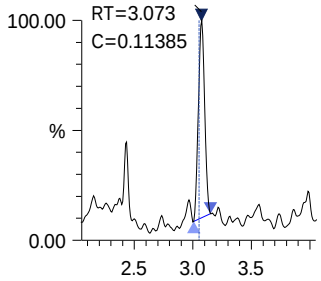
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	4/20/2020 1:43:09 PM	1840	0.11385	20200420_007	3.073	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	4/20/2020 1:43:09 PM	118078	1.00000	20200420_007	3.073	25.0000	1.0000	5

Perchlorate

Conc 0.11385

Area 1840

Q 99.00>83.00 (-) 5.37e2

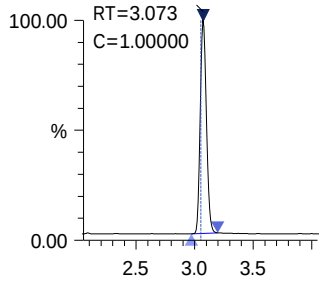


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 118078

ISTD 107.00>89.00 (-) 3.18e4



ALS Group Houston

PERCHLORATE2

Date acquired: 4/20/2020 1:51:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_008.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

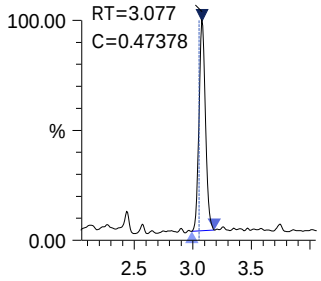
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	4/20/2020 1:51:02 PM	7551	0.47378	20200420_008	3.077	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	PERCHLORATE2	4/20/2020 1:51:02 PM	116479	1.00000	20200420_008	3.075	25.0000	1.0000	6

Perchlorate

Conc 0.47378

Area 7551

Q 99.00>83.00 (-) 2.00e3

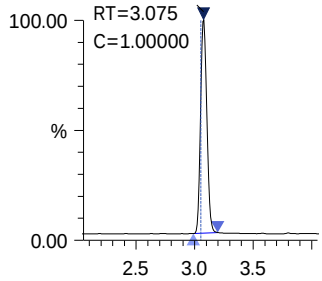


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 116479

ISTD 107.00>89.00 (-) 3.08e4



ALS Group Houston

PERCHLORATE3

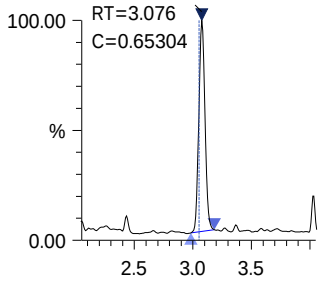
Date acquired: 4/20/2020 1:58:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_009.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	4/20/2020 1:58:56 PM	11235	0.65304	20200420_009	3.076	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE3	4/20/2020 1:58:56 PM	125731	1.00000	20200420_009	3.073	25.0000	1.0000	7

Perchlorate

Conc 0.65304
Area 11235

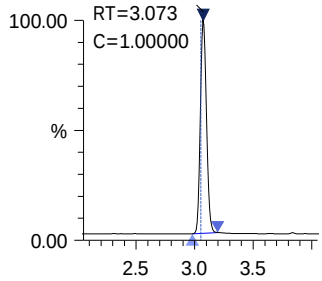
Q 99.00>83.00 (-) 3.12e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 125731

ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

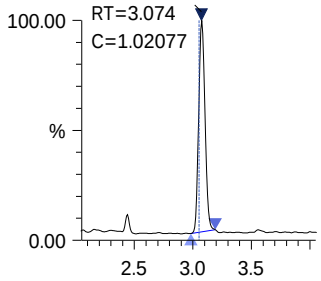
PERCHLORATE4

Date acquired: 4/20/2020 2:06:51 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_010.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	4/20/2020 2:06:51 PM	16670	1.02077	20200420_010	3.074	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE4	4/20/2020 2:06:51 PM	119354	1.00000	20200420_010	3.074	25.0000	1.0000	8

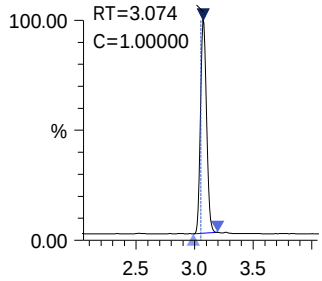
Perchlorate

Conc 1.02077
Area 16670
Q 99.00>83.00 (-) 4.51e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 119354
ISTD 107.00>89.00 (-) 3.26e4



ALS Group Houston

PERCHLORATE5

Date acquired: 4/20/2020 2:14:45 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_011.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

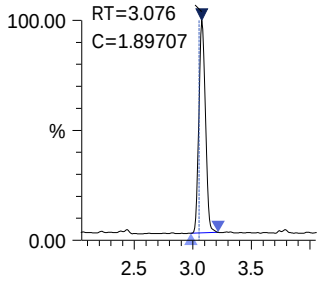
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	4/20/2020 2:14:45 PM	33786	1.89707	20200420_011	3.076	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE5	4/20/2020 2:14:45 PM	130159	1.00000	20200420_011	3.075	25.0000	1.0000	9

Perchlorate

Conc 1.89707

Area 33786

Q 99.00>83.00 (-) 8.73e3

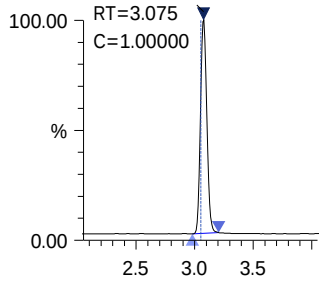


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 130159

ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

PERCHLORATE6

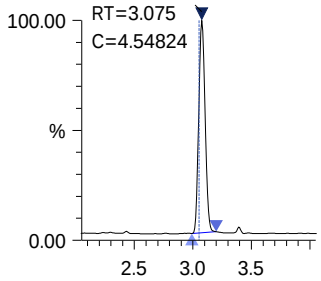
Date acquired: 4/20/2020 2:22:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_012.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	4/20/2020 2:22:39 PM	69848	4.54824	20200420_012	3.075	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE6	4/20/2020 2:22:39 PM	112235	1.00000	20200420_012	3.074	25.0000	1.0000	10

Perchlorate

Conc 4.54824
Area 69848

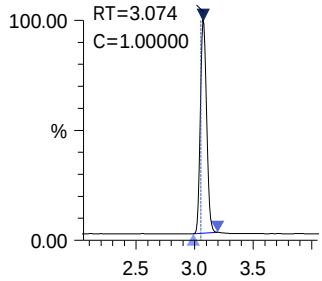
Q 99.00>83.00 (-) 1.86e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 112235

ISTD 107.00>89.00 (-) 2.98e4



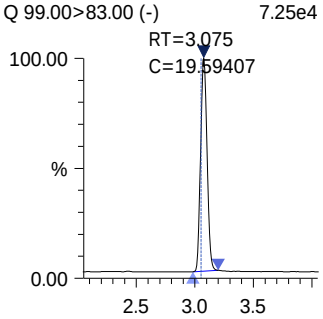
PERCHLORATE8

Date acquired: 4/20/2020 2:30:36 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_013.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	4/20/2020 2:30:36 PM	275854	19.59407	20200420_013	3.075	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE8	4/20/2020 2:30:36 PM	102890	1.00000	20200420_013	3.072	25.0000	1.0000	11

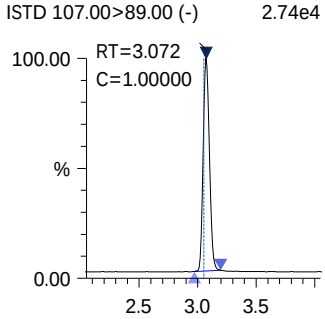
Perchlorate

Conc 19.59407
Area 275854



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 102890



ALS Group Houston

PERCHLORATE9

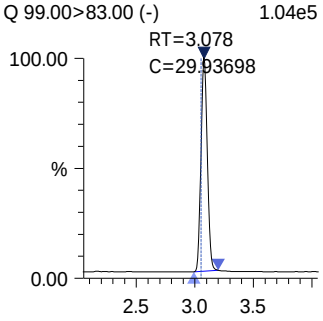
Date acquired: 4/20/2020 2:38:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_014.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	4/20/2020 2:38:33 PM	390068	29.93698	20200420_014	3.078	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE9	4/20/2020 2:38:33 PM	95225	1.00000	20200420_014	3.075	25.0000	1.0000	12

Perchlorate

Conc 29.93698

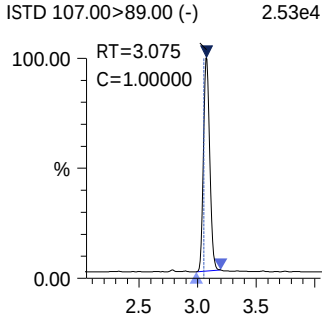
Area 390068



Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 95225



ALS Group Houston

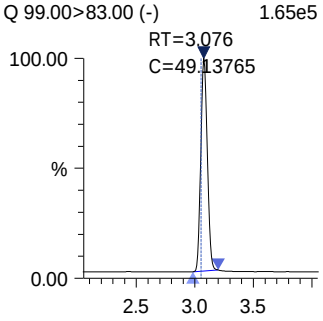
PERCHLORATE10

Date acquired: 4/20/2020 2:46:25 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_015.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE10	4/20/2020 2:46:25 PM	632804	49.13765	20200420_015	3.076	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE10	4/20/2020 2:46:25 PM	94118	1.00000	20200420_015	3.075	25.0000	1.0000	13

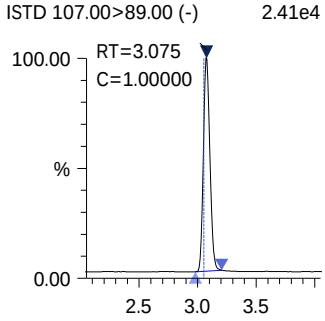
Perchlorate

Conc 49.13765
Area 632804



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 94118



ALS Group Houston

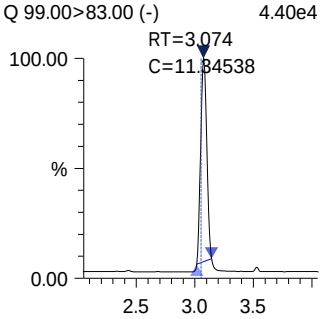
PERCHLORATEICV

Date acquired: 4/20/2020 2:54:20 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_016.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	4/20/2020 2:54:20 PM	149807	11.34538	20200420_016	3.074	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	4/20/2020 2:54:20 PM	96501	1.00000	20200420_016	3.072	25.0000	1.0000	14

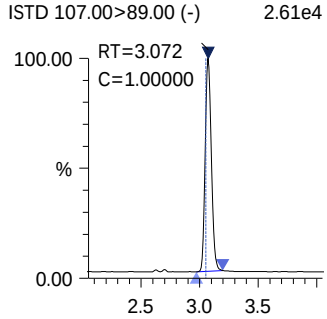
Perchlorate

Conc 11.34538
Area 149807



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 96501



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200429

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
null		20200429_001	Perchlorate6850b.lcm	1x	☒		4/29/2020 12:09
null		20200429_002	Perchlorate6850b.lcm	1x	☒		4/29/2020 12:14
IB		20200429_003	Perchlorate6850b.lcm	1x	☒		4/29/2020 12:19
PERCHLORATE7		20200429_004	Perchlorate6850b.lcm	1x	☒	3100805-02	4/29/2020 12:27
LODV		20200429_005	Perchlorate6850b.lcm	1x	☒		4/29/2020 12:35
EQ2000162-01		20200429_006	Perchlorate6850b.lcm	1x	☒		4/29/2020 13:05
EQ2000162-02		20200429_007	Perchlorate6850b.lcm	1x	☒		4/29/2020 13:13
EQ2000162-03		20200429_008	Perchlorate6850b.lcm	1x		RR_high	4/29/2020 13:21
E2000352-001		20200429_009	Perchlorate6850b.lcm	1x	☒		4/29/2020 13:29
E2000362-001		20200429_010	Perchlorate6850b.lcm	1x	☒		4/29/2020 13:36
E2000363-001		20200429_011	Perchlorate6850b.lcm	1x	☒		4/29/2020 13:44
E2000363-002		20200429_012	Perchlorate6850b.lcm	1x	☒		4/29/2020 13:52
E2000363-003		20200429_013	Perchlorate6850b.lcm	1x	☒		4/29/2020 14:00
E2000363-004		20200429_014	Perchlorate6850b.lcm	1x	☒		4/29/2020 14:08
E2000363-005		20200429_015	Perchlorate6850b.lcm	1x	☒		4/29/2020 14:16
PERCHLORATE7		20200429_016	Perchlorate6850b.lcm	1x	☒	3100805-02	4/29/2020 14:24
E2000363-006		20200429_017	Perchlorate6850b.lcm	1x	☒		4/29/2020 14:32
E2000376-001		20200429_018	Perchlorate6850b.lcm	1x		DL-1000x	4/29/2020 14:40
E2000376-002		20200429_019	Perchlorate6850b.lcm	1x		RR_poss carryover	4/29/2020 14:48
E2000376-003		20200429_020	Perchlorate6850b.lcm	1x		DL-500x	4/29/2020 14:56
E2000376-004		20200429_021	Perchlorate6850b.lcm	1x		DL-1000x	4/29/2020 15:03
EQ2000162-03		20200429_022	Perchlorate6850b.lcm	1x	☒		4/29/2020 15:11
PERCHLORATE7		20200429_023	Perchlorate6850b.lcm	1x	☒	3100805-02	4/29/2020 15:19
EQ2000162-03		20200429_024	Perchlorate6850b.lcm	1x	☒		4/29/2020 15:49
E2000376-002		20200429_025	Perchlorate6850b.lcm	1x			4/29/2020 15:56
E2000376-001X1000		20200429_026	Perchlorate6850b.lcm	1000	☒		4/29/2020 16:04
E2000376-003X500		20200429_027	Perchlorate6850b.lcm	500	☒		4/29/2020 16:12
E2000376-004X1000		20200429_028	Perchlorate6850b.lcm	100	☒		4/29/2020 16:20
PERCHLORATE7		20200429_029	Perchlorate6850b.lcm	1x	☒	3100805-02	4/29/2020 16:28

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000352
Project:	HS20040700	**Date Analyzed:**	4/29/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200429\20200429_004	**Calibration ID:**	EC2000003
		Analysis Lot:	678630
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.9	0.1368	0.1493	9.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000352
Project:	HS20040700	**Date Analyzed:**	4/29/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200429\20200429_016	**Calibration ID:**	EC2000003
		Analysis Lot:	678630
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.5	0.1368	0.1573	14.9	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000352
Project:	HS20040700	**Date Analyzed:**	4/29/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200429\20200429_023	**Calibration ID:**	EC2000003
		Analysis Lot:	678630
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.0	0.1368	0.1498	9.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000352
Project:	HS20040700	**Date Analyzed:**	4/29/20 12:27

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200429\20200429_004	**Lab Code:**	EQ2000163-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	678630
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000163-01	84,029	3.02
Method Blank	EQ2000162-01	105,800	2.96
Lab Control Sample	EQ2000162-02	104,252	3.02
LH18/24-SP650_041620_BIX	E2000352-001	82,368	3.00

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000352
Project:	HS20040700	**Date Analyzed:**	4/29/20 14:24

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200429\20200429_016	**Lab Code:**	EQ2000163-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	678630
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000163-02	101,114	3.02
Duplicate Lab Control Sample	EQ2000162-03	121,962	3.02

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000352
Project:	HS20040700	**Date Analyzed:**	4/29/20 15:19

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200429\20200429_023	**Lab Code:**	EQ2000163-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	678630
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000163-03	105,647	3.01

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

ALS Group Houston

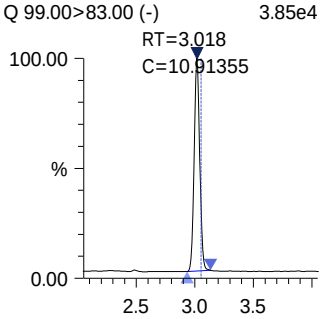
PERCHLORATE7

Date acquired: 4/29/2020 12:27:46 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200429\20200429_004.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/29/2020 12:27:46 PM	125481	10.91355	20200429_004	3.018	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/29/2020 12:27:46 PM	84029	1.00000	20200429_004	3.016	25.0000	1.0000	3

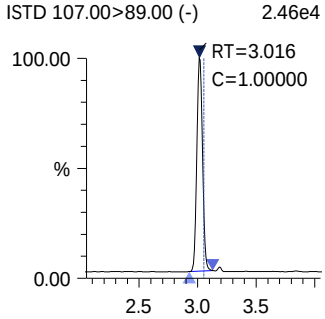
Perchlorate

Conc 10.91355
Area 125481



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 84029



ALS Group Houston

EQ2000162-01

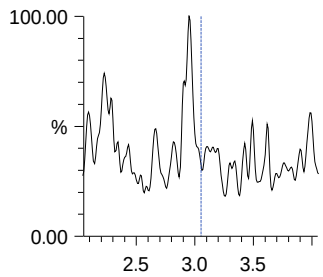
Date acquired: 4/29/2020 1:05:16 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200429\20200429_006.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000162-01	4/29/2020 1:05:16 PM	----	----	20200429_006	----	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	EQ2000162-01	4/29/2020 1:05:16 PM	105800	1.00000	20200429_006	2.955	25.0000	1.0000	5

Perchlorate

Conc ----
Area ----

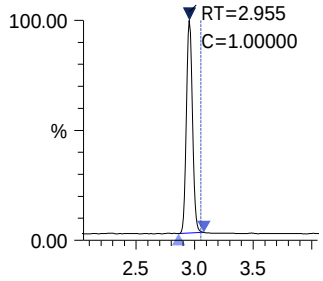
Q 99.00>83.00 (-) 3.44e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 105800

ISTD 107.00>89.00 (-) 3.02e4



ALS Group Houston

EQ2000162-02

Date acquired: 4/29/2020 1:13:11 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200429\20200429_007.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

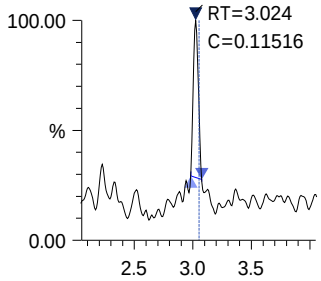
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000162-02	4/29/2020 1:13:11 PM	1643	0.11516	20200429_007	3.024	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000162-02	4/29/2020 1:13:11 PM	104252	1.00000	20200429_007	3.018	25.0000	1.0000	6

Perchlorate

Conc 0.11516

Area 1643

Q 99.00>83.00 (-) 7.59e2

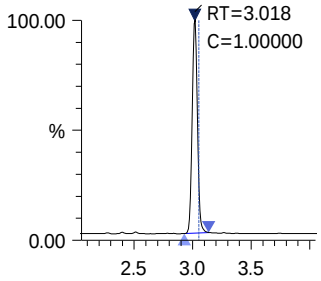


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 104252

ISTD 107.00>89.00 (-) 3.31e4



ALS Group Houston

E2000352-001

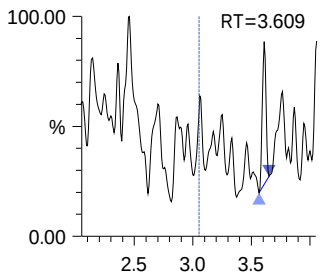
Date acquired: 4/29/2020 1:29:01 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200429\20200429_009.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	E2000352-001	4/29/2020 1:29:01 PM	----	----	20200429_009	----	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	E2000352-001	4/29/2020 1:29:01 PM	82368	1.00000	20200429_009	3.004	25.0000	1.0000	8

Perchlorate

Conc ----
Area ----

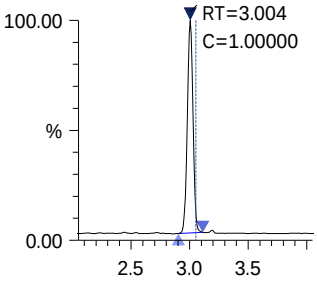
Q 99.00>83.00 (-) 2.87e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 82368

ISTD 107.00>89.00 (-) 2.44e4



ALS Group Houston

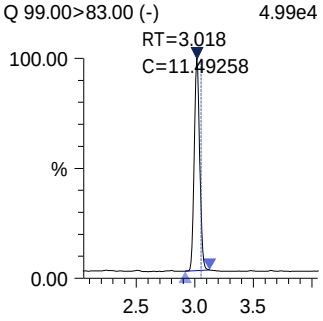
PERCHLORATE7

Date acquired: 4/29/2020 2:24:22 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200429\20200429_016.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/29/2020 2:24:22 PM	159005	11.49258	20200429_016	3.018	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/29/2020 2:24:22 PM	101114	1.00000	20200429_016	3.016	25.0000	1.0000	3

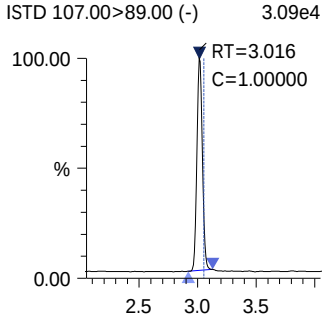
Perchlorate

Conc 11.49258
Area 159005



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 101114



ALS Group Houston

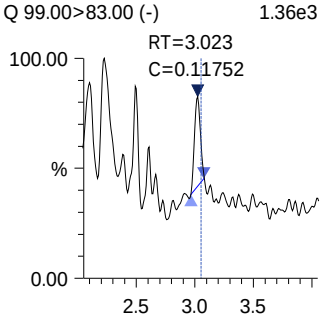
EQ2000162-03

Date acquired: 4/29/2020 3:11:50 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200429\20200429_022.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000162-03	4/29/2020 3:11:50 PM	1961	0.11752	20200429_022	3.023	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000162-03	4/29/2020 3:11:50 PM	121962	1.00000	20200429_022	3.016	25.0000	1.0000	6

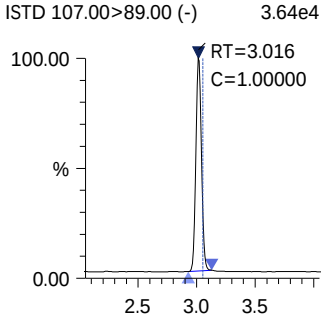
Perchlorate

Conc 0.11752
Area 1961



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 121962



ALS Group Houston

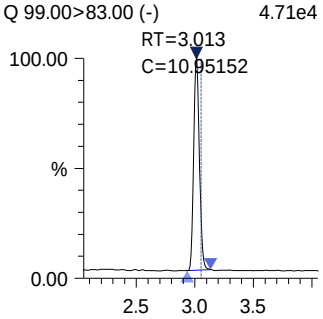
PERCHLORATE7

Date acquired: 4/29/2020 3:19:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200429\20200429_023.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/29/2020 3:19:44 PM	158312	10.95152	20200429_023	3.013	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/29/2020 3:19:44 PM	105647	1.00000	20200429_023	3.012	25.0000	1.0000	3

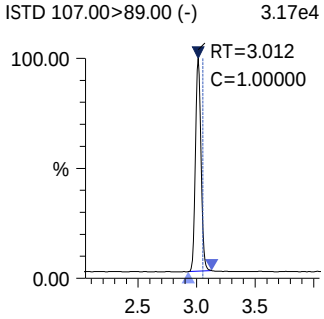
Perchlorate

Conc 10.95152
Area 158312



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 105647



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F: +1 281 530 5887

April 30, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20040851**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on Apr 22, 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-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20040851

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20040851-01	LH18/24-SP650_042120	Water		21-Apr-2020 14:00	22-Apr-2020 08:30	☐
HS20040851-02	LH18/24-SP650_042120_BIX	Water		21-Apr-2020 14:00	22-Apr-2020 08:30	☐

ALS Houston, US Date: 30-Apr-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20040851

Work Order Comments

• Analysis of Perchlorate was performed by ALS Houston TX, High Resolution. Laboratory. Final report attached.

The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.

WetChemistry by Method E350.3

Batch ID: R360536

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

WetChemistry by Method E365.3

Batch ID: R360509

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

ALS Houston, US Date: 30-Apr-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Weekly Samples WorkOrder:HS20040851

Sample ID: LH18/24-SP650_042120 Lab ID:HS20040851-01

Collection Date: 21-Apr-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: MZD
Nitrogen, Ammonia (As N)	**4.6**	a	**0.20**	**0.10**	**0.20**	**mg/L**	1	23-Apr-2020 12:09
ORTHO PHOSPHATE (PO4) AS P BY E365.3		**Method:E365.3**						Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	**0.792**	a	**0.0100**	**0.0250**	**0.0250**	**mg/L**	1	22-Apr-2020 08:56
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	30-Apr-2020 10:45

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

ALS Houston, US Date: 30-Apr-20

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS20040851
Sample ID: LH18/24-SP650_042120_BIX
Lab ID:HS20040851-02
Collection Date: 21-Apr-2020 14:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	30-Apr-2020 15:22

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

ALS Houston, US Date: 30-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20040851

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R360509 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3				**Matrix:** Water	
HS20040851-01	LH18/24-SP650_042120	21 Apr 2020 14:00			22 Apr 2020 08:56	1
Batch ID: R360536 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS20040851-01	LH18/24-SP650_042120	21 Apr 2020 14:00			23 Apr 2020 12:09	1
Batch ID: R360818 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Water	
HS20040851-01	LH18/24-SP650_042120	21 Apr 2020 14:00			30 Apr 2020 10:45	1
Batch ID: R360870 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS20040851-02	LH18/24-SP650_042120_BIX	21 Apr 2020 14:00			30 Apr 2020 15:22	1

ALS Houston, US Date: 30-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20040851

QC BATCH REPORT

Batch ID: R360509 (0) **Instrument: UV-2450** **Method: ORTHO PHOSPHATE (PO4) AS P BY E365.3**

MBLK Sample ID: **MBLK-360509** Units: **mg/L** Analysis Date: **22-Apr-2020 08:56**
Client ID: Run ID: **UV-2450_360509** SeqNo: **5564669** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0250	0.0250								U

LCS Sample ID: **LCS-360509** Units: **mg/L** Analysis Date: **22-Apr-2020 08:56**
Client ID: Run ID: **UV-2450_360509** SeqNo: **5564670** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.267	0.0250	0.25	0	107	85 - 115				

LCSD Sample ID: **LCSD-360509** Units: **mg/L** Analysis Date: **22-Apr-2020 08:56**
Client ID: Run ID: **UV-2450_360509** SeqNo: **5564671** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.264	0.0250	0.25	0	106	85 - 115	0.267	1.13	20	

MS Sample ID: **HS20040774-02MS** Units: **mg/L** Analysis Date: **22-Apr-2020 08:56**
Client ID: Run ID: **UV-2450_360509** SeqNo: **5564672** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.283	0.0250	0.25	0.019	106	80 - 120				

MSD Sample ID: **HS20040774-02MSD** Units: **mg/L** Analysis Date: **22-Apr-2020 08:56**
Client ID: Run ID: **UV-2450_360509** SeqNo: **5564673** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.266	0.0250	0.25	0.019	98.8	80 - 120	0.283	6.19	20	

The following samples were analyzed in this batch: HS20040851-01

ALS Houston, US Date: 30-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20040851

QC BATCH REPORT

Batch ID: R360536 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK Sample ID: **MBLK-360536** Units: **mg/L** Analysis Date: **23-Apr-2020 12:09**
Client ID: Run ID: **WetChem_HS_360536** SeqNo: **5565144** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.10	0.20								U

LCS Sample ID: **LCS-360536** Units: **mg/L** Analysis Date: **23-Apr-2020 12:09**
Client ID: Run ID: **WetChem_HS_360536** SeqNo: **5565145** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.17	0.20	10	0	102	80 - 120				

MS Sample ID: **HS20040709-01MS** Units: **mg/L** Analysis Date: **23-Apr-2020 12:09**
Client ID: Run ID: **WetChem_HS_360536** SeqNo: **5565147** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	11.48	0.20	10	0.106	114	80 - 120				

MSD Sample ID: **HS20040709-01MSD** Units: **mg/L** Analysis Date: **23-Apr-2020 12:09**
Client ID: Run ID: **WetChem_HS_360536** SeqNo: **5565148** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	11.45	0.20	10	0.106	113	80 - 120	11.48	0.27	20	

The following samples were analyzed in this batch: HS20040851-01

ALS Houston, US Date: 30-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS20040851**

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
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
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
Oklahoma	2019-067	31-Aug-2020

ALS Houston, US Date: 30-Apr-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20040851

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20040851-01	LH18/24-SP650_042120	Login	4/22/2020 10:07:41 AM	PMG	WET230
HS20040851-01	LH18/24-SP650_042120	Login	4/22/2020 10:07:41 AM	PMG	WET230
HS20040851-01	LH18/24-SP650_042120	Login	4/22/2020 10:07:41 AM	PMG	Sub
HS20040851-02	LH18/24-SP650_042120_BIX	Login	4/22/2020 10:07:41 AM	PMG	Sub

ALS Houston, US Date: 30-Apr-20

Sample Receipt Checklist

Client Name: Bhate Environmental
Work Order: HS20040851
Date/Time Received: **22-Apr-2020 08:30**
Received by: **AC**

Checklist completed by: *Paresh M. Giga* eSignature — 22-Apr-2020 Date
Reviewed by: *RJ Modashia* eSignature — 22-Apr-2020 Date

Matrices: **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):	1.7C U/C	IR25
Cooler(s)/Kit(s):	44190	
Date/Time sample(s) sent to storage:	4/22/2020 10:15	

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: Times Differ :
COC - 14:00 Labels - 14:30
Logged in per times on COC

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX, 77099 (281) 530-5656 ATTN: R.J Modashia

Page 1 of 1

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

Prepared By:
Scott Beesinger

P.O. Number

HS20040851
Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE							Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_042120	Water	04/21/20 / 14:00		3	X	X									H2SO4	
LH18/24-SP650_042120	Water	04/21/20 / 14:00		1			X								NONE	
LH18/24–SP650_042120_BIX	Water	04/21/20 / 14:00		1				X							NONE	

Additional Remarks: **Standard TAT on all parameters**

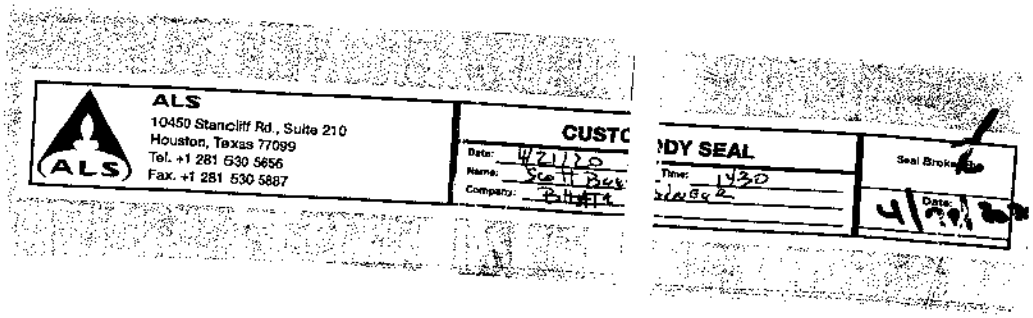
Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
	04/21/20	14:30	AC	4/22/2020	08:50						

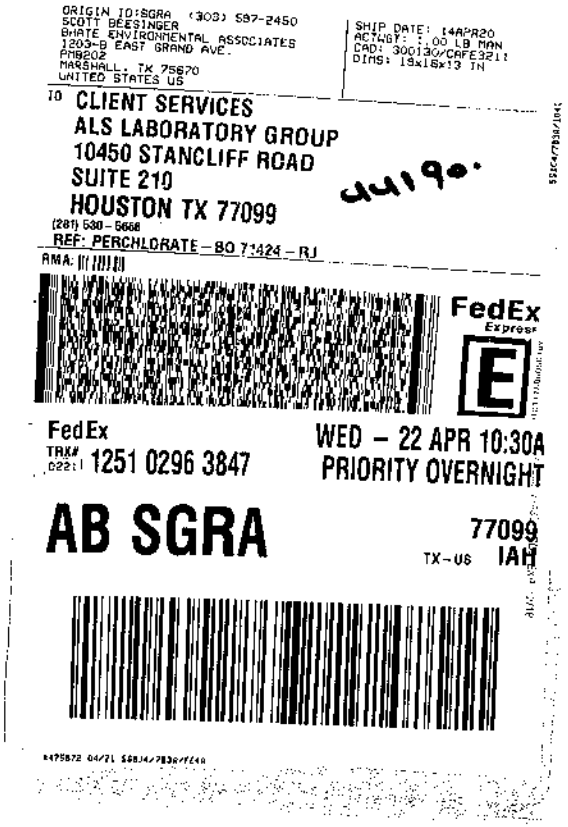
For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

(Word) S:\Forms\Chain of Custody - BiWeekly


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
CUSTO
Date: 4/21/20
Name: Scott Bee
Company: Bhate
DY SEAL
Time: 1430
Seal Broke
Date: 4/21/20


ORIGIN ID:SGRA (303) 597-2450
SCOTT BEESINGER
BHATE ENVIRONMENTAL ASSOCIATES
1203-B EAST GRAND AVE.
PMB202
MARSHALL, TX 75670
UNITED STATES US
SHIP DATE: 14APR20
ACTWGT: 1.00 LB MAN
CAD: 3001307CAFE3211
DIMS: 19x16x13 IN
TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5668
REF: PERCHLORATE - BO 71424 - RJ
44190.
RMA:
FedEx Express
FedEx
TRK# 1251 0296 3847
WED - 22 APR 10:30A
PRIORITY OVERNIGHT
AB SGRA
77099
TX-US IAH

ALS Environmental
ALS Group USA, Corp
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Kelso, WA 98626
T : +1 360 577 7222
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www.alsglobal.com

April 29, 2020

Analytical Report for Service Request No: K2003344

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

RE: HS20040851

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory April 23, 2020
For your reference, these analyses have been assigned our service request number **K2003344.**

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

for 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

Table of Contents

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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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Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

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

Client: ALS Environmental - US
Project: HS20040851
Sample Matrix: Water

Service Request: K2003344
Date Received: 04/23/2020

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 water sample was received for analysis at ALS Environmental on 04/23/2020. 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 Noe D. Davis Date 04/29/2020

Chain of Custody

ALS Environmental—Kelso Laboratory
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K2003344

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:** **13763**

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:	HS20040851
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20040851-01**	**LH18/24-SP650_042120**	**Water**	**21 Apr 2020 14:00**
	TOC Analysis for DOD Level IV			06 May 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: 4/22/20 18:00

Received By: Date/Time: 4/23/2020 1030

Cooler ID(s): Temperature(s):

RIGHT SOLUTIONS | RIGHT PARTNER

PC KL

Cooler Receipt and Preservation Form

Client ALS Houston Service Request K20 o33344

Received: 4/23/2020 Opened: 4/23/2020 By: CG Unloaded: 4/23/2020 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 (N) 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
1.2					3900H88WS	13763	1251 0296 5563	

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:**	K2003344
Project:	HS20040851	**Date Collected:**	04/21/20
Sample Matrix:	Water	**Date Received:**	04/23/20
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
LH18/24-SP650_042120	K2003344-001	**2.41**	0.50	0.20	0.07	1	04/26/20 08:54	
Method Blank	K2003344-MB	ND U	0.50	0.20	0.07	1	04/26/20 15:58	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2003344
Project	HS20040851	**Date Collected:**	04/21/20
Sample Matrix:	Water	**Date Received:**	04/23/20
		Date Analyzed:	04/26/20

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	LH18/24-SP650_042120	**Units:**	mg/L
Lab Code:	K2003344-001	**Basis:**	NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K2003344-001DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	2.41	2.42	2.42	<1	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:**	K2003344
Project:	HS20040851	**Date Analyzed:**	04/26/20
Sample Matrix:	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:	678054

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2003344-LCS	24.8	25.0	99	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2003344
Project: HS20040851

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	678054	KQ2005604-01	04/26/20 00:45	25.0	24.9	100	90-110
CCV2	678054	KQ2005604-02	04/26/20 09:22	25.0	24.7	99	90-110
CCV3	678054	KQ2005604-03	04/26/20 15:01	25.0	24.7	99	90-110
CCV4	678054	KQ2005604-04	04/26/20 17:24	25.0	24.7	99	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2003344
Project: HS20040851

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	678054	KQ2005604-05	04/26/20 00:59	0.50	0.20	0.07	ND	U
CCB2	678054	KQ2005604-06	04/26/20 09:37	0.50	0.20	0.07	ND	U
CCB3	678054	KQ2005604-07	04/26/20 15:15	0.50	0.20	0.07	ND	U
CCB4	678054	KQ2005604-08	04/26/20 17:38	0.50	0.20	0.07	ND	U

Raw Data

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General Chemistry

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Work Request # (Original) K2003360, 3344, 3345, 3384, 3388
IV IV IV II II

Tier:

Date Analyzed: 4/25/20

Analyst: BDP

Analysis: TOC/DOC

TOC: 678052, 678054

Run # DOC: 678053

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: K2003360-21/21d/21H/21q, 3360-23/23d/23H/23q, 3360-21Doc/21dDoc/21HDoc/21qDoc
K2003360-23Doc/23dDoc/23HDoc/23qDoc, 3384-1/1d report a high %RSD. However, these samples are less than 5x the MRL.

Final Approved by: _____ Date: 4/27/20

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 678052 **Method/Testcode:** 9060/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
K2003360-016	Carbon, Total Organic	N/A		Water	0.57 mg/L	10 mL	0.57 mg/L	1	0.07	0.50			4/25/20 18:56:00	Y	IV
K2003360-019	Carbon, Total Organic	N/A		Water	5.81 mg/L	10 mL	5.81 mg/L	1	0.07	0.50			4/25/20 21:02:00	N	IV
K2003360-021	Carbon, Total Organic	N/A		Water	1.08 mg/L	10 mL	1.08 mg/L	1	0.07	0.50			4/25/20 21:58:00	N	IV
K2003360-022	Carbon, Total Organic	N/A		Water	33.86 mg/L	10 mL	677 mg/L	20	2	10			4/25/20 22:53:00	N	IV
K2003360-023	Carbon, Total Organic	N/A		Water	0.62 mg/L	10 mL	0.62 mg/L	1	0.07	0.50			4/25/20 23:49:00	N	IV
K2003360-024	Carbon, Total Organic	N/A		Water	0.47 mg/L	10 mL	0.47 mg/L J	1	0.07	0.50			4/26/20 07:59:00	N	IV
KQ2005602-01	Carbon, Total Organic	CCV		Water	25.95 mg/L	10 mL	25.9 mg/L	1					4/25/20 16:20:00	N	IV
KQ2005602-02	Carbon, Total Organic	CCV		Water	24.88 mg/L	10 mL	24.9 mg/L	1					4/26/20 00:45:00	N	IV
KQ2005602-03	Carbon, Total Organic	CCV		Water	24.69 mg/L	10 mL	24.7 mg/L	1					4/26/20 09:22:00	N	IV
KQ2005602-04	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/25/20 16:35:00	N	IV
KQ2005602-05	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 00:59:00	N	IV
KQ2005602-06	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 09:37:00	N	IV
KQ2005602-07	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/25/20 16:50:00	N	IV
KQ2005602-08	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/25/20 16:50:00	N	IV
KQ2005602-09	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/25/20 16:50:00	N	IV
KQ2005602-10	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/25/20 16:50:00	N	IV
KQ2005602-11	Carbon, Total Organic	LCS		Water	25.04 mg/L	10 mL	25.0 mg/L	1	0.07	0.50	100		4/25/20 17:46:00	N	IV
KQ2005602-12	Carbon, Total Organic	LCS		Water	24.91 mg/L	10 mL	24.9 mg/L	1	0.07	0.50	100		4/25/20 17:46:00	N	IV
KQ2005602-13	Carbon, Total Organic	LCS		Water	24.66 mg/L	10 mL	24.7 mg/L	1	0.07	0.50	99		4/25/20 17:46:00	N	IV
KQ2005602-14	Carbon, Total Organic	LCS		Water	25.04 mg/L	10 mL	25.0 mg/L	1	0.07	0.50	100		4/25/20 17:46:00	N	IV
KQ2005602-15	Carbon, Total Organic	MS	K2003360-016	Water	27.85 mg/L	10 mL	27.9 mg/L	1	0.07	0.50	109		4/25/20 19:52:00	N	IV
KQ2005602-16	Carbon, Total Organic	MS	K2003360-016	Water	27.85 mg/L	10 mL	27.9 mg/L	1	0.07	0.50	109		4/25/20 19:52:00	N	IV
KQ2005602-17	Carbon, Total Organic	MS	K2003360-016	Water	27.96 mg/L	10 mL	28.0 mg/L	1	0.07	0.50	110		4/25/20 19:52:00	N	IV
KQ2005602-18	Carbon, Total Organic	MS	K2003360-016	Water	27.56 mg/L	10 mL	27.6 mg/L	1	0.07	0.50	108		4/25/20 19:52:00	N	IV
KQ2005602-19	Carbon, Total Organic	DUP	K2003360-016	Water	0.57 mg/L	10 mL	0.57 mg/L	1	0.07	0.50		<1	4/25/20 18:56:00	N	IV
KQ2005602-20	Carbon, Total Organic	TRP	K2003360-016	Water	0.59 mg/L	10 mL	0.59 mg/L	1	0.07	0.50		2	4/25/20 18:56:00	N	IV
KQ2005602-21	Carbon, Total Organic	QUAD	K2003360-016	Water	0.55 mg/L	10 mL	0.55 mg/L	1	0.07	0.50		3	4/25/20 18:56:00	N	IV
KQ2005602-22	Carbon, Total Organic	DUP	K2003360-019	Water	5.93 mg/L	10 mL	5.93 mg/L	1	0.07	0.50		2	4/25/20 21:02:00	N	IV
KQ2005602-23	Carbon, Total Organic	TRP	K2003360-019	Water	5.99 mg/L	10 mL	5.99 mg/L	1	0.07	0.50		2	4/25/20 21:02:00	N	IV
KQ2005602-24	Carbon, Total Organic	QUAD	K2003360-019	Water	6.13 mg/L	10 mL	6.13 mg/L	1	0.07	0.50		2	4/25/20 21:02:00	N	IV
KQ2005602-25	Carbon, Total Organic	DUP	K2003360-021	Water	0.70 mg/L	10 mL	0.70 mg/L	1	0.07	0.50		43*	4/25/20 21:58:00	N	IV
KQ2005602-26	Carbon, Total Organic	TRP	K2003360-021	Water	0.61 mg/L	10 mL	0.61 mg/L	1	0.07	0.50		31*	4/25/20 21:58:00	N	IV
KQ2005602-27	Carbon, Total Organic	QUAD	K2003360-021	Water	0.60 mg/L	10 mL	0.60 mg/L	1	0.07	0.50		30*	4/25/20 21:58:00	N	IV
KQ2005602-28	Carbon, Total Organic	DUP	K2003360-022	Water	33.21 mg/L	10 mL	664 mg/L	20	2	10		2	4/25/20 22:53:00	N	IV
KQ2005602-29	Carbon, Total Organic	TRP	K2003360-022	Water	33.29 mg/L	10 mL	666 mg/L	20	2	10		1	4/25/20 22:53:00	N	IV
KQ2005602-30	Carbon, Total Organic	QUAD	K2003360-022	Water	33.46 mg/L	10 mL	669 mg/L	20	2	10		<1	4/25/20 22:53:00	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:** 678052 **Method/Testcode:** 9060/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
KQ2005602-31	Carbon, Total Organic	DUP	K2003360-023	Water	0.47 mg/L	10 mL	0.47 mg/L J	1	0.07	0.50		28*	4/25/20 23:49:00	N	IV
KQ2005602-32	Carbon, Total Organic	TRP	K2003360-023	Water	0.37 mg/L	10 mL	0.37 mg/L J	1	0.07	0.50		26*	4/25/20 23:49:00	N	IV
KQ2005602-33	Carbon, Total Organic	QUAD	K2003360-023	Water	0.36 mg/L	10 mL	0.36 mg/L J	1	0.07	0.50		27*	4/25/20 23:49:00	N	IV
KQ2005602-34	Carbon, Total Organic	DUP	K2003360-024	Water	0.43 mg/L	10 mL	0.43 mg/L J	1	0.07	0.50		10	4/26/20 07:59:00	N	IV
KQ2005602-35	Carbon, Total Organic	TRP	K2003360-024	Water	0.43 mg/L	10 mL	0.43 mg/L J	1	0.07	0.50		6	4/26/20 07:59:00	N	IV
KQ2005602-36	Carbon, Total Organic	QUAD	K2003360-024	Water	0.45 mg/L	10 mL	0.45 mg/L J	1	0.07	0.50		5	4/26/20 07:59:00	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:** 678053 **Method/Testcode:** 9060/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
K2003360-016	Carbon, Dissolved Organic (DOC)	N/A		Water	0.48 mg/L	10 mL	0.48 mg/L J	1	0.07	0.50			4/26/20 01:14:00	Y	IV
K2003360-019	Carbon, Dissolved Organic (DOC)	N/A		Water	4.75 mg/L	10 mL	4.75 mg/L	1	0.07	0.50			4/26/20 03:21:00	N	IV
K2003360-021	Carbon, Dissolved Organic (DOC)	N/A		Water	0.86 mg/L	10 mL	0.86 mg/L	1	0.07	0.50			4/26/20 04:16:00	N	IV
K2003360-022	Carbon, Dissolved Organic (DOC)	N/A		Water	33.39 mg/L	10 mL	668 mg/L	20	2	10			4/26/20 05:12:00	N	IV
K2003360-023	Carbon, Dissolved Organic (DOC)	N/A		Water	0.57 mg/L	10 mL	0.57 mg/L	1	0.07	0.50			4/26/20 06:08:00	N	IV
K2003360-024	Carbon, Dissolved Organic (DOC)	N/A		Water	0.51 mg/L	10 mL	0.51 mg/L	1	0.07	0.50			4/26/20 07:03:00	N	IV
KQ2005603-01	Carbon, Dissolved Organic (DOC)	CCV		Water	24.88 mg/L	10 mL	24.9 mg/L	1					4/26/20 00:45:00	N	IV
KQ2005603-02	Carbon, Dissolved Organic (DOC)	CCV		Water	24.69 mg/L	10 mL	24.7 mg/L	1					4/26/20 09:22:00	N	IV
KQ2005603-03	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 00:59:00	N	IV
KQ2005603-04	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 09:37:00	N	IV
KQ2005603-05	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 09:52:00	N	IV
KQ2005603-06	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 09:52:00	N	IV
KQ2005603-07	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 09:52:00	N	IV
KQ2005603-08	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 09:52:00	N	IV
KQ2005603-09	Carbon, Dissolved Organic (DOC)	LCS		Water	23.93 mg/L	10 mL	23.9 mg/L	1	0.07	0.50	96		4/26/20 10:48:00	N	IV
KQ2005603-10	Carbon, Dissolved Organic (DOC)	LCS		Water	24.18 mg/L	10 mL	24.2 mg/L	1	0.07	0.50	97		4/26/20 10:48:00	N	IV
KQ2005603-11	Carbon, Dissolved Organic (DOC)	LCS		Water	24.09 mg/L	10 mL	24.1 mg/L	1	0.07	0.50	96		4/26/20 10:48:00	N	IV
KQ2005603-12	Carbon, Dissolved Organic (DOC)	LCS		Water	24.08 mg/L	10 mL	24.1 mg/L	1	0.07	0.50	96		4/26/20 10:48:00	N	IV
KQ2005603-13	Carbon, Dissolved Organic (DOC)	MS	K2003360-016	Water	27.59 mg/L	10 mL	27.6 mg/L	1	0.07	0.50	108		4/26/20 02:10:00	N	IV
KQ2005603-14	Carbon, Dissolved Organic (DOC)	MS	K2003360-016	Water	27.41 mg/L	10 mL	27.4 mg/L	1	0.07	0.50	108		4/26/20 02:10:00	N	IV
KQ2005603-15	Carbon, Dissolved Organic (DOC)	MS	K2003360-016	Water	27.25 mg/L	10 mL	27.2 mg/L	1	0.07	0.50	107		4/26/20 02:10:00	N	IV
KQ2005603-16	Carbon, Dissolved Organic (DOC)	MS	K2003360-016	Water	27.76 mg/L	10 mL	27.8 mg/L	1	0.07	0.50	109		4/26/20 02:10:00	N	IV
KQ2005603-17	Carbon, Dissolved Organic (DOC)	DUP	K2003360-016	Water	0.51 mg/L	10 mL	0.51 mg/L	1	0.07	0.50		5	4/26/20 01:14:00	N	IV

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

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Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 678053 **Method/Testcode:** 9060/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
KQ2005603-18	Carbon, Dissolved Organic (DOC)	TRP	K2003360-016	Water	0.49 mg/L	10 mL	0.49 mg/L J	1	0.07	0.50		3	4/26/20 01:14:00	N	IV
KQ2005603-19	Carbon, Dissolved Organic (DOC)	QUAD	K2003360-016	Water	0.48 mg/L	10 mL	0.48 mg/L J	1	0.07	0.50		3	4/26/20 01:14:00	N	IV
KQ2005603-20	Carbon, Dissolved Organic (DOC)	DUP	K2003360-019	Water	4.96 mg/L	10 mL	4.96 mg/L	1	0.07	0.50		4	4/26/20 03:21:00	N	IV
KQ2005603-21	Carbon, Dissolved Organic (DOC)	TRP	K2003360-019	Water	5.03 mg/L	10 mL	5.03 mg/L	1	0.07	0.50		3	4/26/20 03:21:00	N	IV
KQ2005603-22	Carbon, Dissolved Organic (DOC)	QUAD	K2003360-019	Water	5.18 mg/L	10 mL	5.18 mg/L	1	0.07	0.50		4	4/26/20 03:21:00	N	IV
KQ2005603-23	Carbon, Dissolved Organic (DOC)	DUP	K2003360-021	Water	0.61 mg/L	10 mL	0.61 mg/L	1	0.07	0.50		34*	4/26/20 04:16:00	N	IV
KQ2005603-24	Carbon, Dissolved Organic (DOC)	TRP	K2003360-021	Water	0.54 mg/L	10 mL	0.54 mg/L	1	0.07	0.50		25*	4/26/20 04:16:00	N	IV
KQ2005603-25	Carbon, Dissolved Organic (DOC)	QUAD	K2003360-021	Water	0.51 mg/L	10 mL	0.51 mg/L	1	0.07	0.50		25*	4/26/20 04:16:00	N	IV
KQ2005603-26	Carbon, Dissolved Organic (DOC)	DUP	K2003360-022	Water	33.04 mg/L	10 mL	661 mg/L	20	2	10		1	4/26/20 05:12:00	N	IV
KQ2005603-27	Carbon, Dissolved Organic (DOC)	TRP	K2003360-022	Water	33.03 mg/L	10 mL	661 mg/L	20	2	10		<1	4/26/20 05:12:00	N	IV
KQ2005603-28	Carbon, Dissolved Organic (DOC)	QUAD	K2003360-022	Water	33.42 mg/L	10 mL	668 mg/L	20	2	10		<1	4/26/20 05:12:00	N	IV
KQ2005603-29	Carbon, Dissolved Organic (DOC)	DUP	K2003360-023	Water	0.38 mg/L	10 mL	0.38 mg/L J	1	0.07	0.50		41*	4/26/20 06:08:00	N	IV
KQ2005603-30	Carbon, Dissolved Organic (DOC)	TRP	K2003360-023	Water	0.32 mg/L	10 mL	0.32 mg/L J	1	0.07	0.50		31*	4/26/20 06:08:00	N	IV
KQ2005603-31	Carbon, Dissolved Organic (DOC)	QUAD	K2003360-023	Water	0.29 mg/L	10 mL	0.29 mg/L J	1	0.07	0.50		32*	4/26/20 06:08:00	N	IV
KQ2005603-32	Carbon, Dissolved Organic (DOC)	DUP	K2003360-024	Water	0.47 mg/L	10 mL	0.47 mg/L J	1	0.07	0.50		8	4/26/20 07:03:00	N	IV
KQ2005603-33	Carbon, Dissolved Organic (DOC)	TRP	K2003360-024	Water	0.49 mg/L	10 mL	0.49 mg/L J	1	0.07	0.50		4	4/26/20 07:03:00	N	IV
KQ2005603-34	Carbon, Dissolved Organic (DOC)	QUAD	K2003360-024	Water	0.47 mg/L	10 mL	0.47 mg/L J	1	0.07	0.50		4	4/26/20 07:03:00	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:** 678054 **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
K2003344-001	Carbon, Total Organic	N/A		Water	2.41 mg/L	10 mL	2.41 mg/L	1	0.07	0.50			4/26/20 08:54:00	N	IV
K2003345-001	Carbon, Total Organic	N/A		Water	3.12 mg/L	10 mL	3.12 mg/L	1	0.07	0.50			4/26/20 16:27:00	N	IV
K2003384-001	Carbon, Total Organic	N/A		Water	1.50 mg/L	10 mL	1.50 mg/L	1	0.07	0.50			4/26/20 11:43:00	N	II
K2003384-002	Carbon, Total Organic	N/A		Water	1.52 mg/L	10 mL	1.52 mg/L	1	0.07	0.50			4/26/20 12:11:00	Y	II
K2003384-003	Carbon, Total Organic	N/A		Water	1.31 mg/L	10 mL	1.31 mg/L	1	0.07	0.50			4/26/20 13:09:00	N	II
K2003384-004	Carbon, Total Organic	N/A		Water	1.38 mg/L	10 mL	1.38 mg/L	1	0.07	0.50			4/26/20 13:37:00	N	II
K2003384-005	Carbon, Total Organic	N/A		Water	1.28 mg/L	10 mL	1.28 mg/L	1	0.07	0.50			4/26/20 14:05:00	N	II
K2003384-006	Carbon, Total Organic	N/A		Water	1.56 mg/L	10 mL	1.56 mg/L	1	0.07	0.50			4/26/20 14:33:00	N	II
K2003384-007	Carbon, Total Organic	N/A		Water	1.27 mg/L	10 mL	1.27 mg/L	1	0.07	0.50			4/26/20 15:30:00	N	II
K2003388-001	Carbon, Total Organic	N/A		Water	1.09 mg/L	10 mL	1.09 mg/L	1	0.07	0.50			4/26/20 16:56:00	N	II
KQ2005604-01	Carbon, Total Organic	CCV		Water	24.88 mg/L	10 mL	24.9 mg/L	1					4/26/20 00:45:00	N	IV
KQ2005604-02	Carbon, Total Organic	CCV		Water	24.69 mg/L	10 mL	24.7 mg/L	1					4/26/20 09:22:00	N	IV
KQ2005604-03	Carbon, Total Organic	CCV		Water	24.71 mg/L	10 mL	24.7 mg/L	1					4/26/20 15:01:00	N	IV
KQ2005604-04	Carbon, Total Organic	CCV		Water	24.70 mg/L	10 mL	24.7 mg/L	1					4/26/20 17:24:00	N	IV
KQ2005604-05	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 00:59:00	N	IV
KQ2005604-06	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 09:37:00	N	IV
KQ2005604-07	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 15:15:00	N	IV
KQ2005604-08	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 17:38:00	N	IV
KQ2005604-09	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			4/26/20 15:58:00	N	IV
KQ2005604-10	Carbon, Total Organic	LCS		Water	24.80 mg/L	10 mL	24.8 mg/L	1	0.07	0.50	99		4/26/20 16:13:00	N	IV
KQ2005604-11	Carbon, Total Organic	MS	K2003384-002	Water	28.99 mg/L	10 mL	29.0 mg/L	1	0.07	0.50	110		4/26/20 12:39:00	N	II
KQ2005604-12	Carbon, Total Organic	DUP	K2003344-001	Water	2.42 mg/L	10 mL	2.42 mg/L	1	0.07	0.50		<1	4/26/20 08:54:00	N	IV
KQ2005604-13	Carbon, Total Organic	DUP	K2003345-001	Water	2.99 mg/L	10 mL	2.99 mg/L	1	0.07	0.50		4	4/26/20 16:27:00	N	IV
KQ2005604-14	Carbon, Total Organic	DUP	K2003384-007	Water	1.24 mg/L	10 mL	1.24 mg/L	1	0.07	0.50		2	4/26/20 15:30:00	N	II
KQ2005604-15	Carbon, Total Organic	DUP	K2003384-001	Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50		11*	4/26/20 11:43:00	N	II
KQ2005604-16	Carbon, Total Organic	DUP	K2003384-002	Water	1.48 mg/L	10 mL	1.48 mg/L	1	0.07	0.50		3	4/26/20 12:11:00	N	II
KQ2005604-17	Carbon, Total Organic	DUP	K2003384-003	Water	1.30 mg/L	10 mL	1.30 mg/L	1	0.07	0.50		<1	4/26/20 13:09:00	N	II
KQ2005604-18	Carbon, Total Organic	DUP	K2003384-004	Water	1.33 mg/L	10 mL	1.33 mg/L	1	0.07	0.50		4	4/26/20 13:37:00	N	II
KQ2005604-19	Carbon, Total Organic	DUP	K2003384-005	Water	1.30 mg/L	10 mL	1.30 mg/L	1	0.07	0.50		1	4/26/20 14:05:00	N	II
KQ2005604-20	Carbon, Total Organic	DUP	K2003384-006	Water	1.51 mg/L	10 mL	1.51 mg/L	1	0.07	0.50		4	4/26/20 14:33:00	N	II
KQ2005604-21	Carbon, Total Organic	DUP	K2003388-001	Water	1.08 mg/L	10 mL	1.08 mg/L	1	0.07	0.50		<1	4/26/20 16:56:00	N	II

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

TOC: 678052, 678054
DOC: 678053

Schedule: 04252020

Version: 3
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2020/04/25 20:02 - Saturday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Blank)	Blank	Reagent/Acid Blank		1	True	Ready
D	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
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K2003360-016.10	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
4	Sample	K2003360-016.10 ms	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
5	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
6	Sample	K2003360-019.10	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
7	Sample	K2003360-021.10	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
8	Sample	K2003360-022.10 20x	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
9	Sample	K2003360-023.10	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
10	Sample	K2003360-016.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
11	Sample	K2003360-016.09 ms doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
12	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
13	Sample	K2003360-019.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
14	Sample	K2003360-021.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
15	Sample	K2003360-022.09 20x doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
16	Sample	K2003360-023.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
17	Sample	K2003360-024.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
18	Sample	K2003360-024.10	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
19	Sample	K2003344-001.01	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)	4	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
21	Sample	K2003384-001.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K2003384-002.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
23	Sample	K2003384-002.06 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
24	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
25	Sample	K2003384-003.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K2003384-004.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K2003384-005.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K2003384-006.06	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	K2003384-007.06	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
30	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
35	Sample	K2003345-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
36	Sample	K2003388-001.01	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
					False	

Fusion Report - 04252020
Saturday, April 25, 2020 01:31 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/04/28 09:20 - Tuesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	04252020	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)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◈	(clean)		Clean	2020/04/25 13:31

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	16.08	20.68	4.60	49.89	08:01
2	TC Clean	11.76	15.96	4.20	49.65	07:17
3	TC Clean	3.20	7.29	4.08	49.65	07:00
4	TC Clean	2.46	6.46	4.00	49.65	07:02

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◈	(clean)		Clean	2020/04/25 14:06

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.18	5.25	4.07	49.87	08:00
2	TC Clean	5.86	9.90	4.05	49.62	07:19
3	TC Clean	1.96	6.12	4.16	49.64	07:02
4	TC Clean	1.73	5.57	3.84	49.64	07:02

Sample Type: Clean From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◈	(clean)		Clean	2020/04/25 14:40

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.97	4.88	3.91	49.83	08:00
2	TC Clean	5.05	8.90	3.85	49.60	07:15
3	TC Clean	2.10	5.91	3.81	49.66	07:01
4	TC Clean	1.80	5.62	3.83	49.67	07:03

Sample Type: Blank (Creating v1377) From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◈	(blank)		Reagent/Acid Blank	2020/04/25 15:14

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.09	4.83	3.74	49.80	07:57
2	TC Clean	5.09	9.10	4.01	49.59	07:17
3	TC Clean	2.15	6.16	4.01	49.64	07:04
4	TC Clean	2.07	5.96	3.90	49.63	07:01
5	Reagent Blank	5.61	9.55	3.94	49.58	08:11
6	Acid Blank	1.18	5.13	3.95	49.75	08:01

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	D	TOC	RB	0.2482 ppm	0.0000 ppm	0.0000%	2020/04/25 16:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2482	2.4819	9.08	12.74	3.66	49.63	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	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)	25.9487 ppm (PASS)	0.0000 ppm	0%	2020/04/25 16:20

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.9487	259.4872	182.32	186.34	4.02	49.65	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 2

	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%	2020/04/25 16:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.74	11.55	3.81	49.64	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

Sample Type: Sample

From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	1	TOC	MB1	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/25 16:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.80	10.67	3.87	49.68	10:30
2	TOC	0.0000	0.0000	6.73	10.68	3.95	49.63	10:29
3	TOC	0.0000	0.0000	6.67	10.55	3.88	49.64	10:28
4	TOC	0.0000	0.0000	6.52	10.49	3.97	49.59	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Check Standard --> LCS

From Schedule Version 2

	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)	24.9130 ppm	0.1765 ppm	0.71%	2020/04/25 17:46

						(PASS)				

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	25.0430	250.4299	176.23	180.02	3.79	49.59	10:27
C	TOC	25.0 ppm	2	24.9089	249.0887	175.33	179.27	3.94	49.61	10:30
C	TOC	25.0 ppm	3	24.6648	246.6485	173.69	177.69	4.00	49.60	10:26
C	TOC	25.0 ppm	4	25.0351	250.3511	176.18	180.13	3.95	49.62	10:27

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 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	2	TOC	ICS	0.3286 ppm	0.0000 ppm	0.0000%	2020/04/25 18:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3286	3.2863	9.62	13.55	3.93	49.64	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	3	TOC	K2003360-016.10	0.5670 ppm	0.0157 ppm	2.7600%	2020/04/25 18:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5661	5.6611	11.22	15.17	3.95	49.64	10:28
2	TOC	0.5701	5.7012	11.24	15.12	3.87	49.63	10:30
3	TOC	0.5850	5.8499	11.34	15.14	3.80	49.64	10:29
4	TOC	0.5469	5.4692	11.09	15.00	3.92	49.68	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	4	TOC	K2003360-016.10 ms	27.8067 ppm	0.1740 ppm	0.6300%	2020/04/25 19:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.5573	275.5730	192.73	196.58	3.85	49.69	10:28
2	TOC	27.9625	279.6250	195.46	199.30	3.84	49.72	10:28
3	TOC	27.8535	278.5351	194.72	198.73	4.01	49.73	10:26
4	TOC	27.8537	278.5365	194.73	198.87	4.14	49.76	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC)	CAS_salt_010711	CAS_salt_010711

(v1377) (v4) (v32)

Sample Type: Sample

From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	5	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/25 20:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.24	11.19	3.96	49.80	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	6	TOC	K2003360-019.10	5.9654 ppm	0.1342 ppm	2.2500%	2020/04/25 21:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.8106	58.1059	46.49	50.41	3.92	49.80	10:28
2	TOC	5.9316	59.3163	47.30	51.22	3.92	49.83	10:28
3	TOC	5.9850	59.8501	47.66	51.66	4.00	49.85	10:25
4	TOC	6.1343	61.3431	48.66	52.53	3.87	49.87	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	7	TOC	K2003360-021.10	0.7482 ppm	0.2263 ppm	30.2500%	2020/04/25 21:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0813	10.8135	14.68	18.55	3.86	49.91	10:31
2	TOC	0.6980	6.9800	12.10	16.14	4.04	49.93	10:28
3	TOC	0.6126	6.1265	11.53	15.54	4.01	49.96	10:26
4	TOC	0.6006	6.0060	11.45	15.33	3.89	49.99	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	8	TOC	K2003360-022.10 20x	33.4542 ppm	0.2906 ppm	0.8700%	2020/04/25 22:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	33.8590	338.5903	235.11	239.05	3.94	49.96	10:27
2	TOC	33.2067	332.0669	230.72	234.65	3.93	50.00	10:24
3	TOC	33.2867	332.8669	231.26	235.26	4.00	50.00	10:29
4	TOC	33.4644	334.6438	232.46	236.56	4.10	50.01	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	9	TOC	K2003360-023.10	0.4520 ppm	0.1210 ppm	26.7800%	2020/04/25 23:49

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6180	6.1800	11.57	15.43	3.87	49.96	10:28
2	TOC	0.4656	4.6558	10.54	14.35	3.81	49.99	10:30
3	TOC	0.3683	3.6834	9.89	13.97	4.09	49.98	10:30
4	TOC	0.3560	3.5599	9.80	13.81	4.01	49.97	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

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)	24.8751 ppm (PASS)	0.0000 ppm	0%	2020/04/26 00:45

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.8751	248.7511	175.10	179.08	3.98	49.96	10:35

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 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)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/04/26 00:59

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.78	10.67	3.88	49.96	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

Sample Type: Sample From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	10	TOC	K2003360-016.09 doc	0.4906 ppm	0.0136 ppm	2.7700%	2020/04/26 01:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4836	4.8358	10.66	14.49	3.83	49.97	10:28
2	TOC	0.5083	5.0826	10.83	14.87	4.04	49.96	10:27
3	TOC	0.4934	4.9339	10.73	14.69	3.96	49.95	10:29
4	TOC	0.4770	4.7703	10.62	14.53	3.91	49.95	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	11	TOC	K2003360-016.09 ms doc	27.5036 ppm	0.2214 ppm	0.8000%	2020/04/26 02:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.7594	277.5938	194.09	198.00	3.91	49.90	10:30
2	TOC	27.2487	272.4874	190.66	194.58	3.92	49.91	10:28
3	TOC	27.4119	274.1187	191.75	195.76	4.01	49.87	10:29
4	TOC	27.5943	275.9432	192.98	196.94	3.96	49.91	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	12	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/26 03:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.84	10.70	3.86	49.87	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	13	TOC	K2003360-019.09 doc	4.9782 ppm	0.1798 ppm	3.6100%	2020/04/26 03:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.7458	47.4575	39.33	43.21	3.88	49.88	10:27
2	TOC	4.9593	49.5928	40.76	44.68	3.92	49.88	10:25
3	TOC	5.0298	50.2977	41.24	45.19	3.95	49.88	10:29
4	TOC	5.1780	51.7802	42.23	46.20	3.97	49.89	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	14	TOC	K2003360-021.09 doc	0.6314 ppm	0.1590 ppm	25.1800%	2020/04/26 04:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8620	8.6202	13.21	17.11	3.90	49.90	10:28
2	TOC	0.6088	6.0878	11.50	15.44	3.94	49.90	10:30
3	TOC	0.5425	5.4246	11.06	14.99	3.93	49.95	10:24
4	TOC	0.5123	5.1228	10.86	14.76	3.90	49.90	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	15	TOC	K2003360-022.09 20x doc	33.2197 ppm	0.2141 ppm	0.6400%	2020/04/26 05:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	33.3918	333.9182	231.97	235.78	3.81	49.92	10:28
2	TOC	33.0393	330.3925	229.60	233.62	4.02	49.95	10:27
3	TOC	33.0297	330.2974	229.53	233.48	3.95	49.96	10:24
4	TOC	33.4178	334.1784	232.14	236.13	3.98	49.96	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	16	TOC	K2003360-023.09 doc	0.3916 ppm	0.1264 ppm	32.2700%	2020/04/26 06:08

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5732	5.7324	11.26	15.24	3.98	49.99	10:28
2	TOC	0.3786	3.7860	9.96	13.78	3.83	49.98	10:26
3	TOC	0.3236	3.2358	9.59	13.37	3.78	49.98	10:28
4	TOC	0.2910	2.9101	9.37	13.10	3.74	49.97	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	17	TOC	K2003360-024.09 doc	0.4842 ppm	0.0191 ppm	3.9500%	2020/04/26 07:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5105	5.1049	10.84	14.65	3.81	50.00	10:30
2	TOC	0.4692	4.6915	10.57	14.61	4.05	50.00	10:28
3	TOC	0.4863	4.8625	10.68	14.67	3.99	49.99	10:25
4	TOC	0.4709	4.7094	10.58	14.44	3.86	49.97	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	18	TOC	K2003360-024.10	0.4447 ppm	0.0222 ppm	4.9800%	2020/04/26 07:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4730	4.7302	10.59	14.51	3.92	49.99	10:26
2	TOC	0.4272	4.2722	10.28	14.34	4.05	49.97	10:27
3	TOC	0.4269	4.2692	10.28	14.18	3.90	49.98	10:28
4	TOC	0.4518	4.5176	10.45	14.22	3.77	49.99	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	19	TOC	K2003344-001.01	2.4158 ppm	0.0013 ppm	0.0500%	2020/04/26 08:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4149	24.1489	23.65	27.50	3.85	49.96	10:27
2	TOC	2.4167	24.1667	23.66	27.39	3.73	49.96	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

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)	24.6873 ppm (PASS)	0.0000 ppm	0%	2020/04/26 09:22

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.6873	246.8730	173.84	177.71	3.87	49.97	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 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)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/04/26 09:37

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.31	10.25	3.94	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

Sample Type: Sample From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	20	TOC	MB2	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/26 09:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.76	9.78	4.02	49.93	10:30
2	TOC	0.0000	0.0000	5.62	9.61	3.99	49.96	10:30
3	TOC	0.0000	0.0000	5.30	9.23	3.93	49.92	10:25
4	TOC	0.0000	0.0000	5.31	9.09	3.78	49.97	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	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)	24.0702 ppm (PASS)	0.1034 ppm	0.43%	2020/04/26 10:48

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	23.9318	239.3176	168.76	172.66	3.90	49.92	10:29
C	TOC	25.0 ppm	2	24.1816	241.8158	170.44	174.30	3.86	49.96	10:26
C	TOC	25.0 ppm	3	24.0915	240.9146	169.83	174.09	4.26	49.93	10:27
C	TOC	25.0 ppm	4	24.0761	240.7615	169.73	173.65	3.92	49.91	10:28

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
◈	21	TOC	K2003384-001.06	1.4273 ppm	0.1086 ppm	7.6100%	2020/04/26 11:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

1	TOC	1.5041	15.0410	17.53	21.44	3.92	49.92	10:24
2	TOC	1.3505	13.5050	16.49	20.55	4.06	49.94	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	22	TOC	K2003384-002.06	1.4993 ppm	0.0342 ppm	2.2800%	2020/04/26 12:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.5234	15.2343	17.66	21.54	3.88	49.90	10:28
2	TOC	1.4751	14.7511	17.33	21.35	4.02	49.90	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	23	TOC	K2003384-002.06 ms	28.9878 ppm	0.0000 ppm	0.0000%	2020/04/26 12:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	28.9878	289.8779	202.35	206.24	3.89	49.91	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	24	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/26 12:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.27	10.32	4.05	49.88	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	25	TOC	K2003384-003.06	1.3051 ppm	0.0036 ppm	0.2700%	2020/04/26 13:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3077	13.0767	16.20	20.19	3.98	49.86	10:26
2	TOC	1.3026	13.0261	16.17	20.12	3.95	49.87	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	26	TOC	K2003384-004.06	1.3537 ppm	0.0340 ppm	2.5100%	2020/04/26 13:37

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	27	TOC	K2003384-005.06	1.2927 ppm	0.0119 ppm	0.9200%	2020/04/26 14:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2843	12.8432	16.05	19.83	3.78	49.85	10:26
2	TOC	1.3011	13.0113	16.16	19.92	3.76	49.84	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	28	TOC	K2003384-006.06	1.5339 ppm	0.0392 ppm	2.5600%	2020/04/26 14:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.5616	15.6165	17.91	21.76	3.85	49.82	10:30
2	TOC	1.5062	15.0618	17.54	21.39	3.85	49.79	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

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)	24.7074 ppm (PASS)	0.0000 ppm	0%	2020/04/26 15:01

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.7074	247.0738	173.97	177.98	4.00	49.80	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 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)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/04/26 15:15

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.93	9.81	3.88	49.81	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 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	29	TOC	K2003384-007.06	1.2585 ppm	0.0201 ppm	1.6000%	2020/04/26 15:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2727	12.7273	15.97	19.91	3.94	49.81	10:31
2	TOC	1.2443	12.4432	15.78	19.64	3.86	49.79	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	30	TOC	MB3	0.0000 ppm	0.0000 ppm	0.0000%	2020/04/26 15:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.26	9.09	3.83	49.80	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	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 [25.0 ppm]	0 / infinity (NA / NA)	24.8014 ppm (PASS)	0.0000 ppm	0%	2020/04/26 16:13

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.8014	248.0136	174.61	178.55	3.95	49.77	10:30

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
◆	35	TOC	K2003345-001.01	3.0542 ppm	0.0939 ppm	3.0700%	2020/04/26 16:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.1206	31.2061	28.40	32.23	3.83	49.76	10:27
2	TOC	2.9878	29.8783	27.50	31.52	4.02	49.74	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	36	TOC	K2003388-001.01	1.0842 ppm	0.0064 ppm	0.5900%	2020/04/26 16:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0888	10.8878	14.73	18.65	3.92	49.79	10:29
2	TOC	1.0797	10.7971	14.67	18.63	3.96	49.76	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.4100 (IC) (v1377)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

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)	24.6955 ppm (PASS)	0.0000 ppm	0%	2020/04/26 17:24

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.6955	246.9548	173.89	177.80	3.90	49.76	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 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)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/04/26 17:38

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

D	TOC	0 ppm	1	0.0000	0.0000	5.61	9.55	3.94	49.74	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

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1376	2.4970	1.4280	0.0000	0.0000	0.0000	2020/04/23 15:09	Fusion1 (Fusion1)
v1377	1.8707	1.1800	0.0000	0.0000	0.0000	2020/04/25 16:05	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

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

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
Ver Creation: 2019/02/21 17:57
Comment:
Operator: Fusion1 (Fusion1)

Parameter	Value	Advanced Parameter	Value

SampleVolume	10.0 mL	NeedleRinseVolume	5.0 ml
Dilution	1:10	VialPrimeVolume	2.0 ml
AcidVolume	0.5 ml	ICSamplePrimeVolume	2.0 ml
ReagentVolume	2.0 ml	ICSpargeRinseVolume	12.0 ml
UVReactorPrerinse	Off	BaselineStabilizeTime	0.70 min
UVReactorPrerinseVolume	5.0	DetectorPressureFlow	150 ml/min
NumberOfUVReactorPrerinses	1	SyringeSpeedWaste	10
ICSpargeTime	1.00 mins	SyringeSpeedAcid	7
DetectorSweepFlow	500 ml/min	SyringeSpeedReagent	7
PreSpargeTime	2.00 mins	SyringeSpeedDIWater	7
SystemFlow	500 ml/min	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	2020/04/26 17:53

ALS Environmental

StarLIMS Run: 678052, 678054, 678053

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: 19-GEN-8-4-G

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-08-14-N

21 % H3PO4: 19-GEN-08-12-A

Equipment ID: K-TOC-03

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

FILTER ID: 16967789

Analyzed By: BCP	Date Analyzed: 25 per analyst 4/28/20
Reviewed By:	Date Reviewed: 4/29/20

April 30, 2020 Service Request No:E2000362

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

Laboratory Results for: HS20040851

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory April 22, 2020
For your reference, these analyses have been assigned our service request number **E2000362.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2000362
Project:	HS20040851	**Date Received:**	04/22/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 04/22/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000162: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2000362
Project: HS20040851

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000362-001	LH18/24-SP650_042120_BIX	4/21/2020	1400

Service Request Summary

Folder #: **E2000362**
Client Name: ALS Environmental - US
Project Name: HS20040851
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 04/22/20
Internal Due Date: 5/6/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20040851
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000362-001	LH18/24-SP650_042120_BIX	Water	04/21/20 1400	**IV**

Service Request Summary

Folder #:	**E2000362**
Client Name:	ALS Environmental - US
Project Name:	HS20040851
Project Number:	

Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	04/22/20
Internal Due Date:	5/6/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20040851
EDD:	No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-WIC 7B

Pressure Gas:

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2020
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Illinois Environmental Protection Agency	2000322019-2	5/9/2020
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nevada Department of Concervation and Natural Resources	TX026932019-1	7/31/2020
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Concervation	04016	6/30/2020
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020

Chain of Custody

ALS Environmental - Houston HRMS
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E2000362 5
ALS Laboratory Group
HS20040851

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13762**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

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:	HS20040851
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20040851-02**	**LH18/24-SP650_042120_BIX**	**Water**	**21 Apr 2020 14:00**
	SUB_Perch-6850			06 May 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: 4/22/2020

Received By: Loret G Date/Time: 4/22/20 1106

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Environmental

Cooler Receipt Form

Project Chemist CG

Client/Project ALS-H

Thermometer ID 5MC4

Date/Time Received: 4/22/20 Initials: CG Date/Time Logged in: 4/22/20 Initials CG

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ ALS Courier ○ Client
2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other
3. Were custody seals on coolers? ○ Yes ✓ No — If yes, how many and where?
   Were they intact? ○ Yes ○ No ✓ N/A
   Were they signed and dated? ○ Yes ○ No ✓ N/A
4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other
5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		4/22/20	1100	CG	3.1/3.5	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E2000362 5
ALS Laboratory Group
HS20040851

10450 Stancliff Rd., Suite 210
Houston, TX 77099
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www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 357602 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/KBROWN **Prep Method:** Method **Prep Date/Time:** 4/29/20 09:00

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000352-001	LH18/24-SP650_041620_BIX	.01	6850/ClO4 DOD			Water	10mL	
2	E2000362-001	LH18/24-SP650_042120_BIX	.01	6850/ClO4 DOD			Water	10mL	
3	E2000363-001	HBW7_042020	.01	6850/ClO4 DOD			Water	10mL	
4	E2000363-002	HBW10_042020	.01	6850/ClO4 DOD			Water	10mL	
5	E2000363-003	HBW1_042020	.01	6850/ClO4 DOD			Water	10mL	
6	E2000363-004	GPW1_042020	.01	6850/ClO4 DOD			Water	10mL	
7	E2000363-005	GPW3_042020	.01	6850/ClO4 DOD			Water	10mL	
8	E2000363-006	GPW3_042020_a	.01	6850/ClO4 DOD			Water	10mL	
9	E2000376-001	GM-MW-29D-20200423-01	.01	6850/ClO4			Ground Water	10mL	
10	E2000376-002	GM-MW-66D2-20200423-01	.01	6850/ClO4			Ground Water	10mL	
11	E2000376-003	GM-MW-89D-20200423-01	.01	6850/ClO4			Ground Water	10mL	
12	E2000376-004	GM-MW-98D-20200423-01	.01	6850/ClO4			Ground Water	10mL	
13	EQ2000162-01	MB		6850/ClO4 DOD			Liquid	10mL	
14	EQ2000162-02	LCS		6850/ClO4 DOD			Liquid	10mL	
15	EQ2000162-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 202037 Logbook Ref: Sodium Perchlorate Expires On: 05/22/2021

E2000352-001	100.00µL	E2000362-001	100.00µL	E2000363-001	100.00µL	E2000363-002	100.00µL	E2000363-003	100.00µL	E2000363-004	100.00µL
E2000363-005	100.00µL	E2000363-006	100.00µL	E2000376-001	100.00µL	E2000376-002	100.00µL	E2000376-003	100.00µL	E2000376-004	100.00µL
EQ2000162-01	100.00µL	EQ2000162-01	100.00µL	EQ2000162-02	100.00µL	EQ2000162-02	100.00µL	EQ2000162-03	100.00µL	EQ2000162-03	100.00µL

Name: Perchlorate Intermediate Stock1 Inventory ID 204799 Logbook Ref: 200657 1.0ug/mL KN Expires On: 05/15/2020

EQ2000162-02	1.00µL	EQ2000162-02	1.00µL	EQ2000162-03	1.00µL	EQ2000162-03	1.00µL

Preparation Steps

Step: Preparation
Started: 4/29/20 09:00
Finished: 4/29/20 10:00
By: KBROWN
Comments

Comments: _____

Preparation Information Benchsheet

Prep Run#: 357602
Team: Semivoa GCMS/KBROWN

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 4/29/20 09:00

Reviewed By: KN Date: 04/29/20

Chain of Custody

Relinquished By:		Date:		Extracts Examined
Received By:		Date:		Yes No

Analytical Results

ALS Environmental - Houston HRMS
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www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000362
Project:	HS20040851	**Date Collected:**	4/21/20 1400
Sample Matrix:	Water	**Date Received:**	4/22/20
Sample Name:	LH18/24-SP650_042120_BIX	**Units:**	µg/L
Lab Code:	E2000362-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	4/29/20	4/29/20 13:36	357602	678630	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000362
Project:	HS20040851	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000162-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	4/29/20	4/29/20 13:05	357602	678630	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000362
Project:	HS20040851	**Date Analyzed:**	4/29/20
Sample Matrix:	Water		

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	357602

	Lab Control Sample EQ2000162-02			Duplicate Lab Control Sample EQ2000162-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.115	0.100	115	0.118	0.100	118	84 - 119	2	15

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

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000362
Project:	HS20040851	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000162-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.115**		0.100	0.0500	0.0250	1	4/29/20	4/29/20 13:13	357602	678630	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000362
Project:	HS20040851	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000162-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.118**		0.100	0.0500	0.0250	1	4/29/20	4/29/20 15:11	357602	678630	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200420

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200420_001	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:01
	null		20200420_002	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:06
	DIBLK		20200420_003	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:11
	IB		20200420_004	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:19
	PERCHLORATE7		20200420_005	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 13:27
	LODV		20200420_006	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:35
	PERCHLORATE1		20200420_007	Perchlorate6850b.lcm	1x	☒	3100804-05	4/20/2020 13:43
	PERCHLORATE2		20200420_008	Perchlorate6850b.lcm	1x	☒	3100804-06	4/20/2020 13:51
	PERCHLORATE3		20200420_009	Perchlorate6850b.lcm	1x	☒	3100804-07	4/20/2020 13:58
	PERCHLORATE4		20200420_010	Perchlorate6850b.lcm	1x	☒	3100804-08	4/20/2020 14:06
	PERCHLORATE5		20200420_011	Perchlorate6850b.lcm	1x	☒	3100804-09	4/20/2020 14:14
	PERCHLORATE6		20200420_012	Perchlorate6850b.lcm	1x	☒	3100805-01	4/20/2020 14:22
	PERCHLORATE8		20200420_013	Perchlorate6850b.lcm	1x	☒	3100805-03	4/20/2020 14:30
	PERCHLORATE9		20200420_014	Perchlorate6850b.lcm	1x	☒	3100805-04	4/20/2020 14:38
	PERCHLORATE10		20200420_015	Perchlorate6850b.lcm	1x	☒	3100805-05	4/20/2020 14:46
	ICV		20200420_016	Perchlorate6850b.lcm	1x	☒	3100805-06	4/20/2020 14:54
	LODV		20200420_017	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:02
	EQ2000143-01		20200420_018	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:10
	EQ2000143-02		20200420_019	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:18
	EQ2000143-03		20200420_020	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:26
	E2000275-001		20200420_021	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:33
	E2000275-002		20200420_022	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:41
	E2000275-003		20200420_023	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:49
	E2000287-001		20200420_024	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:57
	E2000303-001		20200420_025	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:05
	E2000304-001		20200420_026	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:13
	E2000305-001		20200420_027	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:21
	PERCHLORATE7		20200420_028	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 16:29
	E2000303-001		20200420_029	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:47
	E2000304-001		20200420_030	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:55
	PERCHLORATE7		20200420_031	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 17:02

Initial Calibration - Detailed Report

Calibration ID: EC2000003 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
08	EC2000003-08	PERCHLORATE7	20200420_005	04/20/2020 13:27
01	EC2000003-01	PERCHLORATE1	20200420_007	04/20/2020 13:43
02	EC2000003-02	PERCHLORATE2	20200420_008	04/20/2020 13:51
03	EC2000003-03	PERCHLORATE3	20200420_009	04/20/2020 13:58
04	EC2000003-04	PERCHLORATE4	20200420_010	04/20/2020 14:06
05	EC2000003-05	PERCHLORATE5	20200420_011	04/20/2020 14:14
06	EC2000003-06	PERCHLORATE6	20200420_012	04/20/2020 14:22
07	EC2000003-07	PERCHLORATE8	20200420_013	04/20/2020 14:30
09	EC2000003-09	PERCHLORATE9	20200420_014	04/20/2020 14:38
10	EC2000003-10	PERCHLORATE10	20200420_015	04/20/2020 14:46

Analyte | **Curve Fit** | **Weighting**

Perchlorate | **Average RF** | **RSD = 8.066** | **Average RF = 0.1368**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1558	02	0.5000	0.1297	03	0.7000	0.1277	04	1.0000	0.1397
05	2.0000	0.1298	06	5.0000	0.1245	07	20.0000	0.1341	08	10.0000	0.1562
09	30.0000	0.1365	10	50.0000	0.1345						

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.114	13.9	02	0.5000	0.474	-5.2	03	0.7000	0.653	-6.7
04	1.0000	1.02	2.1	05	2.0000	1.90	-5.1	06	5.0000	4.55	-9.0
07	20.0000	19.6	-2.0	08	10.0000	11.4	14.2	09	30.0000	29.9	-0.2
10	50.0000	49.1	-1.7								

Initial Calibration Verification Summary Report

Calibration ID:	EC2000003	**Instrument ID:**	E-LCMS-01
Datafile ID:	20200420_016	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000003-11	T	Average RF	10	11.345	ng/mL	13.4	<= 15

ALS Group Houston

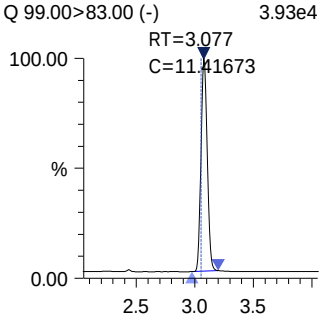
PERCHLORATE7

Date acquired: 4/20/2020 1:27:21 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_005.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/20/2020 1:27:21 PM	144494	11.41673	20200420_005	3.077	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/20/2020 1:27:21 PM	92497	1.00000	20200420_005	3.076	25.0000	1.0000	3

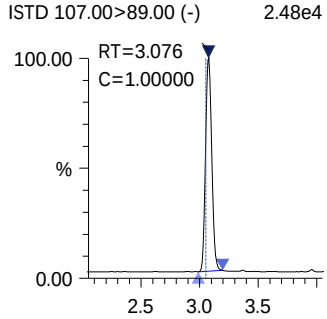
Perchlorate

Conc 11.41673
Area 144494



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 92497



ALS Group Houston

PERCHLORATE1

Date acquired: 4/20/2020 1:43:09 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_007.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

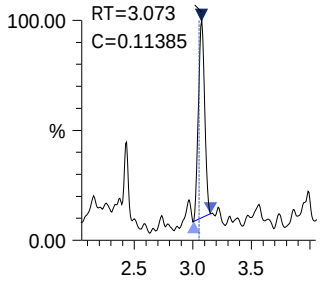
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	4/20/2020 1:43:09 PM	1840	0.11385	20200420_007	3.073	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	4/20/2020 1:43:09 PM	118078	1.00000	20200420_007	3.073	25.0000	1.0000	5

Perchlorate

Conc 0.11385

Area 1840

Q 99.00>83.00 (-) 5.37e2

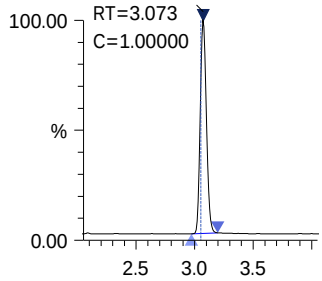


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 118078

ISTD 107.00>89.00 (-) 3.18e4



ALS Group Houston

PERCHLORATE2

Date acquired: 4/20/2020 1:51:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_008.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

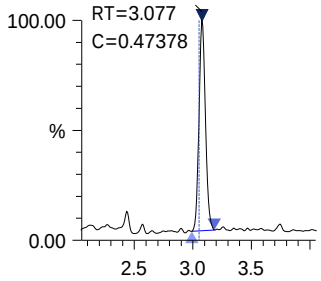
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	4/20/2020 1:51:02 PM	7551	0.47378	20200420_008	3.077	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	PERCHLORATE2	4/20/2020 1:51:02 PM	116479	1.00000	20200420_008	3.075	25.0000	1.0000	6

Perchlorate

Conc 0.47378

Area 7551

Q 99.00>83.00 (-) 2.00e3

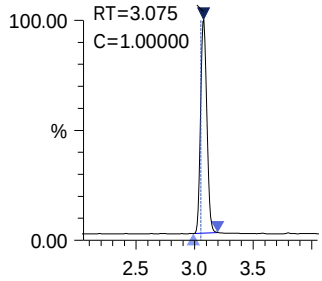


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 116479

ISTD 107.00>89.00 (-) 3.08e4



ALS Group Houston

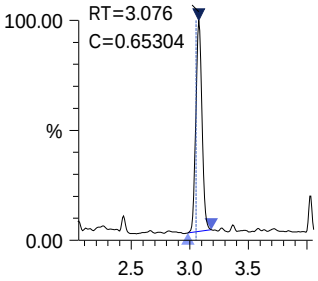
PERCHLORATE3

Date acquired: 4/20/2020 1:58:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_009.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	4/20/2020 1:58:56 PM	11235	0.65304	20200420_009	3.076	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE3	4/20/2020 1:58:56 PM	125731	1.00000	20200420_009	3.073	25.0000	1.0000	7

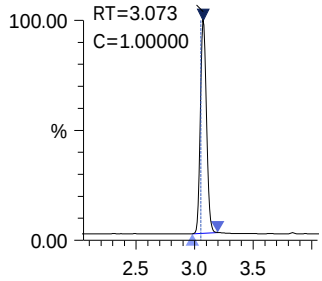
Perchlorate

Conc 0.65304
Area 11235
Q 99.00>83.00 (-) 3.12e3



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 125731
ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

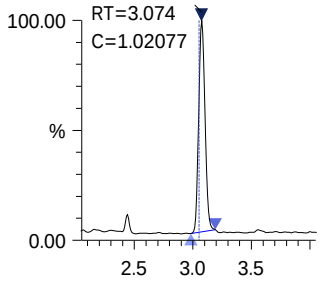
PERCHLORATE4

Date acquired: 4/20/2020 2:06:51 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_010.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	4/20/2020 2:06:51 PM	16670	1.02077	20200420_010	3.074	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE4	4/20/2020 2:06:51 PM	119354	1.00000	20200420_010	3.074	25.0000	1.0000	8

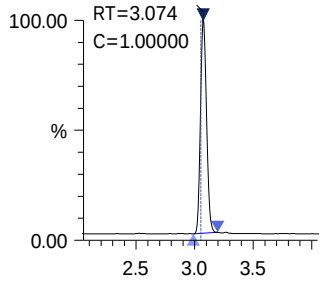
Perchlorate

Conc 1.02077
Area 16670
Q 99.00>83.00 (-) 4.51e3



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 119354
ISTD 107.00>89.00 (-) 3.26e4



ALS Group Houston

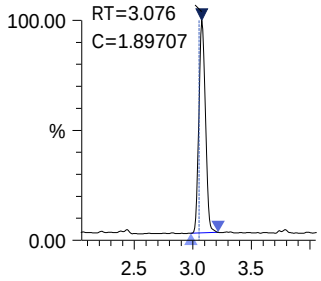
PERCHLORATE5

Date acquired: 4/20/2020 2:14:45 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_011.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	4/20/2020 2:14:45 PM	33786	1.89707	20200420_011	3.076	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE5	4/20/2020 2:14:45 PM	130159	1.00000	20200420_011	3.075	25.0000	1.0000	9

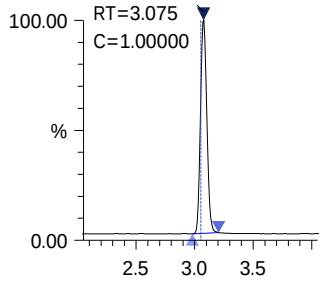
Perchlorate

Conc 1.89707
Area 33786
Q 99.00>83.00 (-) 8.73e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 130159
ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

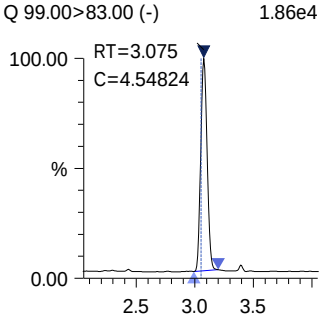
PERCHLORATE6

Date acquired: 4/20/2020 2:22:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_012.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	4/20/2020 2:22:39 PM	69848	4.54824	20200420_012	3.075	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE6	4/20/2020 2:22:39 PM	112235	1.00000	20200420_012	3.074	25.0000	1.0000	10

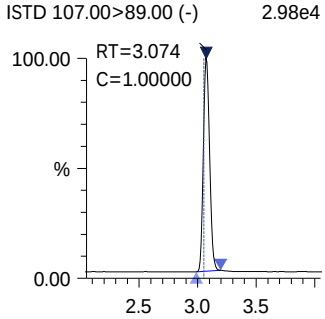
Perchlorate

Conc 4.54824
Area 69848



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 112235



ALS Group Houston

PERCHLORATE8

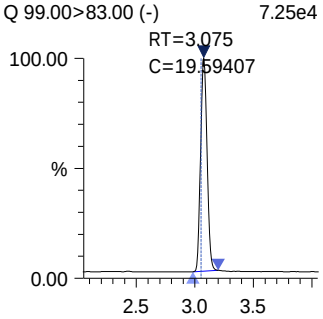
Date acquired: 4/20/2020 2:30:36 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_013.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	4/20/2020 2:30:36 PM	275854	19.59407	20200420_013	3.075	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE8	4/20/2020 2:30:36 PM	102890	1.00000	20200420_013	3.072	25.0000	1.0000	11

Perchlorate

Conc 19.59407

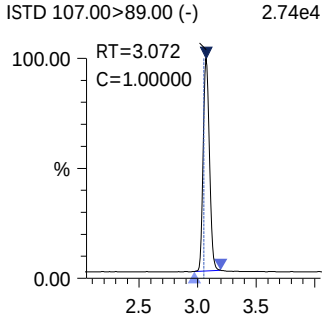
Area 275854



Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 102890



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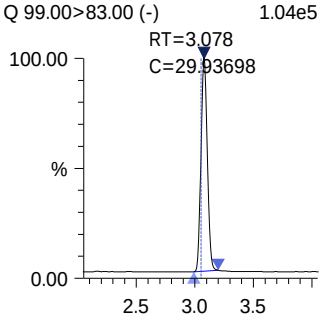
PERCHLORATE9

Date acquired: 4/20/2020 2:38:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_014.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	4/20/2020 2:38:33 PM	390068	29.93698	20200420_014	3.078	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE9	4/20/2020 2:38:33 PM	95225	1.00000	20200420_014	3.075	25.0000	1.0000	12

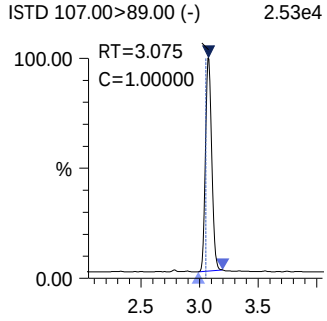
Perchlorate

Conc 29.93698
Area 390068



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 95225



ALS Group Houston

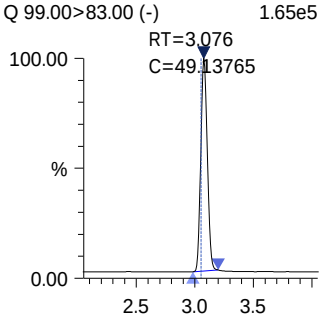
PERCHLORATE10

Date acquired: 4/20/2020 2:46:25 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_015.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE10	4/20/2020 2:46:25 PM	632804	49.13765	20200420_015	3.076	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE10	4/20/2020 2:46:25 PM	94118	1.00000	20200420_015	3.075	25.0000	1.0000	13

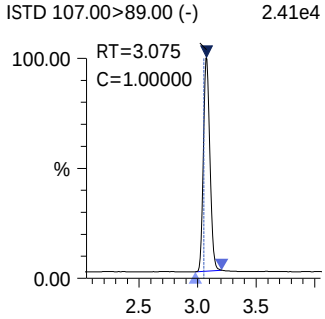
Perchlorate

Conc 49.13765
Area 632804



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 94118



ALS Group Houston

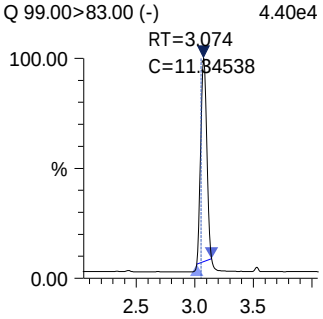
PERCHLORATEICV

Date acquired: 4/20/2020 2:54:20 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_016.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	4/20/2020 2:54:20 PM	149807	11.34538	20200420_016	3.074	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	4/20/2020 2:54:20 PM	96501	1.00000	20200420_016	3.072	25.0000	1.0000	14

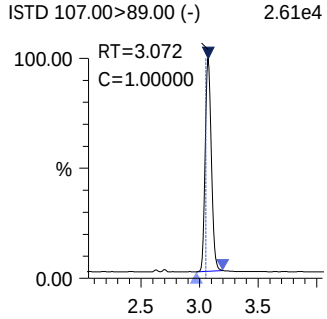
Perchlorate

Conc 11.34538
Area 149807



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 96501



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200429

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null	20200429_001	Perchlorate6850b.lcm	1x	☒		4/29/2020 12:09
	null	20200429_002	Perchlorate6850b.lcm	1x	☒		4/29/2020 12:14
	IB	20200429_003	Perchlorate6850b.lcm	1x	☒		4/29/2020 12:19
	PERCHLORATE7	20200429_004	Perchlorate6850b.lcm	1x	☒	3100805-02	4/29/2020 12:27
	LODV	20200429_005	Perchlorate6850b.lcm	1x	☒		4/29/2020 12:35
	EQ2000162-01	20200429_006	Perchlorate6850b.lcm	1x	☒		4/29/2020 13:05
	EQ2000162-02	20200429_007	Perchlorate6850b.lcm	1x	☒		4/29/2020 13:13
	EQ2000162-03	20200429_008	Perchlorate6850b.lcm	1x		RR_high	4/29/2020 13:21
	E2000352-001	20200429_009	Perchlorate6850b.lcm	1x	☒		4/29/2020 13:29
	E2000362-001	20200429_010	Perchlorate6850b.lcm	1x	☒		4/29/2020 13:36
	E2000363-001	20200429_011	Perchlorate6850b.lcm	1x	☒		4/29/2020 13:44
	E2000363-002	20200429_012	Perchlorate6850b.lcm	1x	☒		4/29/2020 13:52
	E2000363-003	20200429_013	Perchlorate6850b.lcm	1x	☒		4/29/2020 14:00
	E2000363-004	20200429_014	Perchlorate6850b.lcm	1x	☒		4/29/2020 14:08
	E2000363-005	20200429_015	Perchlorate6850b.lcm	1x	☒		4/29/2020 14:16
	PERCHLORATE7	20200429_016	Perchlorate6850b.lcm	1x	☒	3100805-02	4/29/2020 14:24
	E2000363-006	20200429_017	Perchlorate6850b.lcm	1x	☒		4/29/2020 14:32
	E2000376-001	20200429_018	Perchlorate6850b.lcm	1x		DL-1000x	4/29/2020 14:40
	E2000376-002	20200429_019	Perchlorate6850b.lcm	1x		RR_poss carryover	4/29/2020 14:48
	E2000376-003	20200429_020	Perchlorate6850b.lcm	1x		DL-500x	4/29/2020 14:56
	E2000376-004	20200429_021	Perchlorate6850b.lcm	1x		DL-1000x	4/29/2020 15:03
	EQ2000162-03	20200429_022	Perchlorate6850b.lcm	1x	☒		4/29/2020 15:11
	PERCHLORATE7	20200429_023	Perchlorate6850b.lcm	1x	☒	3100805-02	4/29/2020 15:19
	EQ2000162-03	20200429_024	Perchlorate6850b.lcm	1x	☒		4/29/2020 15:49
	E2000376-002	20200429_025	Perchlorate6850b.lcm	1x			4/29/2020 15:56
	E2000376-001X1000	20200429_026	Perchlorate6850b.lcm	1000	☒		4/29/2020 16:04
	E2000376-003X500	20200429_027	Perchlorate6850b.lcm	500	☒		4/29/2020 16:12
	E2000376-004X1000	20200429_028	Perchlorate6850b.lcm	100	☒		4/29/2020 16:20
	PERCHLORATE7	20200429_029	Perchlorate6850b.lcm	1x	☒	3100805-02	4/29/2020 16:28

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000362
Project:	HS20040851	**Date Analyzed:**	4/29/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200429\20200429_004	**Calibration ID:**	EC2000003
		Analysis Lot:	678630
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.9	0.1368	0.1493	9.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000362
Project:	HS20040851	**Date Analyzed:**	4/29/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200429\20200429_016	**Calibration ID:**	EC2000003
		Analysis Lot:	678630
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.5	0.1368	0.1573	14.9	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000362
Project:	HS20040851	**Date Analyzed:**	4/29/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200429\20200429_023	**Calibration ID:**	EC2000003
		Analysis Lot:	678630
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.0	0.1368	0.1498	9.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000362
Project:	HS20040851	**Date Analyzed:**	4/29/20 12:27

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200429\20200429_004	**Lab Code:**	EQ2000163-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	678630
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000163-01	84,029	3.02
Method Blank	EQ2000162-01	105,800	2.96
Lab Control Sample	EQ2000162-02	104,252	3.02
LH18/24-SP650_042120_BIX	E2000362-001	108,004	3.01

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000362
Project:	HS20040851	**Date Analyzed:**	4/29/20 14:24

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200429\20200429_016	**Lab Code:**	EQ2000163-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	678630
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000163-02	101,114	3.02
Duplicate Lab Control Sample	EQ2000162-03	121,962	3.02

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000362
Project:	HS20040851	**Date Analyzed:**	4/29/20 15:19

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200429\20200429_023	**Lab Code:**	EQ2000163-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	678630
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000163-03	105,647	3.01

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

ALS Group Houston

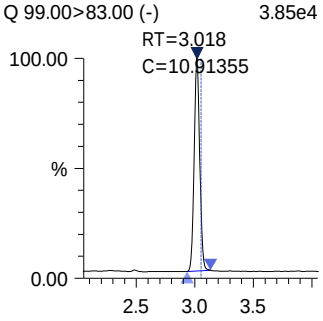
PERCHLORATE7

Date acquired: 4/29/2020 12:27:46 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200429\20200429_004.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/29/2020 12:27:46 PM	125481	10.91355	20200429_004	3.018	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/29/2020 12:27:46 PM	84029	1.00000	20200429_004	3.016	25.0000	1.0000	3

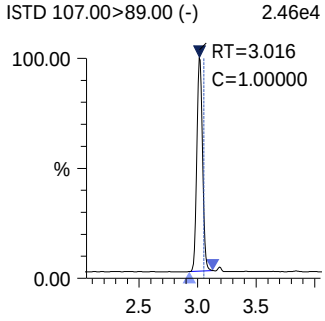
Perchlorate

Conc 10.91355
Area 125481



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 84029



ALS Group Houston

EQ2000162-01

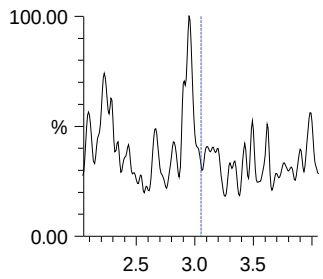
Date acquired: 4/29/2020 1:05:16 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200429\20200429_006.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000162-01	4/29/2020 1:05:16 PM	----	----	20200429_006	----	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	EQ2000162-01	4/29/2020 1:05:16 PM	105800	1.00000	20200429_006	2.955	25.0000	1.0000	5

Perchlorate

Conc ----
Area ----

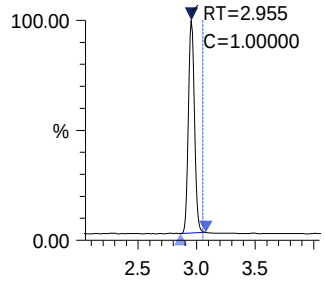
Q 99.00>83.00 (-) 3.44e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 105800

ISTD 107.00>89.00 (-) 3.02e4



ALS Group Houston

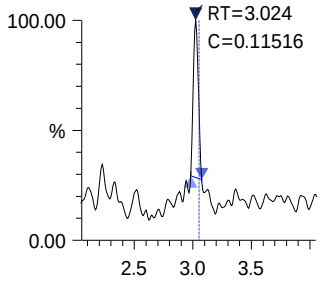
EQ2000162-02

Date acquired: 4/29/2020 1:13:11 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200429\20200429_007.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000162-02	4/29/2020 1:13:11 PM	1643	0.11516	20200429_007	3.024	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000162-02	4/29/2020 1:13:11 PM	104252	1.00000	20200429_007	3.018	25.0000	1.0000	6

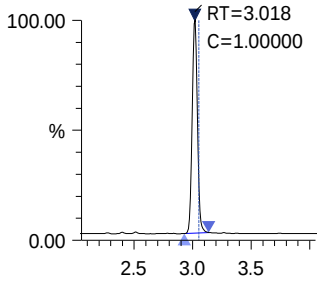
Perchlorate

Conc 0.11516
Area 1643
Q 99.00>83.00 (-) 7.59e2



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 104252
ISTD 107.00>89.00 (-) 3.31e4



ALS Group Houston

E2000362-001

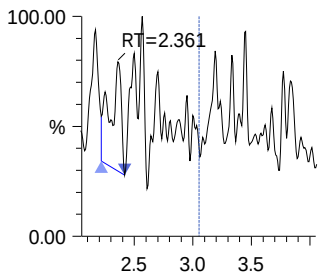
Date acquired: 4/29/2020 1:36:54 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200429\20200429_010.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	E2000362-001	4/29/2020 1:36:54 PM	----	----	20200429_010	----	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	E2000362-001	4/29/2020 1:36:54 PM	108004	1.00000	20200429_010	3.008	25.0000	1.0000	9

Perchlorate

Conc ----
Area ----

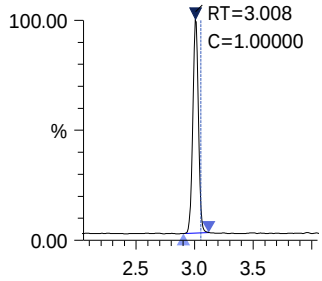
Q 99.00>83.00 (-) 2.54e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 108004

ISTD 107.00>89.00 (-) 3.21e4



ALS Group Houston

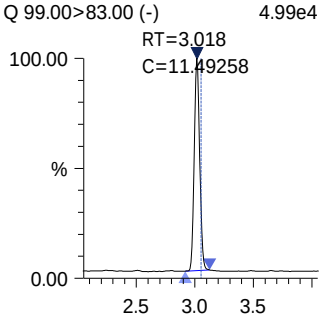
PERCHLORATE7

Date acquired: 4/29/2020 2:24:22 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200429\20200429_016.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/29/2020 2:24:22 PM	159005	11.49258	20200429_016	3.018	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/29/2020 2:24:22 PM	101114	1.00000	20200429_016	3.016	25.0000	1.0000	3

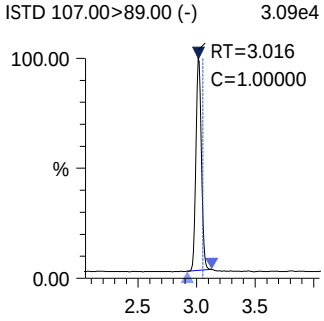
Perchlorate

Conc 11.49258
Area 159005



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 101114



ALS Group Houston

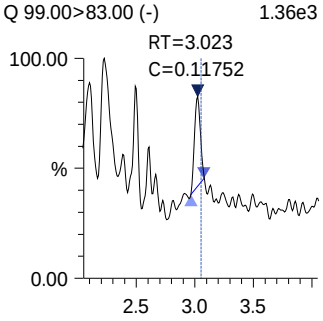
EQ2000162-03

Date acquired: 4/29/2020 3:11:50 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200429\20200429_022.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000162-03	4/29/2020 3:11:50 PM	1961	0.11752	20200429_022	3.023	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000162-03	4/29/2020 3:11:50 PM	121962	1.00000	20200429_022	3.016	25.0000	1.0000	6

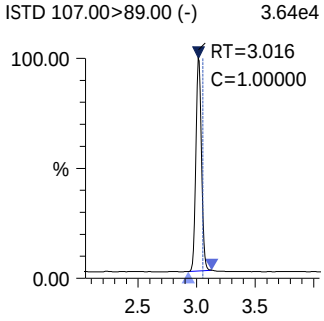
Perchlorate

Conc 0.11752
Area 1961



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 121962



ALS Group Houston

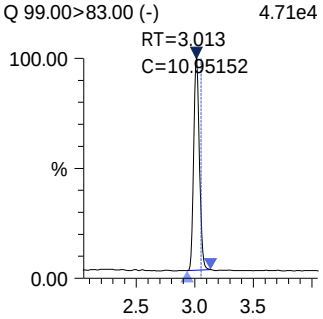
PERCHLORATE7

Date acquired: 4/29/2020 3:19:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200429\20200429_023.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/29/2020 3:19:44 PM	158312	10.95152	20200429_023	3.013	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/29/2020 3:19:44 PM	105647	1.00000	20200429_023	3.012	25.0000	1.0000	3

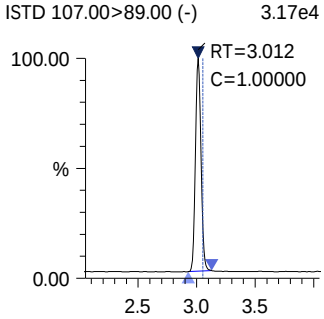
Perchlorate

Conc 10.95152
Area 158312



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 105647



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Houston, TX 77099
T: +1 281 530 5656
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May 07, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20041127**

Laboratory Results for: **Longhorn GW Treatment Plant Bi Weekly Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on Apr 29, 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: 07-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
Work Order: HS20041127

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20041127-01	LH18/24-SP650_042820	Water		28-Apr-2020 14:00	29-Apr-2020 09:17	☐
HS20041127-02	Trip Blank	Water	CG 032420 -138	28-Apr-2020 00:00	29-Apr-2020 09:17	☐

ALS Houston, US Date: 07-May-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Bi Weekly Samples
Work Order: HS20041127

GCMS Volatiles by Method SW8260

Batch ID: R360934

Sample ID: HS20041201-01

- MS and MSD are for an unrelated sample

WetChemistry by Method SW9056

Batch ID: R361140

Sample ID: LH18/24-SP650_042820 (HS20041127-01MS)

- The MS and/or MSD recovery was outside of the control; however, the result in the parent sample is greater than 4x the spike amount. chloride

ALS Houston, US Date: 07-May-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi Weekly Samples WorkOrder:HS20041127
Sample ID: LH18/24-SP650_042820 Lab ID:HS20041127-01
Collection Date: 28-Apr-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 18:39
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	30-Apr-2020 18:39
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 18:39
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 18:39
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	30-Apr-2020 18:39
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	30-Apr-2020 18:39
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	30-Apr-2020 18:39
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	30-Apr-2020 18:39
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 18:39
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 18:39
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	30-Apr-2020 18:39
1,2-Dichloroethane	**1.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	30-Apr-2020 18:39
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	30-Apr-2020 18:39
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	30-Apr-2020 18:39
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	30-Apr-2020 18:39
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 18:39
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	30-Apr-2020 18:39
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	30-Apr-2020 18:39
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	30-Apr-2020 18:39
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	30-Apr-2020 18:39
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	30-Apr-2020 18:39
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 18:39
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	30-Apr-2020 18:39
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 18:39
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 18:39
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	30-Apr-2020 18:39
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	30-Apr-2020 18:39
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	30-Apr-2020 18:39
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	30-Apr-2020 18:39
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 18:39

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

ALS Houston, US Date: 07-May-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Bi Weekly Samples WorkOrder:HS20041127

Sample ID: LH18/24-SP650_042820 Lab ID:HS20041127-01

Collection Date: 28-Apr-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 18:39
cis-1,2-Dichloroethene	**28**		**0.20**	**0.50**	**1.0**	**UG/L**	1	30-Apr-2020 18:39
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	30-Apr-2020 18:39
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 18:39
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	30-Apr-2020 18:39
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	30-Apr-2020 18:39
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	30-Apr-2020 18:39
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	30-Apr-2020 18:39
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 18:39
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 18:39
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 18:39
Trichloroethene	**4.4**		**0.20**	**0.50**	**1.0**	**UG/L**	1	30-Apr-2020 18:39
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 18:39
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 18:39
Surr: 1,2-Dichloroethane-d4	*117*			**0**	*81-118*	*%REC*	*1*	*30-Apr-2020 18:39*
Surr: 4-Bromofluorobenzene	*105*			**0**	*85-114*	*%REC*	*1*	*30-Apr-2020 18:39*
Surr: Dibromofluoromethane	*106*			**0**	*80-119*	*%REC*	*1*	*30-Apr-2020 18:39*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*30-Apr-2020 18:39*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: JHD
Chloride	**294**		**2.00**	**5.00**	**5.00**	**mg/L**	10	05-May-2020 22:27
Sulfate	**41.3**		**0.200**	**0.500**	**0.500**	**mg/L**	1	05-May-2020 21:33

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

ALS Houston, US Date: 07-May-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Bi Weekly Samples WorkOrder:HS20041127

Sample ID: Trip Blank Lab ID:HS20041127-02

Collection Date: 28-Apr-2020 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	30-Apr-2020 17:51
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	30-Apr-2020 17:51
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	30-Apr-2020 17:51
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	30-Apr-2020 17:51
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	30-Apr-2020 17:51
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	30-Apr-2020 17:51
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	30-Apr-2020 17:51
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	30-Apr-2020 17:51
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	30-Apr-2020 17:51
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	30-Apr-2020 17:51
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	30-Apr-2020 17:51
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	30-Apr-2020 17:51
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	30-Apr-2020 17:51
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	30-Apr-2020 17:51
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	30-Apr-2020 17:51
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	30-Apr-2020 17:51
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	30-Apr-2020 17:51
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	30-Apr-2020 17:51
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	30-Apr-2020 17:51
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51

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

ALS Houston, US Date: 07-May-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Bi Weekly Samples WorkOrder:HS20041127

Sample ID: Trip Blank Lab ID:HS20041127-02

Collection Date: 28-Apr-2020 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	30-Apr-2020 17:51
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	30-Apr-2020 17:51
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	30-Apr-2020 17:51
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	30-Apr-2020 17:51
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	30-Apr-2020 17:51
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	30-Apr-2020 17:51
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	30-Apr-2020 17:51
Surr: 1,2-Dichloroethane-d4	*118*			**0**	*81-118*	*%REC*	*1*	*30-Apr-2020 17:51*
Surr: 4-Bromofluorobenzene	*105*			**0**	*85-114*	*%REC*	*1*	*30-Apr-2020 17:51*
Surr: Dibromofluoromethane	*104*			**0**	*80-119*	*%REC*	*1*	*30-Apr-2020 17:51*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*30-Apr-2020 17:51*

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

ALS Houston, US Date: 07-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20041127

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R360934 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20041127-01	LH18/24-SP650_042820	28 Apr 2020 14:00			30 Apr 2020 18:39	1
HS20041127-02	Trip Blank	28 Apr 2020 00:00			30 Apr 2020 17:51	1
Batch ID: R361140 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS20041127-01	LH18/24-SP650_042820	28 Apr 2020 14:00			05 May 2020 22:27	10
HS20041127-01	LH18/24-SP650_042820	28 Apr 2020 14:00			05 May 2020 21:33	1

ALS Houston, US Date: 07-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20041127

QC BATCH REPORT

Batch ID: R360934 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-200430** Units: **UG/L** Analysis Date: **30-Apr-2020 17:27**
Client ID: Run ID: **VOA6_360934** SeqNo: **5572404** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 07-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20041127

QC BATCH REPORT

Batch ID: R360934 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-200430** Units: **UG/L** Analysis Date: **30-Apr-2020 17:27**
Client ID: Run ID: **VOA6_360934** SeqNo: **5572404** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*58.64*	*1.0*	*50*	*0*	*117*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*52.26*	*1.0*	*50*	*0*	*105*	*85 - 114*				
Surr: Dibromofluoromethane	*52.04*	*1.0*	*50*	*0*	*104*	*80 - 119*				
Surr: Toluene-d8	*53.3*	*1.0*	*50*	*0*	*107*	*89 - 112*				

ALS Houston, US Date: 07-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20041127

QC BATCH REPORT

Batch ID: R360934 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200430** Units: **UG/L** Analysis Date: **30-Apr-2020 16:39**
Client ID: Run ID: **VOA6_360934** SeqNo: **5572403** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	18.7	1.0	20	0	93.5	78 - 124				
1,1,1-Trichloroethane	19.91	1.0	20	0	99.5	74 - 131				
1,1,2,2-Tetrachloroethane	18.99	1.0	20	0	94.9	71 - 121				
1,1,2-Trichloroethane	20.12	1.0	20	0	101	80 - 119				
1,1-Dichloroethane	22.3	1.0	20	0	112	77 - 125				
1,1-Dichloroethene	19.15	1.0	20	0	95.8	71 - 131				
1,1-Dichloropropene	17.15	1.0	20	0	85.7	78 - 125				
1,2,3-Trichlorobenzene	15.06	1.0	20	0	75.3	69 - 129				
1,2,3-Trichloropropane	19.73	1.0	20	0	98.6	73 - 122				
1,2,4-Trichlorobenzene	16.67	1.0	20	0	83.4	69 - 130				
1,2,4-Trimethylbenzene	18.56	1.0	20	0	92.8	76 - 124				
1,2-Dibromo-3-chloropropane	16.83	1.0	20	0	84.2	62 - 128				
1,2-Dibromoethane	19.6	1.0	20	0	98.0	77 - 121				
1,2-Dichlorobenzene	18.15	1.0	20	0	90.7	80 - 119				
1,2-Dichloroethane	20.95	1.0	20	0	105	73 - 128				
1,2-Dichloropropane	19.67	1.0	20	0	98.3	78 - 122				
1,3,5-Trimethylbenzene	18.07	1.0	20	0	90.4	75 - 124				
1,3-Dichlorobenzene	17.72	1.0	20	0	88.6	80 - 119				
1,3-Dichloropropane	19.7	1.0	20	0	98.5	80 - 119				
1,4-Dichlorobenzene	17.29	1.0	20	0	86.4	79 - 118				
2,2-Dichloropropane	22.93	1.0	20	0	115	60 - 139				
2-Butanone	36.94	2.0	40	0	92.4	56 - 143				
2-Chlorotoluene	18.87	1.0	20	0	94.3	79 - 122				
2-Hexanone	37.96	2.0	40	0	94.9	57 - 139				
4-Chlorotoluene	19.16	1.0	20	0	95.8	78 - 122				
4-Isopropyltoluene	16.45	1.0	20	0	82.2	77 - 127				
4-Methyl-2-pentanone	41.55	2.0	40	0	104	67 - 130				
Acetone	43.43	2.0	40	0	109	39 - 160				
Benzene	18.58	1.0	20	0	92.9	79 - 120				
Bromobenzene	18	1.0	20	0	90.0	80 - 120				
Bromochloromethane	19.56	1.0	20	0	97.8	78 - 123				
Bromodichloromethane	22.03	1.0	20	0	110	79 - 125				
Bromoform	19.02	1.0	20	0	95.1	66 - 130				
Bromomethane	22.92	1.0	20	0	115	53 - 141				

ALS Houston, US Date: 07-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20041127

QC BATCH REPORT

Batch ID: R360934 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200430** Units: **UG/L** Analysis Date: **30-Apr-2020 16:39**
Client ID: Run ID: **VOA6_360934** SeqNo: **5572403** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	37.51	2.0	40	0	93.8	64 - 133				
Carbon tetrachloride	16.85	1.0	20	0	84.3	72 - 136				
Chlorobenzene	18.18	1.0	20	0	90.9	82 - 118				
Chloroethane	17.9	1.0	20	0	89.5	60 - 138				
Chloroform	20.89	1.0	20	0	104	79 - 124				
Chloromethane	16.66	1.0	20	0	83.3	50 - 139				
cis-1,2-Dichloroethene	20.56	1.0	20	0	103	78 - 123				
cis-1,3-Dichloropropene	20.57	1.0	20	0	103	75 - 124				
Dibromochloromethane	19.63	1.0	20	0	98.1	74 - 126				
Dibromomethane	21.25	1.0	20	0	106	79 - 123				
Dichlorodifluoromethane	18.57	1.0	20	0	92.9	32 - 152				
Ethylbenzene	17.62	1.0	20	0	88.1	79 - 121				
Hexachlorobutadiene	19.03	1.0	20	0	95.2	66 - 134				
Isopropylbenzene	16.91	1.0	20	0	84.6	72 - 131				
m,p-Xylene	35.45	2.0	40	0	88.6	80 - 121				
Methylene chloride	19.45	2.0	20	0	97.2	74 - 124				
Naphthalene	15.49	1.0	20	0	77.5	61 - 128				
n-Butylbenzene	18.52	1.0	20	0	92.6	75 - 128				
n-Propylbenzene	17.99	1.0	20	0	89.9	76 - 126				
o-Xylene	18.21	1.0	20	0	91.1	78 - 122				
sec-Butylbenzene	16.5	1.0	20	0	82.5	77 - 126				
Styrene	18.56	1.0	20	0	92.8	78 - 123				
tert-Butylbenzene	16.43	1.0	20	0	82.1	78 - 124				
Tetrachloroethene	16.78	1.0	20	0	83.9	74 - 129				
Toluene	19.98	1.0	20	0	99.9	80 - 121				
trans-1,2-Dichloroethene	22.72	1.0	20	0	114	75 - 124				
trans-1,3-Dichloropropene	21.41	1.0	20	0	107	73 - 127				
Trichloroethene	18.11	1.0	20	0	90.6	79 - 123				
Trichlorofluoromethane	19.21	1.0	20	0	96.1	65 - 141				
Vinyl chloride	18.01	1.0	20	0	90.0	58 - 137				
Surr: 1,2-Dichloroethane-d4	*56.95*	*1.0*	*50*	*0*	*114*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.67*	*1.0*	*50*	*0*	*97.3*	*85 - 114*				
Surr: Dibromofluoromethane	*47.47*	*1.0*	*50*	*0*	*94.9*	*80 - 119*				
Surr: Toluene-d8	*46.96*	*1.0*	*50*	*0*	*93.9*	*89 - 112*				

ALS Houston, US Date: 07-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20041127

QC BATCH REPORT

Batch ID: R360934 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20041201-01MS** Units: **UG/L** Analysis Date: **30-Apr-2020 19:51**
Client ID: Run ID: **VOA6_360934** SeqNo: **5572408** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	21.26	1.0	20	0	106	78 - 124				
1,1,1-Trichloroethane	24.78	1.0	20	0	124	74 - 131				
1,1,2,2-Tetrachloroethane	20.04	1.0	20	0	100	71 - 121				
1,1,2-Trichloroethane	21.58	1.0	20	0	108	80 - 119				
1,1-Dichloroethane	25.68	1.0	20	0	128	77 - 125				S
1,1-Dichloroethene	23.75	1.0	20	0	119	71 - 131				
1,1-Dichloropropene	21.59	1.0	20	0	108	78 - 125				
1,2,3-Trichlorobenzene	11.83	1.0	20	0	59.2	69 - 129				S
1,2,3-Trichloropropane	20.53	1.0	20	0	103	73 - 122				
1,2,4-Trichlorobenzene	15.03	1.0	20	0	75.2	69 - 130				
1,2,4-Trimethylbenzene	22.67	1.0	20	0	113	76 - 124				
1,2-Dibromo-3-chloropropane	16.4	1.0	20	0	82.0	62 - 128				
1,2-Dibromoethane	21.15	1.0	20	0	106	77 - 121				
1,2-Dichlorobenzene	20.49	1.0	20	0	102	80 - 119				
1,2-Dichloroethane	24.04	1.0	20	0	120	73 - 128				
1,2-Dichloropropane	22.06	1.0	20	0	110	78 - 122				
1,3,5-Trimethylbenzene	23.14	1.0	20	0	116	75 - 124				
1,3-Dichlorobenzene	20.36	1.0	20	0	102	80 - 119				
1,3-Dichloropropane	20.74	1.0	20	0	104	80 - 119				
1,4-Dichlorobenzene	20.06	1.0	20	0	100	79 - 118				
2,2-Dichloropropane	26.35	1.0	20	0	132	60 - 139				
2-Butanone	32.31	2.0	40	0	80.8	56 - 143				
2-Chlorotoluene	23.05	1.0	20	0	115	79 - 122				
2-Hexanone	36.39	2.0	40	0	91.0	57 - 139				
4-Chlorotoluene	22.59	1.0	20	0	113	78 - 122				
4-Isopropyltoluene	22.4	1.0	20	0	112	77 - 127				
4-Methyl-2-pentanone	40.98	2.0	40	0	102	67 - 130				
Acetone	33.29	2.0	40	0	83.2	39 - 160				
Benzene	21.5	1.0	20	0	108	79 - 120				
Bromobenzene	20.62	1.0	20	0	103	80 - 120				
Bromochloromethane	21.63	1.0	20	0	108	78 - 123				
Bromodichloromethane	24.73	1.0	20	0	124	79 - 125				
Bromoform	19.87	1.0	20	0	99.4	66 - 130				
Bromomethane	26.22	1.0	20	0	131	53 - 141				

ALS Houston, US Date: 07-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20041127

QC BATCH REPORT

Batch ID: R360934 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20041201-01MS** Units: **UG/L** Analysis Date: **30-Apr-2020 19:51**
Client ID: Run ID: **VOA6_360934** SeqNo: **5572408** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	44.5	2.0	40	0	111	64 - 133				
Carbon tetrachloride	22.4	1.0	20	0	112	72 - 136				
Chlorobenzene	21.11	1.0	20	0	106	82 - 118				
Chloroethane	20.79	1.0	20	0	104	60 - 138				
Chloroform	24.39	1.0	20	0	122	79 - 124				
Chloromethane	19.03	1.0	20	0	95.2	50 - 139				
cis-1,2-Dichloroethene	23.36	1.0	20	0	117	78 - 123				
cis-1,3-Dichloropropene	22.51	1.0	20	0	113	75 - 124				
Dibromochloromethane	20.45	1.0	20	0	102	74 - 126				
Dibromomethane	23.04	1.0	20	0	115	79 - 123				
Dichlorodifluoromethane	24.09	1.0	20	0	120	32 - 152				
Ethylbenzene	21.76	1.0	20	0	109	79 - 121				
Hexachlorobutadiene	19.99	1.0	20	0	99.9	66 - 134				
Isopropylbenzene	22.52	1.0	20	0	113	72 - 131				
m,p-Xylene	43.11	2.0	40	0	108	80 - 121				
Methylene chloride	21.51	2.0	20	0	108	74 - 124				
Naphthalene	12.83	1.0	20	0	64.1	61 - 128				
n-Butylbenzene	24.84	1.0	20	0	124	75 - 128				
n-Propylbenzene	23.69	1.0	20	0	118	76 - 126				
o-Xylene	21.93	1.0	20	0	110	78 - 122				
sec-Butylbenzene	22.75	1.0	20	0	114	77 - 126				
Styrene	21.35	1.0	20	0	107	78 - 123				
tert-Butylbenzene	22.56	1.0	20	0	113	78 - 124				
Tetrachloroethene	21.38	1.0	20	0	107	74 - 129				
Toluene	23.21	1.0	20	0	116	80 - 121				
trans-1,2-Dichloroethene	26.92	1.0	20	0	135	75 - 124				S
trans-1,3-Dichloropropene	22.73	1.0	20	0	114	73 - 127				
Trichloroethene	20.97	1.0	20	0	105	79 - 123				
Trichlorofluoromethane	25.89	1.0	20	0	129	65 - 141				
Vinyl chloride	21.66	1.0	20	0	108	58 - 137				
Surr: 1,2-Dichloroethane-d4	*59.42*	*1.0*	*50*	*0*	*119*	*81 - 118*				S
Surr: 4-Bromofluorobenzene	*53.59*	*1.0*	*50*	*0*	*107*	*85 - 114*				
Surr: Dibromofluoromethane	*52.48*	*1.0*	*50*	*0*	*105*	*80 - 119*				
Surr: Toluene-d8	*52.43*	*1.0*	*50*	*0*	*105*	*89 - 112*				

ALS Houston, US Date: 07-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20041127

QC BATCH REPORT

Batch ID: R360934 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20041201-01MSD** Units: **UG/L** Analysis Date: **30-Apr-2020 20:15**
Client ID: Run ID: **VOA6_360934** SeqNo: **5572409** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.03	1.0	20	0	100	78 - 124	21.26	5.94	20	
1,1,1-Trichloroethane	23.54	1.0	20	0	118	74 - 131	24.78	5.13	20	
1,1,2,2-Tetrachloroethane	19.43	1.0	20	0	97.1	71 - 121	20.04	3.1	20	
1,1,2-Trichloroethane	21.41	1.0	20	0	107	80 - 119	21.58	0.789	20	
1,1-Dichloroethane	24.5	1.0	20	0	122	77 - 125	25.68	4.72	20	
1,1-Dichloroethene	22.16	1.0	20	0	111	71 - 131	23.75	6.93	20	
1,1-Dichloropropene	21.11	1.0	20	0	106	78 - 125	21.59	2.23	20	
1,2,3-Trichlorobenzene	13.03	1.0	20	0	65.1	69 - 129	11.83	9.59	20	S
1,2,3-Trichloropropane	20.01	1.0	20	0	100	73 - 122	20.53	2.54	20	
1,2,4-Trichlorobenzene	14.59	1.0	20	0	72.9	69 - 130	15.03	3.01	20	
1,2,4-Trimethylbenzene	21.93	1.0	20	0	110	76 - 124	22.67	3.32	20	
1,2-Dibromo-3-chloropropane	16.05	1.0	20	0	80.3	62 - 128	16.4	2.15	20	
1,2-Dibromoethane	20.67	1.0	20	0	103	77 - 121	21.15	2.31	20	
1,2-Dichlorobenzene	20.15	1.0	20	0	101	80 - 119	20.49	1.7	20	
1,2-Dichloroethane	23.13	1.0	20	0	116	73 - 128	24.04	3.84	20	
1,2-Dichloropropane	21.79	1.0	20	0	109	78 - 122	22.06	1.23	20	
1,3,5-Trimethylbenzene	22.12	1.0	20	0	111	75 - 124	23.14	4.52	20	
1,3-Dichlorobenzene	19.97	1.0	20	0	99.9	80 - 119	20.36	1.93	20	
1,3-Dichloropropane	20.47	1.0	20	0	102	80 - 119	20.74	1.29	20	
1,4-Dichlorobenzene	19.75	1.0	20	0	98.7	79 - 118	20.06	1.58	20	
2,2-Dichloropropane	24.87	1.0	20	0	124	60 - 139	26.35	5.75	20	
2-Butanone	32.52	2.0	40	0	81.3	56 - 143	32.31	0.666	20	
2-Chlorotoluene	21.76	1.0	20	0	109	79 - 122	23.05	5.79	20	
2-Hexanone	35.7	2.0	40	0	89.2	57 - 139	36.39	1.93	20	
4-Chlorotoluene	22.02	1.0	20	0	110	78 - 122	22.59	2.55	20	
4-Isopropyltoluene	21.5	1.0	20	0	107	77 - 127	22.4	4.12	20	
4-Methyl-2-pentanone	41.55	2.0	40	0	104	67 - 130	40.98	1.38	20	
Acetone	33.58	2.0	40	0	84.0	39 - 160	33.29	0.863	20	
Benzene	20.28	1.0	20	0	101	79 - 120	21.5	5.87	20	
Bromobenzene	20.11	1.0	20	0	101	80 - 120	20.62	2.51	20	
Bromochloromethane	21.04	1.0	20	0	105	78 - 123	21.63	2.79	20	
Bromodichloromethane	23.65	1.0	20	0	118	79 - 125	24.73	4.45	20	
Bromoform	19.51	1.0	20	0	97.6	66 - 130	19.87	1.84	20	
Bromomethane	24.51	1.0	20	0	123	53 - 141	26.22	6.76	20	

ALS Houston, US Date: 07-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20041127

QC BATCH REPORT

Batch ID: R360934 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20041201-01MSD** Units: **UG/L** Analysis Date: **30-Apr-2020 20:15**
Client ID: Run ID: **VOA6_360934** SeqNo: **5572409** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	42.42	2.0	40	0	106	64 - 133	44.5	4.78	20	
Carbon tetrachloride	21.34	1.0	20	0	107	72 - 136	22.4	4.81	20	
Chlorobenzene	19.58	1.0	20	0	97.9	82 - 118	21.11	7.54	20	
Chloroethane	19.7	1.0	20	0	98.5	60 - 138	20.79	5.39	20	
Chloroform	23.01	1.0	20	0	115	79 - 124	24.39	5.85	20	
Chloromethane	17.85	1.0	20	0	89.2	50 - 139	19.03	6.4	20	
cis-1,2-Dichloroethene	22.89	1.0	20	0	114	78 - 123	23.36	2.02	20	
cis-1,3-Dichloropropene	22.53	1.0	20	0	113	75 - 124	22.51	0.0518	20	
Dibromochloromethane	20.14	1.0	20	0	101	74 - 126	20.45	1.54	20	
Dibromomethane	22.96	1.0	20	0	115	79 - 123	23.04	0.326	20	
Dichlorodifluoromethane	22.04	1.0	20	0	110	32 - 152	24.09	8.91	20	
Ethylbenzene	20.71	1.0	20	0	104	79 - 121	21.76	4.94	20	
Hexachlorobutadiene	19.27	1.0	20	0	96.3	66 - 134	19.99	3.65	20	
Isopropylbenzene	21.57	1.0	20	0	108	72 - 131	22.52	4.31	20	
m,p-Xylene	40.94	2.0	40	0	102	80 - 121	43.11	5.17	20	
Methylene chloride	20.76	2.0	20	0	104	74 - 124	21.51	3.51	20	
Naphthalene	13.68	1.0	20	0	68.4	61 - 128	12.83	6.42	20	
n-Butylbenzene	24.52	1.0	20	0	123	75 - 128	24.84	1.32	20	
n-Propylbenzene	22.62	1.0	20	0	113	76 - 126	23.69	4.61	20	
o-Xylene	20.63	1.0	20	0	103	78 - 122	21.93	6.1	20	
sec-Butylbenzene	21.82	1.0	20	0	109	77 - 126	22.75	4.18	20	
Styrene	20.59	1.0	20	0	103	78 - 123	21.35	3.6	20	
tert-Butylbenzene	21.44	1.0	20	0	107	78 - 124	22.56	5.1	20	
Tetrachloroethene	20.31	1.0	20	0	102	74 - 129	21.38	5.15	20	
Toluene	21.91	1.0	20	0	110	80 - 121	23.21	5.8	20	
trans-1,2-Dichloroethene	25.01	1.0	20	0	125	75 - 124	26.92	7.38	20	S
trans-1,3-Dichloropropene	22.76	1.0	20	0	114	73 - 127	22.73	0.121	20	
Trichloroethene	20.23	1.0	20	0	101	79 - 123	20.97	3.58	20	
Trichlorofluoromethane	24.24	1.0	20	0	121	65 - 141	25.89	6.59	20	
Vinyl chloride	20.41	1.0	20	0	102	58 - 137	21.66	5.92	20	
Surr: 1,2-Dichloroethane-d4	*58.85*	*1.0*	*50*	*0*	*118*	*81 - 118*	*59.42*	*0.959*	*20*	
Surr: 4-Bromofluorobenzene	*53.96*	*1.0*	*50*	*0*	*108*	*85 - 114*	*53.59*	*0.701*	*20*	
Surr: Dibromofluoromethane	*52.36*	*1.0*	*50*	*0*	*105*	*80 - 119*	*52.48*	*0.231*	*20*	
Surr: Toluene-d8	*51.88*	*1.0*	*50*	*0*	*104*	*89 - 112*	*52.43*	*1.05*	*20*	

ALS Houston, US Date: 07-May-20

Client:	Bhate Environmental Associates, Inc.
Project:	Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder:	HS20041127

QC BATCH REPORT

Batch ID:	**R360934 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch: HS20041127-01 HS20041127-02

ALS Houston, US Date: 07-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: HS20041127

QC BATCH REPORT

Batch ID: R361140 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY SW9056A

MBLK Sample ID: **WBLKW1-050520** Units: **mg/L** Analysis Date: **05-May-2020 22:46**
Client ID: Run ID: **ICS-Integrion_361140** SeqNo: **5576522** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.500	0.500								U
Sulfate	0.500	0.500								U

LCS Sample ID: **WLCSW1-050520** Units: **mg/L** Analysis Date: **05-May-2020 23:04**
Client ID: Run ID: **ICS-Integrion_361140** SeqNo: **5576523** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.82	0.500	20	0	99.1	80 - 120				
Sulfate	19.61	0.500	20	0	98.1	80 - 120				

MS Sample ID: **HS20041127-01MS** Units: **mg/L** Analysis Date: **05-May-2020 21:51**
Client ID: **LH18/24-SP650_042820** Run ID: **ICS-Integrion_361140** SeqNo: **5576519** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	285.9	0.500	10	283.1	28.5	80 - 120				SEO
Sulfate	49.86	0.500	10	41.34	85.2	80 - 120				O

MSD Sample ID: **HS20041127-01MSD** Units: **mg/L** Analysis Date: **05-May-2020 22:09**
Client ID: **LH18/24-SP650_042820** Run ID: **ICS-Integrion_361140** SeqNo: **5576520** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	285	0.500	10	283.1	19.1	80 - 120	285.9	0.331	20	SEO
Sulfate	49.88	0.500	10	41.34	85.4	80 - 120	49.86	0.0447	20	O

The following samples were analyzed in this batch: HS20041127-01

ALS Houston, US Date: 07-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
WorkOrder: **HS20041127**

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
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
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
Oklahoma	2019-067	31-Aug-2020
Texas	T104704231-20-26	30-Apr-2021

ALS Houston, US Date: 07-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi Weekly Samples
Work Order: HS20041127

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20041127-01	LH18/24-SP650_042820	Login	4/29/2020 10:54:48 AM	JRM	WET230
HS20041127-01	LH18/24-SP650_042820	Login	4/29/2020 10:54:48 AM	JRM	VOA197
HS20041127-02	Trip Blank	Login	4/29/2020 10:54:48 AM	JRM	VOA197

ALS Houston, US Date: 07-May-20

Sample Receipt Checklist

Client Name: Bhate Environmental
Work Order: HS20041127
Date/Time Received: **29-Apr-2020 09:17**
Received by: **AC**

Checklist completed by: *Jared R. Makan* 29-Apr-2020
eSignature | Date

Reviewed by: *Corey Grandits* 29-Apr-2020
eSignature | 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):	1.6°C/1.6°C UC/C	IR11
Cooler(s)/Kit(s):	45883	
Date/Time sample(s) sent to storage:	04/29/2020 10:57	

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:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210, Houston, Tx. 77099 ATTN: R.J. Modashia

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT
BI-WEEKLY SAMPLES

Prepared By:
Scott Beesinger

P.O Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: VOC	Analyses: CHLORIDE, SULFATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_042820	Water	04/28/20 / 14:00		3	3		HCL	
LH18/24-SP650_042820	Water	04/28/20 / 14:00		1		1	NONE	
Trip Blank	Water	04/28/20		2	2		HCL	

Additional Remarks: **Standard TAT on Chloride & Sulfate. 24 Hour TAT on VOC**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	04/28/20	14:30	AC	4/29/20	09:17						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

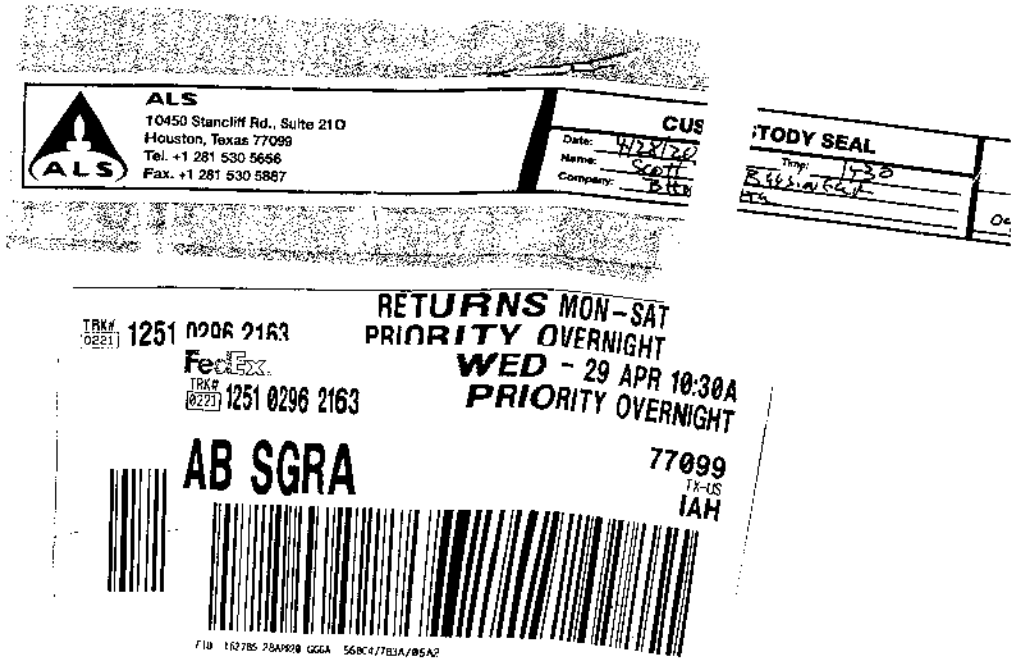
Remarks

HS20041127

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Bi Weekly Sample

(Word) S:\Users\Forms\Chain of Custody - BiWeekly

o/c
1-6
IR#
COC 45883



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

CUS
Date: 4/28/20
Name: Scott
Company: Bitt

TODY SEAL
Time: 1430

TRK# 0221 1251 0296 2163

RETURNS MON-SAT
PRIORITY OVERNIGHT

FedEx.

TRK# 0221 1251 0296 2163

WED - 29 APR 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

May 13, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20041130**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on Apr 29, 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: COREY.GRANDITS
RJ Modashia
Project Manager

ALS Houston, US Date: 13-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20041130

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20041130-01	LH18/24-SP650_042820	Water		28-Apr-2020 14:00	29-Apr-2020 09:17	☐
HS20041130-02	LH18/24-SP650_042820_BIX	Water		28-Apr-2020 14:00	29-Apr-2020 09:17	☐

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20041130

Work Order Comments

• The analysis for Perchlorate was subcontracted to ALS High-Res in Houston, TX. Final report attached.

The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.

Subcontracted by Method NA

Batch ID: R361193

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

WetChemistry by Method E350.3

Batch ID: R361024

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

WetChemistry by Method E365.3

Batch ID: R360748

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

ALS Houston, US Date: 13-May-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Weekly Samples WorkOrder:HS20041130
Sample ID: LH18/24-SP650_042820 Lab ID:HS20041130-01
Collection Date: 28-Apr-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: YP
Nitrogen, Ammonia (As N)	**21**	a	**0.20**	**0.10**	**0.20**	**mg/L**	1	04-May-2020 11:00
ORTHO PHOSPHATE (PO4) AS P BY E365.3		**Method:E365.3**						Analyst: KVL
Phosphorus, Total Orthophosphate (As P)	**1.96**	a	**0.0500**	**0.125**	**0.125**	**mg/L**	5	29-Apr-2020 13:00
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	07-May-2020 10:39

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

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ALS Houston, US Date: 13-May-20

Client:	Bhate Environmental Associates, Inc.	**ANALYTICAL REPORT**
Project:	Longhorn GW Treatment Plant Weekly Samples	WorkOrder:HS20041130
Sample ID:	LH18/24-SP650_042820_BIX	Lab ID:HS20041130-02
Collection Date:	28-Apr-2020 14:00	Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	13-May-2020 15:37

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

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Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20041130

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R360748 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3				**Matrix:** Water	
HS20041130-01	LH18/24-SP650_042820	28 Apr 2020 14:00			29 Apr 2020 13:00	5
Batch ID: R361024 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS20041130-01	LH18/24-SP650_042820	28 Apr 2020 14:00			04 May 2020 11:00	1
Batch ID: R361193 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Water	
HS20041130-01	LH18/24-SP650_042820	28 Apr 2020 14:00			07 May 2020 10:39	1
Batch ID: R361494 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS20041130-02	LH18/24-SP650_042820_BIX	28 Apr 2020 14:00			13 May 2020 15:37	1

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Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20041130

QC BATCH REPORT

Batch ID: R360748 (0) **Instrument: UV-2450** **Method: ORTHO PHOSPHATE (PO4) AS P BY E365.3**

MBLK Sample ID: **MBLK-R360748** Units: **mg/L** Analysis Date: **29-Apr-2020 13:00**
Client ID: Run ID: **UV-2450_360748** SeqNo: **5569417** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0250	0.0250								U

LCS Sample ID: **LCS-R360748** Units: **mg/L** Analysis Date: **29-Apr-2020 13:00**
Client ID: Run ID: **UV-2450_360748** SeqNo: **5569416** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.255	0.0250	0.25	0	102	85 - 115				

LCSD Sample ID: **LCSD-R360748** Units: **mg/L** Analysis Date: **29-Apr-2020 13:00**
Client ID: Run ID: **UV-2450_360748** SeqNo: **5569415** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.257	0.0250	0.25	0	103	85 - 115	0.255	0.781	20	

MS Sample ID: **HS20041130-01MS** Units: **mg/L** Analysis Date: **29-Apr-2020 13:00**
Client ID: **LH18/24-SP650_042820** Run ID: **UV-2450_360748** SeqNo: **5569419** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	3.185	0.125	1.25	1.96	98.0	80 - 120				

MSD Sample ID: **HS20041130-01MSD** Units: **mg/L** Analysis Date: **29-Apr-2020 13:00**
Client ID: **LH18/24-SP650_042820** Run ID: **UV-2450_360748** SeqNo: **5569418** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	3.225	0.125	1.25	1.96	101	80 - 120	3.185	1.25	20	

The following samples were analyzed in this batch: HS20041130-01

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Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20041130

QC BATCH REPORT

Batch ID: R361024 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK Sample ID: **MBLK-R361024** Units: **mg/L** Analysis Date: **04-May-2020 11:00**
Client ID: Run ID: **WetChem_HS_361024** SeqNo: **5574048** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.10	0.20								U

LCS Sample ID: **LCS-R361024** Units: **mg/L** Analysis Date: **04-May-2020 11:00**
Client ID: Run ID: **WetChem_HS_361024** SeqNo: **5574047** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.43	0.20	10	0	104	80 - 120				

MS Sample ID: **HS20041130-01MS** Units: **mg/L** Analysis Date: **04-May-2020 11:00**
Client ID: **LH18/24-SP650_042820** Run ID: **WetChem_HS_361024** SeqNo: **5574050** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	32.74	0.20	10	21.27	115	80 - 120				

MSD Sample ID: **HS20041130-01MSD** Units: **mg/L** Analysis Date: **04-May-2020 11:00**
Client ID: **LH18/24-SP650_042820** Run ID: **WetChem_HS_361024** SeqNo: **5574049** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	32.83	0.20	10	21.27	116	80 - 120	32.74	0.284	20	

The following samples were analyzed in this batch: HS20041130-01

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Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS20041130**

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

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CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	20-030-0	26-Mar-2021
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
Oklahoma	2019-141	31-Aug-2020
Texas	T104704231-20-26	30-Apr-2021

ALS Houston, US Date: 13-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20041130

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20041130-01	LH18/24-SP650_042820	Login	4/29/2020 11:34:36 AM	JRM	WET275
HS20041130-01	LH18/24-SP650_042820	Login	4/29/2020 11:34:36 AM	JRM	WET275
HS20041130-01	LH18/24-SP650_042820	Login	4/29/2020 11:34:36 AM	JRM	Sub
HS20041130-02	LH18/24-SP650_042820_BIX	Login	4/29/2020 11:34:36 AM	JRM	Sub

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ALS Houston, US Date: 13-May-20

Sample Receipt Checklist

Work Order ID: HS20041130 **Date/Time Received:** 29-Apr-2020 09:17

Client Name: Bhate Environmental **Received by:** Asad Chaudhry

Completed By:	/S/ Jared R. Makan	29-Apr-2020 11:35	**Reviewed by:**	/S/ Corey Grandits	29-Apr-2020 15:35
	eSignature	Date/Time		eSignature	Date/Time

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):	1.6°C/1.6°C UC/C	IR11
Cooler(s)/Kit(s):	45883	
Date/Time sample(s) sent to storage:	04/29/2020 11:36	

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:

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CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281) 530-5656 ATTN: R.J Modashia

Page 1 of 1

Project: BHATE LONGHORN ARMY AMMN. PLANT (LHAAP) GROUNDWATER TREATMENT PLANT (GWTP) KARNACK, TEXAS	Project No. NWO1312.0150.0 16.0001
Job: **GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES**	
Prepared By: Scott Beesinger	P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_042820	Water	04/28/20 / 14:00		3	X	X			H2SO4	
LH18/24-SP650_042820	Water	04/28/20 / 14:00		1			X		NONE	
LH18/24–SP650_042820_BIX	Water	04/28/20 / 14:00		1				X	NONE	

Additional Remarks: **Standard TAT on all parameters**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	04/28/20	14:30	AC	4/29/20	09:17						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

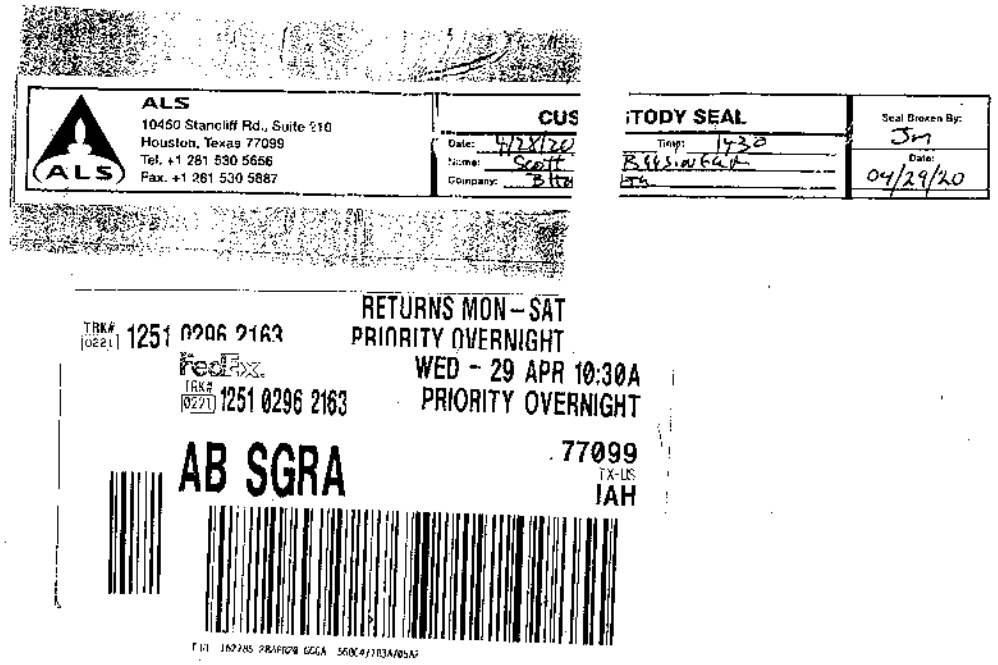
HS20041130

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

(Word) S:\Services\Forms\Chain of Custody - BiWeekly

SIC
1-6
IR # 11
CFe 0
45883

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

CUS
Date: 4/28/20
Name: Scott
Company: Bltz

TODY SEAL
Time: 1430

Seal Broken By:
Jm
Date:
04/29/20

RETURNS MON – SAT
PRIORITY OVERNIGHT

TRK# 0221 1251 0296 2163

FedEx.

TRK# 0221 1251 0296 2163

WED - 29 APR 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

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May 12, 2020 Service Request No:E2000382

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

Laboratory Results for: HS20041130

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory April 29, 2020
For your reference, these analyses have been assigned our service request number **E2000382.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2000382
Project:	HS20041130	**Date Received:**	04/29/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 04/29/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000173: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

DOD Certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

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Client: ALS Environmental - US **Service Request:**E2000382
Project: HS20041130

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000382-001	LH18/24-SP650_042820_BIX	4/28/2020	1400

Service Request Summary

Folder #: **E2000382**
Client Name: ALS Environmental - US
Project Name: HS20041130
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 04/29/20
Internal Due Date: 5/12/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20041130
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000382-001	LH18/24-SP650_042820_BIX	Water	04/28/20 1400	**IV**

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Service Request Summary

Folder #:	**E2000382**
Client Name:	ALS Environmental - US
Project Name:	HS20041130
Project Number:	

Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	04/29/20
Internal Due Date:	5/12/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20041130
EDD:	No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-WIC 7B

Pressure Gas:

Print
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Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.

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Data Qualifiers

Lab Standard

S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

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ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2020
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	2020	4/30/2021
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nevada Department of Concervation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020

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Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

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

E2000382 5
ALS Laboratory Group
HS20041130

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13818**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

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:	HS20041130
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20041130-02**	**LH18/24-SP650_042820_BIX**	**Water**	**28 Apr 2020 14:00**
	SUB_Perch-6850			07 May 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: 4/29/20 14:54

Received By: Date/Time: 4/29/20 14:54

Cooler ID(s): Temperature(s):

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ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALS-H

Thermometer ID 9211

Date/Time Received: 4/29/20 Initials: CH

Date/Time Logged in: 4/29/20 Initials CH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ Courier (ALS) ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other _____

3. Were custody seals on coolers? ○ Yes ✓ No

Were they intact? ○ Yes ○ No ✓ N/A

Were they signed and dated? ○ Yes ○ No ✓ N/A

If yes, how many and where?

4. Packing Material: ○ Inserts ✓ Baggies ✓ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other _____

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling: _____

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
—		4/29/20	1455	CH	1.0	✓ ☐
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No

9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No

10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E2000382 5

ALS Laboratory Group HS20041130

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F: +1 713 266 1599
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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

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Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

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Preparation Information Benchsheet

Prep Run#: 358306 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/KBROWN **Prep Method:** Method **Prep Date/Time:** 5/12/20 09:34

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000382-001	LH18/24-SP650_042820_BIX	.01	6850/ClO4 DOD			Water	10mL	
2	E2000404-001	04WW02-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2000404-002	04WW06-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2000404-003	LHSMW02-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2000404-004	LHSMW02-200504-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2000404-005	04WW11-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2000404-006	04WW04-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2000405-001	04WW05-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2000405-002	04WW09-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2000405-003	04WW10-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2000405-004	04WW10-200505-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2000405-005	04WW07-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2000406-001	04WW08-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2000406-002	LHSMW01-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2000406-003	04WW01-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2000407-001	LH18/24-SP650_050520_BIX	.01	6850/ClO4 DOD			Water	10mL	
17	E2000408-001	LH18/24-SP140_050520	.01	6850/ClO4 DOD			Water	10mL	
18	E2000409-001	LH18/24-SP650_050520_BIX	.01	6850/ClO4 DOD			Water	10mL	
19	EQ2000173-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2000173-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000173-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2000173-04	04WW06-200504 MS	.01	6850/ClO4 DOD			Liquid	10mL	
23	EQ2000173-05	04WW06-200504 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 202037 Logbook Ref: Sodium Perchlorate Expires On: 05/22/2021

E2000382-001	100.00µL	E2000404-001	100.00µL	E2000404-002	100.00µL	E2000404-003	100.00µL	E2000404-004	100.00µL	E2000404-005	100.00µL
E2000404-006	100.00µL	E2000405-001	100.00µL	E2000405-002	100.00µL	E2000405-003	100.00µL	E2000405-004	100.00µL	E2000405-005	100.00µL
E2000406-001	100.00µL	E2000406-002	100.00µL	E2000406-003	100.00µL	E2000407-001	100.00µL	E2000408-001	100.00µL	E2000409-001	100.00µL
EQ2000173-01	100.00µL	EQ2000173-02	100.00µL	EQ2000173-03	100.00µL	EQ2000173-04	100.00µL	EQ2000173-05	100.00µL		

Name: Perchlorate Intermediate Stock1 Inventory ID 204799 Logbook Ref: 200657 1.0ug/mL KN Expires On: 05/15/2020

EQ2000173-02	1.00µL	EQ2000173-03	1.00µL	EQ2000173-04	1.00µL	EQ2000173-05	1.00µL

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Preparation Information Benchsheet

Prep Run#: 358306
Team: Semivoa GCMS/KBROWN

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 5/12/20 09:34

Preparation Steps

Step: Preparation
Started: 5/12/20 09:34
Finished: 5/12/20 12:00
By: KBROWN
Comments

Comments: _____

Reviewed By: GR Date: 5/12/2020

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

RIGHT SOLUTIONS | RIGHT PARTNER

Preparation Information Benchsheet

Prep Run#: 358306 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/KBROWN **Prep Method:** Method **Prep Date/Time:** 5/12/20 09:34

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000382-001	LH18/24-SP650_042820_BIX	.01	6850/ClO4 DOD			Water	10mL	
2	E2000404-001	04WW02-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2000404-002	04WW06-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2000404-003	LHSMW02-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2000404-004	LHSMW02-200504-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2000404-005	04WW11-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2000404-006	04WW04-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2000405-001	04WW05-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2000405-002	04WW09-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2000405-003	04WW10-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2000405-004	04WW10-200505-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2000405-005	04WW07-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2000406-001	04WW08-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2000406-002	LHSMW01-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2000406-003	04WW01-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2000407-001	LH18/24-SP650_050520_BIX	.01	6850/ClO4 DOD			Water	10mL	
17	E2000408-001	LH18/24-SP140_050520	.01	6850/ClO4 DOD			Water	10mL	
18	E2000409-001	LH18/24-SP650_050520_BIX	.01	6850/ClO4 DOD			Water	10mL	
19	EQ2000173-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2000173-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000173-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2000173-04	04WW06-200504 MS	.01	6850/ClO4 DOD			Liquid	10mL	
23	EQ2000173-05	04WW06-200504 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 202037 Logbook Ref: Sodium Perchlorate Expires On: 05/22/2021

E2000382-001	100.00µL	E2000404-001	100.00µL	E2000404-002	100.00µL	E2000404-003	100.00µL	E2000404-004	100.00µL	E2000404-005	100.00µL
E2000404-006	100.00µL	E2000405-001	100.00µL	E2000405-002	100.00µL	E2000405-003	100.00µL	E2000405-004	100.00µL	E2000405-005	100.00µL
E2000406-001	100.00µL	E2000406-002	100.00µL	E2000406-003	100.00µL	E2000407-001	100.00µL	E2000408-001	100.00µL	E2000409-001	100.00µL
EQ2000173-01	100.00µL	EQ2000173-02	100.00µL	EQ2000173-03	100.00µL	EQ2000173-04	100.00µL	EQ2000173-05	100.00µL		

Name: Perchlorate Intermediate Stock1 Inventory ID 204799 Logbook Ref: 200657 1.0ug/mL KN Expires On: 05/15/2020

EQ2000173-02	1.00µL	EQ2000173-03	1.00µL	EQ2000173-04	1.00µL	EQ2000173-05	1.00µL

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Preparation Information Benchsheet

Prep Run#: 358306
Team: Semivoa GCMS/KBROWN

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 5/12/20 09:34

Preparation Steps

Step: Preparation
Started: 5/12/20 09:34
Finished: 5/12/20 12:00
By: KBROWN
Comments

Comments: _____

Reviewed By: GR Date: 5/12/2020

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

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Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000382
Project:	HS20041130	**Date Collected:**	4/28/20 1400
Sample Matrix:	Water	**Date Received:**	4/29/20
Sample Name:	LH18/24-SP650_042820_BIX	**Units:**	µg/L
Lab Code:	E2000382-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	5/12/20	5/12/20 13:37	358306	679868	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000382
Project:	HS20041130	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000173-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	5/12/20	5/12/20 12:50	358306	679868	

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000382
Project:	HS20041130	**Date Analyzed:**	5/12/20
Sample Matrix:	Water		

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	358306

	Lab Control Sample EQ2000173-02			Duplicate Lab Control Sample EQ2000173-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.105	0.100	105	0.107	0.100	107	84 - 119	2	15

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

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000382
Project:	HS20041130	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000173-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.105**		0.100	0.0500	0.0250	1	5/12/20	5/12/20 12:58	358306	679868	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000382
Project:	HS20041130	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000173-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.107**		0.100	0.0500	0.0250	1	5/12/20	5/12/20 13:06	358306	679868	

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May 07, 2020 **Analytical Report for Service Request No:** K2003509

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

RE: HS20041130

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory May 01, 2020
For your reference, these analyses have been assigned our service request number **K2003509.**

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

for Kelley Lovejoy
Project Manager

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www.alsglobal.com

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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.

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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.

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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.

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Case Narrative

ALS Environmental—Kelso Laboratory
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Client: ALS Environmental - US
Project: HS20041130
Sample Matrix: Water

Service Request: K2003509
Date Received: 05/01/2020

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 water sample was received for analysis at ALS Environmental on 05/01/2020. 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 Noe D. Ochoa Date 05/07/2020

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Chain of Custody

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K2003509

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:** **13817**

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:	HS20041130
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20041130-01**	**LH18/24-SP650_042820**	**Water**	**28 Apr 2020 14:00**
	TOC Analysis for DOD Level IV			07 May 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: 4/30/2020 1800

Received By: _____ Date/Time: 5/1/2020 0915

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

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PC KL

Cooler Receipt and Preservation Form

Client ALS Houston Service Request K20 03509

Received: 5/1/2020 Opened: 5/1/2020 By: CG Unloaded: 5/1/2020 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
0.5					3980H88WS	13817	1251 0296 7290	

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: _____

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General Chemistry

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2003509
Project:	HS20041130	**Date Collected:**	04/28/20
Sample Matrix:	Water	**Date Received:**	05/1/20
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
LH18/24-SP650_042820	K2003509-001	**2.18**	0.50	0.20	0.07	1	05/03/20 20:23	
Method Blank	K2003509-MB	ND U	0.50	0.20	0.07	1	05/03/20 14:13	

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ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2003509
Project	HS20041130	**Date Collected:**	04/28/20
Sample Matrix:	Water	**Date Received:**	05/01/20
		Date Analyzed:	05/03/20

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	LH18/24-SP650_042820	**Units:**	mg/L
Lab Code:	K2003509-001	**Basis:**	NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K2003509-001DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	2.18	2.08	2.13	5	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.

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QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2003509
Project:	HS20041130	**Date Analyzed:**	05/03/20
Sample Matrix:	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:	678685

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2003509-LCS	22.9	25.0	91	83-117

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QA/QC Report

Client: ALS Environmental - US **Service Request:** K2003509
Project: HS20041130

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	678685	KQ2005873-01	05/03/20 07:37	25.0	25.5	102	90-110
CCV2	678685	KQ2005873-02	05/03/20 13:43	25.0	25.3	101	90-110
CCV3	678685	KQ2005873-03	05/03/20 18:27	25.0	25.4	102	90-110
CCV4	678685	KQ2005873-22	05/03/20 21:47	25.0	25.2	101	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2003509
Project: HS20041130

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	678685	KQ2005873-04	05/03/20 07:52	0.50	0.20	0.07	ND	U
CCB2	678685	KQ2005873-05	05/03/20 13:58	0.50	0.20	0.07	ND	U
CCB3	678685	KQ2005873-06	05/03/20 18:42	0.50	0.20	0.07	ND	U
CCB4	678685	KQ2005873-23	05/03/20 22:02	0.50	0.20	0.07	ND	U

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Raw Data

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BW 5/6/20

Work Request # Original ( ) K2003404, 5472, 3417, 3418, 3475, 3486, 3509, 3513, 3542

Tier: IV IV I II II II IV I II

Date Analyzed: 5/2/20

Analyst: BW

Analysis: TOC/DOC

Run # TOC: 678684, 678685 DOC: 678686

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:

Final Approved by: [signature] Date: 5/6/20

DQREPORT

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Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 678684 **Method/Testcode:** 9060A/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	T
K2003404-001	Carbon, Total Organic (TOC)	N/A		Storm Water	5.66 mg/L	10 mL	5.66 mg/L	1		0.50			5/3/20 01:49:00	N	
K2003404-002	Carbon, Total Organic (TOC)	N/A		Storm Water	3.40 mg/L	10 mL	3.40 mg/L	1		0.50			5/3/20 02:44:00	N	
K2003404-003	Carbon, Total Organic (TOC)	N/A		Storm Water	3.27 mg/L	10 mL	3.27 mg/L	1		0.50			5/3/20 04:50:00	N	
K2003404-004	Carbon, Total Organic (TOC)	N/A		Storm Water	3.29 mg/L	10 mL	3.29 mg/L	1		0.50			5/3/20 05:46:00	N	
K2003404-005	Carbon, Total Organic (TOC)	N/A		Storm Water	5.04 mg/L	10 mL	5.04 mg/L	1		0.50			5/3/20 06:41:00	N	
K2003404-006	Carbon, Total Organic (TOC)	N/A		Storm Water	5.53 mg/L	10 mL	5.53 mg/L	1		0.50			5/3/20 08:06:00	N	
K2003404-007	Carbon, Total Organic (TOC)	N/A		Storm Water	14.45 mg/L	10 mL	14.5 mg/L	1		0.50			5/3/20 09:02:00	N	
K2003404-008	Carbon, Total Organic (TOC)	N/A		Storm Water	10.25 mg/L	10 mL	10.2 mg/L	1		0.50			5/3/20 09:58:00	N	
KQ2005872-01	Carbon, Total Organic (TOC)	CCV		Storm Water	25.58 mg/L	10 mL	25.6 mg/L	1					5/2/20 23:13:00	N	
KQ2005872-02	Carbon, Total Organic (TOC)	CCV		Storm Water	25.55 mg/L	10 mL	25.5 mg/L	1					5/3/20 07:37:00	N	
KQ2005872-03	Carbon, Total Organic (TOC)	CCV		Storm Water	25.27 mg/L	10 mL	25.3 mg/L	1					5/3/20 13:43:00	N	
KQ2005872-04	Carbon, Total Organic (TOC)	CCB		Storm Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			5/2/20 23:28:00	N	
KQ2005872-05	Carbon, Total Organic (TOC)	CCB		Storm Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			5/3/20 07:52:00	N	
KQ2005872-06	Carbon, Total Organic (TOC)	CCB		Storm Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			5/3/20 13:58:00	N	
KQ2005872-07	Carbon, Total Organic (TOC)	MB		Storm Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			5/2/20 23:42:00	N	
KQ2005872-08	Carbon, Total Organic (TOC)	LCS		Storm Water	23.26 mg/L	10 mL	23.3 mg/L	1		0.50	93		5/3/20 00:38:00	N	
KQ2005872-09	Carbon, Total Organic (TOC)	MB		Storm Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			5/2/20 23:42:00	N	
KQ2005872-10	Carbon, Total Organic (TOC)	MB		Storm Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			5/2/20 23:42:00	N	
KQ2005872-11	Carbon, Total Organic (TOC)	MB		Storm Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			5/2/20 23:42:00	N	
KQ2005872-12	Carbon, Total Organic (TOC)	LCS		Storm Water	23.16 mg/L	10 mL	23.2 mg/L	1		0.50	93		5/3/20 00:38:00	N	
KQ2005872-13	Carbon, Total Organic (TOC)	LCS		Storm Water	23.49 mg/L	10 mL	23.5 mg/L	1		0.50	94		5/3/20 00:38:00	N	

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

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Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 678684 **Method/Testcode:** 9060A/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	T
KQ2005872-14	Carbon, Total Organic (TOC)	LCS		Storm Water	23.37 mg/L	10 mL	23.4 mg/L	1		0.50	93		5/3/20 00:38:00	N	
KQ2005872-15	Carbon, Total Organic (TOC)	MS	K2003404-002	Storm Water	25.86 mg/L	10 mL	103 mg/L	4		2.0	100		5/3/20 03:40:00	N	
KQ2005872-16	Carbon, Total Organic (TOC)	MS	K2003404-002	Storm Water	25.85 mg/L	10 mL	103 mg/L	4		2.0	100		5/3/20 03:40:00	N	
KQ2005872-17	Carbon, Total Organic (TOC)	MS	K2003404-002	Storm Water	26.09 mg/L	10 mL	104 mg/L	4		2.0	101		5/3/20 03:40:00	N	
KQ2005872-18	Carbon, Total Organic (TOC)	MS	K2003404-002	Storm Water	25.92 mg/L	10 mL	104 mg/L	4		2.0	100		5/3/20 03:40:00	N	
KQ2005872-19	Carbon, Total Organic (TOC)	DUP	K2003404-001	Storm Water	5.98 mg/L	10 mL	5.98 mg/L	1		0.50		5	5/3/20 01:49:00	N	
KQ2005872-20	Carbon, Total Organic (TOC)	TRP	K2003404-001	Storm Water	6.03 mg/L	10 mL	6.03 mg/L	1		0.50		3	5/3/20 01:49:00	N	
KQ2005872-21	Carbon, Total Organic (TOC)	QUAD	K2003404-001	Storm Water	6.04 mg/L	10 mL	6.04 mg/L	1		0.50		3	5/3/20 01:49:00	N	
KQ2005872-22	Carbon, Total Organic (TOC)	DUP	K2003404-002	Storm Water	3.37 mg/L	10 mL	3.37 mg/L	1		0.50		<1	5/3/20 02:44:00	N	
KQ2005872-23	Carbon, Total Organic (TOC)	TRP	K2003404-002	Storm Water	3.38 mg/L	10 mL	3.38 mg/L	1		0.50		<1	5/3/20 02:44:00	N	
KQ2005872-24	Carbon, Total Organic (TOC)	QUAD	K2003404-002	Storm Water	3.36 mg/L	10 mL	3.36 mg/L	1		0.50		<1	5/3/20 02:44:00	N	
KQ2005872-25	Carbon, Total Organic (TOC)	DUP	K2003404-003	Storm Water	3.27 mg/L	10 mL	3.27 mg/L	1		0.50		<1	5/3/20 04:50:00	N	
KQ2005872-26	Carbon, Total Organic (TOC)	TRP	K2003404-003	Storm Water	3.37 mg/L	10 mL	3.37 mg/L	1		0.50		2	5/3/20 04:50:00	N	
KQ2005872-27	Carbon, Total Organic (TOC)	QUAD	K2003404-003	Storm Water	3.36 mg/L	10 mL	3.36 mg/L	1		0.50		2	5/3/20 04:50:00	N	
KQ2005872-28	Carbon, Total Organic (TOC)	DUP	K2003404-004	Storm Water	3.22 mg/L	10 mL	3.22 mg/L	1		0.50		2	5/3/20 05:46:00	N	
KQ2005872-29	Carbon, Total Organic (TOC)	TRP	K2003404-004	Storm Water	3.18 mg/L	10 mL	3.18 mg/L	1		0.50		2	5/3/20 05:46:00	N	
KQ2005872-30	Carbon, Total Organic (TOC)	QUAD	K2003404-004	Storm Water	3.18 mg/L	10 mL	3.18 mg/L	1		0.50		2	5/3/20 05:46:00	N	
KQ2005872-31	Carbon, Total Organic (TOC)	DUP	K2003404-005	Storm Water	5.00 mg/L	10 mL	5.00 mg/L	1		0.50		<1	5/3/20 06:41:00	N	
KQ2005872-32	Carbon, Total Organic (TOC)	TRP	K2003404-005	Storm Water	5.03 mg/L	10 mL	5.03 mg/L	1		0.50		<1	5/3/20 06:41:00	N	
KQ2005872-33	Carbon, Total Organic (TOC)	QUAD	K2003404-005	Storm Water	5.02 mg/L	10 mL	5.02 mg/L	1		0.50		<1	5/3/20 06:41:00	N	
KQ2005872-34	Carbon, Total Organic (TOC)	DUP	K2003404-006	Storm Water	5.53 mg/L	10 mL	5.53 mg/L	1		0.50		<1	5/3/20 08:06:00	N	

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

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Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 678684 **Method/Testcode:** 9060A/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	T
KQ2005872-35	Carbon, Total Organic (TOC)	TRP	K2003404-006	Storm Water	5.60 mg/L	10 mL	5.60 mg/L	1		0.50		<1	5/3/20 08:06:00	N	
KQ2005872-36	Carbon, Total Organic (TOC)	QUAD	K2003404-006	Storm Water	5.58 mg/L	10 mL	5.58 mg/L	1		0.50		<1	5/3/20 08:06:00	N	
KQ2005872-37	Carbon, Total Organic (TOC)	DUP	K2003404-007	Storm Water	14.48 mg/L	10 mL	14.5 mg/L	1		0.50		<1	5/3/20 09:02:00	N	
KQ2005872-38	Carbon, Total Organic (TOC)	TRP	K2003404-007	Storm Water	14.70 mg/L	10 mL	14.7 mg/L	1		0.50		<1	5/3/20 09:02:00	N	
KQ2005872-39	Carbon, Total Organic (TOC)	QUAD	K2003404-007	Storm Water	14.47 mg/L	10 mL	14.5 mg/L	1		0.50		<1	5/3/20 09:02:00	N	
KQ2005872-40	Carbon, Total Organic (TOC)	DUP	K2003404-008	Storm Water	10.29 mg/L	10 mL	10.3 mg/L	1		0.50		<1	5/3/20 09:58:00	N	
KQ2005872-41	Carbon, Total Organic (TOC)	TRP	K2003404-008	Storm Water	10.39 mg/L	10 mL	10.4 mg/L	1		0.50		<1	5/3/20 09:58:00	N	
KQ2005872-42	Carbon, Total Organic (TOC)	QUAD	K2003404-008	Storm Water	10.45 mg/L	10 mL	10.4 mg/L	1		0.50		<1	5/3/20 09:58:00	N	

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# 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:** 678685 **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?
K2003417-001	Carbon, Total Organic	N/A		Water	3.58 mg/L	10 mL	3.58 mg/L	1	0.07	0.50			5/3/20 11:51:00	N
K2003417-002	Carbon, Total Organic	N/A		Water	2.17 mg/L	10 mL	2.17 mg/L	1	0.07	0.50			5/3/20 12:19:00	N
K2003417-003	Carbon, Total Organic	N/A		Water	2.13 mg/L	10 mL	2.13 mg/L	1	0.07	0.50			5/3/20 12:47:00	N
K2003417-004	Carbon, Total Organic	N/A		Water	2.11 mg/L	10 mL	2.11 mg/L	1	0.07	0.50			5/3/20 13:15:00	N
K2003417-005	Carbon, Total Organic	N/A		Water	1.99 mg/L	10 mL	1.99 mg/L	1	0.07	0.50			5/3/20 14:42:00	N
K2003418-001	Carbon, Total Organic	N/A		Water	3.73 mg/L	10 mL	3.73 mg/L	1	0.07	0.50			5/3/20 15:10:00	N
K2003418-003	Carbon, Total Organic	N/A		Water	2.68 mg/L	10 mL	2.68 mg/L	1	0.07	0.50			5/3/20 15:38:00	N
K2003475-001	Carbon, Total Organic	N/A		Water	3.01 mg/L	10 mL	3.01 mg/L	1	0.07	0.50			5/3/20 10:54:00	N
K2003486-001	Carbon, Total Organic	N/A		Water	0.54 mg/L	10 mL	0.54 mg/L	1	0.07	0.50			5/3/20 16:06:00	N
K2003486-002	Carbon, Total Organic	N/A		Water	0.91 mg/L	10 mL	0.91 mg/L	1	0.07	0.50			5/3/20 16:34:00	N
K2003486-003	Carbon, Total Organic	N/A		Water	0.79 mg/L	10 mL	0.79 mg/L	1	0.07	0.50			5/3/20 17:03:00	N
K2003486-004	Carbon, Total Organic	N/A		Water	0.86 mg/L	10 mL	0.86 mg/L	1	0.07	0.50			5/3/20 17:31:00	N
K2003509-001	Carbon, Total Organic	N/A		Water	2.18 mg/L	10 mL	2.18 mg/L	1	0.07	0.50			5/3/20 20:23:00	N
K2003513-001	Carbon, Total Organic	N/A		Water	3.24 mg/L	10 mL	65 mg/L	20	2	10			5/3/20 21:19:00	N
K2003542-001	Carbon, Total Organic	N/A		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/3/20 20:51:00	N
KQ2005873-01	Carbon, Total Organic	CCV		Water	25.55 mg/L	10 mL	25.5 mg/L	1					5/3/20 07:37:00	N
KQ2005873-02	Carbon, Total Organic	CCV		Water	25.27 mg/L	10 mL	25.3 mg/L	1					5/3/20 13:43:00	N
KQ2005873-03	Carbon, Total Organic	CCV		Water	25.39 mg/L	10 mL	25.4 mg/L	1					5/3/20 18:27:00	N
KQ2005873-04	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/3/20 07:52:00	N
KQ2005873-05	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/3/20 13:58:00	N
KQ2005873-06	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/3/20 18:42:00	N
KQ2005873-07	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/3/20 14:13:00	N
KQ2005873-08	Carbon, Total Organic	LCS		Water	22.85 mg/L	10 mL	22.9 mg/L	1	0.07	0.50	91		5/3/20 14:27:00	N
KQ2005873-09	Carbon, Total Organic	MS	K2003475-001	Water	28.57 mg/L	10 mL	28.6 mg/L	1	0.07	0.50	102		5/3/20 11:22:00	N
KQ2005873-10	Carbon, Total Organic	DUP	K2003417-001	Water	3.50 mg/L	10 mL	3.50 mg/L	1	0.07	0.50		2	5/3/20 11:51:00	N
KQ2005873-11	Carbon, Total Organic	DUP	K2003417-002	Water	2.13 mg/L	10 mL	2.13 mg/L	1	0.07	0.50		2	5/3/20 12:19:00	N
KQ2005873-12	Carbon, Total Organic	DUP	K2003417-003	Water	2.14 mg/L	10 mL	2.14 mg/L	1	0.07	0.50		<1	5/3/20 12:47:00	N
KQ2005873-13	Carbon, Total Organic	DUP	K2003417-004	Water	2.06 mg/L	10 mL	2.06 mg/L	1	0.07	0.50		3	5/3/20 13:15:00	N
KQ2005873-14	Carbon, Total Organic	DUP	K2003417-005	Water	1.88 mg/L	10 mL	1.88 mg/L	1	0.07	0.50		6	5/3/20 14:42:00	N
KQ2005873-15	Carbon, Total Organic	DUP	K2003418-001	Water	3.77 mg/L	10 mL	3.77 mg/L	1	0.07	0.50		1	5/3/20 15:10:00	N
KQ2005873-16	Carbon, Total Organic	DUP	K2003418-003	Water	2.68 mg/L	10 mL	2.68 mg/L	1	0.07	0.50		<1	5/3/20 15:38:00	N
KQ2005873-17	Carbon, Total Organic	DUP	K2003475-001	Water	2.80 mg/L	10 mL	2.80 mg/L	1	0.07	0.50		7	5/3/20 10:54:00	N
KQ2005873-18	Carbon, Total Organic	DUP	K2003486-001	Water	0.57 mg/L	10 mL	0.57 mg/L	1	0.07	0.50		7	5/3/20 16:06:00	N
KQ2005873-19	Carbon, Total Organic	DUP	K2003486-002	Water	0.88 mg/L	10 mL	0.88 mg/L	1	0.07	0.50		3	5/3/20 16:34:00	N
KQ2005873-20	Carbon, Total Organic	DUP	K2003486-003	Water	0.81 mg/L	10 mL	0.81 mg/L	1	0.07	0.50		1	5/3/20 17:03:00	N
KQ2005873-21	Carbon, Total Organic	DUP	K2003486-004	Water	0.86 mg/L	10 mL	0.86 mg/L	1	0.07	0.50		<1	5/3/20 17:31:00	N

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

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Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 678685 **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?
KQ2005873-22	Carbon, Total Organic	CCV		Water	25.22 mg/L	10 mL	25.2 mg/L	1					5/3/20 21:47:00	N
KQ2005873-23	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/3/20 22:02:00	N
KQ2005873-24	Carbon, Total Organic	DUP	K2003509-001	Water	2.08 mg/L	10 mL	2.08 mg/L	1	0.07	0.50		5	5/3/20 20:23:00	N
KQ2005873-25	Carbon, Total Organic	DUP	K2003513-001	Water	3.19 mg/L	10 mL	64 mg/L	20	2	10		2	5/3/20 21:19:00	N
KQ2005873-26	Carbon, Total Organic	DUP	K2003542-001	Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	5/3/20 20:51:00	N

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Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 678686 **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?	T
K2003418-002	Carbon, Dissolved Organic (DOC)	N/A		Water	3.57 mg/L	10 mL	3.57 mg/L	1	0.07	0.50			5/3/20 17:59:00	N	
K2003418-004	Carbon, Dissolved Organic (DOC)	N/A		Water	2.58 mg/L	10 mL	2.58 mg/L	1	0.07	0.50			5/3/20 19:25:00	N	
KQ2005874-01	Carbon, Dissolved Organic (DOC)	CCV		Water	25.27 mg/L	10 mL	25.3 mg/L	1					5/3/20 13:43:00	N	
KQ2005874-02	Carbon, Dissolved Organic (DOC)	CCV		Water	25.39 mg/L	10 mL	25.4 mg/L	1					5/3/20 18:27:00	N	
KQ2005874-03	Carbon, Dissolved Organic (DOC)	CCV		Water	25.22 mg/L	10 mL	25.2 mg/L	1					5/3/20 21:47:00	N	
KQ2005874-04	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/3/20 13:58:00	N	
KQ2005874-05	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/3/20 18:42:00	N	
KQ2005874-06	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/3/20 22:02:00	N	
KQ2005874-07	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/3/20 19:54:00	N	
KQ2005874-08	Carbon, Dissolved Organic (DOC)	LCS		Water	22.72 mg/L	10 mL	22.7 mg/L	1	0.07	0.50	91		5/3/20 20:08:00	N	
KQ2005874-09	Carbon, Dissolved Organic (DOC)	MS	K2003418-002	Water	29.78 mg/L	10 mL	29.8 mg/L	1	0.07	0.50	105		5/3/20 18:56:00	N	
KQ2005874-10	Carbon, Dissolved Organic (DOC)	DUP	K2003418-002	Water	3.61 mg/L	10 mL	3.61 mg/L	1	0.07	0.50		1	5/3/20 17:59:00	N	
KQ2005874-11	Carbon, Dissolved Organic (DOC)	DUP	K2003418-004	Water	2.58 mg/L	10 mL	2.58 mg/L	1	0.07	0.50		<1	5/3/20 19:25:00	N	

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

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TOC: 678684, 678685
DOC: 678686

Schedule: 05022020

Version: 2
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2020/05/02 14:08 - Saturday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use
(Clean)	Clean	Clean		1	True
(Clean)	Clean	Clean		1	True
(Clean)	Clean	Clean		1	True
(Blank)	Blank	Reagent/Acid Blank		1	True
15	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Cal Standard	[TOC] CAS_salt_010711 CAL [DI Water]	CAS_salt_010711 (CAS_salt_010711)	1	True
A	Cal Standard	[TOC] CAS_salt_010711 CAL [0.500 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
A	Cal Standard	[TOC] CAS_salt_010711 CAL [1.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
A	Cal Standard	[TOC] CAS_salt_010711 CAL [5.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Cal Standard	[TOC] CAS_salt_010711 CAL [10 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Cal Standard	[TOC] CAS_salt_010711 CAL [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Cal Standard	[TOC] CAS_salt_010711 CAL [50 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
15	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	4	True
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	4	True
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True
3	Sample	K2003404-001.25	CAS_salt_010711 (CAS_salt_010711)	4	True
4	Sample	K2003404-002.25	CAS_salt_010711 (CAS_salt_010711)	4	True
5	Sample	K2003404-002.25 ms 4x	CAS_salt_010711 (CAS_salt_010711)	4	True
6	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True
7	Sample	K2003404-003.25	CAS_salt_010711 (CAS_salt_010711)	4	True
8	Sample	K2003404-004.25	CAS_salt_010711 (CAS_salt_010711)	4	True
9	Sample	K2003404-005.25	CAS_salt_010711 (CAS_salt_010711)	4	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
10	Sample	K2003404-006.25	CAS_salt_010711 (CAS_salt_010711)	4	True
11	Sample	K2003404-007.25	CAS_salt_010711 (CAS_salt_010711)	4	True
12	Sample	K2003404-008.25	CAS_salt_010711 (CAS_salt_010711)	4	True
13	Sample	K2003475-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
14	Sample	K2003475-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True
15	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True
16	Sample	K2003417-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
17	Sample	K2003417-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True
18	Sample	K2003417-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True
19	Sample	K2003417-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
21	Sample	K2003417-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True
22	Sample	K2003418-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
23	Sample	K2003418-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True
24	Sample	K2003486-001.03	CAS_salt_010711 (CAS_salt_010711)	2	True
25	Sample	K2003486-002.03	CAS_salt_010711 (CAS_salt_010711)	2	True
26	Sample	K2003486-003.03	CAS_salt_010711 (CAS_salt_010711)	2	True
27	Sample	K2003486-004.03	CAS_salt_010711 (CAS_salt_010711)	2	True
28	Sample	K2003418-002.02 doc	CAS_salt_010711 (CAS_salt_010711)	2	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
29	Sample	K2003418-002.02 ms doc	CAS_salt_010711 (CAS_salt_010711)	1	True
30	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True
31	Sample	K2003418-004.02 doc	CAS_salt_010711 (CAS_salt_010711)	2	True

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Schedule: 05022020

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use
32	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	1	True
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
33	Sample	K2003509-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
34	Sample	K2003542-001.03	CAS_salt_010711 (CAS_salt_010711)	2	True
35	Sample	K2003513-001.02 20x	CAS_salt_010711 (CAS_salt_010711)	2	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
					False

Fusion Report - 05022020
Saturday, May 02, 2020 07:08 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/05/05 09:20 - Tuesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	05022020	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)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/05/02 19:08

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	14.01	19.42	5.41	49.61	05:27
2	TC Clean	12.79	16.92	4.14	49.79	07:18
3	TC Clean	4.87	8.84	3.97	49.82	07:01
4	TC Clean	2.44	6.57	4.13	49.81	07:00

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/05/02 19:40

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.11	5.09	3.98	49.65	05:15
2	TC Clean	6.53	10.54	4.01	49.86	07:17
3	TC Clean	2.02	6.03	4.01	49.88	07:03
4	TC Clean	1.74	5.75	4.01	50.01	03:58

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Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/05/02 20:08

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.81	4.84	4.04	49.54	05:23
2	TC Clean	5.06	9.11	4.05	50.00	04:07
3	TC Clean	2.05	6.12	4.06	49.96	03:47
4	TC Clean	1.58	5.63	4.05	49.96	03:48

Sample Type: Blank (Creating v1379) — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(blank)		Reagent/Acid Blank	2020/05/02 20:30

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.91	4.92	4.01	49.52	05:14
2	TC Clean	5.28	9.38	4.09	50.03	04:02
3	TC Clean	2.20	6.27	4.07	49.99	03:46
4	TC Clean	1.74	6.07	4.33	49.93	03:53
5	Reagent Blank	7.17	11.36	4.18	49.97	05:04
6	Acid Blank	1.36	5.48	4.11	49.61	05:30

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	15	TOC	RB	0.7001 ppm	0.0000 ppm	0.0000%	2020/05/02 21:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7001	7.0007	12.22	16.46	4.24	49.90	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 7.5140 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v32)

Sample Type: Calibration Standard: CAS_salt_010711 CAL (Creating calibration — From Schedule Version 2

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CAS_salt_010711 v33)

	Pos	BAT	Concentration (ppm)	STD Conc	Dil	Sample ID	Result (Abs)	Std. Dev. (Abs)	RSD	Start Time
◉	D	TOC	0.0000	0 ppmC	1:1	[TOC] CAS_salt_010711 CAL [DI Water]	9.3880	0.0000	0%	2020/05/02 21:18
◉	A	TOC	0.5000	5 ppmC	1:10	[TOC] CAS_salt_010711 CAL [0.500 ppm]	13.0770	0.0000	0%	2020/05/02 21:33
◉	A	TOC	1.0000	5 ppmC	1:5	[TOC] CAS_salt_010711 CAL [1.0 ppm]	16.2650	0.0000	0%	2020/05/02 21:47
◉	A	TOC	5.0000	5 ppmC	1:1	[TOC] CAS_salt_010711 CAL [5.0 ppm]	45.8600	0.0000	0%	2020/05/02 22:01
◉	B	TOC	10.0000	50 ppmC	1:5	[TOC] CAS_salt_010711 CAL [10 ppm]	83.1130	0.0000	0%	2020/05/02 22:15
◉	B	TOC	25.0000	50 ppmC	1:2	[TOC] CAS_salt_010711 CAL [25 ppm]	192.2330	0.0000	0%	2020/05/02 22:30
◉	B	TOC	50.0000	50 ppmC	1:1	[TOC] CAS_salt_010711 CAL [50 ppm]	360.0980	0.0000	0%	2020/05/02 22:44

Pos	Base Analysis Type	ID	Rep #	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	DI Water	1	9.39	13.52	4.14	49.95	10:29
A	TOC	0.500 ppm	1	13.08	17.13	4.06	49.99	10:31
A	TOC	1.0 ppm	1	16.26	20.37	4.10	49.97	10:32
A	TOC	5.0 ppm	1	45.86	49.85	3.99	50.00	10:30
B	TOC	10 ppm	1	83.11	87.11	4.00	50.03	10:32
B	TOC	25 ppm	1	192.23	196.19	3.96	50.01	10:30
B	TOC	50 ppm	1	360.10	364.12	4.03	49.99	10:30

Completion State
Success - All Update Conditions met

Method
CAS_salt_010711 (v4)

Success Action
Auto (always)

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	15	TOC	RB	0.0371 ppm	0.0000 ppm	0.0000%	2020/05/02 22:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

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1	TOC	0.0371	0.3706	10.42	14.46	4.05	50.02	10:35

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	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)	25.5833 ppm (PASS)	0.0000 ppm	0%	2020/05/02 23:13

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.5833	255.8330	191.03	194.94	3.92	50.00	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	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%	2020/05/02 23:28

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	9.38	13.39	4.00	50.01	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	1	TOC	MB1	0.0000 ppm	0.0000 ppm	0.0000%	2020/05/02 23:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	9.02	12.90	3.88	50.00	10:27
2	TOC	0.0000	0.0000	8.59	12.63	4.04	50.00	10:27
3	TOC	0.0000	0.0000	8.52	12.59	4.07	50.02	10:29
4	TOC	0.0000	0.0000	8.55	12.55	4.00	49.97	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC)	CAS_salt_010711	CAS_salt_010711

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(v1379) (v4) (v33)

Sample Type: Check Standard --> LCS From Schedule Version 2

	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)	23.3179 ppm (PASS)	0.1403 ppm	0.60%	2020/05/03 00:38

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	23.2613	232.6130	174.66	178.62	3.96	49.99	10:29
C	TOC	25.0 ppm	2	23.1584	231.5841	173.94	178.06	4.12	50.00	10:26
C	TOC	25.0 ppm	3	23.4855	234.8552	176.24	180.41	4.17	49.99	10:28
C	TOC	25.0 ppm	4	23.3663	233.6631	175.40	179.40	4.00	50.01	10:24

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	2	TOC	ICS	0.2731 ppm	0.0000 ppm	0.0000%	2020/05/03 01:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2731	2.7306	12.08	16.20	4.12	49.96	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	3	TOC	K2003404-001.25	5.9273 ppm	0.1810 ppm	3.0500%	2020/05/03 01:49

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.6590	56.5899	50.03	54.14	4.11	49.94	10:27
2	TOC	5.9782	59.7816	52.28	56.15	3.87	49.91	10:26
3	TOC	6.0292	60.2925	52.64	56.59	3.95	49.91	10:24
4	TOC	6.0429	60.4287	52.74	56.71	3.97	49.87	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	4	TOC	K2003404-002.25	3.3794 ppm	0.0190 ppm	0.5600%	2020/05/03 02:44

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Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.4035	34.0355	34.14	38.00	3.86	49.89	10:25
2	TOC	3.3706	33.7063	33.91	37.66	3.75	49.88	10:29
3	TOC	3.3840	33.8397	34.00	37.91	3.91	49.86	10:27
4	TOC	3.3593	33.5927	33.83	37.64	3.82	49.84	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	5	TOC	K2003404-002.25 ms 4x	25.9323 ppm	0.1127 ppm	0.4300%	2020/05/03 03:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	25.9228	259.2279	192.82	196.74	3.92	49.87	10:24
2	TOC	26.0944	260.9436	194.03	198.07	4.04	49.86	10:29
3	TOC	25.8501	258.5013	192.31	196.34	4.03	49.92	10:25
4	TOC	25.8618	258.6176	192.39	196.51	4.12	49.86	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	6	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/05/03 04:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	9.72	13.70	3.98	49.88	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	7	TOC	K2003404-003.25	3.3177 ppm	0.0533 ppm	1.6100%	2020/05/03 04:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.2709	32.7086	33.20	37.16	3.96	49.90	10:25
2	TOC	3.2727	32.7270	33.22	37.22	4.00	49.91	10:25
3	TOC	3.3708	33.7077	33.91	37.89	3.98	49.90	10:29
4	TOC	3.3564	33.5643	33.81	37.86	4.06	49.94	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	8	TOC	K2003404-004.25	3.2153 ppm	0.0506 ppm	1.5700%	2020/05/03 05:46

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Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.2853	32.8534	33.31	37.23	3.92	49.92	10:29
2	TOC	3.2195	32.1949	32.84	36.85	4.00	49.95	10:28
3	TOC	3.1789	31.7890	32.56	36.47	3.91	49.94	10:23
4	TOC	3.1775	31.7748	32.55	36.56	4.01	49.94	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	9	TOC	K2003404-005.25	5.0236 ppm	0.0191 ppm	0.3800%	2020/05/03 06:41

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.0437	50.4365	45.70	49.69	3.99	49.95	10:24
2	TOC	5.0002	50.0023	45.39	49.36	3.97	49.95	10:27
3	TOC	5.0336	50.3358	45.63	49.55	3.93	49.96	10:31
4	TOC	5.0170	50.1697	45.51	49.53	4.02	49.96	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	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)	25.5465 ppm (PASS)	0.0000 ppm	0%	2020/05/03 07:37

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.5465	255.4654	190.77	194.69	3.92	49.97	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	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%	2020/05/03 07:52

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	9.16	13.03	3.86	49.97	10:34

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Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	10	TOC	K2003404-006.25	5.5617 ppm	0.0345 ppm	0.6200%	2020/05/03 08:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.5311	55.3113	49.13	53.16	4.03	49.96	10:27
2	TOC	5.5337	55.3368	49.15	53.19	4.04	49.94	10:29
3	TOC	5.5994	55.9939	49.61	53.53	3.91	49.97	10:28
4	TOC	5.5826	55.8264	49.50	53.37	3.88	49.94	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	11	TOC	K2003404-007.25	14.5236 ppm	0.1157 ppm	0.8000%	2020/05/03 09:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.4514	144.5143	111.99	116.02	4.03	49.95	10:31
2	TOC	14.4771	144.7712	112.17	116.08	3.91	49.94	10:27
3	TOC	14.6964	146.9638	113.71	117.62	3.91	49.94	10:24
4	TOC	14.4696	144.6960	112.12	116.22	4.11	49.93	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	12	TOC	K2003404-008.25	10.3457 ppm	0.0923 ppm	0.8900%	2020/05/03 09:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	10.2481	102.4807	82.37	86.46	4.09	49.98	10:30
2	TOC	10.2912	102.9122	82.67	86.72	4.05	49.95	10:27
3	TOC	10.3945	103.9453	83.40	87.36	3.95	49.96	10:29
4	TOC	10.4490	104.4902	83.79	87.60	3.82	49.93	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	13	TOC	K2003475-001.01	2.9091 ppm	0.1483 ppm	5.1000%	2020/05/03 10:54

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

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#	Analysis Type			(Abs)		(Abs)	(psig)	Time
1	TOC	3.0140	30.1400	31.39	35.24	3.84	49.94	10:30
2	TOC	2.8042	28.0425	29.92	33.87	3.95	49.94	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	14	TOC	K2003475-001.01 ms	28.5668 ppm	0.0000 ppm	0.0000%	2020/05/03 11:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	28.5668	285.6679	211.45	215.29	3.84	49.90	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	15	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/05/03 11:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.92	13.01	4.08	49.90	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	16	TOC	K2003417-001.01	3.5430 ppm	0.0541 ppm	1.5300%	2020/05/03 11:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.5812	35.8123	35.39	39.32	3.93	49.92	10:28
2	TOC	3.5047	35.0473	34.85	38.85	4.00	49.92	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	17	TOC	K2003417-002.01	2.1517 ppm	0.0238 ppm	1.1100%	2020/05/03 12:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1685	21.6847	25.44	29.43	4.00	49.94	10:28
2	TOC	2.1348	21.3484	25.20	29.22	4.02	49.94	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

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

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◈	18	TOC	K2003417-003.01	2.1345 ppm	0.0105 ppm	0.4900%	2020/05/03 12:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1270	21.2703	25.14	29.09	3.94	49.91	10:28
2	TOC	2.1419	21.4193	25.25	29.32	4.07	49.93	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	19	TOC	K2003417-004.01	2.0845 ppm	0.0379 ppm	1.8200%	2020/05/03 13:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1113	21.1128	25.03	28.96	3.93	49.89	10:27
2	TOC	2.0576	20.5763	24.66	28.64	3.98	49.92	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	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)	25.2700 ppm (PASS)	0.0000 ppm	0%	2020/05/03 13:43

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.2700	252.6995	188.82	192.75	3.93	49.88	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	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%	2020/05/03 13:58

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	9.03	12.99	3.96	49.91	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)	0 ppmC

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Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	20	TOC	MB2	0.0000 ppm	0.0000 ppm	0.0000%	2020/05/03 14:13

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.99	12.08	4.09	49.93	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

Sample Type: Check Standard --> LCS From Schedule Version 2

	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)	22.8520 ppm (PASS)	0.0000 ppm	0%	2020/05/03 14:27

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	22.8520	228.5202	171.78	175.86	4.08	49.91	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	21	TOC	K2003417-005.01	1.9382 ppm	0.0802 ppm	4.1400%	2020/05/03 14:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9949	19.9491	24.21	28.21	4.00	49.95	10:29
2	TOC	1.8815	18.8152	23.42	27.50	4.09	49.91	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	22	TOC	K2003418-001.01	3.7493 ppm	0.0303 ppm	0.8100%	2020/05/03 15:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.7278	37.2782	36.43	40.62	4.19	49.92	10:26
2	TOC	3.7707	37.7068	36.73	40.67	3.95	49.89	10:27

Dilution Blank Contribution Method Calibration

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1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	23	TOC	K2003418-003.01	2.6799 ppm	0.0006 ppm	0.0200%	2020/05/03 15:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.6804	26.8035	29.04	32.95	3.90	49.92	10:26
2	TOC	2.6795	26.7950	29.04	33.04	4.01	49.92	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	24	TOC	K2003486-001.03	0.5536 ppm	0.0256 ppm	4.6200%	2020/05/03 16:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5355	5.3546	13.93	17.91	3.98	49.90	10:28
2	TOC	0.5717	5.7165	14.18	18.07	3.88	49.90	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	25	TOC	K2003486-002.03	0.8967 ppm	0.0186 ppm	2.0700%	2020/05/03 16:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9098	9.0983	16.57	20.51	3.94	49.86	10:30
2	TOC	0.8836	8.8358	16.38	20.50	4.11	49.84	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	26	TOC	K2003486-003.03	0.7994 ppm	0.0084 ppm	1.0500%	2020/05/03 17:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7935	7.9346	15.75	19.83	4.08	49.85	10:28
2	TOC	0.8054	8.0538	15.83	19.94	4.11	49.81	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	27	TOC	K2003486-004.03	0.8602 ppm	0.0051 ppm	0.5900%	2020/05/03 17:31

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Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8566	8.5661	16.19	20.27	4.08	49.84	10:32
2	TOC	0.8639	8.6385	16.24	20.13	3.88	49.83	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	28	TOC	K2003418-002.02 doc	3.5881 ppm	0.0256 ppm	0.7100%	2020/05/03 17:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.5700	35.7002	35.31	39.23	3.92	49.82	10:27
2	TOC	3.6062	36.0620	35.57	39.40	3.84	49.85	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	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)	25.3937 ppm (PASS)	0.0000 ppm	0%	2020/05/03 18:27

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.3937	253.9370	189.69	193.73	4.03	49.85	10:35

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	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%	2020/05/03 18:42

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.96	11.95	3.99	49.85	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)	0 ppmC

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Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	29	TOC	K2003418-002.02 ms doc	29.7772 ppm	0.0000 ppm	0.0000%	2020/05/03 18:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	29.7772	297.7718	219.98	223.98	3.99	49.86	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	30	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/05/03 19:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.26	12.22	3.95	49.87	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	31	TOC	K2003418-004.02 doc	2.5782 ppm	0.0026 ppm	0.1000%	2020/05/03 19:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.5800	25.8002	28.34	32.31	3.98	49.86	10:31
2	TOC	2.5763	25.7633	28.31	32.33	4.02	49.89	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	32	TOC	MB3	0.0000 ppm	0.0000 ppm	0.0000%	2020/05/03 19:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.71	11.74	4.03	49.89	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

Sample Type: Check Standard --> LCS From Schedule Version 2

	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)	22.7163 ppm (PASS)	0.0000 ppm	0%	2020/05/03 20:08

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Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	22.7163	227.1635	170.82	175.06	4.24	49.89	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)	25 ppmC

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	33	TOC	K2003509-001.01	2.1338 ppm	0.0702 ppm	3.2900%	2020/05/03 20:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1835	21.8351	25.54	29.64	4.10	49.92	10:28
2	TOC	2.0842	20.8417	24.84	28.88	4.04	49.91	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	34	TOC	K2003542-001.03	0.0000 ppm	0.0000 ppm	0.0000%	2020/05/03 20:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.26	12.24	3.98	49.96	10:29
2	TOC	0.0000	0.0000	7.86	11.89	4.03	50.00	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	35	TOC	K2003513-001.02 20x	3.2188 ppm	0.0366 ppm	1.1400%	2020/05/03 21:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.2447	32.4475	33.02	37.02	4.00	49.97	10:27
2	TOC	3.1929	31.9295	32.66	36.71	4.05	50.01	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 10.1569 (IC) (v1379)	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 2

	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)	25.2187 ppm	0.0000 ppm	0%	2020/05/03 21:47

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							(PASS)			

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.2187	252.1872	188.46	192.50	4.04	50.03	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	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%	2020/05/03 22:02

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.10	11.93	3.83	50.01	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v33)	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
v1378	1.7597	1.6520	0.0000	0.0000	0.0000	2020/04/30 18:27	Fusion1 (Fusion1)
v1379	2.3910	1.3620	0.0000	0.0000	0.0000	2020/05/02 21:03	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		

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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

Name: CAS_salt_010711 (TOC)

Version: v33

Ver Creation: 2020/05/02 22:58

Comment:

Operator: Fusion1 (Fusion1)

Basic Analysis Type: TOC

Calibration curve formula: TOC: y = 7.047x + 10.754

r^2 value: TOC: r^2 = 0.99955

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	9.3880	0.0000		2020/05/02 21:31
0.500 ppm	13.0770	0.5000		2020/05/02 21:46
1.0 ppm	16.2650	1.0000		2020/05/02 22:00
5.0 ppm	45.8600	5.0000		2020/05/02 22:14
10 ppm	83.1130	10.0000		2020/05/02 22:29
25 ppm	192.2330	25.0000		2020/05/02 22:43
50 ppm	360.0980	50.0000		2020/05/02 22:57

Methods

Name: CAS_salt_010711 (TOC)

Version: v4

Ver Creation: 2019/02/21 17:57

Comment:

Operator: Fusion1 (Fusion1)

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

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

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SystemFlow	500 ml/min	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	2020/05/03 22:17

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ALS Environmental

StarLIMS Run: 678684, 678685, 678686

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: 5/2/20

ICAL ID: 19-GEN-16-G->L

ICS ID: 19-GEN-8-4-G

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-08-15-E

21 % H3PO4: 19-GEN-08-15-A

Equipment ID: K-TOC-03

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

FILTER ID: 16967789

Analyzed By: BKP	Date Analyzed: 5/7/20
Reviewed By:	Date Reviewed: 5/6/20

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
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May 21, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20050176**

Laboratory Results for: **Longhorn GW Treatment Plant Monthly Effluent Samples**

Dear Marcia,

ALS Environmental received 3 sample(s) on May 06, 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: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
Work Order: HS20050176

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20050176-01	LH18/24-SP650_050520	Water		05-May-2020 14:00	06-May-2020 09:00	☐
HS20050176-02	LH18/24-SP650_050520_BIX	Water		05-May-2020 14:00	06-May-2020 09:00	☐
HS20050176-03	Trip Blank	Water	CG-041420-11	05-May-2020 14:00	06-May-2020 09:00	☐

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
Work Order: HS20050176

Work Order Comments

• Analysis of Perchlorate was performed by ALS Houston TX, High Resolution. Laboratory. Final report attached

GCMS Semivolatiles by Method SW8270SIM

Batch ID: 153402

Sample ID: LH18/24-SP650_050520 (HS20050176-01)

• The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: MBLK-153402

• One or more surrogate recoveries were above the upper control limits. No target analytes were detected in the sample. The high surrogate recoveries did not impact the non-detect results for target analytes.

Sample ID: LCS/LCSD-153402

• An LCS/LCSD was performed as batch quality control.

GCMS Volatiles by Method SW8260

Batch ID: R361200

Sample ID: LH18/24-SP650_050520 (HS20050176-01MSD)

• MS/MSD RPD recovered above the RPD limits for 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, Naphthalene

Metals by Method SW6020

Batch ID: 153375

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

WetChemistry by Method SW7196

Batch ID: R361188

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

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS20050176

Sample ID: LH18/24-SP650_050520 Lab ID:HS20050176-01

Collection Date: 05-May-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 16:21
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	06-May-2020 16:21
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 16:21
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 16:21
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-May-2020 16:21
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	06-May-2020 16:21
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	06-May-2020 16:21
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 16:21
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 16:21
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	06-May-2020 16:21
1,2-Dichloroethane	**0.94**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	06-May-2020 16:21
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	06-May-2020 16:21
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-May-2020 16:21
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-May-2020 16:21
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 16:21
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	06-May-2020 16:21
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	06-May-2020 16:21
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	06-May-2020 16:21
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	06-May-2020 16:21
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	06-May-2020 16:21
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 16:21
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-May-2020 16:21
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 16:21
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 16:21
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	06-May-2020 16:21
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	06-May-2020 16:21
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	06-May-2020 16:21
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	06-May-2020 16:21
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 16:21

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

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS20050176

Sample ID: LH18/24-SP650_050520 Lab ID:HS20050176-01

Collection Date: 05-May-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 16:21
cis-1,2-Dichloroethene	**21**		**0.20**	**0.50**	**1.0**	**UG/L**	1	06-May-2020 16:21
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	06-May-2020 16:21
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 16:21
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	06-May-2020 16:21
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	06-May-2020 16:21
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	06-May-2020 16:21
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-May-2020 16:21
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 16:21
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 16:21
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 16:21
Trichloroethene	**3.8**		**0.20**	**0.50**	**1.0**	**UG/L**	1	06-May-2020 16:21
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 16:21
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 16:21
Surr: 1,2-Dichloroethane-d4	*92.1*			**0**	*81-118*	*%REC*	*1*	*06-May-2020 16:21*
Surr: 4-Bromofluorobenzene	*93.8*			**0**	*85-114*	*%REC*	*1*	*06-May-2020 16:21*
Surr: Dibromofluoromethane	*90.7*			**0**	*80-119*	*%REC*	*1*	*06-May-2020 16:21*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*06-May-2020 16:21*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 11-May-2020		Analyst: ACN
1,4-Dioxane	**34**	a	**1.0**	**0**	**1.0**	**ug/L**	100	14-May-2020 17:53
Surr: 2-Fluorobiphenyl	*0*	*S*		0	*40-140*	*%REC*	*100*	*14-May-2020 17:53*
Surr: 4-Terphenyl-d14	*0*	*S*		0	*40-140*	*%REC*	*100*	*14-May-2020 17:53*
Surr: Nitrobenzene-d5	*0*	*S*		0	*40-140*	*%REC*	*100*	*14-May-2020 17:53*
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 08-May-2020		Analyst: JC
Barium	**0.0644**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	11-May-2020 14:56
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	11-May-2020 14:56
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	11-May-2020 14:56
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	11-May-2020 14:56

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

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS20050176

Sample ID: LH18/24-SP650_050520 Lab ID:HS20050176-01

Collection Date: 05-May-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
HEXAVALENT CHROMIUM BY SW7196A		**Method:SW7196**						Analyst: TH
Chromium, Hexavalent	0.0100	U	0.00600	0.0100	0.0100	mg/L	1	06-May-2020 13:30

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

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS20050176

Sample ID: LH18/24-SP650_050520_BIX Lab ID:HS20050176-02

Collection Date: 05-May-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	21-May-2020 10:37

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

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS20050176

Sample ID: Trip Blank Lab ID:HS20050176-03

Collection Date: 05-May-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	06-May-2020 15:57
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-May-2020 15:57
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	06-May-2020 15:57
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	06-May-2020 15:57
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	06-May-2020 15:57
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	06-May-2020 15:57
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-May-2020 15:57
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-May-2020 15:57
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	06-May-2020 15:57
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	06-May-2020 15:57
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	06-May-2020 15:57
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	06-May-2020 15:57
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	06-May-2020 15:57
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-May-2020 15:57
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	06-May-2020 15:57
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	06-May-2020 15:57
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	06-May-2020 15:57
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	06-May-2020 15:57
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57

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

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS20050176

Sample ID: Trip Blank Lab ID:HS20050176-03

Collection Date: 05-May-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	06-May-2020 15:57
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	06-May-2020 15:57
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	06-May-2020 15:57
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	06-May-2020 15:57
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	06-May-2020 15:57
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	06-May-2020 15:57
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	06-May-2020 15:57
Surr: 1,2-Dichloroethane-d4	*91.8*			**0**	*81-118*	*%REC*	*1*	*06-May-2020 15:57*
Surr: 4-Bromofluorobenzene	*91.0*			**0**	*85-114*	*%REC*	*1*	*06-May-2020 15:57*
Surr: Dibromofluoromethane	*90.8*			**0**	*80-119*	*%REC*	*1*	*06-May-2020 15:57*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*06-May-2020 15:57*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20050176

Batch ID: 153375 **Start Date:** 08 May 2020 09:30 **End Date:** 08 May 2020 13:30
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20050176-01		10 (mL)	10 (mL)	1

Batch ID: 153402 **Start Date:** 11 May 2020 07:00 **End Date:** 11 May 2020 12:30
Method: SV AQ SEP FUN EXTRACT-LOWLEV - 3510C **Prep Code:** 3510_B_SIM

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20050176-01	1	1000 (mL)	1 (mL)	0.001

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20050176

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 153375 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Water	
HS20050176-01	LH18/24-SP650_050520	05 May 2020 14:00		08 May 2020 13:30	11 May 2020 14:56	1
Batch ID: 153402 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Water	
HS20050176-01	LH18/24-SP650_050520	05 May 2020 14:00		11 May 2020 11:44	14 May 2020 17:53	100
Batch ID: R361188 (0)	**Test Name :** HEXAVALENT CHROMIUM BY SW7196A				**Matrix:** Water	
HS20050176-01	LH18/24-SP650_050520	05 May 2020 14:00			06 May 2020 13:30	1
Batch ID: R361200 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20050176-01	LH18/24-SP650_050520	05 May 2020 14:00			06 May 2020 16:21	1
HS20050176-03	Trip Blank	05 May 2020 14:00			06 May 2020 15:57	1
Batch ID: R361905 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS20050176-02	LH18/24-SP650_050520_BIX	05 May 2020 14:00			21 May 2020 10:37	1

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20050176

QC BATCH REPORT

Batch ID: 153375 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-153375** Units: **mg/L** Analysis Date: **11-May-2020 14:51**
Client ID: Run ID: **ICPMS05_361332** SeqNo: **5580067** PrepDate: **08-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.00250	0.00500								U
Lead	0.00100	0.00500								U
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U

LCS Sample ID: **LCS-153375** Units: **mg/L** Analysis Date: **11-May-2020 14:53**
Client ID: Run ID: **ICPMS05_361332** SeqNo: **5580068** PrepDate: **08-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.04753	0.00500	0.05	0	95.1	86 - 114				
Lead	0.04531	0.00500	0.05	0	90.6	88 - 115				
Selenium	0.0481	0.00500	0.05	0	96.2	80 - 120				
Silver	0.05004	0.00500	0.05	0	100	85 - 116				

MS Sample ID: **HS20050176-01MS** Units: **mg/L** Analysis Date: **11-May-2020 15:00**
Client ID: **LH18/24-SP650_050520** Run ID: **ICPMS05_361332** SeqNo: **5580071** PrepDate: **08-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.1113	0.00500	0.05	0.06443	93.7	86 - 114				
Lead	0.04493	0.00500	0.05	0.000183	89.5	88 - 115				
Selenium	0.04955	0.00500	0.05	0.000589	97.9	80 - 120				
Silver	0.04705	0.00500	0.05	-0.000056	94.2	85 - 116				

MSD Sample ID: **HS20050176-01MSD** Units: **mg/L** Analysis Date: **11-May-2020 15:03**
Client ID: **LH18/24-SP650_050520** Run ID: **ICPMS05_361332** SeqNo: **5580072** PrepDate: **08-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.118	0.00500	0.05	0.06443	107	86 - 114	0.1113	5.87	20	
Lead	0.04828	0.00500	0.05	0.000183	96.2	88 - 115	0.04493	7.21	20	
Selenium	0.05251	0.00500	0.05	0.000589	104	80 - 120	0.04955	5.81	20	
Silver	0.04913	0.00500	0.05	-0.000056	98.4	85 - 116	0.04705	4.33	20	

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20050176

QC BATCH REPORT

Batch ID: 153375 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS20050176-01PDS** Units: **mg/L** Analysis Date: **11-May-2020 15:05**
Client ID: **LH18/24-SP650_050520** Run ID: **ICPMS05_361332** SeqNo: **5580073** PrepDate: **08-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.1684	0.00500	0.1	0.06443	104	80 - 120				
Lead	0.09596	0.00500	0.1	0.000183	95.8	80 - 120				
Selenium	0.1007	0.00500	0.1	0.000589	100	80 - 120				
Silver	0.09566	0.00500	0.1	-0.000056	95.7	80 - 120				

SD Sample ID: **HS20050176-01SD** Units: **mg/L** Analysis Date: **11-May-2020 14:58**
Client ID: **LH18/24-SP650_050520** Run ID: **ICPMS05_361332** SeqNo: **5580070** PrepDate: **08-May-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Barium	0.06623	0.0250					0.06443	2.79	10	
Lead	0.00500	0.0250					0.000183	0	10	U
Selenium	0.0125	0.0250					0.000589	0	10	U
Silver	0.00250	0.0250					-0.000056	0	10	U

The following samples were analyzed in this batch: HS20050176-01

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20050176

QC BATCH REPORT

Batch ID: 153402 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-153402** Units: **ug/L** Analysis Date: **14-May-2020 16:17**
Client ID: Run ID: **SV-6_361631** SeqNo: **5585959** PrepDate: **11-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0	0.010								U
Surr: 2-Fluorobiphenyl	*0.1025*	*0*	*0.08*	*0*	*128*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.1309*	*0*	*0.08*	*0*	*164*	*40 - 140*				S
Surr: Nitrobenzene-d5	*0.08456*	*0*	*0.08*	*0*	*106*	*40 - 140*				

LCS Sample ID: **LCS-153402** Units: **ug/L** Analysis Date: **14-May-2020 16:36**
Client ID: Run ID: **SV-6_361631** SeqNo: **5585960** PrepDate: **11-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.0991	0.010	0.08	0	124	40 - 140				
Surr: 2-Fluorobiphenyl	*0.08779*	*0*	*0.08*	*0*	*110*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.08685*	*0*	*0.08*	*0*	*109*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.08407*	*0*	*0.08*	*0*	*105*	*40 - 140*				

LCSD Sample ID: **LCSD-153402** Units: **ug/L** Analysis Date: **14-May-2020 16:56**
Client ID: Run ID: **SV-6_361631** SeqNo: **5585961** PrepDate: **11-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.108	0.010	0.08	0	135	40 - 140	0.0991	8.59	20	
Surr: 2-Fluorobiphenyl	*0.08316*	*0*	*0.08*	*0*	*104*	*40 - 140*	*0.08779*	*5.41*	*20*	
Surr: 4-Terphenyl-d14	*0.09304*	*0*	*0.08*	*0*	*116*	*40 - 140*	*0.08685*	*6.88*	*20*	
Surr: Nitrobenzene-d5	*0.07856*	*0*	*0.08*	*0*	*98.2*	*40 - 140*	*0.08407*	*6.78*	*20*	

The following samples were analyzed in this batch: HS20050176-01

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20050176

QC BATCH REPORT

Batch ID: R361200 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200506** Units: **UG/L** Analysis Date: **06-May-2020 15:09**
Client ID: Run ID: **VOA6_361200** SeqNo: **5577457** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20050176

QC BATCH REPORT

Batch ID: R361200 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200506** Units: **UG/L** Analysis Date: **06-May-2020 15:09**
Client ID: Run ID: **VOA6_361200** SeqNo: **5577457** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*45.07*	*1.0*	*50*	*0*	*90.1*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.85*	*1.0*	*50*	*0*	*95.7*	*85 - 114*				
Surr: Dibromofluoromethane	*44.79*	*1.0*	*50*	*0*	*89.6*	*80 - 119*				
Surr: Toluene-d8	*52.76*	*1.0*	*50*	*0*	*106*	*89 - 112*				

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20050176

QC BATCH REPORT

Batch ID: R361200 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200506** Units: **UG/L** Analysis Date: **06-May-2020 15:33**
Client ID: Run ID: **VOA6_361200** SeqNo: **5577458** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.38	1.0	20	0	102	78 - 124				
1,1,1-Trichloroethane	19.88	1.0	20	0	99.4	74 - 131				
1,1,2,2-Tetrachloroethane	19.53	1.0	20	0	97.6	71 - 121				
1,1,2-Trichloroethane	20.83	1.0	20	0	104	80 - 119				
1,1-Dichloroethane	20.15	1.0	20	0	101	77 - 125				
1,1-Dichloroethene	21.49	1.0	20	0	107	71 - 131				
1,1-Dichloropropene	19.14	1.0	20	0	95.7	78 - 125				
1,2,3-Trichlorobenzene	15.13	1.0	20	0	75.6	69 - 129				
1,2,3-Trichloropropane	20.51	1.0	20	0	103	73 - 122				
1,2,4-Trichlorobenzene	16.57	1.0	20	0	82.9	69 - 130				
1,2,4-Trimethylbenzene	18.07	1.0	20	0	90.4	76 - 124				
1,2-Dibromo-3-chloropropane	20.8	1.0	20	0	104	62 - 128				
1,2-Dibromoethane	21.57	1.0	20	0	108	77 - 121				
1,2-Dichlorobenzene	19.17	1.0	20	0	95.8	80 - 119				
1,2-Dichloroethane	20.31	1.0	20	0	102	73 - 128				
1,2-Dichloropropane	20.61	1.0	20	0	103	78 - 122				
1,3,5-Trimethylbenzene	17.56	1.0	20	0	87.8	75 - 124				
1,3-Dichlorobenzene	19.02	1.0	20	0	95.1	80 - 119				
1,3-Dichloropropane	20.15	1.0	20	0	101	80 - 119				
1,4-Dichlorobenzene	18.36	1.0	20	0	91.8	79 - 118				
2,2-Dichloropropane	20.08	1.0	20	0	100	60 - 139				
2-Butanone	38.08	2.0	40	0	95.2	56 - 143				
2-Chlorotoluene	18.49	1.0	20	0	92.5	79 - 122				
2-Hexanone	40.45	2.0	40	0	101	57 - 139				
4-Chlorotoluene	18.45	1.0	20	0	92.3	78 - 122				
4-Isopropyltoluene	16.73	1.0	20	0	83.7	77 - 127				
4-Methyl-2-pentanone	39.68	2.0	40	0	99.2	67 - 130				
Acetone	45.18	2.0	40	0	113	39 - 160				
Benzene	21.12	1.0	20	0	106	79 - 120				
Bromobenzene	20.48	1.0	20	0	102	80 - 120				
Bromochloromethane	20.64	1.0	20	0	103	78 - 123				
Bromodichloromethane	21.2	1.0	20	0	106	79 - 125				
Bromoform	19.28	1.0	20	0	96.4	66 - 130				
Bromomethane	23.23	1.0	20	0	116	53 - 141				

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20050176

QC BATCH REPORT

Batch ID: R361200 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200506** Units: **UG/L** Analysis Date: **06-May-2020 15:33**
Client ID: Run ID: **VOA6_361200** SeqNo: **5577458** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	40.43	2.0	40	0	101	64 - 133				
Carbon tetrachloride	18.34	1.0	20	0	91.7	72 - 136				
Chlorobenzene	20.02	1.0	20	0	100	82 - 118				
Chloroethane	19.94	1.0	20	0	99.7	60 - 138				
Chloroform	20.86	1.0	20	0	104	79 - 124				
Chloromethane	18.53	1.0	20	0	92.6	50 - 139				
cis-1,2-Dichloroethene	21.09	1.0	20	0	105	78 - 123				
cis-1,3-Dichloropropene	20.83	1.0	20	0	104	75 - 124				
Dibromochloromethane	20.58	1.0	20	0	103	74 - 126				
Dibromomethane	20.75	1.0	20	0	104	79 - 123				
Dichlorodifluoromethane	15.63	1.0	20	0	78.2	32 - 152				
Ethylbenzene	19.72	1.0	20	0	98.6	79 - 121				
Hexachlorobutadiene	17.11	1.0	20	0	85.5	66 - 134				
Isopropylbenzene	18.8	1.0	20	0	94.0	72 - 131				
m,p-Xylene	38.72	2.0	40	0	96.8	80 - 121				
Methylene chloride	20.26	2.0	20	0	101	74 - 124				
Naphthalene	15.9	1.0	20	0	79.5	61 - 128				
n-Butylbenzene	15.72	1.0	20	0	78.6	75 - 128				
n-Propylbenzene	17.03	1.0	20	0	85.2	76 - 126				
o-Xylene	19.88	1.0	20	0	99.4	78 - 122				
sec-Butylbenzene	16.11	1.0	20	0	80.5	77 - 126				
Styrene	19.72	1.0	20	0	98.6	78 - 123				
tert-Butylbenzene	16.74	1.0	20	0	83.7	78 - 124				
Tetrachloroethene	18.95	1.0	20	0	94.7	74 - 129				
Toluene	20.03	1.0	20	0	100	80 - 121				
trans-1,2-Dichloroethene	21.37	1.0	20	0	107	75 - 124				
trans-1,3-Dichloropropene	21.48	1.0	20	0	107	73 - 127				
Trichloroethene	19.89	1.0	20	0	99.4	79 - 123				
Trichlorofluoromethane	19.82	1.0	20	0	99.1	65 - 141				
Vinyl chloride	18.96	1.0	20	0	94.8	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.29*	*1.0*	*50*	*0*	*105*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*52.75*	*1.0*	*50*	*0*	*106*	*85 - 114*				
Surr: Dibromofluoromethane	*51.25*	*1.0*	*50*	*0*	*103*	*80 - 119*				
Surr: Toluene-d8	*51.12*	*1.0*	*50*	*0*	*102*	*89 - 112*				

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20050176

QC BATCH REPORT

Batch ID: R361200 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20050176-01MS** Units: **UG/L** Analysis Date: **06-May-2020 16:45**
Client ID: **LH18/24-SP650_050520** Run ID: **VOA6_361200** SeqNo: **5577461** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.99	1.0	20	0	105	78 - 124				
1,1,1-Trichloroethane	19.32	1.0	20	0	96.6	74 - 131				
1,1,2,2-Tetrachloroethane	19.49	1.0	20	0	97.4	71 - 121				
1,1,2-Trichloroethane	19.9	1.0	20	0	99.5	80 - 119				
1,1-Dichloroethane	18.11	1.0	20	0	90.6	77 - 125				
1,1-Dichloroethene	21.31	1.0	20	0	107	71 - 131				
1,1-Dichloropropene	20.34	1.0	20	0	102	78 - 125				
1,2,3-Trichlorobenzene	13.94	1.0	20	0	69.7	69 - 129				
1,2,3-Trichloropropane	19.9	1.0	20	0	99.5	73 - 122				
1,2,4-Trichlorobenzene	14.87	1.0	20	0	74.3	69 - 130				
1,2,4-Trimethylbenzene	21.45	1.0	20	0	107	76 - 124				
1,2-Dibromo-3-chloropropane	19.32	1.0	20	0	96.6	62 - 128				
1,2-Dibromoethane	20.92	1.0	20	0	105	77 - 121				
1,2-Dichlorobenzene	20.27	1.0	20	0	101	80 - 119				
1,2-Dichloroethane	20.34	1.0	20	0.9404	97.0	73 - 128				
1,2-Dichloropropane	19.46	1.0	20	0	97.3	78 - 122				
1,3,5-Trimethylbenzene	21.66	1.0	20	0	108	75 - 124				
1,3-Dichlorobenzene	20.72	1.0	20	0	104	80 - 119				
1,3-Dichloropropane	20.02	1.0	20	0	100	80 - 119				
1,4-Dichlorobenzene	19.88	1.0	20	0	99.4	79 - 118				
2,2-Dichloropropane	18.72	1.0	20	0	93.6	60 - 139				
2-Butanone	31.52	2.0	40	0	78.8	56 - 143				
2-Chlorotoluene	20.84	1.0	20	0	104	79 - 122				
2-Hexanone	38.04	2.0	40	0	95.1	57 - 139				
4-Chlorotoluene	21.52	1.0	20	0	108	78 - 122				
4-Isopropyltoluene	22.43	1.0	20	0	112	77 - 127				
4-Methyl-2-pentanone	38.73	2.0	40	0	96.8	67 - 130				
Acetone	32.52	2.0	40	0	81.3	39 - 160				
Benzene	20.49	1.0	20	0	102	79 - 120				
Bromobenzene	20.67	1.0	20	0	103	80 - 120				
Bromochloromethane	18.1	1.0	20	0	90.5	78 - 123				
Bromodichloromethane	19.66	1.0	20	0	98.3	79 - 125				
Bromoform	19.31	1.0	20	0	96.5	66 - 130				
Bromomethane	18.95	1.0	20	0	94.8	53 - 141				

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20050176

QC BATCH REPORT

Batch ID: R361200 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20050176-01MS** Units: **UG/L** Analysis Date: **06-May-2020 16:45**
Client ID: **LH18/24-SP650_050520** Run ID: **VOA6_361200** SeqNo: **5577461** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	45.93	2.0	40	0	115	64 - 133				
Carbon tetrachloride	20.29	1.0	20	0	101	72 - 136				
Chlorobenzene	20.97	1.0	20	0	105	82 - 118				
Chloroethane	17.9	1.0	20	0	89.5	60 - 138				
Chloroform	18.26	1.0	20	0	91.3	79 - 124				
Chloromethane	16.48	1.0	20	0	82.4	50 - 139				
cis-1,2-Dichloroethene	39.02	1.0	20	20.84	90.9	78 - 123				
cis-1,3-Dichloropropene	19.36	1.0	20	0	96.8	75 - 124				
Dibromochloromethane	20.16	1.0	20	0	101	74 - 126				
Dibromomethane	19.11	1.0	20	0	95.6	79 - 123				
Dichlorodifluoromethane	15.27	1.0	20	0	76.4	32 - 152				
Ethylbenzene	21.88	1.0	20	0	109	79 - 121				
Hexachlorobutadiene	18.95	1.0	20	0	94.7	66 - 134				
Isopropylbenzene	23.03	1.0	20	0	115	72 - 131				
m,p-Xylene	44.34	2.0	40	0	111	80 - 121				
Methylene chloride	17.71	2.0	20	0	88.5	74 - 124				
Naphthalene	14.66	1.0	20	0	73.3	61 - 128				
n-Butylbenzene	21.96	1.0	20	0	110	75 - 128				
n-Propylbenzene	21.52	1.0	20	0	108	76 - 126				
o-Xylene	23.05	1.0	20	0	115	78 - 122				
sec-Butylbenzene	21.91	1.0	20	0	110	77 - 126				
Styrene	22.85	1.0	20	0	114	78 - 123				
tert-Butylbenzene	21.85	1.0	20	0	109	78 - 124				
Tetrachloroethene	22.18	1.0	20	0	111	74 - 129				
Toluene	21.49	1.0	20	0	107	80 - 121				
trans-1,2-Dichloroethene	19.72	1.0	20	0	98.6	75 - 124				
trans-1,3-Dichloropropene	19.56	1.0	20	0	97.8	73 - 127				
Trichloroethene	24.8	1.0	20	3.775	105	79 - 123				
Trichlorofluoromethane	19.08	1.0	20	0	95.4	65 - 141				
Vinyl chloride	17.01	1.0	20	0	85.1	58 - 137				
Surr: 1,2-Dichloroethane-d4	*45.2*	*1.0*	*50*	*0*	*90.4*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.74*	*1.0*	*50*	*0*	*103*	*85 - 114*				
Surr: Dibromofluoromethane	*44.66*	*1.0*	*50*	*0*	*89.3*	*80 - 119*				
Surr: Toluene-d8	*51.94*	*1.0*	*50*	*0*	*104*	*89 - 112*				

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20050176

QC BATCH REPORT

Batch ID: R361200 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20050176-01MSD** Units: **UG/L** Analysis Date: **06-May-2020 17:09**
Client ID: **LH18/24-SP650_050520** Run ID: **VOA6_361200** SeqNo: **5577462** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	21.05	1.0	20	0	105	78 - 124	20.99	0.287	20	
1,1,1-Trichloroethane	18.76	1.0	20	0	93.8	74 - 131	19.32	2.92	20	
1,1,2,2-Tetrachloroethane	19.56	1.0	20	0	97.8	71 - 121	19.49	0.384	20	
1,1,2-Trichloroethane	20.52	1.0	20	0	103	80 - 119	19.9	3.09	20	
1,1-Dichloroethane	17.46	1.0	20	0	87.3	77 - 125	18.11	3.65	20	
1,1-Dichloroethene	19.45	1.0	20	0	97.2	71 - 131	21.31	9.16	20	
1,1-Dichloropropene	19.6	1.0	20	0	98.0	78 - 125	20.34	3.74	20	
1,2,3-Trichlorobenzene	20.54	1.0	20	0	103	69 - 129	13.94	38.2	20	R
1,2,3-Trichloropropane	19.93	1.0	20	0	99.7	73 - 122	19.9	0.146	20	
1,2,4-Trichlorobenzene	19.03	1.0	20	0	95.1	69 - 130	14.87	24.6	20	R
1,2,4-Trimethylbenzene	22.95	1.0	20	0	115	76 - 124	21.45	6.78	20	
1,2-Dibromo-3-chloropropane	19.68	1.0	20	0	98.4	62 - 128	19.32	1.85	20	
1,2-Dibromoethane	20.55	1.0	20	0	103	77 - 121	20.92	1.8	20	
1,2-Dichlorobenzene	22.25	1.0	20	0	111	80 - 119	20.27	9.31	20	
1,2-Dichloroethane	20.39	1.0	20	0.9404	97.2	73 - 128	20.34	0.252	20	
1,2-Dichloropropane	19.2	1.0	20	0	96.0	78 - 122	19.46	1.34	20	
1,3,5-Trimethylbenzene	21.09	1.0	20	0	105	75 - 124	21.66	2.66	20	
1,3-Dichlorobenzene	22.96	1.0	20	0	115	80 - 119	20.72	10.3	20	
1,3-Dichloropropane	20.3	1.0	20	0	102	80 - 119	20.02	1.38	20	
1,4-Dichlorobenzene	21.26	1.0	20	0	106	79 - 118	19.88	6.72	20	
2,2-Dichloropropane	17.94	1.0	20	0	89.7	60 - 139	18.72	4.25	20	
2-Butanone	34.13	2.0	40	0	85.3	56 - 143	31.52	7.98	20	
2-Chlorotoluene	20.41	1.0	20	0	102	79 - 122	20.84	2.08	20	
2-Hexanone	38.88	2.0	40	0	97.2	57 - 139	38.04	2.2	20	
4-Chlorotoluene	20.37	1.0	20	0	102	78 - 122	21.52	5.46	20	
4-Isopropyltoluene	23.18	1.0	20	0	116	77 - 127	22.43	3.27	20	
4-Methyl-2-pentanone	39.12	2.0	40	0	97.8	67 - 130	38.73	1	20	
Acetone	30.84	2.0	40	0	77.1	39 - 160	32.52	5.3	20	
Benzene	20.32	1.0	20	0	102	79 - 120	20.49	0.831	20	
Bromobenzene	20.41	1.0	20	0	102	80 - 120	20.67	1.26	20	
Bromochloromethane	17.7	1.0	20	0	88.5	78 - 123	18.1	2.22	20	
Bromodichloromethane	19.88	1.0	20	0	99.4	79 - 125	19.66	1.14	20	
Bromoform	18.74	1.0	20	0	93.7	66 - 130	19.31	2.98	20	
Bromomethane	18.64	1.0	20	0	93.2	53 - 141	18.95	1.67	20	

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20050176

QC BATCH REPORT

Batch ID: R361200 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20050176-01MSD** Units: **UG/L** Analysis Date: **06-May-2020 17:09**
Client ID: **LH18/24-SP650_050520** Run ID: **VOA6_361200** SeqNo: **5577462** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	37.73	2.0	40	0	94.3	64 - 133	45.93	19.6	20	
Carbon tetrachloride	19.93	1.0	20	0	99.6	72 - 136	20.29	1.83	20	
Chlorobenzene	20.64	1.0	20	0	103	82 - 118	20.97	1.59	20	
Chloroethane	16.74	1.0	20	0	83.7	60 - 138	17.9	6.72	20	
Chloroform	18.2	1.0	20	0	91.0	79 - 124	18.26	0.306	20	
Chloromethane	16.08	1.0	20	0	80.4	50 - 139	16.48	2.46	20	
cis-1,2-Dichloroethene	38.57	1.0	20	20.84	88.7	78 - 123	39.02	1.16	20	
cis-1,3-Dichloropropene	19.43	1.0	20	0	97.2	75 - 124	19.36	0.363	20	
Dibromochloromethane	20.82	1.0	20	0	104	74 - 126	20.16	3.23	20	
Dibromomethane	19.02	1.0	20	0	95.1	79 - 123	19.11	0.481	20	
Dichlorodifluoromethane	15.34	1.0	20	0	76.7	32 - 152	15.27	0.452	20	
Ethylbenzene	22.02	1.0	20	0	110	79 - 121	21.88	0.637	20	
Hexachlorobutadiene	22.26	1.0	20	0	111	66 - 134	18.95	16.1	20	
Isopropylbenzene	21.76	1.0	20	0	109	72 - 131	23.03	5.65	20	
m,p-Xylene	43.72	2.0	40	0	109	80 - 121	44.34	1.4	20	
Methylene chloride	17.78	2.0	20	0	88.9	74 - 124	17.71	0.44	20	
Naphthalene	19.3	1.0	20	0	96.5	61 - 128	14.66	27.3	20	R
n-Butylbenzene	23.9	1.0	20	0	119	75 - 128	21.96	8.45	20	
n-Propylbenzene	21.12	1.0	20	0	106	76 - 126	21.52	1.92	20	
o-Xylene	21.91	1.0	20	0	110	78 - 122	23.05	5.04	20	
sec-Butylbenzene	24.11	1.0	20	0	121	77 - 126	21.91	9.56	20	
Styrene	21.27	1.0	20	0	106	78 - 123	22.85	7.19	20	
tert-Butylbenzene	22.56	1.0	20	0	113	78 - 124	21.85	3.17	20	
Tetrachloroethene	22.15	1.0	20	0	111	74 - 129	22.18	0.112	20	
Toluene	21.11	1.0	20	0	106	80 - 121	21.49	1.77	20	
trans-1,2-Dichloroethene	18.69	1.0	20	0	93.4	75 - 124	19.72	5.35	20	
trans-1,3-Dichloropropene	19.71	1.0	20	0	98.6	73 - 127	19.56	0.789	20	
Trichloroethene	24.29	1.0	20	3.775	103	79 - 123	24.8	2.08	20	
Trichlorofluoromethane	18.43	1.0	20	0	92.1	65 - 141	19.08	3.49	20	
Vinyl chloride	16.23	1.0	20	0	81.1	58 - 137	17.01	4.72	20	
Surr: 1,2-Dichloroethane-d4	*44.53*	*1.0*	*50*	*0*	*89.1*	*81 - 118*	*45.2*	*1.5*	*20*	
Surr: 4-Bromofluorobenzene	*48.01*	*1.0*	*50*	*0*	*96.0*	*85 - 114*	*51.74*	*7.48*	*20*	
Surr: Dibromofluoromethane	*44.38*	*1.0*	*50*	*0*	*88.8*	*80 - 119*	*44.66*	*0.624*	*20*	
Surr: Toluene-d8	*52.22*	*1.0*	*50*	*0*	*104*	*89 - 112*	*51.94*	*0.54*	*20*	

ALS Houston, US Date: 21-May-20

Client:	Bhate Environmental Associates, Inc.
Project:	Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder:	HS20050176

QC BATCH REPORT

Batch ID:	**R361200 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch: HS20050176-01 HS20050176-03

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS20050176

QC BATCH REPORT

Batch ID: R361188 (0) **Instrument: UV-2450** **Method: HEXAVALENT CHROMIUM BY SW7196A**

MBLK Sample ID: **MBLK-R361188** Units: **mg/L** Analysis Date: **06-May-2020 13:30**
Client ID: Run ID: **UV-2450_361188** SeqNo: **5577350** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.0100	0.0100								U

LCS Sample ID: **LCS-R361188** Units: **mg/L** Analysis Date: **06-May-2020 13:30**
Client ID: Run ID: **UV-2450_361188** SeqNo: **5577349** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.273	0.0100	0.25	0	109	90 - 111				

MS Sample ID: **HS20050177-01MS** Units: **mg/L** Analysis Date: **06-May-2020 13:30**
Client ID: Run ID: **UV-2450_361188** SeqNo: **5577352** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.259	0.0100	0.25	0.006	101	90 - 111				

MSD Sample ID: **HS20050177-01MSD** Units: **mg/L** Analysis Date: **06-May-2020 13:30**
Client ID: Run ID: **UV-2450_361188** SeqNo: **5577351** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.262	0.0100	0.25	0.006	102	90 - 111	0.259	1.15	20	

The following samples were analyzed in this batch: HS20050176-01

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: **HS20050176**

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
Arkansas	20-030-0	26-Mar-2021
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
Oklahoma	2019-141	31-Aug-2020
Texas	T104704231-20-26	30-Apr-2021

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
Work Order: HS20050176

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20050176-01	LH18/24-SP650_050520	Login	5/6/2020 11:53:31 AM	PMG	EXT053
HS20050176-01	LH18/24-SP650_050520	Login	5/6/2020 11:53:31 AM	PMG	WET134
HS20050176-01	LH18/24-SP650_050520	Login	5/6/2020 11:53:31 AM	PMG	MET063
HS20050176-01	LH18/24-SP650_050520	Login	5/6/2020 11:53:31 AM	PMG	VOA123
HS20050176-02	LH18/24-SP650_050520_BIX	Login	5/6/2020 11:53:31 AM	PMG	Sub
HS20050176-03	Trip Blank	Login	5/6/2020 11:53:31 AM	PMG	VOA123

ALS Houston, US Date: 21-May-20

Sample Receipt Checklist

Work Order ID: HS20050176 **Date/Time Received:** 06-May-2020 09:00

Client Name: Bhate Environmental **Received by:** Asad Chaudhry

Completed By: /S/ Paresh M. Giga (eSignature) 06-May-2020 11:55 (Date/Time) **Reviewed by:** /S/ RJ Modashia (eSignature) 06-May-2020 14:47 (Date/Time)

Matrices: **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):	1.4C U/.C	IR25	
Cooler(s)/Kit(s):	43868		
Date/Time sample(s) sent to storage:	5/6/2020 12:10		
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: VOC no-longer 24Hr.TAT per RJ email

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd., Suite 210 Houston, TX 77099 (281) 530 – 5656 ATTN: RJ Modashia

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT
MONTHLY EFFLUENT SAMPLES

Prepared By:
Scott Beesinger

P.O. Number

HS20050176

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Monthly Effluent Sample

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: VOLATILES	SILVER, SELENIUM, LEAD, BARIUM	HEXAVALENT CHROMIUM	1, 4 - DIOXANE	PERCHLORATE						Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_050520	Water	05/05/20 / 14:00		3	X										HCL	
LH18/24-SP650_050520	Water	05/05/20 / 14:00		2			X	X							NONE	
LH18/24-SP650_050520_BIX	Water	05/05/20 / 14:00		1					X						NONE	
LH18/24-SP650_050520	Water	05/05/20 / 14:00		1		X									HNO3	
Trip Blank	Water	05/05/20		2	X										HCL	

Additional Remarks: **24 HR TAT on VOC's. Standard TAT on all other parameters**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	05/05/20	14:30							AC	5/6/20	09:00

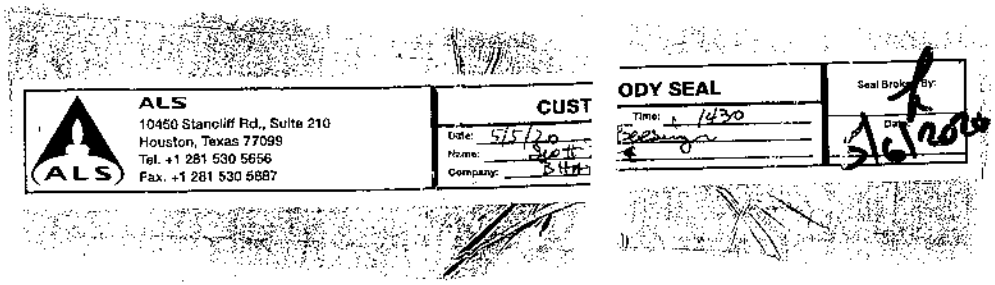
For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

V/C 1.4 IR#25 Cooler 43868

(Word) S:\I-ces\Forms\Chain of Custody - BiWeekly



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

CUST
Date: 5/5/20
Name:
Company:

ODY SEAL
Time: 1430
Seal Broken By:
Date: 5/6/2020

ORIGIN ID:SGRA (303) 597-2450
SCOTT SEESINGER
WHATE ENVIRONMENTAL ASSOCIATES
1203-B EAST GRAND AVE
PO BOX
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 07APR20
ACTWGT: 1.00 LB MAN
CAD: 3001307CAFE3211
DIMS: 26x14x14 IN

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIEF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: ADDITIONAL BOTTLES - BO 71321-RJ

J3868

RMA:

FedEx Express

FedEx
TRK# 0221 1251 0296 2152

WED - 06 MAY 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US IAH

May 20, 2020 Service Request No:E2000407

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

Laboratory Results for: HS20050176

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory May 06, 2020
For your reference, these analyses have been assigned our service request number **E2000407.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2000407
Project:	HS20050176	**Date Received:**	05/06/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 05/06/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000173: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. MS/MSD performed on an unrelated sample.

DOD Certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2000407

Project: HS20050176

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000407-001	LH18/24-SP650_050520_BIX	5/5/2020	1400

Service Request Summary

Folder #: **E2000407**
Client Name: ALS Environmental - US
Project Name: HS20050176
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 05/06/20
Internal Due Date: 5/20/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20050176
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 3B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000407-001	LH18/24-SP650_050520_BIX	Water	05/05/20 1400	**IV**

Service Request Summary

Folder #: **E2000407**
Client Name: ALS Environmental - US
Project Name: HS20050176
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
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P.O. Number: HS20050176
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1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 3B
Pressure Gas:

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2020
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	2020	4/30/2021
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nevada Department of Concervation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
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ALS

E2000407 5
ALS Laboratory Group
HS20050176

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:** **13859**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

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:	HS20050176
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20050176-02**	**LH18/24-SP650_050520_BIX**	**Water**	**05 May 2020 14:00**
	SUB_Perch-6850			20 May 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: 5/6/20 14:40

Received By: Robert A Date/Time: 5/6/20 14:46

Cooler ID(s): Temperature(s):

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALS-H

Thermometer ID SMOM / IR 11

Date/Time Received: 5/6/20 Initials: CH Date/Time Logged in: 5/6/20 Initials CH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ ALS Courier ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No
   Were they intact? ○ Yes ○ No ✓ N/A
   Were they signed and dated? ○ Yes ○ No ✓ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		5/6/20	1440	CH	1.5	✓
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E2000407 5

ALS Laboratory Group HS20050176

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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 358306 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/KBROWN **Prep Method:** Method **Prep Date/Time:** 5/12/20 09:34

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000382-001	LH18/24-SP650_042820_BIX	.01	6850/ClO4 DOD			Water	10mL	
2	E2000404-001	04WW02-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2000404-002	04WW06-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2000404-003	LHSMW02-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2000404-004	LHSMW02-200504-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2000404-005	04WW11-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2000404-006	04WW04-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2000405-001	04WW05-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2000405-002	04WW09-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2000405-003	04WW10-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2000405-004	04WW10-200505-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2000405-005	04WW07-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2000406-001	04WW08-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2000406-002	LHSMW01-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2000406-003	04WW01-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2000407-001	LH18/24-SP650_050520_BIX	.01	6850/ClO4 DOD			Water	10mL	
17	E2000408-001	LH18/24-SP140_050520	.01	6850/ClO4 DOD			Water	10mL	
18	E2000409-001	LH18/24-SP650_050520_BIX	.01	6850/ClO4 DOD			Water	10mL	
19	EQ2000173-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2000173-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000173-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2000173-04	04WW06-200504 MS	.01	6850/ClO4 DOD			Liquid	10mL	
23	EQ2000173-05	04WW06-200504 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 202037 Logbook Ref: Sodium Perchlorate Expires On: 05/22/2021

E2000382-001	100.00µL	E2000404-001	100.00µL	E2000404-002	100.00µL	E2000404-003	100.00µL	E2000404-004	100.00µL	E2000404-005	100.00µL
E2000404-006	100.00µL	E2000405-001	100.00µL	E2000405-002	100.00µL	E2000405-003	100.00µL	E2000405-004	100.00µL	E2000405-005	100.00µL
E2000406-001	100.00µL	E2000406-002	100.00µL	E2000406-003	100.00µL	E2000407-001	100.00µL	E2000408-001	100.00µL	E2000409-001	100.00µL
EQ2000173-01	100.00µL	EQ2000173-02	100.00µL	EQ2000173-03	100.00µL	EQ2000173-04	100.00µL	EQ2000173-05	100.00µL		

Name: Perchlorate Intermediate Stock1 Inventory ID 204799 Logbook Ref: 200657 1.0ug/mL KN Expires On: 05/15/2020

EQ2000173-02	1.00µL	EQ2000173-03	1.00µL	EQ2000173-04	1.00µL	EQ2000173-05	1.00µL

Preparation Information Benchsheet

Prep Run#: 358306 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/KBROWN **Prep Method:** Method **Prep Date/Time:** 5/12/20 09:34

Preparation Steps

Step: Preparation
Started: 5/12/20 09:34
Finished: 5/12/20 12:00
By: KBROWN
Comments

Comments: _____

Reviewed By: GR Date: 5/12/2020

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Collected:**	5/ 5/20 1400
Sample Matrix:	Water	**Date Received:**	5/ 6/20
Sample Name:	LH18/24-SP650_050520_BIX	**Units:**	µg/L
Lab Code:	E2000407-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	5/12/20	5/12/20 15:44	358306	680007	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000173-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	5/12/20	5/12/20 12:50	358306	679868	

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/12/20
Sample Matrix:	Water		

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	358306

	Lab Control Sample EQ2000173-02			Duplicate Lab Control Sample EQ2000173-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.105	0.100	105	0.107	0.100	107	84 - 119	2	15

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

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000173-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.105**		0.100	0.0500	0.0250	1	5/12/20	5/12/20 12:58	358306	679868	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000173-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.107**		0.100	0.0500	0.0250	1	5/12/20	5/12/20 13:06	358306	679868	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	5/12/20 - 5/13/20

Matrix Spike Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	E2000404-002	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		Batch QCMS **Matrix Spike** EQ2000173-04				Batch QCDMS **Duplicate Matrix Spike** EQ2000173-05						
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**		**RPD Limit**
Perchlorate	ND	0.111	0.100	111	0.0929	0.100	93	84 - 119	18	*	15

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

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000173-04	**Basis:**	NA
Run Type:	Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.111**		0.100	0.0500	0.0250	1	5/12/20	5/12/20 13:21	358306	679868	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000173-05	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0929**	J	0.100	0.0500	0.0250	1	5/12/20	5/13/20 14:12	358306	680124	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200420

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200420_001	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:01
	null		20200420_002	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:06
	DIBLK		20200420_003	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:11
	IB		20200420_004	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:19
	PERCHLORATE7		20200420_005	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 13:27
	LODV		20200420_006	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:35
	PERCHLORATE1		20200420_007	Perchlorate6850b.lcm	1x	☒	3100804-05	4/20/2020 13:43
	PERCHLORATE2		20200420_008	Perchlorate6850b.lcm	1x	☒	3100804-06	4/20/2020 13:51
	PERCHLORATE3		20200420_009	Perchlorate6850b.lcm	1x	☒	3100804-07	4/20/2020 13:58
	PERCHLORATE4		20200420_010	Perchlorate6850b.lcm	1x	☒	3100804-08	4/20/2020 14:06
	PERCHLORATE5		20200420_011	Perchlorate6850b.lcm	1x	☒	3100804-09	4/20/2020 14:14
	PERCHLORATE6		20200420_012	Perchlorate6850b.lcm	1x	☒	3100805-01	4/20/2020 14:22
	PERCHLORATE8		20200420_013	Perchlorate6850b.lcm	1x	☒	3100805-03	4/20/2020 14:30
	PERCHLORATE9		20200420_014	Perchlorate6850b.lcm	1x	☒	3100805-04	4/20/2020 14:38
	PERCHLORATE10		20200420_015	Perchlorate6850b.lcm	1x	☒	3100805-05	4/20/2020 14:46
	ICV		20200420_016	Perchlorate6850b.lcm	1x	☒	3100805-06	4/20/2020 14:54
	LODV		20200420_017	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:02
	EQ2000143-01		20200420_018	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:10
	EQ2000143-02		20200420_019	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:18
	EQ2000143-03		20200420_020	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:26
	E2000275-001		20200420_021	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:33
	E2000275-002		20200420_022	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:41
	E2000275-003		20200420_023	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:49
	E2000287-001		20200420_024	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:57
	E2000303-001		20200420_025	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:05
	E2000304-001		20200420_026	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:13
	E2000305-001		20200420_027	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:21
	PERCHLORATE7		20200420_028	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 16:29
	E2000303-001		20200420_029	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:47
	E2000304-001		20200420_030	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:55
	PERCHLORATE7		20200420_031	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 17:02

Initial Calibration - Detailed Report

Calibration ID: EC2000003 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
08	EC2000003-08	PERCHLORATE7	20200420_005	04/20/2020 13:27
01	EC2000003-01	PERCHLORATE1	20200420_007	04/20/2020 13:43
02	EC2000003-02	PERCHLORATE2	20200420_008	04/20/2020 13:51
03	EC2000003-03	PERCHLORATE3	20200420_009	04/20/2020 13:58
04	EC2000003-04	PERCHLORATE4	20200420_010	04/20/2020 14:06
05	EC2000003-05	PERCHLORATE5	20200420_011	04/20/2020 14:14
06	EC2000003-06	PERCHLORATE6	20200420_012	04/20/2020 14:22
07	EC2000003-07	PERCHLORATE8	20200420_013	04/20/2020 14:30
09	EC2000003-09	PERCHLORATE9	20200420_014	04/20/2020 14:38
10	EC2000003-10	PERCHLORATE10	20200420_015	04/20/2020 14:46

Analyte | **Curve Fit** | **Weighting**

Perchlorate | **Average RF** | **RSD = 8.066** | **Average RF = 0.1368**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1558	02	0.5000	0.1297	03	0.7000	0.1277	04	1.0000	0.1397
05	2.0000	0.1298	06	5.0000	0.1245	07	20.0000	0.1341	08	10.0000	0.1562
09	30.0000	0.1365	10	50.0000	0.1345						

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.114	13.9	02	0.5000	0.474	-5.2	03	0.7000	0.653	-6.7
04	1.0000	1.02	2.1	05	2.0000	1.90	-5.1	06	5.0000	4.55	-9.0
07	20.0000	19.6	-2.0	08	10.0000	11.4	14.2	09	30.0000	29.9	-0.2
10	50.0000	49.1	-1.7								

Initial Calibration Verification Summary Report

Calibration ID:	EC2000003	**Instrument ID:**	E-LCMS-01
Datafile ID:	20200420_016	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000003-11	T	Average RF	10	11.345	ng/mL	13.4	<= 15

ALS Group Houston

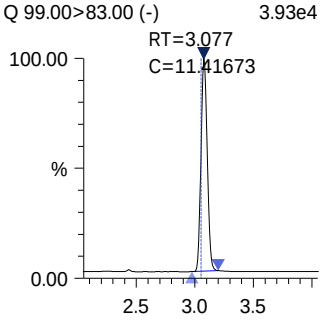
PERCHLORATE7

Date acquired: 4/20/2020 1:27:21 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_005.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/20/2020 1:27:21 PM	144494	11.41673	20200420_005	3.077	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/20/2020 1:27:21 PM	92497	1.00000	20200420_005	3.076	25.0000	1.0000	3

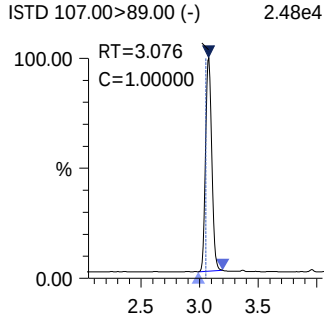
Perchlorate

Conc 11.41673
Area 144494



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 92497



ALS Group Houston

PERCHLORATE1

Date acquired: 4/20/2020 1:43:09 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_007.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

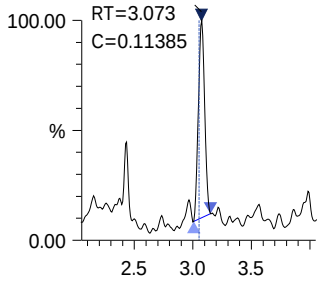
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	4/20/2020 1:43:09 PM	1840	0.11385	20200420_007	3.073	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	4/20/2020 1:43:09 PM	118078	1.00000	20200420_007	3.073	25.0000	1.0000	5

Perchlorate

Conc 0.11385

Area 1840

Q 99.00>83.00 (-) 5.37e2

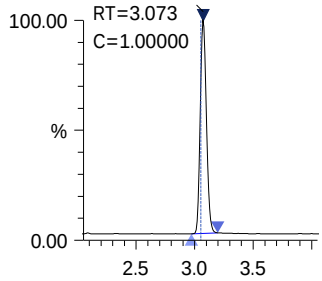


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 118078

ISTD 107.00>89.00 (-) 3.18e4



ALS Group Houston

PERCHLORATE2

Date acquired: 4/20/2020 1:51:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_008.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

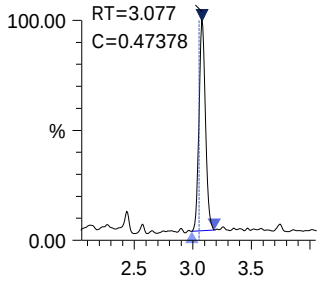
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	4/20/2020 1:51:02 PM	7551	0.47378	20200420_008	3.077	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	PERCHLORATE2	4/20/2020 1:51:02 PM	116479	1.00000	20200420_008	3.075	25.0000	1.0000	6

Perchlorate

Conc 0.47378

Area 7551

Q 99.00>83.00 (-) 2.00e3

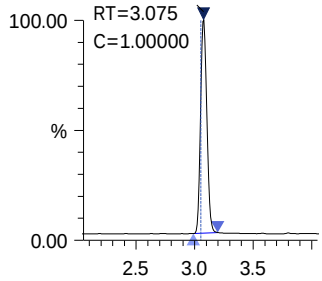


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 116479

ISTD 107.00>89.00 (-) 3.08e4



ALS Group Houston

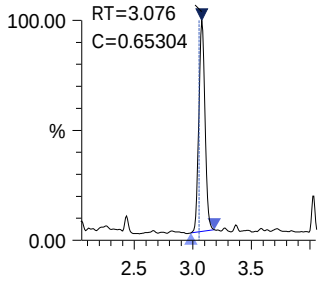
PERCHLORATE3

Date acquired: 4/20/2020 1:58:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_009.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	4/20/2020 1:58:56 PM	11235	0.65304	20200420_009	3.076	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE3	4/20/2020 1:58:56 PM	125731	1.00000	20200420_009	3.073	25.0000	1.0000	7

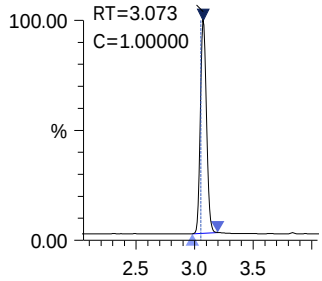
Perchlorate

Conc 0.65304
Area 11235
Q 99.00>83.00 (-) 3.12e3



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 125731
ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

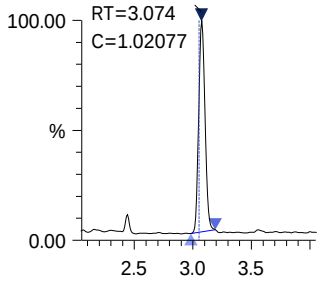
PERCHLORATE4

Date acquired: 4/20/2020 2:06:51 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_010.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	4/20/2020 2:06:51 PM	16670	1.02077	20200420_010	3.074	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE4	4/20/2020 2:06:51 PM	119354	1.00000	20200420_010	3.074	25.0000	1.0000	8

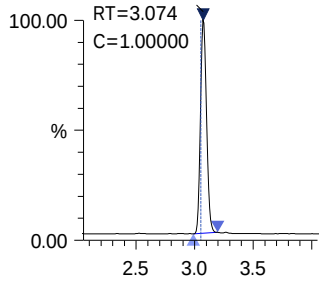
Perchlorate

Conc 1.02077
Area 16670
Q 99.00>83.00 (-) 4.51e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 119354
ISTD 107.00>89.00 (-) 3.26e4



ALS Group Houston

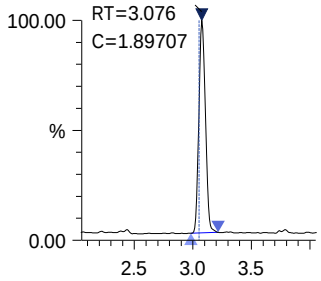
PERCHLORATE5

Date acquired: 4/20/2020 2:14:45 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_011.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	4/20/2020 2:14:45 PM	33786	1.89707	20200420_011	3.076	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE5	4/20/2020 2:14:45 PM	130159	1.00000	20200420_011	3.075	25.0000	1.0000	9

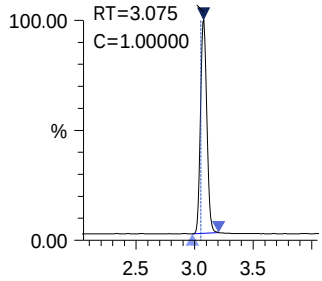
Perchlorate

Conc 1.89707
Area 33786
Q 99.00>83.00 (-) 8.73e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 130159
ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

PERCHLORATE6

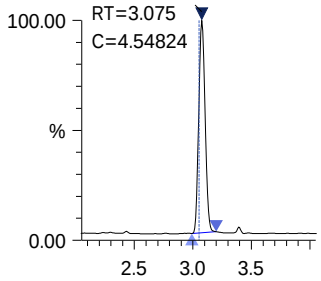
Date acquired: 4/20/2020 2:22:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_012.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	4/20/2020 2:22:39 PM	69848	4.54824	20200420_012	3.075	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE6	4/20/2020 2:22:39 PM	112235	1.00000	20200420_012	3.074	25.0000	1.0000	10

Perchlorate

Conc 4.54824
Area 69848

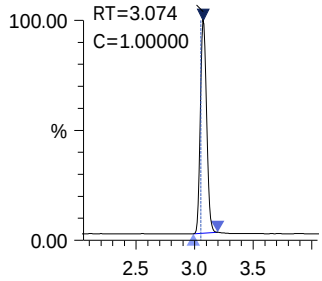
Q 99.00>83.00 (-) 1.86e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 112235

ISTD 107.00>89.00 (-) 2.98e4



ALS Group Houston

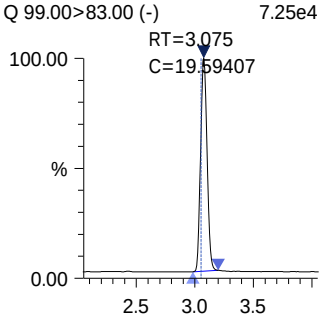
PERCHLORATE8

Date acquired: 4/20/2020 2:30:36 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_013.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	4/20/2020 2:30:36 PM	275854	19.59407	20200420_013	3.075	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE8	4/20/2020 2:30:36 PM	102890	1.00000	20200420_013	3.072	25.0000	1.0000	11

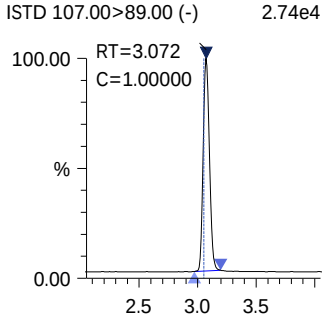
Perchlorate

Conc 19.59407
Area 275854



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 102890



ALS Group Houston

PERCHLORATE9

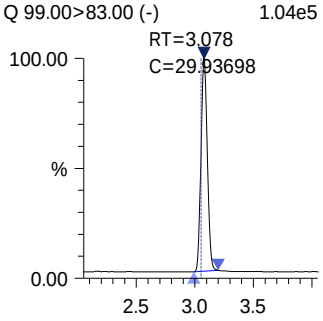
Date acquired: 4/20/2020 2:38:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_014.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	4/20/2020 2:38:33 PM	390068	29.93698	20200420_014	3.078	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE9	4/20/2020 2:38:33 PM	95225	1.00000	20200420_014	3.075	25.0000	1.0000	12

Perchlorate

Conc 29.93698

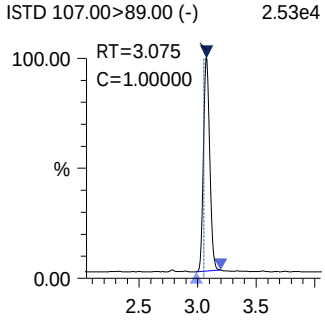
Area 390068



Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 95225



ALS Group Houston

PERCHLORATE10

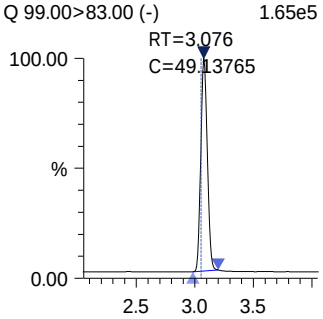
Date acquired: 4/20/2020 2:46:25 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_015.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE10	4/20/2020 2:46:25 PM	632804	49.13765	20200420_015	3.076	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE10	4/20/2020 2:46:25 PM	94118	1.00000	20200420_015	3.075	25.0000	1.0000	13

Perchlorate

Conc 49.13765

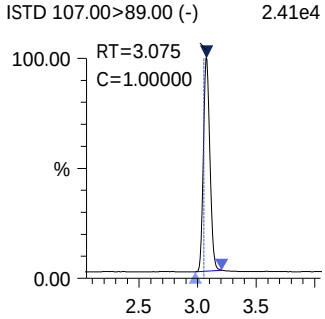
Area 632804



Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 94118



ALS Group Houston

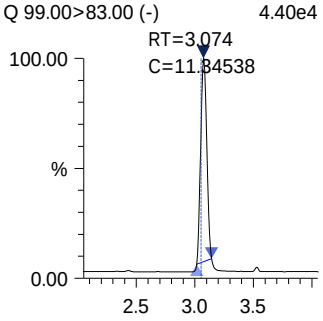
PERCHLORATEICV

Date acquired: 4/20/2020 2:54:20 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_016.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	4/20/2020 2:54:20 PM	149807	11.34538	20200420_016	3.074	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	4/20/2020 2:54:20 PM	96501	1.00000	20200420_016	3.072	25.0000	1.0000	14

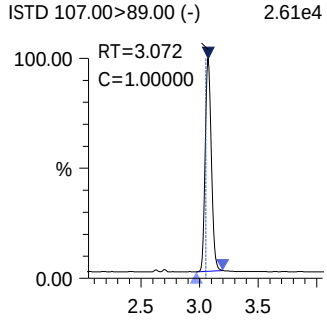
Perchlorate

Conc 11.34538
Area 149807



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 96501



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200512

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200512_001	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:09
	null		20200512_002	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:14
	IB		20200512_003	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:19
	PERCHLORATE7		20200512_004	Perchlorate6850b.lcm	1x	☒	3100805-02	5/12/2020 12:27
	LODV		20200512_005	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:35
	EQ2000173-01		20200512_006	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:50
	EQ2000173-02		20200512_007	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:58
	EQ2000173-03		20200512_008	Perchlorate6850b.lcm	1x	☒		5/12/2020 13:06
	E2000404-002		20200512_009	Perchlorate6850b.lcm	1x	☒		5/12/2020 13:13
	EQ2000173-04		20200512_010	Perchlorate6850b.lcm	1x	☒		5/12/2020 13:21
	EQ2000173-05		20200512_011	Perchlorate6850b.lcm	1x	☒	do not use	5/12/2020 13:29
	E2000382-001		20200512_012	Perchlorate6850b.lcm	1x	☒		5/12/2020 13:37
	PERCHLORATE7		20200512_013	Perchlorate6850b.lcm	1x	☒	3100805-02	5/12/2020 13:45
	E2000404-001		20200512_014	Perchlorate6850b.lcm	1x	☒		5/12/2020 13:53
	E2000404-003		20200512_015	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:01
	E2000404-004		20200512_016	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:09
	E2000404-005		20200512_017	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:17
	E2000404-006		20200512_018	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:25
	E2000405-001		20200512_019	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:32
	E2000405-002		20200512_020	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:40
	E2000405-003		20200512_021	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:48
	E2000405-004		20200512_022	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:56
	E2000405-005		20200512_023	Perchlorate6850b.lcm	1x	☒		5/12/2020 15:04
	PERCHLORATE7		20200512_024	Perchlorate6850b.lcm	1x	☒	3100805-02	5/12/2020 15:12
	E2000406-001		20200512_025	Perchlorate6850b.lcm	1x	☒		5/12/2020 15:20
	E2000406-002		20200512_26	Perchlorate6850b.lcm	1x	☒		5/12/2020 15:28
	E2000406-003		20200512_027	Perchlorate6850b.lcm	1x	☒		5/12/2020 15:36
	E2000407-001		20200512_028	Perchlorate6850b.lcm	1x	☒		5/12/2020 15:44
	E2000408-001		20200512_029	Perchlorate6850b.lcm	1x	☒	dilution	5/12/2020 15:51
	E2000409-001		20200512_030	Perchlorate6850b.lcm	1x	☒	RR-poss carry-over	5/12/2020 15:59
	EQ2000173-05		20200512_031	Perchlorate6850b.lcm	1x	☒	do not use	5/12/2020 16:07
	PERCHLORATE7		20200512_032	Perchlorate6850b.lcm	1x	☒	3100805-02	5/12/2020 16:15

20200513

1st Review: Kneir
2nd Review: Hvan

LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200513_001	Perchlorate6850b.lcm	1x	☒		5/13/2020 11:40
	null		20200513_002	Perchlorate6850b.lcm	1x	☒		5/13/2020 11:45
	IB		20200513_003	Perchlorate6850b.lcm	1x	☒		5/13/2020 11:50
	PERCHLORATE7		20200513_004	Perchlorate6850b.lcm	1x	☒	3100805-02	5/13/2020 11:58
	LODV		20200513_005	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:06
	EQ2000179-01		20200513_006	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:14
	EQ2000179-02		20200513_007	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:22
	EQ2000179-03		20200513_008	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:29
	EQ2000179-04		20200513_009	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:37
	EQ2000179-05		20200513_010	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:45
	E2000410-001		20200513_011	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:53
	E2000410-002		20200513_012	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:01
	E2000410-003		20200513_013	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:09
	E2000410-004		20200513_014	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:17
	E2000410-005		20200513_015	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:25
	PERCHLORATE7		20200513_016	Perchlorate6850b.lcm	1x	☒	3100805-02	5/13/2020 13:33
	E2000410-006		20200513_017	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:41
	E2000410-007		20200513_018	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:49
	E2000408-001X200		20200513_019	Perchlorate6850b.lcm	200x	☒		5/13/2020 13:56
	PERCHLORATE7		20200513_020	Perchlorate6850b.lcm	1x	☒	3100805-02	5/13/2020 14:04
	EQ2000173-05		20200513_021	Perchlorate6850b.lcm	1x	☒		5/13/2020 14:12
	E2000409-001		20200513_022	Perchlorate6850b.lcm	1x	☒		5/13/2020 14:20
	PERCHLORATE7		20200513_023	Perchlorate6850b.lcm	1x	☒	3100805-02	5/13/2020 14:28

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/12/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200512\20200512_004	**Calibration ID:**	EC2000003
		Analysis Lot:	679868
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.9	0.1368	0.1485	8.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/12/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200512\20200512_013	**Calibration ID:**	EC2000003
		Analysis Lot:	679868
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.0	0.1368	0.1502	9.7	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/12/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200512\20200512_013	**Calibration ID:**	EC2000003
		Analysis Lot:	680007
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.0	0.1368	0.1502	9.7	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/12/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200512\20200512_024	**Calibration ID:**	EC2000003
		Analysis Lot:	680007
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.0	0.1368	0.1505	10.0	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/12/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200512\20200512_032	**Calibration ID:**	EC2000003
		Analysis Lot:	680007
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.0	0.1368	0.1511	10.4	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/13/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200513\20200513_004	**Calibration ID:**	EC2000003
		Analysis Lot:	680124
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.1	0.1368	0.1520	11.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/13/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200513\20200513_016	**Calibration ID:**	EC2000003
		Analysis Lot:	680124
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.3	0.1368	0.1546	13.0	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/13/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200513\20200513_020	**Calibration ID:**	EC2000003
		Analysis Lot:	680124
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.7	0.1368	0.1461	6.8	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/13/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200513\20200513_023	**Calibration ID:**	EC2000003
		Analysis Lot:	680124
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.1	0.1368	0.1523	11.3	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/12/20 12:27

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200512\20200512_004	**Lab Code:**	EQ2000176-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	679868
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000176-01	77,004	3.01
Method Blank	EQ2000173-01	95,026	2.94
Lab Control Sample	EQ2000173-02	108,592	3.00
Duplicate Lab Control Sample	EQ2000173-03	109,300	3.00
Batch QC	E2000404-002	104,595	2.99
Batch QCMS	EQ2000173-04	114,639	2.99

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/12/20 13:45

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200512\20200512_013	**Lab Code:**	EQ2000176-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	679868
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000176-02	99,187	2.99

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/12/20 13:45

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200512\20200512_013	**Lab Code:**	EQ2000180-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	680007
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000180-01	99,187	2.99

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/12/20 15:12

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200512\20200512_024	**Lab Code:**	EQ2000180-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	680007
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000180-02	103,620	2.99
LH18/24-SP650_050520_BIX	E2000407-001	124,043	2.97

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/12/20 16:15

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200512\20200512_032	**Lab Code:**	EQ2000180-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	680007
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000180-03	111,449	2.99

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/13/20 11:58

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200513\20200513_004	**Lab Code:**	EQ2000186-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	680124
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000186-01	106,329	3.00

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/13/20 13:33

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200513\20200513_016	**Lab Code:**	EQ2000186-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	680124
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000186-02	116,942	3.00

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/13/20 14:04

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200513\20200513_020	**Lab Code:**	EQ2000186-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	680124
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000186-03	120,816	3.00
Batch QCDMS	EQ2000173-05	141,444	2.98

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000407
Project:	HS20050176	**Date Analyzed:**	5/13/20 14:28

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200513\20200513_023	**Lab Code:**	EQ2000186-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	680124
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000186-04	117,011	2.99

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

ALS Group Houston

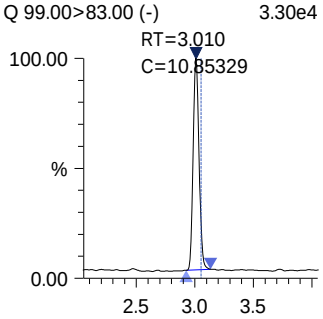
PERCHLORATE7

Date acquired: 5/12/2020 12:27:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_004.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	5/12/2020 12:27:44 PM	114355	10.85329	20200512_004	3.010	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	5/12/2020 12:27:44 PM	77004	1.00000	20200512_004	3.008	25.0000	1.0000	3

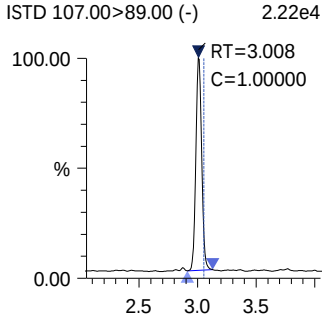
Perchlorate

Conc 10.85329
Area 114355



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 77004



ALS Group Houston

EQ2000173-01

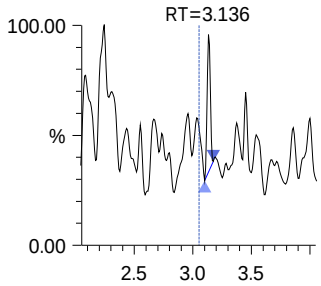
Date acquired: 5/12/2020 12:50:12 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_006.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000173-01	5/12/2020 12:50:12 PM	----	----	20200512_006	----	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	EQ2000173-01	5/12/2020 12:50:12 PM	95026	1.00000	20200512_006	2.942	25.0000	1.0000	5

Perchlorate

Conc ----
Area ----

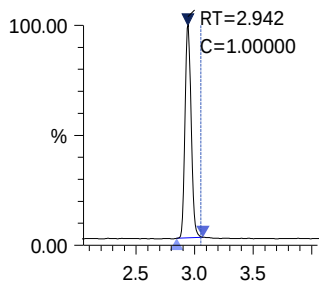
Q 99.00>83.00 (-) 3.00e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 95026

ISTD 107.00>89.00 (-) 2.66e4



ALS Group Houston

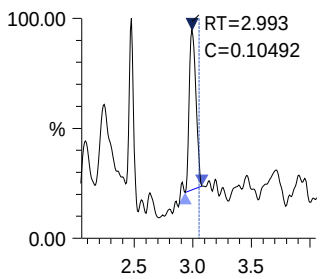
EQ2000173-02

Date acquired: 5/12/2020 12:58:07 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_007.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000173-02	5/12/2020 12:58:07 PM	1559	0.10492	20200512_007	2.993	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000173-02	5/12/2020 12:58:07 PM	108592	1.00000	20200512_007	3.004	25.0000	1.0000	6

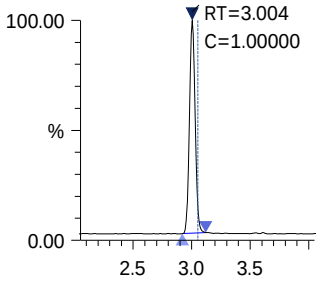
Perchlorate

Conc 0.10492
Area 1559
Q 99.00>83.00 (-) 5.16e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 108592
ISTD 107.00>89.00 (-) 3.19e4



ALS Group Houston

EQ2000173-03

Date acquired: 5/12/2020 1:06:00 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_008.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

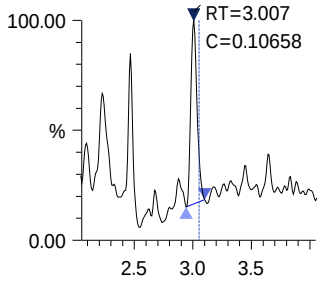
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000173-03	5/12/2020 1:06:00 PM	1594	0.10658	20200512_008	3.007	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	EQ2000173-03	5/12/2020 1:06:00 PM	109300	1.00000	20200512_008	3.004	25.0000	1.0000	7

Perchlorate

Conc 0.10658

Area 1594

Q 99.00>83.00 (-) 4.99e2

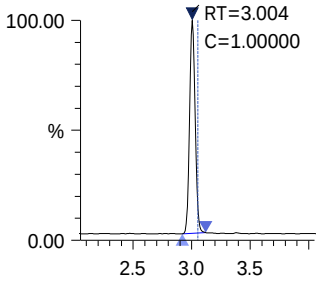


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 109300

ISTD 107.00>89.00 (-) 3.26e4



ALS Group Houston

EQ2000173-04

Date acquired: 5/12/2020 1:21:48 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_010.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

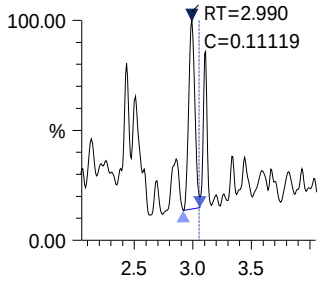
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000173-04	5/12/2020 1:21:48 PM	1744	0.11119	20200512_010	2.990	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	EQ2000173-04	5/12/2020 1:21:48 PM	114639	1.00000	20200512_010	2.990	25.0000	1.0000	9

Perchlorate

Conc 0.11119

Area 1744

Q 99.00>83.00 (-) 5.32e2

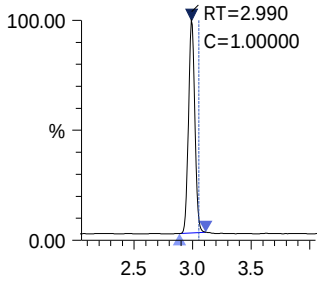


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 114639

ISTD 107.00>89.00 (-) 3.06e4



ALS Group Houston

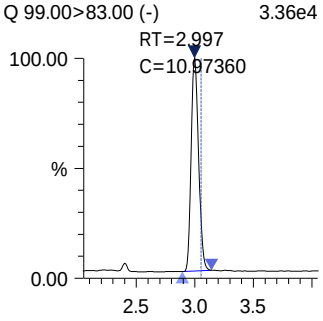
PERCHLORATE7

Date acquired: 5/12/2020 1:45:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_013.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	5/12/2020 1:45:33 PM	148931	10.97360	20200512_013	2.997	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	5/12/2020 1:45:33 PM	99187	1.00000	20200512_013	2.994	25.0000	1.0000	3

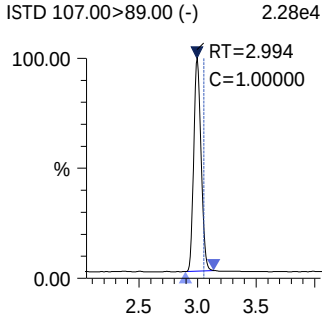
Perchlorate

Conc 10.97360
Area 148931



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 99187



ALS Group Houston

E2000407-001

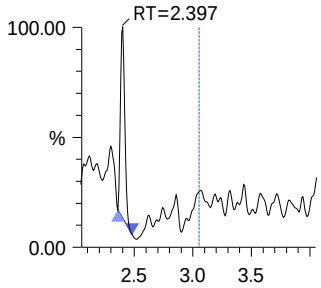
Date acquired: 5/12/2020 3:44:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_028.lcd
Vial: 25 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	E2000407-001	5/12/2020 3:44:02 PM	----	----	20200512_028	----	25.0000	1.0000	25
Sodium Perchlorate-18O4_IS	E2000407-001	5/12/2020 3:44:02 PM	124043	1.00000	20200512_028	2.974	25.0000	1.0000	25

Perchlorate

Conc ----
Area ----

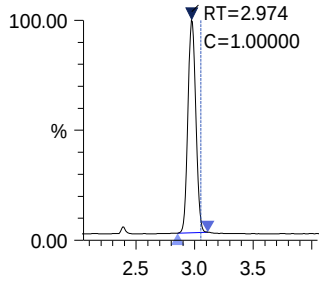
Q 99.00>83.00 (-) 5.18e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 124043

ISTD 107.00>89.00 (-) 2.69e4



ALS Group Houston

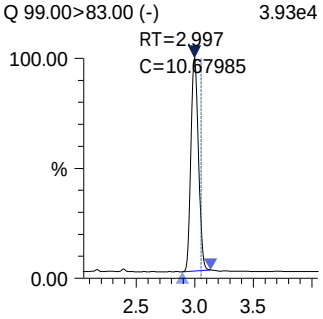
PERCHLORATE7

Date acquired: 5/13/2020 2:04:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200513\20200513_020.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	5/13/2020 2:04:49 PM	176552	10.67985	20200513_020	2.997	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	5/13/2020 2:04:49 PM	120816	1.00000	20200513_020	2.995	25.0000	1.0000	3

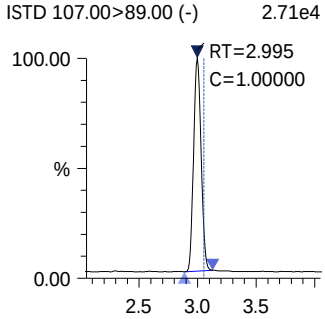
Perchlorate

Conc 10.67985
Area 176552



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 120816



ALS Group Houston

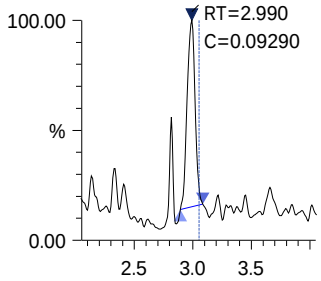
EQ2000173-05

Date acquired: 5/13/2020 2:12:40 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200513\20200513_021.lcd
Vial: 18 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000173-05	5/13/2020 2:12:40 PM	1798	0.09290	20200513_021	2.990	25.0000	1.0000	18
Sodium Perchlorate-18O4_IS	EQ2000173-05	5/13/2020 2:12:40 PM	141444	1.00000	20200513_021	2.980	25.0000	1.0000	18

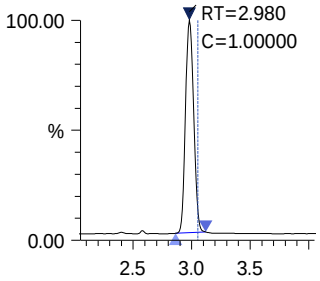
Perchlorate

Conc 0.09290
Area 1798
Q 99.00>83.00 (-) 4.31e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 141444
ISTD 107.00>89.00 (-) 2.95e4



ALS Group Houston

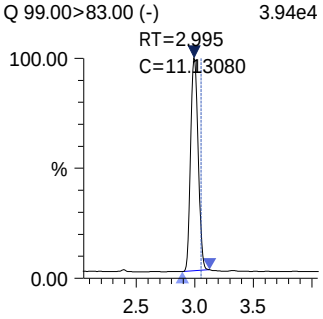
PERCHLORATE7

Date acquired: 5/13/2020 2:28:31 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200513\20200513_023.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	5/13/2020 2:28:31 PM	178211	11.13080	20200513_023	2.995	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	5/13/2020 2:28:31 PM	117011	1.00000	20200513_023	2.992	25.0000	1.0000	3

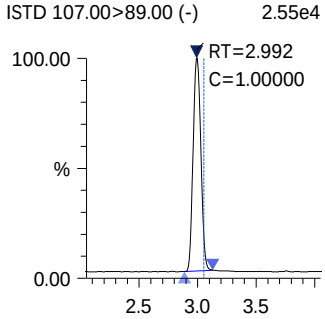
Perchlorate

Conc 11.13080
Area 178211



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 117011



10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
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May 21, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20050177**

Laboratory Results for: **Longhorn GW Treatment Plant Monthly Influent Samples**

Dear Marcia,

ALS Environmental received 1 sample(s) on May 06, 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: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
Work Order: HS20050177

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20050177-01	LH18/24-SP140_050520	Water		05-May-2020 14:00	06-May-2020 09:00	☐

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Monthly Influent Samples
Work Order: HS20050177

Work Order Comments

- Analysis of Perchlorate was performed by ALS Houston TX, High Resolution. Laboratory. Final report attached

Metals by Method SW6020

Batch ID: 153375

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

WetChemistry by Method SW7196

Batch ID: R361188

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

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Influent Samples WorkOrder:HS20050177

Sample ID: LH18/24-SP140_050520 Lab ID:HS20050177-01

Collection Date: 05-May-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 08-May-2020		Analyst: JC
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	11-May-2020 15:08
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	11-May-2020 15:08
HEXAVALENT CHROMIUM BY SW7196A		**Method:SW7196**						Analyst: TH
Chromium, Hexavalent	**0.00600**	J	**0.00600**	**0.0100**	**0.0100**	**mg/L**	1	06-May-2020 13:30
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	21-May-2020 10:37

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

ALS Houston, US Date: 21-May-20

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS20050177

Batch ID: 153375 **Start Date:** 08 May 2020 09:30 **End Date:** 08 May 2020 13:30
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20050177-01		10 (mL)	10 (mL)	1

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples **DATES REPORT**
WorkOrder: HS20050177

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 153375 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Water	
HS20050177-01	LH18/24-SP140_050520	05 May 2020 14:00		08 May 2020 13:30	11 May 2020 15:08	1
Batch ID: R361188 (0)	**Test Name :** HEXAVALENT CHROMIUM BY SW7196A				**Matrix:** Water	
HS20050177-01	LH18/24-SP140_050520	05 May 2020 14:00			06 May 2020 13:30	1
Batch ID: R361905 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS20050177-01	LH18/24-SP140_050520	05 May 2020 14:00			21 May 2020 10:37	1

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS20050177

QC BATCH REPORT

Batch ID: 153375 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-153375** Units: **mg/L** Analysis Date: **11-May-2020 14:51**
Client ID: Run ID: **ICPMS05_361332** SeqNo: **5580067** PrepDate: **08-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U

LCS Sample ID: **LCS-153375** Units: **mg/L** Analysis Date: **11-May-2020 14:53**
Client ID: Run ID: **ICPMS05_361332** SeqNo: **5580068** PrepDate: **08-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.0481	0.00500	0.05	0	96.2	80 - 120				
Silver	0.05004	0.00500	0.05	0	100	85 - 116				

MS Sample ID: **HS20050176-01MS** Units: **mg/L** Analysis Date: **11-May-2020 15:00**
Client ID: Run ID: **ICPMS05_361332** SeqNo: **5580071** PrepDate: **08-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.04955	0.00500	0.05	0.000589	97.9	80 - 120				
Silver	0.04705	0.00500	0.05	-0.000056	94.2	85 - 116				

MSD Sample ID: **HS20050176-01MSD** Units: **mg/L** Analysis Date: **11-May-2020 15:03**
Client ID: Run ID: **ICPMS05_361332** SeqNo: **5580072** PrepDate: **08-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.05251	0.00500	0.05	0.000589	104	80 - 120	0.04955	5.81	20	
Silver	0.04913	0.00500	0.05	-0.000056	98.4	85 - 116	0.04705	4.33	20	

PDS Sample ID: **HS20050176-01PDS** Units: **mg/L** Analysis Date: **11-May-2020 15:05**
Client ID: Run ID: **ICPMS05_361332** SeqNo: **5580073** PrepDate: **08-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.1007	0.00500	0.1	0.000589	100	80 - 120				
Silver	0.09566	0.00500	0.1	-0.000056	95.7	80 - 120				

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS20050177

QC BATCH REPORT

Batch ID: 153375 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS20050176-01SD** Units: **mg/L** Analysis Date: **11-May-2020 14:58**
Client ID: Run ID: **ICPMS05_361332** SeqNo: **5580070** PrepDate: **08-May-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Selenium	0.0125	0.0250					0.000589	0	10	U
Silver	0.00250	0.0250					-0.000056	0	10	U

The following samples were analyzed in this batch: HS20050177-01

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS20050177

QC BATCH REPORT

Batch ID: R361188 (0) **Instrument: UV-2450** **Method: HEXAVALENT CHROMIUM BY SW7196A**

MBLK Sample ID: **MBLK-R361188** Units: **mg/L** Analysis Date: **06-May-2020 13:30**
Client ID: Run ID: **UV-2450_361188** SeqNo: **5577350** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.0100	0.0100								U

LCS Sample ID: **LCS-R361188** Units: **mg/L** Analysis Date: **06-May-2020 13:30**
Client ID: Run ID: **UV-2450_361188** SeqNo: **5577349** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.273	0.0100	0.25	0	109	90 - 111				

MS Sample ID: **HS20050177-01MS** Units: **mg/L** Analysis Date: **06-May-2020 13:30**
Client ID: **LH18/24-SP140_050520** Run ID: **UV-2450_361188** SeqNo: **5577352** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.259	0.0100	0.25	0.006	101	90 - 111				

MSD Sample ID: **HS20050177-01MSD** Units: **mg/L** Analysis Date: **06-May-2020 13:30**
Client ID: **LH18/24-SP140_050520** Run ID: **UV-2450_361188** SeqNo: **5577351** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.262	0.0100	0.25	0.006	102	90 - 111	0.259	1.15	20	

The following samples were analyzed in this batch: HS20050177-01

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: **HS20050177**

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
Arkansas	20-030-0	26-Mar-2021
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
Oklahoma	2019-141	31-Aug-2020
Texas	T104704231-20-26	30-Apr-2021

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
Work Order: HS20050177

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20050177-01	LH18/24-SP140_050520	Login	5/6/2020 12:05:37 PM	PMG	MET063
HS20050177-01	LH18/24-SP140_050520	Login	5/6/2020 12:05:37 PM	PMG	Sub
HS20050177-01	LH18/24-SP140_050520	Login	5/6/2020 12:05:37 PM	PMG	WET134

ALS Houston, US Date: 21-May-20

Sample Receipt Checklist

Work Order ID: HS20050177 **Date/Time Received:** 06-May-2020 09:00

Client Name: Bhate Environmental **Received by:** Asad Chaudhry

Completed By: /S/ Paresh M. Giga (eSignature) 06-May-2020 12:06 (Date/Time) **Reviewed by:** /S/ RJ Modashia (eSignature) 06-May-2020 14:48 (Date/Time)

Matrices: **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):	1.4C U/C	IR25	
Cooler(s)/Kit(s):	43868		
Date/Time sample(s) sent to storage:	5/6/2020 12:15		
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:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd., Suite 210 Houston, TX. 77099 (281) 530-5656 ATTN: RJ Modashia

Page 1 of 1

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT MONTHLY INFLUENT SAMPLES

Prepared By:
Scott Beesinger

P.O. Number

HS20050177
Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Monthly Influent Sample

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: SILVER & SELENIUM	HEXAVALENT CHROMIUM	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP140_050520	Water	05/05/20 / 14:00		1	X			HNO3	
LH18/24-SP140_050520	Water	05/05/20 / 14:00		2		X	X	NONE	

Additional Remarks: **STANDARD TURN AROUND TIME**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	05/05/20	14:30							AC	5/6/2020	09:00

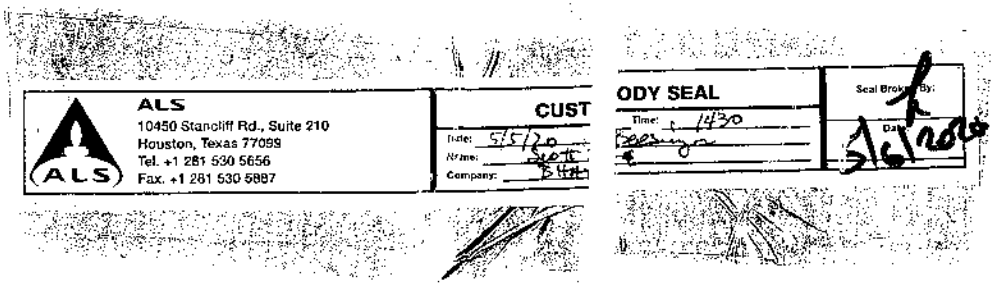
For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

W/C 14 IR#25 0.0 43868

(Word) S \1-cet\Forms\Chain of Custody - BiWeekly



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

CUST

Date: 5/5/20
Name: Scott
Company: SWA

ODY SEAL

Time: 1430

Seal Broken By:

Date: 5/6/2020

ORIGIN ID:SGRA (303) 597-2450
SCOTT BEESINGER
BHATE ENVIRONMENTAL ASSOCIATES
1203-B EAST GRAND AVE.
PH8202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 07APR20
ACTWGT: 1.00 LB MAN
CAD: 330130/CAFE3201
DIMS: 26x14x4 IN

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE,210
HOUSTON TX 77099

(281) 530--5656
REF: ADDITIONAL BOTTLES - BO 71321-RJ

J3868

RMA:

FedEx Express

FedEx
TRK# (0221) 1251 0296 2152

WED - 06 MAY 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US IAH

May 20, 2020 Service Request No:E2000408

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

Laboratory Results for: HS20050177

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory May 06, 2020
For your reference, these analyses have been assigned our service request number **E2000408.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2000408
Project:	HS20050177	**Date Received:**	05/06/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 05/06/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000173: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. MS/MSD performed on an unrelated sample.

DOD Certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2000408
Project: HS20050177

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000408-001	LH18/24-SP140_050520	5/5/2020	1400

Service Request Summary

Folder #: **E2000408**
Client Name: ALS Environmental - US
Project Name: HS20050177
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 05/06/20
Internal Due Date: 5/20/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20050177
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 3B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000408-001	LH18/24-SP140_050520	Water	05/05/20 1400	**IV**

Service Request Summary

Folder #:	**E2000408**
Client Name:	ALS Environmental - US
Project Name:	HS20050177
Project Number:	

Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	05/06/20
Internal Due Date:	5/20/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20050177
EDD:	No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-WIC 3B

Pressure Gas:

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2020
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	2020	4/30/2021
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nevada Department of Concervation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

E2000408 5
ALS Laboratory Group
HS20050177

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:** **13860**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

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:	HS20050177
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20050177-01**	**LH18/24-SP140_050520**	**Water**	**05 May 2020 14:00**
	SUB_Perch-6850			20 May 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: 5/6/20 14:40

Received By: [illegible] Date/Time: 5/6/20 14:46

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALS-H

Thermometer ID SMOM / IR 11

Date/Time Received: 5/6/20 Initials: CH Date/Time Logged in: 5/6/20 Initials CH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ Courier (ALS) ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No
   Were they intact? ○ Yes ○ No ✓ N/A
   Were they signed and dated? ○ Yes ○ No ✓ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		5/6/20	1440	CH	1.5	✓
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E2000408 5

ALS Laboratory Group HS20050177

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 358306 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/KBROWN **Prep Method:** Method **Prep Date/Time:** 5/12/20 09:34

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000382-001	LH18/24-SP650_042820_BIX	.01	6850/ClO4 DOD			Water	10mL	
2	E2000404-001	04WW02-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2000404-002	04WW06-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2000404-003	LHSMW02-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2000404-004	LHSMW02-200504-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2000404-005	04WW11-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2000404-006	04WW04-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2000405-001	04WW05-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2000405-002	04WW09-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2000405-003	04WW10-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2000405-004	04WW10-200505-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2000405-005	04WW07-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2000406-001	04WW08-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2000406-002	LHSMW01-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2000406-003	04WW01-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2000407-001	LH18/24-SP650_050520_BIX	.01	6850/ClO4 DOD			Water	10mL	
17	E2000408-001	LH18/24-SP140_050520	.01	6850/ClO4 DOD			Water	10mL	
18	E2000409-001	LH18/24-SP650_050520_BIX	.01	6850/ClO4 DOD			Water	10mL	
19	EQ2000173-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2000173-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000173-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2000173-04	04WW06-200504 MS	.01	6850/ClO4 DOD			Liquid	10mL	
23	EQ2000173-05	04WW06-200504 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 202037 Logbook Ref: Sodium Perchlorate Expires On: 05/22/2021

E2000382-001	100.00µL	E2000404-001	100.00µL	E2000404-002	100.00µL	E2000404-003	100.00µL	E2000404-004	100.00µL	E2000404-005	100.00µL
E2000404-006	100.00µL	E2000405-001	100.00µL	E2000405-002	100.00µL	E2000405-003	100.00µL	E2000405-004	100.00µL	E2000405-005	100.00µL
E2000406-001	100.00µL	E2000406-002	100.00µL	E2000406-003	100.00µL	E2000407-001	100.00µL	E2000408-001	100.00µL	E2000409-001	100.00µL
EQ2000173-01	100.00µL	EQ2000173-02	100.00µL	EQ2000173-03	100.00µL	EQ2000173-04	100.00µL	EQ2000173-05	100.00µL		

Name: Perchlorate Intermediate Stock1 Inventory ID 204799 Logbook Ref: 200657 1.0ug/mL KN Expires On: 05/15/2020

EQ2000173-02	1.00µL	EQ2000173-03	1.00µL	EQ2000173-04	1.00µL	EQ2000173-05	1.00µL

Preparation Information Benchsheet

Prep Run#: 358306 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/KBROWN **Prep Method:** Method **Prep Date/Time:** 5/12/20 09:34

Preparation Steps

Step: Preparation
Started: 5/12/20 09:34
Finished: 5/12/20 12:00
By: KBROWN
Comments

Comments: _____

Reviewed By: GR Date: 5/12/2020

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000408
Project:	HS20050177	**Date Collected:**	5/ 5/20 1400
Sample Matrix:	Water	**Date Received:**	5/ 6/20
Sample Name:	LH18/24-SP140_050520	**Units:**	µg/L
Lab Code:	E2000408-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**6740**		20.0	10.0	5.00	200	5/12/20	5/13/20 13:56	358306	680124	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000408
Project:	HS20050177	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000173-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	5/12/20	5/12/20 12:50	358306	679868	

Accuracy & Precision

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Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000408
Project:	HS20050177	**Date Analyzed:**	5/12/20
Sample Matrix:	Water		

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	358306

	Lab Control Sample EQ2000173-02			Duplicate Lab Control Sample EQ2000173-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.105	0.100	105	0.107	0.100	107	84 - 119	2	15

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

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000408
Project:	HS20050177	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000173-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.105**		0.100	0.0500	0.0250	1	5/12/20	5/12/20 12:58	358306	679868	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000408
Project:	HS20050177	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000173-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.107**		0.100	0.0500	0.0250	1	5/12/20	5/12/20 13:06	358306	679868	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000408
Project:	HS20050177	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	5/12/20 - 5/13/20

Matrix Spike Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	E2000404-002	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		Batch QCMS **Matrix Spike** EQ2000173-04				Batch QCDMS **Duplicate Matrix Spike** EQ2000173-05						
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**		**RPD Limit**
Perchlorate	ND	0.111	0.100	111	0.0929	0.100	93	84 - 119	18	*	15

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

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000408
Project:	HS20050177	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000173-04	**Basis:**	NA
Run Type:	Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.111**		0.100	0.0500	0.0250	1	5/12/20	5/12/20 13:21	358306	679868	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000408
Project:	HS20050177	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000173-05	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0929**	J	0.100	0.0500	0.0250	1	5/12/20	5/13/20 14:12	358306	680124	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200420

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200420_001	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:01
	null		20200420_002	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:06
	DIBLK		20200420_003	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:11
	IB		20200420_004	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:19
	PERCHLORATE7		20200420_005	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 13:27
	LODV		20200420_006	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:35
	PERCHLORATE1		20200420_007	Perchlorate6850b.lcm	1x	☒	3100804-05	4/20/2020 13:43
	PERCHLORATE2		20200420_008	Perchlorate6850b.lcm	1x	☒	3100804-06	4/20/2020 13:51
	PERCHLORATE3		20200420_009	Perchlorate6850b.lcm	1x	☒	3100804-07	4/20/2020 13:58
	PERCHLORATE4		20200420_010	Perchlorate6850b.lcm	1x	☒	3100804-08	4/20/2020 14:06
	PERCHLORATE5		20200420_011	Perchlorate6850b.lcm	1x	☒	3100804-09	4/20/2020 14:14
	PERCHLORATE6		20200420_012	Perchlorate6850b.lcm	1x	☒	3100805-01	4/20/2020 14:22
	PERCHLORATE8		20200420_013	Perchlorate6850b.lcm	1x	☒	3100805-03	4/20/2020 14:30
	PERCHLORATE9		20200420_014	Perchlorate6850b.lcm	1x	☒	3100805-04	4/20/2020 14:38
	PERCHLORATE10		20200420_015	Perchlorate6850b.lcm	1x	☒	3100805-05	4/20/2020 14:46
	ICV		20200420_016	Perchlorate6850b.lcm	1x	☒	3100805-06	4/20/2020 14:54
	LODV		20200420_017	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:02
	EQ2000143-01		20200420_018	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:10
	EQ2000143-02		20200420_019	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:18
	EQ2000143-03		20200420_020	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:26
	E2000275-001		20200420_021	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:33
	E2000275-002		20200420_022	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:41
	E2000275-003		20200420_023	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:49
	E2000287-001		20200420_024	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:57
	E2000303-001		20200420_025	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:05
	E2000304-001		20200420_026	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:13
	E2000305-001		20200420_027	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:21
	PERCHLORATE7		20200420_028	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 16:29
	E2000303-001		20200420_029	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:47
	E2000304-001		20200420_030	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:55
	PERCHLORATE7		20200420_031	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 17:02

Initial Calibration - Detailed Report

Calibration ID: EC2000003 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
08	EC2000003-08	PERCHLORATE7	20200420_005	04/20/2020 13:27
01	EC2000003-01	PERCHLORATE1	20200420_007	04/20/2020 13:43
02	EC2000003-02	PERCHLORATE2	20200420_008	04/20/2020 13:51
03	EC2000003-03	PERCHLORATE3	20200420_009	04/20/2020 13:58
04	EC2000003-04	PERCHLORATE4	20200420_010	04/20/2020 14:06
05	EC2000003-05	PERCHLORATE5	20200420_011	04/20/2020 14:14
06	EC2000003-06	PERCHLORATE6	20200420_012	04/20/2020 14:22
07	EC2000003-07	PERCHLORATE8	20200420_013	04/20/2020 14:30
09	EC2000003-09	PERCHLORATE9	20200420_014	04/20/2020 14:38
10	EC2000003-10	PERCHLORATE10	20200420_015	04/20/2020 14:46

Analyte | **Curve Fit** | **Weighting**

Perchlorate | **Average RF** | **RSD = 8.066** | **Average RF = 0.1368**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1558	02	0.5000	0.1297	03	0.7000	0.1277	04	1.0000	0.1397
05	2.0000	0.1298	06	5.0000	0.1245	07	20.0000	0.1341	08	10.0000	0.1562
09	30.0000	0.1365	10	50.0000	0.1345						

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.114	13.9	02	0.5000	0.474	-5.2	03	0.7000	0.653	-6.7
04	1.0000	1.02	2.1	05	2.0000	1.90	-5.1	06	5.0000	4.55	-9.0
07	20.0000	19.6	-2.0	08	10.0000	11.4	14.2	09	30.0000	29.9	-0.2
10	50.0000	49.1	-1.7								

Initial Calibration Verification Summary Report

Calibration ID:	EC2000003	**Instrument ID:**	E-LCMS-01
Datafile ID:	20200420_016	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000003-11	T	Average RF	10	11.345	ng/mL	13.4	<= 15

ALS Group Houston

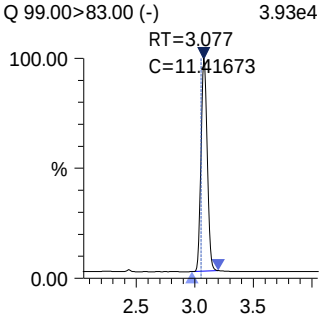
PERCHLORATE7

Date acquired: 4/20/2020 1:27:21 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_005.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/20/2020 1:27:21 PM	144494	11.41673	20200420_005	3.077	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/20/2020 1:27:21 PM	92497	1.00000	20200420_005	3.076	25.0000	1.0000	3

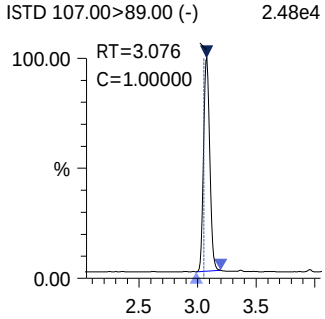
Perchlorate

Conc 11.41673
Area 144494



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 92497



ALS Group Houston

PERCHLORATE1

Date acquired: 4/20/2020 1:43:09 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_007.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

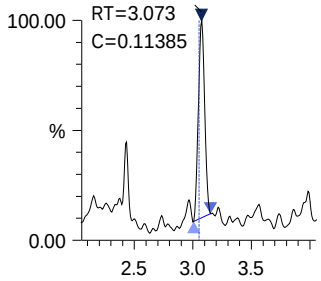
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	4/20/2020 1:43:09 PM	1840	0.11385	20200420_007	3.073	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	4/20/2020 1:43:09 PM	118078	1.00000	20200420_007	3.073	25.0000	1.0000	5

Perchlorate

Conc 0.11385

Area 1840

Q 99.00>83.00 (-) 5.37e2

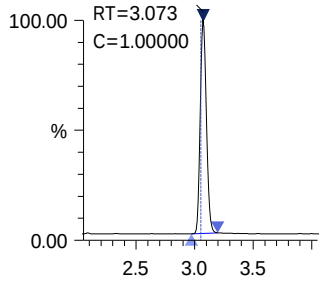


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 118078

ISTD 107.00>89.00 (-) 3.18e4



ALS Group Houston

PERCHLORATE2

Date acquired: 4/20/2020 1:51:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_008.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

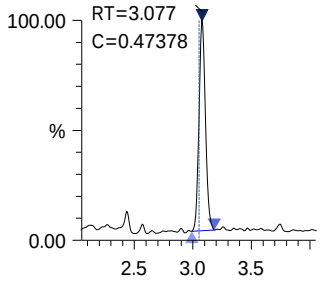
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	4/20/2020 1:51:02 PM	7551	0.47378	20200420_008	3.077	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	PERCHLORATE2	4/20/2020 1:51:02 PM	116479	1.00000	20200420_008	3.075	25.0000	1.0000	6

Perchlorate

Conc 0.47378

Area 7551

Q 99.00>83.00 (-) 2.00e3

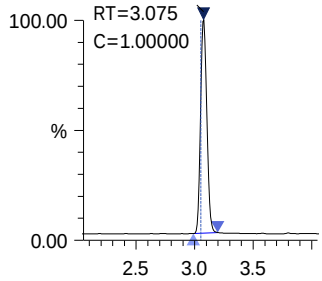


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 116479

ISTD 107.00>89.00 (-) 3.08e4



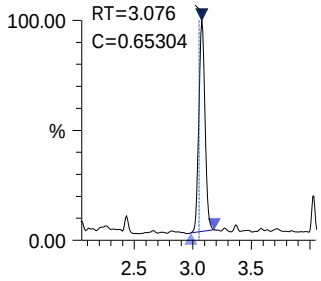
PERCHLORATE3

Date acquired: 4/20/2020 1:58:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_009.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	4/20/2020 1:58:56 PM	11235	0.65304	20200420_009	3.076	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE3	4/20/2020 1:58:56 PM	125731	1.00000	20200420_009	3.073	25.0000	1.0000	7

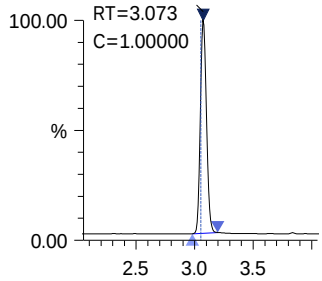
Perchlorate

Conc 0.65304
Area 11235
Q 99.00>83.00 (-) 3.12e3



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 125731
ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

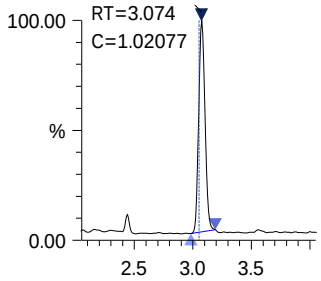
PERCHLORATE4

Date acquired: 4/20/2020 2:06:51 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_010.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	4/20/2020 2:06:51 PM	16670	1.02077	20200420_010	3.074	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE4	4/20/2020 2:06:51 PM	119354	1.00000	20200420_010	3.074	25.0000	1.0000	8

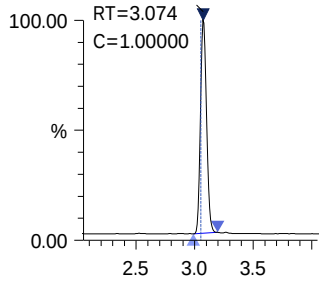
Perchlorate

Conc 1.02077
Area 16670
Q 99.00>83.00 (-) 4.51e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 119354
ISTD 107.00>89.00 (-) 3.26e4



ALS Group Houston

PERCHLORATE5

Date acquired: 4/20/2020 2:14:45 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_011.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

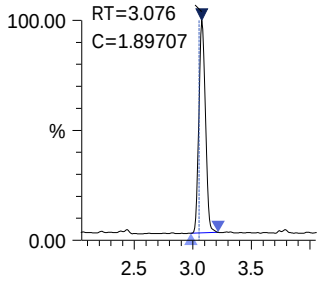
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	4/20/2020 2:14:45 PM	33786	1.89707	20200420_011	3.076	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE5	4/20/2020 2:14:45 PM	130159	1.00000	20200420_011	3.075	25.0000	1.0000	9

Perchlorate

Conc 1.89707

Area 33786

Q 99.00>83.00 (-) 8.73e3

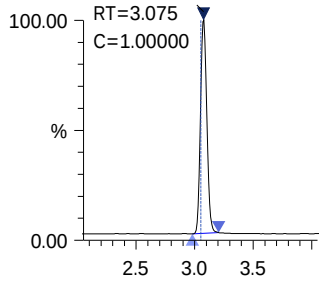


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 130159

ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

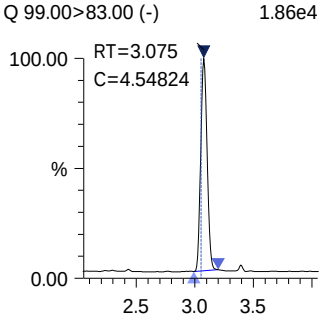
PERCHLORATE6

Date acquired: 4/20/2020 2:22:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_012.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	4/20/2020 2:22:39 PM	69848	4.54824	20200420_012	3.075	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE6	4/20/2020 2:22:39 PM	112235	1.00000	20200420_012	3.074	25.0000	1.0000	10

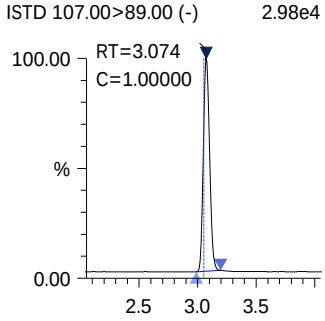
Perchlorate

Conc 4.54824
Area 69848



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 112235



PERCHLORATE8

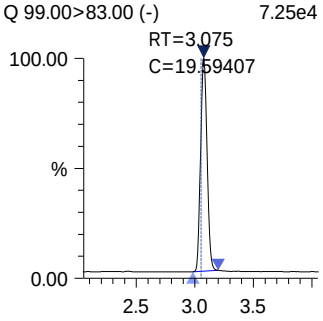
Date acquired: 4/20/2020 2:30:36 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_013.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	4/20/2020 2:30:36 PM	275854	19.59407	20200420_013	3.075	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE8	4/20/2020 2:30:36 PM	102890	1.00000	20200420_013	3.072	25.0000	1.0000	11

Perchlorate

Conc 19.59407

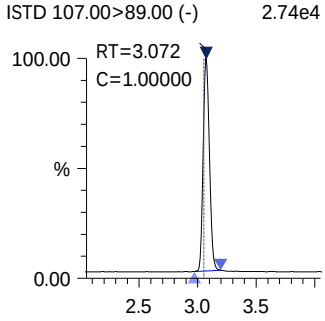
Area 275854



Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 102890



ALS Group Houston

PERCHLORATE9

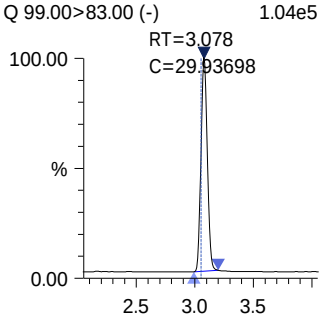
Date acquired: 4/20/2020 2:38:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_014.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	4/20/2020 2:38:33 PM	390068	29.93698	20200420_014	3.078	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE9	4/20/2020 2:38:33 PM	95225	1.00000	20200420_014	3.075	25.0000	1.0000	12

Perchlorate

Conc 29.93698

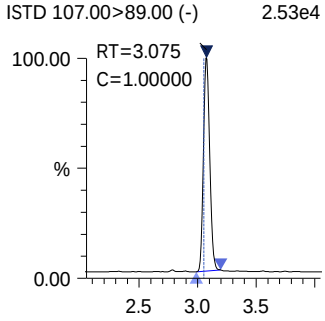
Area 390068



Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 95225



ALS Group Houston

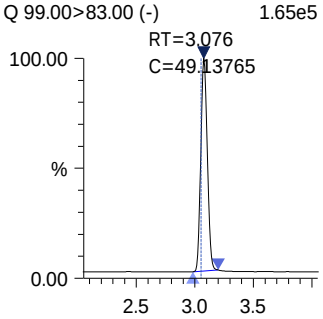
PERCHLORATE10

Date acquired: 4/20/2020 2:46:25 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_015.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE10	4/20/2020 2:46:25 PM	632804	49.13765	20200420_015	3.076	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE10	4/20/2020 2:46:25 PM	94118	1.00000	20200420_015	3.075	25.0000	1.0000	13

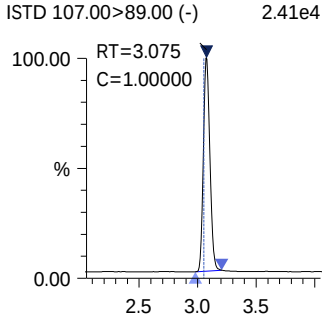
Perchlorate

Conc 49.13765
Area 632804



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 94118



ALS Group Houston

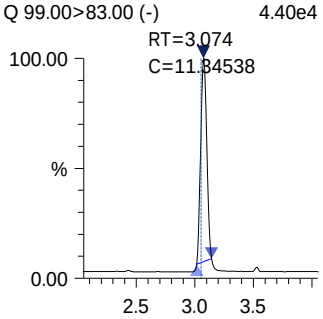
PERCHLORATEICV

Date acquired: 4/20/2020 2:54:20 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_016.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	4/20/2020 2:54:20 PM	149807	11.34538	20200420_016	3.074	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	4/20/2020 2:54:20 PM	96501	1.00000	20200420_016	3.072	25.0000	1.0000	14

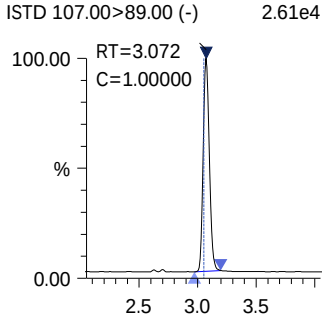
Perchlorate

Conc 11.34538
Area 149807



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 96501



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200512

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null	20200512_001	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:09
	null	20200512_002	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:14
	IB	20200512_003	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:19
	PERCHLORATE7	20200512_004	Perchlorate6850b.lcm	1x	☒	3100805-02	5/12/2020 12:27
	LODV	20200512_005	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:35
	EQ2000173-01	20200512_006	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:50
	EQ2000173-02	20200512_007	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:58
	EQ2000173-03	20200512_008	Perchlorate6850b.lcm	1x	☒		5/12/2020 13:06
	E2000404-002	20200512_009	Perchlorate6850b.lcm	1x	☒		5/12/2020 13:13
	EQ2000173-04	20200512_010	Perchlorate6850b.lcm	1x	☒		5/12/2020 13:21
	EQ2000173-05	20200512_011	Perchlorate6850b.lcm	1x	☒	do not use	5/12/2020 13:29
	E2000382-001	20200512_012	Perchlorate6850b.lcm	1x	☒		5/12/2020 13:37
	PERCHLORATE7	20200512_013	Perchlorate6850b.lcm	1x	☒	3100805-02	5/12/2020 13:45
	E2000404-001	20200512_014	Perchlorate6850b.lcm	1x	☒		5/12/2020 13:53
	E2000404-003	20200512_015	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:01
	E2000404-004	20200512_016	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:09
	E2000404-005	20200512_017	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:17
	E2000404-006	20200512_018	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:25
	E2000405-001	20200512_019	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:32
	E2000405-002	20200512_020	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:40
	E2000405-003	20200512_021	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:48
	E2000405-004	20200512_022	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:56
	E2000405-005	20200512_023	Perchlorate6850b.lcm	1x	☒		5/12/2020 15:04
	PERCHLORATE7	20200512_024	Perchlorate6850b.lcm	1x	☒	3100805-02	5/12/2020 15:12
	E2000406-001	20200512_025	Perchlorate6850b.lcm	1x	☒		5/12/2020 15:20
	E2000406-002	20200512_26	Perchlorate6850b.lcm	1x	☒		5/12/2020 15:28
	E2000406-003	20200512_027	Perchlorate6850b.lcm	1x	☒		5/12/2020 15:36
	E2000407-001	20200512_028	Perchlorate6850b.lcm	1x	☒		5/12/2020 15:44
	E2000408-001	20200512_029	Perchlorate6850b.lcm	1x	☒	dilution	5/12/2020 15:51
	E2000409-001	20200512_030	Perchlorate6850b.lcm	1x	☒	RR-poss carry-over	5/12/2020 15:59
	EQ2000173-05	20200512_031	Perchlorate6850b.lcm	1x	☒	do not use	5/12/2020 16:07
	PERCHLORATE7	20200512_032	Perchlorate6850b.lcm	1x	☒	3100805-02	5/12/2020 16:15

20200513

1st Review: Kneir
2nd Review: Hvan

LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200513_001	Perchlorate6850b.lcm	1x	☒		5/13/2020 11:40
	null		20200513_002	Perchlorate6850b.lcm	1x	☒		5/13/2020 11:45
	IB		20200513_003	Perchlorate6850b.lcm	1x	☒		5/13/2020 11:50
	PERCHLORATE7		20200513_004	Perchlorate6850b.lcm	1x	☒	3100805-02	5/13/2020 11:58
	LODV		20200513_005	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:06
	EQ2000179-01		20200513_006	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:14
	EQ2000179-02		20200513_007	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:22
	EQ2000179-03		20200513_008	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:29
	EQ2000179-04		20200513_009	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:37
	EQ2000179-05		20200513_010	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:45
	E2000410-001		20200513_011	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:53
	E2000410-002		20200513_012	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:01
	E2000410-003		20200513_013	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:09
	E2000410-004		20200513_014	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:17
	E2000410-005		20200513_015	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:25
	PERCHLORATE7		20200513_016	Perchlorate6850b.lcm	1x	☒	3100805-02	5/13/2020 13:33
	E2000410-006		20200513_017	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:41
	E2000410-007		20200513_018	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:49
	E2000408-001X200		20200513_019	Perchlorate6850b.lcm	200x	☒		5/13/2020 13:56
	PERCHLORATE7		20200513_020	Perchlorate6850b.lcm	1x	☒	3100805-02	5/13/2020 14:04
	EQ2000173-05		20200513_021	Perchlorate6850b.lcm	1x	☒		5/13/2020 14:12
	E2000409-001		20200513_022	Perchlorate6850b.lcm	1x	☒		5/13/2020 14:20
	PERCHLORATE7		20200513_023	Perchlorate6850b.lcm	1x	☒	3100805-02	5/13/2020 14:28

ALS Group Houston

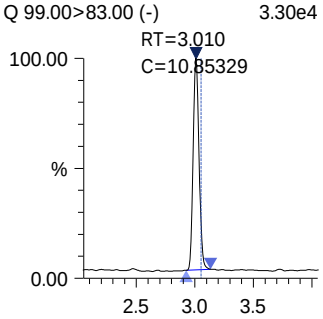
PERCHLORATE7

Date acquired: 5/12/2020 12:27:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_004.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	5/12/2020 12:27:44 PM	114355	10.85329	20200512_004	3.010	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	5/12/2020 12:27:44 PM	77004	1.00000	20200512_004	3.008	25.0000	1.0000	3

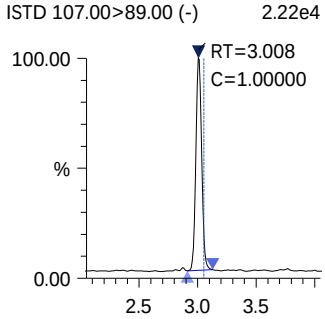
Perchlorate

Conc 10.85329
Area 114355



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 77004



ALS Group Houston

EQ2000173-01

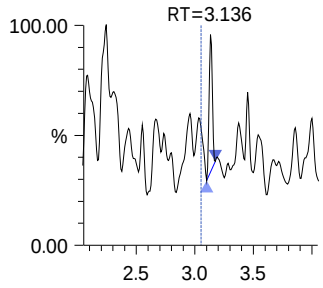
Date acquired: 5/12/2020 12:50:12 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_006.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000173-01	5/12/2020 12:50:12 PM	----	----	20200512_006	----	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	EQ2000173-01	5/12/2020 12:50:12 PM	95026	1.00000	20200512_006	2.942	25.0000	1.0000	5

Perchlorate

Conc ----
Area ----

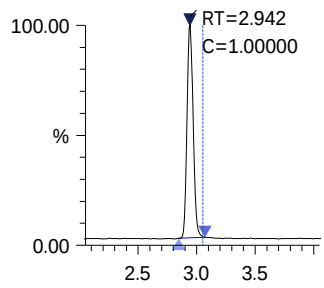
Q 99.00>83.00 (-) 3.00e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 95026

ISTD 107.00>89.00 (-) 2.66e4



ALS Group Houston

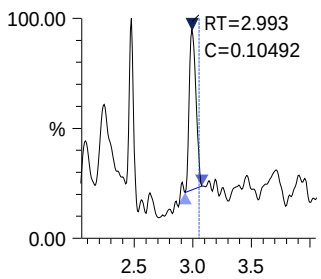
EQ2000173-02

Date acquired: 5/12/2020 12:58:07 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_007.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000173-02	5/12/2020 12:58:07 PM	1559	0.10492	20200512_007	2.993	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000173-02	5/12/2020 12:58:07 PM	108592	1.00000	20200512_007	3.004	25.0000	1.0000	6

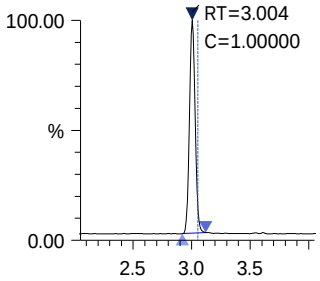
Perchlorate

Conc 0.10492
Area 1559
Q 99.00>83.00 (-) 5.16e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 108592
ISTD 107.00>89.00 (-) 3.19e4



ALS Group Houston

EQ2000173-03

Date acquired: 5/12/2020 1:06:00 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_008.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

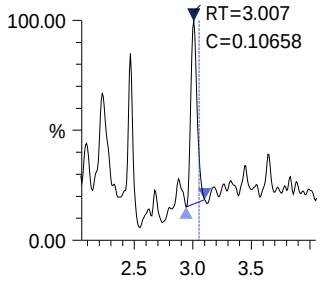
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000173-03	5/12/2020 1:06:00 PM	1594	0.10658	20200512_008	3.007	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	EQ2000173-03	5/12/2020 1:06:00 PM	109300	1.00000	20200512_008	3.004	25.0000	1.0000	7

Perchlorate

Conc 0.10658

Area 1594

Q 99.00>83.00 (-) 4.99e2

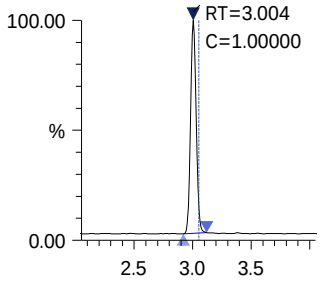


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 109300

ISTD 107.00>89.00 (-) 3.26e4



ALS Group Houston

EQ2000173-04

Date acquired: 5/12/2020 1:21:48 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_010.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

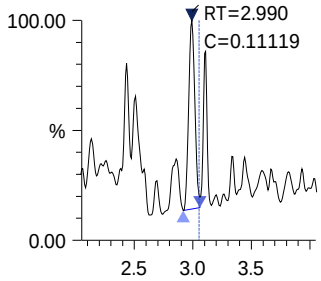
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000173-04	5/12/2020 1:21:48 PM	1744	0.11119	20200512_010	2.990	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	EQ2000173-04	5/12/2020 1:21:48 PM	114639	1.00000	20200512_010	2.990	25.0000	1.0000	9

Perchlorate

Conc 0.11119

Area 1744

Q 99.00>83.00 (-) 5.32e2

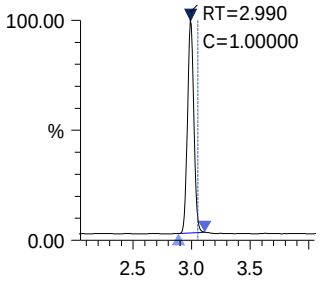


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 114639

ISTD 107.00>89.00 (-) 3.06e4



ALS Group Houston

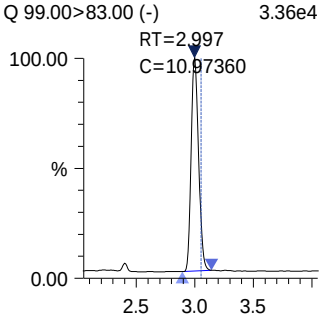
PERCHLORATE7

Date acquired: 5/12/2020 1:45:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_013.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	5/12/2020 1:45:33 PM	148931	10.97360	20200512_013	2.997	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	5/12/2020 1:45:33 PM	99187	1.00000	20200512_013	2.994	25.0000	1.0000	3

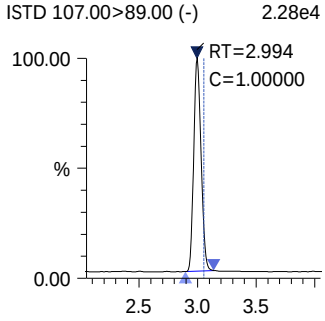
Perchlorate

Conc 10.97360
Area 148931



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 99187



ALS Group Houston

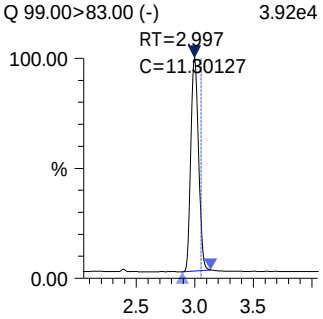
PERCHLORATE7

Date acquired: 5/13/2020 1:33:13 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200513\20200513_016.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	5/13/2020 1:33:13 PM	180833	11.30127	20200513_016	2.997	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	5/13/2020 1:33:13 PM	116942	1.00000	20200513_016	2.995	25.0000	1.0000	3

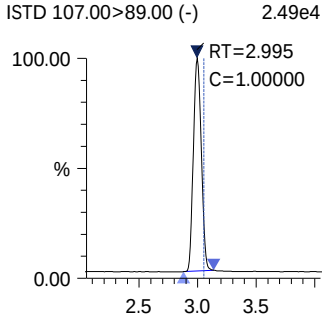
Perchlorate

Conc 11.30127
Area 180833



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 116942



ALS Group Houston

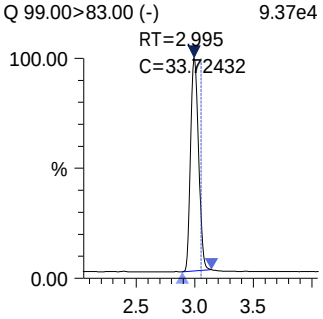
E2000408-001X200

Date acquired: 5/13/2020 1:56:53 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200513\20200513_019.lcd
Vial: 17 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	E2000408-001X200	5/13/2020 1:56:53 PM	448696	33.72432	20200513_019	2.995	25.0000	1.0000	17
Sodium Perchlorate-18O4_IS	E2000408-001X200	5/13/2020 1:56:53 PM	97236	1.00000	20200513_019	2.992	25.0000	1.0000	17

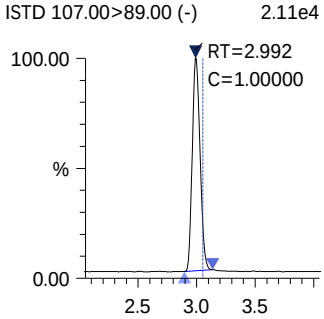
Perchlorate

Conc 33.72432
Area 448696



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 97236



ALS Group Houston

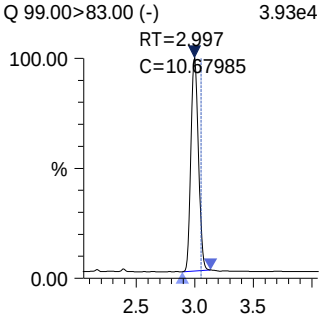
PERCHLORATE7

Date acquired: 5/13/2020 2:04:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200513\20200513_020.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	5/13/2020 2:04:49 PM	176552	10.67985	20200513_020	2.997	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	5/13/2020 2:04:49 PM	120816	1.00000	20200513_020	2.995	25.0000	1.0000	3

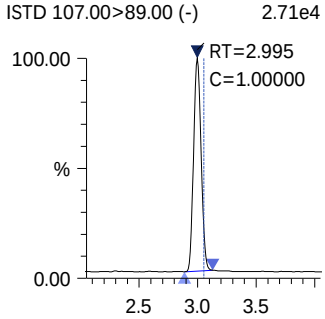
Perchlorate

Conc 10.67985
Area 176552



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 120816



ALS Group Houston

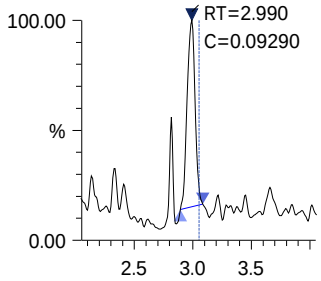
EQ2000173-05

Date acquired: 5/13/2020 2:12:40 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200513\20200513_021.lcd
Vial: 18 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000173-05	5/13/2020 2:12:40 PM	1798	0.09290	20200513_021	2.990	25.0000	1.0000	18
Sodium Perchlorate-18O4_IS	EQ2000173-05	5/13/2020 2:12:40 PM	141444	1.00000	20200513_021	2.980	25.0000	1.0000	18

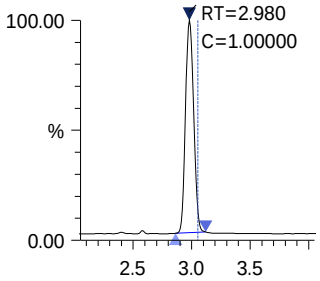
Perchlorate

Conc 0.09290
Area 1798
Q 99.00>83.00 (-) 4.31e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 141444
ISTD 107.00>89.00 (-) 2.95e4



ALS Group Houston

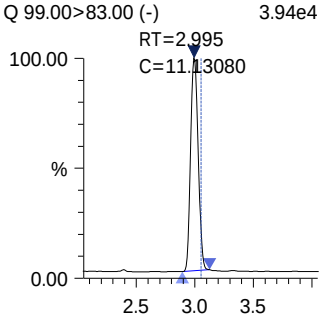
PERCHLORATE7

Date acquired: 5/13/2020 2:28:31 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200513\20200513_023.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	5/13/2020 2:28:31 PM	178211	11.13080	20200513_023	2.995	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	5/13/2020 2:28:31 PM	117011	1.00000	20200513_023	2.992	25.0000	1.0000	3

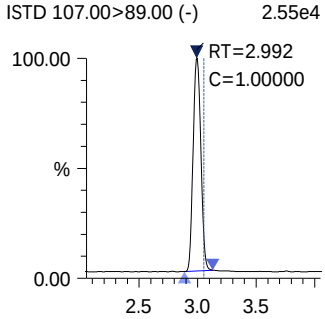
Perchlorate

Conc 11.13080
Area 178211



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 117011



10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
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May 21, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20050178**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on May 06, 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: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20050178

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20050178-01	LH18/24-SP650_050520	Water		05-May-2020 14:00	06-May-2020 09:00	☐
HS20050178-02	LH18/24-SP650_050520-BIX	Water		05-May-2020 14:00	06-May-2020 09:00	☐

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20050178

Work Order Comments

• Analysis of Perchlorate was performed by ALS Houston TX, High Resolution. Laboratory. Final report attached.

The analysis for TOC was subcontracted to ALS Environmental in Kelso WA. Final report attached.

WetChemistry by Method E365.3

Batch ID: R361404

Sample ID: LH18/24-SP650_050520 (HS20050178-01)

• Sample was analyzed outside of the holding time due to laboratory error. Sample results should be considered estimated.

WetChemistry by Method E350.3

Batch ID: R361370

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

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Weekly Samples WorkOrder:HS20050178

Sample ID: LH18/24-SP650_050520 Lab ID:HS20050178-01

Collection Date: 05-May-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: YP
Nitrogen, Ammonia (As N)	**3.7**	a	**0.20**	**0.10**	**0.20**	**mg/L**	1	11-May-2020 13:00
ORTHO PHOSPHATE (PO4) AS P BY E365.3		**Method:E365.3**						Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	**0.804**	Ha	**0.0100**	**0.0250**	**0.0250**	**mg/L**	1	12-May-2020 12:01
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	15-May-2020 15:30

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

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Weekly Samples WorkOrder:HS20050178

Sample ID: LH18/24-SP650_050520-BIX Lab ID:HS20050178-02

Collection Date: 05-May-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	21-May-2020 10:37

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

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20050178

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R361370 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS20050178-01	LH18/24-SP650_050520	05 May 2020 14:00			11 May 2020 13:00	1
Batch ID: R361404 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3				**Matrix:** Water	
HS20050178-01	LH18/24-SP650_050520	05 May 2020 14:00			12 May 2020 12:01	1
Batch ID: R361636 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Water	
HS20050178-01	LH18/24-SP650_050520	05 May 2020 14:00			15 May 2020 15:30	1
Batch ID: R361905 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS20050178-02	LH18/24-SP650_050520-BIX	05 May 2020 14:00			21 May 2020 10:37	1

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20050178

QC BATCH REPORT

Batch ID: R361370 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY SM4500 NH3-D (ISE)**

MBLK Sample ID: **MBLK-R361370** Units: **mg/L** Analysis Date: **11-May-2020 13:00**
Client ID: Run ID: **WetChem_HS_361370** SeqNo: **5580661** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (as N)	0.10	0.20								U

LCS Sample ID: **LCS-R361370** Units: **mg/L** Analysis Date: **11-May-2020 13:00**
Client ID: Run ID: **WetChem_HS_361370** SeqNo: **5580660** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (as N)	10.38	0.20	10	0	104	85 - 115				

MS Sample ID: **HS20050114-01MS** Units: **mg/L** Analysis Date: **11-May-2020 13:00**
Client ID: Run ID: **WetChem_HS_361370** SeqNo: **5580663** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (as N)	10.2	0.20	10	0	102	80 - 120				

MSD Sample ID: **HS20050114-01MSD** Units: **mg/L** Analysis Date: **11-May-2020 13:00**
Client ID: Run ID: **WetChem_HS_361370** SeqNo: **5580662** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (as N)	10.35	0.20	10	0	103	80 - 120	10.2	1.45	20	

The following samples were analyzed in this batch: HS20050178-01

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20050178

QC BATCH REPORT

Batch ID: R361404 (0) **Instrument:** UV-2450 **Method:** ORTHO PHOSPHATE (PO4) AS P BY E365.3

MBLK Sample ID: **MBLK-361404** Units: **mg/L** Analysis Date: **12-May-2020 12:01**
Client ID: Run ID: **UV-2450_361404** SeqNo: **5581239** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0250	0.0250								U

LCS Sample ID: **LCS-361404** Units: **mg/L** Analysis Date: **12-May-2020 12:01**
Client ID: Run ID: **UV-2450_361404** SeqNo: **5581240** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.25	0.0250	0.25	0	100	85 - 115				

LCSD Sample ID: **LCSD-361404** Units: **mg/L** Analysis Date: **12-May-2020 12:01**
Client ID: Run ID: **UV-2450_361404** SeqNo: **5581247** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.247	0.0250	0.25	0	98.8	85 - 115	0.25	1.21	20	

The following samples were analyzed in this batch: HS20050178-01

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS20050178**

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
Arkansas	20-030-0	26-Mar-2021
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
Oklahoma	2019-141	31-Aug-2020
Texas	T104704231-20-26	30-Apr-2021

ALS Houston, US Date: 21-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20050178

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20050178-01	LH18/24-SP650_050520	Login	5/6/2020 12:14:27 PM	PMG	WET326
HS20050178-01	LH18/24-SP650_050520	Login	5/6/2020 12:14:27 PM	PMG	WET326
HS20050178-01	LH18/24-SP650_050520	Login	5/6/2020 12:14:27 PM	PMG	Sub
HS20050178-02	LH18/24-SP650_050520-BIX	Login	5/6/2020 12:14:27 PM	PMG	Sub

ALS Houston, US Date: 21-May-20

Sample Receipt Checklist

Work Order ID: HS20050178 **Date/Time Received:** 06-May-2020 09:00

Client Name: Bhate Environmental **Received by:** Asad Chaudhry

Completed By: /S/ Paresh M. Giga (eSignature) 06-May-2020 12:16 (Date/Time) **Reviewed by:** /S/ RJ Modashia (eSignature) 06-May-2020 14:49 (Date/Time)

Matrices: **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):	1.4C U/C	IR25	
Cooler(s)/Kit(s):	43868		
Date/Time sample(s) sent to storage:	5/6/2020 12:25		
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:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281) 530-5656 ATTN: R.J Modashia

Page 1 of 1

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

Prepared By:
Scott Beesinger

P.O. Number

HS20050178
Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_050520	Water	05/05/20 / 14:00		3	X	X			H2SO4	
LH18/24-SP650_050520	Water	05/05/20 / 14:00		1			X		NONE	
LH18/24–SP650_050520_BIX	Water	05/05/20 / 14:00		1				X	NONE	

Additional Remarks: **Standard TAT on all parameters**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	05/05/20	14:30							AC	5/6/20	09:00

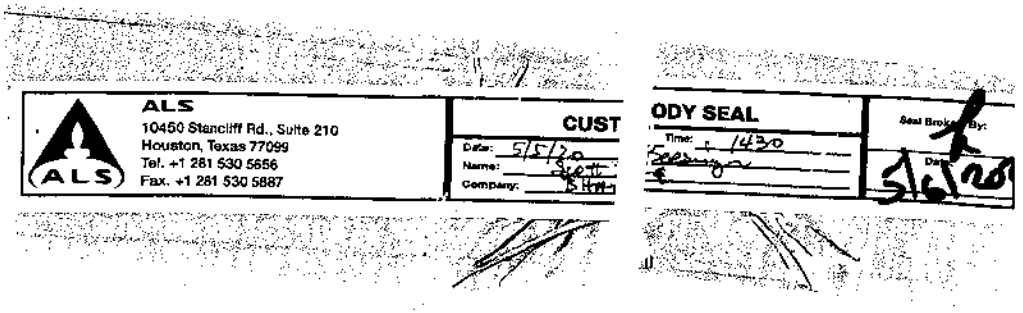
For Lab Use Only

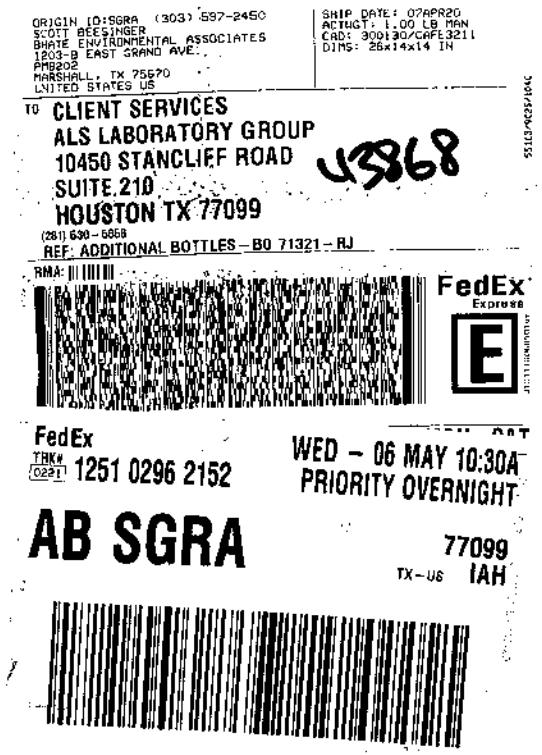
Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

S/C 1.4 IR #25 cf 0.0 43368

(Word) S:\Forms\Chain of Custody - BiWeekly


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
CUST
Date: 5/5/20
Name:
Company:
ODY SEAL
Time: 1430
Seal Broken By:
Date:
5/6/20


ORIGIN ID:SGRA (303) 597-2450
SCOTT BEESINGER
BHATE ENVIRONMENTAL ASSOCIATES
1203-B EAST GRAND AVE.
PMB202
MARSHALL, TX 75670
UNITED STATES US
SHIP DATE: 07APR20
ACTWGT: 1.00 LB MAN
CAD: 3001330/CAFE3211
DIMS: 26x14x14 IN
TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5868
REF: ADDITIONAL BOTTLES - BO 71321 - RJ
J3868
RMA:
FedEx
Express
FedEx
TRK# 0201 1251 0296 2152
WED - 06 MAY 10:30A
PRIORITY OVERNIGHT
AB SGRA
77099
TX-US IAH

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May 15, 2020 **Analytical Report for Service Request No:** K2003793

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

RE: ALS Houston DOD TOC / HS20050178

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory May 08, 2020
For your reference, these analyses have been assigned our service request number **K2003793.**

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

for 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: ALS Houston DOD TOC
Sample Matrix: Water

Service Request: K2003793
Date Received: 05/08/2020

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 water sample was received for analysis at ALS Environmental on 05/08/2020. 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 Noe D. Davis Date 05/15/2020

Chain of Custody

ALS Environmental—Kelso Laboratory
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K2003793

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F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13862**

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:	HS20050178
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20050178-01**	**LH18/24-SP650_050520**	**Water**	**05 May 2020 14:00**
	TOC Analysis for DOD Level IV			20 May 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. Hubbard Date/Time: 5/7/20 18:00

Received By: Date/Time: 5/8/20 1000

Cooler ID(s): Temperature(s):

PC KL

Cooler Receipt and Preservation Form

Client AIR - HOUSTON Service Request K20 03793

Received: 5/8/20 Opened: 5/8/20 By: BR Unloaded: 5/8/20 By: BR

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
-	3.2	3.4	3.0	3.3	18900488		1Z51 0376 8460	

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:**	K2003793
Project:	ALS Houston DOD TOC/HS20050178	**Date Collected:**	05/5/20
Sample Matrix:	Water	**Date Received:**	05/8/20
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
LH18/24-SP650_050520	K2003793-001	**2.34**	0.50	0.20	0.07	1	05/13/20 09:38	
Method Blank	K2003793-MB	ND U	0.50	0.20	0.07	1	05/12/20 23:41	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2003793
Project	ALS Houston DOD TOC/HS20050178	**Date Collected:**	05/05/20
Sample Matrix:	Water	**Date Received:**	05/08/20
		Date Analyzed:	05/13/20

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	LH18/24-SP650_050520	**Units:**	mg/L
Lab Code:	K2003793-001	**Basis:**	NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K2003793-001DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	2.34	2.37	2.36	1	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:**	K2003793
Project:	ALS Houston DOD TOC/HS20050178	**Date Analyzed:**	05/12/20
Sample Matrix:	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:	679905

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2003793-LCS	25.5	25.0	102	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2003793
Project: ALS Houston DOD TOC/HS20050178

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	679905	KQ2006459-01	05/12/20 23:11	25.0	26.0	104	90-110
CCV2	679905	KQ2006459-02	05/13/20 03:00	25.0	25.9	104	90-110
CCV3	679905	KQ2006459-03	05/13/20 08:11	25.0	25.8	103	90-110
CCV4	679905	KQ2006459-04	05/13/20 12:54	25.0	26.0	104	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2003793
Project: ALS Houston DOD TOC/HS20050178

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	679905	KQ2006459-05	05/12/20 23:26	0.50	0.20	0.07	0.09	J
CCB2	679905	KQ2006459-06	05/13/20 03:16	0.50	0.20	0.07	ND	U
CCB3	679905	KQ2006459-07	05/13/20 08:26	0.50	0.20	0.07	0.15	J
CCB4	679905	KQ2006459-08	05/13/20 13:09	0.50	0.20	0.07	ND	U

Raw Data

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www.alsglobal.com

General Chemistry

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Work Request # Original (K2003631, 3711, 3723, 3737, 3742, 3746, 3791, 3792, 3793, 3814, 3842)

Tier: IV II I II II II IV IV IV IV II

Date Analyzed: 5/12/20

Analyst: BCP

Analysis: DOC/DOC

Run # DOC: 679905, 679906, DOC: 679907

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

BCP 5/14/20

COMMENTS: K2003737-1, 3792-1, 3792-5, 3814-1, 3814-2, 3814-3, 3842-10, 3842-4, 3842-5, 3842-6, 3842-7 and respective dups report a high %RSD. However, these samples are less than 5x the MRL.

Final Approved by: _____ Date: 5/14/20

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 679905 **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
K2003631-010	Carbon, Total Organic	N/A		Water	0.05 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/13/20 10:06:00	N	IV
K2003711-001	Carbon, Total Organic	N/A		Drinking Water	0.57 mg/L	10 mL	0.57 mg/L	1	0.07	0.50			5/13/20 00:39:00	N	II
K2003723-001	Carbon, Total Organic	N/A		Water	5.89 mg/L	10 mL	589 mg/L	100	7	50			5/13/20 02:04:00	N	I
K2003737-001	Carbon, Total Organic	N/A		Drinking Water	0.73 mg/L	10 mL	0.73 mg/L	1	0.07	0.50			5/13/20 02:32:00	N	II
K2003742-001	Carbon, Total Organic	N/A		Water	6.84 mg/L	10 mL	6.84 mg/L	1	0.07	0.50			5/13/20 01:36:00	N	II
K2003746-001	Carbon, Total Organic	N/A		Water	2.22 mg/L	10 mL	2.22 mg/L	1	0.07	0.50			5/13/20 03:30:00	N	II
K2003791-001	Carbon, Total Organic	N/A		Ground Water	2.64 mg/L	10 mL	2.64 mg/L	1	0.07	0.50			5/13/20 03:59:00	N	IV
K2003791-002	Carbon, Total Organic	N/A		Ground Water	16.72 mg/L	10 mL	334 mg/L	20	2	10			5/13/20 04:27:00	N	IV
K2003791-003	Carbon, Total Organic	N/A		Ground Water	4.37 mg/L	10 mL	4.37 mg/L	1	0.07	0.50			5/13/20 04:55:00	N	IV
K2003791-004	Carbon, Total Organic	N/A		Ground Water	4.52 mg/L	10 mL	4.52 mg/L	1	0.07	0.50			5/13/20 05:23:00	N	IV
K2003791-005	Carbon, Total Organic	N/A		Ground Water	24.99 mg/L	10 mL	25.0 mg/L	1	0.07	0.50			5/13/20 05:51:00	N	IV
K2003792-001	Carbon, Total Organic	N/A		Ground Water	2.14 mg/L	10 mL	2.14 mg/L	1	0.07	0.50			5/13/20 06:19:00	N	IV
K2003792-002	Carbon, Total Organic	N/A		Ground Water	1.96 mg/L	10 mL	1.96 mg/L	1	0.07	0.50			5/13/20 06:47:00	N	IV
K2003792-003	Carbon, Total Organic	N/A		Ground Water	1.40 mg/L	10 mL	1.40 mg/L	1	0.07	0.50			5/13/20 07:15:00	N	IV
K2003792-004	Carbon, Total Organic	N/A		Ground Water	1.25 mg/L	10 mL	1.25 mg/L	1	0.07	0.50			5/13/20 07:43:00	N	IV
K2003792-005	Carbon, Total Organic	N/A		Ground Water	1.14 mg/L	10 mL	1.14 mg/L	1	0.07	0.50			5/13/20 09:10:00	N	IV
K2003793-001	Carbon, Total Organic	N/A		Water	2.34 mg/L	10 mL	2.34 mg/L	1	0.07	0.50			5/13/20 09:38:00	N	IV
K2003814-001	Carbon, Total Organic	N/A		Water	0.42 mg/L	10 mL	0.42 mg/L J	1	0.07	0.50			5/13/20 10:34:00	N	IV
K2003814-002	Carbon, Total Organic	N/A		Water	0.40 mg/L	10 mL	0.40 mg/L J	1	0.07	0.50			5/13/20 11:02:00	N	IV
K2003814-003	Carbon, Total Organic	N/A		Water	0.41 mg/L	10 mL	0.41 mg/L J	1	0.07	0.50			5/13/20 11:30:00	N	IV
KQ2006459-01	Carbon, Total Organic	CCV		Drinking Water	26.03 mg/L	10 mL	26.0 mg/L	1					5/12/20 23:11:00	N	II
KQ2006459-02	Carbon, Total Organic	CCV		Drinking Water	25.90 mg/L	10 mL	25.9 mg/L	1					5/13/20 03:00:00	N	II
KQ2006459-03	Carbon, Total Organic	CCV		Drinking Water	25.77 mg/L	10 mL	25.8 mg/L	1					5/13/20 08:11:00	N	II
KQ2006459-04	Carbon, Total Organic	CCV		Drinking Water	26.05 mg/L	10 mL	26.0 mg/L	1					5/13/20 12:54:00	N	II
KQ2006459-05	Carbon, Total Organic	CCB		Drinking Water	0.09 mg/L	10 mL	0.09 mg/L J	1	0.07	0.50			5/12/20 23:26:00	N	II
KQ2006459-06	Carbon, Total Organic	CCB		Drinking Water	0.03 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/13/20 03:16:00	N	II
KQ2006459-07	Carbon, Total Organic	CCB		Drinking Water	0.15 mg/L	10 mL	0.15 mg/L J	1	0.07	0.50			5/13/20 08:26:00	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:** 679905 **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
KQ2006459-08	Carbon, Total Organic	CCB		Drinking Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/13/20 13:09:00	N	II
KQ2006459-09	Carbon, Total Organic	MB		Drinking Water	0.03 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/12/20 23:41:00	N	II
KQ2006459-10	Carbon, Total Organic	LCS		Drinking Water	25.46 mg/L	10 mL	25.5 mg/L	1	0.07	0.50	102		5/12/20 23:55:00	N	II
KQ2006459-11	Carbon, Total Organic	MS	K2003711-001	Drinking Water	26.26 mg/L	10 mL	26.3 mg/L	1	0.07	0.50	103		5/13/20 01:07:00	N	II
KQ2006459-12	Carbon, Total Organic	DUP	K2003631-010	Water	0.01 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	5/13/20 10:06:00	N	IV
KQ2006459-13	Carbon, Total Organic	DUP	K2003711-001	Drinking Water	0.57 mg/L	10 mL	0.57 mg/L	1	0.07	0.50		<1	5/13/20 00:39:00	N	II
KQ2006459-14	Carbon, Total Organic	DUP	K2003723-001	Water	6.19 mg/L	10 mL	619 mg/L	100	7	50		5	5/13/20 02:04:00	N	I
KQ2006459-15	Carbon, Total Organic	DUP	K2003737-001	Drinking Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50		23*	5/13/20 02:32:00	N	II
KQ2006459-16	Carbon, Total Organic	DUP	K2003742-001	Water	6.87 mg/L	10 mL	6.87 mg/L	1	0.07	0.50		<1	5/13/20 01:36:00	N	II
KQ2006459-17	Carbon, Total Organic	DUP	K2003746-001	Water	2.10 mg/L	10 mL	2.10 mg/L	1	0.07	0.50		5	5/13/20 03:30:00	N	II
KQ2006459-18	Carbon, Total Organic	DUP	K2003791-002	Ground Water	17.08 mg/L	10 mL	342 mg/L	20	2	10		2	5/13/20 04:27:00	N	IV
KQ2006459-19	Carbon, Total Organic	DUP	K2003791-001	Ground Water	2.51 mg/L	10 mL	2.51 mg/L	1	0.07	0.50		5	5/13/20 03:59:00	N	IV
KQ2006459-20	Carbon, Total Organic	DUP	K2003791-003	Ground Water	4.37 mg/L	10 mL	4.37 mg/L	1	0.07	0.50		<1	5/13/20 04:55:00	N	IV
KQ2006459-21	Carbon, Total Organic	DUP	K2003791-004	Ground Water	4.29 mg/L	10 mL	4.29 mg/L	1	0.07	0.50		5	5/13/20 05:23:00	N	IV
KQ2006459-22	Carbon, Total Organic	DUP	K2003791-005	Ground Water	25.28 mg/L	10 mL	25.3 mg/L	1	0.07	0.50		1	5/13/20 05:51:00	N	IV
KQ2006459-23	Carbon, Total Organic	DUP	K2003792-002	Ground Water	1.87 mg/L	10 mL	1.87 mg/L	1	0.07	0.50		5	5/13/20 06:47:00	N	IV
KQ2006459-24	Carbon, Total Organic	DUP	K2003792-001	Ground Water	1.48 mg/L	10 mL	1.48 mg/L	1	0.07	0.50		37*	5/13/20 06:19:00	N	IV
KQ2006459-25	Carbon, Total Organic	DUP	K2003792-003	Ground Water	1.27 mg/L	10 mL	1.27 mg/L	1	0.07	0.50		10	5/13/20 07:15:00	N	IV
KQ2006459-26	Carbon, Total Organic	DUP	K2003792-004	Ground Water	1.18 mg/L	10 mL	1.18 mg/L	1	0.07	0.50		6	5/13/20 07:43:00	N	IV
KQ2006459-27	Carbon, Total Organic	DUP	K2003792-005	Ground Water	1.01 mg/L	10 mL	1.01 mg/L	1	0.07	0.50		12*	5/13/20 09:10:00	N	IV
KQ2006459-28	Carbon, Total Organic	DUP	K2003793-001	Water	2.37 mg/L	10 mL	2.37 mg/L	1	0.07	0.50		1	5/13/20 09:38:00	N	IV
KQ2006459-29	Carbon, Total Organic	DUP	K2003814-001	Water	0.38 mg/L	10 mL	0.38 mg/L J	1	0.07	0.50		11*	5/13/20 10:34:00	N	IV
KQ2006459-30	Carbon, Total Organic	DUP	K2003814-002	Water	0.34 mg/L	10 mL	0.34 mg/L J	1	0.07	0.50		15*	5/13/20 11:02:00	N	IV
KQ2006459-31	Carbon, Total Organic	DUP	K2003814-003	Water	0.35 mg/L	10 mL	0.35 mg/L J	1	0.07	0.50		15*	5/13/20 11:30:00	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:** 679906 **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
K2003842-001	Carbon, Total Organic	N/A		Water	1.82 mg/L	10 mL	1.82 mg/L	1	0.07	0.50			5/13/20 11:58:00	N	II
K2003842-002	Carbon, Total Organic	N/A		Water	1.08 mg/L	10 mL	1.08 mg/L	1	0.07	0.50			5/13/20 12:26:00	N	II
K2003842-003	Carbon, Total Organic	N/A		Water	0.62 mg/L	10 mL	0.62 mg/L	1	0.07	0.50			5/13/20 13:24:00	N	II
K2003842-004	Carbon, Total Organic	N/A		Water	0.56 mg/L	10 mL	0.56 mg/L	1	0.07	0.50			5/13/20 13:52:00	N	II
K2003842-005	Carbon, Total Organic	N/A		Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50			5/13/20 14:20:00	N	II
K2003842-006	Carbon, Total Organic	N/A		Water	0.54 mg/L	10 mL	0.54 mg/L	1	0.07	0.50			5/13/20 14:48:00	N	II
K2003842-007	Carbon, Total Organic	N/A		Water	0.43 mg/L	10 mL	0.43 mg/L J	1	0.07	0.50			5/13/20 15:16:00	N	II
K2003842-008	Carbon, Total Organic	N/A		Water	0.59 mg/L	10 mL	0.59 mg/L	1	0.07	0.50			5/13/20 15:44:00	N	II
K2003842-009	Carbon, Total Organic	N/A		Water	0.71 mg/L	10 mL	0.71 mg/L	1	0.07	0.50			5/13/20 16:12:00	N	II
K2003842-010	Carbon, Total Organic	N/A		Water	0.18 mg/L	10 mL	0.18 mg/L J	1	0.07	0.50			5/13/20 16:40:00	N	II
K2003842-011	Carbon, Total Organic	N/A		Water	0.56 mg/L	10 mL	0.56 mg/L	1	0.07	0.50			5/13/20 17:08:00	N	II
K2003842-012	Carbon, Total Organic	N/A		Water	0.81 mg/L	10 mL	0.81 mg/L	1	0.07	0.50			5/13/20 18:50:00	N	II
K2003842-013	Carbon, Total Organic	N/A		Water	0.96 mg/L	10 mL	0.96 mg/L	1	0.07	0.50			5/13/20 19:18:00	N	II
K2003842-014	Carbon, Total Organic	N/A		Water	0.46 mg/L	10 mL	0.46 mg/L J	1	0.07	0.50			5/13/20 19:46:00	N	II
K2003842-015	Carbon, Total Organic	N/A		Water	0.41 mg/L	10 mL	0.41 mg/L J	1	0.07	0.50			5/13/20 20:15:00	N	II
KQ2006460-01	Carbon, Total Organic	CCV		Water	25.77 mg/L	10 mL	25.8 mg/L	1					5/13/20 08:11:00	N	II
KQ2006460-02	Carbon, Total Organic	CCV		Water	26.05 mg/L	10 mL	26.0 mg/L	1					5/13/20 12:54:00	N	II
KQ2006460-03	Carbon, Total Organic	CCV		Water	25.97 mg/L	10 mL	26.0 mg/L	1					5/13/20 18:06:00	N	II
KQ2006460-04	Carbon, Total Organic	CCV		Water	25.18 mg/L	10 mL	25.2 mg/L	1					5/13/20 22:08:00	N	II
KQ2006460-05	Carbon, Total Organic	CCB		Water	0.15 mg/L	10 mL	0.15 mg/L J	1	0.07	0.50			5/13/20 08:26:00	N	II
KQ2006460-06	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/13/20 13:09:00	N	II
KQ2006460-07	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/13/20 18:21:00	N	II
KQ2006460-08	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/13/20 22:23:00	N	II
KQ2006460-09	Carbon, Total Organic	MB		Water	0.03 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/13/20 08:41:00	N	II
KQ2006460-10	Carbon, Total Organic	LCS		Water	25.27 mg/L	10 mL	25.3 mg/L	1	0.07	0.50	101		5/13/20 08:55:00	N	II
KQ2006460-11	Carbon, Total Organic	MS	K2003842-011	Water	26.42 mg/L	10 mL	26.4 mg/L	1	0.07	0.50	103		5/13/20 17:37:00	N	II
KQ2006460-12	Carbon, Total Organic	DUP	K2003842-015	Water	0.39 mg/L	10 mL	0.39 mg/L J	1	0.07	0.50		7	5/13/20 20:15:00	N	II
KQ2006460-13	Carbon, Total Organic	DUP	K2003842-001	Water	1.81 mg/L	10 mL	1.81 mg/L	1	0.07	0.50		<1	5/13/20 11:58:00	N	II
KQ2006460-14	Carbon, Total Organic	DUP	K2003842-002	Water	1.07 mg/L	10 mL	1.07 mg/L	1	0.07	0.50		<1	5/13/20 12:26:00	N	II
KQ2006460-15	Carbon, Total Organic	DUP	K2003842-003	Water	0.58 mg/L	10 mL	0.58 mg/L	1	0.07	0.50		7	5/13/20 13:24:00	N	II
KQ2006460-16	Carbon, Total Organic	DUP	K2003842-004	Water	0.53 mg/L	10 mL	0.53 mg/L	1	0.07	0.50		7	5/13/20 13:52:00	N	II
KQ2006460-17	Carbon, Total Organic	DUP	K2003842-005	Water	0.55 mg/L	10 mL	0.55 mg/L	1	0.07	0.50		5	5/13/20 14:20:00	N	II
KQ2006460-18	Carbon, Total Organic	DUP	K2003842-006	Water	0.54 mg/L	10 mL	0.54 mg/L	1	0.07	0.50		<1	5/13/20 14:48:00	N	II
KQ2006460-19	Carbon, Total Organic	DUP	K2003842-007	Water	0.41 mg/L	10 mL	0.41 mg/L J	1	0.07	0.50		5	5/13/20 15:16:00	N	II
KQ2006460-20	Carbon, Total Organic	DUP	K2003842-008	Water	0.56 mg/L	10 mL	0.56 mg/L	1	0.07	0.50		5	5/13/20 15:44:00	N	II
KQ2006460-21	Carbon, Total Organic	DUP	K2003842-009	Water	0.69 mg/L	10 mL	0.69 mg/L	1	0.07	0.50		3	5/13/20 16:12:00	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:** 679906 **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
KQ2006460-22	Carbon, Total Organic	DUP	K2003842-010	Water	0.13 mg/L	10 mL	0.13 mg/L J	1	0.07	0.50		34*	5/13/20 16:40:00	N	II
KQ2006460-23	Carbon, Total Organic	DUP	K2003842-011	Water	0.53 mg/L	10 mL	0.53 mg/L	1	0.07	0.50		7	5/13/20 17:08:00	N	II
KQ2006460-24	Carbon, Total Organic	DUP	K2003842-012	Water	0.75 mg/L	10 mL	0.75 mg/L	1	0.07	0.50		8	5/13/20 18:50:00	N	II
KQ2006460-25	Carbon, Total Organic	DUP	K2003842-013	Water	0.91 mg/L	10 mL	0.91 mg/L	1	0.07	0.50		5	5/13/20 19:18:00	N	II
KQ2006460-26	Carbon, Total Organic	DUP	K2003842-014	Water	0.44 mg/L	10 mL	0.44 mg/L J	1	0.07	0.50		4	5/13/20 19:46:00	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:** 679907 **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
K2003842-001	Carbon, Dissolved Organic (DOC)	N/A		Water	1.24 mg/L	10 mL	1.24 mg/L	1	0.07	0.50			5/13/20 21:11:00	N	II
K2003842-002	Carbon, Dissolved Organic (DOC)	N/A		Water	0.71 mg/L	10 mL	0.71 mg/L	1	0.07	0.50			5/13/20 22:37:00	N	II
K2003842-003	Carbon, Dissolved Organic (DOC)	N/A		Water	0.33 mg/L	10 mL	0.33 mg/L J	1	0.07	0.50			5/13/20 23:06:00	N	II
K2003842-004	Carbon, Dissolved Organic (DOC)	N/A		Water	0.31 mg/L	10 mL	0.31 mg/L J	1	0.07	0.50			5/13/20 23:34:00	N	II
K2003842-005	Carbon, Dissolved Organic (DOC)	N/A		Water	0.34 mg/L	10 mL	0.34 mg/L J	1	0.07	0.50			5/14/20 00:02:00	N	II
K2003842-006	Carbon, Dissolved Organic (DOC)	N/A		Water	0.28 mg/L	10 mL	0.28 mg/L J	1	0.07	0.50			5/14/20 00:30:00	N	II
K2003842-007	Carbon, Dissolved Organic (DOC)	N/A		Water	0.14 mg/L	10 mL	0.14 mg/L J	1	0.07	0.50			5/14/20 00:58:00	N	II
K2003842-008	Carbon, Dissolved Organic (DOC)	N/A		Water	0.37 mg/L	10 mL	0.37 mg/L J	1	0.07	0.50			5/14/20 01:26:00	N	II
K2003842-009	Carbon, Dissolved Organic (DOC)	N/A		Water	0.40 mg/L	10 mL	0.40 mg/L J	1	0.07	0.50			5/14/20 01:54:00	N	II
K2003842-010	Carbon, Dissolved Organic (DOC)	N/A		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/14/20 02:22:00	N	II
K2003842-011	Carbon, Dissolved Organic (DOC)	N/A		Water	0.45 mg/L	10 mL	0.45 mg/L J	1	0.07	0.50			5/14/20 02:50:00	N	II
K2003842-012	Carbon, Dissolved Organic (DOC)	N/A		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/14/20 03:48:00	N	II
K2003842-013	Carbon, Dissolved Organic (DOC)	N/A		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/14/20 04:16:00	N	II
K2003842-014	Carbon, Dissolved Organic (DOC)	N/A		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/14/20 04:44:00	N	II
K2003842-015	Carbon, Dissolved Organic (DOC)	N/A		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/14/20 05:12:00	N	II
KQ2006461-01	Carbon, Dissolved Organic (DOC)	CCV		Water	25.97 mg/L	10 mL	26.0 mg/L	1					5/13/20 17:52:00	N	II
KQ2006461-02	Carbon, Dissolved Organic (DOC)	CCV		Water	25.18 mg/L	10 mL	25.2 mg/L	1					5/13/20 22:08:00	N	II
KQ2006461-03	Carbon, Dissolved Organic (DOC)	CCV		Water	24.88 mg/L	10 mL	24.9 mg/L	1					5/14/20 03:33:00	N	II
KQ2006461-04	Carbon, Dissolved Organic (DOC)	CCV		Water	24.56 mg/L	10 mL	24.6 mg/L	1					5/14/20 05:40:00	N	II
KQ2006461-05	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/13/20 18:06:00	N	II
KQ2006461-06	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/13/20 22:23:00	N	II
KQ2006461-07	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/14/20 03:48:00	N	II
KQ2006461-08	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/14/20 05:55:00	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:** 679907 **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
KQ2006461-09	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/14/20 18:21:00	N	II
KQ2006461-10	Carbon, Dissolved Organic (DOC)	LCS		Water	25.22 mg/L	10 mL	25.2 mg/L	1	0.07	0.50	101		5/14/20 18:36:00	N	II
KQ2006461-11	Carbon, Dissolved Organic (DOC)	MS	K2003842-001	Water	26.67 mg/L	10 mL	26.7 mg/L	1	0.07	0.50	102		5/13/20 21:39:00	N	II
KQ2006461-12	Carbon, Dissolved Organic (DOC)	DUP	K2003842-015	Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	5/14/20 05:12:00	N	II
KQ2006461-13	Carbon, Dissolved Organic (DOC)	DUP	K2003842-001	Water	1.20 mg/L	10 mL	1.20 mg/L	1	0.07	0.50		3	5/13/20 21:11:00	N	II
KQ2006461-14	Carbon, Dissolved Organic (DOC)	DUP	K2003842-002	Water	0.68 mg/L	10 mL	0.68 mg/L	1	0.07	0.50		4	5/13/20 22:37:00	N	II
KQ2006461-15	Carbon, Dissolved Organic (DOC)	DUP	K2003842-003	Water	0.30 mg/L	10 mL	0.30 mg/L J	1	0.07	0.50		9	5/13/20 23:06:00	N	II
KQ2006461-16	Carbon, Dissolved Organic (DOC)	DUP	K2003842-004	Water	0.27 mg/L	10 mL	0.27 mg/L J	1	0.07	0.50		14*	5/13/20 23:34:00	N	II
KQ2006461-17	Carbon, Dissolved Organic (DOC)	DUP	K2003842-005	Water	0.27 mg/L	10 mL	0.27 mg/L J	1	0.07	0.50		23*	5/14/20 00:02:00	N	II
KQ2006461-18	Carbon, Dissolved Organic (DOC)	DUP	K2003842-006	Water	0.25 mg/L	10 mL	0.25 mg/L J	1	0.07	0.50		12*	5/14/20 00:30:00	N	II
KQ2006461-19	Carbon, Dissolved Organic (DOC)	DUP	K2003842-007	Water	0.16 mg/L	10 mL	0.16 mg/L J	1	0.07	0.50		12*	5/14/20 00:58:00	N	II
KQ2006461-20	Carbon, Dissolved Organic (DOC)	DUP	K2003842-008	Water	0.36 mg/L	10 mL	0.36 mg/L J	1	0.07	0.50		3	5/14/20 01:26:00	N	II
KQ2006461-21	Carbon, Dissolved Organic (DOC)	DUP	K2003842-009	Water	0.39 mg/L	10 mL	0.39 mg/L J	1	0.07	0.50		4	5/14/20 01:54:00	N	II
KQ2006461-22	Carbon, Dissolved Organic (DOC)	DUP	K2003842-010	Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	5/14/20 02:22:00	N	II
KQ2006461-23	Carbon, Dissolved Organic (DOC)	DUP	K2003842-011	Water	0.42 mg/L	10 mL	0.42 mg/L J	1	0.07	0.50		5	5/14/20 02:50:00	N	II
KQ2006461-24	Carbon, Dissolved Organic (DOC)	DUP	K2003842-012	Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	5/14/20 03:48:00	N	II
KQ2006461-25	Carbon, Dissolved Organic (DOC)	DUP	K2003842-013	Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	5/14/20 04:16:00	N	II
KQ2006461-26	Carbon, Dissolved Organic (DOC)	DUP	K2003842-014	Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	5/14/20 04:44:00	N	II

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

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	26.246	0.2169	26.0292	26.02924	26.0	5/12/2020
3	ccb	1	0.306	0.2169	0.0893	0.08934	<0.5	5/12/2020
4	mb	1	0.251	0.2169	0.0337	0.03374	<0.5	5/12/2020
5	lcs	1	25.675	0.2169	25.4577	25.45774	25.5	5/12/2020
6	K2003711-001	1	0.791	0.2169	0.5742	0.57424	0.57	5/13/2020
7	K2003711-001	1	0.788	0.2169	0.5707	0.57074	0.6	5/13/2020
8	K2003711-001ms	1	26.474	0.2169	26.2573	26.25734	26	5/13/2020
9	K2003742-001	1	7.054	0.2169	6.8371	6.83714	6.84	5/13/2020
10	K2003742-001	1	7.087	0.2169	6.8697	6.86974	6.87	5/13/2020
11	K2003723-001	100	6.107	0.2169	5.8905	589.054	589.1	5/13/2020
12	K2003723-001	100	6.404	0.2169	6.1867	618.674	618.67	5/13/2020
13	K2003737-001	1	0.947	0.2169	0.7300	0.73004	0.73	5/13/2020
14	K2003737-001	1	0.796	0.2169	0.5787	0.57874	0.58	5/13/2020
15	ccv	1	26.117	0.2169	25.8997	25.89974	25.9	5/13/2020
16	ccb	1	0.242	0.2169	0.0250	0.02504	<0.5	5/13/2020
17	K2003746-001	1	2.433	0.2169	2.2165	2.21654	2.22	5/13/2020
18	K2003746-001	1	2.316	0.2169	2.0995	2.09954	2.1	5/13/2020
19	K2003791-001	1	2.857	0.2169	2.6398	2.63984	2.6	5/13/2020
20	K2003791-001	1	2.728	0.2169	2.5109	2.51094	2.51	5/13/2020
21	K2003791-002	20	16.934	0.2169	16.7174	334.3488	334.35	5/13/2020
22	K2003791-002	20	17.298	0.2169	17.0808	341.6168	341.6	5/13/2020
23	K2003791-003	1	4.588	0.2169	4.3706	4.37064	4.4	5/13/2020
24	K2003791-003	1	4.588	0.2169	4.3712	4.37124	4.37	5/13/2020
25	K2003791-004	1	4.735	0.2169	4.5185	4.51854	4.52	5/13/2020

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: KP	Date Analyzed	5/12/20	
Reviewed By:	Date Reviewed	5/14/20	

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	
26	K2003791-004	1	4.506	0.2169	4.2891	4.28914	4.29	5/13/2020
27	K2003791-005	1	25.209	0.2169	24.9917	24.99174	24.99	5/13/2020
28	K2003791-005	1	25.496	0.2169	25.2794	25.27944	25.3	5/13/2020
29	K2003792-001	1	2.361	0.2169	2.1438	2.14384	2.1	5/13/2020
30	K2003792-001	1	1.697	0.2169	1.4797	1.47974	1.5	5/13/2020
31	K2003792-002	1	2.180	0.2169	1.9627	1.96274	2.0	5/13/2020
32	K2003792-002	1	2.087	0.2169	1.8704	1.87044	1.9	5/13/2020
33	K2003792-003	1	1.614	0.2169	1.3968	1.39684	1.4	5/13/2020
34	K2003792-003	1	1.486	0.2169	1.2690	1.26904	1.3	5/13/2020
35	K2003792-004	1	1.465	0.2169	1.2482	1.24824	1.2	5/13/2020
36	K2003792-004	1	1.397	0.2169	1.1798	1.17984	1.2	5/13/2020
37	ccv	1	25.990	0.2169	25.7728	25.77284	25.8	5/13/2020
38	ccb	1	0.372	0.2169	0.1549	0.15494	<0.5	5/13/2020
39	K2003792-005	1	1.353	0.2169	1.1357	1.13574	1.1	5/13/2020
40	K2003792-005	1	1.228	0.2169	1.0106	1.01064	1.0	5/13/2020
41	K2003793-001	1	2.559	0.2169	2.3419	2.34194	2.3	5/13/2020
42	K2003793-001	1	2.591	0.2169	2.3744	2.37444	2.4	5/13/2020
43	K2003631-010	1	0.267	0.2169	0.0505	0.05054	<0.5	5/13/2020
44	K2003631-010	1	0.229	0.2169	0.0124	0.01244	<0.5	5/13/2020
45	K2003814-001	1	0.636	0.2169	0.4191	0.41914	<0.5	5/13/2020
46	K2003814-001	1	0.592	0.2169	0.3750	0.37504	<0.5	5/13/2020
47	K2003814-002	1	0.618	0.2169	0.4015	0.40154	<0.5	5/13/2020
48	K2003814-002	1	0.561	0.2169	0.3439	0.34394	<0.5	5/13/2020
49	K2003814-003	1	0.624	0.2169	0.4070	0.40704	<0.5	5/13/2020
50	K2003814-003	1	0.569	0.2169	0.3518	0.35184	<0.5	5/13/2020

Analyzed By:	BCP	Date Analyzed	5/12/20
Reviewed By:	JC	Date Reviewed	5/14/20

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	
51	ccv	1	26.263	0.2169	26.0461	26.04614	26.05	5/13/2020
52	ccb	1	0.181	0.2169	-0.0363	-0.03626	<0.5	5/13/2020
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:	BAP	Date Analyzed	5/12/20
Reviewed By:		Date Reviewed	5/13/20 5/14/20

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	ccv	1	25.990	0.2169	25.7728	25.77284	25.8	5/13/2020
3	ccb	1	0.372	0.2169	0.1549	0.15494	<0.5	5/13/2020
4	mb	1	0.251	0.2169	0.0344	0.03444	<0.5	5/13/2020
5	lcs	1	25.492	0.2169	25.2747	25.27474	25.3	5/13/2020
6	K2003842-001	1	2.041	0.2169	1.8245	1.82454	1.82	5/13/2020
7	K2003842-001	1	2.027	0.2169	1.8102	1.81024	1.8	5/13/2020
8	K2003842-002	1	1.295	0.2169	1.0776	1.07764	1	5/13/2020
9	K2003842-002	1	1.284	0.2169	1.0672	1.06724	1.07	5/13/2020
10	ccv	1	26.263	0.2169	26.0461	26.04614	26.05	5/13/2020
11	ccb	1	0.181	0.2169	-0.0363	-0.03626	<0.5	5/13/2020
12	K2003842-003	1	0.840	0.2169	0.6233	0.62334	0.62	5/13/2020
13	K2003842-003	1	0.801	0.2169	0.5840	0.58404	0.58	5/13/2020
14	K2003842-004	1	0.780	0.2169	0.5629	0.56294	0.56	5/13/2020
15	K2003842-004	1	0.742	0.2169	0.5253	0.52534	0.5	5/13/2020
16	K2003842-005	1	0.794	0.2169	0.5773	0.57734	0.6	5/13/2020
17	K2003842-005	1	0.766	0.2169	0.5487	0.54874	0.55	5/13/2020
18	K2003842-006	1	0.755	0.2169	0.5382	0.53824	0.5	5/13/2020
19	K2003842-006	1	0.759	0.2169	0.5418	0.54184	0.5	5/13/2020
20	K2003842-007	1	0.642	0.2169	0.4254	0.42544	<0.5	5/13/2020
21	K2003842-007	1	0.623	0.2169	0.4056	0.40564	<0.5	5/13/2020
22	K2003842-008	1	0.804	0.2169	0.5870	0.58704	0.6	5/13/2020
23	K2003842-008	1	0.778	0.2169	0.5608	0.56084	0.6	5/13/2020
24	K2003842-009	1	0.924	0.2169	0.7072	0.70724	0.71	5/13/2020
25	K2003842-009	1	0.903	0.2169	0.6865	0.68654	0.69	5/13/2020

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: BCP	Date Analyzed	5/12/20	
Reviewed By: JC	Date Reviewed	5/14/20	

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	
26	K2003842-010	1	0.398	0.2169	0.1812	0.18124	<0.5	5/13/2020
27	K2003842-010	1	0.345	0.2169	0.1282	0.12824	<0.5	5/13/2020
28	K2003842-011	1	0.781	0.2169	0.5641	0.56414	0.6	5/13/2020
29	K2003842-011	1	0.745	0.2169	0.5282	0.52824	0.5	5/13/2020
30	K2003842-011ms	1	26.641	0.2169	26.4239	26.42394	26.4	5/13/2020
31	ccv	1	26.186	0.2169	25.9687	25.96874	26.0	5/13/2020
32	ccb	1	0.089	0.2169	-0.1280	-0.12796	<0.5	5/13/2020
33	K2003842-012	1	1.025	0.2169	0.8082	0.80824	0.8	5/13/2020
34	K2003842-012	1	0.966	0.2169	0.7487	0.74874	0.7	5/13/2020
35	K2003842-013	1	1.175	0.2169	0.9580	0.95804	1.0	5/13/2020
36	K2003842-013	1	1.124	0.2169	0.9072	0.90724	0.9	5/13/2020
37	K2003842-014	1	0.681	0.2169	0.4641	0.46414	<0.5	5/13/2020
38	K2003842-014	1	0.661	0.2169	0.4443	0.44434	<0.5	5/13/2020
39	K2003842-015	1	0.629	0.2169	0.4125	0.41254	<0.5	5/13/2020
40	K2003842-015	1	0.603	0.2169	0.3857	0.38574	<0.5	5/13/2020
41	ccv	1	25.401	0.2169	25.1845	25.18454	25.2	5/13/2020
42	ccb	1	0.013	0.2169	-0.2036	-0.20356	<0.5	5/13/2020
43	K2003631-010	1	0.267	0.2169	0.0505	0.05054	<0.5	5/13/2020
44	K2003631-010	1	0.229	0.2169	0.0124	0.01244	<0.5	5/13/2020
45	K2003814-001	1	0.636	0.2169	0.4191	0.41914	<0.5	5/13/2020
46	K2003814-001	1	0.592	0.2169	0.3750	0.37504	<0.5	5/13/2020
47	K2003814-002	1	0.618	0.2169	0.4015	0.40154	<0.5	5/13/2020
48	K2003814-002	1	0.561	0.2169	0.3439	0.34394	<0.5	5/13/2020
49	K2003814-003	1	0.624	0.2169	0.4070	0.40704	<0.5	5/13/2020
50	K2003814-003	1	0.569	0.2169	0.3518	0.35184	<0.5	5/13/2020

Analyzed By:	BLD	Date Analyzed	5/12/20
Reviewed By:		Date Reviewed	5/14/20

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	ccv	1	26.186	0.2169	25.9687	25.96874	26.0	5/13/2020
3	ccb	1	0.089	0.2169	-0.1280	-0.12796	<0.5	5/13/2020
4	mb	1	0.160	0.2169	-0.0570	-0.05696	<0.5	5/13/2020
5	lcs	1	25.441	0.2169	25.2239	25.22394	25.2	5/13/2020
6	K2003842-001.06 doc	1	1.456	0.2169	1.2386	1.23864	1.24	5/13/2020
7	K2003842-001.06 doc	1	1.417	0.2169	1.2003	1.20034	1.2	5/13/2020
8	2003842-001.06 ms d	1	26.884	0.2169	26.6668	26.66684	27	5/13/2020
9	ccv	1	25.401	0.2169	25.1845	25.18454	25.18	5/13/2020
10	ccb	1	0.013	0.2169	-0.2036	-0.20356	<0.5	5/13/2020
11	K2003842-002.06 doc	1	0.930	0.2169	0.7128	0.71284	0.7	5/13/2020
12	K2003842-002.06 doc	1	0.902	0.2169	0.6847	0.68474	0.68	5/13/2020
13	K2003842-003.06 doc	1	0.550	0.2169	0.3330	0.33304	<0.5	5/13/2020
14	K2003842-003.06 doc	1	0.522	0.2169	0.3047	0.30474	<0.5	5/13/2020
15	K2003842-004.06 doc	1	0.531	0.2169	0.3145	0.31454	<0.5	5/13/2020
16	K2003842-004.06 doc	1	0.491	0.2169	0.2744	0.27444	<0.5	5/13/2020
17	K2003842-005.06 doc	1	0.558	0.2169	0.3415	0.34154	<0.5	5/14/2020
18	K2003842-005.06 doc	1	0.488	0.2169	0.2706	0.27064	<0.5	5/14/2020
19	K2003842-006.06 doc	1	0.494	0.2169	0.2768	0.27684	<0.5	5/14/2020
20	K2003842-006.06 doc	1	0.463	0.2169	0.2461	0.24614	<0.5	5/14/2020
21	K2003842-007.06 doc	1	0.359	0.2169	0.1416	0.14164	<0.5	5/14/2020
22	K2003842-007.06 doc	1	0.377	0.2169	0.1601	0.16014	<0.5	5/14/2020
23	K2003842-008.06 doc	1	0.583	0.2169	0.3663	0.36634	<0.5	5/14/2020
24	K2003842-008.06 doc	1	0.572	0.2169	0.3552	0.35524	<0.5	5/14/2020
25	K2003842-009.06 doc	1	0.621	0.2169	0.4042	0.40424	<0.5	5/14/2020

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: BCD	Date Analyzed	5/12/20	
Reviewed By: JC	Date Reviewed	5/14/20	

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	
26	K2003842-009.06 doc	1	0.607	0.2169	0.3900	0.39004	<0.5	5/14/2020
27	K2003842-010.06 doc	1	0.193	0.2169	-0.0235	-0.02346	<0.5	5/14/2020
28	K2003842-010.06 doc	1	0.137	0.2169	-0.0801	-0.08006	<0.5	5/14/2020
29	K2003842-011.06 doc	1	0.662	0.2169	0.4451	0.44514	<0.5	5/14/2020
30	K2003842-011.06 doc	1	0.640	0.2169	0.4229	0.42294	<0.5	5/14/2020
31	ccv	1	25.097	0.2169	24.8796	24.87964	24.9	5/14/2020
32	ccb	1	0.000	0.2169	-0.2169	-0.21686	<0.5	5/14/2020
33	K2003842-012.06 doc	1	0.000	0.2169	-0.2169	-0.21686	<0.5	5/14/2020
34	K2003842-012.06 doc	1	0.000	0.2169	-0.2169	-0.21686	<0.5	5/14/2020
35	K2003842-013.06 doc	1	0.000	0.2169	-0.2169	-0.21686	<0.5	5/14/2020
36	K2003842-013.06 doc	1	0.000	0.2169	-0.2169	-0.21686	<0.5	5/14/2020
37	K2003842-014.06 doc	1	0.000	0.2169	-0.2169	-0.21686	<0.5	5/14/2020
38	K2003842-014.06 doc	1	0.000	0.2169	-0.2169	-0.21686	<0.5	5/14/2020
39	K2003842-015.06 doc	1	0.000	0.2169	-0.2169	-0.21686	<0.5	5/14/2020
40	K2003842-015.06 doc	1	0.000	0.2169	-0.2169	-0.21686	<0.5	5/14/2020
41	ccv	1	24.776	0.2169	24.5592	24.55924	24.6	5/14/2020
42	ccb	1	0.000	0.2169	-0.2169	-0.21686	<0.5	5/14/2020
43		1			0.0000	0	<0.5	
44		1			0.0000	0	<0.5	
45		1			0.0000	0	<0.5	
46		1			0.0000	0	<0.5	
47		1			0.0000	0	<0.5	
48		1			0.0000	0	<0.5	
49		1			0.0000	0	<0.5	
50		1			0.0000	0	<0.5	

Analyzed By: BKP	Date Analyzed 5/12/20
Reviewed By: CF	Date Reviewed 5/14/20

TOC: 679905, 679906
DOC: 679907

Schedule: 05122020

Version: 2
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2020/05/12 20:13 - Tuesday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Blank)	Blank	Reagent/Acid Blank		1	True	Ready
D	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
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	LOT 041320-3DQL	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
4	Sample	K2003711-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
5	Sample	K2003711-001.02 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
6	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
7	Sample	K2003742-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
8	Sample	K2003723-001.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
9	Sample	K2003737-001.01	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	K2003746-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	K2003791-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	K2003791-002.01 20x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	K2003791-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
14	Sample	K2003791-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
15	Sample	K2003791-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
16	Sample	K2003792-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
17	Sample	K2003792-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
18	Sample	K2003792-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
19	Sample	K2003792-004.01	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	K2003792-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K2003793-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
23	Sample	K2003631-010.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
24	Sample	K2003814-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
25	Sample	K2003814-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K2003814-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K2003842-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K2003842-002.02	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	K2003842-003.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
30	Sample	K2003842-004.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
31	Sample	K2003842-005.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
32	Sample	K2003842-006.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
33	Sample	K2003842-007.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
34	Sample	K2003842-008.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
35	Sample	K2003842-009.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
36	Sample	K2003842-010.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
37	Sample	K2003842-011.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
38	Sample	K2003842-011.02 ms	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

Schedule: 05122020

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	K2003842-012.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
41	Sample	K2003842-013.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
42	Sample	K2003842-014.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
43	Sample	K2003842-015.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
44	Sample	FB 5/12/2020 1819	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
45	Sample	K2003842-001.06 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
46	Sample	K2003842-001.06 ms doc	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	K2003842-002.06 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
49	Sample	K2003842-003.06 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
50	Sample	K2003842-004.06 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
51	Sample	K2003842-005.06 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
52	Sample	K2003842-006.06 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
53	Sample	K2003842-007.06 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
54	Sample	K2003842-008.06 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
55	Sample	K2003842-009.06 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
56	Sample	K2003842-010.06 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
57	Sample	K2003842-011.06 doc	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
58	Sample	K2003842-012.06 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
59	Sample	K2003842-013.06 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
60	Sample	K2003842-014.06 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
61	Sample	K2003842-015.06 doc	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 - 05122020
Tuesday, May 12, 2020 08:22 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/05/14 09:15 - Thursday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	05122020	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)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/05/12 20:22

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	10.91	18.44	7.53	49.78	07:58
2	TC Clean	19.05	23.51	4.47	49.55	07:17
3	TC Clean	2.85	7.17	4.32	49.56	07:02
4	TC Clean	2.04	6.17	4.13	49.57	07:02

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/05/12 20:56

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.19	5.33	4.14	49.83	07:59
2	TC Clean	5.70	9.81	4.11	49.59	07:18
3	TC Clean	2.16	6.30	4.14	49.61	07:02
4	TC Clean	1.68	5.83	4.14	49.62	07:01

Sample Type: Clean From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/05/12 21:31

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.03	5.25	4.22	49.87	08:01
2	TC Clean	5.31	9.47	4.15	49.63	07:17
3	TC Clean	2.60	6.72	4.13	49.64	07:05
4	TC Clean	1.90	6.02	4.12	49.65	07:04

Sample Type: Blank (Creating v1382) From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(blank)		Reagent/Acid Blank	2020/05/12 22:05

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.00	5.17	4.17	49.89	08:02
2	TC Clean	5.31	9.57	4.27	49.66	07:16
3	TC Clean	2.42	6.66	4.24	49.68	07:01
4	TC Clean	2.21	6.28	4.07	49.67	07:03
5	Reagent Blank	8.08	12.04	3.97	49.70	08:11
6	Acid Blank	1.48	5.63	4.15	49.92	08:01

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	D	TOC	RB	0.5610 ppm	0.0000 ppm	0.0000%	2020/05/12 22:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5610	5.6098	10.80	15.06	4.26	49.64	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	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)	26.2461 ppm (PASS)	0.0000 ppm	0%	2020/05/12 23:11

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.2461	262.4610	193.46	197.82	4.36	49.68	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	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)	0.3062 ppm (PASS)	0.0000 ppm	0%	2020/05/12 23:26

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.3062	3.0618	9.14	13.48	4.34	49.72	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	1	TOC	MB1	0.2506 ppm	0.0000 ppm	0.0000%	2020/05/12 23:41

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2506	2.5065	8.59	12.72	4.12	49.74	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

Sample Type: Check Standard --> LCS From Schedule Version 2

	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)	25.6746 ppm (PASS)	0.0000 ppm	0%	2020/05/12 23:55

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

	Type									
C	TOC	25.0 ppm	1	25.6746	256.7456	189.40	193.45	4.06	49.74	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	2	TOC	ICS	0.8501 ppm	0.0000 ppm	0.0000%	2020/05/13 00:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8501	8.5005	12.85	17.07	4.22	49.77	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	3	TOC	LOT 041320-3DQL	0.2298 ppm	0.0000 ppm	0.0000%	2020/05/13 00:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2298	2.2982	8.44	12.54	4.10	49.79	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	4	TOC	K2003711-001.02	0.7893 ppm	0.0025 ppm	0.3200%	2020/05/13 00:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7911	7.9108	12.43	16.56	4.13	49.80	10:26
2	TOC	0.7876	7.8757	12.41	16.51	4.10	49.79	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	5	TOC	K2003711-001.02 ms	26.4742 ppm	0.0000 ppm	0.0000%	2020/05/13 01:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	26.4742	264.7415	194.92	199.03	4.11	49.81	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	6	TOC	RB	0.2847 ppm	0.0000 ppm	0.0000%	2020/05/13 01:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2847	2.8470	8.83	12.98	4.15	49.78	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	7	TOC	K2003742-001.01	7.0703 ppm	0.0231 ppm	0.3300%	2020/05/13 01:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.0540	70.5398	56.93	61.07	4.14	49.83	10:28
2	TOC	7.0866	70.8663	57.16	61.22	4.05	49.83	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	8	TOC	K2003723-001.01 100x	6.2555 ppm	0.2095 ppm	3.3500%	2020/05/13 02:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.1074	61.0737	50.20	54.35	4.15	49.84	10:28
2	TOC	6.4036	64.0362	52.31	56.53	4.22	49.83	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	9	TOC	K2003737-001.01	0.8712 ppm	0.1070 ppm	12.2800%	2020/05/13 02:32

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9469	9.4688	13.54	17.65	4.11	49.81	10:28
2	TOC	0.7956	7.9559	12.46	16.80	4.33	49.84	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	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)	26.1166 ppm (PASS)	0.0000 ppm	0%	2020/05/13 03:00

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.1166	261.1662	192.54	196.67	4.13	49.86	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	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)	0.2419 ppm (PASS)	0.0000 ppm	0%	2020/05/13 03:16

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.2419	2.4187	8.69	12.92	4.23	49.86	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	10	TOC	K2003746-001.01	2.3749 ppm	0.0827 ppm	3.4800%	2020/05/13 03:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4334	24.3337	24.10	28.15	4.05	49.88	10:28
2	TOC	2.3164	23.1641	23.27	27.58	4.31	49.88	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	11	TOC	K2003791-001.01	2.7923 ppm	0.0912 ppm	3.2600%	2020/05/13 03:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.8567	28.5671	27.11	31.38	4.27	49.88	10:27
2	TOC	2.7278	27.2780	26.19	30.32	4.13	49.89	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	12	TOC	K2003791-002.01 20x	17.1160 ppm	0.2570 ppm	1.5000%	2020/05/13 04:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	16.9343	169.3429	127.13	131.34	4.20	49.91	10:28
2	TOC	17.2977	172.9768	129.72	133.98	4.26	49.90	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	13	TOC	K2003791-003.01	4.5878 ppm	0.0004 ppm	0.0100%	2020/05/13 04:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.5875	45.8752	39.41	43.63	4.22	49.90	10:28
2	TOC	4.5881	45.8809	39.41	43.48	4.07	49.91	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	14	TOC	K2003791-004.01	4.6207 ppm	0.1622 ppm	3.5100%	2020/05/13 05:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.7354	47.3544	40.46	44.52	4.07	49.92	10:27
2	TOC	4.5060	45.0604	38.83	43.02	4.19	49.94	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	15	TOC	K2003791-005.01	25.3525 ppm	0.2034 ppm	0.8000%	2020/05/13 05:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	25.2086	252.0863	185.93	190.25	4.32	49.94	10:25
2	TOC	25.4963	254.9630	187.97	192.29	4.32	49.94	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	16	TOC	K2003792-001.01	2.0287 ppm	0.4696 ppm	23.1500%	2020/05/13 06:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.3607	23.6075	23.58	27.81	4.23	49.94	10:27
2	TOC	1.6966	16.9660	18.87	23.07	4.21	49.97	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC)	CAS_salt_010711	CAS_salt_010711

(v1382) (v4) (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	17	TOC	K2003792-002.01	2.1335 ppm	0.0653 ppm	3.0600%	2020/05/13 06:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1796	21.7962	22.30	26.53	4.23	49.99	10:28
2	TOC	2.0873	20.8729	21.64	25.67	4.03	49.97	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	18	TOC	K2003792-003.01	1.5498 ppm	0.0904 ppm	5.8300%	2020/05/13 07:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6137	16.1370	18.28	22.32	4.04	49.96	10:30
2	TOC	1.4859	14.8591	17.37	21.48	4.11	49.97	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	19	TOC	K2003792-004.01	1.4309 ppm	0.0484 ppm	3.3800%	2020/05/13 07:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4651	14.6508	17.22	21.36	4.14	49.96	10:28
2	TOC	1.3967	13.9668	16.73	20.89	4.16	49.97	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	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)	25.9897 ppm (PASS)	0.0000 ppm	0%	2020/05/13 08:11

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.9897	259.8968	191.63	195.74	4.11	49.96	10:35

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	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)	0.3718 ppm (PASS)	0.0000 ppm	0%	2020/05/13 08:26

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.3718	3.7177	9.61	13.81	4.20	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 (v35)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	20	TOC	MB2	0.2513 ppm	0.0000 ppm	0.0000%	2020/05/13 08:41

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2513	2.5135	8.60	12.85	4.26	49.91	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

Sample Type: Check Standard --> LCS From Schedule Version 2

	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)	25.4916 ppm (PASS)	0.0000 ppm	0%	2020/05/13 08:55

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	25.4916	254.9160	188.10	192.35	4.26	49.91	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	21	TOC	K2003792-005.01	1.2901 ppm	0.0885 ppm	6.8600%	2020/05/13 09:10

Rep	Base			Adjusted		Baseline	Pressure	Run

#	Analysis Type	ppm	µg	(Abs)	NDIR (Abs)	(Abs)	(psig)	Time
1	TOC	1.3526	13.5263	16.42	20.76	4.34	49.91	10:30
2	TOC	1.2275	12.2752	15.53	19.53	4.00	49.91	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	22	TOC	K2003793-001.01	2.5750 ppm	0.0230 ppm	0.8900%	2020/05/13 09:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.5588	25.5877	24.99	29.15	4.15	49.88	10:26
2	TOC	2.5913	25.9128	25.22	29.33	4.11	49.92	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	23	TOC	K2003631-010.01	0.2483 ppm	0.0270 ppm	10.8600%	2020/05/13 10:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2674	2.6739	8.71	12.70	3.99	49.88	10:28
2	TOC	0.2293	2.2925	8.44	12.56	4.12	49.85	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	24	TOC	K2003814-001.01	0.6140 ppm	0.0311 ppm	5.0700%	2020/05/13 10:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6360	6.3599	11.33	15.40	4.07	49.86	10:30
2	TOC	0.5919	5.9194	11.02	15.10	4.09	49.86	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	25	TOC	K2003814-002.01	0.5896 ppm	0.0407 ppm	6.9000%	2020/05/13 11:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6184	6.1840	11.20	15.33	4.12	49.84	10:31
2	TOC	0.5608	5.6083	10.80	14.90	4.10	49.83	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6239	6.2389	11.24	15.28	4.04	49.83	10:29
2	TOC	0.5687	5.6872	10.85	15.00	4.14	49.84	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	27	TOC	K2003842-001.02	2.0342 ppm	0.0102 ppm	0.5000%	2020/05/13 11:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.0414	20.4141	21.32	25.53	4.22	49.81	10:26
2	TOC	2.0271	20.2706	21.21	25.37	4.16	49.81	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	28	TOC	K2003842-002.02	1.2893 ppm	0.0074 ppm	0.5700%	2020/05/13 12:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2945	12.9451	16.01	20.17	4.16	49.78	10:26
2	TOC	1.2841	12.8409	15.93	19.92	3.98	49.79	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	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)	26.2630 ppm (PASS)	0.0000 ppm	0%	2020/05/13 12:54

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.2630	262.6299	193.58	197.63	4.06	49.79	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	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)	0.1806 ppm (PASS)	0.0000 ppm	0%	2020/05/13 13:09

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.1806	1.8064	8.25	12.40	4.15	49.68	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	29	TOC	K2003842-003.02	0.8206 ppm	0.0278 ppm	3.3800%	2020/05/13 13:24

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8402	8.4020	12.78	16.79	4.01	49.73	10:26
2	TOC	0.8009	8.0094	12.50	16.64	4.14	49.76	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	30	TOC	K2003842-004.02	0.7610 ppm	0.0266 ppm	3.4900%	2020/05/13 13:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7798	7.7982	12.35	16.48	4.12	49.71	10:31
2	TOC	0.7422	7.4225	12.08	16.16	4.08	49.74	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	31	TOC	K2003842-005.02	0.7799 ppm	0.0202 ppm	2.5900%	2020/05/13 14:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7942	7.9418	12.45	16.41	3.96	49.75	10:29
2	TOC	0.7656	7.6561	12.25	16.21	3.96	49.74	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

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

◆ 32	TOC	K2003842-006.02	0.7569 ppm	0.0026 ppm	0.3400%	2020/05/13 14:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7551	7.5505	12.18	16.24	4.07	49.69	10:28
2	TOC	0.7587	7.5871	12.20	16.30	4.10	49.72	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	33	TOC	K2003842-007.02	0.6324 ppm	0.0140 ppm	2.2200%	2020/05/13 15:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6423	6.4232	11.37	15.36	3.98	49.74	10:28
2	TOC	0.6225	6.2248	11.23	15.10	3.87	49.72	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	34	TOC	K2003842-008.02	0.7908 ppm	0.0185 ppm	2.3400%	2020/05/13 15:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8039	8.0389	12.52	16.65	4.13	49.69	10:27
2	TOC	0.7777	7.7771	12.34	16.41	4.07	49.70	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	35	TOC	K2003842-009.02	0.9137 ppm	0.0146 ppm	1.6000%	2020/05/13 16:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9241	9.2408	13.38	17.26	3.88	49.66	10:25
2	TOC	0.9034	9.0339	13.23	17.22	3.99	49.66	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	36	TOC	K2003842-010.02	0.3716 ppm	0.0375 ppm	10.1000%	2020/05/13 16:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3981	3.9814	9.64	13.65	4.01	49.64	10:31
2	TOC	0.3451	3.4508	9.26	13.32	4.06	49.64	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	37	TOC	K2003842-011.02	0.7630 ppm	0.0254 ppm	3.3300%	2020/05/13 17:08

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7810	7.8095	12.36	16.39	4.03	49.64	10:26
2	TOC	0.7451	7.4506	12.10	16.19	4.09	49.62	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	38	TOC	K2003842-011.02 ms	26.6408 ppm	0.0000 ppm	0.0000%	2020/05/13 17:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	26.6408	266.4079	196.10	200.12	4.01	49.61	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	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)	26.1856 ppm (PASS)	0.0000 ppm	0%	2020/05/13 17:52

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.1856	261.8559	193.03	197.08	4.06	49.58	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	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)	0.0889 ppm (PASS)	0.0000 ppm	0%	2020/05/13 18:06

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

D	TOC	0 ppm	1	0.0889	0.8888	7.60	11.54	3.94	49.57	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	0 ppmC

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	39	TOC	MB3	0.1599 ppm	0.0000 ppm	0.0000%	2020/05/13 18:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1599	1.5987	7.95	11.94	4.00	49.54	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

Sample Type: Check Standard --> LCS — From Schedule Version 2

	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)	25.4408 ppm (PASS)	0.0000 ppm	0%	2020/05/13 18:36

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	25.4408	254.4079	187.73	191.70	3.97	49.56	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	25 ppmC

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	40	TOC	K2003842-012.02	0.9954 ppm	0.0421 ppm	4.2300%	2020/05/13 18:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0251	10.2513	14.09	18.39	4.30	49.58	10:28
2	TOC	0.9656	9.6560	13.67	17.71	4.03	49.59	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	41	TOC	K2003842-013.02	1.1495 ppm	0.0359 ppm	3.1300%	2020/05/13 19:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1749	11.7488	15.16	19.14	3.98	49.61	10:27
2	TOC	1.1241	11.2407	14.80	18.78	3.99	49.64	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	42	TOC	K2003842-014.02	0.6711 ppm	0.0140 ppm	2.0900%	2020/05/13 19:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6810	6.8103	11.65	15.60	3.95	49.62	10:29
2	TOC	0.6612	6.6118	11.51	15.47	3.96	49.67	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	43	TOC	K2003842-015.02	0.6160 ppm	0.0189 ppm	3.0700%	2020/05/13 20:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6294	6.2937	11.28	15.43	4.15	49.67	10:31
2	TOC	0.6026	6.0263	11.09	15.30	4.21	49.70	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	44	TOC	FB 5/12/2020 1819	0.0000 ppm	0.0000 ppm	0.0000%	2020/05/13 20:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.32	10.50	4.17	49.70	10:25
2	TOC	0.0000	0.0000	6.23	10.23	4.00	49.71	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	45	TOC	K2003842-001.06 doc	1.4364 ppm	0.0271 ppm	1.8800%	2020/05/13 21:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4555	14.5551	17.15	21.18	4.03	49.75	10:30
2	TOC	1.4172	14.1723	16.88	20.86	3.98	49.77	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC)	CAS_salt_010711	CAS_salt_010711

(v1382) (v4) (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	46	TOC	K2003842-001.06 ms doc	26.8837 ppm	0.0000 ppm	0.0000%	2020/05/13 21:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	26.8837	268.8371	197.83	201.92	4.10	49.77	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	47	TOC	RB	0.0577 ppm	0.0000 ppm	0.0000%	2020/05/13 21:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0577	0.5769	7.22	11.30	4.08	49.80	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	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)	25.4014 ppm (PASS)	0.0000 ppm	0%	2020/05/13 22:08

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.4014	254.0139	187.45	191.64	4.19	49.80	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	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)	0.0133 ppm (PASS)	0.0000 ppm	0%	2020/05/13 22:23

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0133	0.1331	7.06	10.91	3.85	49.80	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D

Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	48	TOC	K2003842-002.06 doc	0.9156 ppm	0.0199 ppm	2.1700%	2020/05/13 22:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9297	9.2971	13.42	17.48	4.06	49.82	10:30
2	TOC	0.9016	9.0156	13.22	17.31	4.09	49.85	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	49	TOC	K2003842-003.06 doc	0.5357 ppm	0.0200 ppm	3.7300%	2020/05/13 23:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5499	5.4986	10.72	14.74	4.02	49.84	10:31
2	TOC	0.5216	5.2157	10.52	14.68	4.17	49.86	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	50	TOC	K2003842-004.06 doc	0.5114 ppm	0.0284 ppm	5.5500%	2020/05/13 23:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5314	5.3142	10.59	14.80	4.22	49.86	10:27
2	TOC	0.4913	4.9131	10.30	14.46	4.16	49.86	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	51	TOC	K2003842-005.06 doc	0.5230 ppm	0.0502 ppm	9.5900%	2020/05/14 00:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5584	5.5844	10.78	14.94	4.16	49.87	10:30
2	TOC	0.4875	4.8751	10.27	14.37	4.10	49.89	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

		Analysis			Std. Dev.		

	Pos	Type	Sample ID	Result (ppmC)	(ppmC)	RSD	Start Time
◈	52	TOC	K2003842-006.06 doc	0.4784 ppm	0.0217 ppm	4.5400%	2020/05/14 00:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4937	4.9370	10.32	14.55	4.23	49.87	10:27
2	TOC	0.4630	4.6302	10.10	14.19	4.09	49.88	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	53	TOC	K2003842-007.06 doc	0.3677 ppm	0.0131 ppm	3.5700%	2020/05/14 00:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3585	3.5845	9.36	13.52	4.16	49.91	10:28
2	TOC	0.3770	3.7703	9.49	13.59	4.10	49.89	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	54	TOC	K2003842-008.06 doc	0.5777 ppm	0.0079 ppm	1.3600%	2020/05/14 01:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5832	5.8321	10.95	15.09	4.14	49.89	10:27
2	TOC	0.5721	5.7209	10.88	14.94	4.06	49.90	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	55	TOC	K2003842-009.06 doc	0.6140 ppm	0.0101 ppm	1.6400%	2020/05/14 01:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6211	6.2107	11.22	15.39	4.17	49.93	10:29
2	TOC	0.6069	6.0686	11.12	15.29	4.16	49.92	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	56	TOC	K2003842-010.06 doc	0.1651 ppm	0.0400 ppm	24.2300%	2020/05/14 02:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1934	1.9336	8.18	12.25	4.07	49.92	10:25
2	TOC	0.1368	1.3679	7.78	11.99	4.20	49.94	10:25

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	57	TOC	K2003842-011.06 doc	0.6509 ppm	0.0157 ppm	2.4200%	2020/05/14 02:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6620	6.6203	11.51	15.65	4.14	49.95	10:26
2	TOC	0.6398	6.3979	11.36	15.34	3.99	49.96	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	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)	25.0965 ppm (PASS)	0.0000 ppm	0%	2020/05/14 03:18

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.0965	250.9655	185.29	189.37	4.08	49.92	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	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%	2020/05/14 03:33

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.62	10.70	4.08	49.96	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	58	TOC	K2003842-012.06 doc	0.0000 ppm	0.0000 ppm	0.0000%	2020/05/14 03:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.27	10.10	3.83	49.97	10:27
2	TOC	0.0000	0.0000	5.89	9.90	4.00	49.98	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	59	TOC	K2003842-013.06 doc	0.0000 ppm	0.0000 ppm	0.0000%	2020/05/14 04:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.25	10.24	4.00	49.98	10:28
2	TOC	0.0000	0.0000	5.76	9.81	4.05	50.01	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	60	TOC	K2003842-014.06 doc	0.0000 ppm	0.0000 ppm	0.0000%	2020/05/14 04:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.64	9.81	4.17	50.00	10:28
2	TOC	0.0000	0.0000	5.67	9.69	4.02	50.01	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	61	TOC	K2003842-015.06 doc	0.0000 ppm	0.0000 ppm	0.0000%	2020/05/14 05:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.84	10.05	4.21	50.05	10:28
2	TOC	0.0000	0.0000	5.77	9.69	3.92	50.05	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.8101 (IC) (v1382)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	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)	24.7761 ppm (PASS)	0.0000 ppm	0%	2020/05/14 05:40

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

	Type		#							Time
B	TOC	25 ppm	1	24.7761	247.7608	183.01	187.21	4.20	50.04	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	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%	2020/05/14 05:55

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.44	10.65	4.21	50.06	10:28

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)	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
v1381	1.1450	0.7350	0.0000	0.0000	0.0000	2020/05/09 14:55	Fusion1 (Fusion1)
v1382	2.6923	1.4840	0.0000	0.0000	0.0000	2020/05/12 22:56	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v35	Calibration curve formula:	TOC: y = 7.105x + 6.969
Ver Creation:	2020/05/09 16:50	r^2 value:	TOC: r^2 = 0.99936
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	6.6220	0.0000		2020/05/09 15:23

0.500 ppm	9.3820	0.5000		2020/05/09 15:38
1.0 ppm	12.1910	1.0000		2020/05/09 15:52
5.0 ppm	39.9300	5.0000		2020/05/09 16:06
10 ppm	81.4900	10.0000		2020/05/09 16:20
25 ppm	190.3090	25.0000		2020/05/09 16:35
50 ppm	358.9940	50.0000		2020/05/09 16:49

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	2020/05/14 06:10

ALS Environmental

StarLIMS Run: 679905, 679906, 679907

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: 5/9/20

ICAL ID: 19-GEN-17-E->J

ICS ID: 19-GEN-8-4-G

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 19-GEN-8-15-B 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 19-GEN-08-17-K

21 % H3PO4: 19-GEN-08-17-L

Equipment ID: K-TOC-03

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

FILTER ID: 16967789

Analyzed By: [illegible]	Date Analyzed: 5/12/20
Reviewed By: [illegible]	Date Reviewed: 5/14/20

May 20, 2020 Service Request No:E2000409

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

Laboratory Results for: HS20050178

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory May 06, 2020
For your reference, these analyses have been assigned our service request number **E2000409.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2000409
Project:	HS20050178	**Date Received:**	05/06/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 05/06/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000173: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. MS/MSD performed on an unrelated sample.

DOD Certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2000409
Project: HS20050178

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000409-001	LH18/24-SP650_050520_BIX	5/5/2020	1400

Service Request Summary

Folder #: **E2000409**
Client Name: ALS Environmental - US
Project Name: HS20050178
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 05/06/20
Internal Due Date: 5/20/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20050178
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 3B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000409-001	LH18/24-SP650_050520_BIX	Water	05/05/20 1400	**IV**

Service Request Summary

Folder #:	**E2000409**
Client Name:	ALS Environmental - US
Project Name:	HS20050178
Project Number:	

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA

Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	05/06/20
Internal Due Date:	5/20/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20050178
EDD:	No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-WIC 3B

Pressure Gas:

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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State Certifications, Accreditations, and Licenses

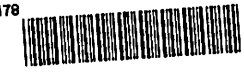
Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2020
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	2020	4/30/2021
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nevada Department of Concervation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com



E2000409 5
ALS Laboratory Group
HS20050178



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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID: 13861**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

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:	HS20050178
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20050178-02**	**LH18/24-SP650_050520-BIX**	**Water**	**05 May 2020 14:00**
	SUB_Perch-6850			20 May 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. Maguire Date/Time: 5/6/20 14:40

Received By: [illegible] Date/Time: 5/6/20 14:40

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALS-H

Thermometer ID SMOM / IR 11

Date/Time Received: 5/6/20 Initials: CH Date/Time Logged in: 5/6/20 Initials CH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ ALS Courier ○ Client
2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other
3. Were custody seals on coolers? ○ Yes ✓ No
   Were they intact? ○ Yes ○ No ✓ N/A
   Were they signed and dated? ○ Yes ○ No ✓ N/A
   If yes, how many and where?
4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other
5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		5/6/20	1440	CH	1.5	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E2000409 5

ALS Laboratory Group HS20050178

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www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
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Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 358306 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/KBROWN **Prep Method:** Method **Prep Date/Time:** 5/12/20 09:34

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000382-001	LH18/24-SP650_042820_BIX	.01	6850/ClO4 DOD			Water	10mL	
2	E2000404-001	04WW02-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2000404-002	04WW06-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2000404-003	LHSMW02-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2000404-004	LHSMW02-200504-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2000404-005	04WW11-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2000404-006	04WW04-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2000405-001	04WW05-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2000405-002	04WW09-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2000405-003	04WW10-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2000405-004	04WW10-200505-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2000405-005	04WW07-200505	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2000406-001	04WW08-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2000406-002	LHSMW01-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2000406-003	04WW01-200504	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2000407-001	LH18/24-SP650_050520_BIX	.01	6850/ClO4 DOD			Water	10mL	
17	E2000408-001	LH18/24-SP140_050520	.01	6850/ClO4 DOD			Water	10mL	
18	E2000409-001	LH18/24-SP650_050520_BIX	.01	6850/ClO4 DOD			Water	10mL	
19	EQ2000173-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2000173-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000173-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2000173-04	04WW06-200504 MS	.01	6850/ClO4 DOD			Liquid	10mL	
23	EQ2000173-05	04WW06-200504 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 202037 Logbook Ref: Sodium Perchlorate Expires On: 05/22/2021

E2000382-001	100.00µL	E2000404-001	100.00µL	E2000404-002	100.00µL	E2000404-003	100.00µL	E2000404-004	100.00µL	E2000404-005	100.00µL
E2000404-006	100.00µL	E2000405-001	100.00µL	E2000405-002	100.00µL	E2000405-003	100.00µL	E2000405-004	100.00µL	E2000405-005	100.00µL
E2000406-001	100.00µL	E2000406-002	100.00µL	E2000406-003	100.00µL	E2000407-001	100.00µL	E2000408-001	100.00µL	E2000409-001	100.00µL
EQ2000173-01	100.00µL	EQ2000173-02	100.00µL	EQ2000173-03	100.00µL	EQ2000173-04	100.00µL	EQ2000173-05	100.00µL		

Name: Perchlorate Intermediate Stock1 Inventory ID 204799 Logbook Ref: 200657 1.0ug/mL KN Expires On: 05/15/2020

EQ2000173-02	1.00µL	EQ2000173-03	1.00µL	EQ2000173-04	1.00µL	EQ2000173-05	1.00µL

Preparation Information Benchsheet

Prep Run#: 358306 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/KBROWN **Prep Method:** Method **Prep Date/Time:** 5/12/20 09:34

Preparation Steps

Step: Preparation
Started: 5/12/20 09:34
Finished: 5/12/20 12:00
By: KBROWN
Comments

Comments: _____

Reviewed By: GR Date: 5/12/2020

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Collected:**	5/ 5/20 1400
Sample Matrix:	Water	**Date Received:**	5/ 6/20
Sample Name:	LH18/24-SP650_050520_BIX	**Units:**	µg/L
Lab Code:	E2000409-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	5/12/20	5/13/20 14:20	358306	680124	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000173-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	5/12/20	5/12/20 12:50	358306	679868	

Accuracy & Precision

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Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Analyzed:**	5/12/20
Sample Matrix:	Water		

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	358306

	Lab Control Sample EQ2000173-02			Duplicate Lab Control Sample EQ2000173-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.105	0.100	105	0.107	0.100	107	84 - 119	2	15

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

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000173-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.105**		0.100	0.0500	0.0250	1	5/12/20	5/12/20 12:58	358306	679868	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000173-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.107**		0.100	0.0500	0.0250	1	5/12/20	5/12/20 13:06	358306	679868	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	5/12/20 - 5/13/20

Matrix Spike Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	E2000404-002	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		Batch QCMS **Matrix Spike** EQ2000173-04				Batch QCDMS **Duplicate Matrix Spike** EQ2000173-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**		**RPD Limit**
Perchlorate	ND	0.111	0.100	111	0.0929	0.100	93	84 - 119	18	*	15

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

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000173-04	**Basis:**	NA
Run Type:	Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.111**		0.100	0.0500	0.0250	1	5/12/20	5/12/20 13:21	358306	679868	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000173-05	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0929**	J	0.100	0.0500	0.0250	1	5/12/20	5/13/20 14:12	358306	680124	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200420

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200420_001	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:01
	null		20200420_002	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:06
	DIBLK		20200420_003	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:11
	IB		20200420_004	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:19
	PERCHLORATE7		20200420_005	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 13:27
	LODV		20200420_006	Perchlorate6850b.lcm	1x	☒		4/20/2020 13:35
	PERCHLORATE1		20200420_007	Perchlorate6850b.lcm	1x	☒	3100804-05	4/20/2020 13:43
	PERCHLORATE2		20200420_008	Perchlorate6850b.lcm	1x	☒	3100804-06	4/20/2020 13:51
	PERCHLORATE3		20200420_009	Perchlorate6850b.lcm	1x	☒	3100804-07	4/20/2020 13:58
	PERCHLORATE4		20200420_010	Perchlorate6850b.lcm	1x	☒	3100804-08	4/20/2020 14:06
	PERCHLORATE5		20200420_011	Perchlorate6850b.lcm	1x	☒	3100804-09	4/20/2020 14:14
	PERCHLORATE6		20200420_012	Perchlorate6850b.lcm	1x	☒	3100805-01	4/20/2020 14:22
	PERCHLORATE8		20200420_013	Perchlorate6850b.lcm	1x	☒	3100805-03	4/20/2020 14:30
	PERCHLORATE9		20200420_014	Perchlorate6850b.lcm	1x	☒	3100805-04	4/20/2020 14:38
	PERCHLORATE10		20200420_015	Perchlorate6850b.lcm	1x	☒	3100805-05	4/20/2020 14:46
	ICV		20200420_016	Perchlorate6850b.lcm	1x	☒	3100805-06	4/20/2020 14:54
	LODV		20200420_017	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:02
	EQ2000143-01		20200420_018	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:10
	EQ2000143-02		20200420_019	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:18
	EQ2000143-03		20200420_020	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:26
	E2000275-001		20200420_021	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:33
	E2000275-002		20200420_022	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:41
	E2000275-003		20200420_023	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:49
	E2000287-001		20200420_024	Perchlorate6850b.lcm	1x	☒		4/20/2020 15:57
	E2000303-001		20200420_025	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:05
	E2000304-001		20200420_026	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:13
	E2000305-001		20200420_027	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:21
	PERCHLORATE7		20200420_028	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 16:29
	E2000303-001		20200420_029	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:47
	E2000304-001		20200420_030	Perchlorate6850b.lcm	1x	☒		4/20/2020 16:55
	PERCHLORATE7		20200420_031	Perchlorate6850b.lcm	1x	☒	3100805-02	4/20/2020 17:02

Initial Calibration - Detailed Report

Calibration ID: EC2000003 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
08	EC2000003-08	PERCHLORATE7	20200420_005	04/20/2020 13:27
01	EC2000003-01	PERCHLORATE1	20200420_007	04/20/2020 13:43
02	EC2000003-02	PERCHLORATE2	20200420_008	04/20/2020 13:51
03	EC2000003-03	PERCHLORATE3	20200420_009	04/20/2020 13:58
04	EC2000003-04	PERCHLORATE4	20200420_010	04/20/2020 14:06
05	EC2000003-05	PERCHLORATE5	20200420_011	04/20/2020 14:14
06	EC2000003-06	PERCHLORATE6	20200420_012	04/20/2020 14:22
07	EC2000003-07	PERCHLORATE8	20200420_013	04/20/2020 14:30
09	EC2000003-09	PERCHLORATE9	20200420_014	04/20/2020 14:38
10	EC2000003-10	PERCHLORATE10	20200420_015	04/20/2020 14:46

Analyte | **Curve Fit** | **Weighting**

Perchlorate | **Average RF** | **RSD = 8.066** | **Average RF = 0.1368**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1558	02	0.5000	0.1297	03	0.7000	0.1277	04	1.0000	0.1397
05	2.0000	0.1298	06	5.0000	0.1245	07	20.0000	0.1341	08	10.0000	0.1562
09	30.0000	0.1365	10	50.0000	0.1345						

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.114	13.9	02	0.5000	0.474	-5.2	03	0.7000	0.653	-6.7
04	1.0000	1.02	2.1	05	2.0000	1.90	-5.1	06	5.0000	4.55	-9.0
07	20.0000	19.6	-2.0	08	10.0000	11.4	14.2	09	30.0000	29.9	-0.2
10	50.0000	49.1	-1.7								

Initial Calibration Verification Summary Report

Calibration ID:	EC2000003	**Instrument ID:**	E-LCMS-01
Datafile ID:	20200420_016	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000003-11	T	Average RF	10	11.345	ng/mL	13.4	<= 15

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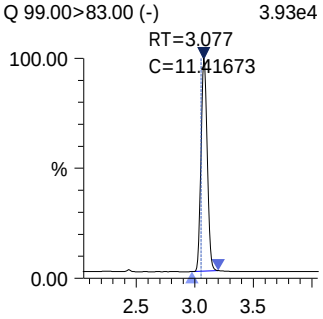
PERCHLORATE7

Date acquired: 4/20/2020 1:27:21 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_005.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	4/20/2020 1:27:21 PM	144494	11.41673	20200420_005	3.077	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	4/20/2020 1:27:21 PM	92497	1.00000	20200420_005	3.076	25.0000	1.0000	3

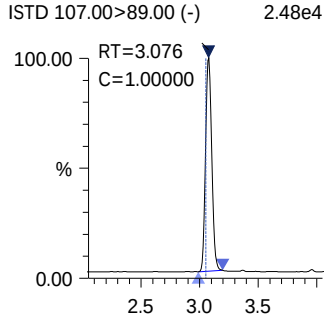
Perchlorate

Conc 11.41673
Area 144494



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 92497



ALS Group Houston

PERCHLORATE1

Date acquired: 4/20/2020 1:43:09 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_007.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

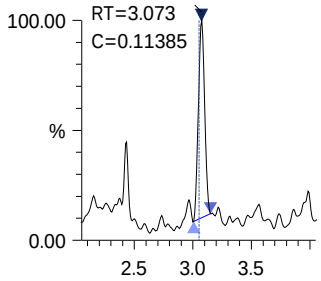
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	4/20/2020 1:43:09 PM	1840	0.11385	20200420_007	3.073	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	4/20/2020 1:43:09 PM	118078	1.00000	20200420_007	3.073	25.0000	1.0000	5

Perchlorate

Conc 0.11385

Area 1840

Q 99.00>83.00 (-) 5.37e2

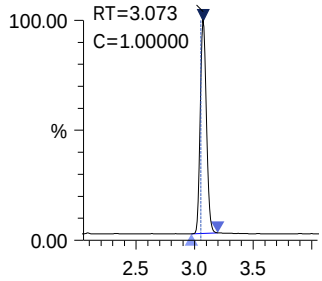


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 118078

ISTD 107.00>89.00 (-) 3.18e4



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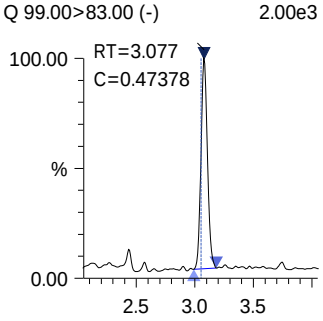
PERCHLORATE2

Date acquired: 4/20/2020 1:51:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_008.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	4/20/2020 1:51:02 PM	7551	0.47378	20200420_008	3.077	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	PERCHLORATE2	4/20/2020 1:51:02 PM	116479	1.00000	20200420_008	3.075	25.0000	1.0000	6

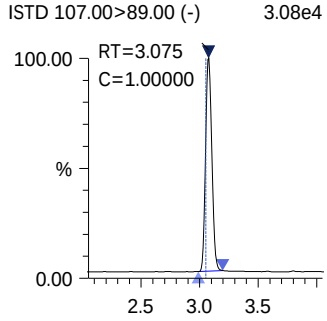
Perchlorate

Conc 0.47378
Area 7551



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 116479



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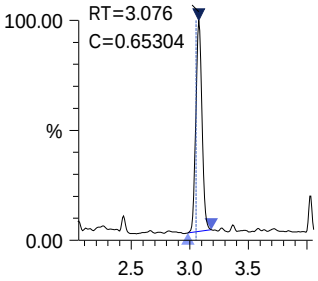
PERCHLORATE3

Date acquired: 4/20/2020 1:58:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_009.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	4/20/2020 1:58:56 PM	11235	0.65304	20200420_009	3.076	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE3	4/20/2020 1:58:56 PM	125731	1.00000	20200420_009	3.073	25.0000	1.0000	7

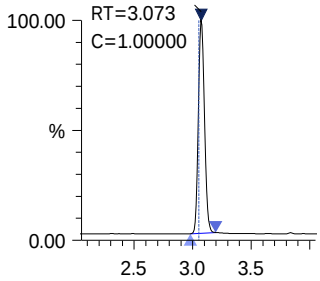
Perchlorate

Conc 0.65304
Area 11235
Q 99.00>83.00 (-) 3.12e3



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 125731
ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

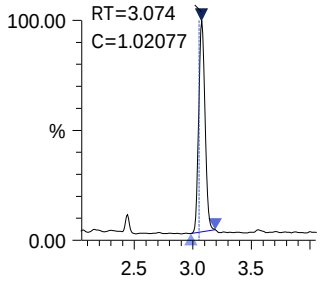
PERCHLORATE4

Date acquired: 4/20/2020 2:06:51 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_010.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	4/20/2020 2:06:51 PM	16670	1.02077	20200420_010	3.074	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE4	4/20/2020 2:06:51 PM	119354	1.00000	20200420_010	3.074	25.0000	1.0000	8

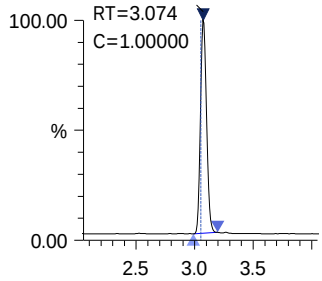
Perchlorate

Conc 1.02077
Area 16670
Q 99.00>83.00 (-) 4.51e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 119354
ISTD 107.00>89.00 (-) 3.26e4



ALS Group Houston

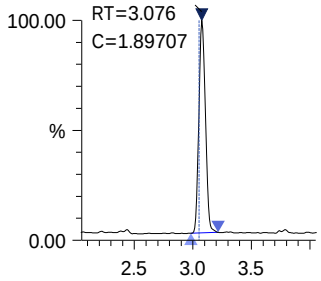
PERCHLORATE5

Date acquired: 4/20/2020 2:14:45 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_011.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	4/20/2020 2:14:45 PM	33786	1.89707	20200420_011	3.076	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE5	4/20/2020 2:14:45 PM	130159	1.00000	20200420_011	3.075	25.0000	1.0000	9

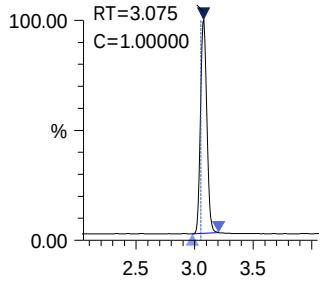
Perchlorate

Conc 1.89707
Area 33786
Q 99.00>83.00 (-) 8.73e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 130159
ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

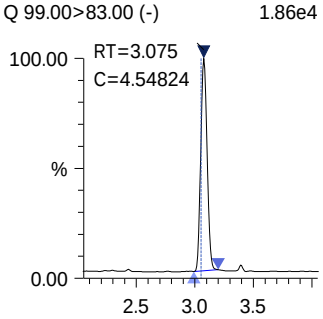
PERCHLORATE6

Date acquired: 4/20/2020 2:22:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_012.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	4/20/2020 2:22:39 PM	69848	4.54824	20200420_012	3.075	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE6	4/20/2020 2:22:39 PM	112235	1.00000	20200420_012	3.074	25.0000	1.0000	10

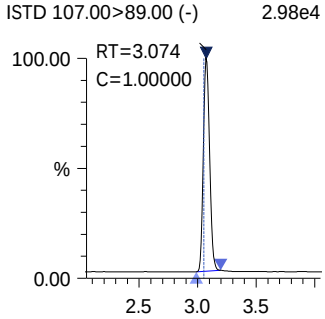
Perchlorate

Conc 4.54824
Area 69848



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 112235



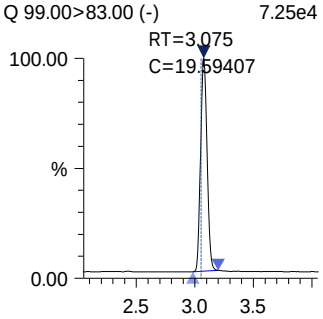
PERCHLORATE8

Date acquired: 4/20/2020 2:30:36 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_013.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	4/20/2020 2:30:36 PM	275854	19.59407	20200420_013	3.075	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE8	4/20/2020 2:30:36 PM	102890	1.00000	20200420_013	3.072	25.0000	1.0000	11

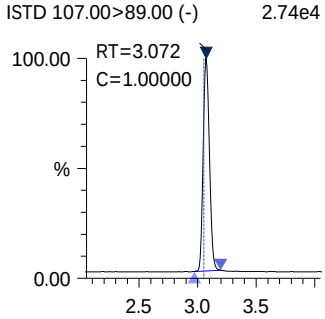
Perchlorate

Conc 19.59407
Area 275854



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 102890



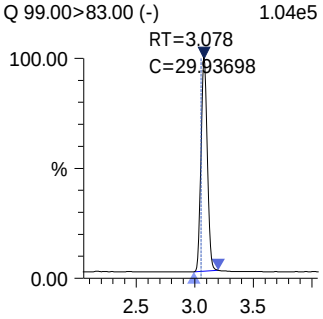
PERCHLORATE9

Date acquired: 4/20/2020 2:38:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_014.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	4/20/2020 2:38:33 PM	390068	29.93698	20200420_014	3.078	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE9	4/20/2020 2:38:33 PM	95225	1.00000	20200420_014	3.075	25.0000	1.0000	12

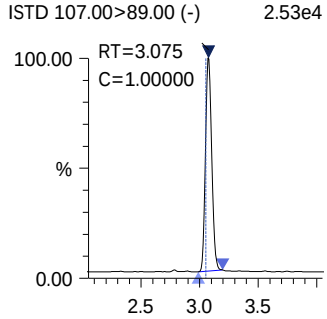
Perchlorate

Conc 29.93698
Area 390068



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 95225



ALS Group Houston

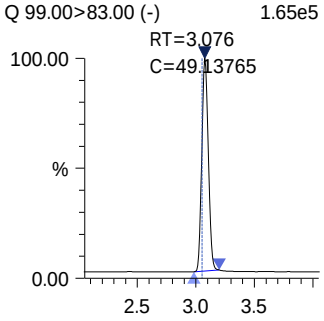
PERCHLORATE10

Date acquired: 4/20/2020 2:46:25 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_015.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE10	4/20/2020 2:46:25 PM	632804	49.13765	20200420_015	3.076	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE10	4/20/2020 2:46:25 PM	94118	1.00000	20200420_015	3.075	25.0000	1.0000	13

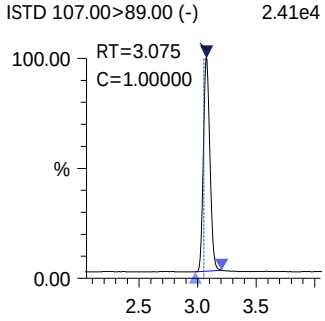
Perchlorate

Conc 49.13765
Area 632804



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 94118



ALS Group Houston

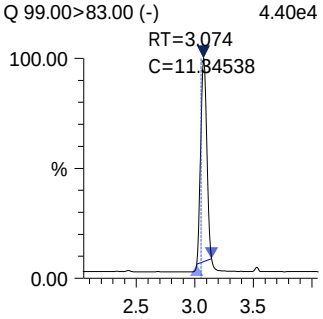
PERCHLORATEICV

Date acquired: 4/20/2020 2:54:20 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200420\20200420_016.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	4/20/2020 2:54:20 PM	149807	11.34538	20200420_016	3.074	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	4/20/2020 2:54:20 PM	96501	1.00000	20200420_016	3.072	25.0000	1.0000	14

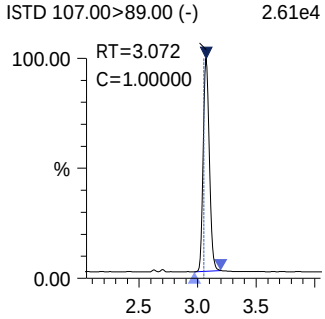
Perchlorate

Conc 11.34538
Area 149807



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 96501



Chromatograms

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200512

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200512_001	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:09
	null		20200512_002	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:14
	IB		20200512_003	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:19
	PERCHLORATE7		20200512_004	Perchlorate6850b.lcm	1x	☒	3100805-02	5/12/2020 12:27
	LODV		20200512_005	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:35
	EQ2000173-01		20200512_006	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:50
	EQ2000173-02		20200512_007	Perchlorate6850b.lcm	1x	☒		5/12/2020 12:58
	EQ2000173-03		20200512_008	Perchlorate6850b.lcm	1x	☒		5/12/2020 13:06
	E2000404-002		20200512_009	Perchlorate6850b.lcm	1x	☒		5/12/2020 13:13
	EQ2000173-04		20200512_010	Perchlorate6850b.lcm	1x	☒		5/12/2020 13:21
	EQ2000173-05		20200512_011	Perchlorate6850b.lcm	1x	☒	do not use	5/12/2020 13:29
	E2000382-001		20200512_012	Perchlorate6850b.lcm	1x	☒		5/12/2020 13:37
	PERCHLORATE7		20200512_013	Perchlorate6850b.lcm	1x	☒	3100805-02	5/12/2020 13:45
	E2000404-001		20200512_014	Perchlorate6850b.lcm	1x	☒		5/12/2020 13:53
	E2000404-003		20200512_015	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:01
	E2000404-004		20200512_016	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:09
	E2000404-005		20200512_017	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:17
	E2000404-006		20200512_018	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:25
	E2000405-001		20200512_019	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:32
	E2000405-002		20200512_020	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:40
	E2000405-003		20200512_021	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:48
	E2000405-004		20200512_022	Perchlorate6850b.lcm	1x	☒		5/12/2020 14:56
	E2000405-005		20200512_023	Perchlorate6850b.lcm	1x	☒		5/12/2020 15:04
	PERCHLORATE7		20200512_024	Perchlorate6850b.lcm	1x	☒	3100805-02	5/12/2020 15:12
	E2000406-001		20200512_025	Perchlorate6850b.lcm	1x	☒		5/12/2020 15:20
	E2000406-002		20200512_26	Perchlorate6850b.lcm	1x	☒		5/12/2020 15:28
	E2000406-003		20200512_027	Perchlorate6850b.lcm	1x	☒		5/12/2020 15:36
	E2000407-001		20200512_028	Perchlorate6850b.lcm	1x	☒		5/12/2020 15:44
	E2000408-001		20200512_029	Perchlorate6850b.lcm	1x	☒	dilution	5/12/2020 15:51
	E2000409-001		20200512_030	Perchlorate6850b.lcm	1x	☒	RR-poss carry-over	5/12/2020 15:59
	EQ2000173-05		20200512_031	Perchlorate6850b.lcm	1x	☒	do not use	5/12/2020 16:07
	PERCHLORATE7		20200512_032	Perchlorate6850b.lcm	1x	☒	3100805-02	5/12/2020 16:15

20200513

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
LCMS01 -Shimadzu 8050

ICAL Date: 4/20/2020
Cal. Std. xp: 5/14/2020
ICAL ID: **EC2000003**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100803-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
	null		20200513_001	Perchlorate6850b.lcm	1x	☒		5/13/2020 11:40
	null		20200513_002	Perchlorate6850b.lcm	1x	☒		5/13/2020 11:45
	IB		20200513_003	Perchlorate6850b.lcm	1x	☒		5/13/2020 11:50
	PERCHLORATE7		20200513_004	Perchlorate6850b.lcm	1x	☒	3100805-02	5/13/2020 11:58
	LODV		20200513_005	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:06
	EQ2000179-01		20200513_006	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:14
	EQ2000179-02		20200513_007	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:22
	EQ2000179-03		20200513_008	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:29
	EQ2000179-04		20200513_009	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:37
	EQ2000179-05		20200513_010	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:45
	E2000410-001		20200513_011	Perchlorate6850b.lcm	1x	☒		5/13/2020 12:53
	E2000410-002		20200513_012	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:01
	E2000410-003		20200513_013	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:09
	E2000410-004		20200513_014	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:17
	E2000410-005		20200513_015	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:25
	PERCHLORATE7		20200513_016	Perchlorate6850b.lcm	1x	☒	3100805-02	5/13/2020 13:33
	E2000410-006		20200513_017	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:41
	E2000410-007		20200513_018	Perchlorate6850b.lcm	1x	☒		5/13/2020 13:49
	E2000408-001X200		20200513_019	Perchlorate6850b.lcm	200x	☒		5/13/2020 13:56
	PERCHLORATE7		20200513_020	Perchlorate6850b.lcm	1x	☒	3100805-02	5/13/2020 14:04
	EQ2000173-05		20200513_021	Perchlorate6850b.lcm	1x	☒		5/13/2020 14:12
	E2000409-001		20200513_022	Perchlorate6850b.lcm	1x	☒		5/13/2020 14:20
	PERCHLORATE7		20200513_023	Perchlorate6850b.lcm	1x	☒	3100805-02	5/13/2020 14:28

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Analyzed:**	5/12/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200512\20200512_004	**Calibration ID:**	EC2000003
		Analysis Lot:	679868
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.9	0.1368	0.1485	8.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Analyzed:**	5/12/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200512\20200512_013	**Calibration ID:**	EC2000003
		Analysis Lot:	679868
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.0	0.1368	0.1502	9.7	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Analyzed:**	5/13/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200513\20200513_004	**Calibration ID:**	EC2000003
		Analysis Lot:	680124
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.1	0.1368	0.1520	11.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Analyzed:**	5/13/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200513\20200513_016	**Calibration ID:**	EC2000003
		Analysis Lot:	680124
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.3	0.1368	0.1546	13.0	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Analyzed:**	5/13/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200513\20200513_020	**Calibration ID:**	EC2000003
		Analysis Lot:	680124
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.7	0.1368	0.1461	6.8	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Analyzed:**	5/13/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	4/20/20
File ID:	I:\LCMS01\DATA\20200513\20200513_023	**Calibration ID:**	EC2000003
		Analysis Lot:	680124
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.1	0.1368	0.1523	11.3	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Analyzed:**	5/12/20 12:27

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200512\20200512_004	**Lab Code:**	EQ2000176-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	679868
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000176-01	77,004	3.01
Method Blank	EQ2000173-01	95,026	2.94
Lab Control Sample	EQ2000173-02	108,592	3.00
Duplicate Lab Control Sample	EQ2000173-03	109,300	3.00
Batch QC	E2000404-002	104,595	2.99
Batch QCMS	EQ2000173-04	114,639	2.99

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Analyzed:**	5/12/20 13:45

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200512\20200512_013	**Lab Code:**	EQ2000176-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	679868
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000176-02	99,187	2.99

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Analyzed:**	5/13/20 11:58

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200513\20200513_004	**Lab Code:**	EQ2000186-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	680124
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000186-01	106,329	3.00

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Analyzed:**	5/13/20 13:33

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200513\20200513_016	**Lab Code:**	EQ2000186-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	680124
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000186-02	116,942	3.00

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Analyzed:**	5/13/20 14:04

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200513\20200513_020	**Lab Code:**	EQ2000186-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	680124
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000186-03	120,816	3.00
Batch QCDMS	EQ2000173-05	141,444	2.98
LH18/24-SP650_050520_BIX	E2000409-001	114,588	2.98

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000409
Project:	HS20050178	**Date Analyzed:**	5/13/20 14:28

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200513\20200513_023	**Lab Code:**	EQ2000186-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	680124
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	110,677	3.07
	Upper Limit ==>	166,016	5.07
	Lower Limit ==>	55,339	1.07
Associated Analyses			
Continuing Calibration Verification	EQ2000186-04	117,011	2.99

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

ALS Group Houston

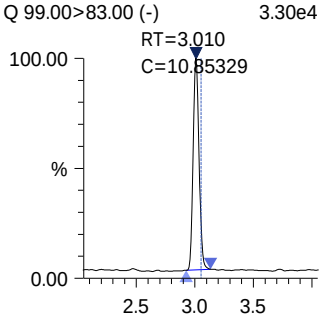
PERCHLORATE7

Date acquired: 5/12/2020 12:27:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_004.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	5/12/2020 12:27:44 PM	114355	10.85329	20200512_004	3.010	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	5/12/2020 12:27:44 PM	77004	1.00000	20200512_004	3.008	25.0000	1.0000	3

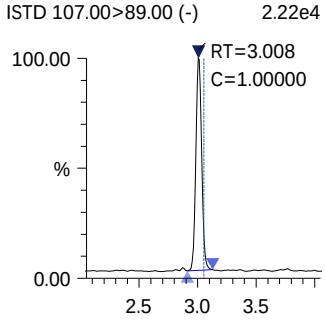
Perchlorate

Conc 10.85329
Area 114355



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 77004



ALS Group Houston

EQ2000173-01

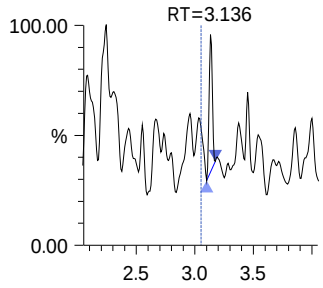
Date acquired: 5/12/2020 12:50:12 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_006.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000173-01	5/12/2020 12:50:12 PM	----	----	20200512_006	----	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	EQ2000173-01	5/12/2020 12:50:12 PM	95026	1.00000	20200512_006	2.942	25.0000	1.0000	5

Perchlorate

Conc ----
Area ----

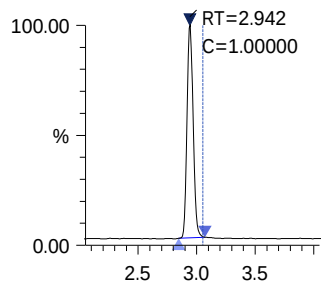
Q 99.00>83.00 (-) 3.00e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 95026

ISTD 107.00>89.00 (-) 2.66e4



ALS Group Houston

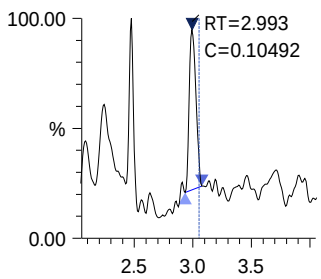
EQ2000173-02

Date acquired: 5/12/2020 12:58:07 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_007.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000173-02	5/12/2020 12:58:07 PM	1559	0.10492	20200512_007	2.993	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000173-02	5/12/2020 12:58:07 PM	108592	1.00000	20200512_007	3.004	25.0000	1.0000	6

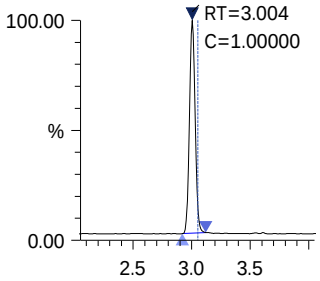
Perchlorate

Conc 0.10492
Area 1559
Q 99.00>83.00 (-) 5.16e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 108592
ISTD 107.00>89.00 (-) 3.19e4



ALS Group Houston

EQ2000173-03

Date acquired: 5/12/2020 1:06:00 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_008.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

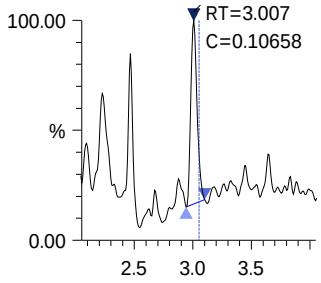
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000173-03	5/12/2020 1:06:00 PM	1594	0.10658	20200512_008	3.007	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	EQ2000173-03	5/12/2020 1:06:00 PM	109300	1.00000	20200512_008	3.004	25.0000	1.0000	7

Perchlorate

Conc 0.10658

Area 1594

Q 99.00>83.00 (-) 4.99e2

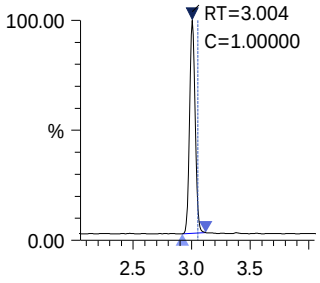


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 109300

ISTD 107.00>89.00 (-) 3.26e4



ALS Group Houston

EQ2000173-04

Date acquired: 5/12/2020 1:21:48 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_010.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

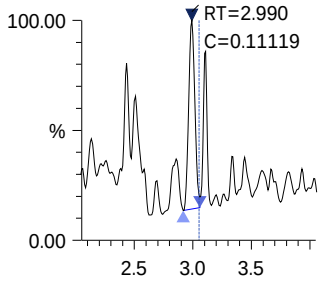
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000173-04	5/12/2020 1:21:48 PM	1744	0.11119	20200512_010	2.990	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	EQ2000173-04	5/12/2020 1:21:48 PM	114639	1.00000	20200512_010	2.990	25.0000	1.0000	9

Perchlorate

Conc 0.11119

Area 1744

Q 99.00>83.00 (-) 5.32e2

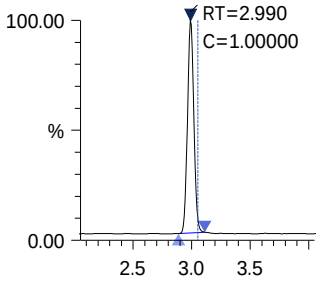


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 114639

ISTD 107.00>89.00 (-) 3.06e4



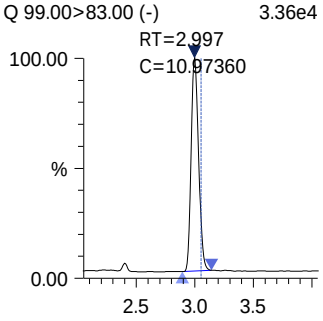
PERCHLORATE7

Date acquired: 5/12/2020 1:45:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200512\20200512_013.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	5/12/2020 1:45:33 PM	148931	10.97360	20200512_013	2.997	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	5/12/2020 1:45:33 PM	99187	1.00000	20200512_013	2.994	25.0000	1.0000	3

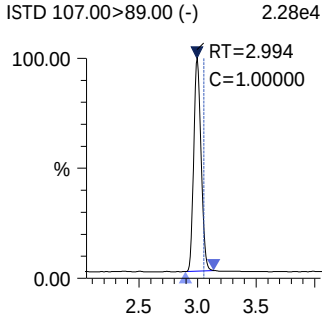
Perchlorate

Conc 10.97360
Area 148931



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 99187



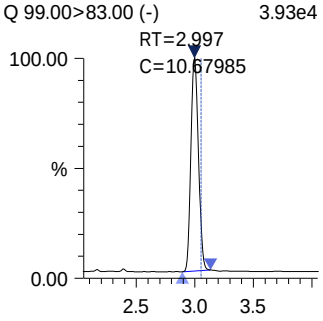
PERCHLORATE7

Date acquired: 5/13/2020 2:04:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200513\20200513_020.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	5/13/2020 2:04:49 PM	176552	10.67985	20200513_020	2.997	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	5/13/2020 2:04:49 PM	120816	1.00000	20200513_020	2.995	25.0000	1.0000	3

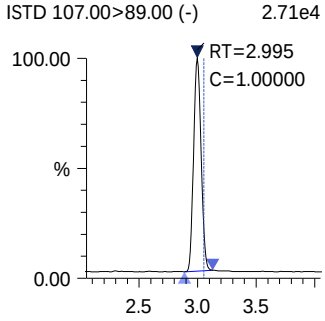
Perchlorate

Conc 10.67985
Area 176552



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 120816



ALS Group Houston

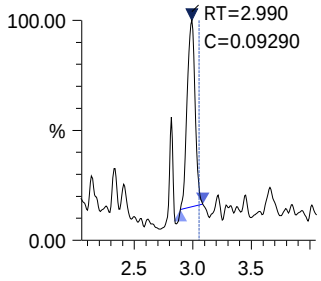
EQ2000173-05

Date acquired: 5/13/2020 2:12:40 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200513\20200513_021.lcd
Vial: 18 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000173-05	5/13/2020 2:12:40 PM	1798	0.09290	20200513_021	2.990	25.0000	1.0000	18
Sodium Perchlorate-18O4_IS	EQ2000173-05	5/13/2020 2:12:40 PM	141444	1.00000	20200513_021	2.980	25.0000	1.0000	18

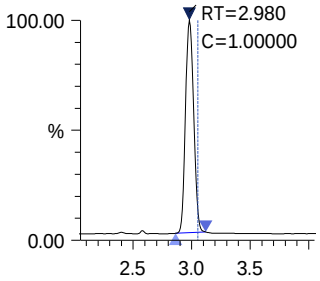
Perchlorate

Conc 0.09290
Area 1798
Q 99.00>83.00 (-) 4.31e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 141444
ISTD 107.00>89.00 (-) 2.95e4



ALS Group Houston

E2000409-001

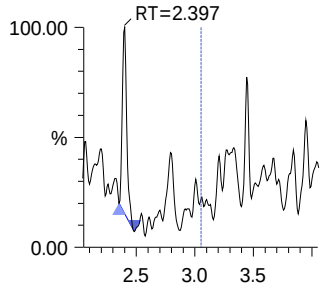
Date acquired: 5/13/2020 2:20:36 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200513\20200513_022.lcd
Vial: 19 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	E2000409-001	5/13/2020 2:20:36 PM	----	----	20200513_022	----	25.0000	1.0000	19
Sodium Perchlorate-18O4_IS	E2000409-001	5/13/2020 2:20:36 PM	114588	1.00000	20200513_022	2.978	25.0000	1.0000	19

Perchlorate

Conc ----
Area ----

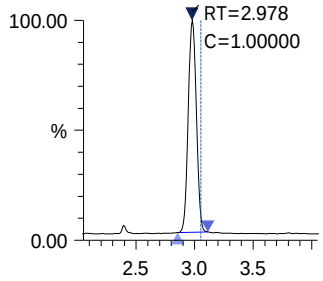
Q 99.00>83.00 (-) 1.81e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 114588

ISTD 107.00>89.00 (-) 2.41e4



ALS Group Houston

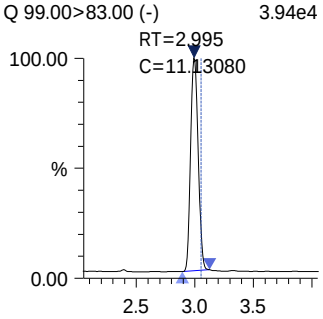
PERCHLORATE7

Date acquired: 5/13/2020 2:28:31 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200513\20200513_023.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	5/13/2020 2:28:31 PM	178211	11.13080	20200513_023	2.995	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	PERCHLORATE7	5/13/2020 2:28:31 PM	117011	1.00000	20200513_023	2.992	25.0000	1.0000	3

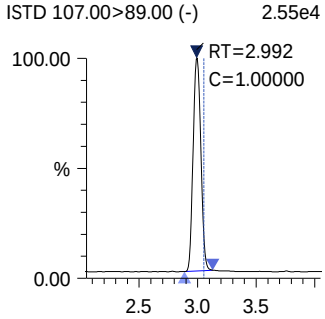
Perchlorate

Conc 11.13080
Area 178211



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 117011



ALS Houston, US Date: 29-May-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20050454

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20050454-01	LH18/24-SP650_051220	Water		12-May-2020 14:00	13-May-2020 12:20	☐
HS20050454-02	LH18/24-SP650_051220-BIX	Water		12-May-2020 14:00	13-May-2020 12:20	☐

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 29-May-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Weekly Samples WorkOrder:HS20050454
Sample ID: LH18/24-SP650_051220 Lab ID:HS20050454-01
Collection Date: 12-May-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: YP
Nitrogen, Ammonia (As N)	**11**	a	**0.20**	**0.10**	**0.20**	**mg/L**	1	21-May-2020 11:00
ORTHO PHOSPHATE (PO4) AS P BY E365.3		**Method:E365.3**						Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	**1.89**	a	**0.100**	**0.250**	**0.250**	**mg/L**	10	13-May-2020 16:30

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

PRELIMINARY

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 29-May-20

Client:	Bhate Environmental Associates, Inc.	**ANALYTICAL REPORT**
Project:	Longhorn GW Treatment Plant Weekly Samples	WorkOrder:HS20050454
Sample ID:	LH18/24-SP650_051220-BIX	Lab ID:HS20050454-02
Collection Date:	12-May-2020 14:00	Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	26-May-2020 18:27

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

PRELIMINARY

RIGHT SOLUTIONS | RIGHT PARTNER

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281) 530-5656 ATTN: RJ Modashia

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

Prepared By:
Scott Beesinger

P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_051220	Water	05/12/20 / 14:00		3	X	X			H2SO4	
LH18/24-SP650_051220	Water	05/12/20 / 14:00		1			X		NONE	
LH18/24--SP650_051220_BIX	Water	05/12/20 / 14:00		1				X	NONE	

Analyses

Additional Remarks: **Standard TAT on all parameters**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	05/12/20	14:30									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
J. Hernandez	5/13/20	12:20							

Remarks:
Cooler - 4595C IR11
Temp 1.3 CF0.0

HS20050454

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

(Word) S:\Users\Forms\Chain of Custody - BiWeekly

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ALS Environmental
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May 29, 2020

Analytical Report for Service Request No: K2003957

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

RE: HS20050454

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory May 14, 2020
For your reference, these analyses have been assigned our service request number **K2003957.**

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

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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.

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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.

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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.

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Case Narrative

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

Client: ALS Environmental - US
Project: HS20050454
Sample Matrix: Water

Service Request: K2003957
Date Received: 05/14/2020

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 water sample was received for analysis at ALS Environmental on 05/14/2020. 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 05/29/2020

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Chain of Custody

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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13901**

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:	HS20050454
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20050454-01**	**LH18/24-SP650_051220**	**Water**	**12 May 2020 14:00**
	TOC Analysis for DOD Level IV			28 May 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: 5/13/2020 1800

Received By: C Crouch Date/Time: 5/14/2020 0925

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

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PC KL

Cooler Receipt and Preservation Form

Client ALS Houston Service Request K2003957

Received: 5/14/2020 Opened: 5/14/2020 By: CG Unloaded: 5/14/2020 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
1-5					48900483	13901	1251 0297 0996	

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: _____

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General Chemistry

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dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2003957
Project:	HS20050454	**Date Collected:**	05/12/20
Sample Matrix:	Water	**Date Received:**	05/14/20
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
LH18/24-SP650_051220	K2003957-001	**2.63**	0.50	0.20	0.07	1	05/27/20 10:22	
Method Blank	K2003957-MB	ND U	0.50	0.20	0.07	1	05/27/20 05:10	

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ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2003957
Project	HS20050454	**Date Collected:**	05/12/20
Sample Matrix:	Water	**Date Received:**	05/14/20
		Date Analyzed:	05/27/20

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	LH18/24-SP650_051220	**Units:**	mg/L
Lab Code:	K2003957-001	**Basis:**	NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K2003957-001DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	2.63	2.46	2.55	6	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.

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dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2003957
Project:	HS20050454	**Date Analyzed:**	05/27/20
Sample Matrix:	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:	680711

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2003957-LCS	24.6	25.0	98	83-117

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QA/QC Report

Client: ALS Environmental - US **Service Request:** K2003957
Project: HS20050454

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	680711	KQ2006710-01	05/27/20 04:41	25.0	24.4	98	90-110
CCV2	680711	KQ2006710-02	05/27/20 09:24	25.0	24.6	98	90-110
CCV3	680711	KQ2006710-03	05/27/20 14:08	25.0	24.8	99	90-110
CCV4	680711	KQ2006710-04	05/27/20 18:51	25.0	25.0	100	90-110

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dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2003957
Project: HS20050454

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	680711	KQ2006710-05	05/27/20 04:56	0.50	0.20	0.07	ND	U
CCB2	680711	KQ2006710-06	05/27/20 09:39	0.50	0.20	0.07	ND	U
CCB3	680711	KQ2006710-07	05/27/20 14:22	0.50	0.20	0.07	ND	U
CCB4	680711	KQ2006710-08	05/27/20 19:06	0.50	0.20	0.07	ND	U

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Raw Data

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Work Request # Original ( ) K2004023, 4049, 4053, 4063, 4085, 4126, 4152, 3497, 3982, 4021, 4023, 3449, 3982, 3448, 4085, 3876, 3982

Tier: II II I I II I IV IV II II II III II III II I II

Date Analyzed: 5/22/20

Analyst: RD

Run # TOC: 680711, 680712 DOC: 680713

Analysis: TOC/DOC

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: K2004063-1/1d, 3982-5/5d, 3982-9/9d, 3982-11/11d, 3982-12/12d 3449-4, 4085-5 report a high %RSD. However, these samples are less than 5x the MRL.

Final Approved by: _____ Date: 5/29/20

DQREPORT

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Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 681225 **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?
K2004023-003	Carbon, Total Organic	N/A		Water	19.94 mg/L	10 ml	19.9 mg/L	1	0.07	0.50			5/27/20 05:40	N
K2004023-004	Carbon, Total Organic	N/A		Water	1.19 mg/L	10 ml	240 mg/L	200	20	100			5/27/20 06:08	N
K2004023-005	Carbon, Total Organic	N/A		Water	24.58 mg/L	10 ml	98.3 mg/L	4	0.3	2.0			5/27/20 06:36	N
K2004023-006	Carbon, Total Organic	N/A		Water	35.32 mg/L	10 ml	35.3 mg/L	1	0.07	0.50			5/27/20 07:04	N
K2004049-001	Carbon, Total Organic	N/A		Water	2.25 mg/L	10 ml	2.25 mg/L	1	0.07	0.50			5/26/20 20:56	N
K2004049-002	Carbon, Total Organic	N/A		Water	0.89 mg/L	10 ml	0.89 mg/L	1	0.07	0.50			5/26/20 21:24	N
K2004049-003	Carbon, Total Organic	N/A		Water	0.97 mg/L	10 ml	0.97 mg/L	1	0.07	0.50			5/26/20 21:52	N
K2004049-004	Carbon, Total Organic	N/A		Water	0.92 mg/L	10 ml	0.92 mg/L	1	0.07	0.50			5/26/20 22:20	N
K2004049-005	Carbon, Total Organic	N/A		Water	0.79 mg/L	10 ml	0.79 mg/L	1	0.07	0.50			5/26/20 22:48	N
K2004049-006	Carbon, Total Organic	N/A		Water	0.77 mg/L	10 ml	0.77 mg/L	1	0.07	0.50			5/27/20 00:00	N
K2004049-007	Carbon, Total Organic	N/A		Water	0.74 mg/L	10 ml	0.74 mg/L	1	0.07	0.50			5/27/20 00:28	N
K2004049-008	Carbon, Total Organic	N/A		Water	1.71 mg/L	10 ml	1.71 mg/L	1	0.07	0.50			5/27/20 00:56	N
K2004049-009	Carbon, Total Organic	N/A		Water	0.74 mg/L	10 ml	0.74 mg/L	1	0.07	0.50			5/27/20 01:24	N
K2004053-001	Carbon, Total Organic	N/A		Drinking Water	1.20 mg/L	10 ml	1.20 mg/L	1	0.07	0.50			5/27/20 01:52	N
K2004063-001	Carbon, Total Organic	N/A		Drinking Water	0.87 mg/L	10 ml	0.87 mg/L	1	0.07	0.50			5/27/20 02:20	N
K2004085-001	Carbon, Total Organic	N/A		Water	1.74 mg/L	10 ml	1.74 mg/L	1	0.07	0.50			5/27/20 03:17	N
K2004085-002	Carbon, Total Organic	N/A		Water	1.67 mg/L	10 ml	1.67 mg/L	1	0.07	0.50			5/27/20 03:45	N
K2004085-003	Carbon, Total Organic	N/A		Water	1.71 mg/L	10 ml	1.71 mg/L	1	0.07	0.50			5/27/20 04:13	N
K2004126-002	Carbon, Total Organic	N/A		Drinking Water	0.83 mg/L	10 ml	0.83 mg/L	1	0.07	0.50			5/27/20 02:49	N
K2004152-001	Carbon, Total Organic	N/A		Water	2.19 mg/L	10 ml	2.19 mg/L	1	0.07	0.50			5/26/20 20:27	N
KQ2006968-01	Carbon, Total Organic	CCV		Water	26.01 mg/L	10 ml	26.0 mg/L	1					5/26/20 19:14	N
KQ2006968-02	Carbon, Total Organic	CCV		Water	25.45 mg/L	10 ml	25.4 mg/L	1					5/26/20 23:31	N
KQ2006968-03	Carbon, Total Organic	CCV		Water	24.38 mg/L	10 ml	24.4 mg/L	1					5/27/20 04:41	N
KQ2006968-04	Carbon, Total Organic	CCV		Water	24.60 mg/L	10 ml	24.6 mg/L	1					5/27/20 09:24	N
KQ2006968-05	Carbon, Total Organic	CCB		Water	0.13 mg/L	10 ml	0.13 mg/L J	1	0.07	0.50			5/26/20 19:29	N
KQ2006968-06	Carbon, Total Organic	CCB		Water	0.01 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/26/20 23:45	N
KQ2006968-07	Carbon, Total Organic	CCB		Water	0.04 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/27/20 04:56	N
KQ2006968-08	Carbon, Total Organic	CCB		Water	0.02 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/27/20 09:39	N
KQ2006968-09	Carbon, Total Organic	MB		Water	0.07 mg/L	10 ml	0.07 mg/L J	1	0.07	0.50			5/26/20 19:43	N
KQ2006968-10	Carbon, Total Organic	LCS		Water	25.76 mg/L	10 ml	25.8 mg/L	1	0.07	0.50	103		5/26/20 19:58	N
KQ2006968-12	Carbon, Total Organic	DUP	K2004023-003	Water	20.19 mg/L	10 ml	20.2 mg/L	1	0.07	0.50		1	5/27/20 05:40	N
KQ2006968-13	Carbon, Total Organic	DUP	K2004023-004	Water	1.08 mg/L	10 ml	220 mg/L	200	20	100		10	5/27/20 06:08	N
KQ2006968-14	Carbon, Total Organic	DUP	K2004023-005	Water	25.08 mg/L	10 ml	100 mg/L	4	0.3	2.0		2	5/27/20 06:36	N
KQ2006968-15	Carbon, Total Organic	DUP	K2004023-006	Water	35.72 mg/L	10 ml	35.7 mg/L	1	0.07	0.50		1	5/27/20 07:04	N
KQ2006968-16	Carbon, Total Organic	DUP	K2004049-001	Water	2.23 mg/L	10 ml	2.23 mg/L	1	0.07	0.50		<1	5/26/20 20:56	N

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

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Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 681225 **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?
KQ2006968-17	Carbon, Total Organic	DUP	K2004049-002	Water	0.85 mg/L	10 ml	0.85 mg/L	1	0.07	0.50		5	5/26/20 21:24	N
KQ2006968-18	Carbon, Total Organic	DUP	K2004049-003	Water	0.96 mg/L	10 ml	0.96 mg/L	1	0.07	0.50		1	5/26/20 21:52	N
KQ2006968-19	Carbon, Total Organic	DUP	K2004049-004	Water	0.87 mg/L	10 ml	0.87 mg/L	1	0.07	0.50		5	5/26/20 22:20	N
KQ2006968-20	Carbon, Total Organic	DUP	K2004049-005	Water	0.72 mg/L	10 ml	0.72 mg/L	1	0.07	0.50		9	5/26/20 22:48	N
KQ2006968-21	Carbon, Total Organic	DUP	K2004049-006	Water	0.76 mg/L	10 ml	0.76 mg/L	1	0.07	0.50		1	5/27/20 00:00	N
KQ2006968-22	Carbon, Total Organic	DUP	K2004049-007	Water	0.68 mg/L	10 ml	0.68 mg/L	1	0.07	0.50		9	5/27/20 00:28	N
KQ2006968-23	Carbon, Total Organic	DUP	K2004049-008	Water	1.72 mg/L	10 ml	1.72 mg/L	1	0.07	0.50		<1	5/27/20 00:56	N
KQ2006968-24	Carbon, Total Organic	DUP	K2004049-009	Water	0.71 mg/L	10 ml	0.71 mg/L	1	0.07	0.50		3	5/27/20 01:24	N
KQ2006968-25	Carbon, Total Organic	DUP	K2004053-001	Drinking Water	1.13 mg/L	10 ml	1.13 mg/L	1	0.07	0.50		6	5/27/20 01:52	N
KQ2006968-26	Carbon, Total Organic	DUP	K2004063-001	Drinking Water	0.77 mg/L	10 ml	0.77 mg/L	1	0.07	0.50		12*	5/27/20 02:20	N
KQ2006968-27	Carbon, Total Organic	DUP	K2004085-001	Water	1.70 mg/L	10 ml	1.70 mg/L	1	0.07	0.50		2	5/27/20 03:17	N
KQ2006968-28	Carbon, Total Organic	DUP	K2004085-002	Water	1.65 mg/L	10 ml	1.65 mg/L	1	0.07	0.50		1	5/27/20 03:45	N
KQ2006968-29	Carbon, Total Organic	DUP	K2004085-003	Water	1.62 mg/L	10 ml	1.62 mg/L	1	0.07	0.50		5	5/27/20 04:13	N
KQ2006968-30	Carbon, Total Organic	DUP	K2004126-002	Drinking Water	0.79 mg/L	10 ml	0.79 mg/L	1	0.07	0.50		5	5/27/20 02:49	N
KQ2006968-31	Carbon, Total Organic	DUP	K2004152-001	Water	2.12 mg/L	10 ml	2.12 mg/L	1	0.07	0.50		3	5/26/20 20:27	N
KQ2006968-32	Carbon, Total Organic	MS	K2004152-001	Water	27.53 mg/L	10 ml	27.5 mg/L	1	0.07	0.50	101		5/26/20 23:16	N

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# 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:** 680711 **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?
K2003957-001	Carbon, Total Organic	N/A		Water	2.63 mg/L	10 ml	2.63 mg/L	1	0.07	0.50			5/27/20 10:22	N
K2003982-001	Carbon, Total Organic	N/A		Water	25.69 mg/L	10 ml	514 mg/L	20	2	10			5/27/20 11:18	N
K2003982-002	Carbon, Total Organic	N/A		Water	9.43 mg/L	10 ml	189 mg/L	20	2	10			5/27/20 11:46	N
K2003982-003	Carbon, Total Organic	N/A		Water	3.64 mg/L	10 ml	73 mg/L	20	2	10			5/27/20 12:14	Y
K2003982-004	Carbon, Total Organic	N/A		Water	10.95 mg/L	10 ml	11.0 mg/L	1	0.07	0.50			5/27/20 13:11	N
K2003982-005	Carbon, Total Organic	N/A		Water	1.45 mg/L	10 ml	1.45 mg/L	1	0.07	0.50			5/27/20 13:39	N
K2003982-006	Carbon, Total Organic	N/A		Water	1.65 mg/L	10 ml	33 mg/L	20	2	10			5/27/20 15:07	N
K2003982-007	Carbon, Total Organic	N/A		Water	7.87 mg/L	10 ml	7.87 mg/L	1	0.07	0.50			5/27/20 15:35	N
K2003982-008	Carbon, Total Organic	N/A		Water	8.33 mg/L	10 ml	8.33 mg/L	1	0.07	0.50			5/27/20 16:03	N
K2003982-009	Carbon, Total Organic	N/A		Water	2.55 mg/L	10 ml	2.55 mg/L	1	0.07	0.50			5/27/20 16:31	N
K2003982-010	Carbon, Total Organic	N/A		Water	2.09 mg/L	10 ml	2.09 mg/L	1	0.07	0.50			5/27/20 16:59	N
K2003982-011	Carbon, Total Organic	N/A		Water	0.70 mg/L	10 ml	0.70 mg/L	1	0.07	0.50			5/27/20 17:27	N
K2003982-012	Carbon, Total Organic	N/A		Water	0.38 mg/L	10 ml	0.38 mg/L J	1	0.07	0.50			5/27/20 17:55	N
K2003982-013	Carbon, Total Organic	N/A		Water	0.33 mg/L	10 ml	0.33 mg/L J	1	0.07	0.50			5/27/20 18:23	N
K2004021-001	Carbon, Total Organic	N/A		Water	1.87 mg/L	10 ml	1.87 mg/L	1	0.07	0.50			5/27/20 10:50	N
K2004023-007	Carbon, Total Organic	N/A		Water	13.44 mg/L	10 ml	13.4 mg/L	1	0.07	0.50			5/27/20 07:32	N
K2004023-008	Carbon, Total Organic	N/A		Water	8.31 mg/L	10 ml	8.31 mg/L	1	0.07	0.50			5/27/20 08:00	N
K2004023-009	Carbon, Total Organic	N/A		Water	1.90 mg/L	10 ml	380 mg/L	200	20	100			5/27/20 08:28	N
K2004023-010	Carbon, Total Organic	N/A		Water	1.42 mg/L	10 ml	280 mg/L	200	20	100			5/27/20 08:56	N
K2004023-011	Carbon, Total Organic	N/A		Water	23.27 mg/L	10 ml	93.1 mg/L	4	0.3	2.0			5/27/20 09:54	N
KQ2006710-01	Carbon, Total Organic	CCV		Water	24.38 mg/L	10 ml	24.4 mg/L	1					5/27/20 04:41	N
KQ2006710-02	Carbon, Total Organic	CCV		Water	24.60 mg/L	10 ml	24.6 mg/L	1					5/27/20 09:24	N
KQ2006710-03	Carbon, Total Organic	CCV		Water	24.77 mg/L	10 ml	24.8 mg/L	1					5/27/20 14:08	N
KQ2006710-04	Carbon, Total Organic	CCV		Water	25.04 mg/L	10 ml	25.0 mg/L	1					5/27/20 18:51	N
KQ2006710-05	Carbon, Total Organic	CCB		Water	0.04 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/27/20 04:56	N
KQ2006710-06	Carbon, Total Organic	CCB		Water	0.02 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/27/20 09:39	N
KQ2006710-07	Carbon, Total Organic	CCB		Water	0.01 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/27/20 14:22	N
KQ2006710-08	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/27/20 19:06	N
KQ2006710-09	Carbon, Total Organic	MB		Water	-0.07 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/27/20 05:10	N
KQ2006710-10	Carbon, Total Organic	LCS		Water	24.59 mg/L	10 ml	24.6 mg/L	1	0.07	0.50	98		5/27/20 05:25	N
KQ2006710-11	Carbon, Total Organic	MS	K2003982-003	Water	25.48 mg/L	10 ml	5090 mg/L	200	20	100	100		5/27/20 12:42	N
KQ2006710-12	Carbon, Total Organic	DUP	K2003957-001	Water	2.46 mg/L	10 ml	2.46 mg/L	1	0.07	0.50		6	5/27/20 10:22	N
KQ2006710-13	Carbon, Total Organic	DUP	K2003982-001	Water	25.80 mg/L	10 ml	516 mg/L	20	2	10		<1	5/27/20 11:18	N
KQ2006710-14	Carbon, Total Organic	DUP	K2003982-002	Water	9.33 mg/L	10 ml	187 mg/L	20	2	10		1	5/27/20 11:46	N
KQ2006710-15	Carbon, Total Organic	DUP	K2003982-003	Water	3.48 mg/L	10 ml	70 mg/L	20	2	10		4	5/27/20 12:14	N
KQ2006710-16	Carbon, Total Organic	DUP	K2003982-004	Water	10.97 mg/L	10 ml	11.0 mg/L	1	0.07	0.50		<1	5/27/20 13:11	N

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

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Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 680711 **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?
KQ2006710-17	Carbon, Total Organic	DUP	K2003982-005	Water	1.30 mg/L	10 ml	1.30 mg/L	1	0.07	0.50		11*	5/27/20 13:39	N
KQ2006710-18	Carbon, Total Organic	DUP	K2003982-006	Water	1.57 mg/L	10 ml	31 mg/L	20	2	10		5	5/27/20 15:07	N
KQ2006710-19	Carbon, Total Organic	DUP	K2003982-007	Water	8.02 mg/L	10 ml	8.02 mg/L	1	0.07	0.50		2	5/27/20 15:35	N
KQ2006710-20	Carbon, Total Organic	DUP	K2003982-008	Water	8.48 mg/L	10 ml	8.48 mg/L	1	0.07	0.50		2	5/27/20 16:03	N
KQ2006710-21	Carbon, Total Organic	DUP	K2003982-009	Water	2.17 mg/L	10 ml	2.17 mg/L	1	0.07	0.50		16*	5/27/20 16:31	N
KQ2006710-22	Carbon, Total Organic	DUP	K2003982-010	Water	2.02 mg/L	10 ml	2.02 mg/L	1	0.07	0.50		3	5/27/20 16:59	N
KQ2006710-23	Carbon, Total Organic	DUP	K2003982-011	Water	0.62 mg/L	10 ml	0.62 mg/L	1	0.07	0.50		11*	5/27/20 17:27	N
KQ2006710-24	Carbon, Total Organic	DUP	K2003982-012	Water	0.32 mg/L	10 ml	0.32 mg/L J	1	0.07	0.50		17*	5/27/20 17:55	N
KQ2006710-25	Carbon, Total Organic	DUP	K2003982-013	Water	0.36 mg/L	10 ml	0.36 mg/L J	1	0.07	0.50		9	5/27/20 18:23	N
KQ2006710-26	Carbon, Total Organic	DUP	K2004021-001	Water	1.82 mg/L	10 ml	1.82 mg/L	1	0.07	0.50		3	5/27/20 10:50	N
KQ2006710-27	Carbon, Total Organic	DUP	K2004023-008	Water	8.20 mg/L	10 ml	8.20 mg/L	1	0.07	0.50		1	5/27/20 08:00	N
KQ2006710-28	Carbon, Total Organic	DUP	K2004023-009	Water	1.88 mg/L	10 ml	380 mg/L	200	20	100		1	5/27/20 08:28	N
KQ2006710-29	Carbon, Total Organic	DUP	K2004023-010	Water	1.42 mg/L	10 ml	280 mg/L	200	20	100		<1	5/27/20 08:56	N
KQ2006710-30	Carbon, Total Organic	DUP	K2004023-011	Water	23.60 mg/L	10 ml	94.4 mg/L	4	0.3	2.0		1	5/27/20 09:54	N
KQ2006710-31	Carbon, Total Organic	DUP	K2004023-007	Water	13.48 mg/L	10 ml	13.5 mg/L	1	0.07	0.50		<1	5/27/20 07:32	N

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Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 680712 **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?
K2003949-001	Carbon, Total Organic	N/A		Surface Water	1.27 mg/L	10 ml	1.27 mg/L	1	0.07	0.50			5/27/20 20:17	N
K2003949-002	Carbon, Total Organic	N/A		Surface Water	1.05 mg/L	10 ml	1.05 mg/L	1	0.07	0.50			5/27/20 20:45	N
K2003949-003	Carbon, Total Organic	N/A		Surface Water	1.11 mg/L	10 ml	1.11 mg/L	1	0.07	0.50			5/27/20 21:13	N
K2003949-004	Carbon, Total Organic	N/A		Surface Water	0.52 mg/L	10 ml	0.52 mg/L	1	0.07	0.50			5/27/20 21:41	N
K2003949-005	Carbon, Total Organic	N/A		Surface Water	1.39 mg/L	10 ml	1.39 mg/L	1	0.07	0.50			5/27/20 22:09	N
K2003949-006	Carbon, Total Organic	N/A		Surface Water	0.48 mg/L	10 ml	0.48 mg/L J	1	0.07	0.50			5/27/20 22:37	N
K2003949-007	Carbon, Total Organic	N/A		Surface Water	1.07 mg/L	10 ml	1.07 mg/L	1	0.07	0.50			5/27/20 23:05	Y
K2003949-008	Carbon, Total Organic	N/A		Surface Water	1.22 mg/L	10 ml	1.22 mg/L	1	0.07	0.50			5/28/20 00:47	N
K2003949-009	Carbon, Total Organic	N/A		Surface Water	-0.06 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/28/20 01:15	N
K2003982-014	Carbon, Total Organic	N/A		Water	1.23 mg/L	10 ml	25 mg/L	20	2	10			5/27/20 19:20	N
K2003982-015	Carbon, Total Organic	N/A		Water	0.97 mg/L	10 ml	0.97 mg/L	1	0.07	0.50			5/27/20 19:48	N
K2003998-001	Carbon, Total Organic	N/A		Surface Water	1.19 mg/L	10 ml	1.19 mg/L	1	0.07	0.50			5/28/20 01:43	N
K2003998-002	Carbon, Total Organic	N/A		Surface Water	1.20 mg/L	10 ml	1.20 mg/L	1	0.07	0.50			5/28/20 02:11	N
K2003998-003	Carbon, Total Organic	N/A		Surface Water	2.41 mg/L	10 ml	2.41 mg/L	1	0.07	0.50			5/28/20 02:39	N
K2003998-004	Carbon, Total Organic	N/A		Surface Water	0.75 mg/L	10 ml	0.75 mg/L	1	0.07	0.50			5/28/20 03:07	N
K2003998-005	Carbon, Total Organic	N/A		Surface Water	1.07 mg/L	10 ml	1.07 mg/L	1	0.07	0.50			5/28/20 03:36	N
K2004085-004	Carbon, Total Organic	N/A		Water	1.93 mg/L	10 ml	1.93 mg/L	1	0.07	0.50			5/28/20 06:12	N
K2004085-005	Carbon, Total Organic	N/A		Water	0.90 mg/L	10 ml	0.90 mg/L	1	0.07	0.50			5/28/20 06:40	N
KQ2006711-01	Carbon, Total Organic	CCV		Water	25.04 mg/L	10 ml	25.0 mg/L	1					5/27/20 18:51	N
KQ2006711-02	Carbon, Total Organic	CCV		Water	24.82 mg/L	10 ml	24.8 mg/L	1					5/27/20 23:48	N
KQ2006711-03	Carbon, Total Organic	CCV		Water	24.00 mg/L	10 ml	24.0 mg/L	1					5/28/20 04:32	N
KQ2006711-04	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/27/20 19:06	N
KQ2006711-05	Carbon, Total Organic	CCB		Water	-0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/28/20 00:02	N
KQ2006711-06	Carbon, Total Organic	CCB		Water	-0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/28/20 04:46	N
KQ2006711-07	Carbon, Total Organic	MS	K2003949-007	Surface Water	27.29 mg/L	10 ml	27.3 mg/L	1	0.07	0.50	105		5/27/20 23:33	N
KQ2006711-08	Carbon, Total Organic	MB		Water	-0.04 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/27/20 14:37:00	N
KQ2006711-09	Carbon, Total Organic	LCS		Water	24.58 mg/L	10 mL	24.6 mg/L	1	0.07	0.50	98		5/27/20 14:52:00	N

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

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Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 680712 **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?
KQ2006711-10	Carbon, Total Organic	DUP	K2003949-001	Surface Water	1.21 mg/L	10 ml	1.21 mg/L	1	0.07	0.50		5	5/27/20 20:17	N
KQ2006711-11	Carbon, Total Organic	DUP	K2003949-002	Surface Water	1.02 mg/L	10 ml	1.02 mg/L	1	0.07	0.50		2	5/27/20 20:45	N
KQ2006711-12	Carbon, Total Organic	DUP	K2003949-003	Surface Water	1.12 mg/L	10 ml	1.12 mg/L	1	0.07	0.50		1	5/27/20 21:13	N
KQ2006711-13	Carbon, Total Organic	DUP	K2003949-004	Surface Water	0.47 mg/L	10 ml	0.47 mg/L J	1	0.07	0.50		11*	5/27/20 21:41	N
KQ2006711-14	Carbon, Total Organic	DUP	K2003949-005	Surface Water	1.34 mg/L	10 ml	1.34 mg/L	1	0.07	0.50		4	5/27/20 22:09	N
KQ2006711-15	Carbon, Total Organic	DUP	K2003949-006	Surface Water	0.46 mg/L	10 ml	0.46 mg/L J	1	0.07	0.50		5	5/27/20 22:37	N
KQ2006711-16	Carbon, Total Organic	DUP	K2003949-007	Surface Water	1.05 mg/L	10 ml	1.05 mg/L	1	0.07	0.50		2	5/27/20 23:05	N
KQ2006711-17	Carbon, Total Organic	DUP	K2003949-008	Surface Water	1.11 mg/L	10 ml	1.11 mg/L	1	0.07	0.50		10	5/28/20 00:47	N
KQ2006711-18	Carbon, Total Organic	DUP	K2003949-009	Surface Water	-0.04 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50		NC	5/28/20 01:15	N
KQ2006711-19	Carbon, Total Organic	DUP	K2003982-014	Water	1.28 mg/L	10 ml	26 mg/L	20	2	10		4	5/27/20 19:20	N
KQ2006711-20	Carbon, Total Organic	DUP	K2003982-015	Water	0.95 mg/L	10 ml	0.94 mg/L	1	0.07	0.50		3	5/27/20 19:48	N
KQ2006711-21	Carbon, Total Organic	DUP	K2003998-001	Surface Water	1.15 mg/L	10 ml	1.15 mg/L	1	0.07	0.50		4	5/28/20 01:43	N
KQ2006711-22	Carbon, Total Organic	DUP	K2003998-003	Surface Water	2.36 mg/L	10 ml	2.36 mg/L	1	0.07	0.50		2	5/28/20 02:39	N
KQ2006711-23	Carbon, Total Organic	DUP	K2003998-002	Surface Water	1.13 mg/L	10 ml	1.13 mg/L	1	0.07	0.50		6	5/28/20 02:11	N
KQ2006711-24	Carbon, Total Organic	DUP	K2003998-004	Surface Water	0.72 mg/L	10 ml	0.72 mg/L	1	0.07	0.50		4	5/28/20 03:07	N
KQ2006711-25	Carbon, Total Organic	DUP	K2003998-005	Surface Water	1.07 mg/L	10 ml	1.07 mg/L	1	0.07	0.50		<1	5/28/20 03:36	N
KQ2006711-26	Carbon, Total Organic	CCV		Water	24.09 mg/L	10 ml	24.1 mg/L	1					5/28/20 07:08	N
KQ2006711-27	Carbon, Total Organic	CCB		Water	0.02 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/28/20 07:23	N
KQ2006711-28	Carbon, Total Organic	DUP	K2004085-004	Water	1.79 mg/L	10 ml	1.79 mg/L	1	0.07	0.50		7	5/28/20 06:12	N
KQ2006711-29	Carbon, Total Organic	DUP	K2004085-005	Water	0.80 mg/L	10 ml	0.80 mg/L	1	0.07	0.50		12*	5/28/20 06:40	N

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

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Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 680713 **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?
K2003876-002	Carbon, Dissolved Organic (DOC)	N/A		Water	3.94 mg/L	10 ml	3.94 mg/L	1	0.07	0.50			5/28/20 04:04	N
K2003876-004	Carbon, Dissolved Organic (DOC)	N/A		Water	2.86 mg/L	10 ml	2.86 mg/L	1	0.07	0.50			5/28/20 05:01	N
K2003932-003	Carbon, Dissolved Organic (DOC)	N/A		Water	33.52 mg/L	10 ml	33.5 mg/L	1	0.07	0.50			5/28/20 05:30	N
KQ2006712-01	Carbon, Dissolved Organic (DOC)	CCV		Water	24.82 mg/L	10 ml	24.8 mg/L	1					5/27/20 23:48	N
KQ2006712-02	Carbon, Dissolved Organic (DOC)	CCV		Water	24.00 mg/L	10 ml	24.0 mg/L	1					5/28/20 04:32	N
KQ2006712-03	Carbon, Dissolved Organic (DOC)	CCV		Water	24.09 mg/L	10 ml	24.1 mg/L	1					5/28/20 07:08	N
KQ2006712-04	Carbon, Dissolved Organic (DOC)	CCB		Water	-0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/28/20 00:02	N
KQ2006712-05	Carbon, Dissolved Organic (DOC)	CCB		Water	-0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/28/20 04:46	N
KQ2006712-06	Carbon, Dissolved Organic (DOC)	CCB		Water	0.02 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/28/20 07:23	N
KQ2006712-08	Carbon, Dissolved Organic (DOC)	DUP	K2003876-002	Water	3.92 mg/L	10 ml	3.92 mg/L	1	0.07	0.50		<1	5/28/20 04:04	N
KQ2006712-09	Carbon, Dissolved Organic (DOC)	DUP	K2003876-004	Water	2.83 mg/L	10 ml	2.83 mg/L	1	0.07	0.50		1	5/28/20 05:01	N
KQ2006712-10	Carbon, Dissolved Organic (DOC)	DUP	K2003932-003	Water	33.62 mg/L	10 ml	33.6 mg/L	1	0.07	0.50		<1	5/28/20 05:30	N
KQ2006712-11	Carbon, Dissolved Organic (DOC)	MB		Water	-0.05 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/28/20 00:17	N
KQ2006712-12	Carbon, Dissolved Organic (DOC)	LCS		Water	24.54 mg/L	10 ml	24.5 mg/L	1	0.07	0.50	98		5/28/20 00:32	N
KQ2006712-13	Carbon, Dissolved Organic (DOC)	MS	K2003932-003	Water	34.27 mg/L	10 ml	137 mg/L	4	0.3	2.0	104		5/28/20 05:58	N

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

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0.350				OBSERVATIONS	13	ABOVE
0.292				STD Deviation	0.05513	ABOVE
0.225	0.225	0.225	0.225	AVERAGE	0.22446	0.2251
0.254	0.254	0.254	0.254	UCL	0.27959	0.2536
0.144				LCL	0.16933	BELOW
0.241	0.241	0.241	0.241			0.2412
0.231	0.231	0.231	0.231			0.2309
0.174	0.174	0.174	0.174	OBSERVATIONS	9	0.1736
0.223	0.223	0.223	0.223	STD Deviation	0.08974	0.2225
0.187	0.187	0.187	0.187	AVERAGE	0.21834	0.1871
0.167				UCL	0.30809	BELOW
0.192	0.192	0.192	0.192	LCL	0.12860	0.1918
0.239	0.239	0.239	0.239			0.2393
						BELOW
				OBSERVATIONS	9	BELOW
				STD Deviation	0.08974	BELOW
				AVERAGE	0.21834	BELOW
				UCL	0.30809	BELOW
				LCL	0.12860	BELOW
						BELOW
						BELOW
				OBSERVATIONS	9	BELOW
				STD Deviation	0.02931	BELOW
				AVERAGE	0.21834	BELOW
						BELOW
						BELOW
						BELOW
						BELOW
						BELOW

9/28/10

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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	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	26.226	0.2183	26.0074	26.00736	26.0	5/26/2020
3	ccb	1	0.350	0.2183	0.1315	0.13146	<0.5	5/26/2020
4	mb	1	0.292	0.2183	0.0737	0.07366	<0.5	5/26/2020
5	lcs	1	25.975	0.2183	25.7568	25.75676	25.8	5/26/2020
6	K2004152-001	1	2.411	0.2183	2.1929	2.19286	2.19	5/26/2020
7	K2004152-001	1	2.338	0.2183	2.1193	2.11926	2.1	5/26/2020
8	K2004049-001	1	2.467	0.2183	2.2483	2.24826	2	5/26/2020
9	K2004049-001	1	2.446	0.2183	2.2281	2.22806	2.23	5/26/2020
10	K2004049-002	1	1.110	0.2183	0.8914	0.89136	0.89	5/26/2020
11	K2004049-002	1	1.066	0.2183	0.8473	0.84726	0.8	5/26/2020
12	K2004049-003	1	1.186	0.2183	0.9672	0.96716	0.97	5/26/2020
13	K2004049-003	1	1.176	0.2183	0.9575	0.95746	0.96	5/26/2020
14	K2004049-004	1	1.136	0.2183	0.9174	0.91736	0.92	5/26/2020
15	K2004049-004	1	1.093	0.2183	0.8742	0.87416	0.9	5/26/2020
16	K2004049-005	1	1.006	0.2183	0.7878	0.78776	0.8	5/26/2020
17	K2004049-005	1	0.939	0.2183	0.7207	0.72066	0.72	5/26/2020
18	KQ2006968-32	1	27.750	0.2183	27.5312	27.53116	27.5	5/26/2020
19	ccv	1	25.664	0.2183	25.4460	25.44596	25.4	5/26/2020
20	ccb	1	0.225	0.2183	0.0068	0.00676	<0.5	5/26/2020
21	K2004049-006	1	0.984	0.2183	0.7652	0.76516	0.77	5/27/2020
22	K2004049-006	1	0.975	0.2183	0.7564	0.75636	0.8	5/27/2020
23	K2004049-007	1	0.963	0.2183	0.7445	0.74446	0.7	5/27/2020
24	K2004049-007	1	0.899	0.2183	0.6806	0.68056	0.68	5/27/2020
25	K2004049-008	1	1.930	0.2183	1.7116	1.71156	1.71	5/27/2020

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: [illegible]	Date Analyzed 5/28/20	
Reviewed By: [illegible]	Date Reviewed 5/28/20	

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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	K2004049-008	1	1.941	0.2183	1.7222	1.72216	1.72	5/27/2020
27	K2004049-009	1	0.955	0.2183	0.7366	0.73656	0.74	5/27/2020
28	K2004049-009	1	0.932	0.2183	0.7133	0.71326	0.7	5/27/2020
29	K2004053-001	1	1.415	0.2183	1.1971	1.19706	1.2	5/27/2020
30	K2004053-001	1	1.348	0.2183	1.1295	1.12946	1.1	5/27/2020
31	K2004063-001	1	1.089	0.2183	0.8707	0.87066	0.9	5/27/2020
32	K2004063-001	1	0.989	0.2183	0.7709	0.77086	0.8	5/27/2020
33	K2004126-002	1	1.046	0.2183	0.8277	0.82766	0.8	5/27/2020
34	K2004126-002	1	1.007	0.2183	0.7891	0.78906	0.8	5/27/2020
35	K2004085-001	1	1.956	0.2183	1.7378	1.73776	1.7	5/27/2020
36	K2004085-001	1	1.918	0.2183	1.6999	1.69986	1.7	5/27/2020
37	K2004085-002	1	1.888	0.2183	1.6695	1.66946	1.7	5/27/2020
38	K2004085-002	1	1.870	0.2183	1.6517	1.65166	1.7	5/27/2020
39	K2004085-003	1	1.927	0.2183	1.7089	1.70886	1.7	5/27/2020
40	K2004085-003	1	1.838	0.2183	1.6198	1.61976	1.6	5/27/2020
41	ccv	1	24.598	0.2183	24.3792	24.37916	24.4	5/27/2020
42	ccb	1	0.254	0.2183	0.0353	0.03526	<0.5	5/27/2020
43	K2004023-003	1	20.163	0.2183	19.9444	19.94436	19.9	5/27/2020
44	K2004023-003	1	20.406	0.2183	20.1873	20.18726	20.2	5/27/2020
45	K2004023-004	200	1.413	0.2183	1.1947	238.932	238.9	5/27/2020
46	K2004023-004	200	1.300	0.2183	1.0818	216.352	216.4	5/27/2020
47	K2004023-005	4	24.798	0.2183	24.5796	98.31824	98.3	5/27/2020
48	K2004023-005	4	25.294	0.2183	25.0754	100.30144	100.3	5/27/2020
49	K2004023-006	1	35.534	0.2183	35.3159	35.31586	35.3	5/27/2020
50	K2004023-006	1	35.942	0.2183	35.7232	35.72316	35.7	5/27/2020

Analyzed By:	Date Analyzed 5/28/20
Reviewed By:	Date Reviewed 5/29/20

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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	
51	ccv	1	24.819	0.2183	24.6007	24.60066	24.60	5/27/2020
52	ccb	1	0.241	0.2183	0.0229	0.02286	<0.5	5/27/2020
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:	[illegible]	Date Analyzed	5/28/20
Reviewed By:	[illegible]	Date Reviewed	5/29/20

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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	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	24.598	0.2183	24.3792	24.37916	24.4	5/27/2020
3	ccb	1	0.254	0.2183	0.0353	0.03526	<0.5	5/27/2020
4	mb	1	0.144	0.2183	-0.0741	-0.07414	<0.5	5/27/2020
5	lcs	1	24.812	0.2183	24.5935	24.59346	24.6	5/27/2020
6	K2004023-007	1	13.660	0.2183	13.4421	13.44206	13.44	5/27/2020
7	K2004023-007	1	13.694	0.2183	13.4755	13.47546	13.5	5/27/2020
8	K2004023-008	1	8.525	0.2183	8.3069	8.30686	8	5/27/2020
9	K2004023-008	1	8.419	0.2183	8.2003	8.20026	8.20	5/27/2020
10	K2004023-009	200	2.123	0.2183	1.9046	380.912	380.91	5/27/2020
11	K2004023-009	200	2.096	0.2183	1.8780	375.592	375.6	5/27/2020
12	K2004023-010	200	1.642	0.2183	1.4239	284.772	284.77	5/27/2020
13	K2004023-010	200	1.637	0.2183	1.4190	283.792	283.79	5/27/2020
14	ccv	1	24.819	0.2183	24.6007	24.60066	24.60	5/27/2020
15	ccb	1	0.241	0.2183	0.0229	0.02286	<0.5	5/27/2020
16	K2004023-011	4	23.484	0.2183	23.2654	93.06144	93.1	5/27/2020
17	K2004023-011	4	23.820	0.2183	23.6021	94.40824	94.41	5/27/2020
18	K2003957-001	1	2.846	0.2183	2.6279	2.62786	2.6	5/27/2020
19	K2003957-001	1	2.681	0.2183	2.4626	2.46256	2.5	5/27/2020
20	K2004021-001	1	2.088	0.2183	1.8700	1.86996	1.87	5/27/2020
21	K2004021-001	1	2.040	0.2183	1.8221	1.82206	1.82	5/27/2020
22	K2003982-001	20	25.905	0.2183	25.6870	513.7392	513.7	5/27/2020
23	K2003982-001	20	26.015	0.2183	25.7963	515.9252	515.9	5/27/2020
24	K2003982-002	20	9.651	0.2183	9.4324	188.6472	188.65	5/27/2020
25	K2003982-002	20	9.552	0.2183	9.3337	186.6732	186.67	5/27/2020

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: BLR	Date Analyzed 5/28/20
Reviewed By:	Date Reviewed 5/28/20

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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	K2003982-003	20	3.858	0.2183	3.6393	72.7852	72.79	5/27/2020
27	K2003982-003	20	3.699	0.2183	3.4810	69.6192	69.62	5/27/2020
28	KQ2006710-11	200	25.693	0.2183	25.4750	5094.992	5095.0	5/27/2020
29	K2003982-004	1	11.170	0.2183	10.9515	10.95146	11.0	5/27/2020
30	K2003982-004	1	11.191	0.2183	10.9726	10.97256	11.0	5/27/2020
31	K2003982-005	1	1.667	0.2183	1.4486	1.44856	1.4	5/27/2020
32	K2003982-005	1	1.521	0.2183	1.3022	1.30216	1.3	5/27/2020
33	ccv	1	24.985	0.2183	24.7669	24.76686	24.8	5/27/2020
34	ccb	1	0.231	0.2183	0.0126	0.01256	<0.5	5/27/2020
35	K2003982-006	20	1.873	0.2183	1.6545	33.0892	33.1	5/27/2020
36	K2003982-006	20	1.791	0.2183	1.5723	31.4452	31.4	5/27/2020
37	K2003982-007	1	8.084	0.2183	7.8660	7.86596	7.9	5/27/2020
38	K2003982-007	1	8.243	0.2183	8.0249	8.02486	8.0	5/27/2020
39	K2003982-008	1	8.546	0.2183	8.3277	8.32766	8.3	5/27/2020
40	K2003982-008	1	8.696	0.2183	8.4776	8.47756	8.5	5/27/2020
41	K2003982-009	1	2.771	0.2183	2.5523	2.55226	2.6	5/27/2020
42	K2003982-009	1	2.390	0.2183	2.1715	2.17146	2.2	5/27/2020
43	K2003982-010	1	2.306	0.2183	2.0872	2.08716	2.1	5/27/2020
44	K2003982-010	1	2.242	0.2183	2.0240	2.02396	2.0	5/27/2020
45	K2003982-011	1	0.917	0.2183	0.6984	0.69836	0.7	5/27/2020
46	K2003982-011	1	0.841	0.2183	0.6227	0.62266	0.6	5/27/2020
47	K2003982-012	1	0.596	0.2183	0.3775	0.37746	<0.5	5/27/2020
48	K2003982-012	1	0.536	0.2183	0.3172	0.31716	<0.5	5/27/2020
49	K2003982-013	1	0.549	0.2183	0.3307	0.33066	<0.5	5/27/2020
50	K2003982-013	1	0.580	0.2183	0.3618	0.36176	<0.5	5/27/2020

Analyzed By:	BDP	Date Analyzed	5/28/20
Reviewed By:		Date Reviewed	5/28/20

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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	
51	ccv	1	25.257	0.2183	25.0382	25.03816	25.04	5/27/2020
52	ccb	1	0.223	0.2183	0.0042	0.00416	<0.5	5/27/2020
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:	BNP	Date Analyzed	5/28/20
Reviewed By:	JF	Date Reviewed	5/29/20

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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	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.257	0.2183	25.0382	25.03816	25.0	5/27/2020
3	ccb	1	0.223	0.2183	0.0042	0.00416	<0.5	5/27/2020
4	K2003982-014	20	1.448	0.2183	1.2299	24.5972	24.6	5/27/2020
5	K2003982-014	20	1.499	0.2183	1.2808	25.6152	25.6	5/27/2020
6	K2003982-015	1	1.193	0.2183	0.9743	0.97426	0.97	5/27/2020
7	K2003982-015	1	1.163	0.2183	0.9450	0.94496	0.9	5/27/2020
8	K2003949-001	1	1.492	0.2183	1.2740	1.27396	1	5/27/2020
9	K2003949-001	1	1.432	0.2183	1.2137	1.21366	1.21	5/27/2020
10	K2003949-002	1	1.265	0.2183	1.0463	1.04626	1.05	5/27/2020
11	K2003949-002	1	1.243	0.2183	1.0243	1.02426	1.0	5/27/2020
12	K2003949-003	1	1.332	0.2183	1.1133	1.11326	1.11	5/27/2020
13	K2003949-003	1	1.343	0.2183	1.1246	1.12456	1.12	5/27/2020
14	K2003949-004	1	0.743	0.2183	0.5247	0.52466	0.52	5/27/2020
15	K2003949-004	1	0.690	0.2183	0.4713	0.47126	<0.5	5/27/2020
16	K2003949-005	1	1.607	0.2183	1.3884	1.38836	1.4	5/27/2020
17	K2003949-005	1	1.559	0.2183	1.3403	1.34026	1.34	5/27/2020
18	K2003949-006	1	0.696	0.2183	0.4781	0.47806	<0.5	5/27/2020
19	K2003949-006	1	0.674	0.2183	0.4559	0.45586	<0.5	5/27/2020
20	K2003949-007	1	1.284	0.2183	1.0660	1.06596	1.07	5/27/2020
21	K2003949-007	1	1.268	0.2183	1.0498	1.04976	1.05	5/27/2020
22	KQ2006711-07	1	27.509	0.2183	27.2904	27.29036	27.3	5/27/2020
23	ccv	1	25.038	0.2183	24.8194	24.81936	24.8	5/27/2020
24	ccb	1	0.187	0.2183	-0.0312	-0.03124	<0.5	5/28/2020
25	K2003949-008	1	1.436	0.2183	1.2176	1.21756	1.22	5/28/2020

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: BHP	Date Analyzed 5/28/20	
Reviewed By: JL	Date Reviewed 5/29/20	

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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	K2003949-008	1	1.325	0.2183	1.1063	1.10626	1.11	5/28/2020
27	K2003949-009	1	0.161	0.2183	-0.0575	-0.05754	<0.5	5/28/2020
28	K2003949-009	1	0.180	0.2183	-0.0382	-0.03824	<0.5	5/28/2020
29	K2003998-001	1	1.410	0.2183	1.1918	1.19176	1.2	5/28/2020
30	K2003998-001	1	1.366	0.2183	1.1473	1.14726	1.1	5/28/2020
31	K2003998-002	1	1.415	0.2183	1.1963	1.19626	1.2	5/28/2020
32	K2003998-002	1	1.345	0.2183	1.1269	1.12686	1.1	5/28/2020
33	K2003998-003	1	2.626	0.2183	2.4072	2.40716	2.4	5/28/2020
34	K2003998-003	1	2.577	0.2183	2.3590	2.35896	2.4	5/28/2020
35	K2003998-004	1	0.966	0.2183	0.7474	0.74736	0.7	5/28/2020
36	K2003998-004	1	0.940	0.2183	0.7213	0.72126	0.7	5/28/2020
37	K2003998-005	1	1.292	0.2183	1.0738	1.07376	1.1	5/28/2020
38	K2003998-005	1	1.286	0.2183	1.0679	1.06786	1.1	5/28/2020
39	ccv	1	24.214	0.2183	23.9956	23.99556	24.0	5/28/2020
40	ccb	1	0.192	0.2183	-0.0265	-0.02654	<0.5	5/28/2020
41	K2004085-004	1	2.147	0.2183	1.9285	1.92846	1.9	5/28/2020
42	K2004085-004	1	2.011	0.2183	1.7929	1.79286	1.8	5/28/2020
43	K2004085-005	1	1.116	0.2183	0.8976	0.89756	0.9	5/28/2020
44	K2004085-005	1	1.014	0.2183	0.7959	0.79586	0.8	5/28/2020
45	ccv	1	24.309	0.2183	24.0910	24.09096	24.1	5/28/2020
46	ccb	1	0.239	0.2183	0.0210	0.02096	<0.5	5/28/2020
47		1			0.0000	0	<0.5	
48		1			0.0000	0	<0.5	
49		1			0.0000	0	<0.5	
50		1			0.0000	0	<0.5	

Analyzed By:	KVP	Date Analyzed	5/28/20
Reviewed By:	JC	Date Reviewed	5/29/20

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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	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.038	0.2183	24.8194	24.81936	24.8	5/27/2020
3	ccb	1	0.187	0.2183	-0.0312	-0.03124	<0.5	5/28/2020
4	mb	1	0.167	0.2183	-0.0514	-0.05144	<0.5	5/28/2020
5	lcs	1	24.763	0.2183	24.5448	24.54476	24.5	5/28/2020
6	K2003876-002	1	4.154	0.2183	3.9360	3.93596	3.94	5/28/2020
7	K2003876-002	1	4.136	0.2183	3.9175	3.91746	3.9	5/28/2020
8	ccv	1	24.214	0.2183	23.9956	23.99556	24	5/28/2020
9	ccb	1	0.192	0.2183	-0.0265	-0.02654	<0.5	5/28/2020
10	K2003876-004	1	3.077	0.2183	2.8591	2.85906	2.86	5/28/2020
11	K2003876-004	1	3.048	0.2183	2.8292	2.82916	2.8	5/28/2020
12	K2003932-003	1	33.741	0.2183	33.5228	33.52276	33.52	5/28/2020
13	K2003932-003	1	33.837	0.2183	33.6186	33.61856	33.62	5/28/2020
14	KQ2006712-13	4	34.485	0.2183	34.2671	137.06824	137.07	5/28/2020
15	ccv	1	24.309	0.2183	24.0910	24.09096	24.1	5/28/2020
16	ccb	1	0.239	0.2183	0.0210	0.02096	<0.5	5/28/2020
17	K2003842-005.06 doc	1	0.558	0.2169	0.3415	0.34154	<0.5	5/14/2020
18	K2003842-005.06 doc	1	0.488	0.2169	0.2706	0.27064	<0.5	5/14/2020
19	K2003842-006.06 doc	1	0.494	0.2169	0.2768	0.27684	<0.5	5/14/2020
20	K2003842-006.06 doc	1	0.463	0.2169	0.2461	0.24614	<0.5	5/14/2020
21	K2003842-007.06 doc	1	0.359	0.2169	0.1416	0.14164	<0.5	5/14/2020
22	K2003842-007.06 doc	1	0.377	0.2169	0.1601	0.16014	<0.5	5/14/2020
23	K2003842-008.06 doc	1	0.583	0.2169	0.3663	0.36634	<0.5	5/14/2020
24	K2003842-008.06 doc	1	0.572	0.2169	0.3552	0.35524	<0.5	5/14/2020
25	K2003842-009.06 doc	1	0.621	0.2169	0.4042	0.40424	<0.5	5/14/2020

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: BD	Date Analyzed 5/28/20	
Reviewed By: JC	Date Reviewed 5/28/20	

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TOC: 681225, 680711, 680712

DOC: 680713

Schedule: 05262020

Version: 1
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2020/05/26 14:27 - Tuesday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use
(Clean)	Clean	Clean		1	True
(Clean)	Clean	Clean		1	True
(Clean)	Clean	Clean		1	True
(Blank)	Blank	Reagent/Acid Blank		1	True
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Cal Standard	[TOC] CAS_salt_010711 CAL [DI Water]	CAS_salt_010711 (CAS_salt_010711)	1	True
A	Cal Standard	[TOC] CAS_salt_010711 CAL [0.500 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
A	Cal Standard	[TOC] CAS_salt_010711 CAL [1.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
A	Cal Standard	[TOC] CAS_salt_010711 CAL [5.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Cal Standard	[TOC] CAS_salt_010711 CAL [10 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Cal Standard	[TOC] CAS_salt_010711 CAL [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Cal Standard	[TOC] CAS_salt_010711 CAL [50 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True
3	Sample	K2004152-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
4	Sample	K2004049-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
5	Sample	K2004049-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True
6	Sample	K2004049-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True
7	Sample	K2004049-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True
8	Sample	K2004049-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True
9	Sample	K2004152-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
10	Sample	K2004049-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True
11	Sample	K2004049-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True
12	Sample	K2004049-008.01	CAS_salt_010711 (CAS_salt_010711)	2	True
13	Sample	K2004049-009.01	CAS_salt_010711 (CAS_salt_010711)	2	True
14	Sample	K2004053-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
15	Sample	K2004063-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
16	Sample	K2004126-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True
17	Sample	K2004085-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
18	Sample	K2004085-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True
19	Sample	K2004085-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
21	Sample	K2004023-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True
22	Sample	K2004023-004.01 200x	CAS_salt_010711 (CAS_salt_010711)	2	True
23	Sample	K2004023-005.01 4x	CAS_salt_010711 (CAS_salt_010711)	2	True
24	Sample	K2004023-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True
25	Sample	K2004023-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True
26	Sample	K2004023-008.01	CAS_salt_010711 (CAS_salt_010711)	2	True
27	Sample	K2004023-009.01 200x	CAS_salt_010711 (CAS_salt_010711)	2	True
28	Sample	K2004023-010.01 200x	CAS_salt_010711 (CAS_salt_010711)	2	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
29	Sample	K2004023-011.01 4x	CAS_salt_010711 (CAS_salt_010711)	2	True
30	Sample	K2003957-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
31	Sample	K2004021-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
32	Sample	K2003982-001.01 20x	CAS_salt_010711 (CAS_salt_010711)	2	True

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Schedule: 05262020

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use
33	Sample	K2003982-002.01 20x	CAS_salt_010711 (CAS_salt_010711)	2	True
34	Sample	K2003982-003.01 20x	CAS_salt_010711 (CAS_salt_010711)	2	True
35	Sample	K2003982-003.01 ms 200x	CAS_salt_010711 (CAS_salt_010711)	1	True
36	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True
37	Sample	K2003982-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True
38	Sample	K2003982-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
39	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	1	True
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
40	Sample	K2003982-006.01 20x	CAS_salt_010711 (CAS_salt_010711)	2	True
41	Sample	K2003982-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True
42	Sample	K2003982-008.01	CAS_salt_010711 (CAS_salt_010711)	2	True
43	Sample	K2003982-009.01	CAS_salt_010711 (CAS_salt_010711)	2	True
44	Sample	K2003982-010.01	CAS_salt_010711 (CAS_salt_010711)	2	True
45	Sample	K2003982-011.01	CAS_salt_010711 (CAS_salt_010711)	2	True
46	Sample	K2003982-012.01	CAS_salt_010711 (CAS_salt_010711)	2	True
47	Sample	K2003982-013.01	CAS_salt_010711 (CAS_salt_010711)	2	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
48	Sample	K2003982-014.01 20x	CAS_salt_010711 (CAS_salt_010711)	2	True
49	Sample	K2003982-015.01	CAS_salt_010711 (CAS_salt_010711)	2	True
50	Sample	K2003949-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True
51	Sample	K2003949-002.02	CAS_salt_010711 (CAS_salt_010711)	2	True
52	Sample	K2003949-003.02	CAS_salt_010711 (CAS_salt_010711)	2	True
53	Sample	K2003949-004.02	CAS_salt_010711 (CAS_salt_010711)	2	True
54	Sample	K2003949-005.02	CAS_salt_010711 (CAS_salt_010711)	2	True
55	Sample	K2003949-006.02	CAS_salt_010711 (CAS_salt_010711)	2	True
56	Sample	K2003949-007.02	CAS_salt_010711 (CAS_salt_010711)	2	True
57	Sample	K2003949-007.02 ms	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
58	Sample	MB4	CAS_salt_010711 (CAS_salt_010711)	1	True
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
59	Sample	K2003949-008.02	CAS_salt_010711 (CAS_salt_010711)	2	True
60	Sample	K2003949-009.02	CAS_salt_010711 (CAS_salt_010711)	2	True
61	Sample	K2003998-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True
62	Sample	K2003998-002.02	CAS_salt_010711 (CAS_salt_010711)	2	True
63	Sample	K2003998-003.02	CAS_salt_010711 (CAS_salt_010711)	2	True
64	Sample	K2003998-004.02	CAS_salt_010711 (CAS_salt_010711)	2	True
65	Sample	K2003998-005.02	CAS_salt_010711 (CAS_salt_010711)	2	True
66	Sample	K2003876-002.02 doc	CAS_salt_010711 (CAS_salt_010711)	2	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
67	Sample	K2003876-004.02 doc	CAS_salt_010711 (CAS_salt_010711)	2	True
68	Sample	K2003932-003.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True
69	Sample	K2003932-003.01 ms doc 4x	CAS_salt_010711 (CAS_salt_010711)	1	True
70	Sample	K2004085-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True
71	Sample	K2004085-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
					False

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Fusion Report - 05262020
Tuesday, May 26, 2020 02:50 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/05/28 09:03 - Thursday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	05262020	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) (v1)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/05/26 14:50

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	10.96	15.25	4.29	49.71	07:58
2	TC Clean	4.79	8.19	3.41	49.48	07:19
3	TC Clean	1.36	4.94	3.58	49.46	07:05
4	TC Clean	1.02	4.58	3.56	49.69	07:02

Sample Type: Clean — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/05/26 15:25

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.91	4.37	3.46	49.79	08:00
2	TC Clean	3.08	6.69	3.62	49.57	07:17
3	TC Clean	1.43	4.91	3.48	49.55	07:04
4	TC Clean	1.52	5.02	3.50	49.52	07:00

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Sample Type: Clean From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/05/26 15:59

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.33	3.94	3.61	49.89	07:59
2	TC Clean	3.56	6.93	3.37	49.83	07:16
3	TC Clean	1.68	5.19	3.51	49.84	06:58
4	TC Clean	1.34	4.87	3.52	49.77	07:00

Sample Type: Blank (Creating v1390) From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(blank)		Reagent/Acid Blank	2020/05/26 16:33

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.81	4.18	3.37	49.71	05:14
2	TC Clean	3.63	7.01	3.38	49.76	07:15
3	TC Clean	1.87	5.25	3.38	49.74	07:04
4	TC Clean	1.75	5.14	3.40	49.91	07:02
5	Reagent Blank	3.29	6.88	3.60	49.77	08:10
6	Acid Blank	0.68	4.29	3.61	49.69	05:32

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	D	TOC	RB	0.1450 ppm	0.0000 ppm	0.0000%	2020/05/26 17:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1450	1.4501	7.52	11.07	3.55	49.89	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.4907 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

Sample Type: Calibration Standard: CAS_salt_010711 CAL (Creating calibration From Schedule Version 1

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CAS_salt_010711 v36)

	Pos	BAT	Concentration (ppm)	STD Conc	Dil	Sample ID	Result (Abs)	Std. Dev. (Abs)	RSD	Start Time
◆	D	TOC	0.0000	0 ppmC	1:1	[TOC] CAS_salt_010711 CAL [DI Water]	5.2860	0.0000	0%	2020/05/26 17:34
◆	A	TOC	0.5000	5 ppmC	1:10	[TOC] CAS_salt_010711 CAL [0.500 ppm]	7.7280	0.0000	0%	2020/05/26 17:49
◆	A	TOC	1.0000	5 ppmC	1:5	[TOC] CAS_salt_010711 CAL [1.0 ppm]	9.7320	0.0000	0%	2020/05/26 18:03
◆	A	TOC	5.0000	5 ppmC	1:1	[TOC] CAS_salt_010711 CAL [5.0 ppm]	30.7290	0.0000	0%	2020/05/26 18:17
◆	B	TOC	10.0000	50 ppmC	1:5	[TOC] CAS_salt_010711 CAL [10 ppm]	75.9880	0.0000	0%	2020/05/26 18:31
◆	B	TOC	25.0000	50 ppmC	1:2	[TOC] CAS_salt_010711 CAL [25 ppm]	182.4960	0.0000	0%	2020/05/26 18:46
◆	B	TOC	50.0000	50 ppmC	1:1	[TOC] CAS_salt_010711 CAL [50 ppm]	346.4790	0.0000	0%	2020/05/26 19:00

Pos	Base Analysis Type	ID	Rep #	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	DI Water	1	5.29	8.91	3.62	49.91	10:30
A	TOC	0.500 ppm	1	7.73	11.09	3.36	49.91	10:29
A	TOC	1.0 ppm	1	9.73	13.43	3.70	49.99	10:33
A	TOC	5.0 ppm	1	30.73	34.12	3.39	49.99	10:30
B	TOC	10 ppm	1	75.99	79.39	3.40	49.95	10:30
B	TOC	25 ppm	1	182.50	185.92	3.42	49.97	10:31
B	TOC	50 ppm	1	346.48	349.98	3.51	49.92	10:29

Completion State
Success - All Update Conditions met

Method
CAS_salt_010711 (v4)

Success Action
Auto (always)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	26.2257 ppm (PASS)	0.0000 ppm	0%	2020/05/26 19:14

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Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.2257	262.2571	184.99	188.45	3.46	49.87	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	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)	0.3498 ppm (PASS)	0.0000 ppm	0%	2020/05/26 19:29

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.3498	3.4982	6.12	9.61	3.49	49.83	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	1	TOC	MB1	0.2920 ppm	0.0000 ppm	0.0000%	2020/05/26 19:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2920	2.9203	5.57	8.97	3.40	49.79	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> LCS From Schedule Version 1

	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)	25.9751 ppm (PASS)	0.0000 ppm	0%	2020/05/26 19:58

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	25.9751	259.7515	183.26	186.59	3.33	49.76	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	25 ppmC

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Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	2	TOC	ICS	0.7874 ppm	0.0000 ppm	0.0000%	2020/05/26 20:13

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7874	7.8736	9.00	12.72	3.72	49.73	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	3	TOC	K2004152-001.01	2.3744 ppm	0.0521 ppm	2.1900%	2020/05/26 20:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4112	24.1123	20.22	23.74	3.52	49.69	10:30
2	TOC	2.3376	23.3759	19.71	23.35	3.64	49.69	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	4	TOC	K2004049-001.01	2.4565 ppm	0.0143 ppm	0.5800%	2020/05/26 20:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4666	24.6663	20.60	24.19	3.58	49.68	10:26
2	TOC	2.4464	24.4638	20.46	24.04	3.58	49.64	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	5	TOC	K2004049-002.01	1.0876 ppm	0.0312 ppm	2.8700%	2020/05/26 21:24

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1097	11.0968	11.22	14.75	3.53	49.65	10:27
2	TOC	1.0656	10.6555	10.92	14.41	3.49	49.67	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	6	TOC	K2004049-003.01	1.1806 ppm	0.0069 ppm	0.5800%	2020/05/26 21:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

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1	TOC	1.1855	11.8548	11.75	15.15	3.40	49.66	10:29
2	TOC	1.1758	11.7579	11.68	15.03	3.35	49.68	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	7	TOC	K2004049-004.01	1.1141 ppm	0.0306 ppm	2.7500%	2020/05/26 22:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1357	11.3572	11.40	14.77	3.37	49.69	10:31
2	TOC	1.0925	10.9246	11.11	14.65	3.54	49.67	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	8	TOC	K2004049-005.01	0.9725 ppm	0.0475 ppm	4.8800%	2020/05/26 22:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0061	10.0610	10.51	14.08	3.58	49.72	10:33
2	TOC	0.9390	9.3897	10.04	13.47	3.42	49.74	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	9	TOC	K2004152-001.01 ms	27.7495 ppm	0.0000 ppm	0.0000%	2020/05/26 23:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.7495	277.4953	195.37	198.86	3.48	49.76	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	25.6643 ppm (PASS)	0.0000 ppm	0%	2020/05/26 23:31

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.6643	256.6426	181.11	184.55	3.44	49.78	10:30

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Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	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)	0.2251 ppm (PASS)	0.0000 ppm	0%	2020/05/26 23:45

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.2251	2.2512	5.26	8.85	3.59	49.79	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	10	TOC	K2004049-006.01	0.9791 ppm	0.0062 ppm	0.6400%	2020/05/27 00:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9835	9.8353	10.35	13.88	3.53	49.81	10:27
2	TOC	0.9747	9.7470	10.29	13.73	3.44	49.84	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	11	TOC	K2004049-007.01	0.9309 ppm	0.0452 ppm	4.8600%	2020/05/27 00:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9628	9.6284	10.21	13.54	3.33	49.88	10:28
2	TOC	0.8989	8.9890	9.77	13.15	3.38	49.89	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	12	TOC	K2004049-008.01	1.9352 ppm	0.0075 ppm	0.3900%	2020/05/27 00:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9299	19.2993	16.90	20.40	3.50	49.88	10:27

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2	TOC	1.9405	19.4049	16.97	20.51	3.54	49.91	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	13	TOC	K2004049-009.01	0.9432 ppm	0.0165 ppm	1.7500%	2020/05/27 01:24

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9549	9.5489	10.16	13.66	3.51	49.94	10:30
2	TOC	0.9316	9.3159	9.99	13.49	3.49	49.96	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	14	TOC	K2004053-001.01	1.3816 ppm	0.0478 ppm	3.4600%	2020/05/27 01:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4154	14.1535	13.34	16.79	3.45	49.96	10:27
2	TOC	1.3478	13.4780	12.87	16.28	3.41	50.03	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	15	TOC	K2004063-001.01	1.0391 ppm	0.0706 ppm	6.7900%	2020/05/27 02:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0890	10.8899	11.08	14.46	3.38	50.03	10:28
2	TOC	0.9892	9.8917	10.39	13.91	3.52	50.03	10:23

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	16	TOC	K2004126-002.01	1.0267 ppm	0.0273 ppm	2.6600%	2020/05/27 02:49

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0460	10.4602	10.78	14.28	3.49	50.05	10:26
2	TOC	1.0074	10.0740	10.52	13.92	3.41	50.06	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

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

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	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	17	TOC	K2004085-001.01	1.9372 ppm	0.0268 ppm	1.3800%	2020/05/27 03:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9561	19.5611	17.08	20.38	3.30	50.05	10:29
2	TOC	1.9182	19.1821	16.81	20.24	3.42	50.08	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	18	TOC	K2004085-002.01	1.8789 ppm	0.0126 ppm	0.6700%	2020/05/27 03:45

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.8878	18.8783	16.60	20.01	3.40	50.09	10:29
2	TOC	1.8700	18.7003	16.48	20.00	3.52	50.11	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	19	TOC	K2004085-003.01	1.8826 ppm	0.0630 ppm	3.3500%	2020/05/27 04:13

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9272	19.2718	16.88	20.28	3.41	50.13	10:26
2	TOC	1.8381	18.3806	16.26	19.74	3.48	50.15	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	24.5975 ppm (PASS)	0.0000 ppm	0%	2020/05/27 04:41

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.5975	245.9750	173.74	177.15	3.41	50.14	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

			Concentration			Min / Max				

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	Pos	BAT	(ppm)	Dil	Sample ID	(% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.2536 ppm (PASS)	0.0000 ppm	0%	2020/05/27 04:56

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.2536	2.5362	5.46	8.82	3.37	50.16	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	20	TOC	MB2	0.1442 ppm	0.0000 ppm	0.0000%	2020/05/27 05:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1442	1.4419	4.55	8.12	3.57	50.18	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> LCS From Schedule Version 1

	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)	24.8118 ppm (PASS)	0.0000 ppm	0%	2020/05/27 05:25

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.8118	248.1175	175.22	178.72	3.51	50.23	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	25 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	21	TOC	K2004023-003.01	20.2842 ppm	0.1718 ppm	0.8500%	2020/05/27 05:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	20.1627	201.6274	142.93	146.49	3.56	50.21	10:31
2	TOC	20.4056	204.0563	144.61	148.27	3.66	50.21	10:28

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Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	22	TOC	K2004023-004.01 200x	1.3565 ppm	0.0799 ppm	5.8900%	2020/05/27 06:08

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4130	14.1304	13.32	16.79	3.46	50.24	10:28
2	TOC	1.3001	13.0006	12.54	15.96	3.42	50.24	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	23	TOC	K2004023-005.01 4x	25.0458 ppm	0.3506 ppm	1.4000%	2020/05/27 06:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	24.7979	247.9794	174.97	178.42	3.45	50.23	10:27
2	TOC	25.2937	252.9371	178.40	182.04	3.64	50.23	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	24	TOC	K2004023-006.01	35.7378 ppm	0.2880 ppm	0.8100%	2020/05/27 07:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	35.5342	355.3423	249.19	252.73	3.55	50.20	10:27
2	TOC	35.9415	359.4146	252.00	255.54	3.54	50.19	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	25	TOC	K2004023-007.01	13.6771 ppm	0.0236 ppm	0.1700%	2020/05/27 07:32

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	13.6604	136.6035	97.98	101.47	3.49	50.16	10:29
2	TOC	13.6938	136.9377	98.21	101.48	3.27	50.16	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	26	TOC	K2004023-008.01	8.4719 ppm	0.0754 ppm	0.8900%	2020/05/27 08:00

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Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.5252	85.2519	62.48	65.66	3.17	50.12	10:28
2	TOC	8.4186	84.1857	61.75	65.21	3.47	50.11	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	27	TOC	K2004023-009.01 200x	2.1096 ppm	0.0188 ppm	0.8900%	2020/05/27 08:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1229	21.2291	18.23	21.66	3.43	50.10	10:25
2	TOC	2.0963	20.9629	18.05	21.37	3.32	50.08	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	28	TOC	K2004023-010.01 200x	1.6397 ppm	0.0035 ppm	0.2100%	2020/05/27 08:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6422	16.4219	14.91	18.46	3.56	50.06	10:30
2	TOC	1.6373	16.3727	14.87	18.24	3.37	50.04	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	24.8190 ppm (PASS)	0.0000 ppm	0%	2020/05/27 09:24

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.8190	248.1899	175.27	178.65	3.38	50.04	10:35

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

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

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◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.2412 ppm (PASS)	0.0000 ppm	0%	2020/05/27 09:39

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.2412	2.4118	5.37	8.68	3.31	50.01	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	29	TOC	K2004023-011.01 4x	23.6521 ppm	0.2381 ppm	1.0100%	2020/05/27 09:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	23.4837	234.8366	165.89	169.36	3.48	49.98	10:31
2	TOC	23.8204	238.2044	168.21	171.68	3.47	49.99	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	30	TOC	K2003957-001.01	2.7636 ppm	0.1169 ppm	4.2300%	2020/05/27 10:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.8462	28.4623	23.23	26.66	3.43	49.93	10:28
2	TOC	2.6809	26.8088	22.09	25.37	3.29	49.94	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	31	TOC	K2004021-001.01	2.0644 ppm	0.0339 ppm	1.6400%	2020/05/27 10:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.0883	20.8833	17.99	21.42	3.43	49.94	10:28
2	TOC	2.0404	20.4045	17.66	21.18	3.53	49.94	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	32	TOC	K2003982-001.01 20x	25.9600 ppm	0.0772 ppm	0.3000%	2020/05/27 11:18

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Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	25.9053	259.0535	182.63	186.08	3.46	49.89	10:27
2	TOC	26.0146	260.1457	183.38	186.63	3.25	49.91	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	33	TOC	K2003982-002.01 20x	9.6013 ppm	0.0698 ppm	0.7300%	2020/05/27 11:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.6507	96.5068	70.26	73.69	3.42	49.84	10:28
2	TOC	9.5520	95.5202	69.58	73.03	3.45	49.87	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	34	TOC	K2003982-003.01 20x	3.7785 ppm	0.1119 ppm	2.9600%	2020/05/27 12:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.8576	38.5758	30.22	33.71	3.49	49.84	10:27
2	TOC	3.6993	36.9932	29.13	32.56	3.44	49.92	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	35	TOC	K2003982-003.01 ms 200x	25.6933 ppm	0.0000 ppm	0.0000%	2020/05/27 12:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	25.6933	256.9327	181.16	184.56	3.40	50.02	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	36	TOC	RB	0.2606 ppm	0.0000 ppm	0.0000%	2020/05/27 12:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2606	2.6064	5.36	8.81	3.46	50.10	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

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	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	37	TOC	K2003982-004.01	11.1804 ppm	0.0149 ppm	0.1300%	2020/05/27 13:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	11.1698	111.6980	80.77	84.28	3.51	50.24	10:26
2	TOC	11.1909	111.9092	80.91	84.47	3.56	50.19	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	38	TOC	K2003982-005.01	1.5937 ppm	0.1035 ppm	6.5000%	2020/05/27 13:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6669	16.6693	15.08	18.59	3.52	50.15	10:26
2	TOC	1.5205	15.2052	14.06	17.57	3.50	50.20	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	24.9852 ppm (PASS)	0.0000 ppm	0%	2020/05/27 14:08

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.9852	249.8521	176.42	179.76	3.34	50.14	10:28

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	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)	0.2309 ppm (PASS)	0.0000 ppm	0%	2020/05/27 14:22

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.2309	2.3091	5.30	8.83	3.53	50.08	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos D

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Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	39	TOC	MB3	0.1736 ppm	0.0000 ppm	0.0000%	2020/05/27 14:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1736	1.7355	4.75	8.20	3.44	50.09	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> LCS From Schedule Version 1

	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)	24.7935 ppm (PASS)	0.0000 ppm	0%	2020/05/27 14:52

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.7935	247.9352	175.09	178.70	3.61	50.06	10:28

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	25 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	40	TOC	K2003982-006.01 20x	1.8317 ppm	0.0581 ppm	3.1700%	2020/05/27 15:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.8728	18.7278	16.50	20.20	3.70	50.01	10:24
2	TOC	1.7906	17.9061	15.93	19.49	3.56	50.05	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	41	TOC	K2003982-007.01	8.1637 ppm	0.1124 ppm	1.3800%	2020/05/27 15:35

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

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1	TOC	8.0843	80.8425	59.44	62.84	3.40	50.01	10:28
2	TOC	8.2432	82.4324	60.54	63.96	3.42	49.97	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	42	TOC	K2003982-008.01	8.6210 ppm	0.1060 ppm	1.2300%	2020/05/27 16:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.5460	85.4602	62.63	66.05	3.42	50.00	10:26
2	TOC	8.6959	86.9589	63.66	66.99	3.32	50.00	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	43	TOC	K2003982-009.01	2.5802 ppm	0.2692 ppm	10.4300%	2020/05/27 16:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.7706	27.7057	22.71	26.17	3.46	49.95	10:28
2	TOC	2.3898	23.8981	20.07	23.47	3.40	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	44	TOC	K2003982-010.01	2.2739 ppm	0.0447 ppm	1.9700%	2020/05/27 16:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.3055	23.0548	19.49	23.01	3.52	49.92	10:29
2	TOC	2.2423	22.4226	19.05	22.47	3.42	49.87	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	45	TOC	K2003982-011.01	0.8789 ppm	0.0535 ppm	6.0900%	2020/05/27 17:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9167	9.1669	9.89	13.30	3.41	49.88	10:25
2	TOC	0.8410	8.4103	9.37	12.93	3.56	49.90	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

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	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	46	TOC	K2003982-012.01	0.5657 ppm	0.0427 ppm	7.5400%	2020/05/27 17:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5958	5.9583	7.67	11.08	3.41	49.83	10:29
2	TOC	0.5355	5.3550	7.26	10.79	3.53	49.82	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	47	TOC	K2003982-013.01	0.5645 ppm	0.0220 ppm	3.9000%	2020/05/27 18:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5490	5.4896	7.35	10.82	3.47	49.86	10:27
2	TOC	0.5801	5.8006	7.56	10.93	3.37	49.85	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	25.2565 ppm (PASS)	0.0000 ppm	0%	2020/05/27 18:51

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.2565	252.5645	178.29	181.78	3.49	49.84	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	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)	0.2225 ppm (PASS)	0.0000 ppm	0%	2020/05/27 19:06

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.2225	2.2252	5.24	8.65	3.41	49.88	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D

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Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	48	TOC	K2003982-014.01 20x	1.4737 ppm	0.0360 ppm	2.4400%	2020/05/27 19:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4482	14.4819	13.56	17.06	3.50	49.91	10:27
2	TOC	1.4991	14.9911	13.92	17.39	3.47	49.86	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	49	TOC	K2003982-015.01	1.1780 ppm	0.0207 ppm	1.7500%	2020/05/27 19:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1926	11.9257	11.80	15.28	3.48	49.92	10:25
2	TOC	1.1633	11.6335	11.60	15.03	3.44	49.93	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	50	TOC	K2003949-001.02	1.4622 ppm	0.0427 ppm	2.9200%	2020/05/27 20:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4923	14.9232	13.87	17.21	3.34	49.87	10:29
2	TOC	1.4320	14.3199	13.45	16.70	3.25	49.94	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	51	TOC	K2003949-002.02	1.2536 ppm	0.0155 ppm	1.2400%	2020/05/27 20:45

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2646	12.6461	12.30	15.69	3.40	49.86	10:25
2	TOC	1.2426	12.4262	12.14	15.63	3.48	49.89	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

		Analysis			Std. Dev.		

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	Pos	Type	Sample ID	Result (ppmC)	(ppmC)	RSD	Start Time
◈	52	TOC	K2003949-003.02	1.3372 ppm	0.0080 ppm	0.6000%	2020/05/27 21:13

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3316	13.3159	12.76	16.21	3.45	49.86	10:28
2	TOC	1.3429	13.4288	12.84	16.35	3.51	49.83	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	53	TOC	K2003949-004.02	0.7163 ppm	0.0377 ppm	5.2700%	2020/05/27 21:41

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7430	7.4295	8.69	12.23	3.54	49.77	10:26
2	TOC	0.6896	6.8957	8.32	12.02	3.70	49.74	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	54	TOC	K2003949-005.02	1.5827 ppm	0.0341 ppm	2.1500%	2020/05/27 22:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6067	16.0674	14.66	18.23	3.57	49.72	10:26
2	TOC	1.5586	15.5857	14.33	17.91	3.58	49.71	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	55	TOC	K2003949-006.02	0.6853 ppm	0.0157 ppm	2.2800%	2020/05/27 22:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6964	6.9637	8.37	11.97	3.60	49.69	10:28
2	TOC	0.6742	6.7424	8.22	11.71	3.49	49.68	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	56	TOC	K2003949-007.02	1.2762 ppm	0.0115 ppm	0.9000%	2020/05/27 23:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2843	12.8429	12.43	15.93	3.50	49.68	10:27
2	TOC	1.2681	12.6808	12.32	15.90	3.58	49.68	10:25

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	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	57	TOC	K2003949-007.02 ms	27.5087 ppm	0.0000 ppm	0.0000%	2020/05/27 23:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.5087	275.0867	193.71	197.32	3.61	49.68	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	25.0377 ppm (PASS)	0.0000 ppm	0%	2020/05/27 23:48

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.0377	250.3772	176.78	180.24	3.46	49.69	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	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)	0.1871 ppm (PASS)	0.0000 ppm	0%	2020/05/28 00:02

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.1871	1.8708	5.00	8.58	3.58	49.70	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	58	TOC	MB4	0.1669 ppm	0.0000 ppm	0.0000%	2020/05/28 00:17

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Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1669	1.6690	4.71	8.10	3.39	49.70	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> LCS From Schedule Version 1

	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)	24.7631 ppm (PASS)	0.0000 ppm	0%	2020/05/28 00:32

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.7631	247.6315	174.88	178.21	3.33	49.71	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	25 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	59	TOC	K2003949-008.02	1.3803 ppm	0.0787 ppm	5.7000%	2020/05/28 00:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4359	14.3590	13.48	17.10	3.62	49.71	10:25
2	TOC	1.3246	13.2465	12.71	16.28	3.57	49.72	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	60	TOC	K2003949-009.02	0.1704 ppm	0.0136 ppm	7.9800%	2020/05/28 01:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1608	1.6082	4.67	8.32	3.65	49.72	10:27
2	TOC	0.1801	1.8006	4.80	8.37	3.57	49.73	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	61	TOC	K2003998-001.02	1.3879 ppm	0.0315 ppm	2.2700%	2020/05/28 01:43

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Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4101	14.1015	13.30	16.91	3.60	49.75	10:26
2	TOC	1.3656	13.6559	12.99	16.61	3.61	49.80	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	62	TOC	K2003998-002.02	1.3799 ppm	0.0491 ppm	3.5600%	2020/05/28 02:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4146	14.1463	13.33	16.74	3.41	49.75	10:27
2	TOC	1.3452	13.4519	12.85	16.34	3.49	49.76	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	63	TOC	K2003998-003.02	2.6014 ppm	0.0341 ppm	1.3100%	2020/05/28 02:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.6255	26.2547	21.70	25.16	3.45	49.78	10:26
2	TOC	2.5773	25.7730	21.37	24.89	3.52	49.78	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	64	TOC	K2003998-004.02	0.9526 ppm	0.0185 ppm	1.9400%	2020/05/28 03:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9657	9.6574	10.23	13.60	3.37	49.79	10:28
2	TOC	0.9396	9.3955	10.05	13.66	3.61	49.79	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	65	TOC	K2003998-005.02	1.2891 ppm	0.0042 ppm	0.3300%	2020/05/28 03:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2921	12.9210	12.49	16.11	3.63	49.80	10:27
2	TOC	1.2862	12.8617	12.44	15.84	3.39	49.81	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC)	CAS_salt_010711	CAS_salt_010711

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(v1390) (v4) (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	66	TOC	K2003876-002.02 doc	4.1450 ppm	0.0131 ppm	0.3200%	2020/05/28 04:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.1543	41.5429	32.27	35.65	3.38	49.81	10:30
2	TOC	4.1358	41.3577	32.14	35.71	3.56	49.81	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	24.2139 ppm (PASS)	0.0000 ppm	0%	2020/05/28 04:32

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.2139	242.1385	171.08	174.64	3.55	49.83	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	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)	0.1918 ppm (PASS)	0.0000 ppm	0%	2020/05/28 04:46

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.1918	1.9185	5.03	8.54	3.51	49.84	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	67	TOC	K2003876-004.02 doc	3.0624 ppm	0.0212 ppm	0.6900%	2020/05/28 05:01

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Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.0774	30.7741	24.83	28.40	3.57	49.83	10:28
2	TOC	3.0475	30.4746	24.62	28.07	3.45	49.84	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	68	TOC	K2003932-003.01 doc	33.7890 ppm	0.0677 ppm	0.2000%	2020/05/28 05:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	33.7411	337.4111	236.79	240.10	3.31	49.83	10:25
2	TOC	33.8369	338.3688	237.45	240.92	3.46	49.85	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	69	TOC	K2003932-003.01 ms doc 4x	34.4854 ppm	0.0000 ppm	0.0000%	2020/05/28 05:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	34.4854	344.8541	241.94	245.50	3.56	49.87	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	70	TOC	K2004085-004.01	2.0790 ppm	0.0958 ppm	4.6100%	2020/05/28 06:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1468	21.4678	18.39	21.79	3.39	49.88	10:25
2	TOC	2.0112	20.1123	17.46	20.87	3.41	49.90	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	71	TOC	K2004085-005.01	1.0650 ppm	0.0719 ppm	6.7500%	2020/05/28 06:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1159	11.1590	11.27	14.60	3.33	49.90	10:28
2	TOC	1.0142	10.1420	10.56	14.03	3.46	49.88	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC)	CAS_salt_010711	CAS_salt_010711

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(v1390) (v4) (v36)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	24.3093 ppm (PASS)	0.0000 ppm	0%	2020/05/28 07:08

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.3093	243.0933	171.74	175.10	3.36	49.88	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	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)	0.2393 ppm (PASS)	0.0000 ppm	0%	2020/05/28 07:23

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.2393	2.3930	5.36	8.78	3.42	49.87	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	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
v1389	1.1383	0.8660	0.0000	0.0000	0.0000	2020/05/26 13:05	Fusion1 (Fusion1)
v1390	1.0953	0.6790	0.0000	0.0000	0.0000	2020/05/26 17:19	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v35	Calibration curve formula:	TOC: y = 7.105x + 6.969
Ver Creation:	2020/05/09 16:50	r^2 value:	TOC: r^2 = 0.99936
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	6.6220	0.0000		2020/05/09 15:23
0.500 ppm	9.3820	0.5000		2020/05/09 15:38
1.0 ppm	12.1910	1.0000		2020/05/09 15:52
5.0 ppm	39.9300	5.0000		2020/05/09 16:06
10 ppm	81.4900	10.0000		2020/05/09 16:20
25 ppm	190.3090	25.0000		2020/05/09 16:35
50 ppm	358.9940	50.0000		2020/05/09 16:49

Name: CAS_salt_010711 (TOC)

Version:	v36	Calibration curve formula:	TOC: y = 6.913x + 3.706
Ver Creation:	2020/05/26 19:14	r^2 value:	TOC: r^2 = 0.99884
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	5.2860	0.0000		2020/05/26 17:47
0.500 ppm	7.7280	0.5000		2020/05/26 18:02
1.0 ppm	9.7320	1.0000		2020/05/26 18:16
5.0 ppm	30.7290	5.0000		2020/05/26 18:30
10 ppm	75.9880	10.0000		2020/05/26 18:45
25 ppm	182.4960	25.0000		2020/05/26 18:59
50 ppm	346.4790	50.0000		2020/05/26 19:13

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

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml

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AcidVolume	0.5 ml	ICSamplePrimeVolume	2.0 ml
ReagentVolume	2.0 ml	ICSpargeRinseVolume	12.0 ml
UVReactorPrerinse	Off	BaselineStabilizeTime	0.70 min
UVReactorPrerinseVolume	5.0	DetectorPressureFlow	150 ml/min
NumberOfUVReactorPrerinses	1	SyringeSpeedWaste	10
ICSpargeTime	1.00 mins	SyringeSpeedAcid	7
DetectorSweepFlow	500 ml/min	SyringeSpeedReagent	7
PreSpargeTime	2.00 mins	SyringeSpeedDIWater	7
SystemFlow	500 ml/min	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	2020/05/28 07:38

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StarLIMS Run: 681225, 680711, 680712, 680713

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: 5/9/20

ICAL ID: 19-GEN-19-J->20-B

ICS ID: 19-GEN-8-4-G

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 19-GEN-8-15-B 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 19-GEN-08-19-E

21 % H3PO4: 19-GEN-08-19-D

Equipment ID: K-TOC-03

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

FILTER ID: 16967789

Analyzed By:	Date Analyzed: 5/26/20
Reviewed By:	Date Reviewed: 5/28/20

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May 26, 2020 Service Request No:E2000429

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

Laboratory Results for: HS20050454

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory May 13, 2020
For your reference, these analyses have been assigned our service request number **E2000429.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2000429
Project:	HS20050454	**Date Received:**	05/13/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One sample was received for analysis at ALS Environmental in Houston on 5/3/20.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000191: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

DoD certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

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Client: ALS Environmental - US **Service Request:**E2000429
Project: HS20050454

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000429-001	LH18/24-SP650_051220_BIX	5/12/2020	1400

Service Request Summary

Folder #: **E2000429**
Client Name: ALS Environmental - US
Project Name: HS20050454
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 05/13/20
Internal Due Date: 5/28/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20050454
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000429-001	LH18/24-SP650_051220_BIX	Water	05/12/20 1400	**IV**

Print

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Service Request Summary

Folder #:	**E2000429**
Client Name:	ALS Environmental - US
Project Name:	HS20050454
Project Number:	

Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	05/13/20
Internal Due Date:	5/28/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20050454
EDD:	No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-WIC 7B

Pressure Gas:

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Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.

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Data Qualifiers

Lab Standard

S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

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Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arizona Department of Health Services	AZ0793	5/27/2020
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	2020	4/30/2021
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13 (2020)	4/30/2021
Nevada Department of Concervation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020

Chain of Custody

ALS Environmental - Houston HRMS
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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13902**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

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:	HS20050454
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20050454-02**	**LH18/24-SP650_051220-BIX**	**Water**	**12 May 2020 14:00**
	SUB_Perch-6850			28 May 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: NR Date/Time: 5.13.20 17.35

Received By: [illegible] Date/Time: 5/13/20 17:35

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist CA

Client/Project ALS-H

Thermometer ID IR11

Date/Time Received: 5/13/20 Initials: CA Date/Time Logged in: 5/13/20 Initials CA

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ ALS Courier ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No
   Were they intact? ○ Yes ○ No ✓ N/A
   Were they signed and dated? ○ Yes ○ No ✓ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
—		CA	1735	CA	2.9	✓
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

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Preparation Information Benchsheets

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Phone (713)266-1599 Fax (713)266-0130
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Preparation Information Benchsheet

Prep Run#: 358607 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/DBOTROS **Prep Method:** Method **Prep Date/Time:** 5/18/20 10:11

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000429-001	LH18/24-SP650_051220_BIX	.01	6850/ClO4 DOD			Water	10mL	
2	EQ2000191-01	MB		6850/ClO4 DOD			Liquid	10mL	
3	EQ2000191-02	LCS		6850/ClO4 DOD			Liquid	10mL	
4	EQ2000191-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 202037 Logbook Ref: Sodium Perchlorate Expires On: 05/22/2021

E2000429-001 100.00µL EQ2000191-01 100.00µL EQ2000191-02 100.00µL EQ2000191-03 100.00µL

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000191-02 1.00µL EQ2000191-03 1.00µL

Preparation Steps

Step: Preparation
Started: 5/18/20 10:11
Finished: 5/18/20 13:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 5/19/20

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

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Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000429
Project:	HS20050454	**Date Collected:**	5/12/20 1400
Sample Matrix:	Water	**Date Received:**	5/13/20
Sample Name:	LH18/24-SP650_051220_BIX	**Units:**	µg/L
Lab Code:	E2000429-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	5/18/20	5/18/20 13:16	358607	681271	

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000429
Project:	HS20050454	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000191-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	5/18/20	5/18/20 12:49	358607	681271	

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Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000429
Project:	HS20050454	**Date Analyzed:**	5/18/20
Sample Matrix:	Water		

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	358607

	Lab Control Sample EQ2000191-02			Duplicate Lab Control Sample EQ2000191-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.100	0.100	100	0.105	0.100	105	84 - 119	4	15

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

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000429
Project:	HS20050454	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000191-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.100**		0.100	0.0500	0.0250	1	5/18/20	5/18/20 12:57	358607	681271	

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000429
Project:	HS20050454	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000191-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.105**		0.100	0.0500	0.0250	1	5/18/20	5/18/20 13:05	358607	681271	

RIGHT SOLUTIONS | RIGHT PARTNER

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

May 19, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20050456**

Laboratory Results for: **LHAAP 18 24**

Dear Marcia,

ALS Environmental received 1 sample(s) on May 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: 19-May-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20050456

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20050456-01	LH 18/24-SP650_051220	Water		12-May-2020 14:00	13-May-2020 12:20	☐

ALS Houston, US Date: 19-May-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP 18 24
Work Order: HS20050456

GCMS Volatiles by Method SW8260

Batch ID: R361521

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

WetChemistry by Method E300

Batch ID: R361694

Sample ID: LH 18/24-SP650_051220 (HS20050456-01MS)

- The MS and/or MSD recovery was outside of the control; however, the result in the parent sample is greater than 4x the spike amount. Chloride

Batch ID: R361772

Sample ID: HS20050610-01MS

- MS and MSD are for an unrelated sample

ALS Houston, US Date: 19-May-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: LHAAP 18 24 WorkOrder:HS20050456

Sample ID: LH 18/24-SP650_051220 Lab ID:HS20050456-01

Collection Date: 12-May-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	13-May-2020 17:18
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	13-May-2020 17:18
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	13-May-2020 17:18
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	13-May-2020 17:18
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	13-May-2020 17:18
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	13-May-2020 17:18
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	13-May-2020 17:18
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	13-May-2020 17:18
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	13-May-2020 17:18
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	13-May-2020 17:18
1,2-Dichloroethane	**0.97**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	13-May-2020 17:18
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	13-May-2020 17:18
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	13-May-2020 17:18
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	13-May-2020 17:18
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	13-May-2020 17:18
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	13-May-2020 17:18
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	13-May-2020 17:18
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	13-May-2020 17:18
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	13-May-2020 17:18
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	13-May-2020 17:18
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	13-May-2020 17:18
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	13-May-2020 17:18
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	13-May-2020 17:18
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	13-May-2020 17:18
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	13-May-2020 17:18
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	13-May-2020 17:18
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	13-May-2020 17:18
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	13-May-2020 17:18
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	13-May-2020 17:18

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

ALS Houston, US Date: 19-May-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: LH 18/24-SP650_051220
Collection Date: 12-May-2020 14:00

ANALYTICAL REPORT
WorkOrder:HS20050456
Lab ID:HS20050456-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	13-May-2020 17:18
cis-1,2-Dichloroethene	**20**		**0.20**	**0.50**	**1.0**	**UG/L**	1	13-May-2020 17:18
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	13-May-2020 17:18
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	13-May-2020 17:18
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	13-May-2020 17:18
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	13-May-2020 17:18
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	13-May-2020 17:18
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	13-May-2020 17:18
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	13-May-2020 17:18
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	13-May-2020 17:18
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	13-May-2020 17:18
Trichloroethene	**4.0**		**0.20**	**0.50**	**1.0**	**UG/L**	1	13-May-2020 17:18
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	13-May-2020 17:18
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	13-May-2020 17:18
Surr: 1,2-Dichloroethane-d4	*89.8*			**0**	*81-118*	*%REC*	*1*	*13-May-2020 17:18*
Surr: 4-Bromofluorobenzene	*99.1*			**0**	*85-114*	*%REC*	*1*	*13-May-2020 17:18*
Surr: Dibromofluoromethane	*91.7*			**0**	*80-119*	*%REC*	*1*	*13-May-2020 17:18*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*13-May-2020 17:18*
ANIONS BY E300.0		**Method:E300**						Analyst: JHD
Chloride	**400**		**2.00**	**5.00**	**5.00**	**mg/L**	10	16-May-2020 04:44
Sulfate	**31.6**		**0.200**	**0.500**	**0.500**	**mg/L**	1	18-May-2020 22:20

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

ALS Houston, US Date: 19-May-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20050456

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R361521 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20050456-01	LH 18/24-SP650_051220	12 May 2020 14:00			13 May 2020 17:18	1
Batch ID: R361694 (0)	**Test Name :** ANIONS BY E300.0				**Matrix:** Water	
HS20050456-01	LH 18/24-SP650_051220	12 May 2020 14:00			16 May 2020 04:44	10
Batch ID: R361772 (0)	**Test Name :** ANIONS BY E300.0				**Matrix:** Water	
HS20050456-01	LH 18/24-SP650_051220	12 May 2020 14:00			18 May 2020 22:20	1

ALS Houston, US Date: 19-May-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20050456

QC BATCH REPORT

Batch ID: R361521 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200513** Units: **UG/L** Analysis Date: **13-May-2020 12:29**
Client ID: Run ID: **VOA6_361521** SeqNo: **5584115** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 19-May-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20050456

QC BATCH REPORT

Batch ID: R361521 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200513** Units: **UG/L** Analysis Date: **13-May-2020 12:29**
Client ID: Run ID: **VOA6_361521** SeqNo: **5584115** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*44.94*	*1.0*	*50*	*0*	*89.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.25*	*1.0*	*50*	*0*	*96.5*	*85 - 114*				
Surr: Dibromofluoromethane	*46.27*	*1.0*	*50*	*0*	*92.5*	*80 - 119*				
Surr: Toluene-d8	*54.47*	*1.0*	*50*	*0*	*109*	*89 - 112*				

ALS Houston, US Date: 19-May-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20050456

QC BATCH REPORT

Batch ID: R361521 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200513** Units: **UG/L** Analysis Date: **13-May-2020 11:41**
Client ID: Run ID: **VOA6_361521** SeqNo: **5584114** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.12	1.0	20	0	95.6	78 - 124				
1,1,1-Trichloroethane	18.69	1.0	20	0	93.5	74 - 131				
1,1,2,2-Tetrachloroethane	18.64	1.0	20	0	93.2	71 - 121				
1,1,2-Trichloroethane	19.25	1.0	20	0	96.2	80 - 119				
1,1-Dichloroethane	18.03	1.0	20	0	90.1	77 - 125				
1,1-Dichloroethene	18	1.0	20	0	90.0	71 - 131				
1,1-Dichloropropene	17.72	1.0	20	0	88.6	78 - 125				
1,2,3-Trichlorobenzene	20.82	1.0	20	0	104	69 - 129				
1,2,3-Trichloropropane	19.02	1.0	20	0	95.1	73 - 122				
1,2,4-Trichlorobenzene	19.46	1.0	20	0	97.3	69 - 130				
1,2,4-Trimethylbenzene	17.01	1.0	20	0	85.1	76 - 124				
1,2-Dibromo-3-chloropropane	20.38	1.0	20	0	102	62 - 128				
1,2-Dibromoethane	20.53	1.0	20	0	103	77 - 121				
1,2-Dichlorobenzene	17.68	1.0	20	0	88.4	80 - 119				
1,2-Dichloroethane	20.84	1.0	20	0	104	73 - 128				
1,2-Dichloropropane	18.36	1.0	20	0	91.8	78 - 122				
1,3,5-Trimethylbenzene	16.68	1.0	20	0	83.4	75 - 124				
1,3-Dichlorobenzene	17.72	1.0	20	0	88.6	80 - 119				
1,3-Dichloropropane	19.56	1.0	20	0	97.8	80 - 119				
1,4-Dichlorobenzene	17.25	1.0	20	0	86.3	79 - 118				
2,2-Dichloropropane	19.56	1.0	20	0	97.8	60 - 139				
2-Butanone	43.05	2.0	40	0	108	56 - 143				
2-Chlorotoluene	16.73	1.0	20	0	83.6	79 - 122				
2-Hexanone	36.63	2.0	40	0	91.6	57 - 139				
4-Chlorotoluene	16.94	1.0	20	0	84.7	78 - 122				
4-Isopropyltoluene	16.41	1.0	20	0	82.0	77 - 127				
4-Methyl-2-pentanone	35.63	2.0	40	0	89.1	67 - 130				
Acetone	33.52	2.0	40	0	83.8	39 - 160				
Benzene	18.35	1.0	20	0	91.8	79 - 120				
Bromobenzene	18.03	1.0	20	0	90.2	80 - 120				
Bromochloromethane	19.33	1.0	20	0	96.7	78 - 123				
Bromodichloromethane	19.83	1.0	20	0	99.1	79 - 125				
Bromoform	19.74	1.0	20	0	98.7	66 - 130				
Bromomethane	20.57	1.0	20	0	103	53 - 141				

ALS Houston, US Date: 19-May-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20050456

QC BATCH REPORT

Batch ID: R361521 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200513** Units: **UG/L** Analysis Date: **13-May-2020 11:41**
Client ID: Run ID: **VOA6_361521** SeqNo: **5584114** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	36.7	2.0	40	0	91.8	64 - 133				
Carbon tetrachloride	17.72	1.0	20	0	88.6	72 - 136				
Chlorobenzene	18.53	1.0	20	0	92.7	82 - 118				
Chloroethane	17.73	1.0	20	0	88.6	60 - 138				
Chloroform	19.97	1.0	20	0	99.9	79 - 124				
Chloromethane	17.04	1.0	20	0	85.2	50 - 139				
cis-1,2-Dichloroethene	19.77	1.0	20	0	98.9	78 - 123				
cis-1,3-Dichloropropene	19.41	1.0	20	0	97.1	75 - 124				
Dibromochloromethane	19.78	1.0	20	0	98.9	74 - 126				
Dibromomethane	20.27	1.0	20	0	101	79 - 123				
Dichlorodifluoromethane	18.65	1.0	20	0	93.3	32 - 152				
Ethylbenzene	17.83	1.0	20	0	89.1	79 - 121				
Hexachlorobutadiene	21.36	1.0	20	0	107	66 - 134				
Isopropylbenzene	16.83	1.0	20	0	84.2	72 - 131				
m,p-Xylene	34.87	2.0	40	0	87.2	80 - 121				
Methylene chloride	18.89	2.0	20	0	94.5	74 - 124				
Naphthalene	18.46	1.0	20	0	92.3	61 - 128				
n-Butylbenzene	16.51	1.0	20	0	82.6	75 - 128				
n-Propylbenzene	15.94	1.0	20	0	79.7	76 - 126				
o-Xylene	17.56	1.0	20	0	87.8	78 - 122				
sec-Butylbenzene	15.74	1.0	20	0	78.7	77 - 126				
Styrene	18.85	1.0	20	0	94.3	78 - 123				
tert-Butylbenzene	15.69	1.0	20	0	78.5	78 - 124				
Tetrachloroethene	16.98	1.0	20	0	84.9	74 - 129				
Toluene	18.62	1.0	20	0	93.1	80 - 121				
trans-1,2-Dichloroethene	19.89	1.0	20	0	99.4	75 - 124				
trans-1,3-Dichloropropene	19.37	1.0	20	0	96.8	73 - 127				
Trichloroethene	18.72	1.0	20	0	93.6	79 - 123				
Trichlorofluoromethane	18.54	1.0	20	0	92.7	65 - 141				
Vinyl chloride	17.19	1.0	20	0	86.0	58 - 137				
Surr: 1,2-Dichloroethane-d4	*51.49*	*1.0*	*50*	*0*	*103*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*52.03*	*1.0*	*50*	*0*	*104*	*85 - 114*				
Surr: Dibromofluoromethane	*52.17*	*1.0*	*50*	*0*	*104*	*80 - 119*				
Surr: Toluene-d8	*51.18*	*1.0*	*50*	*0*	*102*	*89 - 112*				

ALS Houston, US Date: 19-May-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20050456

QC BATCH REPORT

Batch ID: R361521 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20050423-01MS** Units: **UG/L** Analysis Date: **13-May-2020 16:05**
Client ID: Run ID: **VOA6_361521** SeqNo: **5584119** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	21.12	1.0	20	0	106	78 - 124				
1,1,1-Trichloroethane	19.1	1.0	20	0	95.5	74 - 131				
1,1,2,2-Tetrachloroethane	21.17	1.0	20	0	106	71 - 121				
1,1,2-Trichloroethane	20.26	1.0	20	0	101	80 - 119				
1,1-Dichloroethane	17.01	1.0	20	0	85.0	77 - 125				
1,1-Dichloroethene	17.7	1.0	20	0	88.5	71 - 131				
1,1-Dichloropropene	19.64	1.0	20	0	98.2	78 - 125				
1,2,3-Trichlorobenzene	20.85	1.0	20	0	104	69 - 129				
1,2,3-Trichloropropane	21.18	1.0	20	0	106	73 - 122				
1,2,4-Trichlorobenzene	19.42	1.0	20	0	97.1	69 - 130				
1,2,4-Trimethylbenzene	22.01	1.0	20	0	110	76 - 124				
1,2-Dibromo-3-chloropropane	24.4	1.0	20	0	122	62 - 128				
1,2-Dibromoethane	21.37	1.0	20	0	107	77 - 121				
1,2-Dichlorobenzene	20.78	1.0	20	0	104	80 - 119				
1,2-Dichloroethane	20.3	1.0	20	0	102	73 - 128				
1,2-Dichloropropane	18.42	1.0	20	0	92.1	78 - 122				
1,3,5-Trimethylbenzene	21.52	1.0	20	0	108	75 - 124				
1,3-Dichlorobenzene	20.66	1.0	20	0	103	80 - 119				
1,3-Dichloropropane	20.36	1.0	20	0	102	80 - 119				
1,4-Dichlorobenzene	20.35	1.0	20	0	102	79 - 118				
2,2-Dichloropropane	18.95	1.0	20	0	94.7	60 - 139				
2-Butanone	38.93	2.0	40	0	97.3	56 - 143				
2-Chlorotoluene	20.9	1.0	20	0	105	79 - 122				
2-Hexanone	41.36	2.0	40	0	103	57 - 139				
4-Chlorotoluene	20.48	1.0	20	0	102	78 - 122				
4-Isopropyltoluene	20.55	1.0	20	0	103	77 - 127				
4-Methyl-2-pentanone	41.66	2.0	40	0	104	67 - 130				
Acetone	33.4	2.0	40	4.694	71.8	39 - 160				
Benzene	19.17	1.0	20	0	95.8	79 - 120				
Bromobenzene	21.3	1.0	20	0	106	80 - 120				
Bromochloromethane	17.79	1.0	20	0	89.0	78 - 123				
Bromodichloromethane	19.69	1.0	20	0	98.4	79 - 125				
Bromoform	21	1.0	20	0	105	66 - 130				
Bromomethane	16.73	1.0	20	0	83.6	53 - 141				

ALS Houston, US Date: 19-May-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20050456

QC BATCH REPORT

Batch ID: R361521 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20050423-01MS** Units: **UG/L** Analysis Date: **13-May-2020 16:05**
Client ID: Run ID: **VOA6_361521** SeqNo: **5584119** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	32.81	2.0	40	0	82.0	64 - 133				
Carbon tetrachloride	19.98	1.0	20	0	99.9	72 - 136				
Chlorobenzene	20.4	1.0	20	0	102	82 - 118				
Chloroethane	15	1.0	20	0	75.0	60 - 138				
Chloroform	18.21	1.0	20	0	91.0	79 - 124				
Chloromethane	13.36	1.0	20	0	66.8	50 - 139				
cis-1,2-Dichloroethene	18.41	1.0	20	0	92.0	78 - 123				
cis-1,3-Dichloropropene	19.68	1.0	20	0	98.4	75 - 124				
Dibromochloromethane	21.49	1.0	20	0	107	74 - 126				
Dibromomethane	19.78	1.0	20	0	98.9	79 - 123				
Dichlorodifluoromethane	10.55	1.0	20	0	52.7	32 - 152				
Ethylbenzene	21.48	1.0	20	0	107	79 - 121				
Hexachlorobutadiene	15.11	1.0	20	0	75.5	66 - 134				
Isopropylbenzene	21.17	1.0	20	0	106	72 - 131				
m,p-Xylene	42.92	2.0	40	0	107	80 - 121				
Methylene chloride	16.93	2.0	20	0	84.7	74 - 124				
Naphthalene	23.71	1.0	20	0	119	61 - 128				
n-Butylbenzene	19.67	1.0	20	0	98.3	75 - 128				
n-Propylbenzene	21.06	1.0	20	0	105	76 - 126				
o-Xylene	21.27	1.0	20	0	106	78 - 122				
sec-Butylbenzene	19.56	1.0	20	0	97.8	77 - 126				
Styrene	20.55	1.0	20	0	103	78 - 123				
tert-Butylbenzene	20.97	1.0	20	0	105	78 - 124				
Tetrachloroethene	21.62	1.0	20	0	108	74 - 129				
Toluene	21.77	1.0	20	0	109	80 - 121				
trans-1,2-Dichloroethene	18.65	1.0	20	0	93.2	75 - 124				
trans-1,3-Dichloropropene	19.9	1.0	20	0	99.5	73 - 127				
Trichloroethene	20.03	1.0	20	0	100	79 - 123				
Trichlorofluoromethane	18.59	1.0	20	0	92.9	65 - 141				
Vinyl chloride	14.57	1.0	20	0	72.8	58 - 137				
Surr: 1,2-Dichloroethane-d4	*44.9*	*1.0*	*50*	*0*	*89.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.1*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*44.92*	*1.0*	*50*	*0*	*89.8*	*80 - 119*				
Surr: Toluene-d8	*52.77*	*1.0*	*50*	*0*	*106*	*89 - 112*				

ALS Houston, US Date: 19-May-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20050456

QC BATCH REPORT

Batch ID: R361521 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20050423-01MSD** Units: **UG/L** Analysis Date: **13-May-2020 16:30**
Client ID: Run ID: **VOA6_361521** SeqNo: **5584120** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.98	1.0	20	0	99.9	78 - 124	21.12	5.52	20	
1,1,1-Trichloroethane	18.7	1.0	20	0	93.5	74 - 131	19.1	2.09	20	
1,1,2,2-Tetrachloroethane	20.61	1.0	20	0	103	71 - 121	21.17	2.65	20	
1,1,2-Trichloroethane	19.9	1.0	20	0	99.5	80 - 119	20.26	1.82	20	
1,1-Dichloroethane	16.54	1.0	20	0	82.7	77 - 125	17.01	2.82	20	
1,1-Dichloroethene	16.96	1.0	20	0	84.8	71 - 131	17.7	4.26	20	
1,1-Dichloropropene	18.43	1.0	20	0	92.2	78 - 125	19.64	6.33	20	
1,2,3-Trichlorobenzene	24.53	1.0	20	0	123	69 - 129	20.85	16.2	20	
1,2,3-Trichloropropane	20.76	1.0	20	0	104	73 - 122	21.18	1.99	20	
1,2,4-Trichlorobenzene	21.11	1.0	20	0	106	69 - 130	19.42	8.35	20	
1,2,4-Trimethylbenzene	20.82	1.0	20	0	104	76 - 124	22.01	5.53	20	
1,2-Dibromo-3-chloropropane	23.7	1.0	20	0	118	62 - 128	24.4	2.91	20	
1,2-Dibromoethane	21.59	1.0	20	0	108	77 - 121	21.37	1.03	20	
1,2-Dichlorobenzene	20.11	1.0	20	0	101	80 - 119	20.78	3.27	20	
1,2-Dichloroethane	20.17	1.0	20	0	101	73 - 128	20.3	0.642	20	
1,2-Dichloropropane	17.04	1.0	20	0	85.2	78 - 122	18.42	7.83	20	
1,3,5-Trimethylbenzene	20.48	1.0	20	0	102	75 - 124	21.52	4.97	20	
1,3-Dichlorobenzene	20.33	1.0	20	0	102	80 - 119	20.66	1.62	20	
1,3-Dichloropropane	19.77	1.0	20	0	98.9	80 - 119	20.36	2.94	20	
1,4-Dichlorobenzene	19.58	1.0	20	0	97.9	79 - 118	20.35	3.84	20	
2,2-Dichloropropane	17.52	1.0	20	0	87.6	60 - 139	18.95	7.83	20	
2-Butanone	37.45	2.0	40	0	93.6	56 - 143	38.93	3.88	20	
2-Chlorotoluene	19.64	1.0	20	0	98.2	79 - 122	20.9	6.2	20	
2-Hexanone	40.49	2.0	40	0	101	57 - 139	41.36	2.11	20	
4-Chlorotoluene	19.7	1.0	20	0	98.5	78 - 122	20.48	3.88	20	
4-Isopropyltoluene	19.41	1.0	20	0	97.0	77 - 127	20.55	5.69	20	
4-Methyl-2-pentanone	41.96	2.0	40	0	105	67 - 130	41.66	0.704	20	
Acetone	34.12	2.0	40	4.694	73.6	39 - 160	33.4	2.15	20	
Benzene	18.19	1.0	20	0	91.0	79 - 120	19.17	5.2	20	
Bromobenzene	20.99	1.0	20	0	105	80 - 120	21.3	1.44	20	
Bromochloromethane	17.23	1.0	20	0	86.2	78 - 123	17.79	3.22	20	
Bromodichloromethane	18.61	1.0	20	0	93.0	79 - 125	19.69	5.66	20	
Bromoform	20.82	1.0	20	0	104	66 - 130	21	0.832	20	
Bromomethane	15.36	1.0	20	0	76.8	53 - 141	16.73	8.5	20	

ALS Houston, US Date: 19-May-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20050456

QC BATCH REPORT

Batch ID: R361521 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20050423-01MSD** Units: **UG/L** Analysis Date: **13-May-2020 16:30**
Client ID: Run ID: **VOA6_361521** SeqNo: **5584120** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	31.37	2.0	40	0	78.4	64 - 133	32.81	4.49	20	
Carbon tetrachloride	19.13	1.0	20	0	95.7	72 - 136	19.98	4.31	20	
Chlorobenzene	19.77	1.0	20	0	98.9	82 - 118	20.4	3.1	20	
Chloroethane	15.91	1.0	20	0	79.5	60 - 138	15	5.89	20	
Chloroform	18.02	1.0	20	0	90.1	79 - 124	18.21	1.05	20	
Chloromethane	12.36	1.0	20	0	61.8	50 - 139	13.36	7.83	20	
cis-1,2-Dichloroethene	17.46	1.0	20	0	87.3	78 - 123	18.41	5.27	20	
cis-1,3-Dichloropropene	18.52	1.0	20	0	92.6	75 - 124	19.68	6.09	20	
Dibromochloromethane	21.19	1.0	20	0	106	74 - 126	21.49	1.39	20	
Dibromomethane	19.3	1.0	20	0	96.5	79 - 123	19.78	2.44	20	
Dichlorodifluoromethane	10.46	1.0	20	0	52.3	32 - 152	10.55	0.835	20	
Ethylbenzene	20.32	1.0	20	0	102	79 - 121	21.48	5.54	20	
Hexachlorobutadiene	16.51	1.0	20	0	82.5	66 - 134	15.11	8.87	20	
Isopropylbenzene	20.31	1.0	20	0	102	72 - 131	21.17	4.14	20	
m,p-Xylene	40.98	2.0	40	0	102	80 - 121	42.92	4.61	20	
Methylene chloride	16.93	2.0	20	0	84.7	74 - 124	16.93	0.00995	20	
Naphthalene	25.47	1.0	20	0	127	61 - 128	23.71	7.15	20	
n-Butylbenzene	19.04	1.0	20	0	95.2	75 - 128	19.67	3.23	20	
n-Propylbenzene	20.14	1.0	20	0	101	76 - 126	21.06	4.45	20	
o-Xylene	20.89	1.0	20	0	104	78 - 122	21.27	1.79	20	
sec-Butylbenzene	19.02	1.0	20	0	95.1	77 - 126	19.56	2.81	20	
Styrene	20.02	1.0	20	0	100	78 - 123	20.55	2.61	20	
tert-Butylbenzene	20.19	1.0	20	0	101	78 - 124	20.97	3.82	20	
Tetrachloroethene	21.03	1.0	20	0	105	74 - 129	21.62	2.76	20	
Toluene	20.66	1.0	20	0	103	80 - 121	21.77	5.25	20	
trans-1,2-Dichloroethene	17.8	1.0	20	0	89.0	75 - 124	18.65	4.64	20	
trans-1,3-Dichloropropene	19.05	1.0	20	0	95.3	73 - 127	19.9	4.35	20	
Trichloroethene	18.9	1.0	20	0	94.5	79 - 123	20.03	5.83	20	
Trichlorofluoromethane	17.32	1.0	20	0	86.6	65 - 141	18.59	7.08	20	
Vinyl chloride	13.49	1.0	20	0	67.4	58 - 137	14.57	7.72	20	
Surr: 1,2-Dichloroethane-d4	*46.21*	*1.0*	*50*	*0*	*92.4*	*81 - 118*	*44.9*	*2.86*	*20*	
Surr: 4-Bromofluorobenzene	*49.46*	*1.0*	*50*	*0*	*98.9*	*85 - 114*	*50.1*	*1.28*	*20*	
Surr: Dibromofluoromethane	*45.76*	*1.0*	*50*	*0*	*91.5*	*80 - 119*	*44.92*	*1.87*	*20*	
Surr: Toluene-d8	*53.98*	*1.0*	*50*	*0*	*108*	*89 - 112*	*52.77*	*2.26*	*20*	

ALS Houston, US Date: 19-May-20

Client:	Bhate Environmental Associates, Inc.
Project:	LHAAP 18 24
WorkOrder:	HS20050456

QC BATCH REPORT

Batch ID:	**R361521 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch: HS20050456-01

ALS Houston, US Date: 19-May-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20050456

QC BATCH REPORT

Batch ID: R361694 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY E300.0**

MBLK Sample ID: **MBLK051520** Units: **mg/L** Analysis Date: **15-May-2020 18:10**
Client ID: Run ID: **ICS-Integrion_361694** SeqNo: **5587284** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.500	0.500								U

LCS Sample ID: **LCS051520** Units: **mg/L** Analysis Date: **15-May-2020 18:28**
Client ID: Run ID: **ICS-Integrion_361694** SeqNo: **5587285** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.5	0.500	20	0	97.5	90 - 110				

MS Sample ID: **HS20050539-02MS** Units: **mg/L** Analysis Date: **15-May-2020 21:47**
Client ID: Run ID: **ICS-Integrion_361694** SeqNo: **5587296** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	21.78	0.500	10	11.88	99.1	80 - 120				

MS Sample ID: **HS20050456-01MS** Units: **mg/L** Analysis Date: **16-May-2020 05:02**
Client ID: **LH 18/24-SP650_051220** Run ID: **ICS-Integrion_361694** SeqNo: **5587370** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	422.6	5.00	100	400	22.6	80 - 120				SO

MSD Sample ID: **HS20050539-02MSD** Units: **mg/L** Analysis Date: **15-May-2020 22:05**
Client ID: Run ID: **ICS-Integrion_361694** SeqNo: **5587297** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	21.84	0.500	10	11.88	99.6	80 - 120	21.78	0.257	20	

MSD Sample ID: **HS20050456-01MSD** Units: **mg/L** Analysis Date: **16-May-2020 05:20**
Client ID: **LH 18/24-SP650_051220** Run ID: **ICS-Integrion_361694** SeqNo: **5587371** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	420.4	5.00	100	400	20.4	80 - 120	422.6	0.522	20	SO

The following samples were analyzed in this batch: HS20050456-01

ALS Houston, US Date: 19-May-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20050456

QC BATCH REPORT

Batch ID: R361772 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY E300.0**

MBLK Sample ID: **MBLK051820** Units: **mg/L** Analysis Date: **18-May-2020 11:28**
Client ID: Run ID: **ICS-Integrion_361772** SeqNo: **5588815** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS051820** Units: **mg/L** Analysis Date: **18-May-2020 11:46**
Client ID: Run ID: **ICS-Integrion_361772** SeqNo: **5588816** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	19.12	0.500	20	0	95.6	90 - 110				

LCSD Sample ID: **LCSD051820** Units: **mg/L** Analysis Date: **18-May-2020 12:05**
Client ID: Run ID: **ICS-Integrion_361772** SeqNo: **5588817** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	18.96	0.500	20	0	94.8	90 - 110	19.12	0.804	20	

MS Sample ID: **HS20050610-01MS** Units: **mg/L** Analysis Date: **18-May-2020 12:41**
Client ID: Run ID: **ICS-Integrion_361772** SeqNo: **5588889** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	121.3	0.500	10	113.5	78.3	80 - 120				SEO

MS Sample ID: **HS20050590-02MS** Units: **mg/L** Analysis Date: **18-May-2020 17:12**
Client ID: Run ID: **ICS-Integrion_361772** SeqNo: **5588891** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	35.85	0.500	10	27.6	82.5	80 - 120				

MSD Sample ID: **HS20050610-01MSD** Units: **mg/L** Analysis Date: **18-May-2020 12:59**
Client ID: Run ID: **ICS-Integrion_361772** SeqNo: **5588890** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	122.3	0.500	10	113.5	88.2	80 - 120	121.3	0.818	20	EO

ALS Houston, US Date: 19-May-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20050456

QC BATCH REPORT

Batch ID: R361772 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY E300.0**

MSD Sample ID: **HS20050590-02MSD** Units: **mg/L** Analysis Date: **18-May-2020 17:30**
Client ID: Run ID: **ICS-Integrion_361772** SeqNo: **5588826** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	36.73	0.500	10	27.6	91.3	80 - 120	37.14	1.12	20	

The following samples were analyzed in this batch: HS20050456-01

ALS Houston, US Date: 19-May-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: **HS20050456**

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
Arkansas	20-030-0	26-Mar-2021
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
Oklahoma	2019-141	31-Aug-2020
Texas	T104704231-20-26	30-Apr-2021

ALS Houston, US Date: 19-May-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20050456

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20050456-01	LH 18/24-SP650_051220	Login	5/13/2020 3:03:56 PM	NDR	Disposed
HS20050456-01	LH 18/24-SP650_051220	Login	5/13/2020 3:03:56 PM	NDR	Disposed

ALS Houston, US Date: 19-May-20

Sample Receipt Checklist

Work Order ID: HS20050456 **Date/Time Received:** 13-May-2020 12:20

Client Name: Bhate Environmental **Received by:** Jared R. Makan

Completed By: /S/ Nilesh D. Ranchod (eSignature) 13-May-2020 15:07 (Date/Time) **Reviewed by:** /S/ Corey Grandits (eSignature) 13-May-2020 17:25 (Date/Time)

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 ☐	COC IDs:N/A
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):	1.3c UC/C	IR11	
Cooler(s)/Kit(s):	45956		
Date/Time sample(s) sent to storage:	05/13/2020 16:00		
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: Trip blank listed on COC not Received.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210, Houston, Tx. 77099 ATTN: R.J. Modashia

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT
BI-WEEKLY SAMPLES

Prepared By:
Scott Beesinger

P.O Number

HS20050456
Bhate Environmental Associates, Inc.
LHAAP 18 24

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: VOC	Analyses: CHLORIDE, SULFATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_051220	Water	05/12/20 / 14:00		3	3		HCL	
LH18/24-SP650_051220	Water	05/12/20 / 14:00		1		1	NONE	
Trip Blank	Water	05/12/20		2	2		HCL	

Additional Remarks: **Standard TAT**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	05/12/20	14:30									

9For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
J. Munnerlyn	5/13/20	12:20							

Remarks
Cooler - 45956 1124
Temp 1.3 CF0.0

(Word) S:\Users\Forms\Chain of Custody - BiWeekly


ALS
10450 Stanhiff Rd , Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5667
ALS
Date:
Name:
Company:
Validate
Prepar
De.
CUSTODY SEAL
Seal Broken By:
Date:
WED - 13 MAY 10:30A
PRIORITY OVERNIGHT
FedEx

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

June 05, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20050737**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on May 20, 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: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20050737

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20050737-01	LH18/24-SP650_051920	Water		19-May-2020 14:00	20-May-2020 09:25	☐
HS20050737-02	LH18/24-SP650_051920-BIX	Water		19-May-2020 14:00	20-May-2020 09:25	☐

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20050737

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 Environmental in Kelso, WA. Final Report attached.

WetChemistry by Method E350.3

Batch ID: R361930

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

WetChemistry by Method E365.3

Batch ID: R361902

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

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Weekly Samples WorkOrder:HS20050737

Sample ID: LH18/24-SP650_051920 Lab ID:HS20050737-01

Collection Date: 19-May-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: YP
Nitrogen, Ammonia (As N)	**11**	a	**0.20**	**0.10**	**0.20**	**mg/L**	1	21-May-2020 11:00
ORTHO PHOSPHATE (PO4) AS P BY E365.3		**Method:E365.3**						Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	**1.89**	a	**0.100**	**0.250**	**0.250**	**mg/L**	10	20-May-2020 15:14
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	29-May-2020 15:58

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

ALS Houston, US Date: 05-Jun-20

Client:	Bhate Environmental Associates, Inc.	**ANALYTICAL REPORT**
Project:	Longhorn GW Treatment Plant Weekly Samples	WorkOrder:HS20050737
Sample ID:	LH18/24-SP650_051920-BIX	Lab ID:HS20050737-02
Collection Date:	19-May-2020 14:00	Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	05-Jun-2020 10:54

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

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20050737

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R361902 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3				**Matrix:** Water	
HS20050737-01	LH18/24-SP650_051920	19 May 2020 14:00			20 May 2020 15:14	10
Batch ID: R361930 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS20050737-01	LH18/24-SP650_051920	19 May 2020 14:00			21 May 2020 11:00	1
Batch ID: R362409 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Water	
HS20050737-01	LH18/24-SP650_051920	19 May 2020 14:00			29 May 2020 15:58	1
Batch ID: R362710 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS20050737-02	LH18/24-SP650_051920-BIX	19 May 2020 14:00			05 Jun 2020 10:54	1

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20050737

QC BATCH REPORT

Batch ID: R361902 (0) **Instrument:** UV-2450 **Method:** ORTHO PHOSPHATE (PO4) AS P BY E365.3

MBLK Sample ID: **MBLK-361902** Units: **mg/L** Analysis Date: **20-May-2020 15:14**
Client ID: Run ID: **UV-2450_361902** SeqNo: **5591408** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0250	0.0250								U

LCS Sample ID: **LCS-361902** Units: **mg/L** Analysis Date: **20-May-2020 15:14**
Client ID: Run ID: **UV-2450_361902** SeqNo: **5591409** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.245	0.0250	0.25	0	98.0	85 - 115				

MS Sample ID: **HS20050737-01MS** Units: **mg/L** Analysis Date: **20-May-2020 15:14**
Client ID: **LH18/24-SP650_051920** Run ID: **UV-2450_361902** SeqNo: **5591411** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	4.3	0.250	2.5	1.89	96.4	80 - 120				

MSD Sample ID: **HS20050737-01MSD** Units: **mg/L** Analysis Date: **20-May-2020 15:14**
Client ID: **LH18/24-SP650_051920** Run ID: **UV-2450_361902** SeqNo: **5591412** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	4.22	0.250	2.5	1.89	93.2	80 - 120	4.3	1.88	20	

The following samples were analyzed in this batch: HS20050737-01

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS20050737

QC BATCH REPORT

Batch ID: R361930 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK Sample ID: **MBLK-R361930** Units: **mg/L** Analysis Date: **21-May-2020 11:00**
Client ID: Run ID: **WetChem_HS_361930** SeqNo: **5591852** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.10	0.20								U

LCS Sample ID: **LCS-R361930** Units: **mg/L** Analysis Date: **21-May-2020 11:00**
Client ID: Run ID: **WetChem_HS_361930** SeqNo: **5591851** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.61	0.20	10	0	106	80 - 120				

MS Sample ID: **HS20050592-02MS** Units: **mg/L** Analysis Date: **21-May-2020 11:00**
Client ID: Run ID: **WetChem_HS_361930** SeqNo: **5591854** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	11.99	0.20	10	0.011	120	80 - 120				

MSD Sample ID: **HS20050592-02MSD** Units: **mg/L** Analysis Date: **21-May-2020 11:00**
Client ID: Run ID: **WetChem_HS_361930** SeqNo: **5591853** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	11.71	0.20	10	0.011	117	80 - 120	11.99	2.32	20	

The following samples were analyzed in this batch: HS20050737-01

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS20050737**

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
Arkansas	20-030-0	26-Mar-2021
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
Oklahoma	2019-141	31-Aug-2020
Texas	T104704231-20-26	30-Apr-2021

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS20050737

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20050737-01	LH18/24-SP650_051920	Login	5/20/2020 1:38:08 PM	PMG	WET011
HS20050737-01	LH18/24-SP650_051920	Login	5/20/2020 1:38:08 PM	PMG	WET011
HS20050737-01	LH18/24-SP650_051920	Login	5/20/2020 1:38:08 PM	PMG	Sub
HS20050737-02	LH18/24-SP650_051920-BIX	Login	5/20/2020 1:38:08 PM	PMG	Sub

ALS Houston, US Date: 05-Jun-20

Sample Receipt Checklist

Work Order ID: HS20050737 **Date/Time Received:** **20-May-2020 09:25**

Client Name: Bhate Environmental **Received by:** **Paresh M. Giga**

Completed By: */S/ Paresh M. Giga* 20-May-2020 13:39 **Reviewed by:** */S/ RJ Modashia* 21-May-2020 10:29

eSignature Date/Time eSignature Date/Time

Matrices: **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):	1.4C U/C	IR25	
Cooler(s)/Kit(s):	45283		
Date/Time sample(s) sent to storage:	5/20/2020 13:40		
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:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281) 530-5656 ATTN: R.J Modashia

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

Prepared By:
Scott Beesinger

P.O. Number

HS20050737

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_051920	Water	05/19/20 / 14:00		3	X	X			H2SO4	
LH18/24-SP650_051920	Water	05/19/20 / 14:00		1			X		NONE	
LH18/24–SP650_051920_BIX	Water	05/19/20 / 14:00		1				X	NONE	

Additional Remarks: **Standard TAT on all parameters**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	05/19/20	14:30		5/20/20	09:25						

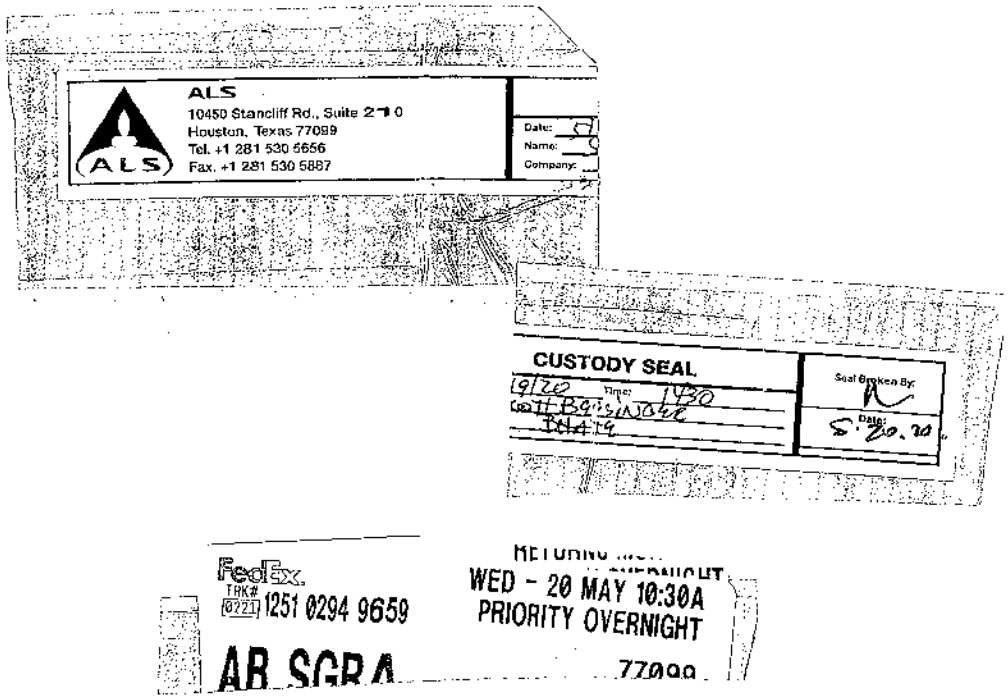
For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

45283 wc. 1.4° A 25' cf-0.6°

(Word) S:\Forms\Chain of Custody - BiWeekly


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
Date:
Name:
Company:
CUSTODY SEAL
Seal Broken By:
Date:
5.20.20
FedEx
TRK# 0221 1251 0294 9659
WED - 20 MAY 10:30A
PRIORITY OVERNIGHT
77099

June 04, 2020 Service Request No:E2000451

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

Laboratory Results for: HS20050737

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory May 22, 2020
For your reference, these analyses have been assigned our service request number **E2000451.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
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Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2000451
Project:	HS20050737	**Date Received:**	05/22/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One water sample was received for analysis at ALS Environmental in Houston on 05/22/20.

The sample was received in good condition and are consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000209: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2000451
Project: HS20050737

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000451-001	LH18/24-SP650_051920_BIX	5/19/2020	1400

Service Request Summary

Folder #: **E2000451**
Client Name: ALS Environmental - US
Project Name: HS20050737
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 05/22/20
Internal Due Date: 6/4/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20050737
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000451-001	LH18/24-SP650_051920_BIX	Water	05/19/20 1400	**IV**

Service Request Summary

Folder #:	**E2000451**
Client Name:	ALS Environmental - US
Project Name:	HS20050737
Project Number:	

Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	05/22/20
Internal Due Date:	6/4/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20050737
EDD:	No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-WIC 7B

Pressure Gas:

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	2020	4/30/2021
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13 (2020)	4/30/2021
Nevada Department of Concervation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020

Chain of Custody

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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **13937**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

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:	HS20050737
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20050737-02**	**LH18/24-SP650_051920-BIX**	**Water**	**19 May 2020 14:00**
	SUB_Perch-6850			29 May 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. Hussey Date/Time: 5/22/20 09:00

Received By: Date/Time: 5/22/20 0900

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist LH

Client/Project ALS-H

Thermometer ID SMOM/IR11

Date/Time Received: 5/22/20 Initials: LH Date/Time Logged in: 5/22/20 Initials LH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ ALS Courier ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No If yes, how many and where?

Were they intact? ○ Yes ○ No ✓ N/A

Were they signed and dated? ○ Yes ○ No ✓ N/A

4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		5/22/20	0900	LH	0.5	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No

9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No

10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 359084 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 5/27/20 09:18

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000449-001	LH18/24-SP650_051920_BIX	.01	6850/ClO4 DOD			Water	10mL	
2	E2000450-001	LH18/24-SP140_051920	.01	6850/ClO4 DOD			Water	10mL	
3	E2000451-001	LH18/24-SP650_051920_BIX	.01	6850/ClO4 DOD			Water	10mL	
4	EQ2000209-01	MB		6850/ClO4 DOD			Liquid	10mL	
5	EQ2000209-02	LCS		6850/ClO4 DOD			Liquid	10mL	
6	EQ2000209-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 202037 Logbook Ref: Sodium Perchlorate Expires On: 05/22/2021

E2000449-001 100.00µL E2000450-001 100.00µL E2000451-001 100.00µL EQ2000209-01 100.00µL EQ2000209-02 100.00µL EQ2000209-03 100.00µL

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000209-02 1.00µL EQ2000209-03 1.00µL

Preparation Steps

Step: Preparation
Started: 5/27/20 09:18
Finished: 5/27/20 11:30
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 5/27/2020

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

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www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000451
Project:	HS20050737	**Date Collected:**	5/19/20 1400
Sample Matrix:	Water	**Date Received:**	5/22/20
Sample Name:	LH18/24-SP650_051920_BIX	**Units:**	µg/L
Lab Code:	E2000451-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	5/27/20	6/2/20 19:53	359084	682302	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000451
Project:	HS20050737	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000209-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100			1	5/27/20	6/2/20 19:22	359084	682302	

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000451
Project:	HS20050737	**Date Analyzed:**	6/ 2/20
Sample Matrix:	Water		

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	359084

	Lab Control Sample EQ2000209-02			Duplicate Lab Control Sample EQ2000209-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.118	0.100	118	0.115	0.100	115	84 - 119	2	15

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

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000451
Project:	HS20050737	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000209-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.118**		0.100			1	5/27/20	6/2/20 19:29	359084	682302	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000451
Project:	HS20050737	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000209-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.115**		0.100			1	5/27/20	6/2/20 19:37	359084	682302	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200602

1st Review: Kneir
2nd Review: Hvan

Injection Log
LCMS01 -Shimadzu 8050

ICAL Date: 6/2/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000007**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments
	null		20200602_001	Perchlorate6850b.lcm	1x	☒	
	null		20200602_002	Perchlorate6850b.lcm	1x	☒	
	null		20200602_003	Perchlorate6850b.lcm	1x	☒	
	null		20200602_004	Perchlorate6850b.lcm	1x	☒	
	null		20200602_005	Perchlorate6850b.lcm	1x	☒	
	IB		20200602_006	Perchlorate6850b.lcm	1x	☒	
	IB		20200602_007	Perchlorate6850b.lcm	1x	☒	
	IB		20200602_008	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE1		20200602_009	Perchlorate6850b.lcm	1x	☒	3100806-05
	PERCHLORATE2		20200602_010	Perchlorate6850b.lcm	1x	☒	3100806-06
	PERCHLORATE3		20200602_011	Perchlorate6850b.lcm	1x	☒	3100806-07
	PERCHLORATE4		20200602_012	Perchlorate6850b.lcm	1x	☒	3100807-01
	PERCHLORATE5		20200602_013	Perchlorate6850b.lcm	1x	☒	3100807-02
	PERCHLORATE6		20200602_014	Perchlorate6850b.lcm	1x	☒	3100807-03
	PERCHLORATE7		20200602_015	Perchlorate6850b.lcm	1x	☒	3100807-04
	PERCHLORATE8		20200602_016	Perchlorate6850b.lcm	1x	☒	3100807-05
	PERCHLORATE9		20200602_017	Perchlorate6850b.lcm	1x	☒	3100807-06
	PERCHLORATE10		20200602_018	Perchlorate6850b.lcm	1x	☒	3100807-07
	PERCHLORATEICV		20200602_019	Perchlorate6850b.lcm	1x	☒	3100807-08
	null		20200602_020	Perchlorate6850b.lcm	1x	☒	
	null		20200602_021	Perchlorate6850b.lcm	1x	☒	
	IB		20200602_022	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200602_023	Perchlorate6850b.lcm	1x	☒	3100807-04
	LODV		20200602_024	Perchlorate6850b.lcm	1x	☒	
	EQ2000215-01		20200602_025	Perchlorate6850b.lcm	1x	☒	do not use
	EQ2000215-02		20200602_026	Perchlorate6850b.lcm	1x	☒	do not use
	EQ2000215-03		20200602_027	Perchlorate6850b.lcm	1x	☒	do not use
	E2000473-001		20200602_028	Perchlorate6850b.lcm	1x	☒	do not use
	ICS		20200602_029	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200602_030	Perchlorate6850b.lcm	1x	☒	3100807-04
	EQ2000202-01		20200602_031	Perchlorate6850b.lcm	1x	☒	
	EQ2000202-02		20200602_032	Perchlorate6850b.lcm	1x	☒	
	EQ2000202-03		20200602_033	Perchlorate6850b.lcm	1x	☒	
	E2000442-001		20200602_034	Perchlorate6850b.lcm	1x	☒	
	E2000442-002		20200602_035	Perchlorate6850b.lcm	1x	☒	
	ICS		20200602_036	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200602_037	Perchlorate6850b.lcm	1x	☒	3100807-04
	EQ2000209-01		20200602_038	Perchlorate6850b.lcm	1x	☒	
	EQ2000209-02		20200602_039	Perchlorate6850b.lcm	1x	☒	
	EQ2000209-03		20200602_040	Perchlorate6850b.lcm	1x	☒	
	E2000449-001		20200602_041	Perchlorate6850b.lcm	1x	☒	
	E2000451-001		20200602_042	Perchlorate6850b.lcm	1x	☒	
	E2000450-001X500		20200602_043	Perchlorate6850b.lcm	500x	☒	
	PERCHLORATE7		20200602_044	Perchlorate6850b.lcm	1x	☒	3100807-04
	EQ2000210-01		20200602_045	Perchlorate6850b.lcm	1x	☒	
	EQ2000210-02		20200602_046	Perchlorate6850b.lcm	1x	☒	
	EQ2000210-03		20200602_047	Perchlorate6850b.lcm	1x	☒	
	E2000459-001X1000		20200602_048	Perchlorate6850b.lcm	1000x	☒	
	E2000459-002		20200602_049	Perchlorate6850b.lcm	1x	☒	
	E2000459-003X200		20200602_050	Perchlorate6850b.lcm	200x	☒	
	E2000459-004X500		20200602_051	Perchlorate6850b.lcm	500x	☒	
	PERCHLORATE7		20200602_052	Perchlorate6850b.lcm	1x	☒	3100807-04

Initial Calibration - Detailed Report

Calibration ID: EC2000007 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2000007-01	PERCHLORATE1	20200602_009	06/02/2020 15:37
02	EC2000007-02	PERCHLORATE2	20200602_010	06/02/2020 15:45
03	EC2000007-03	PERCHLORATE3	20200602_011	06/02/2020 15:53
04	EC2000007-04	PERCHLORATE4	20200602_012	06/02/2020 16:05
05	EC2000007-05	PERCHLORATE5	20200602_013	06/02/2020 16:13
06	EC2000007-06	PERCHLORATE6	20200602_014	06/02/2020 16:21
07	EC2000007-07	PERCHLORATE7	20200602_015	06/02/2020 16:29
08	EC2000007-08	PERCHLORATE8	20200602_016	06/02/2020 16:37
09	EC2000007-09	PERCHLORATE9	20200602_017	06/02/2020 16:44
10	EC2000007-10	PERCHLORATE10	20200602_018	06/02/2020 16:52

Analyte **Curve Fit** **Weighting**

Perchlorate **Average RF** **RSD = 11.36** **Average RF = 0.1279**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1628	02	0.5000	0.122	03	0.7000	0.1165	04	1.0000	0.1408
05	2.0000	0.1172	06	5.0000	0.1212	07	10.0000	0.135	08	20.0000	0.1233
09	30.0000	0.12	10	50.0000	0.1202						

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.127	27.3	02	0.5000	0.477	-4.6	03	0.7000	0.638	-8.9
04	1.0000	1.10	10.1	05	2.0000	1.83	-8.4	06	5.0000	4.74	-5.2
07	10.0000	10.6	5.5	08	20.0000	19.3	-3.6	09	30.0000	28.1	-6.2
10	50.0000	47.0	-6.0								

Initial Calibration Verification Summary Report

Calibration ID:	EC2000007	**Instrument ID:**	E-LCMS-01
Datafile ID:	20200602_019	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000007-11	T	Average RF	10	10.859	ng/mL	8.6	<= 15

ALS Group Houston

PERCHLORATE1

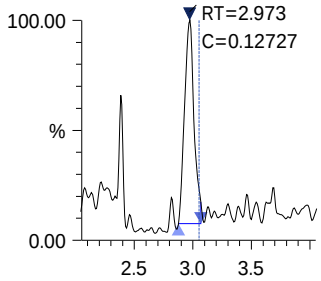
Date acquired: 6/2/2020 3:37:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_009.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	6/2/2020 3:37:49 PM	2231	0.12727	20200602_009	2.973	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE1	6/2/2020 3:37:49 PM	137060	1.00000	20200602_009	2.954	25.0000	1.0000	4

Perchlorate

Conc 0.12727
Area 2231

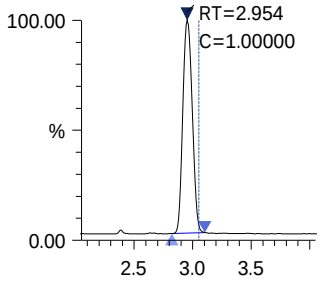
Q 99.00>83.00 (-) 4.13e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 137060

ISTD 107.00>89.00 (-) 2.48e4



ALS Group Houston

PERCHLORATE2

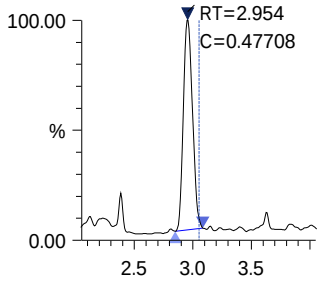
Date acquired: 6/2/2020 3:45:42 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_010.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	6/2/2020 3:45:42 PM	8464	0.47708	20200602_010	2.954	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE2	6/2/2020 3:45:42 PM	138722	1.00000	20200602_010	2.949	25.0000	1.0000	5

Perchlorate

Conc 0.47708
Area 8464

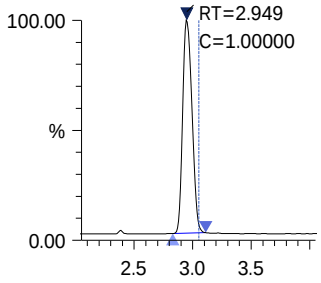
Q 99.00>83.00 (-) 1.56e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 138722

ISTD 107.00>89.00 (-) 2.53e4



ALS Group Houston

PERCHLORATE3

Date acquired: 6/2/2020 3:53:36 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_011.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

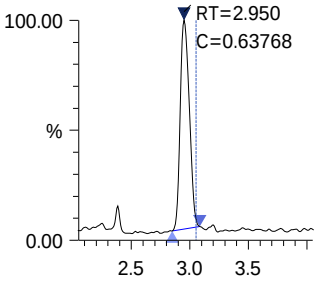
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	6/2/2020 3:53:36 PM	11656	0.63768	20200602_011	2.950	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	PERCHLORATE3	6/2/2020 3:53:36 PM	142915	1.00000	20200602_011	2.954	25.0000	1.0000	6

Perchlorate

Conc 0.63768

Area 11656

Q 99.00>83.00 (-) 2.17e3

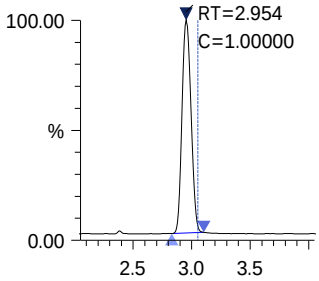


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 142915

ISTD 107.00>89.00 (-) 2.70e4



ALS Group Houston

PERCHLORATE4

Date acquired: 6/2/2020 4:05:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_012.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

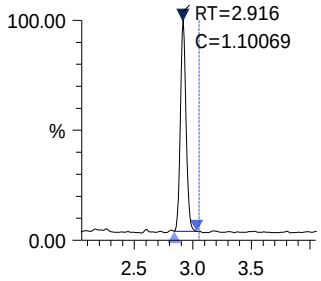
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	6/2/2020 4:05:28 PM	18119	1.10069	20200602_012	2.916	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE4	6/2/2020 4:05:28 PM	128706	1.00000	20200602_012	2.914	25.0000	1.0000	7

Perchlorate

Conc 1.10069

Area 18119

Q 99.00>83.00 (-) 5.42e3

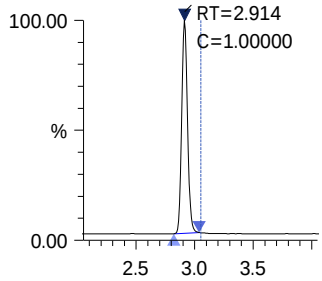


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 128706

ISTD 107.00>89.00 (-) 3.72e4



ALS Group Houston

PERCHLORATE5

Date acquired: 6/2/2020 4:13:21 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_013.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

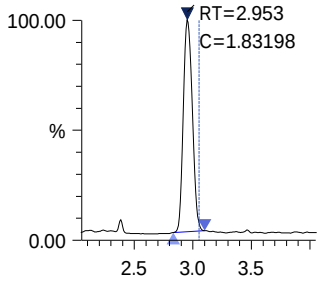
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	6/2/2020 4:13:21 PM	33971	1.83198	20200602_013	2.953	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE5	6/2/2020 4:13:21 PM	144982	1.00000	20200602_013	2.953	25.0000	1.0000	8

Perchlorate

Conc 1.83198

Area 33971

Q 99.00>83.00 (-) 6.29e3

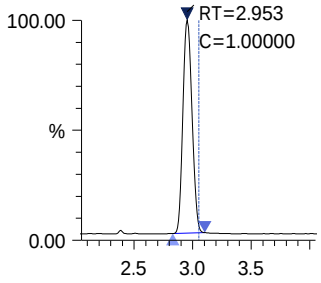


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 144982

ISTD 107.00>89.00 (-) 2.71e4



ALS Group Houston

PERCHLORATE6

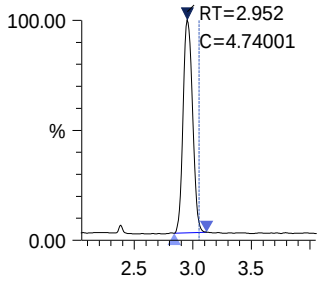
Date acquired: 6/2/2020 4:21:16 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_014.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	6/2/2020 4:21:16 PM	85178	4.74001	20200602_014	2.952	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE6	6/2/2020 4:21:16 PM	140500	1.00000	20200602_014	2.948	25.0000	1.0000	9

Perchlorate

Conc 4.74001
Area 85178

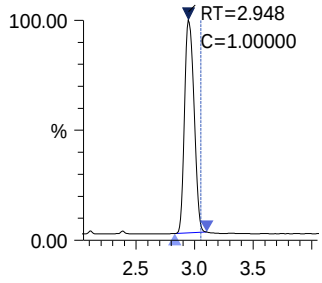
Q 99.00>83.00 (-) 1.50e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 140500

ISTD 107.00>89.00 (-) 2.51e4



ALS Group Houston

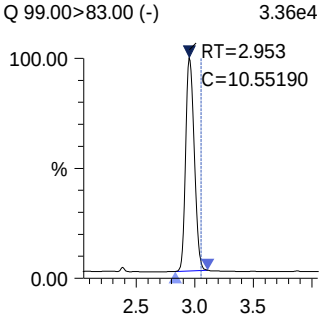
PERCHLORATE7

Date acquired: 6/2/2020 4:29:10 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_015.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	6/2/2020 4:29:10 PM	173998	10.55190	20200602_015	2.953	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/2/2020 4:29:10 PM	128928	1.00000	20200602_015	2.951	25.0000	1.0000	10

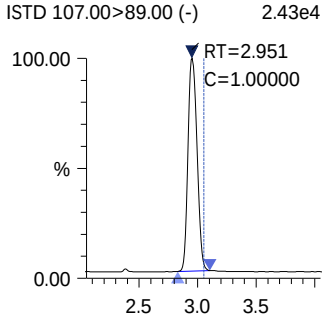
Perchlorate

Conc 10.55190
Area 173998



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 128928



ALS Group Houston

PERCHLORATE8

Date acquired: 6/2/2020 4:37:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_016.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

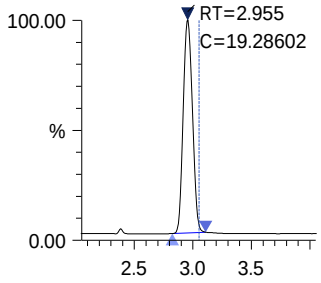
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	6/2/2020 4:37:02 PM	324944	19.28602	20200602_016	2.955	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE8	6/2/2020 4:37:02 PM	131734	1.00000	20200602_016	2.953	25.0000	1.0000	11

Perchlorate

Conc 19.28602

Area 324944

Q 99.00>83.00 (-) 5.85e4

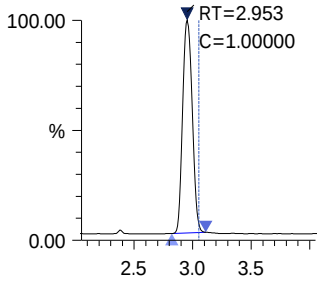


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 131734

ISTD 107.00>89.00 (-) 2.34e4



ALS Group Houston

PERCHLORATE9

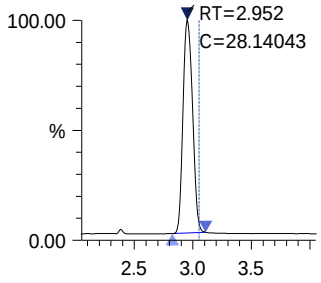
Date acquired: 6/2/2020 4:44:57 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_017.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	6/2/2020 4:44:57 PM	469066	28.14043	20200602_017	2.952	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE9	6/2/2020 4:44:57 PM	130327	1.00000	20200602_017	2.953	25.0000	1.0000	12

Perchlorate

Conc 28.14043
Area 469066

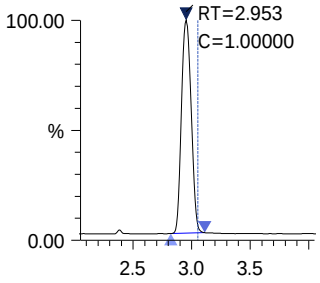
Q 99.00>83.00 (-) 8.16e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 130327

ISTD 107.00>89.00 (-) 2.28e4



ALS Group Houston

PERCHLORATE10

Date acquired: 6/2/2020 4:52:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_018.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

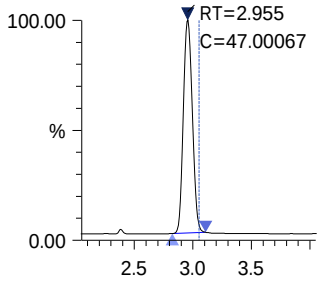
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE10	6/2/2020 4:52:49 PM	737362	47.00067	20200602_018	2.955	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE10	6/2/2020 4:52:49 PM	122661	1.00000	20200602_018	2.952	25.0000	1.0000	13

Perchlorate

Conc 47.00067

Area 737362

Q 99.00>83.00 (-) 1.36e5

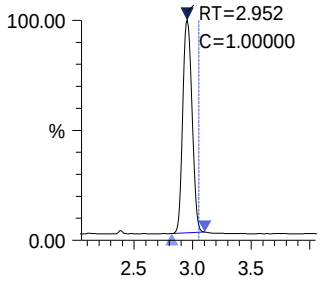


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 122661

ISTD 107.00>89.00 (-) 2.25e4



ALS Group Houston

PERCHLORATEICV

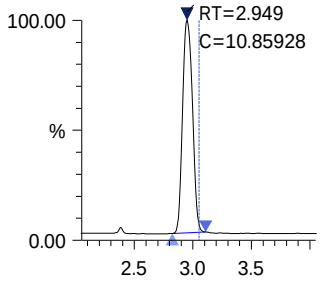
Date acquired: 6/2/2020 5:00:42 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_019.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	6/2/2020 5:00:42 PM	180334	10.85928	20200602_019	2.949	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	6/2/2020 5:00:42 PM	129839	1.00000	20200602_019	2.948	25.0000	1.0000	14

Perchlorate

Conc 10.85928
Area 180334

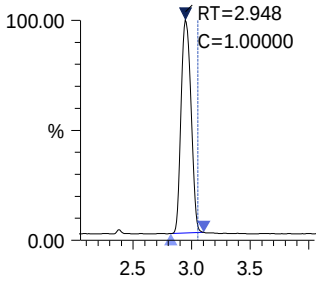
Q 99.00>83.00 (-) 3.04e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 129839

ISTD 107.00>89.00 (-) 2.21e4



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200602

1st Review: Kneir
2nd Review: Hvan

ALS Environmental
Injection Log
LCMS01 -Shimadzu 8050

ICAL Date: 6/2/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000007**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments
	null		20200602_001	Perchlorate6850b.lcm	1x	☒	
	null		20200602_002	Perchlorate6850b.lcm	1x	☒	
	null		20200602_003	Perchlorate6850b.lcm	1x	☒	
	null		20200602_004	Perchlorate6850b.lcm	1x	☒	
	null		20200602_005	Perchlorate6850b.lcm	1x	☒	
	IB		20200602_006	Perchlorate6850b.lcm	1x	☒	
	IB		20200602_007	Perchlorate6850b.lcm	1x	☒	
	IB		20200602_008	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE1		20200602_009	Perchlorate6850b.lcm	1x	☒	3100806-05
	PERCHLORATE2		20200602_010	Perchlorate6850b.lcm	1x	☒	3100806-06
	PERCHLORATE3		20200602_011	Perchlorate6850b.lcm	1x	☒	3100806-07
	PERCHLORATE4		20200602_012	Perchlorate6850b.lcm	1x	☒	3100807-01
	PERCHLORATE5		20200602_013	Perchlorate6850b.lcm	1x	☒	3100807-02
	PERCHLORATE6		20200602_014	Perchlorate6850b.lcm	1x	☒	3100807-03
	PERCHLORATE7		20200602_015	Perchlorate6850b.lcm	1x	☒	3100807-04
	PERCHLORATE8		20200602_016	Perchlorate6850b.lcm	1x	☒	3100807-05
	PERCHLORATE9		20200602_017	Perchlorate6850b.lcm	1x	☒	3100807-06
	PERCHLORATE10		20200602_018	Perchlorate6850b.lcm	1x	☒	3100807-07
	PERCHLORATEICV		20200602_019	Perchlorate6850b.lcm	1x	☒	3100807-08
	null		20200602_020	Perchlorate6850b.lcm	1x	☒	
	null		20200602_021	Perchlorate6850b.lcm	1x	☒	
	IB		20200602_022	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200602_023	Perchlorate6850b.lcm	1x	☒	3100807-04
	LODV		20200602_024	Perchlorate6850b.lcm	1x	☒	
	EQ2000215-01		20200602_025	Perchlorate6850b.lcm	1x	☒	do not use
	EQ2000215-02		20200602_026	Perchlorate6850b.lcm	1x	☒	do not use
	EQ2000215-03		20200602_027	Perchlorate6850b.lcm	1x	☒	do not use
	E2000473-001		20200602_028	Perchlorate6850b.lcm	1x	☒	do not use
	ICS		20200602_029	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200602_030	Perchlorate6850b.lcm	1x	☒	3100807-04
	EQ2000202-01		20200602_031	Perchlorate6850b.lcm	1x	☒	
	EQ2000202-02		20200602_032	Perchlorate6850b.lcm	1x	☒	
	EQ2000202-03		20200602_033	Perchlorate6850b.lcm	1x	☒	
	E2000442-001		20200602_034	Perchlorate6850b.lcm	1x	☒	
	E2000442-002		20200602_035	Perchlorate6850b.lcm	1x	☒	
	ICS		20200602_036	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200602_037	Perchlorate6850b.lcm	1x	☒	3100807-04
	EQ2000209-01		20200602_038	Perchlorate6850b.lcm	1x	☒	
	EQ2000209-02		20200602_039	Perchlorate6850b.lcm	1x	☒	
	EQ2000209-03		20200602_040	Perchlorate6850b.lcm	1x	☒	
	E2000449-001		20200602_041	Perchlorate6850b.lcm	1x	☒	
	E2000451-001		20200602_042	Perchlorate6850b.lcm	1x	☒	
	E2000450-001X500		20200602_043	Perchlorate6850b.lcm	500x	☒	
	PERCHLORATE7		20200602_044	Perchlorate6850b.lcm	1x	☒	3100807-04
	EQ2000210-01		20200602_045	Perchlorate6850b.lcm	1x	☒	
	EQ2000210-02		20200602_046	Perchlorate6850b.lcm	1x	☒	
	EQ2000210-03		20200602_047	Perchlorate6850b.lcm	1x	☒	
	E2000459-001X1000		20200602_048	Perchlorate6850b.lcm	1000x	☒	
	E2000459-002		20200602_049	Perchlorate6850b.lcm	1x	☒	
	E2000459-003X200		20200602_050	Perchlorate6850b.lcm	200x	☒	
	E2000459-004X500		20200602_051	Perchlorate6850b.lcm	500x	☒	
	PERCHLORATE7		20200602_052	Perchlorate6850b.lcm	1x	☒	3100807-04

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000451
Project:	HS20050737	**Date Analyzed:**	6/ 2/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/2/20
File ID:	I:\LCMS01\DATA\20200602\20200602_037	**Calibration ID:**	EC2000007
		Analysis Lot:	682302
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.6	0.1279	0.1354	5.9	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000451
Project:	HS20050737	**Date Analyzed:**	6/ 2/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	6/2/20
File ID:	I:\LCMS01\DATA\20200602\20200602_044	**Calibration ID:**	EC2000007
		Analysis Lot:	682302
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.8	0.1279	0.1383	8.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000451
Project:	HS20050737	**Date Analyzed:**	6/2/20 19:14

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200602\20200602_037	**Lab Code:**	EQ2000220-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	682302
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	134,654	2.95
	Upper Limit ==>	201,981	4.95
	Lower Limit ==>	67,327	0.95
Associated Analyses			
Continuing Calibration Verification	EQ2000220-01	130,037	2.95
Method Blank	EQ2000209-01	156,098	2.95
Lab Control Sample	EQ2000209-02	162,494	2.95
Duplicate Lab Control Sample	EQ2000209-03	164,223	2.94
LH18/24-SP650_051920_BIX	E2000451-001	148,304	2.93

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000451
Project:	HS20050737	**Date Analyzed:**	6/2/20 20:09

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20200602\20200602_044	**Lab Code:**	EQ2000220-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	682302
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	134,654	2.95
	Upper Limit ==>	201,981	4.95
	Lower Limit ==>	67,327	0.95
Associated Analyses			
Continuing Calibration Verification	EQ2000220-02	130,496	2.94

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

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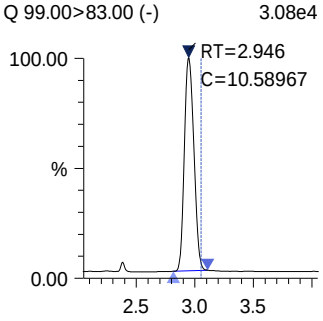
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Date acquired: 6/2/2020 7:14:09 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_037.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	6/2/2020 7:14:09 PM	176124	10.58967	20200602_037	2.946	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/2/2020 7:14:09 PM	130037	1.00000	20200602_037	2.945	25.0000	1.0000	10

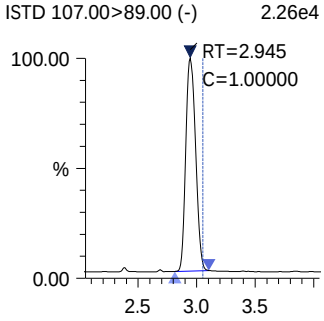
Perchlorate

Conc 10.58967
Area 176124



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 130037



ALS Group Houston

EQ2000209-01

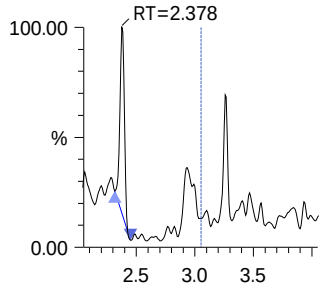
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Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_038.lcd
Vial: 21 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000209-01	6/2/2020 7:22:03 PM	----	----	20200602_038	----	25.0000	1.0000	21
Sodium Perchlorate-18O4_IS	EQ2000209-01	6/2/2020 7:22:03 PM	156098	1.00000	20200602_038	2.947	25.0000	1.0000	21

Perchlorate

Conc ----
Area ----

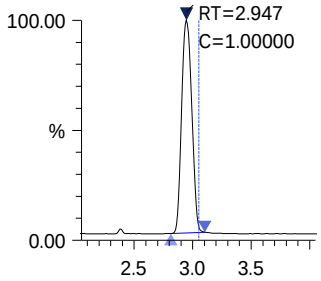
Q 99.00>83.00 (-) 3.73e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 156098

ISTD 107.00>89.00 (-) 2.62e4



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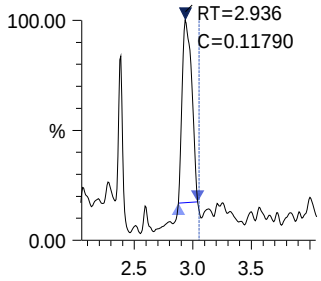
EQ2000209-02

Date acquired: 6/2/2020 7:29:57 PM
Acquired by: System Administrator
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Vial: 22 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000209-02	6/2/2020 7:29:57 PM	2450	0.11790	20200602_039	2.936	25.0000	1.0000	22
Sodium Perchlorate-18O4_IS	EQ2000209-02	6/2/2020 7:29:57 PM	162494	1.00000	20200602_039	2.946	25.0000	1.0000	22

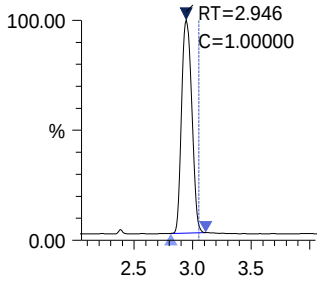
Perchlorate

Conc 0.11790
Area 2450
Q 99.00>83.00 (-) 4.93e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 162494
ISTD 107.00>89.00 (-) 2.69e4



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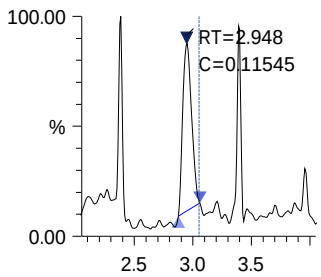
EQ2000209-03

Date acquired: 6/2/2020 7:37:52 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_040.lcd
Vial: 23 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000209-03	6/2/2020 7:37:52 PM	2425	0.11545	20200602_040	2.948	25.0000	1.0000	23
Sodium Perchlorate-18O4_IS	EQ2000209-03	6/2/2020 7:37:52 PM	164223	1.00000	20200602_040	2.944	25.0000	1.0000	23

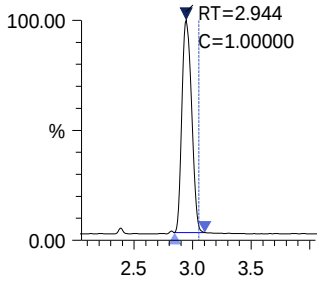
Perchlorate

Conc 0.11545
Area 2425
Q 99.00>83.00 (-) 5.79e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 164223
ISTD 107.00>89.00 (-) 2.88e4



ALS Group Houston

E2000451-001

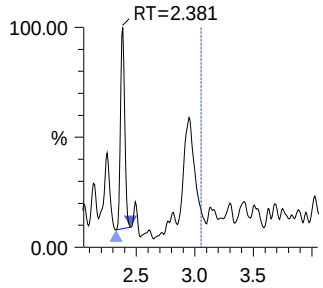
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Data File: I:\LCMS01\DATA\20200602\20200602_042.lcd
Vial: 26 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	E2000451-001	6/2/2020 7:53:43 PM	----	----	20200602_042	----	25.0000	1.0000	26
Sodium Perchlorate-18O4_IS	E2000451-001	6/2/2020 7:53:43 PM	148304	1.00000	20200602_042	2.931	25.0000	1.0000	26

Perchlorate

Conc ----
Area ----

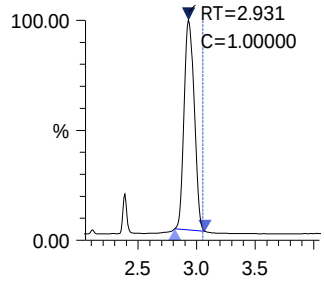
Q 99.00>83.00 (-) 3.38e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 148304

ISTD 107.00>89.00 (-) 2.50e4



ALS Group Houston

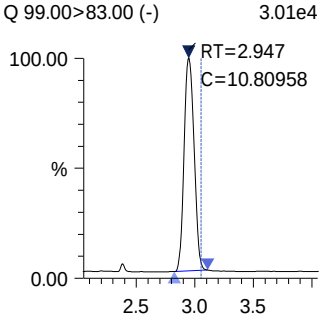
PERCHLORATE7

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Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	6/2/2020 8:09:29 PM	180416	10.80958	20200602_044	2.947	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/2/2020 8:09:29 PM	130496	1.00000	20200602_044	2.941	25.0000	1.0000	10

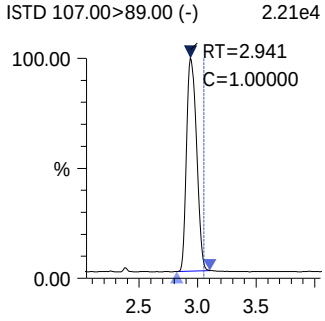
Perchlorate

Conc 10.80958
Area 180416



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 130496



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May 29, 2020

Analytical Report for Service Request No: K2004152

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

RE: HS20050737

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory May 21, 2020
For your reference, these analyses have been assigned our service request number **K2004152.**

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: HS20050737
Sample Matrix: Water

Service Request: K2004152
Date Received: 05/21/2020

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 water sample was received for analysis at ALS Environmental on 05/21/2020. 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 05/29/2020

Chain of Custody

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K2004152

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:** **13936**

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:	HS20050737
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20050737-01**	**LH18/24-SP650_051920**	**Water**	**19 May 2020 14:00**
	TOC Analysis for DOD Level IV			29 May 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: 5/20/2020 1800.

Received By: _____ Date/Time: 5/21/20 0957

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

PC KL

Cooler Receipt and Preservation Form

Client AIS - HOUSTON Service Request K20 04152

Received: 5/21/20 Opened: 5/21/20 By: BR Unloaded: 5/21/20 By: BR

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
1.8	—	—	—	—	1L07		125102972955	

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:**	K2004152
Project:	HS20050737	**Date Collected:**	05/19/20
Sample Matrix:	Water	**Date Received:**	05/21/20
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
LH18/24-SP650_051920	K2004152-001	**2.19**	0.50	0.20	0.07	1	05/26/20 20:27	
Method Blank	K2004152-MB	**0.07 J**	0.50	0.20	0.07	1	05/26/20 19:43	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2004152
Project	HS20050737	**Date Collected:**	05/19/20
Sample Matrix:	Water	**Date Received:**	05/21/20
		Date Analyzed:	05/26/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	LH18/24-SP650_051920	**Units:**	mg/L
Lab Code:	K2004152-001	**Basis:**	NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K2004152-001DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	2.19	2.12	2.16	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:**	K2004152
Project:	HS20050737	**Date Collected:**	05/19/20
Sample Matrix:	Water	**Date Received:**	05/21/20
		Date Analyzed:	05/26/20
		Date Extracted:	NA

Matrix Spike Summary
Carbon, Total Organic

Sample Name:	LH18/24-SP650_051920	**Units:**	mg/L
Lab Code:	K2004152-001	**Basis:**	NA
Analysis Method:	SM 5310 C		
Prep Method:	None		

Matrix Spike
K2004152-001MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic	2.19	27.5	25.0	101	83-117

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.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2004152
Project:	HS20050737	**Date Analyzed:**	05/26/20
Sample Matrix:	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:	681225

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2004152-LCS	25.8	25.0	103	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2004152
Project: HS20050737

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	681225	KQ2006968-01	05/26/20 19:14	25.0	26.0	104	90-110
CCV2	681225	KQ2006968-02	05/26/20 23:31	25.0	25.4	102	90-110
CCV3	681225	KQ2006968-03	05/27/20 04:41	25.0	24.4	98	90-110
CCV4	681225	KQ2006968-04	05/27/20 09:24	25.0	24.6	98	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2004152
Project: HS20050737

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	681225	KQ2006968-05	05/26/20 19:29	0.50	0.20	0.07	0.13	J
CCB2	681225	KQ2006968-06	05/26/20 23:45	0.50	0.20	0.07	ND	U
CCB3	681225	KQ2006968-07	05/27/20 04:56	0.50	0.20	0.07	ND	U
CCB4	681225	KQ2006968-08	05/27/20 09:39	0.50	0.20	0.07	ND	U

Raw Data

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General Chemistry

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Work Request # Original ( ) K2004023, 4049, 4053, 4063, 4085, 4126, 4152, 3497, 3982, 4021, 4023, 3449, 3982, 3998, 4085, 3876, 3982

Tier: II II I I II I IV IV II II II III II III II II

Date Analyzed: 5/12/20

Analyst: RD

Run # TOC: 680711, 680712 POC: 680713

Analysis: TOC/POC

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: K2004063-1/1d, 3982-5/5d, 3982-9/9d, 3982-11/11d, 3182-12/12d 3449-4, 4085-5 report a high %RSD. However, these samples are less than 5x the MRL.

Final Approved by: _____ Date: 5/20/20

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 681225 **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
K2004023-003	Carbon, Total Organic	N/A		Water	19.94 mg/L	10 ml	19.9 mg/L	1	0.07	0.50			5/27/20 05:40	N	II
K2004023-004	Carbon, Total Organic	N/A		Water	1.19 mg/L	10 ml	240 mg/L	200	20	100			5/27/20 06:08	N	II
K2004023-005	Carbon, Total Organic	N/A		Water	24.58 mg/L	10 ml	98.3 mg/L	4	0.3	2.0			5/27/20 06:36	N	II
K2004023-006	Carbon, Total Organic	N/A		Water	35.32 mg/L	10 ml	35.3 mg/L	1	0.07	0.50			5/27/20 07:04	N	II
K2004049-001	Carbon, Total Organic	N/A		Water	2.25 mg/L	10 ml	2.25 mg/L	1	0.07	0.50			5/26/20 20:56	N	II
K2004049-002	Carbon, Total Organic	N/A		Water	0.89 mg/L	10 ml	0.89 mg/L	1	0.07	0.50			5/26/20 21:24	N	II
K2004049-003	Carbon, Total Organic	N/A		Water	0.97 mg/L	10 ml	0.97 mg/L	1	0.07	0.50			5/26/20 21:52	N	II
K2004049-004	Carbon, Total Organic	N/A		Water	0.92 mg/L	10 ml	0.92 mg/L	1	0.07	0.50			5/26/20 22:20	N	II
K2004049-005	Carbon, Total Organic	N/A		Water	0.79 mg/L	10 ml	0.79 mg/L	1	0.07	0.50			5/26/20 22:48	N	II
K2004049-006	Carbon, Total Organic	N/A		Water	0.77 mg/L	10 ml	0.77 mg/L	1	0.07	0.50			5/27/20 00:00	N	II
K2004049-007	Carbon, Total Organic	N/A		Water	0.74 mg/L	10 ml	0.74 mg/L	1	0.07	0.50			5/27/20 00:28	N	II
K2004049-008	Carbon, Total Organic	N/A		Water	1.71 mg/L	10 ml	1.71 mg/L	1	0.07	0.50			5/27/20 00:56	N	II
K2004049-009	Carbon, Total Organic	N/A		Water	0.74 mg/L	10 ml	0.74 mg/L	1	0.07	0.50			5/27/20 01:24	N	II
K2004053-001	Carbon, Total Organic	N/A		Drinking Water	1.20 mg/L	10 ml	1.20 mg/L	1	0.07	0.50			5/27/20 01:52	N	I
K2004063-001	Carbon, Total Organic	N/A		Drinking Water	0.87 mg/L	10 ml	0.87 mg/L	1	0.07	0.50			5/27/20 02:20	N	I
K2004085-001	Carbon, Total Organic	N/A		Water	1.74 mg/L	10 ml	1.74 mg/L	1	0.07	0.50			5/27/20 03:17	N	II
K2004085-002	Carbon, Total Organic	N/A		Water	1.67 mg/L	10 ml	1.67 mg/L	1	0.07	0.50			5/27/20 03:45	N	II
K2004085-003	Carbon, Total Organic	N/A		Water	1.71 mg/L	10 ml	1.71 mg/L	1	0.07	0.50			5/27/20 04:13	N	II
K2004126-002	Carbon, Total Organic	N/A		Drinking Water	0.83 mg/L	10 ml	0.83 mg/L	1	0.07	0.50			5/27/20 02:49	N	I
K2004152-001	Carbon, Total Organic	N/A		Water	2.19 mg/L	10 ml	2.19 mg/L	1	0.07	0.50			5/26/20 20:27	N	IV
KQ2006968-01	Carbon, Total Organic	CCV		Water	26.01 mg/L	10 ml	26.0 mg/L	1					5/26/20 19:14	N	IV
KQ2006968-02	Carbon, Total Organic	CCV		Water	25.45 mg/L	10 ml	25.4 mg/L	1					5/26/20 23:31	N	IV
KQ2006968-03	Carbon, Total Organic	CCV		Water	24.38 mg/L	10 ml	24.4 mg/L	1					5/27/20 04:41	N	IV
KQ2006968-04	Carbon, Total Organic	CCV		Water	24.60 mg/L	10 ml	24.6 mg/L	1					5/27/20 09:24	N	IV
KQ2006968-05	Carbon, Total Organic	CCB		Water	0.13 mg/L	10 ml	0.13 mg/L J	1	0.07	0.50			5/26/20 19:29	N	IV
KQ2006968-06	Carbon, Total Organic	CCB		Water	0.01 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/26/20 23:45	N	IV
KQ2006968-07	Carbon, Total Organic	CCB		Water	0.04 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/27/20 04:56	N	IV
KQ2006968-08	Carbon, Total Organic	CCB		Water	0.02 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/27/20 09:39	N	IV
KQ2006968-09	Carbon, Total Organic	MB		Water	0.07 mg/L	10 ml	0.07 mg/L J	1	0.07	0.50			5/26/20 19:43	N	IV
KQ2006968-10	Carbon, Total Organic	LCS		Water	25.76 mg/L	10 ml	25.8 mg/L	1	0.07	0.50	103		5/26/20 19:58	N	IV
KQ2006968-12	Carbon, Total Organic	DUP	K2004023-003	Water	20.19 mg/L	10 ml	20.2 mg/L	1	0.07	0.50		1	5/27/20 05:40	N	II
KQ2006968-13	Carbon, Total Organic	DUP	K2004023-004	Water	1.08 mg/L	10 ml	220 mg/L	200	20	100		10	5/27/20 06:08	N	II
KQ2006968-14	Carbon, Total Organic	DUP	K2004023-005	Water	25.08 mg/L	10 ml	100 mg/L	4	0.3	2.0		2	5/27/20 06:36	N	II
KQ2006968-15	Carbon, Total Organic	DUP	K2004023-006	Water	35.72 mg/L	10 ml	35.7 mg/L	1	0.07	0.50		1	5/27/20 07:04	N	II
KQ2006968-16	Carbon, Total Organic	DUP	K2004049-001	Water	2.23 mg/L	10 ml	2.23 mg/L	1	0.07	0.50		<1	5/26/20 20:56	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:** 681225 **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
KQ2006968-17	Carbon, Total Organic	DUP	K2004049-002	Water	0.85 mg/L	10 ml	0.85 mg/L	1	0.07	0.50		5	5/26/20 21:24	N	II
KQ2006968-18	Carbon, Total Organic	DUP	K2004049-003	Water	0.96 mg/L	10 ml	0.96 mg/L	1	0.07	0.50		1	5/26/20 21:52	N	II
KQ2006968-19	Carbon, Total Organic	DUP	K2004049-004	Water	0.87 mg/L	10 ml	0.87 mg/L	1	0.07	0.50		5	5/26/20 22:20	N	II
KQ2006968-20	Carbon, Total Organic	DUP	K2004049-005	Water	0.72 mg/L	10 ml	0.72 mg/L	1	0.07	0.50		9	5/26/20 22:48	N	II
KQ2006968-21	Carbon, Total Organic	DUP	K2004049-006	Water	0.76 mg/L	10 ml	0.76 mg/L	1	0.07	0.50		1	5/27/20 00:00	N	II
KQ2006968-22	Carbon, Total Organic	DUP	K2004049-007	Water	0.68 mg/L	10 ml	0.68 mg/L	1	0.07	0.50		9	5/27/20 00:28	N	II
KQ2006968-23	Carbon, Total Organic	DUP	K2004049-008	Water	1.72 mg/L	10 ml	1.72 mg/L	1	0.07	0.50		<1	5/27/20 00:56	N	II
KQ2006968-24	Carbon, Total Organic	DUP	K2004049-009	Water	0.71 mg/L	10 ml	0.71 mg/L	1	0.07	0.50		3	5/27/20 01:24	N	II
KQ2006968-25	Carbon, Total Organic	DUP	K2004053-001	Drinking Water	1.13 mg/L	10 ml	1.13 mg/L	1	0.07	0.50		6	5/27/20 01:52	N	I
KQ2006968-26	Carbon, Total Organic	DUP	K2004063-001	Drinking Water	0.77 mg/L	10 ml	0.77 mg/L	1	0.07	0.50		12*	5/27/20 02:20	N	I
KQ2006968-27	Carbon, Total Organic	DUP	K2004085-001	Water	1.70 mg/L	10 ml	1.70 mg/L	1	0.07	0.50		2	5/27/20 03:17	N	II
KQ2006968-28	Carbon, Total Organic	DUP	K2004085-002	Water	1.65 mg/L	10 ml	1.65 mg/L	1	0.07	0.50		1	5/27/20 03:45	N	II
KQ2006968-29	Carbon, Total Organic	DUP	K2004085-003	Water	1.62 mg/L	10 ml	1.62 mg/L	1	0.07	0.50		5	5/27/20 04:13	N	II
KQ2006968-30	Carbon, Total Organic	DUP	K2004126-002	Drinking Water	0.79 mg/L	10 ml	0.79 mg/L	1	0.07	0.50		5	5/27/20 02:49	N	I
KQ2006968-31	Carbon, Total Organic	DUP	K2004152-001	Water	2.12 mg/L	10 ml	2.12 mg/L	1	0.07	0.50		3	5/26/20 20:27	N	IV
KQ2006968-32	Carbon, Total Organic	MS	K2004152-001	Water	27.53 mg/L	10 ml	27.5 mg/L	1	0.07	0.50	101		5/26/20 23:16	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:** 680711 **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
K2003957-001	Carbon, Total Organic	N/A		Water	2.63 mg/L	10 ml	2.63 mg/L	1	0.07	0.50			5/27/20 10:22	N	IV
K2003982-001	Carbon, Total Organic	N/A		Water	25.69 mg/L	10 ml	514 mg/L	20	2	10			5/27/20 11:18	N	II
K2003982-002	Carbon, Total Organic	N/A		Water	9.43 mg/L	10 ml	189 mg/L	20	2	10			5/27/20 11:46	N	II
K2003982-003	Carbon, Total Organic	N/A		Water	3.64 mg/L	10 ml	73 mg/L	20	2	10			5/27/20 12:14	Y	II
K2003982-004	Carbon, Total Organic	N/A		Water	10.95 mg/L	10 ml	11.0 mg/L	1	0.07	0.50			5/27/20 13:11	N	II
K2003982-005	Carbon, Total Organic	N/A		Water	1.45 mg/L	10 ml	1.45 mg/L	1	0.07	0.50			5/27/20 13:39	N	II
K2003982-006	Carbon, Total Organic	N/A		Water	1.65 mg/L	10 ml	33 mg/L	20	2	10			5/27/20 15:07	N	II
K2003982-007	Carbon, Total Organic	N/A		Water	7.87 mg/L	10 ml	7.87 mg/L	1	0.07	0.50			5/27/20 15:35	N	II
K2003982-008	Carbon, Total Organic	N/A		Water	8.33 mg/L	10 ml	8.33 mg/L	1	0.07	0.50			5/27/20 16:03	N	II
K2003982-009	Carbon, Total Organic	N/A		Water	2.55 mg/L	10 ml	2.55 mg/L	1	0.07	0.50			5/27/20 16:31	N	II
K2003982-010	Carbon, Total Organic	N/A		Water	2.09 mg/L	10 ml	2.09 mg/L	1	0.07	0.50			5/27/20 16:59	N	II
K2003982-011	Carbon, Total Organic	N/A		Water	0.70 mg/L	10 ml	0.70 mg/L	1	0.07	0.50			5/27/20 17:27	N	II
K2003982-012	Carbon, Total Organic	N/A		Water	0.38 mg/L	10 ml	0.38 mg/L J	1	0.07	0.50			5/27/20 17:55	N	II
K2003982-013	Carbon, Total Organic	N/A		Water	0.33 mg/L	10 ml	0.33 mg/L J	1	0.07	0.50			5/27/20 18:23	N	II
K2004021-001	Carbon, Total Organic	N/A		Water	1.87 mg/L	10 ml	1.87 mg/L	1	0.07	0.50			5/27/20 10:50	N	II
K2004023-007	Carbon, Total Organic	N/A		Water	13.44 mg/L	10 ml	13.4 mg/L	1	0.07	0.50			5/27/20 07:32	N	II
K2004023-008	Carbon, Total Organic	N/A		Water	8.31 mg/L	10 ml	8.31 mg/L	1	0.07	0.50			5/27/20 08:00	N	II
K2004023-009	Carbon, Total Organic	N/A		Water	1.90 mg/L	10 ml	380 mg/L	200	20	100			5/27/20 08:28	N	II
K2004023-010	Carbon, Total Organic	N/A		Water	1.42 mg/L	10 ml	280 mg/L	200	20	100			5/27/20 08:56	N	II
K2004023-011	Carbon, Total Organic	N/A		Water	23.27 mg/L	10 ml	93.1 mg/L	4	0.3	2.0			5/27/20 09:54	N	II
KQ2006710-01	Carbon, Total Organic	CCV		Water	24.38 mg/L	10 ml	24.4 mg/L	1					5/27/20 04:41	N	II
KQ2006710-02	Carbon, Total Organic	CCV		Water	24.60 mg/L	10 ml	24.6 mg/L	1					5/27/20 09:24	N	II
KQ2006710-03	Carbon, Total Organic	CCV		Water	24.77 mg/L	10 ml	24.8 mg/L	1					5/27/20 14:08	N	II
KQ2006710-04	Carbon, Total Organic	CCV		Water	25.04 mg/L	10 ml	25.0 mg/L	1					5/27/20 18:51	N	II
KQ2006710-05	Carbon, Total Organic	CCB		Water	0.04 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/27/20 04:56	N	II
KQ2006710-06	Carbon, Total Organic	CCB		Water	0.02 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/27/20 09:39	N	II
KQ2006710-07	Carbon, Total Organic	CCB		Water	0.01 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/27/20 14:22	N	II
KQ2006710-08	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/27/20 19:06	N	II
KQ2006710-09	Carbon, Total Organic	MB		Water	-0.07 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/27/20 05:10	N	II
KQ2006710-10	Carbon, Total Organic	LCS		Water	24.59 mg/L	10 ml	24.6 mg/L	1	0.07	0.50	98		5/27/20 05:25	N	II
KQ2006710-11	Carbon, Total Organic	MS	K2003982-003	Water	25.48 mg/L	10 ml	5090 mg/L	200	20	100	100		5/27/20 12:42	N	II
KQ2006710-12	Carbon, Total Organic	DUP	K2003957-001	Water	2.46 mg/L	10 ml	2.46 mg/L	1	0.07	0.50		6	5/27/20 10:22	N	IV
KQ2006710-13	Carbon, Total Organic	DUP	K2003982-001	Water	25.80 mg/L	10 ml	516 mg/L	20	2	10		<1	5/27/20 11:18	N	II
KQ2006710-14	Carbon, Total Organic	DUP	K2003982-002	Water	9.33 mg/L	10 ml	187 mg/L	20	2	10		1	5/27/20 11:46	N	II
KQ2006710-15	Carbon, Total Organic	DUP	K2003982-003	Water	3.48 mg/L	10 ml	70 mg/L	20	2	10		4	5/27/20 12:14	N	II
KQ2006710-16	Carbon, Total Organic	DUP	K2003982-004	Water	10.97 mg/L	10 ml	11.0 mg/L	1	0.07	0.50		<1	5/27/20 13:11	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:** 680711 **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
KQ2006710-17	Carbon, Total Organic	DUP	K2003982-005	Water	1.30 mg/L	10 ml	1.30 mg/L	1	0.07	0.50		11*	5/27/20 13:39	N	II
KQ2006710-18	Carbon, Total Organic	DUP	K2003982-006	Water	1.57 mg/L	10 ml	31 mg/L	20	2	10		5	5/27/20 15:07	N	II
KQ2006710-19	Carbon, Total Organic	DUP	K2003982-007	Water	8.02 mg/L	10 ml	8.02 mg/L	1	0.07	0.50		2	5/27/20 15:35	N	II
KQ2006710-20	Carbon, Total Organic	DUP	K2003982-008	Water	8.48 mg/L	10 ml	8.48 mg/L	1	0.07	0.50		2	5/27/20 16:03	N	II
KQ2006710-21	Carbon, Total Organic	DUP	K2003982-009	Water	2.17 mg/L	10 ml	2.17 mg/L	1	0.07	0.50		16*	5/27/20 16:31	N	II
KQ2006710-22	Carbon, Total Organic	DUP	K2003982-010	Water	2.02 mg/L	10 ml	2.02 mg/L	1	0.07	0.50		3	5/27/20 16:59	N	II
KQ2006710-23	Carbon, Total Organic	DUP	K2003982-011	Water	0.62 mg/L	10 ml	0.62 mg/L	1	0.07	0.50		11*	5/27/20 17:27	N	II
KQ2006710-24	Carbon, Total Organic	DUP	K2003982-012	Water	0.32 mg/L	10 ml	0.32 mg/L J	1	0.07	0.50		17*	5/27/20 17:55	N	II
KQ2006710-25	Carbon, Total Organic	DUP	K2003982-013	Water	0.36 mg/L	10 ml	0.36 mg/L J	1	0.07	0.50		9	5/27/20 18:23	N	II
KQ2006710-26	Carbon, Total Organic	DUP	K2004021-001	Water	1.82 mg/L	10 ml	1.82 mg/L	1	0.07	0.50		3	5/27/20 10:50	N	II
KQ2006710-27	Carbon, Total Organic	DUP	K2004023-008	Water	8.20 mg/L	10 ml	8.20 mg/L	1	0.07	0.50		1	5/27/20 08:00	N	II
KQ2006710-28	Carbon, Total Organic	DUP	K2004023-009	Water	1.88 mg/L	10 ml	380 mg/L	200	20	100		1	5/27/20 08:28	N	II
KQ2006710-29	Carbon, Total Organic	DUP	K2004023-010	Water	1.42 mg/L	10 ml	280 mg/L	200	20	100		<1	5/27/20 08:56	N	II
KQ2006710-30	Carbon, Total Organic	DUP	K2004023-011	Water	23.60 mg/L	10 ml	94.4 mg/L	4	0.3	2.0		1	5/27/20 09:54	N	II
KQ2006710-31	Carbon, Total Organic	DUP	K2004023-007	Water	13.48 mg/L	10 ml	13.5 mg/L	1	0.07	0.50		<1	5/27/20 07:32	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:** 680712 **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
K2003949-001	Carbon, Total Organic	N/A		Surface Water	1.27 mg/L	10 ml	1.27 mg/L	1	0.07	0.50			5/27/20 20:17	N	III
K2003949-002	Carbon, Total Organic	N/A		Surface Water	1.05 mg/L	10 ml	1.05 mg/L	1	0.07	0.50			5/27/20 20:45	N	III
K2003949-003	Carbon, Total Organic	N/A		Surface Water	1.11 mg/L	10 ml	1.11 mg/L	1	0.07	0.50			5/27/20 21:13	N	III
K2003949-004	Carbon, Total Organic	N/A		Surface Water	0.52 mg/L	10 ml	0.52 mg/L	1	0.07	0.50			5/27/20 21:41	N	III
K2003949-005	Carbon, Total Organic	N/A		Surface Water	1.39 mg/L	10 ml	1.39 mg/L	1	0.07	0.50			5/27/20 22:09	N	III
K2003949-006	Carbon, Total Organic	N/A		Surface Water	0.48 mg/L	10 ml	0.48 mg/L J	1	0.07	0.50			5/27/20 22:37	N	III
K2003949-007	Carbon, Total Organic	N/A		Surface Water	1.07 mg/L	10 ml	1.07 mg/L	1	0.07	0.50			5/27/20 23:05	Y	III
K2003949-008	Carbon, Total Organic	N/A		Surface Water	1.22 mg/L	10 ml	1.22 mg/L	1	0.07	0.50			5/28/20 00:47	N	III
K2003949-009	Carbon, Total Organic	N/A		Surface Water	-0.06 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/28/20 01:15	N	III
K2003982-014	Carbon, Total Organic	N/A		Water	1.23 mg/L	10 ml	25 mg/L	20	2	10			5/27/20 19:20	N	II
K2003982-015	Carbon, Total Organic	N/A		Water	0.97 mg/L	10 ml	0.97 mg/L	1	0.07	0.50			5/27/20 19:48	N	II
K2003998-001	Carbon, Total Organic	N/A		Surface Water	1.19 mg/L	10 ml	1.19 mg/L	1	0.07	0.50			5/28/20 01:43	N	III
K2003998-002	Carbon, Total Organic	N/A		Surface Water	1.20 mg/L	10 ml	1.20 mg/L	1	0.07	0.50			5/28/20 02:11	N	III
K2003998-003	Carbon, Total Organic	N/A		Surface Water	2.41 mg/L	10 ml	2.41 mg/L	1	0.07	0.50			5/28/20 02:39	N	III
K2003998-004	Carbon, Total Organic	N/A		Surface Water	0.75 mg/L	10 ml	0.75 mg/L	1	0.07	0.50			5/28/20 03:07	N	III
K2003998-005	Carbon, Total Organic	N/A		Surface Water	1.07 mg/L	10 ml	1.07 mg/L	1	0.07	0.50			5/28/20 03:36	N	III
K2004085-004	Carbon, Total Organic	N/A		Water	1.93 mg/L	10 ml	1.93 mg/L	1	0.07	0.50			5/28/20 06:12	N	II
K2004085-005	Carbon, Total Organic	N/A		Water	0.90 mg/L	10 ml	0.90 mg/L	1	0.07	0.50			5/28/20 06:40	N	II
KQ2006711-01	Carbon, Total Organic	CCV		Water	25.04 mg/L	10 ml	25.0 mg/L	1					5/27/20 18:51	N	II
KQ2006711-02	Carbon, Total Organic	CCV		Water	24.82 mg/L	10 ml	24.8 mg/L	1					5/27/20 23:48	N	II
KQ2006711-03	Carbon, Total Organic	CCV		Water	24.00 mg/L	10 ml	24.0 mg/L	1					5/28/20 04:32	N	II
KQ2006711-04	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/27/20 19:06	N	II
KQ2006711-05	Carbon, Total Organic	CCB		Water	-0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/28/20 00:02	N	II
KQ2006711-06	Carbon, Total Organic	CCB		Water	-0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/28/20 04:46	N	II
KQ2006711-07	Carbon, Total Organic	MS	K2003949-007	Surface Water	27.29 mg/L	10 ml	27.3 mg/L	1	0.07	0.50	105		5/27/20 23:33	N	III
KQ2006711-08	Carbon, Total Organic	MB		Water	-0.04 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			5/27/20 14:37:00	N	II
KQ2006711-09	Carbon, Total Organic	LCS		Water	24.58 mg/L	10 mL	24.6 mg/L	1	0.07	0.50	98		5/27/20 14:52:00	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:** 680712 **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
KQ2006711-10	Carbon, Total Organic	DUP	K2003949-001	Surface Water	1.21 mg/L	10 ml	1.21 mg/L	1	0.07	0.50		5	5/27/20 20:17	N	III
KQ2006711-11	Carbon, Total Organic	DUP	K2003949-002	Surface Water	1.02 mg/L	10 ml	1.02 mg/L	1	0.07	0.50		2	5/27/20 20:45	N	III
KQ2006711-12	Carbon, Total Organic	DUP	K2003949-003	Surface Water	1.12 mg/L	10 ml	1.12 mg/L	1	0.07	0.50		1	5/27/20 21:13	N	III
KQ2006711-13	Carbon, Total Organic	DUP	K2003949-004	Surface Water	0.47 mg/L	10 ml	0.47 mg/L J	1	0.07	0.50		11*	5/27/20 21:41	N	III
KQ2006711-14	Carbon, Total Organic	DUP	K2003949-005	Surface Water	1.34 mg/L	10 ml	1.34 mg/L	1	0.07	0.50		4	5/27/20 22:09	N	III
KQ2006711-15	Carbon, Total Organic	DUP	K2003949-006	Surface Water	0.46 mg/L	10 ml	0.46 mg/L J	1	0.07	0.50		5	5/27/20 22:37	N	III
KQ2006711-16	Carbon, Total Organic	DUP	K2003949-007	Surface Water	1.05 mg/L	10 ml	1.05 mg/L	1	0.07	0.50		2	5/27/20 23:05	N	III
KQ2006711-17	Carbon, Total Organic	DUP	K2003949-008	Surface Water	1.11 mg/L	10 ml	1.11 mg/L	1	0.07	0.50		10	5/28/20 00:47	N	III
KQ2006711-18	Carbon, Total Organic	DUP	K2003949-009	Surface Water	-0.04 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50		NC	5/28/20 01:15	N	III
KQ2006711-19	Carbon, Total Organic	DUP	K2003982-014	Water	1.28 mg/L	10 ml	26 mg/L	20	2	10		4	5/27/20 19:20	N	II
KQ2006711-20	Carbon, Total Organic	DUP	K2003982-015	Water	0.95 mg/L	10 ml	0.94 mg/L	1	0.07	0.50		3	5/27/20 19:48	N	II
KQ2006711-21	Carbon, Total Organic	DUP	K2003998-001	Surface Water	1.15 mg/L	10 ml	1.15 mg/L	1	0.07	0.50		4	5/28/20 01:43	N	III
KQ2006711-22	Carbon, Total Organic	DUP	K2003998-003	Surface Water	2.36 mg/L	10 ml	2.36 mg/L	1	0.07	0.50		2	5/28/20 02:39	N	III
KQ2006711-23	Carbon, Total Organic	DUP	K2003998-002	Surface Water	1.13 mg/L	10 ml	1.13 mg/L	1	0.07	0.50		6	5/28/20 02:11	N	III
KQ2006711-24	Carbon, Total Organic	DUP	K2003998-004	Surface Water	0.72 mg/L	10 ml	0.72 mg/L	1	0.07	0.50		4	5/28/20 03:07	N	III
KQ2006711-25	Carbon, Total Organic	DUP	K2003998-005	Surface Water	1.07 mg/L	10 ml	1.07 mg/L	1	0.07	0.50		<1	5/28/20 03:36	N	III
KQ2006711-26	Carbon, Total Organic	CCV		Water	24.09 mg/L	10 ml	24.1 mg/L	1					5/28/20 07:08	N	II
KQ2006711-27	Carbon, Total Organic	CCB		Water	0.02 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/28/20 07:23	N	II
KQ2006711-28	Carbon, Total Organic	DUP	K2004085-004	Water	1.79 mg/L	10 ml	1.79 mg/L	1	0.07	0.50		7	5/28/20 06:12	N	II
KQ2006711-29	Carbon, Total Organic	DUP	K2004085-005	Water	0.80 mg/L	10 ml	0.80 mg/L	1	0.07	0.50		12*	5/28/20 06:40	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:** 680713 **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
K2003876-002	Carbon, Dissolved Organic (DOC)	N/A		Water	3.94 mg/L	10 ml	3.94 mg/L	1	0.07	0.50			5/28/20 04:04	N	II
K2003876-004	Carbon, Dissolved Organic (DOC)	N/A		Water	2.86 mg/L	10 ml	2.86 mg/L	1	0.07	0.50			5/28/20 05:01	N	II
K2003932-003	Carbon, Dissolved Organic (DOC)	N/A		Water	33.52 mg/L	10 ml	33.5 mg/L	1	0.07	0.50			5/28/20 05:30	N	II
KQ2006712-01	Carbon, Dissolved Organic (DOC)	CCV		Water	24.82 mg/L	10 ml	24.8 mg/L	1					5/27/20 23:48	N	II
KQ2006712-02	Carbon, Dissolved Organic (DOC)	CCV		Water	24.00 mg/L	10 ml	24.0 mg/L	1					5/28/20 04:32	N	II
KQ2006712-03	Carbon, Dissolved Organic (DOC)	CCV		Water	24.09 mg/L	10 ml	24.1 mg/L	1					5/28/20 07:08	N	II
KQ2006712-04	Carbon, Dissolved Organic (DOC)	CCB		Water	-0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/28/20 00:02	N	II
KQ2006712-05	Carbon, Dissolved Organic (DOC)	CCB		Water	-0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/28/20 04:46	N	II
KQ2006712-06	Carbon, Dissolved Organic (DOC)	CCB		Water	0.02 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/28/20 07:23	N	II
KQ2006712-08	Carbon, Dissolved Organic (DOC)	DUP	K2003876-002	Water	3.92 mg/L	10 ml	3.92 mg/L	1	0.07	0.50		<1	5/28/20 04:04	N	II
KQ2006712-09	Carbon, Dissolved Organic (DOC)	DUP	K2003876-004	Water	2.83 mg/L	10 ml	2.83 mg/L	1	0.07	0.50		1	5/28/20 05:01	N	II
KQ2006712-10	Carbon, Dissolved Organic (DOC)	DUP	K2003932-003	Water	33.62 mg/L	10 ml	33.6 mg/L	1	0.07	0.50		<1	5/28/20 05:30	N	II
KQ2006712-11	Carbon, Dissolved Organic (DOC)	MB		Water	-0.05 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			5/28/20 00:17	N	II
KQ2006712-12	Carbon, Dissolved Organic (DOC)	LCS		Water	24.54 mg/L	10 ml	24.5 mg/L	1	0.07	0.50	98		5/28/20 00:32	N	II
KQ2006712-13	Carbon, Dissolved Organic (DOC)	MS	K2003932-003	Water	34.27 mg/L	10 ml	137 mg/L	4	0.3	2.0	104		5/28/20 05:58	N	II

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

0.350				OBSERVATIONS	13	ABOVE
0.292				STD Deviation	0.05513	ABOVE
0.225	0.225	0.225	0.225	AVERAGE	0.22446	0.2251
0.254	0.254	0.254	0.254	UCL	0.27959	0.2536
0.144				LCL	0.16933	BELOW
0.241	0.241	0.241	0.241			0.2412
0.231	0.231	0.231	0.231			0.2309
0.174	0.174	0.174	0.174	OBSERVATIONS	9	0.1736
0.223	0.223	0.223	0.223	STD Deviation	0.08974	0.2225
0.187	0.187	0.187	0.187	AVERAGE	0.21834	0.1871
0.167				UCL	0.30809	BELOW
0.192	0.192	0.192	0.192	LCL	0.12860	0.1918
0.239	0.239	0.239	0.239			0.2393
						BELOW
				OBSERVATIONS	9	BELOW
				STD Deviation	0.08974	BELOW
				AVERAGE	0.21834	BELOW
				UCL	0.30809	BELOW
				LCL	0.12860	BELOW
						BELOW
						BELOW
				OBSERVATIONS	9	BELOW
				STD Deviation	0.02931	BELOW
				AVERAGE	0.21834	BELOW
						BELOW
						BELOW
						BELOW
						BELOW
						BELOW

9/28/10

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	26.226	0.2183	26.0074	26.00736	26.0	5/26/2020
3	ccb	1	0.350	0.2183	0.1315	0.13146	<0.5	5/26/2020
4	mb	1	0.292	0.2183	0.0737	0.07366	<0.5	5/26/2020
5	lcs	1	25.975	0.2183	25.7568	25.75676	25.8	5/26/2020
6	K2004152-001	1	2.411	0.2183	2.1929	2.19286	2.19	5/26/2020
7	K2004152-001	1	2.338	0.2183	2.1193	2.11926	2.1	5/26/2020
8	K2004049-001	1	2.467	0.2183	2.2483	2.24826	2	5/26/2020
9	K2004049-001	1	2.446	0.2183	2.2281	2.22806	2.23	5/26/2020
10	K2004049-002	1	1.110	0.2183	0.8914	0.89136	0.89	5/26/2020
11	K2004049-002	1	1.066	0.2183	0.8473	0.84726	0.8	5/26/2020
12	K2004049-003	1	1.186	0.2183	0.9672	0.96716	0.97	5/26/2020
13	K2004049-003	1	1.176	0.2183	0.9575	0.95746	0.96	5/26/2020
14	K2004049-004	1	1.136	0.2183	0.9174	0.91736	0.92	5/26/2020
15	K2004049-004	1	1.093	0.2183	0.8742	0.87416	0.9	5/26/2020
16	K2004049-005	1	1.006	0.2183	0.7878	0.78776	0.8	5/26/2020
17	K2004049-005	1	0.939	0.2183	0.7207	0.72066	0.72	5/26/2020
18	KQ2006968-32	1	27.750	0.2183	27.5312	27.53116	27.5	5/26/2020
19	ccv	1	25.664	0.2183	25.4460	25.44596	25.4	5/26/2020
20	ccb	1	0.225	0.2183	0.0068	0.00676	<0.5	5/26/2020
21	K2004049-006	1	0.984	0.2183	0.7652	0.76516	0.77	5/27/2020
22	K2004049-006	1	0.975	0.2183	0.7564	0.75636	0.8	5/27/2020
23	K2004049-007	1	0.963	0.2183	0.7445	0.74446	0.7	5/27/2020
24	K2004049-007	1	0.899	0.2183	0.6806	0.68056	0.68	5/27/2020
25	K2004049-008	1	1.930	0.2183	1.7116	1.71156	1.71	5/27/2020

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: [illegible]	Date Analyzed 5/28/20	
Reviewed By: [illegible]	Date Reviewed 5/28/20	

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	
26	K2004049-008	1	1.941	0.2183	1.7222	1.72216	1.72	5/27/2020
27	K2004049-009	1	0.955	0.2183	0.7366	0.73656	0.74	5/27/2020
28	K2004049-009	1	0.932	0.2183	0.7133	0.71326	0.7	5/27/2020
29	K2004053-001	1	1.415	0.2183	1.1971	1.19706	1.2	5/27/2020
30	K2004053-001	1	1.348	0.2183	1.1295	1.12946	1.1	5/27/2020
31	K2004063-001	1	1.089	0.2183	0.8707	0.87066	0.9	5/27/2020
32	K2004063-001	1	0.989	0.2183	0.7709	0.77086	0.8	5/27/2020
33	K2004126-002	1	1.046	0.2183	0.8277	0.82766	0.8	5/27/2020
34	K2004126-002	1	1.007	0.2183	0.7891	0.78906	0.8	5/27/2020
35	K2004085-001	1	1.956	0.2183	1.7378	1.73776	1.7	5/27/2020
36	K2004085-001	1	1.918	0.2183	1.6999	1.69986	1.7	5/27/2020
37	K2004085-002	1	1.888	0.2183	1.6695	1.66946	1.7	5/27/2020
38	K2004085-002	1	1.870	0.2183	1.6517	1.65166	1.7	5/27/2020
39	K2004085-003	1	1.927	0.2183	1.7089	1.70886	1.7	5/27/2020
40	K2004085-003	1	1.838	0.2183	1.6198	1.61976	1.6	5/27/2020
41	ccv	1	24.598	0.2183	24.3792	24.37916	24.4	5/27/2020
42	ccb	1	0.254	0.2183	0.0353	0.03526	<0.5	5/27/2020
43	K2004023-003	1	20.163	0.2183	19.9444	19.94436	19.9	5/27/2020
44	K2004023-003	1	20.406	0.2183	20.1873	20.18726	20.2	5/27/2020
45	K2004023-004	200	1.413	0.2183	1.1947	238.932	238.9	5/27/2020
46	K2004023-004	200	1.300	0.2183	1.0818	216.352	216.4	5/27/2020
47	K2004023-005	4	24.798	0.2183	24.5796	98.31824	98.3	5/27/2020
48	K2004023-005	4	25.294	0.2183	25.0754	100.30144	100.3	5/27/2020
49	K2004023-006	1	35.534	0.2183	35.3159	35.31586	35.3	5/27/2020
50	K2004023-006	1	35.942	0.2183	35.7232	35.72316	35.7	5/27/2020

Analyzed By:	Date Analyzed 5/28/20
Reviewed By:	Date Reviewed 5/29/20

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	
51	ccv	1	24.819	0.2183	24.6007	24.60066	24.60	5/27/2020
52	ccb	1	0.241	0.2183	0.0229	0.02286	<0.5	5/27/2020
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:		Date Analyzed	5/28/20
Reviewed By:		Date Reviewed	5/29/20

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	ccv	1	24.598	0.2183	24.3792	24.37916	24.4	5/27/2020
3	ccb	1	0.254	0.2183	0.0353	0.03526	<0.5	5/27/2020
4	mb	1	0.144	0.2183	-0.0741	-0.07414	<0.5	5/27/2020
5	lcs	1	24.812	0.2183	24.5935	24.59346	24.6	5/27/2020
6	K2004023-007	1	13.660	0.2183	13.4421	13.44206	13.44	5/27/2020
7	K2004023-007	1	13.694	0.2183	13.4755	13.47546	13.5	5/27/2020
8	K2004023-008	1	8.525	0.2183	8.3069	8.30686	8	5/27/2020
9	K2004023-008	1	8.419	0.2183	8.2003	8.20026	8.20	5/27/2020
10	K2004023-009	200	2.123	0.2183	1.9046	380.912	380.91	5/27/2020
11	K2004023-009	200	2.096	0.2183	1.8780	375.592	375.6	5/27/2020
12	K2004023-010	200	1.642	0.2183	1.4239	284.772	284.77	5/27/2020
13	K2004023-010	200	1.637	0.2183	1.4190	283.792	283.79	5/27/2020
14	ccv	1	24.819	0.2183	24.6007	24.60066	24.60	5/27/2020
15	ccb	1	0.241	0.2183	0.0229	0.02286	<0.5	5/27/2020
16	K2004023-011	4	23.484	0.2183	23.2654	93.06144	93.1	5/27/2020
17	K2004023-011	4	23.820	0.2183	23.6021	94.40824	94.41	5/27/2020
18	K2003957-001	1	2.846	0.2183	2.6279	2.62786	2.6	5/27/2020
19	K2003957-001	1	2.681	0.2183	2.4626	2.46256	2.5	5/27/2020
20	K2004021-001	1	2.088	0.2183	1.8700	1.86996	1.87	5/27/2020
21	K2004021-001	1	2.040	0.2183	1.8221	1.82206	1.82	5/27/2020
22	K2003982-001	20	25.905	0.2183	25.6870	513.7392	513.7	5/27/2020
23	K2003982-001	20	26.015	0.2183	25.7963	515.9252	515.9	5/27/2020
24	K2003982-002	20	9.651	0.2183	9.4324	188.6472	188.65	5/27/2020
25	K2003982-002	20	9.552	0.2183	9.3337	186.6732	186.67	5/27/2020

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:	BLR	Date Analyzed	5/28/20
Reviewed By:		Date Reviewed	5/28/20

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	
26	K2003982-003	20	3.858	0.2183	3.6393	72.7852	72.79	5/27/2020
27	K2003982-003	20	3.699	0.2183	3.4810	69.6192	69.62	5/27/2020
28	KQ2006710-11	200	25.693	0.2183	25.4750	5094.992	5095.0	5/27/2020
29	K2003982-004	1	11.170	0.2183	10.9515	10.95146	11.0	5/27/2020
30	K2003982-004	1	11.191	0.2183	10.9726	10.97256	11.0	5/27/2020
31	K2003982-005	1	1.667	0.2183	1.4486	1.44856	1.4	5/27/2020
32	K2003982-005	1	1.521	0.2183	1.3022	1.30216	1.3	5/27/2020
33	ccv	1	24.985	0.2183	24.7669	24.76686	24.8	5/27/2020
34	ccb	1	0.231	0.2183	0.0126	0.01256	<0.5	5/27/2020
35	K2003982-006	20	1.873	0.2183	1.6545	33.0892	33.1	5/27/2020
36	K2003982-006	20	1.791	0.2183	1.5723	31.4452	31.4	5/27/2020
37	K2003982-007	1	8.084	0.2183	7.8660	7.86596	7.9	5/27/2020
38	K2003982-007	1	8.243	0.2183	8.0249	8.02486	8.0	5/27/2020
39	K2003982-008	1	8.546	0.2183	8.3277	8.32766	8.3	5/27/2020
40	K2003982-008	1	8.696	0.2183	8.4776	8.47756	8.5	5/27/2020
41	K2003982-009	1	2.771	0.2183	2.5523	2.55226	2.6	5/27/2020
42	K2003982-009	1	2.390	0.2183	2.1715	2.17146	2.2	5/27/2020
43	K2003982-010	1	2.306	0.2183	2.0872	2.08716	2.1	5/27/2020
44	K2003982-010	1	2.242	0.2183	2.0240	2.02396	2.0	5/27/2020
45	K2003982-011	1	0.917	0.2183	0.6984	0.69836	0.7	5/27/2020
46	K2003982-011	1	0.841	0.2183	0.6227	0.62266	0.6	5/27/2020
47	K2003982-012	1	0.596	0.2183	0.3775	0.37746	<0.5	5/27/2020
48	K2003982-012	1	0.536	0.2183	0.3172	0.31716	<0.5	5/27/2020
49	K2003982-013	1	0.549	0.2183	0.3307	0.33066	<0.5	5/27/2020
50	K2003982-013	1	0.580	0.2183	0.3618	0.36176	<0.5	5/27/2020

Analyzed By: BW	Date Analyzed 5/28/20
Reviewed By:	Date Reviewed 5/29/20

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	
51	ccv	1	25.257	0.2183	25.0382	25.03816	25.04	5/27/2020
52	ccb	1	0.223	0.2183	0.0042	0.00416	<0.5	5/27/2020
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: BNP	Date Analyzed 5/28/20
Reviewed By: JF	Date Reviewed 5/29/20

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	ccv	1	25.257	0.2183	25.0382	25.03816	25.0	5/27/2020
3	ccb	1	0.223	0.2183	0.0042	0.00416	<0.5	5/27/2020
4	K2003982-014	20	1.448	0.2183	1.2299	24.5972	24.6	5/27/2020
5	K2003982-014	20	1.499	0.2183	1.2808	25.6152	25.6	5/27/2020
6	K2003982-015	1	1.193	0.2183	0.9743	0.97426	0.97	5/27/2020
7	K2003982-015	1	1.163	0.2183	0.9450	0.94496	0.9	5/27/2020
8	K2003949-001	1	1.492	0.2183	1.2740	1.27396	1	5/27/2020
9	K2003949-001	1	1.432	0.2183	1.2137	1.21366	1.21	5/27/2020
10	K2003949-002	1	1.265	0.2183	1.0463	1.04626	1.05	5/27/2020
11	K2003949-002	1	1.243	0.2183	1.0243	1.02426	1.0	5/27/2020
12	K2003949-003	1	1.332	0.2183	1.1133	1.11326	1.11	5/27/2020
13	K2003949-003	1	1.343	0.2183	1.1246	1.12456	1.12	5/27/2020
14	K2003949-004	1	0.743	0.2183	0.5247	0.52466	0.52	5/27/2020
15	K2003949-004	1	0.690	0.2183	0.4713	0.47126	<0.5	5/27/2020
16	K2003949-005	1	1.607	0.2183	1.3884	1.38836	1.4	5/27/2020
17	K2003949-005	1	1.559	0.2183	1.3403	1.34026	1.34	5/27/2020
18	K2003949-006	1	0.696	0.2183	0.4781	0.47806	<0.5	5/27/2020
19	K2003949-006	1	0.674	0.2183	0.4559	0.45586	<0.5	5/27/2020
20	K2003949-007	1	1.284	0.2183	1.0660	1.06596	1.07	5/27/2020
21	K2003949-007	1	1.268	0.2183	1.0498	1.04976	1.05	5/27/2020
22	KQ2006711-07	1	27.509	0.2183	27.2904	27.29036	27.3	5/27/2020
23	ccv	1	25.038	0.2183	24.8194	24.81936	24.8	5/27/2020
24	ccb	1	0.187	0.2183	-0.0312	-0.03124	<0.5	5/28/2020
25	K2003949-008	1	1.436	0.2183	1.2176	1.21756	1.22	5/28/2020

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: BHP	Date Analyzed	5/28/20	
Reviewed By: JL	Date Reviewed	5/29/20	

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	
26	K2003949-008	1	1.325	0.2183	1.1063	1.10626	1.11	5/28/2020
27	K2003949-009	1	0.161	0.2183	-0.0575	-0.05754	<0.5	5/28/2020
28	K2003949-009	1	0.180	0.2183	-0.0382	-0.03824	<0.5	5/28/2020
29	K2003998-001	1	1.410	0.2183	1.1918	1.19176	1.2	5/28/2020
30	K2003998-001	1	1.366	0.2183	1.1473	1.14726	1.1	5/28/2020
31	K2003998-002	1	1.415	0.2183	1.1963	1.19626	1.2	5/28/2020
32	K2003998-002	1	1.345	0.2183	1.1269	1.12686	1.1	5/28/2020
33	K2003998-003	1	2.626	0.2183	2.4072	2.40716	2.4	5/28/2020
34	K2003998-003	1	2.577	0.2183	2.3590	2.35896	2.4	5/28/2020
35	K2003998-004	1	0.966	0.2183	0.7474	0.74736	0.7	5/28/2020
36	K2003998-004	1	0.940	0.2183	0.7213	0.72126	0.7	5/28/2020
37	K2003998-005	1	1.292	0.2183	1.0738	1.07376	1.1	5/28/2020
38	K2003998-005	1	1.286	0.2183	1.0679	1.06786	1.1	5/28/2020
39	ccv	1	24.214	0.2183	23.9956	23.99556	24.0	5/28/2020
40	ccb	1	0.192	0.2183	-0.0265	-0.02654	<0.5	5/28/2020
41	K2004085-004	1	2.147	0.2183	1.9285	1.92846	1.9	5/28/2020
42	K2004085-004	1	2.011	0.2183	1.7929	1.79286	1.8	5/28/2020
43	K2004085-005	1	1.116	0.2183	0.8976	0.89756	0.9	5/28/2020
44	K2004085-005	1	1.014	0.2183	0.7959	0.79586	0.8	5/28/2020
45	ccv	1	24.309	0.2183	24.0910	24.09096	24.1	5/28/2020
46	ccb	1	0.239	0.2183	0.0210	0.02096	<0.5	5/28/2020
47		1			0.0000	0	<0.5	
48		1			0.0000	0	<0.5	
49		1			0.0000	0	<0.5	
50		1			0.0000	0	<0.5	

Analyzed By:	KVP	Date Analyzed	5/28/20
Reviewed By:	JC	Date Reviewed	5/29/20

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	ccv	1	25.038	0.2183	24.8194	24.81936	24.8	5/27/2020
3	ccb	1	0.187	0.2183	-0.0312	-0.03124	<0.5	5/28/2020
4	mb	1	0.167	0.2183	-0.0514	-0.05144	<0.5	5/28/2020
5	lcs	1	24.763	0.2183	24.5448	24.54476	24.5	5/28/2020
6	K2003876-002	1	4.154	0.2183	3.9360	3.93596	3.94	5/28/2020
7	K2003876-002	1	4.136	0.2183	3.9175	3.91746	3.9	5/28/2020
8	ccv	1	24.214	0.2183	23.9956	23.99556	24	5/28/2020
9	ccb	1	0.192	0.2183	-0.0265	-0.02654	<0.5	5/28/2020
10	K2003876-004	1	3.077	0.2183	2.8591	2.85906	2.86	5/28/2020
11	K2003876-004	1	3.048	0.2183	2.8292	2.82916	2.8	5/28/2020
12	K2003932-003	1	33.741	0.2183	33.5228	33.52276	33.52	5/28/2020
13	K2003932-003	1	33.837	0.2183	33.6186	33.61856	33.62	5/28/2020
14	KQ2006712-13	4	34.485	0.2183	34.2671	137.06824	137.07	5/28/2020
15	ccv	1	24.309	0.2183	24.0910	24.09096	24.1	5/28/2020
16	ccb	1	0.239	0.2183	0.0210	0.02096	<0.5	5/28/2020
17	K2003842-005.06 doc	1	0.558	0.2169	0.3415	0.34154	<0.5	5/14/2020
18	K2003842-005.06 doc	1	0.488	0.2169	0.2706	0.27064	<0.5	5/14/2020
19	K2003842-006.06 doc	1	0.494	0.2169	0.2768	0.27684	<0.5	5/14/2020
20	K2003842-006.06 doc	1	0.463	0.2169	0.2461	0.24614	<0.5	5/14/2020
21	K2003842-007.06 doc	1	0.359	0.2169	0.1416	0.14164	<0.5	5/14/2020
22	K2003842-007.06 doc	1	0.377	0.2169	0.1601	0.16014	<0.5	5/14/2020
23	K2003842-008.06 doc	1	0.583	0.2169	0.3663	0.36634	<0.5	5/14/2020
24	K2003842-008.06 doc	1	0.572	0.2169	0.3552	0.35524	<0.5	5/14/2020
25	K2003842-009.06 doc	1	0.621	0.2169	0.4042	0.40424	<0.5	5/14/2020

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: BD	Date Analyzed 5/28/20	
Reviewed By: JC	Date Reviewed 5/28/20	

TOC: 681225, 680711, 680712
DOC: 680713

Schedule: 05262020

Version: 1
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2020/05/26 14:27 - Tuesday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use
(Clean)	Clean	Clean		1	True
(Clean)	Clean	Clean		1	True
(Clean)	Clean	Clean		1	True
(Blank)	Blank	Reagent/Acid Blank		1	True
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Cal Standard	[TOC] CAS_salt_010711 CAL [DI Water]	CAS_salt_010711 (CAS_salt_010711)	1	True
A	Cal Standard	[TOC] CAS_salt_010711 CAL [0.500 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
A	Cal Standard	[TOC] CAS_salt_010711 CAL [1.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
A	Cal Standard	[TOC] CAS_salt_010711 CAL [5.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Cal Standard	[TOC] CAS_salt_010711 CAL [10 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Cal Standard	[TOC] CAS_salt_010711 CAL [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Cal Standard	[TOC] CAS_salt_010711 CAL [50 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True
3	Sample	K2004152-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
4	Sample	K2004049-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
5	Sample	K2004049-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True
6	Sample	K2004049-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True
7	Sample	K2004049-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True
8	Sample	K2004049-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True
9	Sample	K2004152-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
10	Sample	K2004049-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True
11	Sample	K2004049-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True
12	Sample	K2004049-008.01	CAS_salt_010711 (CAS_salt_010711)	2	True
13	Sample	K2004049-009.01	CAS_salt_010711 (CAS_salt_010711)	2	True
14	Sample	K2004053-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
15	Sample	K2004063-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
16	Sample	K2004126-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True
17	Sample	K2004085-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
18	Sample	K2004085-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True
19	Sample	K2004085-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
21	Sample	K2004023-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True
22	Sample	K2004023-004.01 200x	CAS_salt_010711 (CAS_salt_010711)	2	True
23	Sample	K2004023-005.01 4x	CAS_salt_010711 (CAS_salt_010711)	2	True
24	Sample	K2004023-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True
25	Sample	K2004023-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True
26	Sample	K2004023-008.01	CAS_salt_010711 (CAS_salt_010711)	2	True
27	Sample	K2004023-009.01 200x	CAS_salt_010711 (CAS_salt_010711)	2	True
28	Sample	K2004023-010.01 200x	CAS_salt_010711 (CAS_salt_010711)	2	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
29	Sample	K2004023-011.01 4x	CAS_salt_010711 (CAS_salt_010711)	2	True
30	Sample	K2003957-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
31	Sample	K2004021-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True
32	Sample	K2003982-001.01 20x	CAS_salt_010711 (CAS_salt_010711)	2	True

Schedule: 05262020

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use
33	Sample	K2003982-002.01 20x	CAS_salt_010711 (CAS_salt_010711)	2	True
34	Sample	K2003982-003.01 20x	CAS_salt_010711 (CAS_salt_010711)	2	True
35	Sample	K2003982-003.01 ms 200x	CAS_salt_010711 (CAS_salt_010711)	1	True
36	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True
37	Sample	K2003982-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True
38	Sample	K2003982-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
39	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	1	True
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
40	Sample	K2003982-006.01 20x	CAS_salt_010711 (CAS_salt_010711)	2	True
41	Sample	K2003982-007.01	CAS_salt_010711 (CAS_salt_010711)	2	True
42	Sample	K2003982-008.01	CAS_salt_010711 (CAS_salt_010711)	2	True
43	Sample	K2003982-009.01	CAS_salt_010711 (CAS_salt_010711)	2	True
44	Sample	K2003982-010.01	CAS_salt_010711 (CAS_salt_010711)	2	True
45	Sample	K2003982-011.01	CAS_salt_010711 (CAS_salt_010711)	2	True
46	Sample	K2003982-012.01	CAS_salt_010711 (CAS_salt_010711)	2	True
47	Sample	K2003982-013.01	CAS_salt_010711 (CAS_salt_010711)	2	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
48	Sample	K2003982-014.01 20x	CAS_salt_010711 (CAS_salt_010711)	2	True
49	Sample	K2003982-015.01	CAS_salt_010711 (CAS_salt_010711)	2	True
50	Sample	K2003949-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True
51	Sample	K2003949-002.02	CAS_salt_010711 (CAS_salt_010711)	2	True
52	Sample	K2003949-003.02	CAS_salt_010711 (CAS_salt_010711)	2	True
53	Sample	K2003949-004.02	CAS_salt_010711 (CAS_salt_010711)	2	True
54	Sample	K2003949-005.02	CAS_salt_010711 (CAS_salt_010711)	2	True
55	Sample	K2003949-006.02	CAS_salt_010711 (CAS_salt_010711)	2	True
56	Sample	K2003949-007.02	CAS_salt_010711 (CAS_salt_010711)	2	True
57	Sample	K2003949-007.02 ms	CAS_salt_010711 (CAS_salt_010711)	1	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
58	Sample	MB4	CAS_salt_010711 (CAS_salt_010711)	1	True
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
59	Sample	K2003949-008.02	CAS_salt_010711 (CAS_salt_010711)	2	True
60	Sample	K2003949-009.02	CAS_salt_010711 (CAS_salt_010711)	2	True
61	Sample	K2003998-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True
62	Sample	K2003998-002.02	CAS_salt_010711 (CAS_salt_010711)	2	True
63	Sample	K2003998-003.02	CAS_salt_010711 (CAS_salt_010711)	2	True
64	Sample	K2003998-004.02	CAS_salt_010711 (CAS_salt_010711)	2	True
65	Sample	K2003998-005.02	CAS_salt_010711 (CAS_salt_010711)	2	True
66	Sample	K2003876-002.02 doc	CAS_salt_010711 (CAS_salt_010711)	2	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
67	Sample	K2003876-004.02 doc	CAS_salt_010711 (CAS_salt_010711)	2	True
68	Sample	K2003932-003.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True
69	Sample	K2003932-003.01 ms doc 4x	CAS_salt_010711 (CAS_salt_010711)	1	True
70	Sample	K2004085-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True
71	Sample	K2004085-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True
					False

Fusion Report - 05262020
Tuesday, May 26, 2020 02:50 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/05/28 09:03 - Thursday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	05262020	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) (v1)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/05/26 14:50

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	10.96	15.25	4.29	49.71	07:58
2	TC Clean	4.79	8.19	3.41	49.48	07:19
3	TC Clean	1.36	4.94	3.58	49.46	07:05
4	TC Clean	1.02	4.58	3.56	49.69	07:02

Sample Type: Clean — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/05/26 15:25

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.91	4.37	3.46	49.79	08:00
2	TC Clean	3.08	6.69	3.62	49.57	07:17
3	TC Clean	1.43	4.91	3.48	49.55	07:04
4	TC Clean	1.52	5.02	3.50	49.52	07:00

Sample Type: Clean From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/05/26 15:59

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.33	3.94	3.61	49.89	07:59
2	TC Clean	3.56	6.93	3.37	49.83	07:16
3	TC Clean	1.68	5.19	3.51	49.84	06:58
4	TC Clean	1.34	4.87	3.52	49.77	07:00

Sample Type: Blank (Creating v1390) From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(blank)		Reagent/Acid Blank	2020/05/26 16:33

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.81	4.18	3.37	49.71	05:14
2	TC Clean	3.63	7.01	3.38	49.76	07:15
3	TC Clean	1.87	5.25	3.38	49.74	07:04
4	TC Clean	1.75	5.14	3.40	49.91	07:02
5	Reagent Blank	3.29	6.88	3.60	49.77	08:10
6	Acid Blank	0.68	4.29	3.61	49.69	05:32

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	D	TOC	RB	0.1450 ppm	0.0000 ppm	0.0000%	2020/05/26 17:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1450	1.4501	7.52	11.07	3.55	49.89	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 6.4907 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v35)

Sample Type: Calibration Standard: CAS_salt_010711 CAL (Creating calibration From Schedule Version 1

CAS_salt_010711 v36)

	Pos	BAT	Concentration (ppm)	STD Conc	Dil	Sample ID	Result (Abs)	Std. Dev. (Abs)	RSD	Start Time
◆	D	TOC	0.0000	0 ppmC	1:1	[TOC] CAS_salt_010711 CAL [DI Water]	5.2860	0.0000	0%	2020/05/26 17:34
◆	A	TOC	0.5000	5 ppmC	1:10	[TOC] CAS_salt_010711 CAL [0.500 ppm]	7.7280	0.0000	0%	2020/05/26 17:49
◆	A	TOC	1.0000	5 ppmC	1:5	[TOC] CAS_salt_010711 CAL [1.0 ppm]	9.7320	0.0000	0%	2020/05/26 18:03
◆	A	TOC	5.0000	5 ppmC	1:1	[TOC] CAS_salt_010711 CAL [5.0 ppm]	30.7290	0.0000	0%	2020/05/26 18:17
◆	B	TOC	10.0000	50 ppmC	1:5	[TOC] CAS_salt_010711 CAL [10 ppm]	75.9880	0.0000	0%	2020/05/26 18:31
◆	B	TOC	25.0000	50 ppmC	1:2	[TOC] CAS_salt_010711 CAL [25 ppm]	182.4960	0.0000	0%	2020/05/26 18:46
◆	B	TOC	50.0000	50 ppmC	1:1	[TOC] CAS_salt_010711 CAL [50 ppm]	346.4790	0.0000	0%	2020/05/26 19:00

Pos	Base Analysis Type	ID	Rep #	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	DI Water	1	5.29	8.91	3.62	49.91	10:30
A	TOC	0.500 ppm	1	7.73	11.09	3.36	49.91	10:29
A	TOC	1.0 ppm	1	9.73	13.43	3.70	49.99	10:33
A	TOC	5.0 ppm	1	30.73	34.12	3.39	49.99	10:30
B	TOC	10 ppm	1	75.99	79.39	3.40	49.95	10:30
B	TOC	25 ppm	1	182.50	185.92	3.42	49.97	10:31
B	TOC	50 ppm	1	346.48	349.98	3.51	49.92	10:29

Completion State
Success - All Update Conditions met

Method
CAS_salt_010711 (v4)

Success Action
Auto (always)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	26.2257 ppm (PASS)	0.0000 ppm	0%	2020/05/26 19:14

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.2257	262.2571	184.99	188.45	3.46	49.87	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	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)	0.3498 ppm (PASS)	0.0000 ppm	0%	2020/05/26 19:29

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.3498	3.4982	6.12	9.61	3.49	49.83	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	1	TOC	MB1	0.2920 ppm	0.0000 ppm	0.0000%	2020/05/26 19:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2920	2.9203	5.57	8.97	3.40	49.79	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> LCS From Schedule Version 1

	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)	25.9751 ppm (PASS)	0.0000 ppm	0%	2020/05/26 19:58

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	25.9751	259.7515	183.26	186.59	3.33	49.76	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	25 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	2	TOC	ICS	0.7874 ppm	0.0000 ppm	0.0000%	2020/05/26 20:13

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7874	7.8736	9.00	12.72	3.72	49.73	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	3	TOC	K2004152-001.01	2.3744 ppm	0.0521 ppm	2.1900%	2020/05/26 20:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4112	24.1123	20.22	23.74	3.52	49.69	10:30
2	TOC	2.3376	23.3759	19.71	23.35	3.64	49.69	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	4	TOC	K2004049-001.01	2.4565 ppm	0.0143 ppm	0.5800%	2020/05/26 20:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4666	24.6663	20.60	24.19	3.58	49.68	10:26
2	TOC	2.4464	24.4638	20.46	24.04	3.58	49.64	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	5	TOC	K2004049-002.01	1.0876 ppm	0.0312 ppm	2.8700%	2020/05/26 21:24

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1097	11.0968	11.22	14.75	3.53	49.65	10:27
2	TOC	1.0656	10.6555	10.92	14.41	3.49	49.67	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	6	TOC	K2004049-003.01	1.1806 ppm	0.0069 ppm	0.5800%	2020/05/26 21:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

1	TOC	1.1855	11.8548	11.75	15.15	3.40	49.66	10:29
2	TOC	1.1758	11.7579	11.68	15.03	3.35	49.68	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	7	TOC	K2004049-004.01	1.1141 ppm	0.0306 ppm	2.7500%	2020/05/26 22:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1357	11.3572	11.40	14.77	3.37	49.69	10:31
2	TOC	1.0925	10.9246	11.11	14.65	3.54	49.67	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	8	TOC	K2004049-005.01	0.9725 ppm	0.0475 ppm	4.8800%	2020/05/26 22:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0061	10.0610	10.51	14.08	3.58	49.72	10:33
2	TOC	0.9390	9.3897	10.04	13.47	3.42	49.74	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	9	TOC	K2004152-001.01 ms	27.7495 ppm	0.0000 ppm	0.0000%	2020/05/26 23:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.7495	277.4953	195.37	198.86	3.48	49.76	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	25.6643 ppm (PASS)	0.0000 ppm	0%	2020/05/26 23:31

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.6643	256.6426	181.11	184.55	3.44	49.78	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	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)	0.2251 ppm (PASS)	0.0000 ppm	0%	2020/05/26 23:45

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.2251	2.2512	5.26	8.85	3.59	49.79	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	10	TOC	K2004049-006.01	0.9791 ppm	0.0062 ppm	0.6400%	2020/05/27 00:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9835	9.8353	10.35	13.88	3.53	49.81	10:27
2	TOC	0.9747	9.7470	10.29	13.73	3.44	49.84	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	11	TOC	K2004049-007.01	0.9309 ppm	0.0452 ppm	4.8600%	2020/05/27 00:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9628	9.6284	10.21	13.54	3.33	49.88	10:28
2	TOC	0.8989	8.9890	9.77	13.15	3.38	49.89	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	12	TOC	K2004049-008.01	1.9352 ppm	0.0075 ppm	0.3900%	2020/05/27 00:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9299	19.2993	16.90	20.40	3.50	49.88	10:27

2	TOC	1.9405	19.4049	16.97	20.51	3.54	49.91	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	13	TOC	K2004049-009.01	0.9432 ppm	0.0165 ppm	1.7500%	2020/05/27 01:24

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9549	9.5489	10.16	13.66	3.51	49.94	10:30
2	TOC	0.9316	9.3159	9.99	13.49	3.49	49.96	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	14	TOC	K2004053-001.01	1.3816 ppm	0.0478 ppm	3.4600%	2020/05/27 01:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4154	14.1535	13.34	16.79	3.45	49.96	10:27
2	TOC	1.3478	13.4780	12.87	16.28	3.41	50.03	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	15	TOC	K2004063-001.01	1.0391 ppm	0.0706 ppm	6.7900%	2020/05/27 02:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0890	10.8899	11.08	14.46	3.38	50.03	10:28
2	TOC	0.9892	9.8917	10.39	13.91	3.52	50.03	10:23

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	16	TOC	K2004126-002.01	1.0267 ppm	0.0273 ppm	2.6600%	2020/05/27 02:49

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0460	10.4602	10.78	14.28	3.49	50.05	10:26
2	TOC	1.0074	10.0740	10.52	13.92	3.41	50.06	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	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
◆	17	TOC	K2004085-001.01	1.9372 ppm	0.0268 ppm	1.3800%	2020/05/27 03:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9561	19.5611	17.08	20.38	3.30	50.05	10:29
2	TOC	1.9182	19.1821	16.81	20.24	3.42	50.08	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	18	TOC	K2004085-002.01	1.8789 ppm	0.0126 ppm	0.6700%	2020/05/27 03:45

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.8878	18.8783	16.60	20.01	3.40	50.09	10:29
2	TOC	1.8700	18.7003	16.48	20.00	3.52	50.11	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	19	TOC	K2004085-003.01	1.8826 ppm	0.0630 ppm	3.3500%	2020/05/27 04:13

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9272	19.2718	16.88	20.28	3.41	50.13	10:26
2	TOC	1.8381	18.3806	16.26	19.74	3.48	50.15	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	24.5975 ppm (PASS)	0.0000 ppm	0%	2020/05/27 04:41

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.5975	245.9750	173.74	177.15	3.41	50.14	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

			Concentration			Min / Max				

	Pos	BAT	(ppm)	Dil	Sample ID	(% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.2536 ppm (PASS)	0.0000 ppm	0%	2020/05/27 04:56

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.2536	2.5362	5.46	8.82	3.37	50.16	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	20	TOC	MB2	0.1442 ppm	0.0000 ppm	0.0000%	2020/05/27 05:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1442	1.4419	4.55	8.12	3.57	50.18	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> LCS From Schedule Version 1

	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)	24.8118 ppm (PASS)	0.0000 ppm	0%	2020/05/27 05:25

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.8118	248.1175	175.22	178.72	3.51	50.23	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	25 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	21	TOC	K2004023-003.01	20.2842 ppm	0.1718 ppm	0.8500%	2020/05/27 05:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	20.1627	201.6274	142.93	146.49	3.56	50.21	10:31
2	TOC	20.4056	204.0563	144.61	148.27	3.66	50.21	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	22	TOC	K2004023-004.01 200x	1.3565 ppm	0.0799 ppm	5.8900%	2020/05/27 06:08

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4130	14.1304	13.32	16.79	3.46	50.24	10:28
2	TOC	1.3001	13.0006	12.54	15.96	3.42	50.24	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	23	TOC	K2004023-005.01 4x	25.0458 ppm	0.3506 ppm	1.4000%	2020/05/27 06:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	24.7979	247.9794	174.97	178.42	3.45	50.23	10:27
2	TOC	25.2937	252.9371	178.40	182.04	3.64	50.23	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	24	TOC	K2004023-006.01	35.7378 ppm	0.2880 ppm	0.8100%	2020/05/27 07:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	35.5342	355.3423	249.19	252.73	3.55	50.20	10:27
2	TOC	35.9415	359.4146	252.00	255.54	3.54	50.19	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	25	TOC	K2004023-007.01	13.6771 ppm	0.0236 ppm	0.1700%	2020/05/27 07:32

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	13.6604	136.6035	97.98	101.47	3.49	50.16	10:29
2	TOC	13.6938	136.9377	98.21	101.48	3.27	50.16	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	26	TOC	K2004023-008.01	8.4719 ppm	0.0754 ppm	0.8900%	2020/05/27 08:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.5252	85.2519	62.48	65.66	3.17	50.12	10:28
2	TOC	8.4186	84.1857	61.75	65.21	3.47	50.11	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	27	TOC	K2004023-009.01 200x	2.1096 ppm	0.0188 ppm	0.8900%	2020/05/27 08:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1229	21.2291	18.23	21.66	3.43	50.10	10:25
2	TOC	2.0963	20.9629	18.05	21.37	3.32	50.08	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	28	TOC	K2004023-010.01 200x	1.6397 ppm	0.0035 ppm	0.2100%	2020/05/27 08:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6422	16.4219	14.91	18.46	3.56	50.06	10:30
2	TOC	1.6373	16.3727	14.87	18.24	3.37	50.04	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	24.8190 ppm (PASS)	0.0000 ppm	0%	2020/05/27 09:24

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.8190	248.1899	175.27	178.65	3.38	50.04	10:35

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	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)	0.2412 ppm (PASS)	0.0000 ppm	0%	2020/05/27 09:39

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.2412	2.4118	5.37	8.68	3.31	50.01	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	29	TOC	K2004023-011.01 4x	23.6521 ppm	0.2381 ppm	1.0100%	2020/05/27 09:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	23.4837	234.8366	165.89	169.36	3.48	49.98	10:31
2	TOC	23.8204	238.2044	168.21	171.68	3.47	49.99	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	30	TOC	K2003957-001.01	2.7636 ppm	0.1169 ppm	4.2300%	2020/05/27 10:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.8462	28.4623	23.23	26.66	3.43	49.93	10:28
2	TOC	2.6809	26.8088	22.09	25.37	3.29	49.94	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	31	TOC	K2004021-001.01	2.0644 ppm	0.0339 ppm	1.6400%	2020/05/27 10:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.0883	20.8833	17.99	21.42	3.43	49.94	10:28
2	TOC	2.0404	20.4045	17.66	21.18	3.53	49.94	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	32	TOC	K2003982-001.01 20x	25.9600 ppm	0.0772 ppm	0.3000%	2020/05/27 11:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	25.9053	259.0535	182.63	186.08	3.46	49.89	10:27
2	TOC	26.0146	260.1457	183.38	186.63	3.25	49.91	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	33	TOC	K2003982-002.01 20x	9.6013 ppm	0.0698 ppm	0.7300%	2020/05/27 11:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.6507	96.5068	70.26	73.69	3.42	49.84	10:28
2	TOC	9.5520	95.5202	69.58	73.03	3.45	49.87	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	34	TOC	K2003982-003.01 20x	3.7785 ppm	0.1119 ppm	2.9600%	2020/05/27 12:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.8576	38.5758	30.22	33.71	3.49	49.84	10:27
2	TOC	3.6993	36.9932	29.13	32.56	3.44	49.92	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	35	TOC	K2003982-003.01 ms 200x	25.6933 ppm	0.0000 ppm	0.0000%	2020/05/27 12:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	25.6933	256.9327	181.16	184.56	3.40	50.02	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	36	TOC	RB	0.2606 ppm	0.0000 ppm	0.0000%	2020/05/27 12:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2606	2.6064	5.36	8.81	3.46	50.10	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	37	TOC	K2003982-004.01	11.1804 ppm	0.0149 ppm	0.1300%	2020/05/27 13:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	11.1698	111.6980	80.77	84.28	3.51	50.24	10:26
2	TOC	11.1909	111.9092	80.91	84.47	3.56	50.19	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	38	TOC	K2003982-005.01	1.5937 ppm	0.1035 ppm	6.5000%	2020/05/27 13:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6669	16.6693	15.08	18.59	3.52	50.15	10:26
2	TOC	1.5205	15.2052	14.06	17.57	3.50	50.20	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	24.9852 ppm (PASS)	0.0000 ppm	0%	2020/05/27 14:08

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.9852	249.8521	176.42	179.76	3.34	50.14	10:28

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	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)	0.2309 ppm (PASS)	0.0000 ppm	0%	2020/05/27 14:22

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.2309	2.3091	5.30	8.83	3.53	50.08	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos D

Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	39	TOC	MB3	0.1736 ppm	0.0000 ppm	0.0000%	2020/05/27 14:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1736	1.7355	4.75	8.20	3.44	50.09	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> LCS From Schedule Version 1

	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)	24.7935 ppm (PASS)	0.0000 ppm	0%	2020/05/27 14:52

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.7935	247.9352	175.09	178.70	3.61	50.06	10:28

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	25 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	40	TOC	K2003982-006.01 20x	1.8317 ppm	0.0581 ppm	3.1700%	2020/05/27 15:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.8728	18.7278	16.50	20.20	3.70	50.01	10:24
2	TOC	1.7906	17.9061	15.93	19.49	3.56	50.05	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	41	TOC	K2003982-007.01	8.1637 ppm	0.1124 ppm	1.3800%	2020/05/27 15:35

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

1	TOC	8.0843	80.8425	59.44	62.84	3.40	50.01	10:28
2	TOC	8.2432	82.4324	60.54	63.96	3.42	49.97	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	42	TOC	K2003982-008.01	8.6210 ppm	0.1060 ppm	1.2300%	2020/05/27 16:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.5460	85.4602	62.63	66.05	3.42	50.00	10:26
2	TOC	8.6959	86.9589	63.66	66.99	3.32	50.00	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	43	TOC	K2003982-009.01	2.5802 ppm	0.2692 ppm	10.4300%	2020/05/27 16:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.7706	27.7057	22.71	26.17	3.46	49.95	10:28
2	TOC	2.3898	23.8981	20.07	23.47	3.40	49.95	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	44	TOC	K2003982-010.01	2.2739 ppm	0.0447 ppm	1.9700%	2020/05/27 16:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.3055	23.0548	19.49	23.01	3.52	49.92	10:29
2	TOC	2.2423	22.4226	19.05	22.47	3.42	49.87	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	45	TOC	K2003982-011.01	0.8789 ppm	0.0535 ppm	6.0900%	2020/05/27 17:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9167	9.1669	9.89	13.30	3.41	49.88	10:25
2	TOC	0.8410	8.4103	9.37	12.93	3.56	49.90	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	46	TOC	K2003982-012.01	0.5657 ppm	0.0427 ppm	7.5400%	2020/05/27 17:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5958	5.9583	7.67	11.08	3.41	49.83	10:29
2	TOC	0.5355	5.3550	7.26	10.79	3.53	49.82	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	47	TOC	K2003982-013.01	0.5645 ppm	0.0220 ppm	3.9000%	2020/05/27 18:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5490	5.4896	7.35	10.82	3.47	49.86	10:27
2	TOC	0.5801	5.8006	7.56	10.93	3.37	49.85	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	25.2565 ppm (PASS)	0.0000 ppm	0%	2020/05/27 18:51

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.2565	252.5645	178.29	181.78	3.49	49.84	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	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)	0.2225 ppm (PASS)	0.0000 ppm	0%	2020/05/27 19:06

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.2225	2.2252	5.24	8.65	3.41	49.88	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D

Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	48	TOC	K2003982-014.01 20x	1.4737 ppm	0.0360 ppm	2.4400%	2020/05/27 19:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4482	14.4819	13.56	17.06	3.50	49.91	10:27
2	TOC	1.4991	14.9911	13.92	17.39	3.47	49.86	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	49	TOC	K2003982-015.01	1.1780 ppm	0.0207 ppm	1.7500%	2020/05/27 19:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1926	11.9257	11.80	15.28	3.48	49.92	10:25
2	TOC	1.1633	11.6335	11.60	15.03	3.44	49.93	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	50	TOC	K2003949-001.02	1.4622 ppm	0.0427 ppm	2.9200%	2020/05/27 20:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4923	14.9232	13.87	17.21	3.34	49.87	10:29
2	TOC	1.4320	14.3199	13.45	16.70	3.25	49.94	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	51	TOC	K2003949-002.02	1.2536 ppm	0.0155 ppm	1.2400%	2020/05/27 20:45

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2646	12.6461	12.30	15.69	3.40	49.86	10:25
2	TOC	1.2426	12.4262	12.14	15.63	3.48	49.89	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

		Analysis			Std. Dev.		

	Pos	Type	Sample ID	Result (ppmC)	(ppmC)	RSD	Start Time
◈	52	TOC	K2003949-003.02	1.3372 ppm	0.0080 ppm	0.6000%	2020/05/27 21:13

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3316	13.3159	12.76	16.21	3.45	49.86	10:28
2	TOC	1.3429	13.4288	12.84	16.35	3.51	49.83	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	53	TOC	K2003949-004.02	0.7163 ppm	0.0377 ppm	5.2700%	2020/05/27 21:41

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7430	7.4295	8.69	12.23	3.54	49.77	10:26
2	TOC	0.6896	6.8957	8.32	12.02	3.70	49.74	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	54	TOC	K2003949-005.02	1.5827 ppm	0.0341 ppm	2.1500%	2020/05/27 22:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6067	16.0674	14.66	18.23	3.57	49.72	10:26
2	TOC	1.5586	15.5857	14.33	17.91	3.58	49.71	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	55	TOC	K2003949-006.02	0.6853 ppm	0.0157 ppm	2.2800%	2020/05/27 22:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6964	6.9637	8.37	11.97	3.60	49.69	10:28
2	TOC	0.6742	6.7424	8.22	11.71	3.49	49.68	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	56	TOC	K2003949-007.02	1.2762 ppm	0.0115 ppm	0.9000%	2020/05/27 23:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2843	12.8429	12.43	15.93	3.50	49.68	10:27
2	TOC	1.2681	12.6808	12.32	15.90	3.58	49.68	10:25

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	57	TOC	K2003949-007.02 ms	27.5087 ppm	0.0000 ppm	0.0000%	2020/05/27 23:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.5087	275.0867	193.71	197.32	3.61	49.68	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	25.0377 ppm (PASS)	0.0000 ppm	0%	2020/05/27 23:48

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.0377	250.3772	176.78	180.24	3.46	49.69	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	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)	0.1871 ppm (PASS)	0.0000 ppm	0%	2020/05/28 00:02

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.1871	1.8708	5.00	8.58	3.58	49.70	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	58	TOC	MB4	0.1669 ppm	0.0000 ppm	0.0000%	2020/05/28 00:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1669	1.6690	4.71	8.10	3.39	49.70	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> LCS From Schedule Version 1

	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)	24.7631 ppm (PASS)	0.0000 ppm	0%	2020/05/28 00:32

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.7631	247.6315	174.88	178.21	3.33	49.71	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	25 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	59	TOC	K2003949-008.02	1.3803 ppm	0.0787 ppm	5.7000%	2020/05/28 00:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4359	14.3590	13.48	17.10	3.62	49.71	10:25
2	TOC	1.3246	13.2465	12.71	16.28	3.57	49.72	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	60	TOC	K2003949-009.02	0.1704 ppm	0.0136 ppm	7.9800%	2020/05/28 01:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1608	1.6082	4.67	8.32	3.65	49.72	10:27
2	TOC	0.1801	1.8006	4.80	8.37	3.57	49.73	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	61	TOC	K2003998-001.02	1.3879 ppm	0.0315 ppm	2.2700%	2020/05/28 01:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4101	14.1015	13.30	16.91	3.60	49.75	10:26
2	TOC	1.3656	13.6559	12.99	16.61	3.61	49.80	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	62	TOC	K2003998-002.02	1.3799 ppm	0.0491 ppm	3.5600%	2020/05/28 02:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4146	14.1463	13.33	16.74	3.41	49.75	10:27
2	TOC	1.3452	13.4519	12.85	16.34	3.49	49.76	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	63	TOC	K2003998-003.02	2.6014 ppm	0.0341 ppm	1.3100%	2020/05/28 02:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.6255	26.2547	21.70	25.16	3.45	49.78	10:26
2	TOC	2.5773	25.7730	21.37	24.89	3.52	49.78	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	64	TOC	K2003998-004.02	0.9526 ppm	0.0185 ppm	1.9400%	2020/05/28 03:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9657	9.6574	10.23	13.60	3.37	49.79	10:28
2	TOC	0.9396	9.3955	10.05	13.66	3.61	49.79	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	65	TOC	K2003998-005.02	1.2891 ppm	0.0042 ppm	0.3300%	2020/05/28 03:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2921	12.9210	12.49	16.11	3.63	49.80	10:27
2	TOC	1.2862	12.8617	12.44	15.84	3.39	49.81	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC)	CAS_salt_010711	CAS_salt_010711

(v1390) (v4) (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	66	TOC	K2003876-002.02 doc	4.1450 ppm	0.0131 ppm	0.3200%	2020/05/28 04:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.1543	41.5429	32.27	35.65	3.38	49.81	10:30
2	TOC	4.1358	41.3577	32.14	35.71	3.56	49.81	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	24.2139 ppm (PASS)	0.0000 ppm	0%	2020/05/28 04:32

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.2139	242.1385	171.08	174.64	3.55	49.83	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	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)	0.1918 ppm (PASS)	0.0000 ppm	0%	2020/05/28 04:46

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.1918	1.9185	5.03	8.54	3.51	49.84	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	67	TOC	K2003876-004.02 doc	3.0624 ppm	0.0212 ppm	0.6900%	2020/05/28 05:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.0774	30.7741	24.83	28.40	3.57	49.83	10:28
2	TOC	3.0475	30.4746	24.62	28.07	3.45	49.84	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	68	TOC	K2003932-003.01 doc	33.7890 ppm	0.0677 ppm	0.2000%	2020/05/28 05:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	33.7411	337.4111	236.79	240.10	3.31	49.83	10:25
2	TOC	33.8369	338.3688	237.45	240.92	3.46	49.85	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	69	TOC	K2003932-003.01 ms doc 4x	34.4854 ppm	0.0000 ppm	0.0000%	2020/05/28 05:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	34.4854	344.8541	241.94	245.50	3.56	49.87	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	70	TOC	K2004085-004.01	2.0790 ppm	0.0958 ppm	4.6100%	2020/05/28 06:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1468	21.4678	18.39	21.79	3.39	49.88	10:25
2	TOC	2.0112	20.1123	17.46	20.87	3.41	49.90	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC) (v1390)	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	71	TOC	K2004085-005.01	1.0650 ppm	0.0719 ppm	6.7500%	2020/05/28 06:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1159	11.1590	11.27	14.60	3.33	49.90	10:28
2	TOC	1.0142	10.1420	10.56	14.03	3.46	49.88	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 3.5543 (IC)	CAS_salt_010711	CAS_salt_010711

(v1390) (v4) (v36)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	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)	24.3093 ppm (PASS)	0.0000 ppm	0%	2020/05/28 07:08

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.3093	243.0933	171.74	175.10	3.36	49.88	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	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)	0.2393 ppm (PASS)	0.0000 ppm	0%	2020/05/28 07:23

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.2393	2.3930	5.36	8.78	3.42	49.87	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v36)	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
v1389	1.1383	0.8660	0.0000	0.0000	0.0000	2020/05/26 13:05	Fusion1 (Fusion1)
v1390	1.0953	0.6790	0.0000	0.0000	0.0000	2020/05/26 17:19	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v35	Calibration curve formula:	TOC: y = 7.105x + 6.969
Ver Creation:	2020/05/09 16:50	r^2 value:	TOC: r^2 = 0.99936
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	6.6220	0.0000		2020/05/09 15:23
0.500 ppm	9.3820	0.5000		2020/05/09 15:38
1.0 ppm	12.1910	1.0000		2020/05/09 15:52
5.0 ppm	39.9300	5.0000		2020/05/09 16:06
10 ppm	81.4900	10.0000		2020/05/09 16:20
25 ppm	190.3090	25.0000		2020/05/09 16:35
50 ppm	358.9940	50.0000		2020/05/09 16:49

Name: CAS_salt_010711 (TOC)

Version:	v36	Calibration curve formula:	TOC: y = 6.913x + 3.706
Ver Creation:	2020/05/26 19:14	r^2 value:	TOC: r^2 = 0.99884
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	5.2860	0.0000		2020/05/26 17:47
0.500 ppm	7.7280	0.5000		2020/05/26 18:02
1.0 ppm	9.7320	1.0000		2020/05/26 18:16
5.0 ppm	30.7290	5.0000		2020/05/26 18:30
10 ppm	75.9880	10.0000		2020/05/26 18:45
25 ppm	182.4960	25.0000		2020/05/26 18:59
50 ppm	346.4790	50.0000		2020/05/26 19:13

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

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml

AcidVolume	0.5 ml	ICSamplePrimeVolume	2.0 ml
ReagentVolume	2.0 ml	ICSpargeRinseVolume	12.0 ml
UVReactorPrerinse	Off	BaselineStabilizeTime	0.70 min
UVReactorPrerinseVolume	5.0	DetectorPressureFlow	150 ml/min
NumberOfUVReactorPrerinses	1	SyringeSpeedWaste	10
ICSpargeTime	1.00 mins	SyringeSpeedAcid	7
DetectorSweepFlow	500 ml/min	SyringeSpeedReagent	7
PreSpargeTime	2.00 mins	SyringeSpeedDIWater	7
SystemFlow	500 ml/min	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	2020/05/28 07:38

ALS Environmental

StarLIMS Run: 681225, 680711, 680712, 680713

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: 5/9/20

ICAL ID: 19-GEN-19-J->20-B

ICS ID: 19-GEN-8-4-G

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 19-GEN-8-15-B 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 19-GEN-08-19-E

21 % H3PO4: 19-GEN-08-19-D

Equipment ID: K-TOC-03

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

FILTER ID: 16967789

Analyzed By:	Date Analyzed: 5/26/20
Reviewed By:	Date Reviewed: 5/28/20

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June 05, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS20050754**

Laboratory Results for: **Groundwater Treatment Plant Quarterly Influent Samples**

Dear Marcia,

ALS Environmental received 2 sample(s) on May 20, 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: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
Work Order: HS20050754

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20050754-01	LH18/24-SP140_051920	Water		19-May-2020 14:00	20-May-2020 09:25	☐
HS20050754-02	Trip Blank	Water		19-May-2020 00:01	20-May-2020 09:25	☐

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Groundwater Treatment Plant Quarterly Influent Samples
Work Order: HS20050754

Work Order Comments

• The analysis for Perchlorate was subcontracted to ALS Salt Lake City, UT. Final report attached.

GCMS Semivolatiles by Method SW8270SIM

Batch ID: 153733

Sample ID: LH18/24-SP140_051920 (HS20050754-01)

• The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: LCSD-153733

• The RPD between the LCS and LCSD was outside of the control limit.

Sample ID: MBLK-153733

• High %Recovery for surrogate 4-Terphenyl-d14, it is not associated with target compound.

GCMS Volatiles by Method SW8260

Batch ID: R362012

Sample ID: LH18/24-SP140_051920 (HS20050754-01MS)

• MS/MSD failed QC limits due to background sample.
The RPD between the MS and MSD was outside of the control limit.

Batch ID: R362091

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

Metals by Method SW7470

Batch ID: 153928

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

Metals by Method SW6020

Batch ID: 153795

Sample ID: HS20050797-01MS

• MS/MSD and DUPs are for an unrelated sample

WetChemistry by Method SW9056

Batch ID: R362252

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

WetChemistry by Method E410.4

Batch ID: R362235

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

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Groundwater Treatment Plant Quarterly Influent Samples
Work Order: HS20050754

WetChemistry by Method E1664A

Batch ID: R362159

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

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Groundwater Treatment Plant Quarterly Influent Samples WorkOrder:HS20050754

Sample ID: LH18/24-SP140_051920 Lab ID:HS20050754-01

Collection Date: 19-May-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 21:27
1,1,1-Trichloroethane	**2.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-May-2020 21:27
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	21-May-2020 21:27
1,1,2-Trichloroethane	**2.1**		**0.30**	**1.0**	**1.0**	**UG/L**	1	21-May-2020 21:27
1,1-Dichloroethane	**9.6**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-May-2020 21:27
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 21:27
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 21:27
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	21-May-2020 21:27
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	21-May-2020 21:27
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	21-May-2020 21:27
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 21:27
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 21:27
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 21:27
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	21-May-2020 21:27
1,2-Dichloroethane	**50**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-May-2020 21:27
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	21-May-2020 21:27
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 21:27
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	21-May-2020 21:27
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 21:27
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	21-May-2020 21:27
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 21:27
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	21-May-2020 21:27
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 21:27
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	21-May-2020 21:27
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	21-May-2020 21:27
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 21:27
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	21-May-2020 21:27
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	21-May-2020 21:27
Benzene	**2.5**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-May-2020 21:27
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	21-May-2020 21:27
Bromochloromethane	**17**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-May-2020 21:27
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 21:27
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	21-May-2020 21:27
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	21-May-2020 21:27
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	21-May-2020 21:27
Carbon tetrachloride	**7.3**		**0.50**	**1.0**	**1.0**	**UG/L**	1	21-May-2020 21:27
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 21:27
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 21:27
Chloroform	**13**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-May-2020 21:27

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

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Groundwater Treatment Plant Quarterly Influent Samples WorkOrder:HS20050754
Sample ID: LH18/24-SP140_051920 Lab ID:HS20050754-01
Collection Date: 19-May-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 21:27
cis-1,2-Dichloroethene	**3,000**		**40**	**100**	**200**	**UG/L**	200	22-May-2020 16:00
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	21-May-2020 21:27
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 21:27
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 21:27
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 21:27
Ethylbenzene	**1.5**		**0.30**	**1.0**	**1.0**	**UG/L**	1	21-May-2020 21:27
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	21-May-2020 21:27
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 21:27
m,p-Xylene	**1.0**	J	**0.50**	**1.0**	**2.0**	**UG/L**	1	21-May-2020 21:27
Methylene chloride	**4,300**		**80**	**200**	**400**	**UG/L**	200	22-May-2020 16:00
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	21-May-2020 21:27
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 21:27
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 21:27
o-Xylene	**0.76**	J	**0.30**	**1.0**	**1.0**	**UG/L**	1	21-May-2020 21:27
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 21:27
Styrene	**1.7**		**0.30**	**1.0**	**1.0**	**UG/L**	1	21-May-2020 21:27
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 21:27
Tetrachloroethene	**77**		**0.30**	**1.0**	**1.0**	**UG/L**	1	21-May-2020 21:27
Toluene	**2.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-May-2020 21:27
trans-1,2-Dichloroethene	**11**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-May-2020 21:27
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 21:27
Trichloroethene	**5,900**		**40**	**100**	**200**	**UG/L**	200	22-May-2020 16:00
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 21:27
Vinyl chloride	**99**		**0.20**	**0.50**	**1.0**	**UG/L**	1	21-May-2020 21:27
Surr: 1,2-Dichloroethane-d4	*90.4*			**0**	*81-118*	*%REC*	*1*	*21-May-2020 21:27*
Surr: 1,2-Dichloroethane-d4	*89.6*			**0**	*81-118*	*%REC*	*200*	*22-May-2020 16:00*
Surr: 4-Bromofluorobenzene	*99.7*			**0**	*85-114*	*%REC*	*1*	*21-May-2020 21:27*
Surr: 4-Bromofluorobenzene	*97.1*			**0**	*85-114*	*%REC*	*200*	*22-May-2020 16:00*
Surr: Dibromofluoromethane	*91.4*			**0**	*80-119*	*%REC*	*1*	*21-May-2020 21:27*
Surr: Dibromofluoromethane	*90.3*			**0**	*80-119*	*%REC*	*200*	*22-May-2020 16:00*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*1*	*21-May-2020 21:27*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*200*	*22-May-2020 16:00*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 21-May-2020		Analyst: ACN
1,4-Dioxane	**37**		**1.0**	**1.0**	**1.0**	**ug/L**	100	29-May-2020 14:56
Surr: 2-Fluorobiphenyl	*0*	*S*		0	*40-140*	*%REC*	*100*	*29-May-2020 14:56*
Surr: 4-Terphenyl-d14	*0*	*S*		0	*40-140*	*%REC*	*100*	*29-May-2020 14:56*
Surr: Nitrobenzene-d5	*0*	*S*		0	*40-140*	*%REC*	*100*	*29-May-2020 14:56*

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

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Groundwater Treatment Plant Quarterly Influent Samples WorkOrder:HS20050754
Sample ID: LH18/24-SP140_051920 Lab ID:HS20050754-01
Collection Date: 19-May-2020 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 26-May-2020		Analyst: JHD
Aluminum	**0.187**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	28-May-2020 16:22
Antimony	**0.00116**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	28-May-2020 16:22
Arsenic	**0.00118**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	28-May-2020 16:22
Barium	**0.417**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	28-May-2020 16:22
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	28-May-2020 16:22
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	28-May-2020 16:22
Calcium	**24.2**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	28-May-2020 16:22
Chromium	**0.00118**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	28-May-2020 16:22
Cobalt	**0.00597**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	28-May-2020 16:22
Iron	**0.896**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	28-May-2020 16:22
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	28-May-2020 16:22
Magnesium	**18.5**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	28-May-2020 16:22
Manganese	**0.376**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	28-May-2020 16:22
Nickel	**0.00839**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	28-May-2020 16:22
Potassium	**1.05**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	28-May-2020 16:22
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	28-May-2020 16:22
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	28-May-2020 16:22
Sodium	**139**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	28-May-2020 16:22
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	28-May-2020 16:22
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	28-May-2020 16:22
Zinc	**0.0227**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	28-May-2020 16:22
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 28-May-2020		Analyst: FO
Mercury	**0.0000310**	J	**0.0000300**	**0.000100**	**0.000200**	**mg/L**	1	28-May-2020 16:24
OIL & GREASE (HEM) BY E1664A		**Method:E1664A**						Analyst: KAH
Oil and Grease	2.00	U	0.610	2.00	2.00	mg/L	1	26-May-2020 14:10
CHEMICAL OXYGEN DEMAND BY E410.4		**Method:E410.4**						Analyst: TH
Chemical Oxygen Demand	**19.0**		**5.00**	**15.0**	**15.0**	**mg/L**	1	27-May-2020 15:00
ANIONS BY SW9056A		**Method:SW9056**						Analyst: JHD
Chloride	**239**		**2.00**	**5.00**	**5.00**	**mg/L**	10	27-May-2020 05:52
Sulfate	**31.6**		**0.200**	**0.500**	**0.500**	**mg/L**	1	27-May-2020 14:37
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	05-Jun-2020 10:54

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

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Groundwater Treatment Plant Quarterly Influent Samples WorkOrder:HS20050754

Sample ID: Trip Blank Lab ID:HS20050754-02

Collection Date: 19-May-2020 00:01 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	21-May-2020 20:39
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	21-May-2020 20:39
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	21-May-2020 20:39
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	21-May-2020 20:39
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	21-May-2020 20:39
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	21-May-2020 20:39
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	21-May-2020 20:39
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	21-May-2020 20:39
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	21-May-2020 20:39
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	21-May-2020 20:39
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	21-May-2020 20:39
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	21-May-2020 20:39
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	21-May-2020 20:39
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	21-May-2020 20:39
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	21-May-2020 20:39
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	21-May-2020 20:39
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	21-May-2020 20:39
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	21-May-2020 20:39
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39

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

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Groundwater Treatment Plant Quarterly Influent Samples WorkOrder:HS20050754

Sample ID: Trip Blank Lab ID:HS20050754-02

Collection Date: 19-May-2020 00:01 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	21-May-2020 20:39
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	21-May-2020 20:39
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	21-May-2020 20:39
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	21-May-2020 20:39
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	21-May-2020 20:39
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	21-May-2020 20:39
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	21-May-2020 20:39
Surr: 1,2-Dichloroethane-d4	*88.9*			**0**	*81-118*	*%REC*	*1*	*21-May-2020 20:39*
Surr: 4-Bromofluorobenzene	*96.2*			**0**	*85-114*	*%REC*	*1*	*21-May-2020 20:39*
Surr: Dibromofluoromethane	*91.6*			**0**	*80-119*	*%REC*	*1*	*21-May-2020 20:39*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*21-May-2020 20:39*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

Batch ID: 153733 **Start Date:** 21 May 2020 09:30 **End Date:** 21 May 2020 13:30
Method: SV AQ SEP FUN EXTRACT-LOWLEV - 3510C **Prep Code:** 3510_B_SIM

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20050754-01	1	1000 (mL)	1 (mL)	0.001

Batch ID: 153795 **Start Date:** 26 May 2020 09:04 **End Date:** 26 May 2020 13:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20050754-01		10 (mL)	10 (mL)	1

Batch ID: 153928 **Start Date:** 28 May 2020 11:30 **End Date:** 28 May 2020 13:30
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20050754-01		10 (mL)	10 (mL)	1

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 153733 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Water	
HS20050754-01	LH18/24-SP140_051920	19 May 2020 14:00		21 May 2020 14:52	29 May 2020 14:56	100
Batch ID: 153795 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Water	
HS20050754-01	LH18/24-SP140_051920	19 May 2020 14:00		26 May 2020 13:00	28 May 2020 16:22	1
Batch ID: 153928 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Water	
HS20050754-01	LH18/24-SP140_051920	19 May 2020 14:00		28 May 2020 11:30	28 May 2020 16:24	1
Batch ID: R362012 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20050754-01	LH18/24-SP140_051920	19 May 2020 14:00			21 May 2020 21:27	1
HS20050754-02	Trip Blank	19 May 2020 00:01			21 May 2020 20:39	1
Batch ID: R362091 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20050754-01	LH18/24-SP140_051920	19 May 2020 14:00			22 May 2020 16:00	200
Batch ID: R362159 (0)	**Test Name :** OIL & GREASE (HEM) BY E1664A				**Matrix:** Water	
HS20050754-01	LH18/24-SP140_051920	19 May 2020 14:00			26 May 2020 14:10	1
Batch ID: R362235 (0)	**Test Name :** CHEMICAL OXYGEN DEMAND BY E410.4				**Matrix:** Water	
HS20050754-01	LH18/24-SP140_051920	19 May 2020 14:00			27 May 2020 15:00	1
Batch ID: R362252 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS20050754-01	LH18/24-SP140_051920	19 May 2020 14:00			27 May 2020 14:37	1
HS20050754-01	LH18/24-SP140_051920	19 May 2020 14:00			27 May 2020 05:52	10
Batch ID: R362710 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS20050754-01	LH18/24-SP140_051920	19 May 2020 14:00			05 Jun 2020 10:54	1

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: 153795 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-153795** Units: **mg/L** Analysis Date: **28-May-2020 16:06**
Client ID: Run ID: **ICPMS05_362274** SeqNo: **5599970** PrepDate: **26-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.005208	0.0100								J
Antimony	0.000500	0.00500								U
Arsenic	0.000500	0.00500								U
Barium	0.00250	0.00500								U
Beryllium	0.000500	0.00200								U
Cadmium	0.000500	0.00200								U
Calcium	0.0500	0.500								U
Chromium	0.000500	0.00500								U
Cobalt	0.000500	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00100	0.00500								U
Magnesium	0.01854	0.200								J
Manganese	0.00250	0.00500								U
Nickel	0.00100	0.00500								U
Potassium	0.0500	0.200								U
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U
Sodium	0.0500	0.200								U
Thallium	0.000500	0.00200								U
Vanadium	0.00100	0.00500								U
Zinc	0.00250	0.00500								U

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: 153795 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-153795** Units: **mg/L** Analysis Date: **28-May-2020 16:08**
Client ID: Run ID: **ICPMS05_362274** SeqNo: **5599971** PrepDate: **26-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1003	0.0100	0.1	0	100	84 - 117				
Antimony	0.04695	0.00500	0.05	0	93.9	85 - 117				
Arsenic	0.04829	0.00500	0.05	0	96.6	84 - 116				
Barium	0.04737	0.00500	0.05	0	94.7	86 - 114				
Beryllium	0.04531	0.00200	0.05	0	90.6	83 - 121				
Cadmium	0.04857	0.00200	0.05	0	97.1	87 - 115				
Calcium	4.746	0.500	5	0	94.9	87 - 118				
Chromium	0.04745	0.00500	0.05	0	94.9	85 - 116				
Cobalt	0.04571	0.00500	0.05	0	91.4	86 - 115				
Iron	4.925	0.200	5	0	98.5	87 - 118				
Lead	0.04605	0.00500	0.05	0	92.1	88 - 115				
Magnesium	5.048	0.200	5	0	101	83 - 118				
Manganese	0.04727	0.00500	0.05	0	94.5	87 - 115				
Nickel	0.04941	0.00500	0.05	0	98.8	85 - 117				
Potassium	5.074	0.200	5	0	101	87 - 115				
Selenium	0.04922	0.00500	0.05	0	98.4	80 - 120				
Silver	0.04657	0.00500	0.05	0	93.1	85 - 116				
Sodium	4.934	0.200	5	0	98.7	85 - 117				
Thallium	0.04405	0.00200	0.05	0	88.1	82 - 116				
Vanadium	0.04727	0.00500	0.05	0	94.5	86 - 115				
Zinc	0.04992	0.00500	0.05	0	99.8	83 - 119				

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: 153795 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS20050797-01MS** Units: **mg/L** Analysis Date: **28-May-2020 16:15**
Client ID: Run ID: **ICPMS05_362274** SeqNo: **5599974** PrepDate: **26-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Aluminum	0.09461	0.0100	0.1	0.007035	87.6	84 - 117			
Antimony	0.04548	0.00500	0.05	0.000709	89.5	85 - 117			
Arsenic	0.05415	0.00500	0.05	0.009884	88.5	84 - 116			
Barium	0.6695	0.00500	0.05	0.7122	-85.2	86 - 114			SO
Beryllium	0.043	0.00200	0.05	0.000011	86.0	83 - 121			
Cadmium	0.04612	0.00200	0.05	0.000041	92.2	87 - 115			
Calcium	111.4	0.500	5	122.8	-228	87 - 118			SO
Chromium	0.04575	0.00500	0.05	0.000891	89.7	85 - 116			
Cobalt	0.04339	0.00500	0.05	0.000834	85.1	86 - 115			S
Iron	19.39	0.200	5	17.24	42.9	87 - 118			S
Lead	0.04465	0.00500	0.05	0.000215	88.9	88 - 115			
Magnesium	23.14	0.200	5	21.57	31.5	83 - 118			SO
Manganese	7.972	0.00500	0.05	9.28	-2620	87 - 115			SEO
Nickel	0.04654	0.00500	0.05	0.001935	89.2	85 - 117			
Potassium	9.189	0.200	5	5.307	77.6	87 - 115			S
Selenium	0.04755	0.00500	0.05	0.000192	94.7	80 - 120			
Silver	0.04339	0.00500	0.05	0.00001	86.8	85 - 116			
Sodium	74.78	0.200	5	81.69	-138	85 - 117			SO
Thallium	0.0445	0.00200	0.05	0.000445	88.1	82 - 116			
Vanadium	0.0454	0.00500	0.05	0.000098	90.6	86 - 115			
Zinc	0.0479	0.00500	0.05	0.001604	92.6	83 - 119			

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: 153795 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS20050797-01MSD** Units: **mg/L** Analysis Date: **28-May-2020 16:18**
Client ID: Run ID: **ICPMS05_362274** SeqNo: **5599975** PrepDate: **26-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.09744	0.0100	0.1	0.007035	90.4	84 - 117	0.09461	2.95	20	
Antimony	0.04694	0.00500	0.05	0.000709	92.5	85 - 117	0.04548	3.18	20	
Arsenic	0.05668	0.00500	0.05	0.009884	93.6	84 - 116	0.05415	4.55	20	
Barium	0.6657	0.00500	0.05	0.7122	-92.9	86 - 114	0.6695	0.576	20	SO
Beryllium	0.04482	0.00200	0.05	0.000011	89.6	83 - 121	0.043	4.16	20	
Cadmium	0.04818	0.00200	0.05	0.000041	96.3	87 - 115	0.04612	4.38	20	
Calcium	115.7	0.500	5	122.8	-142	87 - 118	111.4	3.8	20	SO
Chromium	0.04647	0.00500	0.05	0.000891	91.2	85 - 116	0.04575	1.55	20	
Cobalt	0.04512	0.00500	0.05	0.000834	88.6	86 - 115	0.04339	3.92	20	
Iron	20.18	0.200	5	17.24	58.7	87 - 118	19.39	3.99	20	S
Lead	0.0454	0.00500	0.05	0.000215	90.4	88 - 115	0.04465	1.66	20	
Magnesium	23.69	0.200	5	21.57	42.4	83 - 118	23.14	2.34	20	SO
Manganese	8.319	0.00500	0.05	9.28	-1920	87 - 115	7.972	4.27	20	SEO
Nickel	0.0475	0.00500	0.05	0.001935	91.1	85 - 117	0.04654	2.05	20	
Potassium	9.373	0.200	5	5.307	81.3	87 - 115	9.189	1.99	20	S
Selenium	0.04925	0.00500	0.05	0.000192	98.1	80 - 120	0.04755	3.51	20	
Silver	0.04536	0.00500	0.05	0.00001	90.7	85 - 116	0.04339	4.44	20	
Sodium	76.65	0.200	5	81.69	-101	85 - 117	74.78	2.46	20	SO
Thallium	0.04489	0.00200	0.05	0.000445	88.9	82 - 116	0.0445	0.87	20	
Vanadium	0.04643	0.00500	0.05	0.000098	92.7	86 - 115	0.0454	2.24	20	
Zinc	0.04892	0.00500	0.05	0.001604	94.6	83 - 119	0.0479	2.1	20	

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: 153795 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS20050797-01PDS** Units: **mg/L** Analysis Date: **28-May-2020 16:20**
Client ID: Run ID: **ICPMS05_362274** SeqNo: **5599976** PrepDate: **26-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.09986	0.0100	0.1	0.007035	92.8	80 - 120				
Antimony	0.09843	0.00500	0.1	0.000709	97.7	80 - 120				
Arsenic	0.1077	0.00500	0.1	0.009884	97.8	80 - 120				
Barium	0.7337	0.00500	0.1	0.7122	21.5	80 - 120				SO
Beryllium	0.09242	0.00200	0.1	0.000011	92.4	80 - 120				
Cadmium	0.09639	0.00200	0.1	0.000041	96.3	80 - 120				
Calcium	125	0.500	10	122.8	21.3	80 - 120				SO
Chromium	0.09733	0.00500	0.1	0.000891	96.4	80 - 120				
Cobalt	0.0925	0.00500	0.1	0.000834	91.7	80 - 120				
Iron	25.75	0.200	10	17.24	85.1	80 - 120				
Lead	0.09296	0.00500	0.1	0.000215	92.7	80 - 120				
Magnesium	29.6	0.200	10	21.57	80.3	80 - 120				
Nickel	0.09706	0.00500	0.1	0.001935	95.1	80 - 120				
Potassium	14.6	0.200	10	5.307	92.9	80 - 120				
Selenium	0.1031	0.00500	0.1	0.000192	103	80 - 120				
Silver	0.09459	0.00500	0.1	0.00001	94.6	80 - 120				
Sodium	84.33	0.200	10	81.69	26.4	80 - 120				SO
Thallium	0.1009	0.00200	0.1	0.000445	101	80 - 120				
Vanadium	0.0988	0.00500	0.1	0.000098	98.7	80 - 120				
Zinc	0.1116	0.00500	0.1	0.001604	110	80 - 120				

PDS Sample ID: **HS20050797-01PDS** Units: **mg/L** Analysis Date: **28-May-2020 17:18**
Client ID: Run ID: **ICPMS05_362274** SeqNo: **5600101** PrepDate: **26-May-2020** DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Manganese	19.03	0.500	10	9.308	97.2	80 - 120				

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: 153795 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS20050797-01SD** Units: **mg/L** Analysis Date: **28-May-2020 16:13**
Client ID: Run ID: **ICPMS05_362274** SeqNo: **5599973** PrepDate: **26-May-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	0.01028	0.0500					0.007035	0	10	J
Antimony	0.00250	0.0250					0.000709	0	10	U
Arsenic	0.008982	0.0250					0.009884	0	10	J
Barium	0.654	0.0250					0.7122	8.17	10	
Beryllium	0.00250	0.0100					0.000011	0	10	U
Cadmium	0.00250	0.0100					0.000041	0	10	U
Calcium	122.1	2.50					122.8	0.629	10	
Chromium	0.00250	0.0250					0.000891	0	10	U
Cobalt	0.000869	0.0250					0.000834	0	10	J
Iron	17.35	1.00					17.24	0.653	10	
Lead	0.00500	0.0250					0.000215	0	10	U
Magnesium	21.86	1.00					21.57	1.34	10	
Nickel	0.007287	0.0250					0.001935	0	10	J
Potassium	5.001	1.00					5.307	5.76	10	
Selenium	0.0125	0.0250					0.000192	0	10	U
Silver	0.00250	0.0250					0.00001	0	10	U
Sodium	81.21	1.00					81.69	0.581	10	
Thallium	0.00250	0.0100					0.000445	0	10	U
Vanadium	0.00500	0.0250					0.000098	0	10	U
Zinc	0.0125	0.0250					0.001604	0	10	U

SD Sample ID: **HS20050797-01SD** Units: **mg/L** Analysis Date: **28-May-2020 17:16**
Client ID: Run ID: **ICPMS05_362274** SeqNo: **5600100** PrepDate: **26-May-2020** DF: **500**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Manganese	9.457	2.50					9.308	1.6	10	

The following samples were analyzed in this batch: HS20050754-01

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: 153928 (0) **Instrument: HG03** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-153928** Units: **mg/L** Analysis Date: **28-May-2020 16:16**
Client ID: Run ID: **HG03_362311** SeqNo: **5600137** PrepDate: **28-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.000100	0.000200								U

LCS Sample ID: **LCS-153928** Units: **mg/L** Analysis Date: **28-May-2020 16:18**
Client ID: Run ID: **HG03_362311** SeqNo: **5600138** PrepDate: **28-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00503	0.000200	0.005	0	101	80 - 120				

MS Sample ID: **HS20050905-01MS** Units: **mg/L** Analysis Date: **28-May-2020 16:21**
Client ID: Run ID: **HG03_362311** SeqNo: **5600140** PrepDate: **28-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00497	0.000200	0.005	0.000004000	99.3	75 - 125				

MSD Sample ID: **HS20050905-01MSD** Units: **mg/L** Analysis Date: **28-May-2020 16:23**
Client ID: Run ID: **HG03_362311** SeqNo: **5600141** PrepDate: **28-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00527	0.000200	0.005	0.000004000	105	75 - 125	0.004970	5.86	20	

The following samples were analyzed in this batch: HS20050754-01

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: 153733 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-153733** Units: **ug/L** Analysis Date: **29-May-2020 13:21**
Client ID: Run ID: **SV-6_362411** SeqNo: **5601769** PrepDate: **21-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.010	0.010								U
Surr: 2-Fluorobiphenyl	*0.09957*	*0*	*0.08*	*0*	*124*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.1139*	*0*	*0.08*	*0*	*142*	*40 - 140*				S
Surr: Nitrobenzene-d5	*0.07603*	*0*	*0.08*	*0*	*95.0*	*40 - 140*				

LCS Sample ID: **LCS-153733** Units: **ug/L** Analysis Date: **29-May-2020 13:40**
Client ID: Run ID: **SV-6_362411** SeqNo: **5601770** PrepDate: **21-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.05124	0.010	0.08	0	64.1	40 - 140				
Surr: 2-Fluorobiphenyl	*0.07082*	*0*	*0.08*	*0*	*88.5*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.07395*	*0*	*0.08*	*0*	*92.4*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.06014*	*0*	*0.08*	*0*	*75.2*	*40 - 140*				

LCSD Sample ID: **LCSD-153733** Units: **ug/L** Analysis Date: **29-May-2020 13:59**
Client ID: Run ID: **SV-6_362411** SeqNo: **5601771** PrepDate: **21-May-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.07679	0.010	0.08	0	96.0	40 - 140	0.05124	39.9	20	R
Surr: 2-Fluorobiphenyl	*0.07625*	*0*	*0.08*	*0*	*95.3*	*40 - 140*	*0.07082*	*7.39*	*20*	
Surr: 4-Terphenyl-d14	*0.08164*	*0*	*0.08*	*0*	*102*	*40 - 140*	*0.07395*	*9.89*	*20*	
Surr: Nitrobenzene-d5	*0.06709*	*0*	*0.08*	*0*	*83.9*	*40 - 140*	*0.06014*	*10.9*	*20*	

The following samples were analyzed in this batch: HS20050754-01

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: R362012 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-200521** Units: **UG/L** Analysis Date: **21-May-2020 20:15**
Client ID: Run ID: **VOA6_362012** SeqNo: **5593326** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: R362012 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200521** Units: **UG/L** Analysis Date: **21-May-2020 20:15**
Client ID: Run ID: **VOA6_362012** SeqNo: **5593326** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*44.43*	*1.0*	*50*	*0*	*88.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.29*	*1.0*	*50*	*0*	*96.6*	*85 - 114*				
Surr: Dibromofluoromethane	*45.06*	*1.0*	*50*	*0*	*90.1*	*80 - 119*				
Surr: Toluene-d8	*53.02*	*1.0*	*50*	*0*	*106*	*89 - 112*				

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: R362012 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200521** Units: **UG/L** Analysis Date: **21-May-2020 19:27**
Client ID: Run ID: **VOA6_362012** SeqNo: **5593325** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	18.56	1.0	20	0	92.8	78 - 124				
1,1,1-Trichloroethane	19.8	1.0	20	0	99.0	74 - 131				
1,1,2,2-Tetrachloroethane	19.41	1.0	20	0	97.0	71 - 121				
1,1,2-Trichloroethane	18.98	1.0	20	0	94.9	80 - 119				
1,1-Dichloroethane	19.58	1.0	20	0	97.9	77 - 125				
1,1-Dichloroethene	19.09	1.0	20	0	95.4	71 - 131				
1,1-Dichloropropene	18.38	1.0	20	0	91.9	78 - 125				
1,2,3-Trichlorobenzene	19.33	1.0	20	0	96.6	69 - 129				
1,2,3-Trichloropropane	18.71	1.0	20	0	93.6	73 - 122				
1,2,4-Trichlorobenzene	19.4	1.0	20	0	97.0	69 - 130				
1,2,4-Trimethylbenzene	18.99	1.0	20	0	95.0	76 - 124				
1,2-Dibromo-3-chloropropane	20.33	1.0	20	0	102	62 - 128				
1,2-Dibromoethane	19.23	1.0	20	0	96.2	77 - 121				
1,2-Dichlorobenzene	19.22	1.0	20	0	96.1	80 - 119				
1,2-Dichloroethane	19.07	1.0	20	0	95.4	73 - 128				
1,2-Dichloropropane	19.27	1.0	20	0	96.4	78 - 122				
1,3,5-Trimethylbenzene	19.03	1.0	20	0	95.2	75 - 124				
1,3-Dichlorobenzene	19.47	1.0	20	0	97.3	80 - 119				
1,3-Dichloropropane	19.05	1.0	20	0	95.2	80 - 119				
1,4-Dichlorobenzene	19.17	1.0	20	0	95.9	79 - 118				
2,2-Dichloropropane	19.15	1.0	20	0	95.7	60 - 139				
2-Butanone	37.44	2.0	40	0	93.6	56 - 143				
2-Chlorotoluene	19.02	1.0	20	0	95.1	79 - 122				
2-Hexanone	38.98	2.0	40	0	97.4	57 - 139				
4-Chlorotoluene	19.39	1.0	20	0	96.9	78 - 122				
4-Isopropyltoluene	18.72	1.0	20	0	93.6	77 - 127				
4-Methyl-2-pentanone	37.28	2.0	40	0	93.2	67 - 130				
Acetone	38.7	2.0	40	0	96.8	39 - 160				
Benzene	19.15	1.0	20	0	95.7	79 - 120				
Bromobenzene	19.11	1.0	20	0	95.5	80 - 120				
Bromochloromethane	19.4	1.0	20	0	97.0	78 - 123				
Bromodichloromethane	18.82	1.0	20	0	94.1	79 - 125				
Bromoform	18.85	1.0	20	0	94.3	66 - 130				
Bromomethane	24.05	1.0	20	0	120	53 - 141				

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: R362012 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200521** Units: **UG/L** Analysis Date: **21-May-2020 19:27**
Client ID: Run ID: **VOA6_362012** SeqNo: **5593325** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	39.82	2.0	40	0	99.5	64 - 133				
Carbon tetrachloride	17.74	1.0	20	0	88.7	72 - 136				
Chlorobenzene	19.05	1.0	20	0	95.3	82 - 118				
Chloroethane	17.98	1.0	20	0	89.9	60 - 138				
Chloroform	19.67	1.0	20	0	98.3	79 - 124				
Chloromethane	17.51	1.0	20	0	87.6	50 - 139				
cis-1,2-Dichloroethene	19.54	1.0	20	0	97.7	78 - 123				
cis-1,3-Dichloropropene	18.72	1.0	20	0	93.6	75 - 124				
Dibromochloromethane	18.77	1.0	20	0	93.9	74 - 126				
Dibromomethane	19.48	1.0	20	0	97.4	79 - 123				
Dichlorodifluoromethane	18.7	1.0	20	0	93.5	32 - 152				
Ethylbenzene	19.51	1.0	20	0	97.5	79 - 121				
Hexachlorobutadiene	20.4	1.0	20	0	102	66 - 134				
Isopropylbenzene	18.92	1.0	20	0	94.6	72 - 131				
m,p-Xylene	38.38	2.0	40	0	95.9	80 - 121				
Methylene chloride	21.21	2.0	20	0	106	74 - 124				
Naphthalene	18.12	1.0	20	0	90.6	61 - 128				
n-Butylbenzene	18.36	1.0	20	0	91.8	75 - 128				
n-Propylbenzene	19.12	1.0	20	0	95.6	76 - 126				
o-Xylene	19.1	1.0	20	0	95.5	78 - 122				
sec-Butylbenzene	18.25	1.0	20	0	91.3	77 - 126				
Styrene	19.05	1.0	20	0	95.3	78 - 123				
tert-Butylbenzene	18.57	1.0	20	0	92.8	78 - 124				
Tetrachloroethene	19.16	1.0	20	0	95.8	74 - 129				
Toluene	19.35	1.0	20	0	96.8	80 - 121				
trans-1,2-Dichloroethene	19.72	1.0	20	0	98.6	75 - 124				
trans-1,3-Dichloropropene	19	1.0	20	0	95.0	73 - 127				
Trichloroethene	19.13	1.0	20	0	95.6	79 - 123				
Trichlorofluoromethane	19.44	1.0	20	0	97.2	65 - 141				
Vinyl chloride	18.75	1.0	20	0	93.7	58 - 137				
Surr: 1,2-Dichloroethane-d4	*51.74*	*1.0*	*50*	*0*	*103*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.62*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*51.28*	*1.0*	*50*	*0*	*103*	*80 - 119*				
Surr: Toluene-d8	*50.19*	*1.0*	*50*	*0*	*100*	*89 - 112*				

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: R362012 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20050754-01MS** Units: **UG/L** Analysis Date: **21-May-2020 22:15**
Client ID: **LH18/24-SP140_051920** Run ID: **VOA6_362012** SeqNo: **5593330** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.01	1.0	20	0	100	78 - 124				
1,1,1-Trichloroethane	21.8	1.0	20	2.287	97.6	74 - 131				
1,1,2,2-Tetrachloroethane	18.77	1.0	20	0	93.8	71 - 121				
1,1,2-Trichloroethane	20.86	1.0	20	2.115	93.7	80 - 119				
1,1-Dichloroethane	27.27	1.0	20	9.616	88.2	77 - 125				
1,1-Dichloroethene	115.1	1.0	20	0	576	71 - 131				S
1,1-Dichloropropene	20.13	1.0	20	0	101	78 - 125				
1,2,3-Trichlorobenzene	13.13	1.0	20	0	65.6	69 - 129				S
1,2,3-Trichloropropane	18.11	1.0	20	0	90.6	73 - 122				
1,2,4-Trichlorobenzene	15.22	1.0	20	0	76.1	69 - 130				
1,2,4-Trimethylbenzene	20.96	1.0	20	0	105	76 - 124				
1,2-Dibromo-3-chloropropane	15.57	1.0	20	0	77.9	62 - 128				
1,2-Dibromoethane	18.9	1.0	20	0	94.5	77 - 121				
1,2-Dichlorobenzene	19.97	1.0	20	0	99.9	80 - 119				
1,2-Dichloroethane	67.24	1.0	20	49.55	88.4	73 - 128				
1,2-Dichloropropane	18.46	1.0	20	0	92.3	78 - 122				
1,3,5-Trimethylbenzene	20.82	1.0	20	0	104	75 - 124				
1,3-Dichlorobenzene	19.7	1.0	20	0	98.5	80 - 119				
1,3-Dichloropropane	19.02	1.0	20	0	95.1	80 - 119				
1,4-Dichlorobenzene	19.74	1.0	20	0	98.7	79 - 118				
2,2-Dichloropropane	17.54	1.0	20	0	87.7	60 - 139				
2-Butanone	31.47	2.0	40	0	78.7	56 - 143				
2-Chlorotoluene	20.3	1.0	20	0	101	79 - 122				
2-Hexanone	36.64	2.0	40	0	91.6	57 - 139				
4-Chlorotoluene	20.24	1.0	20	0	101	78 - 122				
4-Isopropyltoluene	21.45	1.0	20	0	107	77 - 127				
4-Methyl-2-pentanone	36.69	2.0	40	0	91.7	67 - 130				
Acetone	40.97	2.0	40	0	102	39 - 160				
Benzene	21.74	1.0	20	2.478	96.3	79 - 120				
Bromobenzene	19.59	1.0	20	0	98.0	80 - 120				
Bromochloromethane	30.12	1.0	20	17.08	65.2	78 - 123				S
Bromodichloromethane	18.14	1.0	20	0	90.7	79 - 125				
Bromoform	18.85	1.0	20	0	94.3	66 - 130				
Bromomethane	24.48	1.0	20	0	122	53 - 141				

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: R362012 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20050754-01MS** Units: **UG/L** Analysis Date: **21-May-2020 22:15**
Client ID: **LH18/24-SP140_051920** Run ID: **VOA6_362012** SeqNo: **5593330** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	37.26	2.0	40	0	93.1	64 - 133				
Carbon tetrachloride	26.79	1.0	20	7.288	97.5	72 - 136				
Chlorobenzene	19.76	1.0	20	0	98.8	82 - 118				
Chloroethane	20.29	1.0	20	0	101	60 - 138				
Chloroform	31.3	1.0	20	13.26	90.2	79 - 124				
Chloromethane	28.2	1.0	20	0	141	50 - 139				S
cis-1,2-Dichloroethene	3227	1.0	20	3313	-427	78 - 123				SEO
cis-1,3-Dichloropropene	18.27	1.0	20	0	91.4	75 - 124				
Dibromochloromethane	19.13	1.0	20	0	95.6	74 - 126				
Dibromomethane	17.83	1.0	20	0	89.2	79 - 123				
Dichlorodifluoromethane	29.35	1.0	20	0	147	32 - 152				
Ethylbenzene	22.21	1.0	20	1.458	104	79 - 121				
Hexachlorobutadiene	19.48	1.0	20	0	97.4	66 - 134				
Isopropylbenzene	21.54	1.0	20	0	108	72 - 131				
m,p-Xylene	41.72	2.0	40	1	102	80 - 121				
Methylene chloride	4163	2.0	20	4410	-1230	74 - 124				SEO
Naphthalene	14.05	1.0	20	0	70.3	61 - 128				
n-Butylbenzene	21.98	1.0	20	0	110	75 - 128				
n-Propylbenzene	21.4	1.0	20	0	107	76 - 126				
o-Xylene	21.12	1.0	20	0.7571	102	78 - 122				
sec-Butylbenzene	21.79	1.0	20	0	109	77 - 126				
Styrene	21.1	1.0	20	1.674	97.1	78 - 123				
tert-Butylbenzene	21.62	1.0	20	0	108	78 - 124				
Tetrachloroethene	95.09	1.0	20	76.75	91.7	74 - 129				
Toluene	22.07	1.0	20	2.282	98.9	80 - 121				
trans-1,2-Dichloroethene	28.73	1.0	20	11	88.6	75 - 124				
trans-1,3-Dichloropropene	18.53	1.0	20	0	92.6	73 - 127				
Trichloroethene	6117	1.0	20	6279	-810	79 - 123				SEO
Trichlorofluoromethane	22.93	1.0	20	0	115	65 - 141				
Vinyl chloride	116.2	1.0	20	99.05	85.8	58 - 137				O
Surr: 1,2-Dichloroethane-d4	*45.51*	*1.0*	*50*	*0*	*91.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.24*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*45.65*	*1.0*	*50*	*0*	*91.3*	*80 - 119*				
Surr: Toluene-d8	*49.96*	*1.0*	*50*	*0*	*99.9*	*89 - 112*				

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: R362012 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20050754-01MSD** Units: **UG/L** Analysis Date: **21-May-2020 22:39**
Client ID: **LH18/24-SP140_051920** Run ID: **VOA6_362012** SeqNo: **5593331** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	18.94	1.0	20	0	94.7	78 - 124	20.01	5.53	20	
1,1,1-Trichloroethane	20.63	1.0	20	2.287	91.7	74 - 131	21.8	5.5	20	
1,1,2,2-Tetrachloroethane	19.44	1.0	20	0	97.2	71 - 121	18.77	3.54	20	
1,1,2-Trichloroethane	20.69	1.0	20	2.115	92.9	80 - 119	20.86	0.797	20	
1,1-Dichloroethane	26.3	1.0	20	9.616	83.4	77 - 125	27.27	3.59	20	
1,1-Dichloroethene	108.1	1.0	20	0	540	71 - 131	115.1	6.33	20	S
1,1-Dichloropropene	19.09	1.0	20	0	95.4	78 - 125	20.13	5.29	20	
1,2,3-Trichlorobenzene	16.1	1.0	20	0	80.5	69 - 129	13.13	20.4	20	R
1,2,3-Trichloropropane	18.89	1.0	20	0	94.4	73 - 122	18.11	4.18	20	
1,2,4-Trichlorobenzene	17.56	1.0	20	0	87.8	69 - 130	15.22	14.3	20	
1,2,4-Trimethylbenzene	20.86	1.0	20	0	104	76 - 124	20.96	0.488	20	
1,2-Dibromo-3-chloropropane	16.77	1.0	20	0	83.8	62 - 128	15.57	7.4	20	
1,2-Dibromoethane	18.72	1.0	20	0	93.6	77 - 121	18.9	0.914	20	
1,2-Dichlorobenzene	20.48	1.0	20	0	102	80 - 119	19.97	2.49	20	
1,2-Dichloroethane	65.59	1.0	20	49.55	80.2	73 - 128	67.24	2.48	20	
1,2-Dichloropropane	17.55	1.0	20	0	87.7	78 - 122	18.46	5.09	20	
1,3,5-Trimethylbenzene	20.75	1.0	20	0	104	75 - 124	20.82	0.345	20	
1,3-Dichlorobenzene	20.25	1.0	20	0	101	80 - 119	19.7	2.78	20	
1,3-Dichloropropane	18.82	1.0	20	0	94.1	80 - 119	19.02	1.05	20	
1,4-Dichlorobenzene	19.79	1.0	20	0	98.9	79 - 118	19.74	0.226	20	
2,2-Dichloropropane	16.36	1.0	20	0	81.8	60 - 139	17.54	6.96	20	
2-Butanone	31.42	2.0	40	0	78.6	56 - 143	31.47	0.145	20	
2-Chlorotoluene	20.08	1.0	20	0	100	79 - 122	20.3	1.06	20	
2-Hexanone	37.29	2.0	40	0	93.2	57 - 139	36.64	1.76	20	
4-Chlorotoluene	20.29	1.0	20	0	101	78 - 122	20.24	0.264	20	
4-Isopropyltoluene	21.14	1.0	20	0	106	77 - 127	21.45	1.46	20	
4-Methyl-2-pentanone	36.42	2.0	40	0	91.1	67 - 130	36.69	0.744	20	
Acetone	38.5	2.0	40	0	96.3	39 - 160	40.97	6.21	20	
Benzene	20.68	1.0	20	2.478	91.0	79 - 120	21.74	5	20	
Bromobenzene	19.71	1.0	20	0	98.5	80 - 120	19.59	0.585	20	
Bromochloromethane	27.52	1.0	20	17.08	52.2	78 - 123	30.12	9.02	20	S
Bromodichloromethane	17.96	1.0	20	0	89.8	79 - 125	18.14	0.965	20	
Bromoform	18.85	1.0	20	0	94.3	66 - 130	18.85	0.00216	20	
Bromomethane	18.43	1.0	20	0	92.1	53 - 141	24.48	28.2	20	R

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: R362012 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20050754-01MSD** Units: **UG/L** Analysis Date: **21-May-2020 22:39**
Client ID: **LH18/24-SP140_051920** Run ID: **VOA6_362012** SeqNo: **5593331** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	35	2.0	40	0	87.5	64 - 133	37.26	6.25	20	
Carbon tetrachloride	25.09	1.0	20	7.288	89.0	72 - 136	26.79	6.55	20	
Chlorobenzene	19.13	1.0	20	0	95.7	82 - 118	19.76	3.21	20	
Chloroethane	18.74	1.0	20	0	93.7	60 - 138	20.29	7.94	20	
Chloroform	30.15	1.0	20	13.26	84.5	79 - 124	31.3	3.74	20	
Chloromethane	28.8	1.0	20	0	144	50 - 139	28.2	2.12	20	S
cis-1,2-Dichloroethene	3093	1.0	20	3313	-1100	78 - 123	3227	4.26	20	SEO
cis-1,3-Dichloropropene	17.73	1.0	20	0	88.7	75 - 124	18.27	2.99	20	
Dibromochloromethane	18.53	1.0	20	0	92.7	74 - 126	19.13	3.14	20	
Dibromomethane	17.97	1.0	20	0	89.9	79 - 123	17.83	0.785	20	
Dichlorodifluoromethane	27.05	1.0	20	0	135	32 - 152	29.35	8.17	20	
Ethylbenzene	21.36	1.0	20	1.458	99.5	79 - 121	22.21	3.88	20	
Hexachlorobutadiene	21.83	1.0	20	0	109	66 - 134	19.48	11.4	20	
Isopropylbenzene	20.55	1.0	20	0	103	72 - 131	21.54	4.74	20	
m,p-Xylene	40.27	2.0	40	1	98.2	80 - 121	41.72	3.53	20	
Methylene chloride	4011	2.0	20	4410	-1990	74 - 124	4163	3.72	20	SEO
Naphthalene	16.34	1.0	20	0	81.7	61 - 128	14.05	15.1	20	
n-Butylbenzene	21.88	1.0	20	0	109	75 - 128	21.98	0.449	20	
n-Propylbenzene	21.24	1.0	20	0	106	76 - 126	21.4	0.746	20	
o-Xylene	20.53	1.0	20	0.7571	98.9	78 - 122	21.12	2.82	20	
sec-Butylbenzene	21.7	1.0	20	0	109	77 - 126	21.79	0.427	20	
Styrene	19.99	1.0	20	1.674	91.6	78 - 123	21.1	5.4	20	
tert-Butylbenzene	21.26	1.0	20	0	106	78 - 124	21.62	1.66	20	
Tetrachloroethene	90.7	1.0	20	76.75	69.7	74 - 129	95.09	4.73	20	S
Toluene	21.16	1.0	20	2.282	94.4	80 - 121	22.07	4.21	20	
trans-1,2-Dichloroethene	27.52	1.0	20	11	82.6	75 - 124	28.73	4.28	20	
trans-1,3-Dichloropropene	18.44	1.0	20	0	92.2	73 - 127	18.53	0.496	20	
Trichloroethene	5917	1.0	20	6279	-1810	79 - 123	6117	3.32	20	SEO
Trichlorofluoromethane	20.86	1.0	20	0	104	65 - 141	22.93	9.47	20	
Vinyl chloride	106	1.0	20	99.05	34.8	58 - 137	116.2	9.18	20	SO
Surr: 1,2-Dichloroethane-d4	*45.2*	*1.0*	*50*	*0*	*90.4*	*81 - 118*	*45.51*	*0.673*	*20*	
Surr: 4-Bromofluorobenzene	*50.35*	*1.0*	*50*	*0*	*101*	*85 - 114*	*50.24*	*0.223*	*20*	
Surr: Dibromofluoromethane	*45.64*	*1.0*	*50*	*0*	*91.3*	*80 - 119*	*45.65*	*0.0173*	*20*	
Surr: Toluene-d8	*50.42*	*1.0*	*50*	*0*	*101*	*89 - 112*	*49.96*	*0.913*	*20*	

ALS Houston, US Date: 05-Jun-20

Client:	Bhate Environmental Associates, Inc.
Project:	Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder:	HS20050754

QC BATCH REPORT

Batch ID:	**R362012 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch: HS20050754-01 HS20050754-02

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: R362091 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200522** Units: **UG/L** Analysis Date: **22-May-2020 12:48**
Client ID: Run ID: **VOA6_362091** SeqNo: **5594989** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*44.38*	*1.0*	*50*	*0*	*88.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.9*	*1.0*	*50*	*0*	*99.8*	*85 - 114*				
Surr: Dibromofluoromethane	*44.09*	*1.0*	*50*	*0*	*88.2*	*80 - 119*				
Surr: Toluene-d8	*53.41*	*1.0*	*50*	*0*	*107*	*89 - 112*				

LCS Sample ID: **VLCSW-200522** Units: **UG/L** Analysis Date: **22-May-2020 12:00**
Client ID: Run ID: **VOA6_362091** SeqNo: **5594988** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	21.1	1.0	20	0	106	78 - 123				
Methylene chloride	23.71	2.0	20	0	119	74 - 124				
Trichloroethene	20.53	1.0	20	0	103	79 - 123				
Surr: 1,2-Dichloroethane-d4	*54.52*	*1.0*	*50*	*0*	*109*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.85*	*1.0*	*50*	*0*	*104*	*85 - 114*				
Surr: Dibromofluoromethane	*53.52*	*1.0*	*50*	*0*	*107*	*80 - 119*				
Surr: Toluene-d8	*51.18*	*1.0*	*50*	*0*	*102*	*89 - 112*				

MS Sample ID: **HS20050797-01MS** Units: **UG/L** Analysis Date: **22-May-2020 15:12**
Client ID: Run ID: **VOA6_362091** SeqNo: **5594995** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	434	25	500	0	86.8	78 - 123				
Methylene chloride	479.5	50	500	43.71	87.2	74 - 124				
Trichloroethene	482.8	25	500	0	96.6	79 - 123				
Surr: 1,2-Dichloroethane-d4	*1121*	*25*	*1250*	*0*	*89.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*1216*	*25*	*1250*	*0*	*97.3*	*85 - 114*				
Surr: Dibromofluoromethane	*1137*	*25*	*1250*	*0*	*91.0*	*80 - 119*				
Surr: Toluene-d8	*1317*	*25*	*1250*	*0*	*105*	*89 - 112*				

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: R362091 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20050797-01MSD** Units: **UG/L** Analysis Date: **22-May-2020 15:36**
Client ID: Run ID: **VOA6_362091** SeqNo: **5594996** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	407.6	25	500	0	81.5	78 - 123	434	6.27	20	
Methylene chloride	466.2	50	500	43.71	84.5	74 - 124	479.5	2.82	20	
Trichloroethene	458.6	25	500	0	91.7	79 - 123	482.8	5.14	20	
Surr: 1,2-Dichloroethane-d4	*1094*	*25*	*1250*	*0*	*87.5*	*81 - 118*	*1121*	*2.43*	*20*	
Surr: 4-Bromofluorobenzene	*1236*	*25*	*1250*	*0*	*98.9*	*85 - 114*	*1216*	*1.65*	*20*	
Surr: Dibromofluoromethane	*1127*	*25*	*1250*	*0*	*90.2*	*80 - 119*	*1137*	*0.883*	*20*	
Surr: Toluene-d8	*1303*	*25*	*1250*	*0*	*104*	*89 - 112*	*1317*	*1.08*	*20*	

The following samples were analyzed in this batch: HS20050754-01

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: R362159 (0) **Instrument: Balance1** **Method: OIL & GREASE (HEM) BY E1664A**

MBLK Sample ID: **WBLKW-052620** Units: **mg/L** Analysis Date: **26-May-2020 14:10**
Client ID: Run ID: **Balance1_362159** SeqNo: **5596493** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Oil and Grease	2.00	2.00								U

LCS Sample ID: **WLCSW-052620** Units: **mg/L** Analysis Date: **26-May-2020 14:10**
Client ID: Run ID: **Balance1_362159** SeqNo: **5596495** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Oil and Grease	35.6	2.00	40	0	89.0	78 - 114				

LCSD Sample ID: **WLCSDW-052620** Units: **mg/L** Analysis Date: **26-May-2020 14:10**
Client ID: Run ID: **Balance1_362159** SeqNo: **5596494** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Oil and Grease	35.2	2.00	40	0	88.0	78 - 114	35.6	1.13	18	

MS Sample ID: **HS20050734-01MS** Units: **mg/L** Analysis Date: **26-May-2020 14:10**
Client ID: Run ID: **Balance1_362159** SeqNo: **5596473** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Oil and Grease	34.78	2.00	40	0	87.0	78 - 114				

The following samples were analyzed in this batch: HS20050754-01

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: R362235 (0) **Instrument: WetChem_HS** **Method: CHEMICAL OXYGEN DEMAND BY E410.4**

MBLK Sample ID: **MBLK-R362235** Units: **mg/L** Analysis Date: **27-May-2020 15:00**
Client ID: Run ID: **WetChem_HS_362235** SeqNo: **5598369** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	15.0	15.0								U

LCS Sample ID: **LCS-R362235** Units: **mg/L** Analysis Date: **27-May-2020 15:00**
Client ID: Run ID: **WetChem_HS_362235** SeqNo: **5598368** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	100	15.0	100	0	100	85 - 115				

MS Sample ID: **HS20050992-01MS** Units: **mg/L** Analysis Date: **27-May-2020 15:00**
Client ID: Run ID: **WetChem_HS_362235** SeqNo: **5598371** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	60	15.0	50	12	96.0	80 - 120				

MSD Sample ID: **HS20050992-01MSD** Units: **mg/L** Analysis Date: **27-May-2020 15:00**
Client ID: Run ID: **WetChem_HS_362235** SeqNo: **5598370** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	60	15.0	50	12	96.0	80 - 120	60	0	20	

The following samples were analyzed in this batch: HS20050754-01

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS20050754

QC BATCH REPORT

Batch ID: R362252 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK052620** Units: **mg/L** Analysis Date: **27-May-2020 18:15**
Client ID: Run ID: **ICS-Integrion_362252** SeqNo: **5598771** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.500	0.500								U
Sulfate	0.2195	0.500								J

LCS Sample ID: **LCS052620** Units: **mg/L** Analysis Date: **27-May-2020 18:33**
Client ID: Run ID: **ICS-Integrion_362252** SeqNo: **5598772** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.14	0.500	20	0	95.7	80 - 120				
Sulfate	18.72	0.500	20	0	93.6	80 - 120				

MS Sample ID: **HS20050754-01MS** Units: **mg/L** Analysis Date: **27-May-2020 06:10**
Client ID: **LH18/24-SP140_051920** Run ID: **ICS-Integrion_362252** SeqNo: **5598740** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	331.4	5.00	100	238.8	92.6	80 - 120				
Sulfate	126.1	5.00	100	30.73	95.3	80 - 120				

MSD Sample ID: **HS20050754-01MSD** Units: **mg/L** Analysis Date: **27-May-2020 06:28**
Client ID: **LH18/24-SP140_051920** Run ID: **ICS-Integrion_362252** SeqNo: **5598741** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	328.2	5.00	100	238.8	89.4	80 - 120	331.4	0.995	20	
Sulfate	124.5	5.00	100	30.73	93.7	80 - 120	126.1	1.27	20	

The following samples were analyzed in this batch: HS20050754-01

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: **HS20050754**

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
Arkansas	20-030-0	26-Mar-2021
Dept of Defense	ANAB L2231 V009	22-Dec-2021
Florida	E87611-28	30-Jun-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2020	31-Dec-2020
Oklahoma	2019-141	31-Aug-2020
Texas	T104704231-20-26	30-Apr-2021

ALS Houston, US Date: 05-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
Work Order: HS20050754

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20050754-01	LH18/24-SP140_051920	Login	5/20/2020 4:56:43 PM	RPG	Sub
HS20050754-01	LH18/24-SP140_051920	Login	5/20/2020 4:56:43 PM	RPG	Disposed
HS20050754-01	LH18/24-SP140_051920	Login	5/20/2020 4:56:43 PM	RPG	EXT154
HS20050754-01	LH18/24-SP140_051920	Login	5/20/2020 4:56:43 PM	RPG	Disposed
HS20050754-01	LH18/24-SP140_051920	Login	5/20/2020 4:56:43 PM	RPG	Disposed
HS20050754-01	LH18/24-SP140_051920	Login	5/20/2020 4:56:43 PM	RPG	Disposed
HS20050754-01	LH18/24-SP140_051920	Login	5/20/2020 4:56:43 PM	RPG	VOA001
HS20050754-02	Trip Blank	Login	5/20/2020 4:56:43 PM	RPG	VOA001

ALS Houston, US Date: 05-Jun-20

Sample Receipt Checklist

Work Order ID: HS20050754 **Date/Time Received:** 20-May-2020 09:25

Client Name: Bhate Environmental **Received by:** Paresh M. Giga

Completed By:	/S/ Raegen Giga	20-May-2020 17:01	**Reviewed by:**	/S/ RJ Modashia	21-May-2020 09:03
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **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:1/1
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):	1.4c uc/c	IR 25
Cooler(s)/Kit(s):	45282	
Date/Time sample(s) sent to storage:	05/20/2020 17:05	

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: 1 x TB rec'd - Trip Blank split between 2 x Work Orders (1 x vial each)

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd., Suite 210 Houston, Tx. 77099 ATTN: RJ Modashia

HS20050754

Bhate Environmental Associates, Inc.
Groundwater Treatment Plant Quarterly Influent Samp

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT QUARTERLY INFLUENT SAMPLES

Prepared By:
Scott Beesinger

P. O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: ROD Volatiles	Total Metals	Oil & Grease	Chemical Oxygen Demand	Chloride & Sulfate	1, 4 - DIOXANE	Perchlorate				Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP140_051920	Water	05/19/20 / 14:00		4	3		1								HCL	
LH18/24-SP140_051920	Water	05/19/20 / 14:00		1		1									HNO3	
LH18/24-SP140_051920	Water	05/19/20 / 14:00		2					1	1					NONE	
LH18/24-SP140_051920	Water	05/19/20 / 14:00		1				1							H2SO4	
LH18/24-SP140_051920	Water	05/19/20 / 14:00		1							1				NONE	
Trip Blank	Water	05/19/20		2	2										HCL	

Additional Remarks: **STANDARD TURN AROUND TIME**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	05/19/20	14:30		5/20/2020	09:25						

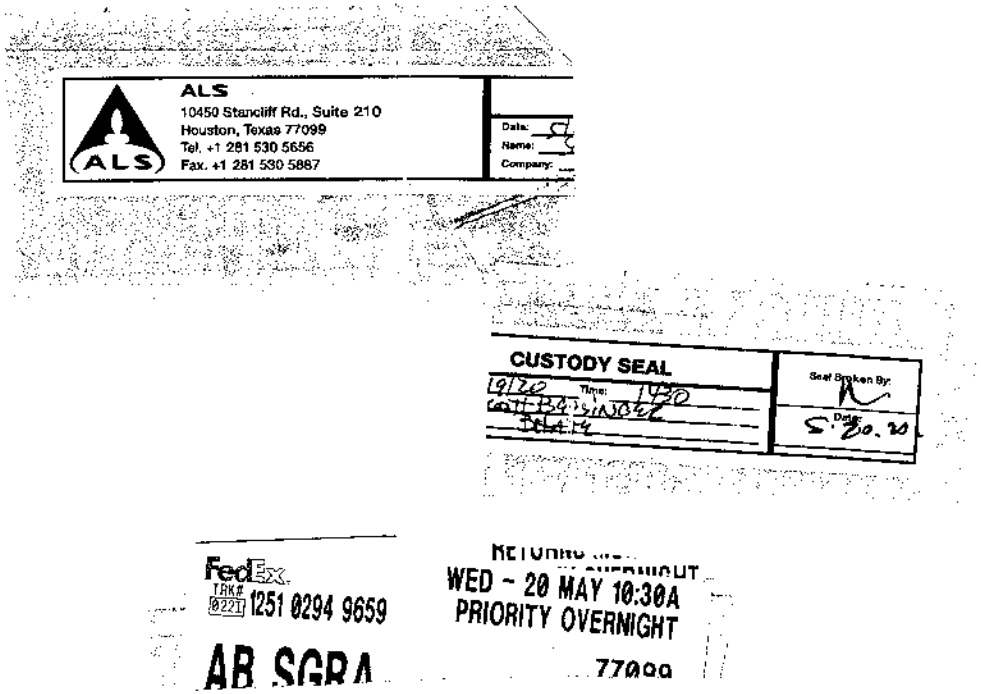
For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

45283 1.4° 425 Cl- 0.5°

(Word) S:\1-ces\Forms\Chain of Custody - BiWeekly


ALS
10450 Stanciff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
Date:
Name:
Company:
CUSTODY SEAL
Time:
Seal Broken By:
Date:
FedEx
TRK# 0221 1251 0294 9659
AB SGRA
WED - 20 MAY 10:30A
PRIORITY OVERNIGHT
77099

June 04, 2020 Service Request No:E2000450

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

Laboratory Results for: HS20050754

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory May 22, 2020
For your reference, these analyses have been assigned our service request number **E2000450.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2000450
Project:	HS20050754	**Date Received:**	05/22/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One water sample was received for analysis at ALS Environmental in Houston on 05/22/20.

The sample was received in good condition and are consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000209: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2000450

Project: HS20050754

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000450-001	LH18/24-SP140_051920	5/19/2020	1400

Service Request Summary

Folder #: **E2000450**
Client Name: ALS Environmental - US
Project Name: HS20050754
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 05/22/20
Internal Due Date: 6/4/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20050754
EDD: No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000450-001	LH18/24-SP140_051920	Water	05/19/20 1400	**IV**

Service Request Summary

Folder #:	**E2000450**
Client Name:	ALS Environmental - US
Project Name:	HS20050754
Project Number:	

Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	05/22/20
Internal Due Date:	6/4/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20050754
EDD:	No EDD Specified

1 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-WIC 7B

Pressure Gas:

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	2020	4/30/2021
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13 (2020)	4/30/2021
Nevada Department of Concervation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

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: **Colorado**

COC ID: **13940**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

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:	HS20050754
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20050754-01**	**LH18/24-SP140_051920**	**Water**	**19 May 2020 14:00**
	SUB_Perch-6850			29 May 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. Lawal Date/Time: 5/22/20 09:00

Received By: [illegible] Date/Time: 5/22/20 0900

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist: LH

Client/Project: ALS-H

Thermometer ID: SMOM/IR11

Date/Time Received: 5/22/20 Initials: LH

Date/Time Logged in: 5/22/20 Initials: LH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ● Courier (ALS) ○ Client

2. Samples received in: ● Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ● No
   Were they intact? ○ Yes ○ No ● N/A
   Were they signed and dated? ○ Yes ○ No ● N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ● Baggies ○ Bubble Wrap ○ Gel Packs ● Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		5/22/20	0900	LH	0.5	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ● Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ● Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ● Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ● Yes ○ No
10. Did sample labels and tags agree with custody documents? ● Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 359084
Team: Semivoa GCMS/GRIVERA
Prep WorkFlow: GenExt28Day
Prep Method: Method
Status: Prepped
Prep Date/Time: 5/27/20 09:18

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000449-001	LH18/24-SP650_051920_BIX	.01	6850/ClO4 DOD			Water	10mL	
2	E2000450-001	LH18/24-SP140_051920	.01	6850/ClO4 DOD			Water	10mL	
3	E2000451-001	LH18/24-SP650_051920_BIX	.01	6850/ClO4 DOD			Water	10mL	
4	EQ2000209-01	MB		6850/ClO4 DOD			Liquid	10mL	
5	EQ2000209-02	LCS		6850/ClO4 DOD			Liquid	10mL	
6	EQ2000209-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 202037 Logbook Ref: Sodium Perchlorate Expires On: 05/22/2021

E2000449-001 100.00µL E2000450-001 100.00µL E2000451-001 100.00µL EQ2000209-01 100.00µL EQ2000209-02 100.00µL EQ2000209-03 100.00µL

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000209-02 1.00µL EQ2000209-03 1.00µL

Preparation Steps

Step: Preparation
Started: 5/27/20 09:18
Finished: 5/27/20 11:30
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 5/27/2020

Chain of Custody

Relinquished By: _____ Date: _____
Received By: _____ Date: _____

Extracts Examined
Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000450
Project:	HS20050754	**Date Collected:**	5/19/20 1400
Sample Matrix:	Water	**Date Received:**	5/22/20
Sample Name:	LH18/24-SP140_051920	**Units:**	µg/L
Lab Code:	E2000450-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**9250**		50.0	25.0	12.5	500	5/27/20	6/2/20 20:01	359084	682302	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000450
Project:	HS20050754	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000209-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100			1	5/27/20	6/2/20 19:22	359084	682302	

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000450
Project:	HS20050754	**Date Analyzed:**	6/ 2/20
Sample Matrix:	Water		

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	359084

	Lab Control Sample EQ2000209-02			Duplicate Lab Control Sample EQ2000209-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.118	0.100	118	0.115	0.100	115	84 - 119	2	15

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

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000450
Project:	HS20050754	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000209-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.118**		0.100			1	5/27/20	6/2/20 19:29	359084	682302	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000450
Project:	HS20050754	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000209-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.115**		0.100			1	5/27/20	6/2/20 19:37	359084	682302	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20200602

1st Review: Kneir
2nd Review: Hvan

Injection Log
LCMS01 -Shimadzu 8050

ICAL Date: 6/2/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000007**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments
	null		20200602_001	Perchlorate6850b.lcm	1x	☒	
	null		20200602_002	Perchlorate6850b.lcm	1x	☒	
	null		20200602_003	Perchlorate6850b.lcm	1x	☒	
	null		20200602_004	Perchlorate6850b.lcm	1x	☒	
	null		20200602_005	Perchlorate6850b.lcm	1x	☒	
	IB		20200602_006	Perchlorate6850b.lcm	1x	☒	
	IB		20200602_007	Perchlorate6850b.lcm	1x	☒	
	IB		20200602_008	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE1		20200602_009	Perchlorate6850b.lcm	1x	☒	3100806-05
	PERCHLORATE2		20200602_010	Perchlorate6850b.lcm	1x	☒	3100806-06
	PERCHLORATE3		20200602_011	Perchlorate6850b.lcm	1x	☒	3100806-07
	PERCHLORATE4		20200602_012	Perchlorate6850b.lcm	1x	☒	3100807-01
	PERCHLORATE5		20200602_013	Perchlorate6850b.lcm	1x	☒	3100807-02
	PERCHLORATE6		20200602_014	Perchlorate6850b.lcm	1x	☒	3100807-03
	PERCHLORATE7		20200602_015	Perchlorate6850b.lcm	1x	☒	3100807-04
	PERCHLORATE8		20200602_016	Perchlorate6850b.lcm	1x	☒	3100807-05
	PERCHLORATE9		20200602_017	Perchlorate6850b.lcm	1x	☒	3100807-06
	PERCHLORATE10		20200602_018	Perchlorate6850b.lcm	1x	☒	3100807-07
	PERCHLORATEICV		20200602_019	Perchlorate6850b.lcm	1x	☒	3100807-08
	null		20200602_020	Perchlorate6850b.lcm	1x	☒	
	null		20200602_021	Perchlorate6850b.lcm	1x	☒	
	IB		20200602_022	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200602_023	Perchlorate6850b.lcm	1x	☒	3100807-04
	LODV		20200602_024	Perchlorate6850b.lcm	1x	☒	
	EQ2000215-01		20200602_025	Perchlorate6850b.lcm	1x	☒	do not use
	EQ2000215-02		20200602_026	Perchlorate6850b.lcm	1x	☒	do not use
	EQ2000215-03		20200602_027	Perchlorate6850b.lcm	1x	☒	do not use
	E2000473-001		20200602_028	Perchlorate6850b.lcm	1x	☒	do not use
	ICS		20200602_029	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200602_030	Perchlorate6850b.lcm	1x	☒	3100807-04
	EQ2000202-01		20200602_031	Perchlorate6850b.lcm	1x	☒	
	EQ2000202-02		20200602_032	Perchlorate6850b.lcm	1x	☒	
	EQ2000202-03		20200602_033	Perchlorate6850b.lcm	1x	☒	
	E2000442-001		20200602_034	Perchlorate6850b.lcm	1x	☒	
	E2000442-002		20200602_035	Perchlorate6850b.lcm	1x	☒	
	ICS		20200602_036	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200602_037	Perchlorate6850b.lcm	1x	☒	3100807-04
	EQ2000209-01		20200602_038	Perchlorate6850b.lcm	1x	☒	
	EQ2000209-02		20200602_039	Perchlorate6850b.lcm	1x	☒	
	EQ2000209-03		20200602_040	Perchlorate6850b.lcm	1x	☒	
	E2000449-001		20200602_041	Perchlorate6850b.lcm	1x	☒	
	E2000451-001		20200602_042	Perchlorate6850b.lcm	1x	☒	
	E2000450-001X500		20200602_043	Perchlorate6850b.lcm	500x	☒	
	PERCHLORATE7		20200602_044	Perchlorate6850b.lcm	1x	☒	3100807-04
	EQ2000210-01		20200602_045	Perchlorate6850b.lcm	1x	☒	
	EQ2000210-02		20200602_046	Perchlorate6850b.lcm	1x	☒	
	EQ2000210-03		20200602_047	Perchlorate6850b.lcm	1x	☒	
	E2000459-001X1000		20200602_048	Perchlorate6850b.lcm	1000x	☒	
	E2000459-002		20200602_049	Perchlorate6850b.lcm	1x	☒	
	E2000459-003X200		20200602_050	Perchlorate6850b.lcm	200x	☒	
	E2000459-004X500		20200602_051	Perchlorate6850b.lcm	500x	☒	
	PERCHLORATE7		20200602_052	Perchlorate6850b.lcm	1x	☒	3100807-04

Initial Calibration - Detailed Report

Calibration ID: EC2000007 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2000007-01	PERCHLORATE1	20200602_009	06/02/2020 15:37
02	EC2000007-02	PERCHLORATE2	20200602_010	06/02/2020 15:45
03	EC2000007-03	PERCHLORATE3	20200602_011	06/02/2020 15:53
04	EC2000007-04	PERCHLORATE4	20200602_012	06/02/2020 16:05
05	EC2000007-05	PERCHLORATE5	20200602_013	06/02/2020 16:13
06	EC2000007-06	PERCHLORATE6	20200602_014	06/02/2020 16:21
07	EC2000007-07	PERCHLORATE7	20200602_015	06/02/2020 16:29
08	EC2000007-08	PERCHLORATE8	20200602_016	06/02/2020 16:37
09	EC2000007-09	PERCHLORATE9	20200602_017	06/02/2020 16:44
10	EC2000007-10	PERCHLORATE10	20200602_018	06/02/2020 16:52

Analyte **Curve Fit** **Weighting**

Perchlorate **Average RF** **RSD = 11.36** **Average RF = 0.1279**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1628	02	0.5000	0.122	03	0.7000	0.1165	04	1.0000	0.1408
05	2.0000	0.1172	06	5.0000	0.1212	07	10.0000	0.135	08	20.0000	0.1233
09	30.0000	0.12	10	50.0000	0.1202						

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.127	27.3	02	0.5000	0.477	-4.6	03	0.7000	0.638	-8.9
04	1.0000	1.10	10.1	05	2.0000	1.83	-8.4	06	5.0000	4.74	-5.2
07	10.0000	10.6	5.5	08	20.0000	19.3	-3.6	09	30.0000	28.1	-6.2
10	50.0000	47.0	-6.0								

Initial Calibration Verification Summary Report

Calibration ID:	EC2000007	**Instrument ID:**	E-LCMS-01
Datafile ID:	20200602_019	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000007-11	T	Average RF	10	10.859	ng/mL	8.6	<= 15

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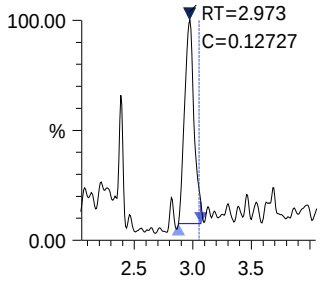
PERCHLORATE1

Date acquired: 6/2/2020 3:37:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_009.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	6/2/2020 3:37:49 PM	2231	0.12727	20200602_009	2.973	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE1	6/2/2020 3:37:49 PM	137060	1.00000	20200602_009	2.954	25.0000	1.0000	4

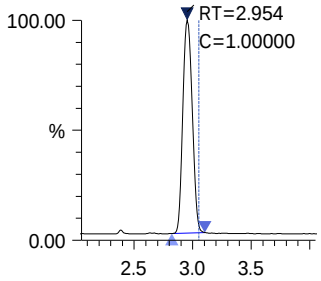
Perchlorate

Conc 0.12727
Area 2231
Q 99.00>83.00 (-) 4.13e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 137060
ISTD 107.00>89.00 (-) 2.48e4



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PERCHLORATE2

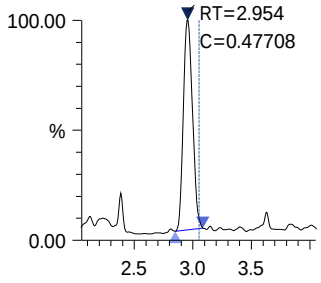
Date acquired: 6/2/2020 3:45:42 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_010.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	6/2/2020 3:45:42 PM	8464	0.47708	20200602_010	2.954	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE2	6/2/2020 3:45:42 PM	138722	1.00000	20200602_010	2.949	25.0000	1.0000	5

Perchlorate

Conc 0.47708
Area 8464

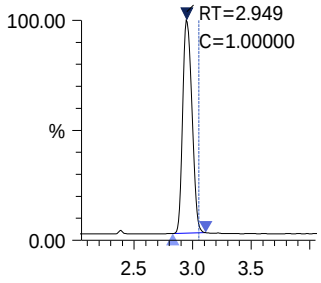
Q 99.00>83.00 (-) 1.56e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 138722

ISTD 107.00>89.00 (-) 2.53e4



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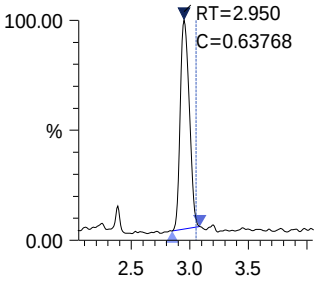
PERCHLORATE3

Date acquired: 6/2/2020 3:53:36 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_011.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	6/2/2020 3:53:36 PM	11656	0.63768	20200602_011	2.950	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	PERCHLORATE3	6/2/2020 3:53:36 PM	142915	1.00000	20200602_011	2.954	25.0000	1.0000	6

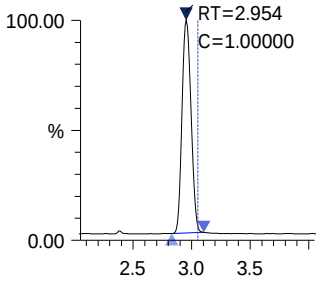
Perchlorate

Conc 0.63768
Area 11656
Q 99.00>83.00 (-) 2.17e3



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 142915
ISTD 107.00>89.00 (-) 2.70e4



ALS Group Houston

PERCHLORATE4

Date acquired: 6/2/2020 4:05:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_012.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

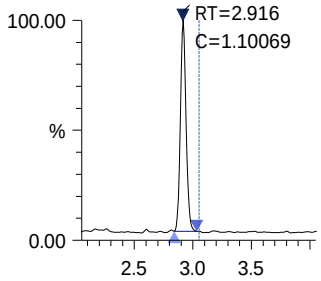
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	6/2/2020 4:05:28 PM	18119	1.10069	20200602_012	2.916	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE4	6/2/2020 4:05:28 PM	128706	1.00000	20200602_012	2.914	25.0000	1.0000	7

Perchlorate

Conc 1.10069

Area 18119

Q 99.00>83.00 (-) 5.42e3

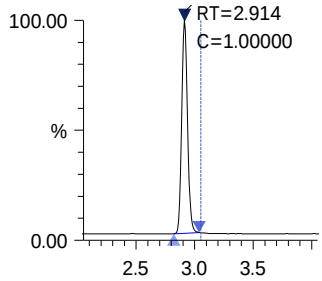


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 128706

ISTD 107.00>89.00 (-) 3.72e4



ALS Group Houston

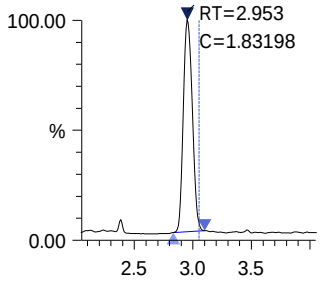
PERCHLORATE5

Date acquired: 6/2/2020 4:13:21 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_013.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	6/2/2020 4:13:21 PM	33971	1.83198	20200602_013	2.953	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE5	6/2/2020 4:13:21 PM	144982	1.00000	20200602_013	2.953	25.0000	1.0000	8

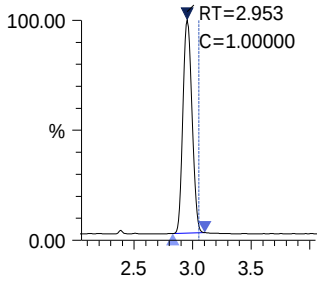
Perchlorate

Conc 1.83198
Area 33971
Q 99.00>83.00 (-) 6.29e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 144982
ISTD 107.00>89.00 (-) 2.71e4



ALS Group Houston

PERCHLORATE6

Date acquired: 6/2/2020 4:21:16 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_014.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

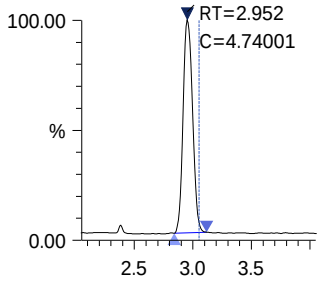
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	6/2/2020 4:21:16 PM	85178	4.74001	20200602_014	2.952	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE6	6/2/2020 4:21:16 PM	140500	1.00000	20200602_014	2.948	25.0000	1.0000	9

Perchlorate

Conc 4.74001

Area 85178

Q 99.00>83.00 (-) 1.50e4

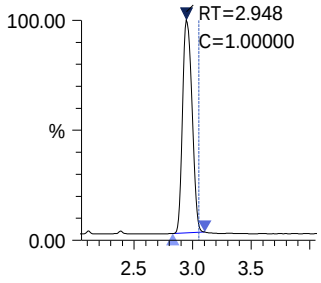


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 140500

ISTD 107.00>89.00 (-) 2.51e4



ALS Group Houston

PERCHLORATE7

Date acquired: 6/2/2020 4:29:10 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_015.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

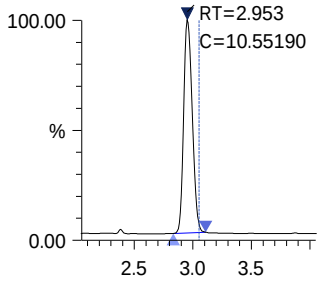
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	6/2/2020 4:29:10 PM	173998	10.55190	20200602_015	2.953	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/2/2020 4:29:10 PM	128928	1.00000	20200602_015	2.951	25.0000	1.0000	10

Perchlorate

Conc 10.55190

Area 173998

Q 99.00>83.00 (-) 3.36e4

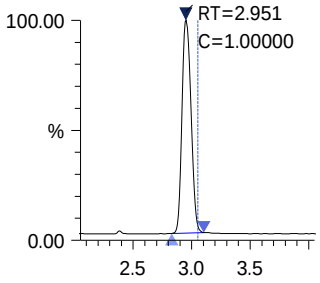


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 128928

ISTD 107.00>89.00 (-) 2.43e4



ALS Group Houston

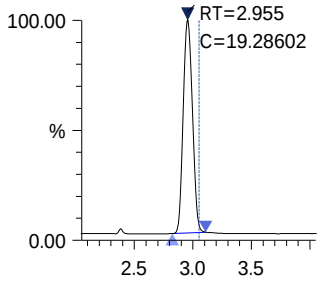
PERCHLORATE8

Date acquired: 6/2/2020 4:37:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_016.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	6/2/2020 4:37:02 PM	324944	19.28602	20200602_016	2.955	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE8	6/2/2020 4:37:02 PM	131734	1.00000	20200602_016	2.953	25.0000	1.0000	11

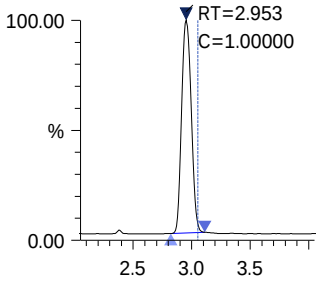
Perchlorate

Conc 19.28602
Area 324944
Q 99.00>83.00 (-) 5.85e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 131734
ISTD 107.00>89.00 (-) 2.34e4



ALS Group Houston

PERCHLORATE9

Date acquired: 6/2/2020 4:44:57 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_017.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

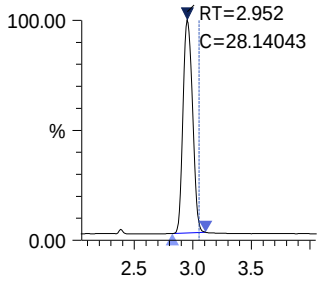
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	6/2/2020 4:44:57 PM	469066	28.14043	20200602_017	2.952	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE9	6/2/2020 4:44:57 PM	130327	1.00000	20200602_017	2.953	25.0000	1.0000	12

Perchlorate

Conc 28.14043

Area 469066

Q 99.00>83.00 (-) 8.16e4

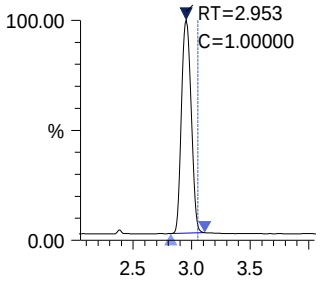


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 130327

ISTD 107.00>89.00 (-) 2.28e4



ALS Group Houston

PERCHLORATE10

Date acquired: 6/2/2020 4:52:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_018.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

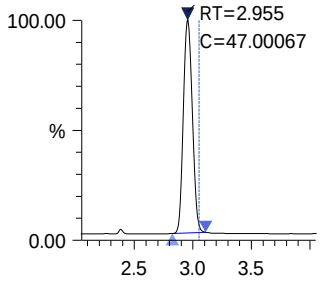
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE10	6/2/2020 4:52:49 PM	737362	47.00067	20200602_018	2.955	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE10	6/2/2020 4:52:49 PM	122661	1.00000	20200602_018	2.952	25.0000	1.0000	13

Perchlorate

Conc 47.00067

Area 737362

Q 99.00>83.00 (-) 1.36e5

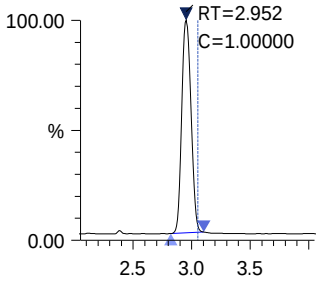


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 122661

ISTD 107.00>89.00 (-) 2.25e4



ALS Group Houston

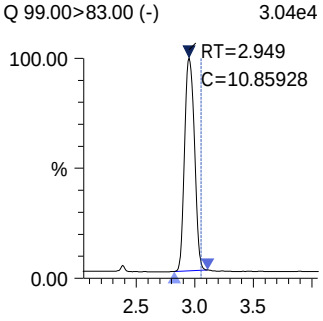
PERCHLORATEICV

Date acquired: 6/2/2020 5:00:42 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_019.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	6/2/2020 5:00:42 PM	180334	10.85928	20200602_019	2.949	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	6/2/2020 5:00:42 PM	129839	1.00000	20200602_019	2.948	25.0000	1.0000	14

Perchlorate

Conc 10.85928
Area 180334



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 129839

